

**AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER**  
**Department Of Electronics & Telecommunication Engineering**

**T.E Mini-Project List**

**2020-2021**

Group No.	Title of Project	Name of Student	Area of Project	Remark	Internal Guide Name/Qualification/Experience
01	Wireless hotel order system	Barke Divya D Bhalerao Kishori V Dolas Dnyaneshwari R	Embedded		Mr.H.A.Shinde M.E (Electronics) Exp.-09 Years.
02	Temperature and humidity data logger using PIC18F46K22 and SD card	Dhekane Abhishek A Dighe Mayuri N Dighe Nikhil M	Embedded		Mr.H.A.Shinde M.E (Electronics) Exp.-09 Years
03	Home Automation Using Arduino With Bluetooth Module HC-05	Deshmukh Prachi N Dhamane Snehal A Erande Kalyani S	Embedded		Mr.S.R.Gagare M.E.(Electronics) Exp.-19 Years
04	Water level Alarm using IC 555 Timer	Aher Nilesh S Bagale Sanket J Cholke Shubham G	Instrumentation		Dr. R. S. Pawase Ph.D.(E&TC) Exp.-15 Years
05	Auto temperature detector for entrance for covid safety	Dalvi Shalini H Dangat Aniket V Dol Sharayu S	Embedded		Dr. S. R. Jondhale Ph.D. (E&TC) Exp.-13 Years
06	IR based automatic hand sanitizer	Bhadakwan Ganesh V Bhange Ravikiran B Bhomale Akanksha A	Embedded		Mr.A.E.Kachare M.E(E&TC) Exp.-15 Years
07	Motion based Automatic Door Opener	Ghadge Priti A Hadole Vivek A Ilhe Mahesh P	Embedded		Mr.C.D.Bhos M.E(Electronics) Exp.-11 years
08	Arduino based Security System	Gorde Pooja S Handal Supriya S Joshi Bhagyashri D	Embedded		Mr.M.B.Kadu M.Tech (E&TC) Exp.-13 Years
09	Home Automation using IoT	Gorade Yogesh A Gunjal Pravin C Hase Aniket B	IoT		Mr. S. S. Aher M.E (Electronics) Exp.-09 Years
10	Design of Automatic Room Light using Arduino and PIR Sensor	Gaikwad Vaishnavi P Gorde Harshada B Kangane Priyanka R Gaikwad Shradha A	Embedded		Mr.S.R.Gagare M.E.(Electronics) Exp.-19 Years

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11	<del>Home Automation</del> Fire Detection alarm	Gade Vaibhav D Ghodake Pankaj S Ghumare Pankaj R	Embedded		Mr. M.D. Rahane M.E (E&TC) Exp.-09 Years
12	Metal detector circuit	Havare Rutuja B Jondhale Priti S Kadlag Avinash B	Embedded		Mr. A. R. Tambe M.E (E&TC) Exp.-06 Years
13	Fire detection and alarm system	Kasar Shubham S Nagare Pratik S	Embedded		Mr. P. R. Gunjal M.E (Electronics) Exp.-07 Years
14	Patient heart rate Monitoring System using PIC Microcontroller	Malwade Shivam R Mhase Girish P	Instrumentation		Mr. S. M. Vanam M.E (E&TC) Exp.-09 Years
15	Mask Detection System	Khatode Akanksha B Malunekar Pratiksha Y Mandlik Nutan S	Instrumentation		Mr. A. R. Tambe M.E (E&TC) Exp.-06 Years
16	Battery Status Indicator	Karpe Shruti D Khandagale Amit S Magar Shubham R	Instrumentation		Mr.M.B.Kadu M.Tech (E&TC) Exp.-13 Years
17	Smart helmet	Panmand Pratik S Patil Girish P	Embedded System		Mr. M.D. Rahane M.E (E&TC) Exp.-09 Years
18	Automatic Controlling Temperature and Humidity of Green House.	Kolhe Pradip S Lange Annasaheb E Pansare Kiran B	Instrumentation		Dr. R. P. Labade Ph.D.(E&TC) Exp.-22 Years
19	Short Circuit Indicator	Patil Poorva S Shinde Yogita R Sonawane Swati E	Instrumentation		Mr. S. S. Aher M.E (Electronics) Exp.-09 Years
20	IR based Automatic Hand Sanitizer Dispenser	Pawar Vishakha B Raut Pratiksha R Wagh Sarika M	Embedded System		Mr.C.D.Bhos M.E(Electronics) Exp.-11 years
21	Wireless Electronic Notice Board Using GSM 8051 Microcontroller	Pawar Shubham K Revadkar Pranjali S Satpute Shivani S	Embedded System		Mr.A.E.Kachare M.E(E&TC) Exp.-15 Years
22	See and Speak using Raspberry Pi.	Pawar Sushant S Sawant Rushikesh R Wadage Dipak K	Embedded System		Dr. S. R. Jondhale Ph.D. (E&TC) Exp.-13 Years

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23	Home Automation using PIR and LDR	Thorat Pratiksha R Vadak Gauri S	Embedded System		Dr. R. P. Labade Ph.D.(E&TC) Exp.-22 Years
24	Arduino based Home Automation System	Shewale Ajit A Walunj Rushikesh D Wayal Sachin D	Embedded System		Dr. R. S. Pawase Ph.D.(E&TC) Exp.-15 Years

  
Mr M. B. Kadu /Mr.H.A.shinde  
Mini- Project Coordinator

  
Dr.R.P.Labade  
Head of Department



**Amrutvahini College of Engineering, Sangamner**  
**Department of Electronics and Telecommunication**  
**Mini-Project Synopsis**  
**Academic Year: 2020-21**

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**Project Title:** Motion Based Automatic Door Opener.

**Introduction:**

Opening a door in places like hotels, Shopping complexes, and offices can be a tedious task and sometimes require a person just for the sake of opening door whenever a person arrives. Our system puts forward an automatic and precise door opening system based on human movement sensing near the door. This project proposes a system that allows for automatic door opening solution by sensing human presence near it. Our system achieves this functionality with the help of PIR sensors. PIR stands for passive infrared sensors. Every live body emits some infrared energy. This energy is sensed by a PIR sensor from a good distance. This signal is then processed and door is opened and closed based on this data. When a living being arrives within the sensor range, it detects its presence and sends out a command that opens the door. The door then automatically closes after a specific time delay if there is no further motion near the door. The system can be later enhanced by integrating counter mechanism so as to keep track of the number of persons inside the facility.

**Related Work:**

Many researchers have implemented an automatic door opening system. A new design for creating easy and safe accessibility conditions through the establishment of an advanced interaction between the person and the accessibility control of the building is implemented [1]. Based on this concept, an integrated architecture for door openers, called PathPass, is proposed that introduces easy to use equipment by the person and to the door's control unit allowing the performance of a wide range of operational modes. Remote control and finger print based system is used for door opening purpose [2]. Bluetooth technology is used by researchers for automatic gate [3]. Bluetooth can reduce the waiting time and error to open the door compared with RFID card. Gesture spotting algorithm with single wearable sensor is used by authors [4]. A door-opening activity monitoring system using a single wrist-worn inertial sensor to support assessing the performance of upper-limb movement during daily living is developed.

**Research Motivation:**

In the pandemic situation like COVID -19, opening the door manually is very risky because some people came from offices, hospitals and some public places. So when they touches to door sometimes it spread virus and it is dangerous for normal person at home as well as other places like theaters, malls, hospitals. Also, the physically challenged persons are not able to open or close the door. So, an automatic door opening system is necessary in such cases.

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**Project Aim and Objectives:**

The main aim of the proposed system is to automatically open and close the door with reduced delay and without use of human being. The main objectives of the system are to detect a human being and open/close the door automatically.

**Proposed System Assumptions and Design:**

Proposed system consists of PIR sensor for sensing the presence of a person near a door. When the person is sensed by the sensor, the control signal is sent by microcontroller to the motor driver circuit. This will start the motor and the door will be opened automatically. When there is no human movement, the data out of the PIR Sensor becomes LOW. Once the data out is LOW, after a small delay, the door is automatically closed and comes back to initial position.

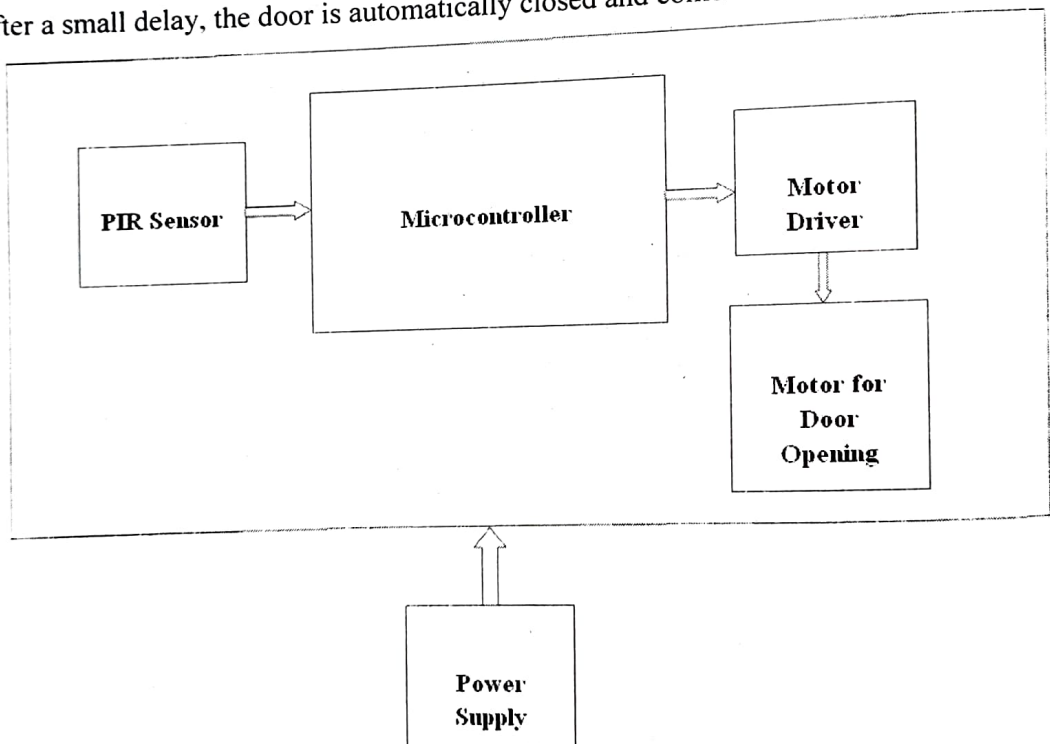


Figure1. Proposed System for Automatic Door Opener

**Expected Outcome:**

The system will be able to

1. Detect the presence or absence of a person near the door.
2. Open and close the door automatically i.e. without human intervention.

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**References:**

- [1]. P. Lymperopoulos and K. Meade, "PathPass: Opening doors for people with disabilities," 2014 4th International Conference on Wireless Mobile Communication and Healthcare - Transforming Healthcare Through Innovations in Mobile and Wireless Technologies (MOBIHEALTH), 2014, pp. 32-35, doi: 10.1109/MOBIHEALTH.2014.7015902.
- [2]. Pik-Yiu Chan and J. D. Enderle, "Automatic door opener," Proceedings of the IEEE 26th Annual Northeast Bioengineering Conference (Cat. No.00CH37114), 2000, pp. 139-140, doi: 10.1109/NEBC.2000.842418.
- [3]. K. Khreasarn and K. Hantrakul, "Automatic gate using Bluetooth technology (Open the gate with the strength of the Bluetooth signal on the smartphone)," 2018 International Conference on Digital Arts, Media and Technology (ICDAMT), 2018, pp. 54-58, doi: 10.1109/ICDAMT.2018.8376495.
- [4]. M. Tseng, K. Liu, C. Hsieh, S. J. Hsu and C. Chan, "Gesture spotting algorithm for door opening using single wearable sensor," 2018 IEEE International Conference on Applied System Invention (ICASI), 2018, pp. 854-856, doi: 10.1109/ICASI.2018.8394398.

**Remark of Project Guide:**


Project idea is based on embedded system domain. Useful for society.  
Forwarded for your approval.

**Remark of Project Coordinator:**


forwarded

**Remark of Head of Department:**

Recommended

  
Mr. C. D. Bhos  
(Project Guide)

  
Mr. M. B. Kadu  
(Project Coordinator)

  
Dr. R. P. Labade  
(Head, E&TC Department)