



# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

## IoT based Smart Automating Of Home Appliances using Raspberry Pi

Mrs P. Venkata Lavanya<sup>1</sup>, Vanamamulai RamyaSree<sup>2</sup>, Sanga Ajay<sup>3</sup>, Ushakoyala Harshith<sup>4</sup>

Associate Professor<sup>1</sup>, UG Students<sup>2,3,4</sup>

Department of Electronics and Communication Engineering  
TKR College of Engineering and Technology, Hyderabad, India.

**Abstract:** This project deals with the idea of automation of home appliances using raspberry pi.. Automating of home appliances will monitor or control home attributes such as light, temperature, Gas, Security locks etc. In this project we are connecting each and every attribute to the raspberry pi kit. We are dumping an inbuilt code into the raspberry pi. So that it gets operated and shows the output. We are using many sensors like IR sensors will say that if a person enters directly light gets ON no need to get the switch ON. A temperature sensor also uses according to weather conditions we can set a temperature and fan getting ON automatically. These are some of the sensors we are using for making home appliances to work we are using a raspberry pi board to connect all the sensors and for security purposes we are using cameras. Main things like light and fans need to get On and off automatically.

**Keywords:** Raspberry Pi, Internet of Things (IoT), Sensors, Camera

### I. Introduction

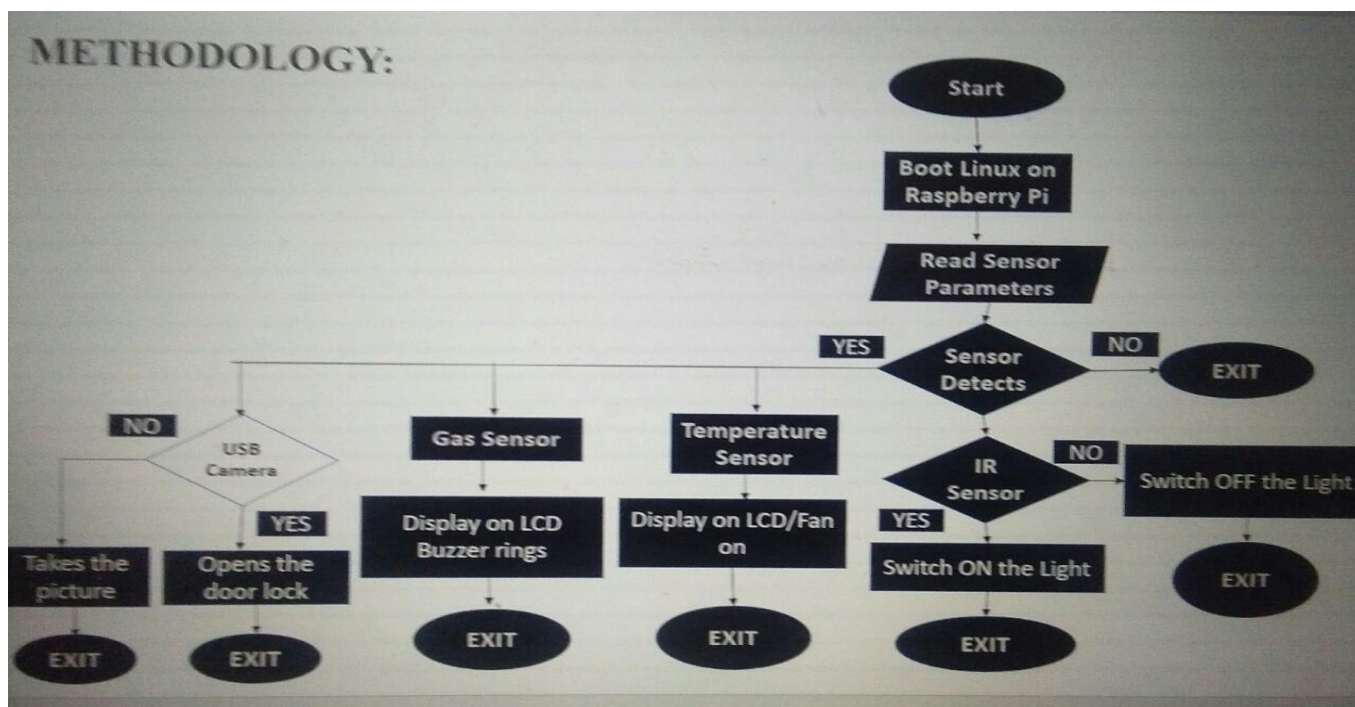
Home automation is the ability to control domestic appliances by electronically controlled, internet-connected systems. Automation of home appliances is complex for common people. These are designed to manage the different attributes of the home. Home security can be achieved by the automation, which will avoid the threat from the hackers. With this project we can achieve full home automation and it helps people to be concerned about their home. Automating of home appliances will monitor or control home attributes such as light, temperature, Gas, Security locks etc. In this project we are connecting each and every attribute to the raspberry pi kit. We are dumping an inbuilt code into the raspberry pi. So that it gets operated and shows the output. We are using many sensors like IR sensors will say that if a person enters directly light gets ON no need to get the switch ON. A temperature sensor also uses according to weather conditions we can set a temperature and fan getting ON automatically. These are some of the sensors we are using for making home appliances to work we are using a raspberry pi board to connect all the sensors and for security purposes we are using cameras. Main things like light and fans need to get On and off automatically.

### II. Introduction to IoT

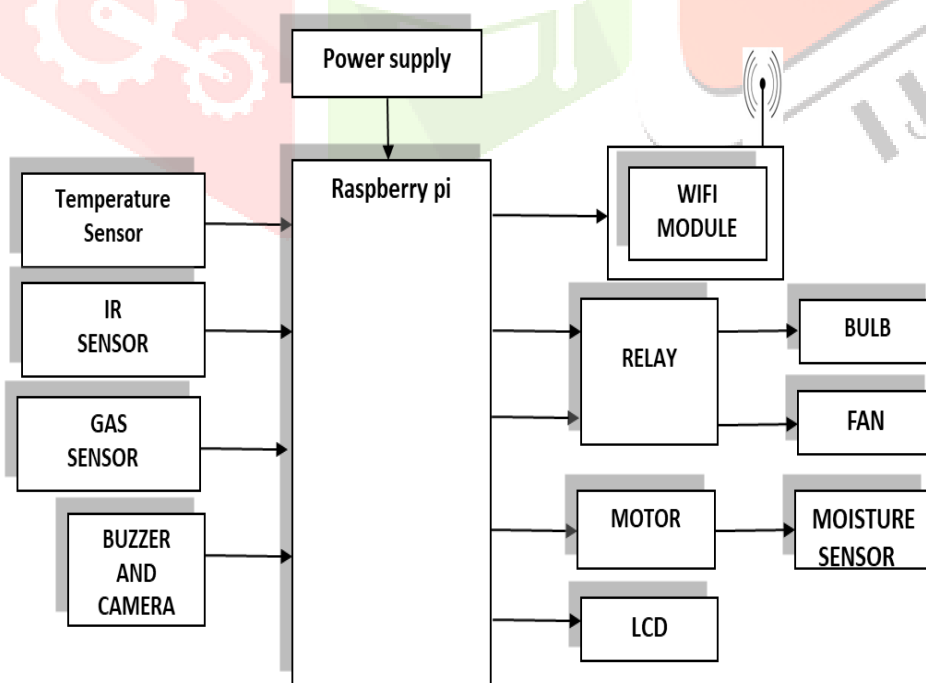
Now a days rapid use of this advanced technology life is getting easier and simple in all aspects. The concept of automating of home appliances already existing system has been in early 19<sup>th</sup> century it came into picture and it has enhanced from a set a spare Electronics. Further the standard was developed to allow transmitters and receivers on/off but the system has advantages and disadvantages. By the invention of Raspberry- Pi we are having large number of communication ports, HDMI port, USB port so on...It became very easy and interesting. Internet of things play an important role here we proposed a automation of home appliances using raspberry pi. It can automate home appliances and allows to control over internet from anywhere over the world. Our proposed system consists of microcontroller/ raspberry pi board. It consists of light, fan and sensors connected to it and along with LCD display. Every Thing gets operated under the connection of internet via electricity using computers. Our system Need to have a raspberry pi version technology. Camera has been

connected to board but it Need electricity connection to the board and also need an internet connection. Now a days in present technology that IOT permits us to control hardware through internet. We can connect the physical devices to the technology we used in our circuit or kit. The microcontroller we are using is raspberry pi and the code we used to write is python because it is a new trending technology. Me and my teammates are well aware of this technology. We are well getting trained by this technology in an institute. The raspberry pi is connected to internet via electricity this is used to transmitting and receiving commands and used to pass the instructions related to it. Liquid crystal display can used to show the status on the screen.

### III. MEHODOLOGY



### IV. BLOCK DIAGRAM



- The main aim of the project is Automation of home appliances using Raspberry pi. We are using many sensors and for the security purpose we are using camera. The sensors like IR sensor, Temperature sensor, Gas sensor.
- The main thing is when a person enters into the room the light has to be get ON. If the no person is present it has to be OFF. For Temperature sensor according to whether condition we need to fix a particular temperature then the fan gets ON. If the temperature is low then the fan gets OFF. For Gas sensor the people are using incense stick for fragrance purpose so if it gets near to the gas sensor then the buzzer gets ring.
- These are all sensors connected to raspberry pi board for security purpose we are using camera it captures the image.
- Only one facial data can be saved in the camera. Others persons are all take it as unknown persons.

## V. CONCLUSION

This project has proposed the idea of smart homes which will support a lot of automated appliances. These automated appliances have a connection between the wireless communication, sensors, monitoring and tracking. Smart homes are the big systems that contain the various technologies and applications which are used to provide the security and the control of the home appliances easily.

This project discussed the designed modules like sensors, And providing the security to the home through the security lock system. In this project, an efficient approach of smart homes is implemented. Python programming language and the Raspberry pi Microcontroller have been used to connect the sensor circuit to the home and to find the face of the person to unlock the door.

## VI. REFERENCES

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