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**ABSTRACT**

In this paper solar is additional to be added. Typically the change over switch is inbuilt in the solar panel, Instead of these changeover switch is automated. How much power from solar panel, power supply line and balance battery charge , these are integrated to the mobile application. In this paper solar integrated hybrid home automation system is proposed that can access and control the home equipments from every corner of the world. If the water tank is empty, automatically water will be filled in the tank. PIR sensor is also installed in this device. If the person is entering the room, the light will be automatically on and the person is leaving the room light will automatically off for power saving. If we introduce the automated system, we can fully change the physical switches.

**KEYWORDS:** IoT, PIR, Home automation, smart phone, voice control.

**1. INTRODUCTION**

Home automation system is a system meant to control and automates home appliances and devices with help of various control units. This framework is intended to help and to satisfy the needs of the elderly and the handicapped at houses. Additionally, the idea of home automation system will improve living status. The system design does not remove the existing electrical switches and a gives a safer control over the switches with low voltage usage technique. In this paper solar is additional to be added.

Typically the change over switch is inbuilt in the solar panel, Instead of these changeover switch is automated. How much power from solar panel, power supply line and balance battery charge , these are integrated to the mobile application. In this paper solar integrated hybrid home automation system is proposed that can access and control the home equipments from every corner of the world[1]. If the water tank is empty, automatically water will be filled in the tank. PIR sensor is also installed in this device. If the person is entering the room, the light will be automatically on and the person is leaving the room light will automatically off for power saving. If we introduce the automated system, we can fully change the physical switches.

Device to be automated or controlled are connected to the system and the user is presented with a user interface with necessary information and controls regarding the devices. The user is able to trigger control actions by using the IoT interface. Thus, saving of the power is the main concern, which is the basic aim of this project. To save the power consumption, we have proposed the smart, energy efficient home automation system using IoT. Thus, aim of this research to save the power consumption (reducing the electricity bills) and at the same time provide the safety and security of the home equipments[2].

**2. RELATED WORKS**

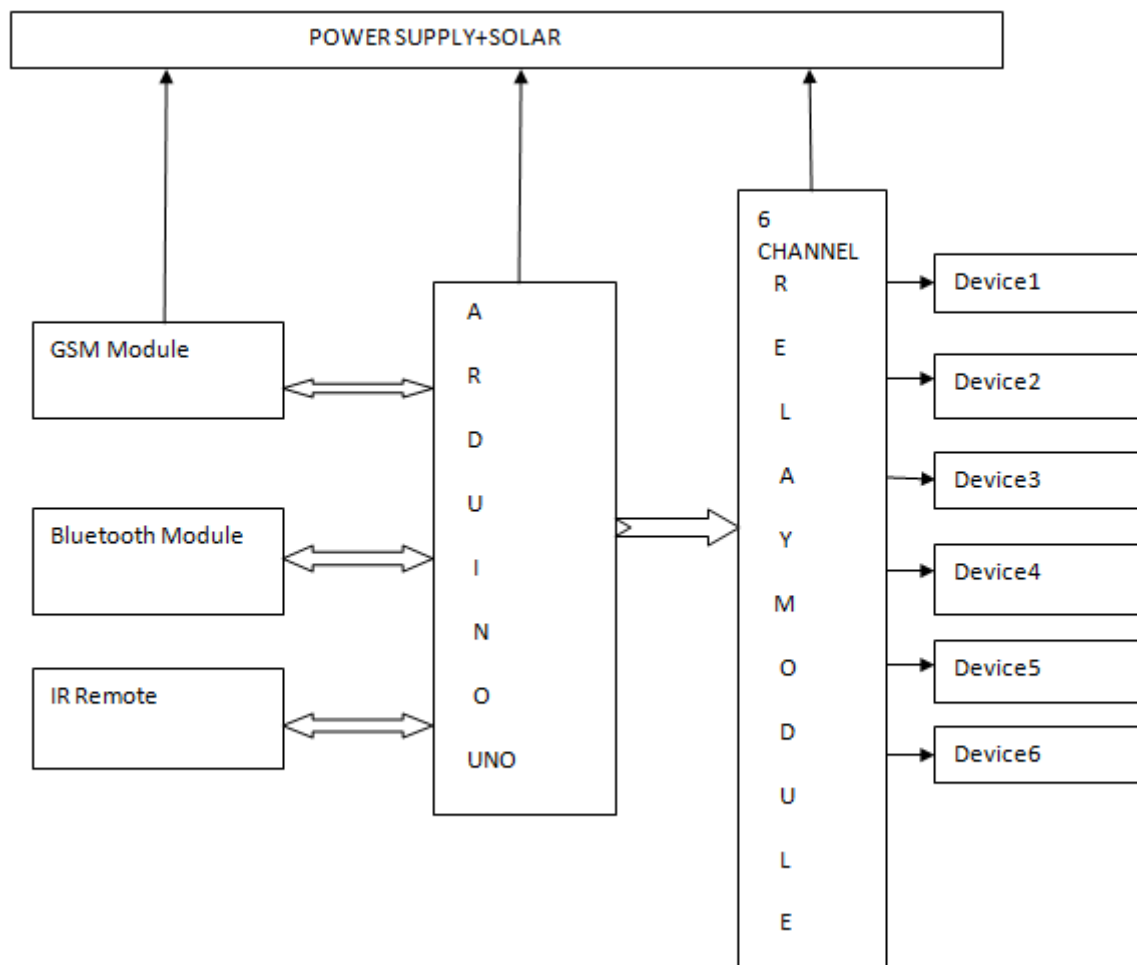
Human-machine interaction (HMI) has become , the more realistic in day-to-day life due to the advancement in the technology. IoT has provided the applications to turn non-smart device into smart device, which allow users to access these devices through the Internet. It converts the home into smart home and provides a more robust method of controlling the home appliance. Also, the security can be added with the help of installed camera in the home, which can be traced through the Internet. Thus, user can monitor their home and can turn ON/OFF their appliances which will definitely going to save both the electricity and electric bills. It can be which has the ability to control and monitor of different interconnected appliances such as power plugs, lights, temperature and humidity sensors, smoke , gas and fire detectors as well as emergency and security systems [3]. Home automation system it controlled and managed easily from an array of devices such as smart phone, tablet,

desktop and laptop [4]. The rapid growth of wireless technologies influences to use smart phones to remotely control and monitor the home appliances around the world [5-6]. Several home automation systems use smart phones to communicate with microcontrollers using various wireless communication techniques such as Bluetooth [7], GSM [8], ZigBee [9], Wi-Fi [10] and EnOcean [11]. Smartphone applications are used to connect to the network so that the authorized users can adjust the setting of system on their personal devices. Different type of home automation systems offer a wide range of functions and services, some of the common features are appliance control, thermostat control, remote control lighting, live video surveillance, monitor security camera, real time text alerts [10-13].

### Internet of things

The Internet of Things is a simple stereotype which means taking all the things in the world and connecting them to the internet. It is a giant network of interrelated computing devices, digital and mechanical machines, objects, animals or people which is provided with UIDs and the ability to send data over a network without the help of human-to-human or human-to-computer interaction[9]. The Fundamental building blocks of IoT consist of sensors, processors, gateways, and applications. By 2020,[10] it is estimated that 50 billion ‘things’ will be connected to the Internet. Wireless technologies such as the Wi-Fi, Bluetooth, ZigBee, RFID, 6LoWPAN (IPv6 Low power Wireless Personal Area Network) allow the device to be connected to the Internet and to each other

### Block diagram



**System overview**

To make the application is user friendly, web based and it uses android based technologies have gained their importance in this cutting edge technology. In this paper, home automation system is proposed that can access and control the home equipments from every corner of the world. For this home automation system, Internet connection module is attached to the main supply unit of the home system ,and it which can be accessed through the Internet. . If the water tank is empty, automatically water will be filled in the tank. PIR sensor is also installed in this device. If the person is entering the room, the light will be automatically on and the person is leaving the room light will automatically off for power saving agent . Other features that can be included in the smart home for security purpose is to include the sensors and cameras that can prevent the intruder from entering into your home. Also, making the system more intelligent, that can turn on the light and fan of the room as soon as it detects the presence of the person.

**Temperature sensor**

A temperature sensor is a sensor which plays an important role in many applications. For example, for maintaining a specific temperature is essential for the equipment which is used to fabricate medical drugs, heat liquids, or clean other equipment. For example, while an appliance might not actually perform any high temperature activities, the system itself could be at risk to overheating. This risk arises from which specific external factors like a harsh operating environment or internal factors like self-heating of electronics. By detecting when overheating occurs, the system can take preventative action. In these cases, the temperature detection circuit must be reliable over the expected operating temperature range for the application.

**Motion detector**

A motion detector which is a device that detects moving objects, especially people. Such a device which is often integrated as a component of a system that automatically performs a task or alerts a user of motion in an area. It form a vital component of security, automated lighting control, home control, energy efficiency and other useful systems. An electronic motion detector which contains an optical, microwave, or acoustic sensor, and in many cases a transmitter for illumination. However, a passive sensor which senses a signature only from the moving object via emission or reflection. Specialized systems has cost more, but have much longer ranges. Tomographic motion detection systems which can cover much larger areas because the radio waves are at frequencies which penetrate most walls and obstructions, and are detected in multiple locations, which is not only at the location of the transmitter r saving agent .

**3. CONCLUSION**

If the water tank is empty, automatically water will be filled in the tank. PIR sensor is also installed in this device. If the person is entering the room, the light will be automatically on and the person is leaving the room light will automatically off for power A temperature sensor is a sensor which plays an important role in many applications. For example, for maintaining a specific temperature is essential for the equipment which is used to fabricate medical drugs, heat liquids, or clean other equipment. For example, while an appliance might not actually perform any high temperature activities, the system itself could be at risk to overheating. This risk arises from which specific external factors like a harsh operating environment or internal factors like self-heating of electronics. By detecting when overheating occurs, the system can take preventative action. In these cases, the temperature detection circuit must be reliable over the expected operating temperature range for the application.

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