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A Review on Advanced Home Automation System using GSM and AI

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Abstract: ***In this proposed work, we are going to connect home appliances to user mobile so that they can handle their appliances by remote distances. Smart home and artificial technology are the trending technology which is developing rapidly. This smart home product improves the quality of living for occupants. In this system, we explore full home control or home automation by using GSM (Global System for Mobile Communication). User home appliances such as LED bulb, air conditioner etc. is controlled by GSM (Global System for Mobile Communication) modem via SMS (Short Message Services) text message is presented in this paper. In this project, we are using AI (Artificial Intelligence) to operate devices. AI (Artificial Intelligence) is relatively a new idea that is easily accessible today by anyone who has access to a computer or a smartphone. This (Artificial Intelligence) also becoming a powerful presence in technology, has been swiftly dominating the home automation market. This allows us to integrate smart solutions into our everyday tasks. In this work, we are going to execute a continuous process to home appliances control system without any supervisor and later it will co-ordinate appliances and other devices through Short Message Service using GSM(Global System for Mobile Communication) and AI(Artificial Intelligence)***
Keywords: AI technology, GSM, Microcontroller, Wireless connectivity

I. INTRODUCTION

Now daily from the invention of the modern laptop or computer electronics plays a very important half to an extraordinary extent. As electronics becomes cheaper and a lot of advanced, their presence becomes a lot of productive. One in all the new and most immerging markets in trendy electronics is in home automation. Home automation isn't a replacement plan however it's quickly changing into a common tool that is making powerful answers to resolve routine a day. The goal of home automation is to use mobile technology and to integrate devices or loads. Artificial intelligence means intelligent home automation system supported GSM because of the master controller. If we tend to speak home automation, the most issue is the way to connect home appliances to the intelligent system. With the assistance of GSM and microcontroller, we will build a home automation system that's capable of operative these home devices. The microcontroller can function as a master device through that the AI can communicate and manage the house appliances. Ai is that the collection of powerful and rigorous programming techniques finding out the character of intelligence by building algorithm systems, and also the application of those ideas in a resolution of real-world issues. The expansion within the areas of AI has been blown up. There exist a variety of AI tools that build associate in inclining automation systems a lot of developed. The AI system projected during this project is capable of dominant home appliances on the instruction of the users. In these systems, AI may be applied within the authority in addition chief stage. Applying AI at the authority can increase the awareness and security and is a lot applicable. On the opposite hand, deciding half will utilize the case-based mostly perceptive of AI for effective and economical management because it must decide that of the target device is approaching this open instruction.

II. LITRETURE SURVEY

A. This paper presents an intensive review of the analysis, modeling, design, testing associate in different aspects of an electronic load controller (ELC) found within the literature. The assumptions created and a short description of the answer strategies is given. This paper describes step by step development within the space of ELC that provides useful data and resources for the long run studies for those fascinated by the matter or meaning to do extra analysis in space of little hydro power generation.

B. In his paper, within the planned system it's assumed that the house system adapts itself to the occupant's life style. The planned intelligent system incessantly learns and adapts to the users preferences. By discrimination language process, the intelligent system can execute the commands issued by the user. The AI system can complete the changes and implement them with the assistance of the RASPBERRY PI. This project aims at dominant, managing and coordinating the everyday home appliances during a comfortable, effective and secure approach. The planning of the system relies on master-slave communication between the RASPBERRY PI and ARDUINO to regulate the appliances. On supplying a command to the system, the RASPBERRY PI can map the command to the ARDUINO device within the specific rooms. Additionally, the intelligent system conjointly performs the work of a private assistant and has extra modules like news, searching etc. To let the user access information remotely.

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C. In this paper the approaching of the sensible energy meter (SEM) was expected to produce associate in tending increased service to customers of electrical energy; but, the present stage of the SEM doesn't supply daily consumption tuned to customers, neither will it allow the user to line a threshold price for daily or monthly consumption cutoff. This work sought-after to style associate in construct an automatic electrical load watching, management associate in alert system persecution an ARDUINO UNO (ATMEGA328P) microcontroller, that offers period of time tuned in to users on their energy consumption with no extra wiring work needed. Associate in having implementation of the planned system provided economical watching, management and warning of current consumption as compared with the standard energy meters.

D. In this paper, style of sensible energy meter was achieved with ATMEL microcontroller because the main half for evaluating consumed power and power issue (PF). Ade7756 metering IC is employed as input unit because it contains voltage and current electrical device. The foundation mean sq. (RMS) price of voltage and current, consumed power, and PF are monitored through liquid crystal display at customers premise and these parameters sent through a GSM wireless network to the bottom station so as to articulate consumed power fees and also assess and monitor power consumption and demand.

III. METHEDOLOGY

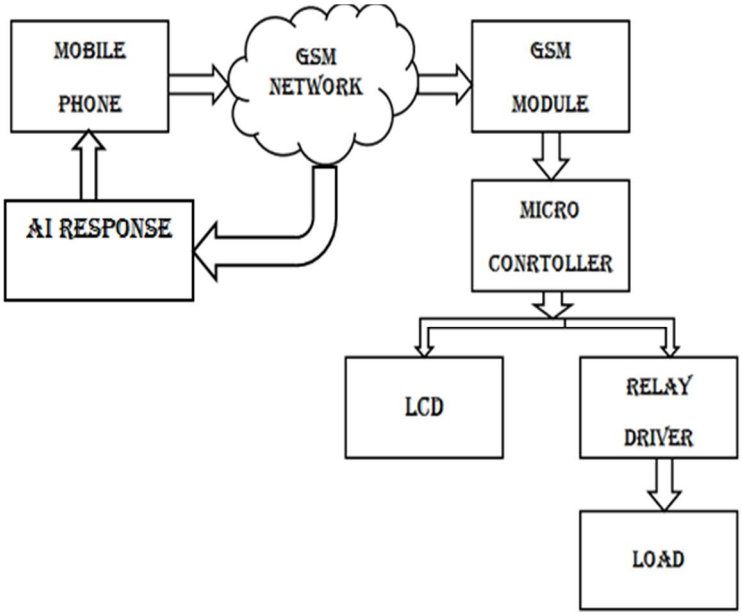


Fig.1 Block diagram of proposed work

The short message services (SMS) is transmitted from mobile to GSM module through GSM network. The microcontroller will enable the command transmitted from mobile phone with the help of code e.g., TURN ON L1 then relay will ON. As relay ON load will also be turn ON and message will display on LED as L1 ON. The AI Send the return message to the user from the GSM Module that the system or any equipment is turn on or not. This is something a basic overview of our proposed work. Here, the advance wireless and AI technology is used and GSM SIM900 is a complete Quad-band GSM/GPRS solution in a SMT module which can be embedded in the customer applications. With a small configuration of 24mm x 24mm x 3mm, SIM900 can fit almost all the space requirements in your M2M application, especially for slim and compact demand of design. Microcontroller has excellent features include the cost, efficiency, low power dissipation.

IV. CONCLUSION

In this proposed work, the main objective is to have home automation system using AI and GSM module. It is used to control the load of the home appliances and make them interrupt free. This device has good efficiency with good connectivity for all suitable home appliances. This device over comes the entire problem which is held at the time of controlling load.

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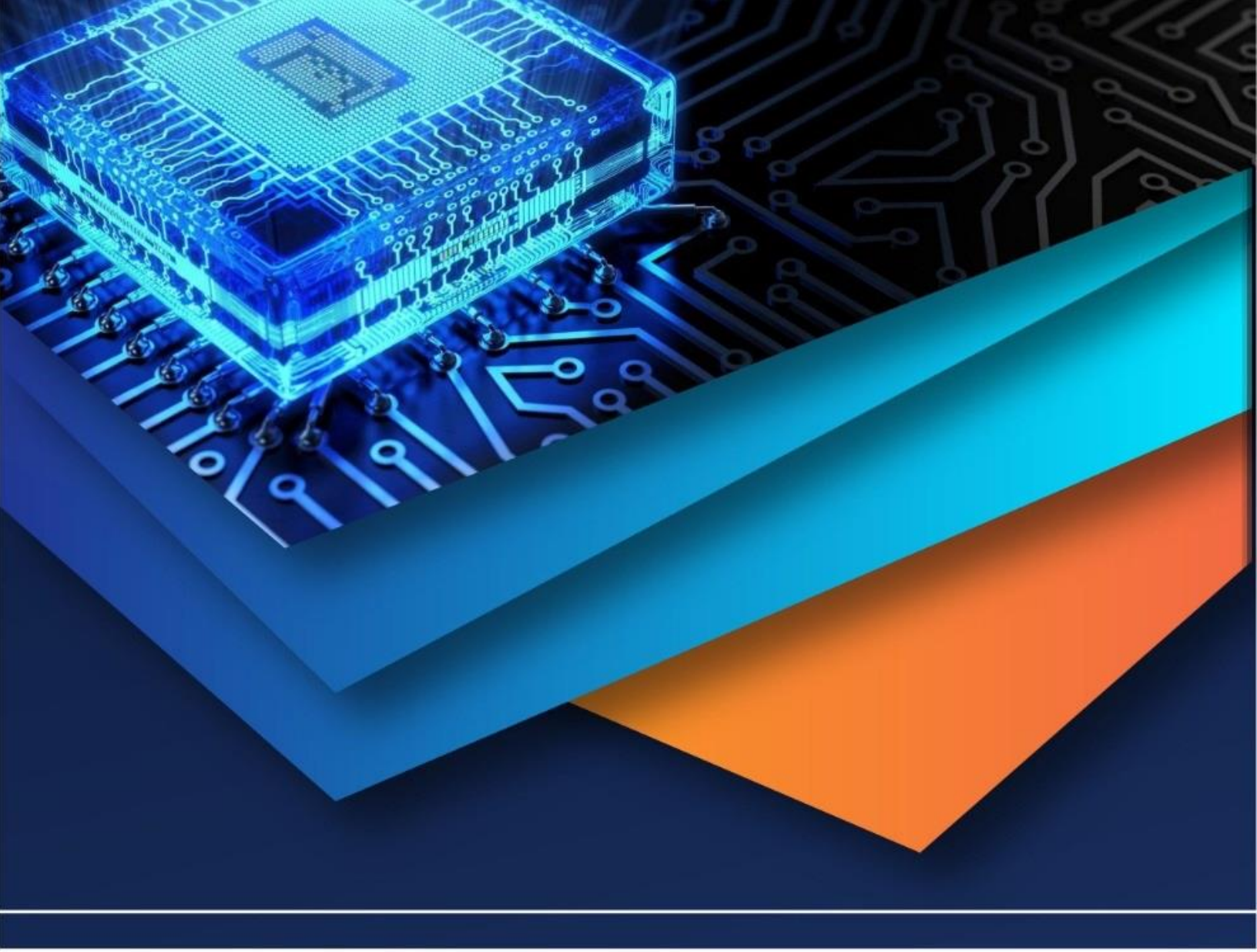
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