USING ANDROID APP HOME AUTOMATION AND ROUTINE DISPLAY

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Abstract: main objective of this project is to develop home automation system and display daily routine using an arduino- board. A smartphone application is use in this system which allows user to control the home appliances or devices such as fan bulbs. As the technology is getting developed so houses are getting advanced and also considering the fact of increasing demand of home security and automation. The Bluetooth module is interfaced to the arduino-board while android application on the smart phone which send on/off command to the board where load is connected. so you do not need to get up and switch on and switch off the devices while doing some work such as sleeping, watching television etc. it also sends daily routine command to board which displays on LCD which is connected to the board, GSM is also used which are connected to the board. The connections are made between the arduino and Bluetooth module also with the relays android application are connected through Bluetooth module to the system. The project presents the low cost flexible home control using arduino board static relay, GSM, PIR (Setspare PIR Sensor Module) motion sensor LDR.

Keywords: —Arduino board, GSM, LDR and PIR sensor, Bluetooth, Android app

Introduction: I. INTRODUCTION

World around us continuously changing with the advancement of science and technology. People are attracted to digital system which have many advantages. We are moving towards more automated way of life. We have smart cities, smart phones and many more, so we come up with new system called arduino based home automation using Bluetooth. The system is cost effective provide ability to user, control electronic devices through command. User can control the devices like fan, lights by using smartphone. Its main objective is provide facility to elderly handicapped people to perform their daily routine task control the home appliances remotely. For enhauncing the security of home the system is used if you are not in the home thief are enter in the home then system give alert message to the user. When thief is enter in the room the PIR sensor will detect the motion give alert message to the user. In surrounding us many people are uses the smart phones in that android operating system is more popular. So the android app is developed, which is based on current market trend. The main function of system are Controlled the home appliances, Security system by using PIR (Setspares PIR Sensor Module) and LDR sensor, Daily routine display.

1. **Goals and Objectives:**
1.To provide daily routine information.
2.To provide security to home from unknown person.
3.To remotely controlled home appliances like fan, light.
4.To save time and utilized energy efficiently.

2. **Method:**

A. Block Diagram:-
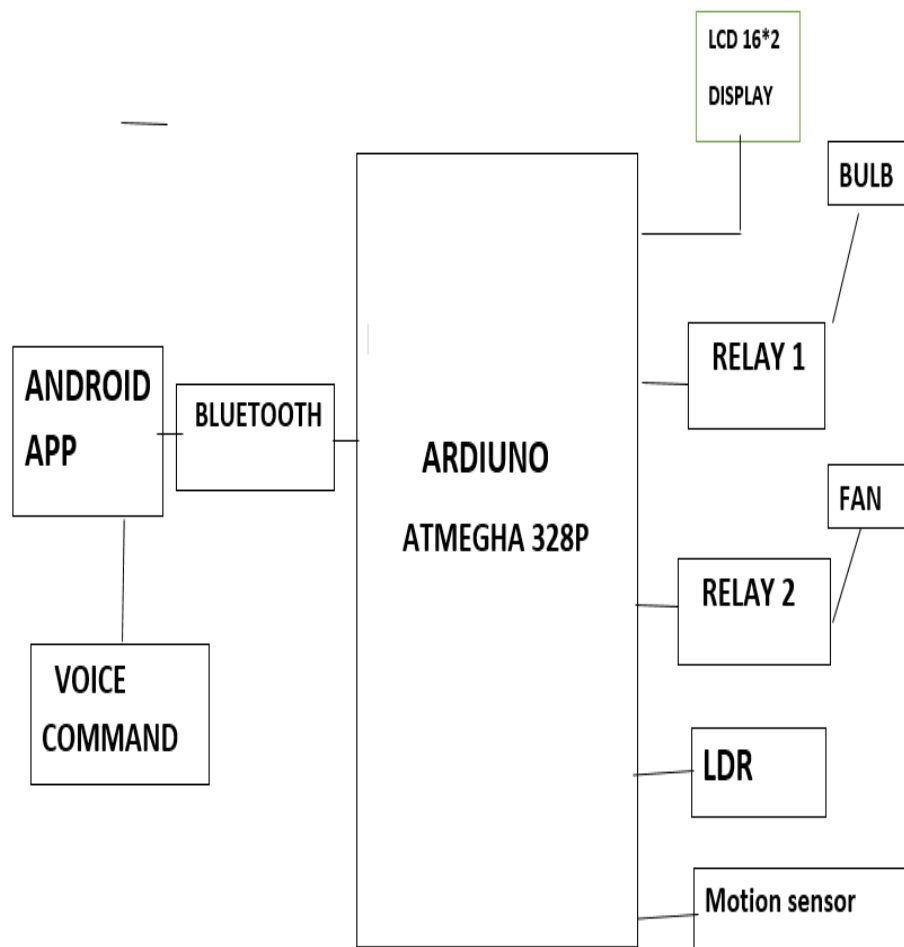
WORKING OF PROJECT

The PIR (Setspares PIR Sensor Module) and LDR sensor, Bluetooth, LCD Display, GSM are connected to arduino controller. android app is connected to system through Bluetooth. home appliances is control by using android application by sending a command. PIR (Setspares PIR Sensor Module)sensor are use for security and LCD display for daily routine display.

PIR Sensor : It is a passive infrared sensor. In this project the PIR (Setspares PIR Sensor Module) is used for security purpose. if no one in the room and motion happen near the sensor then it detect the motion and send alert message to user.

LDR : It is a light dependent resistor. if darkness in the room and motion happen means someone in the room then the light will automatically turn on in room.

LCD Display : daily routine command send to system by using android app and it will stored first, when user will come in front of PIR (Setspares PIR Sensor Module) sensor then motion is happen and routine display on LCD display.
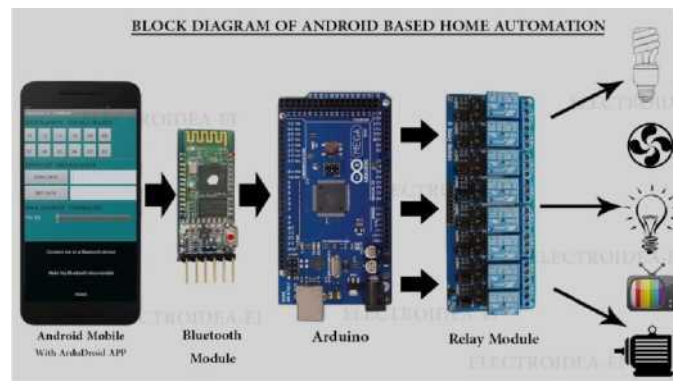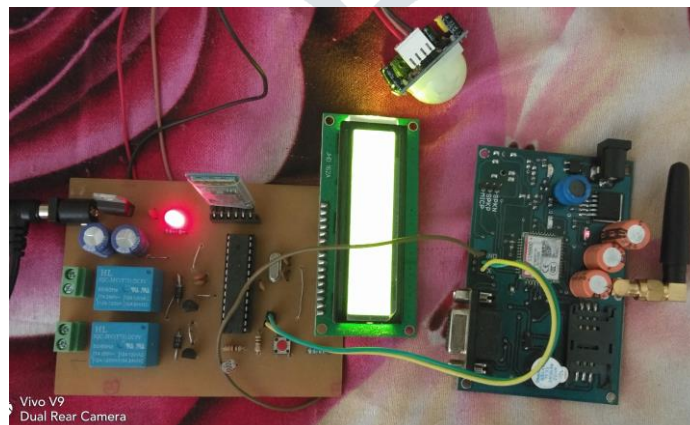
Fig. 1. Home Automation

In this project ATMEGA328 controller is use as a main controller. The power supply circuit is used to provide 5V DC to the microcontroller and other components from 230v AC source. The sensors like PIR sensor, LDR, LCD display relay.1 and relay.2 Bluetooth are connected to the controller board. The outputs of these sensors are either analog or digital in nature but it doesn't need any interfacing circuit or IC to connect with controller. Hence these sensors are directly connected to the controller board. The Bluetooth module is connected to the controller to send different types of command. suppose you send a command such as turn on light then relay.1 will on and it turn on the device is connected to relay.1 which is bulb. if you send turn off light command then relay.1 will turn off and bulb will turn off. same process is happen with relay.2 In this project the PIR (Setspares PIR Sensor Module) is used for security purpose. It is a passive infrared sensor. if no one in the room and motion happen near the sensor then it detect the motion and send alert message to user. for security purpose their is extra intrusion mode is designed, when we leaving the room or going to some where that time if we turn on intrusion mode then some motion happen in the room or someone came in the room then PIR (Setspares PIR Sensor Module) detect it and send alert message to user. LDR is used, It is a light dependent resistor.if darkness in the room and motion happen means someone in the room then the light will automatically turn on in room. LCD display is used, daily routine command send to system by using android app and it will stored first, when user will come in front of PIR (Setspares PIR Sensor Module) sensor then motion is happen and routine display on LCD display.

3. Methodology:

IN this system is designed to reduce the difficulties of physically disabled and locally handicapped people. It merges the idea of home automation and security System. The system mainly reduces the human effort by using this system in day today life. like does not need to get up switch off and switch off the mobile when you are doing important work for providing a security The sensors play a major role in this system. LDR and PIR sensors are used. when you are not in the room and thief is coming then PIR will detect the motion give alert message to user by using GSM. When darkness in the room the LDR will automatically turn on the light if motion is happen means someone in the room. These sensors are together interfaced with ATMEGA328p controller.

3. Output Result:
4.

5. Conclusion:

The home automation system and security system has been experimentally proven to work satisfactorily by connecting sample appliances to it and appliances successfully controlled from wireless mobile device and our daily routine successfully

display on LCD display. We learn many skill such as soldering wiring the circuit and other tools that we use for this project and was able to work together as a team during this project The Bluetooth was successfully tested on different mobile phones from different manufactures. so we design and implement successfully cost effective system.

6. References:

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