

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Mach Zehnder Interferometer with Multimode for Biosensing application” was carried out by U.Chandras (ID No.:20181ECE0364), V.Likhitha (ID No.:20181ECE0370), Y.Harshitha (ID No.:20181ECE0387), and T.Mysuraiah setty (ID No.:20181ECE0358) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. Shwetha M**

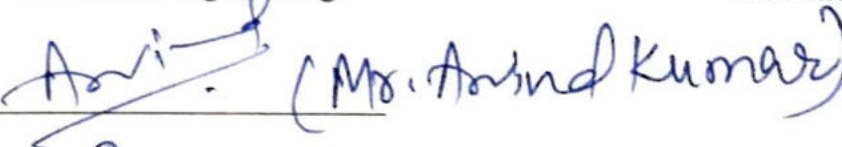
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

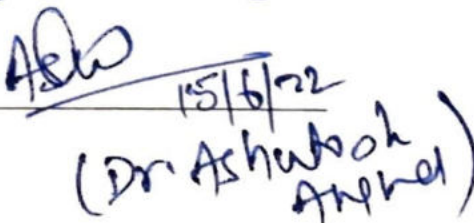
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



(Mr. Anand Kumar)

Examiner-2



15/6/22  
(Dr. Ashwath Anand)



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



GAIN MORE KNOWLEDGE  
REACH GREATER HEIGHTS

## Certificate

This is to certify that the University Project (PIP 102) work entitled "Smart Farming Using Pink Technology" was carried out by Ms. Vaishnavi R (ID No. 20181ECE0124), Mr. Boya Santhosh Kumar (ID No.20181ECE0159), Mr.B. Bhanu Prakash Reddy (ID No. 20181ECE0157), Mr. C. Raja Sekhar Reddy (ID No. 20181ECE0169) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Dr. M S Divyarani**  
Supervisor & Asst.Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1                     A/S/6/22                    

Examiner-2                     Kaveri/20/6/22                    

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP-102) work entitled, "VIRTUAL HAND GESTURE RECOGNITION" was carried out by Mr. P.V. YASWANTH REDDY (ID No: 20181ECE0326), Ms. VISWASHREE CH (ID No: 20181ECE0378), Mr. NAKKA MANI KUMAR (ID No:20181ECE0415) and Mr. B.HARISH REDDY (ID No; 20181ECE0424), and Ms. NEHA SHUKLA (ID No: 20191LEC0019) who are Bonafide students of VIII semester B. Tech Electronics & Communication Engineering in Presidency University, this is in partial fulfilment of the course work in place of Professional Practice (PIP-102) of Bachelor of Engineering in Presidency University, Bengaluru during the year 2021-2022.

**Mrs. Samreen Fiza**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner -1

23/6/22

Examiner -2

23/6/22



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “CONTINUOUS REAL-TIME NON-INVASIVE HEALTH MONITORING SYSTEM FOR PATIENTS” was carried out by Mr. Amith Kumar S (ID No. 20181ECE0011), Mr. Erasupradeepreddy (ID No. 20181ECE0193), Mr. Gondala Sai Venkata Yogesh (ID No. 20181ECE0007), and Mr. B Naveen Surya (ID No. 20181ECE0146) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Mr. V V S Vijaya Krishna**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

18/6/22



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “SECURED HUMAN HEALTH RECORD ACCESS USING BIOMETRIC SYSTEM” was carried out by Mr. M SUNIL KUMAR (ID No. 20181ECE0058), Ms. MADIHA NISHATH P (ID No. 20181ECE0059), Mr. NITISH REDDY D (ID No. 20181ECE0077), Ms. PALLAVI A (ID No. 20181ECE0080) and Ms. SAHANA M NAIDU (ID No. 20181ECE0101) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Dr. MUTHUPANDI G**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

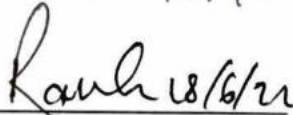
  
**Dr. RAJIV RANJAN SINGH**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

  
18/6/22

Examiner-2

  
18/6/22

  
REGISTRAR  
PRESIDENCY UNIVERSITY  
BANGALORE

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication  
Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “IMPLEMENTATION OF SPATIAL AND FREQUENCY DOMAIN TECHNIQUES OF IMAGE FUSION” was carried out by Mr. Divya Prakash (ID No. 20181ECE0405), Mr. Surya V (ID No. 20181ECE0406), Ms. Prajnaa (ID No. 20181ECE0414), Mr. Jillela Charan (ID No. 20181ECE0417) and Ms. Sakshi Prajapati (ID No. 20181ECE0423) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Mrs. Samreen Fiza**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 Rgub 23/6/22

Examiner-2 Aran 23/6/22

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "QUANTITATIVE ANALYSIS OF IMAGE FUSION ALGORITHMS" was carried out by Mr. MACHANI VENKATA RAMANA (ID No. 20181ECE0272), Mr. KURAPATI RANGANATH (ID No. 20181ECE0260), Mr. KUCHI HEMANTH KUMAR NAIDU (ID No. 20181ECE0257), Mr. KASETTY NARASIMHA (ID No. 20181ECE0239) and Mr. MANDATI ASHOK (ID No. 20181ECE0281) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Technology in Presidency University, Bengaluru, during the year 2021-2022.

**Mrs. SAMREEN FIZA**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1  23/6/22

Examiner-2  23/6/22



# PRESIDENCY UNIVERSITY

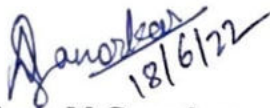
Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Ambulance Rescue System and Vehicle Accident Detection and Monitoring using IoT” was carried out by Mr. Chinthalapalli Charan Deep (ID No.20181ECE0178), Mr. Ganesh V (ID No.20181ECE0200), Mr. Ganji Muniteja (ID No. 2018ECE0204), Mr. Jonnalagadda . V.V.N.S.M. Vamsi Krishna (ID No. 20181ECE0225) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

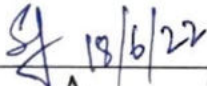
  
18/6/22

**Ms . Akshaya M Ganorkar**  
Supervisor & Asst.Professor  
Department of Electronics and  
Communication Engineering

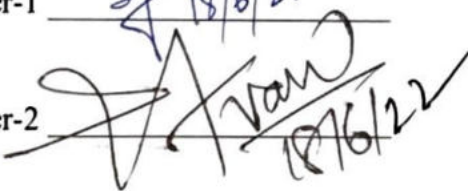


**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

  
18/6/22

Examiner-2

  
18/6/22

  
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PRESIDENCY UNIVERSITY  
BANGALORE



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

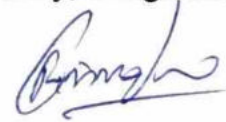
This is to certify that the University Project (PIP 102) work entitled “**IMAGE DEBLURRING AND SUPER RESOLUTION BY ADAPTIVE SPARSE AND REGULARIZATION**” was carried out by Mr. Pokala Sandeep (ID No. 20181ECE0318), Mr. Bavigadda Lokesh Naidu (ID No. 20181ECE0408), Mr. Gajjala Ajay Kumar Reddy (ID No. 20181ECE0421), Mr. Amara Sundar (ID No. 20181ECE0137) and Mr. Yeruva Sreenu (ID No. 20181ECE0388) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. Puneeth S B**

Supervisor & Assistant Professor

Department of Electronics and  
Communication Engineering

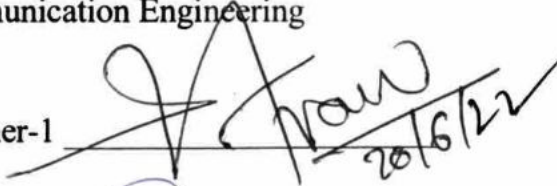


**Dr. Rajiv Ranjan Singh**

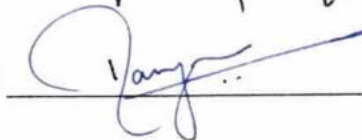
Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "IOT Based Cancellous Bone Health Analysis Using UltraSound Waves " was carried out by Mr.Kamatam Manikanta (ID No. 20181ECE0233), Mr. Kanala Sadhik (ID No. 20181ECE0234), Mr. K Vijay (ID No. 20181ECE0231), Mr.Galam Gurusreedhar (ID No. 20181ECE0198) and Mr. Dusthakar Rahul (ID No.20181ECE0190) who are bonafide students of VIII Semester B.Tech , Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Mr. Kiran Kale

Supervisor & Assistant  
professor


Department of Electronics and  
Communication Engineering

  
Dr. Rajiv Ranjan Singh

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1

 15/06/2022

Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**BRAIN CONTROLLED 3D PRINTED PROSTHETIC ARM**” was carried out by Mr. CHINNALA UDAY KUMAR (ID No. 20181ECE0174), Ms. YOGASHREE R S (ID No. 20181ECE0127), Ms. AKSANI KAVYASRI (ID No. 20181ECE0132), Ms. GAVINI BHARGAVI (ID No. 20181ECE0206), and Ms. NEHA SINGH (ID No. 20181ECE0072) who're bonafide college students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

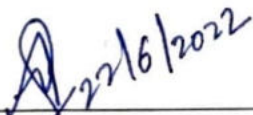


**Dr. DIVYARANI M S**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 \_\_\_\_\_



Examiner-2 \_\_\_\_\_



REGISTRAR



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "TRAFFIC VIOLATION DETECTION USING VAE NEURAL NETWORKS" was carried out by Mr. NAGA MAHENDRA REDDY (ID No. 20181ECE0292), Mr. VENNAPUSA CHANDRA KANTH REDDY (ID No. 20181ECE0372), Mr. NAGASWARAM VINODH (ID No.20181ECE0295), Mr. NAGASWARAM VINAY (ID No.20181ECE0294) and Mr. NAGASWARAM SURESH (ID No. 20181ECE0293) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course, work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022. .

*Kehkeshan*  
20/6/22

**Mrs. KEHKESHAN JALALL S**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Rajiv*

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 \_\_\_\_\_

Examiner-2 \_\_\_\_\_

*20/6/22*

*Ramesh*  
20/6/22

*Janu*  
REGISTRAR  
PRESIDENCY UNIVERSITY  
BANGALORE

**PRESIDENCY UNIVERSITY**  
(Private University established in Karnataka State by Act No. 41 of 2013)  
Itgalpur, Rajanakunte, Yelahanka, Bengaluru – 560064  
Website: www.presidencyuniversity.in

June, 2022  
**PRESIDENCY UNIVERSITY**

**Bengaluru**

**Department of Electronics and Communication Engineering**



### Certificate

This is to certify that the University Project (PIP 102) work entitled “ **TRANSKAN: TRANSFORMER-GENERATIVE ADVERSIAL NETWORK FOR IMAGE SUPERRESOLUTION** ” was carried out by **Ms. GUDDENNAGARI SUSHMITHA** (ID No. 20181ECE0213), **Ms. K DURGA** (ID No. 20181ECE0227), **Mr. KAPPARAPU VENKATA AJITH KUMAR REDDY** (ID No.20181ECE0235), **Mr. KATAKAM HEMANTH KUMAR** (ID No.20181ECE0240) and **Mr. VARAGANTI MOHAN SAI** (ID No. 20181ECE0368) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022. .

**Dr. SAFINAZ S**

Assistant Professor

Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1

*Dr. 20/6/22*

Examiner-2

*Lauch 20/6/22.*



# PRESIDENCY UNIVERSITY


Bengaluru, Karnataka.


## Department of Electronics and Communication Engineering

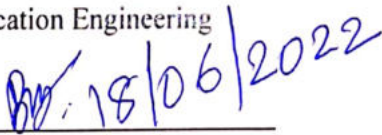



### Certificate

This is to certify that the University Project (PIP 102) work entitled "BATTERY MONITORING SYSTEM FOR ELECTRIC VEHICLES" was carried out by Mr. Attar Zameer (ID No. 20181ECE0145), Mr. Lakkakula Ravikumar (ID No. 20181ECE0263), Mr. Makkala Yashovardhan (ID No. 20181ECE0276) and Mr. Reddy Mohammad Sohail (ID No. 20181ECE0333) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Dr. Sreenivasappa BV**  
Supervisor & Professor  
Department of Electronics and  
Communication Engineering

  
**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1  18/06/2022

Examiner-2 

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "WET AND DRY WASTE SEGREGATION" was carried out by Mr. MANOJ H.V (ID No.20181ECE0061), Ms. NANDITHA.P (ID No. 20181ECE0071), Ms. NIKITHA.N (ID No. 20181ECE0075), Mr. NITHIN.N (ID No. 20181ECE0076) and Mr. SKANDH MUTHANNA M.S (ID No. 20181ECE0111) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Mrs. DIANA STEFFI D.D**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 SAb 15/06/2022

Examiner-2 ans shaji 15/06/2022

REGISTRAR

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "IOT BASED HOME AUTOMATION AND SECURITY SYSTEM WITH WEB DASHBOARD" was carried out by Mr. Bharat Krishnan (ID No. 20181ECE0016), Mr. Abhilash Kumar A (ID No. 20181ECE0003), Mr. Kishan S (ID No. 20181ECE0048), Ms. Gowri Krishnaveni (ID No. 20181ECE0034) and Ms. Sahana Singh S (ID No. 20181ECE0102) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

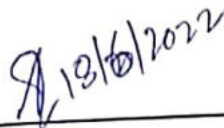


Ms. Ashwini B  
Supervisor and Assistant Professor  
Department of  
Electronics and Communication Engineering

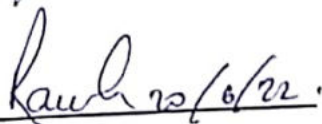


Dr. Rajiv Ranjan Singh  
Professor and Head  
Department of  
Electronics and Communication Engineering

Examiner-1

  
12/6/2022

Examiner-2

  
12/6/22



# PRESIDENCY UNIVERSITY

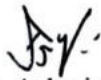
Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "IOT BASED HOME AUTOMATION AND SECURITY SYSTEM WITH WEB DASHBOARD" was carried out by Mr. Bharat Krishnan (ID No. 20181ECE0016), Mr. Abhilash Kumar A (ID No. 20181ECE0003), Mr. Kishan S (ID No. 20181ECE0048), Ms. Gowri Krishnaveni (ID No. 20181ECE0034) and Ms. Sahana Singh S (ID No. 20181ECE0102) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



Ms. Ashwini B

Supervisor and Assistant Professor  
Department of

Electronics and Communication Engineering



Dr. Rajiv Ranjan Singh  
Professor and Head  
Department of

Electronics and Communication Engineering

Examiner-1

  
\_\_\_\_\_

Examiner-2

  
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REGISTRAR  


# PRESIDENCY UNIVERSITY


Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "Segmentation of Cetaceans and Animalia from Underwater Images" was carried out by Ms. GANGIREDDY NIKITHA (ID No. 20181ECE0202), Mr. KOLAKALA GANGIREDDY (ID No. 20181ECE0245), Mr. OBI CHETHAN REDDY (ID No. 20181ECE0306), Mr. G NEELANTH REDDY (ID No. 20181ECE0400) and Ms. PUSHPANJALI ACHUTHAN (ID No. 20181ECE0090) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
18/6/22  
**Mr. Tirumala Vasu G**

**Supervisor & Assistant Professor**

Department of Electronics and Communication  
Engineering

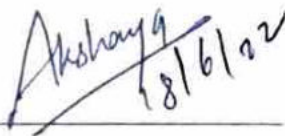


**Dr. Rajiv Ranjan Singh**

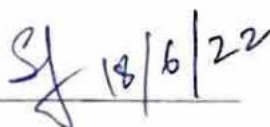
**Professor & Head**

Department of Electronics and  
Communication Engineering

Examiner-1

  
18/6/22

Examiner-2

  
18/6/22



# PRESIDENCY UNIVERSITY

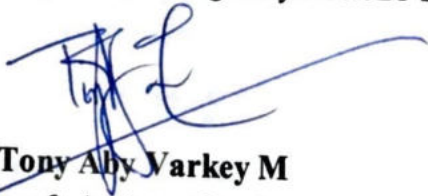
Bengaluru, Karnataka


Department of Electronics and Communication Engineering



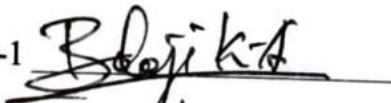
## Certificate

This is to certify that the University Project (PIP 102) work entitled “GPS BASED SURVEILLANCE AND OBSTACLE DETECTION USING AUTONOMOUS VEHICLE” was carried out by Mr. Vijay Kumar P (ID No. 20181ECE0310), Mr. Pradeep V (ID No. 20181ECE0320), Mr. Prashanth P (ID No. 20181ECE0323) and Ms. Pravalleeka N (ID No. 20181ECE0324) who are Bonafede students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Mr. Tony Abhy Varkey M**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

  
**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**FOOD QUALITY DETECTION AND MONITORING SYSTEM**” was carried out by **Ms. L MADHAVI** (ID no.20181ECE0052), **Ms. CHANDANA G S** (ID no.20181ECE0021), **Ms. PATHAKUNTA MOOLAMMA** (ID no. 20181ECE0314), **Mr. PANYAM SHAIK FAYAZ** (ID no. 20181ECE0312) and **Mr. NALLANI SAITEJA** (ID no. 20181ECE0298) who are bonified students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*SKb* 18/06/2022

**Mr. SYED ABRAR AHMED**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 *SKb* 18/06/2022

Examiner-2 *SKb* 18/06/2022



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "SMART PARKING USING EMBEDDED AI PROCESSOR" was carried out by Mr. Dinesh Kumar. G (ID No. 20181ECE0195), Mr. Dinesh Kumar Reddy. P (ID No.20181ECE0316), Mr. Vara Prasad (ID No.20181ECE0363), Mr. Vijay Kumar Reddy (ID No. 20181ECE0317) and Mr. Sunil. N (ID No. 20181ECE0296) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Akshatha .k*  
16/6/2022.

**Ms.Akshatha .k**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Rajiv Ranjan Singh*

**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

*T.P.J*

Examiner-2

*I.O*



# PRESIDENCY UNIVERSITY

Bengaluru

## Department of Electronics and Communication Engineering



### Certificate

This is to certify that the University Project (PIP 102) work entitled "Vehicle to Vehicle Communication using Light Fidelity" was carried out by Mr.MAGESH K (ID No. 20181ECE9004), MR. NANDA KUMAR (ID No.20181ECE9005), MR. RUCHITH GURURAJ (ID No.20181ECE0098), MS.SRI SAI CHANDANA (ID No.20181ECE0113) and MS.SHALINI S (ID No.20181ECE0105) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Mrs. Annapurna H.S

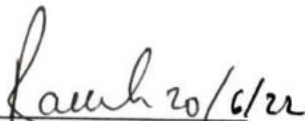
Supervisor & Assistant Professor

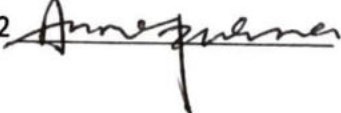
Department of Electronics and  
Communication Engineering

  
Dr. Rajiv Ranjan Singh

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1  20/6/22

Examiner-2 

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled **“AUTOMATIC MOVABLE ROAD DIVIDER TO AVOID TRAFFIC PROBLEMS BASED ON INTERNET OF THINGS(IOT)”** was carried out by Mr. REVANTH REDDY K (ID No.20181ECE0252), Mr. SARATH KUMAR L (ID No. 20181ECE0266), Mr. MUKESH MEENAN C (ID No.20181ECE0287), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Dr. Sayyed Faizan Ali

Assistant Professor  
Department of Electronics and Communication  
Engineering

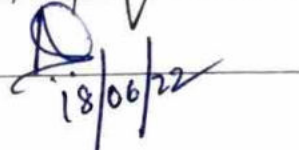
  
Dr. Rajiv Ranjan Singh

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2

  
18/06/22

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "SMART FARMING USING IOT" was carried out by Mr.M.V.N.VIGNESWAR(ID No.20181ECE0279),Mr.M.HARINATHREDDY(IDNo.20181ECE0278),Mr.M.JAYAVARD HAN(IDNo.20181ECE0285).Mr.M.AKHILESHWAR(IDNo.20181ECE0278),Ms.A.LAVA NYA(IDNo.20181ECE0138) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Pallabi K.*

**Mrs.Pallabi K.**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

Head of the Department  
Electronics and Communication Engineering  
School of Engineering  
PRESIDENCY UNIVERSITY  
Rajarajkunte, Yelahanka, Bengaluru

*Janu*  
REGISTRAR  
PRESIDENCY UNIVERSITY  
BANGALORE



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

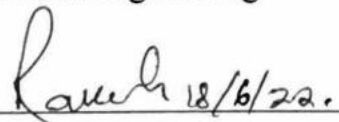
This is to certify that the University Project (PIP 102) work entitled “THE APPLICATION OF SWARM ROBOTICS TO DESIGN AND IMPLEMENT ROBOTS” was carried out by Mr. Nichenametla Ashok (ID No. 20181ECE0303), Mr. Prajwal P (ID No. 20181ECE0322), Mx. Mr. P Kamalnath (ID No. 20181ECE0307), Mr. Srihari babu Somavarapu (ID No. 20181ECE0349) and Mr. Pilligundla Nagarajappa Bhanu Prakash (ID No. 20181ECE0315) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Dr. K. Rafeeq Ahmed**  
Supervisor & Professor

Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1  18/6/22.

Examiner-2 



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "AUTOMATIC ACCIDENT DETECTION AND HUMAN RESCUE SYSTEM" was carried out by Mr.Chakka Sai Teja (ID No.20181ECE0164), Mr.Bommireddy Mahidhar Reddy (ID No. 20181ECE0156), Mr.Bukkasamudram Hemanth Reddy (ID No.20181ECE0160), Mr.Ambati Sai Kumar Reddy (ID No. 20181ECE0139) and Mr.Batchali Bheemasai (ID No. 20181ECE0152) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Mrs. Anupama Sindgi*

**Mrs. Anupama Sindgi**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Dr. Rajiv Ranjan Singh*

**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

*[Signature]*

Examiner-2

*[Signature]*

Head of the Department  
Electronics and Communication Engineering  
School of Engineering  
PRESIDENCY UNIVERSITY  
Jayanukunte, Yelahanka, Bengaluru - 56

REGISTRAR



# CERTIFICATE

This is to certify that the University Project (PIP 102) work entitled "FEATURE EXTRACTION FOR TRAFFIC SIGN DETECTION AND RECOGNITION" was carried out by Ms. NIBA FATHIMA P (ID No. 20181ECE0073), Ms. SHRIYA S KUMAR (ID No. 20181ECE0109), Ms. DISHA DECHAMMA (ID No. 20181ECE9008), Ms. SUSHMITHA (ID No. 20181ECE0121) and Ms. VAISHNAVI APPACHA A (ID No. 20181ECE0123) who are Bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Ms. G SWETHA**

Supervisor & Assistant Professor

Department of Electronics and  
Communication Engineering

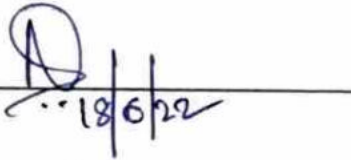


**Dr Rajiv Ranjan Singh**

Professor & Head


Department of Electronics and  
Communication Engineering

Examiner-1



18/06/22

Examiner-2



18/06/22



REGISTRAR



PRESIDENCY UNIVERSITY  
Registrar  
BANGALORE

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "NEURAL NETWORK BASED COURSE RECOMMENDATION SYSTEM UNDER FULLY FLEXIBLE CREDIT SYSTEM" was carried out by Mr. Deepak B Salagare (ID No. 20181ECE0402), Ms. Bhoomika B (ID No. 20181ECE0393), Mr. Palasani Vishnuvardhan Reddy (ID No. 20181ECE0309), and Ms. Shwetha Bhavikatti (ID No. 20181ECE0353) and who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Mr. Ramzan Basheer**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

ZARTI 16/6/22

Examiner-2

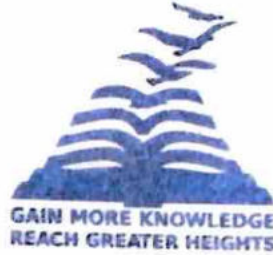
K. R. Reddy  
16/6/2022



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



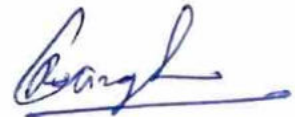
## Certificate

This is to certify that the University Project (PIP 102) work entitled “**BRAIN TUMOR DETECTION USING IMAGE FUSION TECHNIQUES**” was carried out by Mr. Y.Bhanu Nagendra Sandeep (ID No.20181ECE0418), Mr. T.Nikhil Reddy (ID No.20181ECE0361), Ms. Vallepu Bhavya Sai (ID No.20181ECE0366), Ms. Yadavalli Samhitha (ID No.20181ECE0379) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*M/Konar  
17/6/22*

**Ms. Maitraiye Konar**

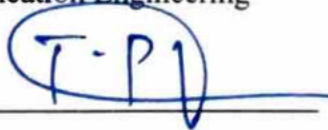
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



**Head of the Department**  
Electronics and Communication Engineering  
School of Engineering  
PRESIDENCY UNIVERSITY  
Rajanukunte, Yelahanka, Bengaluru -56

*Janu*  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



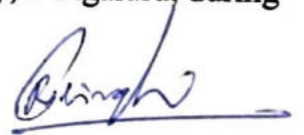
## Certificate

This is to certify that the University Project (PIP 102) work entitled “**ACCIDENT DETECTION AND ENVIRONMENT MONITORING DEVICE FOR FISHERMAN BOAT**” was carried out by Ms. Komal Kumari Nagar (ID No. 20181ECE0049), Ms. Godavari Vithoba Siddi (ID No. 20181ECE0033) and Mr. Chethan L (ID No.20181ECE0023), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the years 2021-2022.

*S Chaudhuri*

16-06-2022

**Dr. Sumantra Chaudhuri**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of  
Electronics and  
Communication  
Engineering

Examiner-1

*K. R. Reddy*

Examiner-2

*ZARAH*



# PRESIDENCY UNIVERSITY

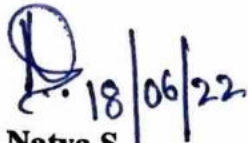
Bengaluru

Department of Electronics and Communication Engineering



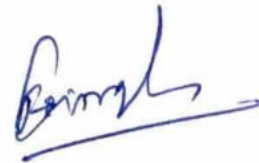
## Certificate

This is to certify that the University Project (PIP 102) work entitled "OPENCV-BASED HOME SECURITY CAMERA WITH MOTION DETECTION AND FACE RECOGNITION" was carried out by Mr . Sree Sankaran C (ID No. 20181ECE0395), Mr. Shaik Mohammed Muheet (ID No. 20181ECE0345), Mr Yashraj (ID No. 20181ECE0383), Mr Jejoy M Joseph (ID No. 20181ECE9001) and Mr . Siddique Izhan (ID No. 20181ECE0065) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
D. 18/06/22

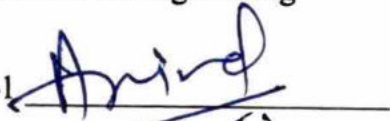
**Ms. Natya S**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

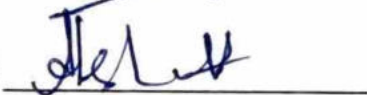


**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “SECURED EVM USING BIOMETRIC WITH UNIQUE ID AND IOT” was carried out by Mr. ABHILASH N (ID No. 20181ECE0004), Mr. AKASH DR (ID No. 20181ECE0010), Mr. ARUN R (ID No. 20181ECE0012), Mr. TEJA VARDHAN (ID No. 20181ECE0015) and Mr. LUKKA PAVAN NAGASAI (ID No. 20181ECE9003) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
20/6/22

**Mr. ASHUTOSH ANAND**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

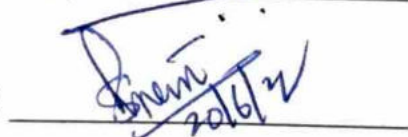


**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2

  
20/6/22





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**REAL TIME PARKING MONITORING & AUTOMATIC BILLING**” was carried out by Mr. N C Likith Reddy (ID No. 20181ECE0069), Mr. Abdul Aftaab Ahamed Sheik (ID No. 20181ECE0130), Mr. G Yashwanth Reddy (ID No. 20181ECE0218), Mr. Sai Kumar Pamarthi (ID No. 20181ECE0338) and Mr. Thalla Mithilesh (ID No. 20181ECE0357) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Arvind*  
**Mr. Arvind Kumar**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

Examiner-1

*Arvind*  
20/06/22

Examiner-2

*Ranjit*  
20/06/22

*Ranjit*  
**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

B.Tech. Electronics and Communication Engineering / June, 2022





**DEPARTMENT OF ELECTRONICS AND COMMUNICATION**  
**PRESIDENCY UNIVERSITY**

**CERTIFICATE**

This is to certify that the University Project (PIP 102) work entitled **“REAL TIME TRACKING AND ALERT SYSTEM FOR LAPTOP THROUGH IMPLEMENTATION OF GPS, GSM, MOTION SENSOR FOR ANTI THEFT PURPOSES”** was carried out by S. POOJITH KUMAR (ID No. 20181ECE0340), N. VIJAY KUMAR REDDY (ID No. 20181ECE0305), S. NAGA VAMSI (ID No.20181ECE0336), G. DINESH (ID No. 20181ECE0217) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Mrs. AMRUTHA V NAIR**

Supervisor & Assistant Professor

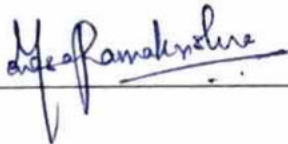
Department of Electronics and  
Communication Engineering

  
**DR. RAJIV RANJAN SINGH**

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**DESIGN AND IMPLEMENTATION OF AN ADVANCED SECURITY SYSTEM- INVISIBLE EYE**” was carried out by A. Navaneesh Kumar Reddy (IDNo. 20181ECE0131), S. Sreekanth (IDNo.20181ECE0378), N. Karthik (IDNo.20181ECE0302), E. Sudheer (IDNo.20181ECE0194) and S. Vikas Reddy (IDNo.20181ECE0337) who are Bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022. 2



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering



**Ms. Sowmya CS**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

Examiner-1   
17/6/2022

Examiner-2   
17/6/22

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project – II work entitled “**UNDERWATER COMMUNICATION USING LASER**” was carried out by **Ms.Anapoorna R** (IDNo.20191LEC0013), **Ms.Chaithra M** (IDNo.20191LEC0007) and **Ms.Meghana S** (IDNo.20191LEC0012), **Mr.Tarun R** (IDNo.20191LEC0014).who are bonafide students of VIII Semester B.Tech. **Electronics and Communication Engineering** in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice – II of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Mr. Balaji K.A**

Supervisor & Assistant Professor  
Department of Electronics and

Communication Engineering

Examiner-1

Examiner-2

**Dr.Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and

Communication Engineering



# PRESIDENCY UNIVERSITY

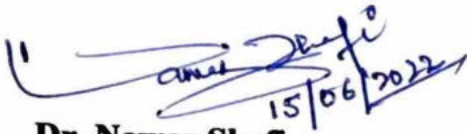
Bengaluru

Department of Electronics and Communication Engineering



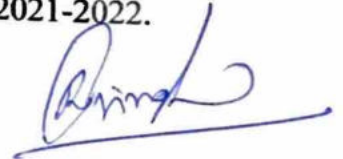
## Certificate

This is to certify that the University Project (PIP 102) work entitled "WEATHER MONITORING SYSTEM USING IOT" was carried out by Mr. Deekshith D (ID No. 20181ECE0024), Mr. Elwin Joshua (ID No. 20181ECE0029), Mr. Karthik R (ID No. 20181ECE0045) and Mr. Kushal S (ID No. 20181ECE0051) who are Bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
15/06/2022

**Dr. Nawaz Shafi**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 Anjand Singh

Examiner-2 SAB



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**SMART MUSIC PLAYER INTEGRATING FACIAL EMOTION RECOGNITION AND MUSIC MOOD RECOMMENDATION**” was carried out by **Ms. G Aditi Naidu (ID No. 2018IECE0032), Ms. Jeevitha S Rao (ID No. 2018IECE0043), Ms. Chaithanya S (ID No.2018IECE0019), Ms. Likhitha M (ID No.2018IECE0054), Mr. Katragadda Yaswanth Sai (ID No.2018IECE0241)**, who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021- 2022.

*Aruna of*

Supervisor & Professor  
Department of Electronics and  
Communication Engineering

*Dr Rajiv Ranjan Singh*

Dr Rajiv Ranjan Singh  
Professor & Head Department of  
Electronics and Communication  
Engineering

Examiner-1 \_\_\_\_\_

Examiner-2 \_\_\_\_\_



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “ AN IOT APPROACH TOWARDS THE DEVELOPMENT OF SMART HIGHWAYS ” was carried out by Mr. K Revanth Kumar (ID NO. 20181ECE0416),MR.N Thanesh Reddy (ID No.20181ECE0299),Mr. Dinesh Ketani(ID No. 20181ECE9014), and Mr. Lokeshwaran(ID No. 20181ECE0267)who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency

**Dr. Pritham Keshari Sahoo**  
Supervisor & Asst. Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

Head of the Department  
Electronics and Communication Engineering  
School of Engineering  
PRESIDENCY UNIVERSITY  
Rajanakunte, Yelahanka, Bengaluru -64

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

## Department of Electronics and Communication Engineering



### Certificate

This is to certify that the University Project (PIP 102) work entitled “AQUACULTURE FOR FISHERIES USING IOT” was carried out by Mr. Kore Akhil Kumar (ID No. 20181ECE0250), Mr. Mekala Amarnath (ID No. 20181ECE0284), Mr. Munagali Sumanth Naidu (ID No. 20181ECE0290), and Mr. Setty Reddy Vikesh (ID No. 20181ECE0343) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Mrs. Anusha R**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

## Department of Electronics and Communication Engineering



### Certificate

This is to certify that the University Project (PIP 102) work entitled "Two wheeled self balancing bot using Linear Quadratic Regulator" was carried out by Mr. MOHAMMED ADNAN (ID No. 20181ECE9020), Mr. SHAFIM FAISAL REHMAN KHAN (ID No.20181ECE0104), Mr. MOHAMMED FARHAN KALEEM (ID No. 20181ECE0064), Mr. AKULA SAI TEJA REDDY (ID No. 20181ECE0133) and Mr. ABHILASH R KULKARNI (ID No. 20181ECE9019) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

Mrs. Renuka Bhagwat

Supervisor & Assistant Professor

Department of Electronics and  
Communication Engineering

Dr. Rajiv Ranjan Singh

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1

Dr. Joseph Antony Prathap

  
16/6/22

Examiner-2

Dr. K Rafeeq Ahamed

  
16/6/2022

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "HEART ATTACK PREDICTION USING MACHINE LEARNING" was carried out by Ms. SPOORTHY S (ID No. 20181ECE0112), Ms. SAMYUKTHAA M (ID No.20181ECE0269), Mr. KOTU VASUDEV (ID No. 20181ECE0255), Mr. RAMA KRISHNA KOMMINENI (ID No. 20181ECE0246) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Ms. SRILAKSHMI K H**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

  
REGISTRAR

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



GAIN MORE KNOWLEDGE  
REACH GREATER HEIGHTS

## Certificate

This is to certify that the University Project (PIP 102) work entitled "Sand-Dust Image Enhancement and Infrared Strip-Noise Removal using Anisotropic Guided Filter" was carried out by Ms. RADHA SHARMA (ID No. 20181ECE0092), Mr. VARANASI SREEKANTH (ID No. 20181ECE0369), Mr. BALA VENKATESHWARLU (ID No. 20181ECE0238), Mr. TEJESWAR REDDY (ID No. 20181ECE0232) and Mr. NITISH REDDY (ID No. 20181ECE0035) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
18/6/22  
**Mr. Tirumala Vasu G**

Supervisor & Assistant Professor

Department of Electronics and  
Communication Engineering

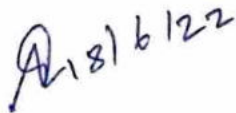


**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1

  
18/6/22

Examiner-2

  
18/6/22



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**SOLDIER HEALTH MONITORING AND TRACKING SYSTEM USING INTERNET OF THINGS(IOT)**” was carried out by Mr. Shashank R(ID No.20191LEC0010), Miss. Divyashree S(ID No. 20181ECE0186), Mr. Golla Pramod Kumar(ID No. 20181ECE0209), Mr. Bharath Manohara M (ID No.20181ECE9015) and Mr. Narendra Reddy G (ID No20181ECE0221) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

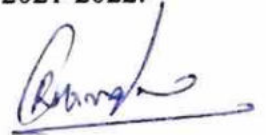


**Dr. Joseph Anthony Prathap**  
Supervisor & Associate Professor  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering



# PRESIDENCY UNIVERSITY

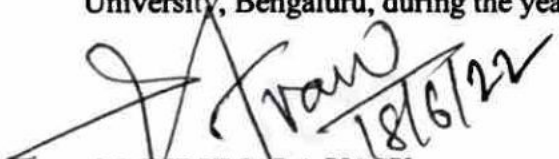
Bengaluru


Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "COLOUR IMAGE ENHANCEMENT" was carried out by MS.MOKSHITHA.K (ID No. 20181ECE0254), Ms. NOORAIN SADAF (ID No. 20181ECE0078), Mr. NIKHILBALGANOOR(IDNo.20181ECE0074),Mr.HARISH.S(ID-No.20181ECE0038) and Mr. SRIKANTH.M (ID No. 20181ECE0114) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Mr PIRUMALA VASU  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

  
Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 18/6/22

Examiner-2 18/6/22

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "IOT BASED SMART AND ADAPTIVE LIGHTING SYSTEM" was carried out by Mr. B Vivekananda Reddy (ID No. 20181ECE0147), Mr. B Nanda Kumar Reddy (ID No. 20181ECE0158), Mr. B Rajendra Reddy (ID No. 20181ECE0161), Mr. B. Tharun Kumar Reddy (ID No. 20181ECE0150) and Mr. (ID No. A Lakshmi Saketh Reddy) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Rakesh* 18/6/22.

**Dr. Rakesh Chowdhury**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Rajiv Ranjan Singh*

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

*K. R. Reddy*

Examiner-2

*Ranjana*



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP102) work entitled “**Performance Analysis of Indian Regional Navigation Satellite System**” was carried out by Mr. MAHENDRAM (ID No. 20181ECE0060), Mr. DASARI SAI VINAY (ID No.20181ECE0083) Mr. RAKSHITH J T (ID No. 20181ECE0095) who are bonafide students of VIII Semester B.Tech, Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Manaswini R*  
16/6/22

**Ms. Manaswini R**  
Supervisor & Assistant professor  
Department of Electronics and  
Communication Engineering

*Dr. Rajiv Ranjan Singh*

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 *[Signature]*

Examiner-2 *[Signature]*



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP102) work entitled “IoT Mining Tracking and Worker Safety Helmet” was carried out by Mr. DUDDHELA GIRISH (ID No. 20181ECE0187), Mr. TANGUTURU SAI SUKESH (ID No. 20181ECE0356), Mr. VENKATESH SURESH PARTHANALLI (ID No. 20191LEC0004) who are bonafide students of VIII Semester B.Tech, Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Mrs. Aruna D**

Supervisor & Assistant professor

Department of Electronics and

Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and

Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY

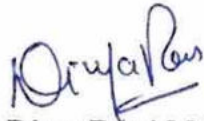
Bengaluru

Department of Electronics and Communication Engineering



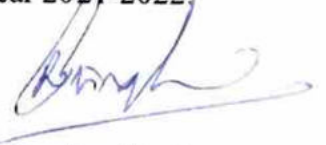
## Certificate

This is to certify that the University Project (PIP102) work entitled “**3D PRINTED PROSTHETIC ARM USING EMG CONTROL**” was carried out by Mr. MANOJ KUMAR REDDY (ID No. 20181ECE0386), Ms. VINUKONDA NIKHITHA (ID No. 20181ECE0376), Ms. SAYED FAKRUNNISHA (ID No. 20181ECE0407) and Ms. SHWETA S HIREMATH (ID No. 20191LEC000S) Mr. SUMIT KHATRI (ID No. 20181LEC0003) who are bonafide students of VIII Semester B.Tech, Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Mrs. Divya Rani M S**

Supervisor & Assistant professor  
Department of Electronics and  
Communication Engineering



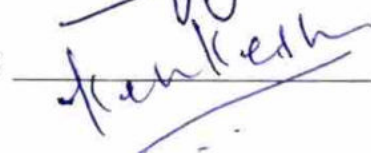
**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



# PRESIDENCY UNIVERSITY

BANGALORE

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that the University Project (PIP 102) work entitled "STUDY ON SCADA" was carried out by **Mr. Harshith A (ID No. 20191LEC0006)**, **Ms. Yashaswini N D (ID No. 20181ECE0382)** and **Mr. Manu C (ID No. 20181ECE0062)** who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. Nawaz Shafi**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



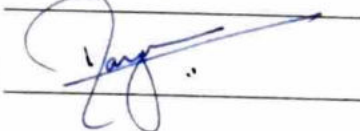
**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



# PRESIDENCY UNIVERSITY

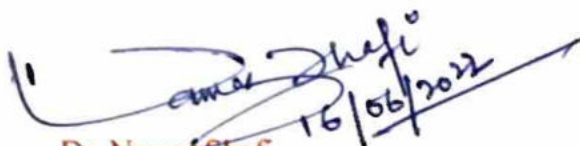
Bengaluru

Department of Electronics and Communication Engineering



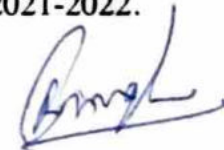
## Certificate

This is to certify that the University Project (PIP 102) work entitled “Implementing Routing Using Open Shortest Path First Routing Protocol” was carried out by Mr. Harshit Nahar who is a bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Dr. Nawaz Shafi  
16/06/2022

Supervisor & Assistant Professor

Department of Electronics and  
Communication Engineering



Dr. Rajiv Ranjan Singh

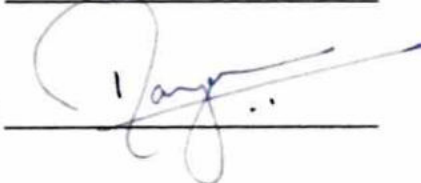
Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Event Management System” was carried out by Mr. Prajwal B J who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Pallabi Kakati*

**Ms. Pallabi Kakati**  
Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

*Janus*  
REGISTRAR  
PRESIDENCY UNIVERSITY  
BANGALORE

June, 2022

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Employee leave Management System” was carried out by Mr. Pavan P (ID No. 2181ECE0082) who is a bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Pallabi Kakati*

**Ms. Pallabi Kakati**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Rajiv Ranjan Singh*  
16/06/2022

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering



June, 2022

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Employee leave Management System” was carried out by Mr. Rohit R Achanur (ID No. 2181ECE0097) who is a bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Pallabi Kakati*

**Ms. Pallabi Kakati**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Rajiv Ranjan Singh*

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering



**PRESIDENCY UNIVERSITY**

**Bengaluru**

**Department of Electronics and Communication Engineering**

**CERTIFICATE**

This is to certify that the University Project(PIP 102) work entitled "Training Management System" was carried out by Ms. Rakshitha A R(ID No.20181ECE0096) who is Bonafide student of 8<sup>th</sup> Semester B. tech Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022

*S. Faizan Ali*

**Dr. Sayyed Faizan Ali**  
Assistant Professor

**Department of Electronics -  
And Communication**

*Rajiv Ranjan*

**Dr. Rajiv Ranjan**  
Professor & Head

**Department of Electronics  
and Communication**

*Janus*  
REGISTRAR  
PRESIDENCY UNIVERSITY  
BANGALORE

June, 2022

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Employee leave Management System” was carried out by Ms. Preethi S Sarangamath (ID No. 2181ECE0088) who is a bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Pallabi Kakati*

**Ms. Pallabi Kakati**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Rajiv Ranjan Singh*

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

*Sanu*  
REGISTRAR  
PRESIDENCY UNIVERSITY  
BANGALORE



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate


This is to certify that the University Project (PIP 102) work entitled "SMART SHOPPING CART SYSTEM USING RFID AS IOT APPLICATION" was carried out by Allareddy Sashank reddy (ID No. 20181ECE0136), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

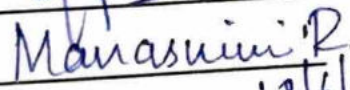
  
Mrs. Sowmya C S

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

  
Dr. Rajiv Ranjan Singh

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2 

12/6/22



# PRESIDENCY UNIVERSITY

## BENGALURU

### Department of Electronics and Communication Engineering



### Certificate

This is to certify that the University Project (PIP 102) work entitled **“ONLINE PET SHOP”** was carried out by **MR. DHAREPPA BISTAGOND (ID No. 20181ECE0027)** who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



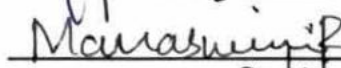
**MS. SOWMYA C S**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1:   
Examiner-2:   
20/6/22.

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication

Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Conducting Building Audits to implement IOT and Automation for a Smart Sustainable Campus” was carried out by **Mr. Vignesh Babu R.V** (ID No.20181ECE0374), who is a Bonafede student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Ms. Sowmya C.S**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



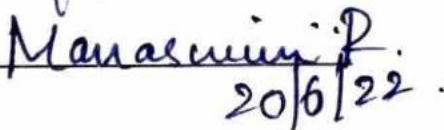
**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2

  
20/6/22.

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



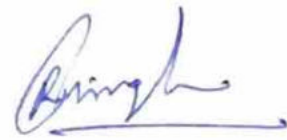
## Certificate

This is to certify that the Internship Project (PIP 102) work entitled "SECURING CLOUD COMPUTING USING CRYPTOGRAPHY" was carried out by Gutha Sivasai Naidu (ID No. 20181ECE0220), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Mrs. Sowmya C S**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



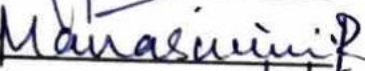
**Dr. Rajiv Ranjan Singh**  
Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



20/6/22



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "AGRICULTURE PORTAL" was carried out by CHINNIREDDYGARI SRIPATHI (ID No. 20181ECE0175), and CHINTALAPUDI GOPI KRISHNA (ID No. 20181ECE0176), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
18/6/22  
Mrs. MANASA R

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1  C.S. 18/06/2022

Examiner-2  18/6/22



  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "WEB DEVELOPMENT" was carried out by P. RAGHU VARDHAN (ID No. 20181ECE0328) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



Ms. ARUNA M

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**IOT Based Distancing & Monitoring Robot For Queue**” was carried out by **S.PURUSHOTHAM (ID No. 20181ECE0389)** who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Mrs. M. Aruna**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING  
SCHOOL OF ENGINEERING  
PRESIDENCY UNIVERSITY**

**CERTIFICATE**

This is to certify that the Internship Report "IT INFRASTRUCTURE AND BASIC OF NETWORKING" being submitted by "SAI KIRAN R PASTAY " bearing roll number(s):20181ECE9009, in partial fulfillment of requirement for the award of degree of **Bachelor of Technology in Electronics and Communication Engineering** is a Bonafide work carried out under my supervision.

 C.S.

**Ms. Sowmya . C. S**  
Associate Professor-ECE  
Department of ECE  
Presidency University



**Mr. Mahesh Linganna**  
PIP-II (Internship Coordinator)  
IT Engineer  
Presidency University



**Mr. Rajiv Ranjan**  
HOD Of ECE  
Presidency  
University

  
REGISTRAR  




# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "AGRICULTURE PORTAL" was carried out by Mr. D RAKESH (ID No. 20181ECE0181) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Manaswini R*  
Ms. MANASWINI R 18/6/22

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Ranjit Singh*

Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

*Manaswini R*  
18/6/22

Examiner-2

*D. Rakesh*



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



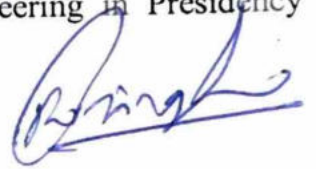
## Certificate

This is to certify that the University Project (PIP 102) work entitled "EXIM OPERATIONS USING RPA" was carried out by R. NANDA KISHORE REDDY (ID No. 20181ECE0329), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. NAWAZ SHAFI**

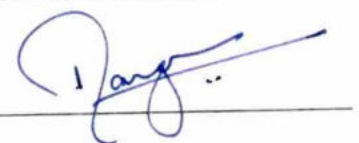
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2 

  
REGISTRAR  


**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING  
SCHOOL OF ENGINEERING  
PRESIDENCY UNIVERSITY**

**CERTIFICATE**

This is to certify that the Project report “**EXPLORATORY DATA ANALYSIS**”  
being submitted by “**YELLASOM SAMARSIMHAREDDY**” bearing roll number:  
**20181ECE0385**, in partial fulfillment of requirement for the award of degree of  
**Bachelor of Technology in Electronic and communication Engineering** is a  
bonafide work carried out under my supervision.

  
**Ms. Aruna Dore**

**Supervisor & Professor**

**Department of  
Electronics and  
Communication  
Engineering**



**Dr. Rajiv Ranjan  
Singh**

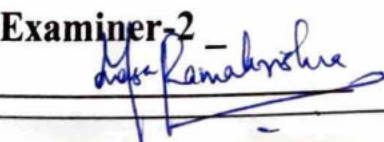
**Professor & Head**

**Department of  
electronics and  
communication  
engineering**

**Examiner-1**



**Examiner-2**





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the university Internship (PIP 102) work entitled “**INDIAN AGRICULTURE WEBSITE**” was carried out by **Mr. KURAPATI PAVAN KUMAR (ID No. 20181ECE0259)** who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Manaswini R*  
Ms. Manaswini R 18/6/22

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Rajiv Ranjan Singh*

Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 *Manaswini R*  
18/6/22

Examiner-2 *Dr. Ramakrishna*



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Internship (PIP 102) work entitled "INDIAN AGRICULTURE WEBSITE" was carried out by Mr. GUTTY VINAY KUMAR (ID No. 20181ECE0222) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Ms. Manaswini R 18/6/22.

Supervisor & Assistant Professor

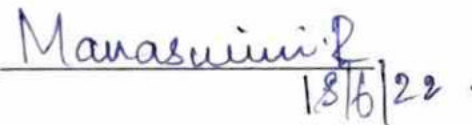
Department of Electronics and  
Communication Engineering




Dr. Rajiv Ranjan Singh

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1   
18/6/22.

Examiner-2 



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "WEB DEVELOPMENT" was carried out by P. CHENNA KESAVA (ID No. 20181ECE0325) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

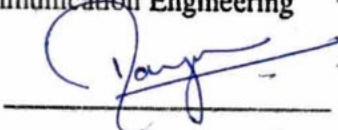
  
Ms. ANURUPA M

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

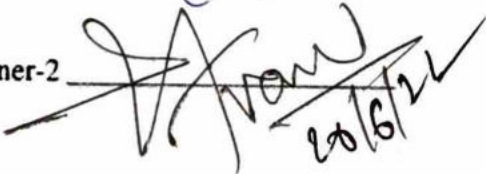


Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2

  
20/6/22

  
REGISTRAR  
PRESIDENCY UNIVERSITY  
BANGALORE

# PRESIDENCY UNIVERSITY

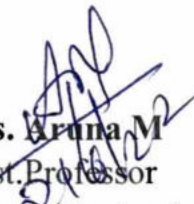
Bengaluru

Department of Electronics and Communication Engineering

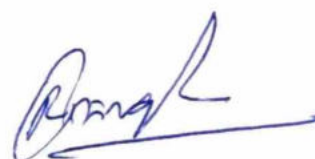


## Certificate

This is to certify that the INTERNSHIP (PIP 102) work entitled "DIABETES PREDICTION SYSTEM" at TECHNOOK was carried out by Mr. B.VEERA RAVINDRA REDDY(20181ECE0151) who are bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Mrs. Aruna M  
Asst. Professor

Department of Electronics and  
Communication Engineering

  
Dr. Rajiv Ranjan Singh  
Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship (PIP102) work entitled “**DIABETES PREDICTION SYSTEM**” was carried out at TeachNook by Mr. SRINIVAS GOWDA K N (ID No. 20191LEC0015) who are bonafide student of VIII Semester B.Tech., Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Mr. Kiran Kale**

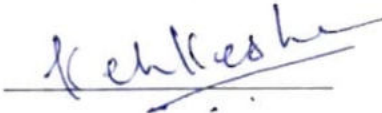
Supervisor & Assistant professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



REGISTRAR



PRESIDENCY UNIVERSITY  
Registrar  
BANGALORE



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate



This is to certify that the Internship Project (PIP 102) work entitled "EXPLORATORY DATA ANALYSIS" was carried out by Mr. Simhadri Venkata Sai Krishna (ID No.20181ECE0346) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Mrs. Aruna M**  
Supervisor & Asst Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1   
Examiner-2 

  
REGISTRAR  3

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “SECURING CLOUD COMPUTING USING CRYPTOGRAPHY” was carried out by G.S GOUSE BASHA (ID No. 20181ECE0211), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.




Mr. Arvind kumar

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2 




**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING**

**SCHOOL OF ENGINEERING**

**PRESIDENCY UNIVERSITY**

**CERTIFICATE**

This is to certify that the Project report "IOT Based Social Distancing & Monitoring Robot For Queue" being submitted by "KONUDULA PADMAVATHI" 20181ECE0249, in partial fulfillment of requirement for the award of degree of Bachelor of Technology in Electronics And Communication Engineering is a bonafide work carried out under my supervision.



**Dr. RAJIV  
RANJAN SINGH**  
Head Of Department of  
ECE  
Presidency University



**Mr. KIRAN  
KALE**  
Asst prof ECE  
Presidency  
University

**Examiner 1:-**



**Examiner 2:-**



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Project (PIP 102) work entitled "EXPLORATORY DATA ANALYSIS" was carried out by Mr. Polu Nithish Reddy (ID No.20181ECE0319) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Mr. Kiran Kale

Supervisor & Asst Professor  
Department of Electronics and  
Communication Engineering

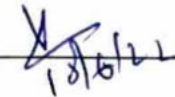
  
Mrs. Aruna M

Co-ordinator  
Department of Electronics and  
Communication Engineering

  
Dr. Rajiv Ranjan Singh

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 SAB 18/06/2022

Examiner-2  18/06/22

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



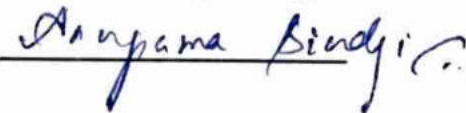
## Certificate


This is to certify that the Internship Project (PIP 102) work entitled "AUTOMATED CONVEYOR TRACKING(FOR PROJECT COUNTER) " was carried out by Ms. CHAITHRA V (ID No. 20181ECE0020) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Mr. ARVIND KUMAR**

Supervisor & Assistant Professor

Department of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2 



**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering

  
REGISTRAR  




## Certificate

This is to certify that the University Project (PIP 102) work entitled “HTML DEVELOPMENT” was Carried out by Mr. SHANKAR M SHIVAMATTA (Id No. 20191LEC0016) who are Bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Mr. KIRAN KALE**

Assistant Professor

Department of Electronics and  
Communication Engineering

  
**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1

SAB 20/06/2022

Examiner-2







## Certificate

This is to certify that the University Project (PIP 102) work entitled “**HTML DEVELOPMENT**” was Carried out by **Dr. KIRAN KUMAR N D (Id No. 20191LEC0009)** who are Bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Dr. PRITAM KESHARI SAHOO**

Assistant Professor

Department of Electronics and  
Communication Engineering

**DR. RAJIV RANJAN SINGH**

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

DEPARTMENT OF Electronics and Communications Engineering (ECE)  
SCHOOL OF ENGINEERING

PRESIDENCY UNIVERSITY

## CERTIFICATE

This is to certified that the Project report “ **HYBRID ELECTRIC VEHICLES IN TEACHNOOK** ” being submitted by “**GANGIREDDY GARI PAVAN KUMAR REDDY**” bering roll number 20181ECE0203 in partial fulfillment of requirement for the award of degree of **Bachelor of Technology in Electronics and Communications Engineering** is a bonafide work carried out under my supervision.



**Dr. Pritam Keshari Sahoo**  
Supervisor & Assistant Professor  
Department of Electronics and Communication  
Engineering




**Dr. Rajiv Ranjan Singh**  
Professor & Head Department of Electronics and  
Communication Engineering

Examiner-1

  
21/6/22

Examiner-2

  
21/6/22

  
REGISTRAR





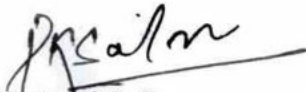
DEPARTMENT OF Electronics and Communications Engineering (ECE)

SCHOOL OF ENGINEERING

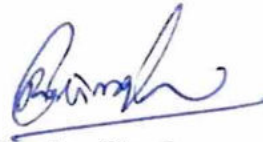
PRESIDENCY UNIVERSITY

## CERTIFICATE

This is to certified that the Project report “ **HYBRID ELECTRIC VEHICLES IN TEACHNOOK** ” being submitted by “**RAICHUR SALEEM BASHA**” bering roll number 20181ECE0330 in partial fulfillment of requirement for the award of degree of **Bachelor of Technology in Electronics and Communications Engineering** is a bonafide work carried out under my supervision.



**Dr. Pritam Keshari Sahoo**  
Supervisor & Assistant Professor  
Department of Electronics and Communication  
Engineering

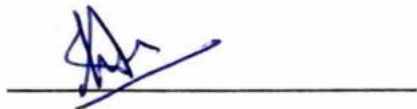


**Dr. Rajiv Ranjan Singh**  
Professor & Head Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



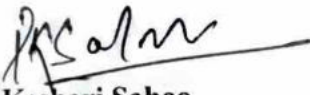
DEPARTMENT OF Electronics and Communications Engineering (ECE)

SCHOOL OF ENGINEERING

PRESIDENCY UNIVERSITY

## CERTIFICATE

This is to certified that the Project report “ **HYBRID ELECTRIC VEHICLES IN TEACHNOOK** ” being submitted by “**KURUBA SAIVENKAT**” bering roll number 20181ECE0261 in partial fulfillment of requirement for the award of degree of **Bachelor of Technology in Electronics and Communications Engineering** is a bonafide work carried out under my supervision.

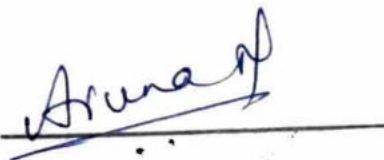


**Dr. Pritam Keshari Sahoo**  
Supervisor & Assistant Professor  
Department of Electronics and Communication  
Engineering

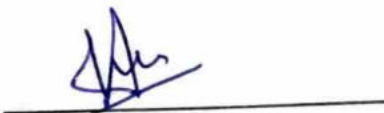


**Dr. Rajiv Ranjan Singh**  
Professor & Head Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



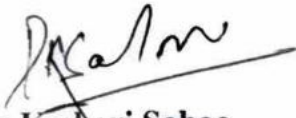
REGISTRAR



DEPARTMENT OF Electronics and Communications Engineering (ECE)  
SCHOOL OF ENGINEERING  
PRESIDENCY UNIVERSITY

**CERTIFICATE**

This is to certified that the Project report “ **HYBRID ELECTRIC VEHICLES IN TEACHNOOK** ” being submitted by “**VINUKONDA CHARANTEJA** ” being roll number 20181ECE0375 in partial fulfillment of requirement for the award of degree of **Bachelor of Technology in Electronics and Communications Engineering** is a bonafide work carried out under my supervision.

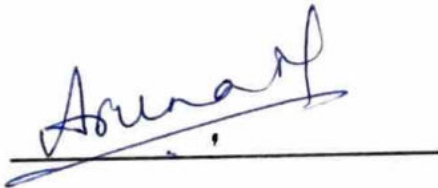


**Dr. Pritam Keshari Sahoo**  
Supervisor & Assistant Professor  
Department of Electronics and Communication  
Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



GAIN MORE KNOWLEDGE  
REACH GREATER HEIGHTS

## Certificate

This is to certify that the University Project (PIP 102) work entitled “**SECURITY ANALYST TRAINING**” was carried out by Mr. Yuvaraj Gowda B V (ID No. 20181ECE0128), who is a bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Mr. Arvind Kumar**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Program (PIP 102) work entitled “DATA ACQUISITION MONITORING SYSTEMS” was carried out by Mr. Hemanth R (ID No. 20181ECE0041), Mr. Fazahath Hussain D (ID No. 20181ECE0031) and Mr. B D Sai Sandeep (ID No. 20181ECE0014), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Dr. Rakesh Chowdhury**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 \_\_\_\_\_

Examiner-2 \_\_\_\_\_

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “DATA SCIENCE IN AGRICULTURE” was carried out by Mr. TANGUTURU HEMANTH (ID No. 20181ECE0355), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. Rakesh Chowdhary**

Supervisor & Assistant Professor

Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**


Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1

 20/6/22

Examiner-2

 20/6/22

B, Tech Electronics and Communication Engineering / June, 2022



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work titled "Online Movie Ticket Booking System" was carried out by Mr. D V SAMRUTH GUPTHA (ID No. 20181ECE0182) who are bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. Rakesh chowdhary**

Supervisor & Assistant Professor

Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering



REGISTRAR



PRESIDENCY UNIVERSITY  
Registrar  
BANGALORE

# PRESIDENCY UNIVERSITY


Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “VLSI Design Verification” was carried out by Mr. Syed Rayees Daanish (ID No. 20181ECE0354) who is a bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

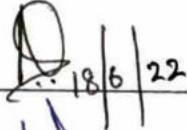


**Mr. Arvind Kumar**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 \_\_\_\_\_



Examiner-2 \_\_\_\_\_





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship (PIP 102) work entitled “CONTROL PANELS AND PROGRAMMABLE LOGIC CIRCUITS” was carried out by Mr. Sujan Mandana CS (ID No.20181ECE0392), who is a bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*ASD 25/6/22*

**Dr. Ashutosh Anand**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Ranjit*

**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

*Avinash*

Examiner-2

*S. Kaigantli*



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Project (PIP 102) work entitled “EXPLORATORY DATA ANALYSIS” was carried out by Mr. Pullela Bhargav (ID No.20181ECE0327) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Ashu*  
20/6/22

**Dr. Ashutosh Anand**  
Supervisor & Asst Professor  
Department of Electronics and  
Communication Engineering

*Rajiv*

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 *Amind*

Examiner-2 *S. Chandhan*



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship (PIP102) work entitled “**ELECTRONICS DEVICES**” was carried out at BEL by Mr. NIKHIL M (ID No. 20181ECE9012) who are bonafide students of VIII Semester B.Tech., Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

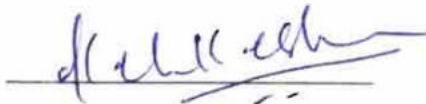
  
**Dr. Shwetha M**

Supervisor & Assistant professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship (PIP102) work entitled “ELECTRONICS DEVICES” was carried out at BEL by Mr. MAHADEVAPRASAD S (ID No. 20191LEC0018) who are bonafide students of VIII Semester B.Tech., Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Dr. Shwetha M**

Supervisor & Assistant professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**

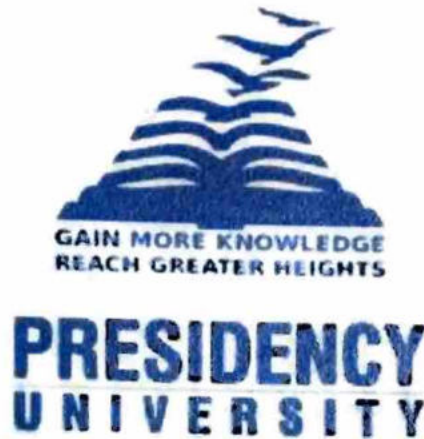
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2



Presidency University  
Bengaluru  
Department of Electronics and Communication Engineering



## Certificate

This is to certify that the internship project (PIP 102) work entitled "Online Pizza Ordering System" was carried out by Ms. Devangam Sai Bruhati (ID No.20181ECE0184), who is bonafide student of 8th semester B.Tech. Electronics and Communication engineering in Presidency University. This is in partial fulfillment of the course work in place of professional practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
21-06-22  
**Dr. Sumantra Chaudhuri**

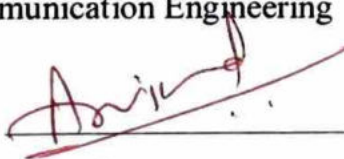
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2

  
21/6/22



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING  
SCHOOL OF ENGINEERING**

**PRESIDENCY UNIVERSITY**

**CERTIFICATE**

This is to certified that the Project report “**FLIGHT RESERVATION SYSTEM**” being submitted by “**VUNDELA SAI RAKESH REDDY** ” bearing roll number(s): 20181ECE0411, in partial fulfillment of requirement for the award of degree of **Bachelor of Technology in Electronics and communication Engineering** is a bonafide work carried out under my supervision.

*S. Chaudhuri*  
21-06-2022

**Dr. SUMANTRA  
CHAUDHURI**  
Asst.Professor  
Department of ECE  
Presidency University

*Rajiv Rajan Singh*

**Dr. RAJIV RAJAN  
SINGH**  
Professor & Head  
Department of ECE  
PresidencyUniversity

Examiner-1

*[Signature]*

Examiner-2

*[Signature]*



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING**

**SCHOOL OF ENGINEERING**



**PRESIDENCY UNIVERSITY**

**CERTIFICATE**

This is to certify that the University Project (PIP 102) work entitled “**STUDY ON MANUFACTURING AND ASSEMBLY OF SOLAR PHOTOVOLTAIC**” was carried out by **Mr. ROHESH KUMAR B.M. (ID No. 20181ECE9018)**, **Ms. EKTHA R (ID No. 20181ECE0028)** and **Ms. SHALINI V (ID No. 20181ECE0106)** who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*S Chaudhuri*  
18-06-22

**Dr. Sumantra Chaudhuri**

Supervisor & Asst Professor  
Department of Electronics and  
Communication Engineering

*Rajiv Ranjan Singh*

**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 SAb 18/06/2022

Examiner-2 Kc



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Program (PIP 102) work entitled "ENCRYPTOR" was carried out by Mr. Hemanth Kumar S (ID No. 20181ECE0040) and Mr. J Abhishek (ID No. 20181ECE0042), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Dr. Nawaz Shafi**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "WIPRO INTENSHP CAPSTONE PROJECT" was carried out by M.GURUNATH (ID No:20181ECE0268) who are bonafide students of VIII Semester B. Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. Nawaz Shafi**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2 

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the internship (PIP 102) work entitled "STOCK PORTFOLIO MANAGEMENT" was carried out by Mr. Suhas S R (ID No. 20181ECE0117) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. Nawaz Shafi**

Assistant Professor

Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**


Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Capgemini Internship (Online Shopping A, Book Renatl A)” was carried out by Tupakula Shabana (ID No. 20181ECE0362) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Ms. Ashwini B**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**DIGITAL MEDIA ANALYST INTERN**” was carried out by **Mr. SRISHU Y S (20181ECE0115)** who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Ms. Aruna**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering

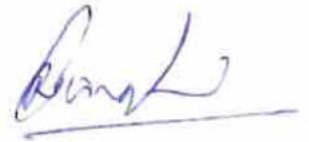


## Certificate

This is to certify that the Internship Program (PIP102) work entitled “**Training Management System**” was carried out by Mr. DINAKAR G P (ID No. 20191LEC0001) who are bonafide student of VIII Semester B.Tech., Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. Sayyed Faizan Ali**  
Supervisor & Assistant professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2 

  
REGISTRAR 

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “DESIGN FOR TESTABILITY” was carried out by Mr. Abhignan S V (ID No. 20181ECE0002), Ms. Athira V Nath (ID No. 20181ECE0013), Mr. Harshith K (ID No. 20181ECE0039), Mr. Koushik S (ID No. 20181ECE0050) and Mr. Mohammed Waseem Waris (ID No. 20181ECE0066) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering 'in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. Joseph Anthony Prathap**  
Supervisor & Associate Professor  
Department of Electronics and  
Communication Engineering

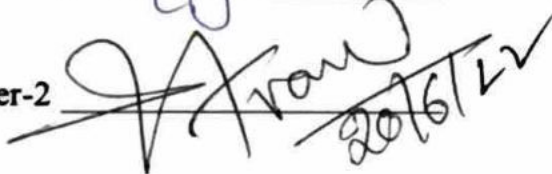


**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship (PIP 102) work entitled "TRAINING IN DESIGN FOR TESTABILITY DOMAIN" was carried out by Mr. Ch Bhargav Naidu (ID No. 20181ECE0179), Mr. Chittoor Abhishek (ID No. 20181ECE0180), who are bonafide students of VIII Semester B.Tech. in Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*(N)konar 20/6/22*  
**Ms. Maitrayee Konar**

Supervisor & Assistance Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

*Abhishek 20/5/22*

Examiner-2

*Manoj 20/5/22*



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship (PIP 102) work entitled "TRAINING IN VLSI DFT DOMAIN" was carried out by Ms. GOLI MANOGNA (ID No. 20181ECE0207), who is bonafide student of VIII Semester B.Tech. in Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*M/Konar*  
*18/6/22*

**Ms. Maitrayee Konar**  
Supervisor & Assistance Professor  
Department of Electronics and  
Communication Engineering

Examiner-1

*Li*  
*18/6/22*

Examiner-2

*A. V. Rao*  
*18/6/22*

*Rajiv Singh*

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering  
Head of the Department  
Electronics and Communication Engineering  
School of Engineering  
PRESIDENCY UNIVERSITY  
Rajanukunte, Yelahanka, Bengaluru -64

*Sanna*  
REGISTRAR  
PRESIDENCY UNIVERSITY  
Registrar  
BANGALORE



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

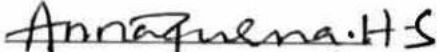
This is to certify that the University Project (PIP 102) work entitled “DFT in VLSI” was carried out by K. Gowtham Sai (ID No. 20181ECE0228), K.O. Sreekar Koundinya (ID No. 20181ECE0236), K. Sai Prudhvi Raj (ID No. 20181ECE0237), and L. Chandu Harsha (ID No. 20181ECE0265) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Mrs. Annapurna H. S

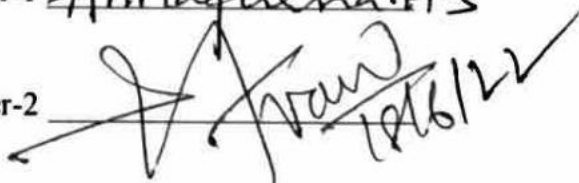
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication  
Engineering



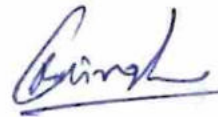
## CERTIFICATE

This is to certify that the University Project (PIP 102) work entitled "DFT BASICS" is original work carried out by Mr. Murala Siva Rama Krishna (20181ECE0291), Mr. Nittur Lalith Bharadwaj (20181ECE0304), Mr. Parth Prahlad Rajguru (20181ECE0352) and Mr. Vankadara Sai Shabarish (20181ECE0367) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of University Project (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Ms. Akshatha K**

Supervisor, Assistant Professor  
Dept. of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head Dept. of  
Electronics and  
Communication Engineering

Examiner-1



Examiner-2



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## CERTIFICATE

This is to certify that the University Project (PIP 102) work entitled “**DFT BASICS**” is original work carried out by Mr. Vennapusa Charan Subhash Reddy (20181ECE0373), Mr. Rahul R (20181ECE0410), Mr. Shaik Mohammed Sameeulla (20181ECE0413) and Mr. Pochireddy Pochi Reddy who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of University Project (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Ms. Anusha R**


Supervisor & Assistant Professor  
Dept. of Electronics and Communication  
Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head Dept. of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2 

  
REGISTRAR 

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**Design for Testability**” was carried out by Mayank Chandra (ID No. 20181ECE9017) who is Bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.


  
**Mr. Muthupandi G.**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

  
**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Capgemini Internship (Online Shopping A, Toy Rental A)” was carried out by Mr. NALLABALLI GNANESWAR (ID No. 20181ECE0399) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*SAb* 17/06/2022

**Mr. Syed Abrar Ahmed**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

*Sanna*  
REGISTRAR

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “Capgemini Internship (Online Shopping A, Toy Rental A)” was carried out by Mr.GUNDA MOHANKRISHNA (ID No. 20181ECE0215) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*SAb* 17/06/2022

**Mr. Syed Abrar Ahmed**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

*Janus*  
REGISTRAR  
PRESIDENCY UNIVERSITY  
BANGALORE

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "Capgemini Internship (Online Shopping A, Toy Rental A)" was carried out by Mr Guntakanti Harshavardhan Reddy (ID No. 20181ECE0219) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Mr Syed Abrar Ahmed**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

# PRESIDENCY UNIVERSITY

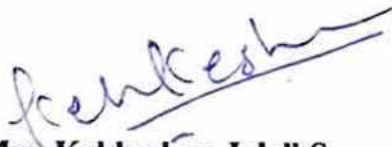
Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Program (PIP102) work entitled “**Cappgemini Internship (Online Shopping A, Toy Rental A)**” was carried out by Mr. KOTA SANDEEP (ID No. 20181ECE0253), Mr. MADDI VAMSI KRISHNA (ID No. 20181ECE0273), Mr. SUNKARA SIVA SANKAR (ID No. 20181ECE0351), Mr. GOLLA HARIPRIYA (ID No. 20181ECE0208) who are bonafide students of VIII Semester B.Tech., Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Mrs. Kehkeshan Jalali S**

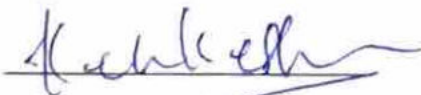
Supervisor & Assistant professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**CLEVERNIST ED TECH**” was carried out by NALLANI KIRAN KUMAR (ID No. 20181ECE0297) who is Bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Dr. Shwetha M*  
18/6/22

**Dr. Shwetha M**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Dr. Rajiv Ranjan Singh*

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

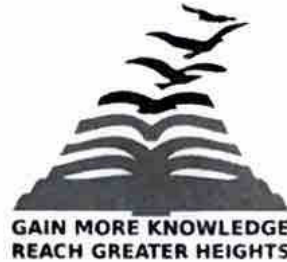
Examiner-1 *SAB* 18/06/2022

Examiner-2 *Chine* 18/06/2022

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Program (PIP102) work entitled “**CLEVERNIST ED TECH**” was carried out by Mr. DUDEKULA FAIROZ (ID No. 20181ECE0189) who are bonafide student of VIII Semester B.Tech., Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Dr. Puneeth S B**

Supervisor & Assistant professor  
Department of Electronics and  
Communication Engineering

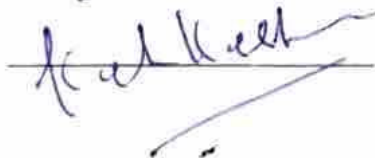
  
**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



  
REGISTRAR  


# Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “ **EDTECH SALES** ” was carried out by **S. Rohith Kishan (ID No. 20181ECE0342)**, who is bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**Dr. Puneeth S B**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

20/6/22

Examiner-2

REGISTRAR



# PRESIDENCY UNIVERSITY



Private University Estd. in Karnataka State by Act No. 41 of 2013

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### BONAFIDE CERTIFICATE

Certify that this report "**BUSINESS DEVELOPMENT ASSOCIATE**" is a bonafide work of "**ALAMURA AYESHA 20181ECE0134**", who have successfully carried out the internship work and submitted the report for partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY in ELECTRONICS AND COMMUNICATION ENGINEERING during 2021-22.

**Dr. Sayyed Faizan Ali**  
Assistant Professor  
Dept. of Electronics and  
Communication Engineering  
Presidency University

**Dr. Rajiv Ranjan**  
Professor and HOD  
Dept. of Electronics and  
Communication Engineering  
Presidency University

### Name and Signature of the Examiners:

- 1) NATYA'S 18/6/22
- 2) T. PRABHU 18/6/22

REGISTRAR

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**ROLE OF INSIDE SALES EXECUTIVE**” was carried out by Mr. ANUJ KUMAR JHA (ID No. 20181ECE0142), who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Mr. Tony Aby Varkey M.**  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 SAV 18/06/2022

Examiner-2 SAV 18/6



# PRESIDENCY UNIVERSITY

**Bengaluru**

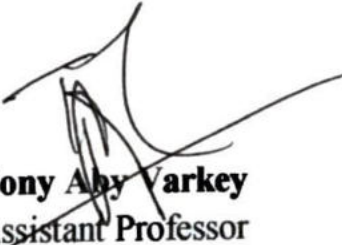
**Department of Electronics and Communication**

**Engineering**



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**Senior Inside Sales Executive**” was carried out by **SHIFALI VK (ID No. 20181ECE0108)** who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Tony Ahy Varkey**  
Assistant Professor

Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering



REGISTRAR



PRESIDENCY UNIVERSITY  
Registrar  
BANGALORE

# PRESIDENCY UNIVERSITY


Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “INSIDE SALES EXECUTIVE” was carried out by Ms. KHAJEE SAMEENA SULTHANA (ID No. 20181ECE0420) who are bonafide college students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

 Mr. Tony Aby Varkey M

Supervisor & Assistant Professor

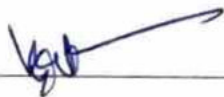
Department of Electronics and  
Communication Engineering

  
Dr. Rajiv Ranjan Singh

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY


Bengaluru

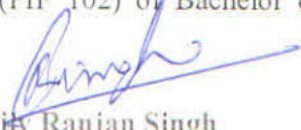
Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled **"INSIDE SALES EXECUTIVE"** was carried out by Ms. MACHA BINITHA YADAV (ID No. 20181ECE0270) who are bonafide college students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Mr. Tony Ahy Varkey M  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

  
Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2

  
REGISTRAR  




# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication

Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**ECOMMERCE WEBSITE**” was carried out by **SHRUTHI S (ID No. 20181ECE0110)** who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*DR. SREENIVASAPPA B V*  
16/06/2022

**DR. SREENIVASAPPA B V**  
Supervisor & Professor  
Department of Electronics and  
Communication Engineering

*Dr. Rajiv Ranjan Singh*  
16/06/2022

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "TRAINING ON LINUX AND NETWORKING" was carried out by **Ms. Fathima Zaiba** (ID – 20181ECE0030) who is a Bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*BV: 20/06/2022*  
**Dr. Sreenivasappa B V**

Supervisor & Professor

Department of Electronics and  
Communication Engineering

*R Singh*  
**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1 *BV: 20/06/2022*

Examiner-2 *SAh 20/06/2022*



# PRESIDENCY UNIVERSITY


Bengaluru


Department of Electronics and Communications Engineering



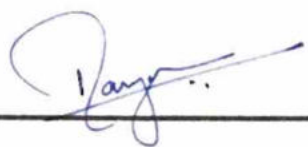
## CERTIFICATE

This is to certify that the Training report “HTML & CSS WEB DEVELOPMENT” was carried out by “THURAKA YASWANTH” (ID NO. 20181ECE0360), Iam a bonafide student of VIII Semester B.Tech Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Electronics and Communications in Presidency University, Bengaluru, during the year 2021-2022.


  
**Ms. Aruna M.D.**  
Supervisor & Assistant Professor  
Department of Electronics and Communication  
Engineering

  
**Dr. Rajiv Ranjan Singh**  
Professor & Head Department of Electronics and  
Communication Engineering

Examiner-1

  
\_\_\_\_\_

Examiner-2

  
\_\_\_\_\_



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## CERTIFICATE

This is to certified that the Training report “HTML & CSS WEB DEVELOPMENT” being submitted by “KUCHI ADARSH” bearing roll number 20181ECE0256 in partial fulfillment of requirement for the award of degree of **Bachelor of Technology in Electronics and Communications Engineering** is a bonafide work carried out under my supervision.

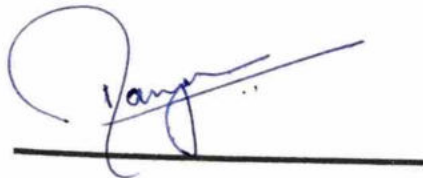
  
MS. Aruna M

Supervisor & Assistant Professor  
Department of Electronics and Communication  
Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2

  
20/6/22

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Programme (PIP 102) work entitled "COMPANY DIRECTORY LISTING PORTAL" was carried out by MR. H S Chandan (ID No. 20181ECE0037) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.


*Manaswini R*  
Ms. Manaswini R 10/8/22

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1  \_\_\_\_\_

Examiner-2  \_\_\_\_\_

*Janus*  
REGISTRAR Registrar  
PRESIDENCY UNIVERSITY  
BANGALORE

# PRESIDENCY UNIVERSITY

Bengaluru

## Department of Electronics and Communication Engineering



### Certificate

This is to certify that the Internship work entitled "EXOZEN" was carried out by Ms. Bhumika M (ID No. 20181ECE0017), Mr. Bhuvan Raj S (ID No.20181ECE0018), Mr. Jyothish P T (ID No.20181ECE0044), Ms. Sinchana D A (ID No.20181ECE0347) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Manaswini R*  
**Ms. Manaswini R** 18/6/22  
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

*Rajiv Ranjan Singh*  
**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

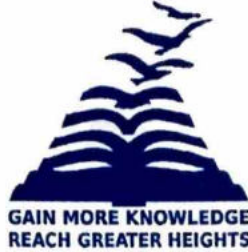
Examiner-1 *Manaswini R* 18/6/22.

Examiner-2 *[Signature]* 18/6/22

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Programme (PIP 102) work entitled “COMPANY DIRECTORY LISTING PORTAL” was carried out by MR. Likhin Bopanna K D (ID No. 20181ECE0053) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

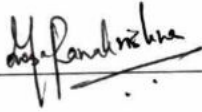
*Manaswini R*  
Ms. Manaswini R 16/6/22.

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



*Sanu*  
REGISTRAR  
PRESIDENCY UNIVERSITY

# PRESIDENCY UNIVERSITY

Bengaluru

## Department of Electronics and Communication Engineering



### Certificate

This is to certify that the Internship Program (PIP 102) work entitled “**AUTOMATIC STREET LIGHTS USING LDR**” was carried out by **Mr. Lohith Gowda C V (ID No. 20181ECE0056)**, who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Ms. Ashwini B**

Supervisor & Assistant Professor  
Department of Electronics  
and Communication  
Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics  
and Communication  
Engineering

Examiner-1 \_\_\_\_\_ 

Examiner-2 \_\_\_\_\_ 





# PRESIDENCY UNIVERSITY


Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Programme (PIP 102) work entitled “COMPANY DIRECTORY LISTING PORTAL” was carried out by MR. Chandan R Kalhatti (ID No. 20181ECE0166) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Ms. Ashwini B**

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

  
**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “SECURITY ANALYST TRAINING” was carried out by Mr. Vasanth Kumar. R (ID No. 20181ECE0125), who is a bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
**Mrs. Ashwini. B**

Supervisor & Associate Professor  
Department of Electronics and  
Communication Engineering

  
**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



  
B.Tech, ECE/JUNE 2022



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship (PIP 102) work entitled “CONTROL PANELS AND PROGRAMMABLE LOGIC CIRCUITS” was carried out by Mr. Suhas Gowda S (ID No.20181ECE0394), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Ms. Ashwini B

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

Dr. Rajiv Ranjan Singh

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**DESIGN OF WIRE HARNESS FOR ELECTRIC VEHICLE AND BMS ARCHITECTURE**” was carried out by Mr. Naveed Ulla Khan (ID No. 20181ECE0300) who is a bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Ms. Ashwini B**

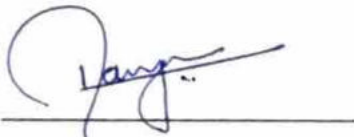
Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering

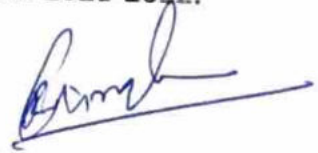


## Certificate

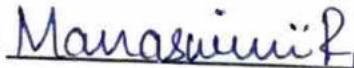
This is to certify that the University Project (PIP 102) work entitled "BMS CONTROLLER USING PCB ALLEGRO TOOLS" was carried out by Mr. Naveen Gowda N K (ID No. 20181ECE0301), Ms. Pragathi S (ID No. 20181ECE0321), Ms. Rakshitha R (ID No. 20181ECE0331) and Mr. Rithik Krishnan K (ID No. 20181ECE0334) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

 18/6/22

**Mrs. Aruna D**  
Supervisor & Asst Professor  
Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1  18/6/22

Examiner-2  18/06/2022



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “PLC BASED ELEVATOR CONTROL SYSTEMS” was carried out by Mr. Dipesh A D (ID No. 20181ECE0185), Mr. Goutham Kumar G (ID No. 20181ECE0212), and Mr. Prajwal N U (ID No. 20181ECE0086) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Ms. Aruna D

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering



Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 Manaswini P 16/6/22.

Examiner-2 Gowmy C.S. 16/6/2022



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Internship (PIP 102) work entitled “**INDIAN AGRICULTURE WEBSITE**” was carried out by **Mr. KURUVA SREEKANTH (ID No. 20181ECE0262)** who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Technology in Presidency University, Bengaluru, during the year 2021-2022.

  
18/6/22  
**Ms. Aruna Dore**

Supervisor & Professor

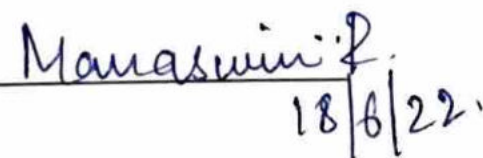
Department of Electronics and  
Communication Engineering

  
**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1   
18/6/22

Examiner-2   
18/6/22



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled "SMART SHOPPING CART SYSTEM USING RFID AS IOT APPLICATION" was carried out by Allagadda Maruthi Rohith (ID No. 20181ECE0135), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfilment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

**DR. RAJIV RANJAN SINGH**

Professor & Head

Department of Electronics and  
Communication Engineering

**DR. ASHUTOSH ANAND**

Supervisor & Assistant  
professor

Department of Electronics and  
Communication Engineering

Examiner-1

Examiner-2





# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**INDIAN AGRICULTURE WEBSITE**” was carried out by **Mr. MATATHAMBALPERIYANAMBI S MADHU SUDHAN** (ID No. 20181ECE0283) who is bonafide student of VIII semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Technology in Presidency University, Bengaluru, during the year 2021-2022.

  
**Dr. K Rafeeq Ahmed**

Supervisor & Professor

Department of Electronics and  
Communication Engineering

  
**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2 



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Internship (PIP 102) work entitled “**INDIAN AGRICULTURE WEBSITE**” was carried out by **Mr. MULLAGURU SAI DINESH (ID No. 20181ECE0289)** who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Technology in Presidency University, Bengaluru, during the year 2021-2022.

  
**Dr. K Rafeeq Ahmed**


Supervisor & Professor

Department of Electronics and  
Communication Engineering

  
**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1 

Examiner-2 

  
REGISTRAR  


# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Professional Practice (PIP 102) work entitled "Graphical User Interface development for Human Machine Interface - Panels" was carried out by Mr. R Sai Suhas (ID No. 20181ECE0091), who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
17/6/2022

**Dr. K Rafeeq Ahmed**  
Supervisor & Professor  
Department of Electronics  
and Communication Engineering



**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics  
and Communication Engineering

Examiner-1 SA6 17/6/2022

Examiner-2 SA6 17/6



# PRESIDENCY UNIVERSITY

Bengaluru

## Department of Electronics and Communication Engineering



### Certificate

This is to certify that the Professional Practice (PIP 102) work entitled “Simulation of Radar Waveform” was carried out by Ms. Saranya S (ID No. 20181ECE0103), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. K Rafeeq Ahmed**

Supervisor & Professor

Department of Electronics and  
Communication Engineering

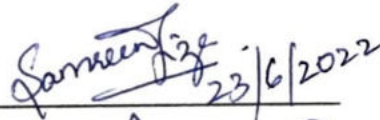


**Dr. Rajiv Ranjan Singh**

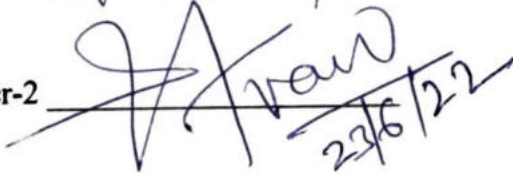
Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1

  
23/6/2022

Examiner-2

  
23/6/22



# PRESIDENCY UNIVERSITY

**Bengaluru**

**Department of Electronics and Communication**

**Engineering**



## Certificate

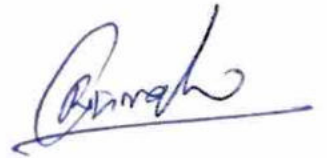
This is to certify that the Professional Practice (PIP 102) work entitled “ONLINE JEWELLERY SHOP” was carried out by **MR. SHARATH M (ID No. 20181ECE0107)** who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Dr. K Rafeeq Ahmed**

Supervisor & Professor

Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

Professor & Head

Department of Electronics and  
Communication Engineering



REGISTRAR



PRESIDENCY UNIVERSITY  
Registrar  
BANGALORE

# PRESIDENCY UNIVERSITY

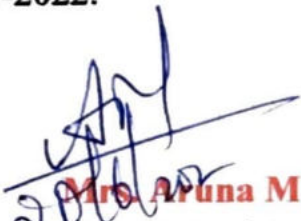
Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**POST SILICON VALIDATION**” is original work was carried out by **G VAMSIDHAR REDDY (20181ECE0196)** who is a bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Mrs. Aruna M**  
Supervisor & Assistant Professor

Department of Electronics and  
Communication Engineering



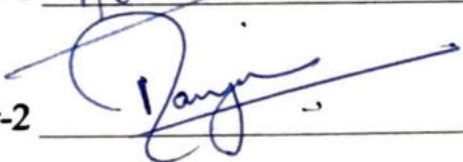
**Dr. Rajiv Ranjan Singh**  
Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1



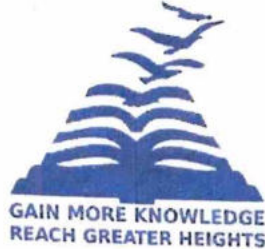
Examiner-2



# PRESIDENCY UNIVERSITY


Bengaluru

Department of Electronics and Communication Engineering

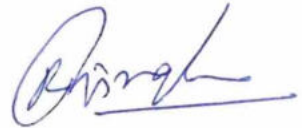


## CERTIFICATE

This is to certify that the Project report “**Web Development**” being submitted by “**MANCHA CHINNA BAYANNA**” bearing roll number: 20181ECE0280, in partial fulfillment of requirement for the award of degree of **Bachelor of Technology in Electronics & Communication Engineering** is a Bonafide work carried out under my supervision

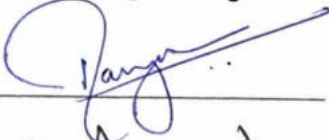
  
Mrs. ABINAYA M

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

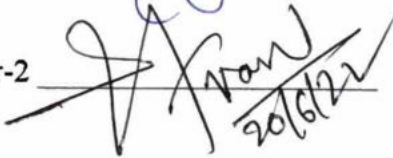


**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2

  
20/6/22

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the University Project (PIP 102) work entitled “**WEB DEVELOPMENT**” was carried out by **Mr. Andra Ram Nitish** who is bonafide student of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.



**Ms. Aruna M**

Supervisor & Assistant. Professor

Department of Electronics and  
Communication Engineering



**Dr. Rajiv Ranjan Singh**

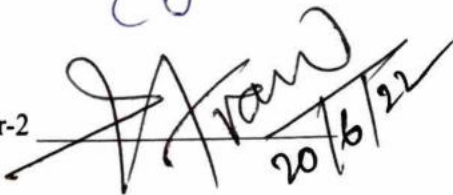
Professor & Head

Department of Electronics and  
Communication Engineering

Examiner-1



Examiner-2



20/6/22



# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



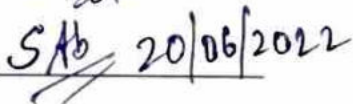
## Certificate

This is to certify that the training (PIP 102) work entitled "HTML WEB DEVELOPMENT" was carried out by Mr. Mohammed Ansar (ID No.20181ECE0344) who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

  
Mrs. Aruna M  
Supervisor & Asst Professor  
Department of Electronics and  
Communication Engineering

  
Dr. Rajiv Ranjan Singh  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1   
20/6

Examiner-2   
20/06/2022

# PRESIDENCY UNIVERSITY

Bengaluru

Department of Electronics and Communication Engineering



## Certificate

This is to certify that the Internship Program (PIP102) work entitled “HTML WEB DEVELOPMENT” was carried out by Mr. MUKUND (ID No. 20181ECE0068) who are bonafide student of VIII Semester, B.Tech., Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Manaswini R*  
16/6/22

**Ms. Manaswini R**  
Supervisor & Assistant professor  
Department of Electronics and  
Communication Engineering

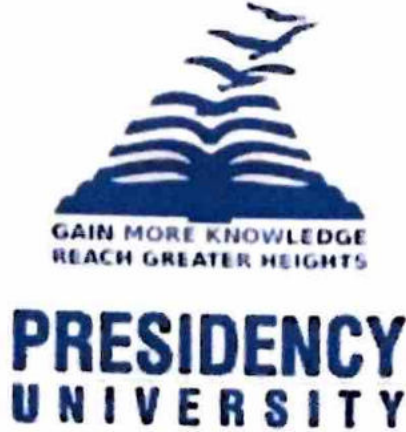
**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 *Amey Kumar*

Examiner-2 *[Signature]*



**Presidency University**  
**Bengaluru**  
**Department of Electronics and Communication Engineering**



**Certificate**

This is to certify that the Internship Project (PIP 102) work entitled “Online Pizza Ordering System” was carried out by Mr. Mohammed Abdul Qadeer (ID No.20181ECE0063), who are bonafide students of VIII Semester B.Tech. Electronics and Communication Engineering in Presidency University. This is in partial fulfillment of the course work in place of Professional Practice (PIP 102) of Bachelor of Engineering in Presidency University, Bengaluru, during the year 2021-2022.

*Manaswini R*  
Ms. Manaswini R 16/6/22

Supervisor & Assistant Professor  
Department of Electronics and  
Communication Engineering

**Dr. Rajiv Ranjan Singh**  
Professor & Head  
Department of Electronics and  
Communication Engineering

Examiner-1 *Manaswini R*  
16/6/22

Examiner-2 *[Signature]*  
16/6

