INTELLIGENT HOME WITH HOUSE-HOLD PURPOSE ROBOT

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Abstract: -The 21st century houses will become more self-controlled and automated and it will provide comfort to people, especially when employed in a private home. A home automation system is a system that allow users to control various electric appliances. There are number of well-established home automation systems present based on wired communication. This does not cause any problem until the system planning is well done in advance and installation done during the physical construction of the required building. For already existing buildings the implementation cost can become very high. The idea of the "Internet of Things" is closely related to the development of Domestic/Industrial automation. As the variety of governable devices within the home rises, interconnection and communication between the devices becomes difficult. Remote intelligent home system may give a foreign interface to Domestic/Industrial appliances or the system itself, via phonephone line, wireless transmission or the net, to supply management and monitoring via a Smartphone or browser.

Keywords:-Sensors, voice recognition, Intelligent Home, robot.

I. INTRODUCTION

The sociology of the planet population shows a trend that the aged population worldwide is increasing apace as a results of the rise of the typical lifetime of individuals. Caring for and supporting this growing population may be a concern for governments and nations round the globe. Home automation is one amongst the main growing industries that may amendment the method individuals live. Many of these automation systems target those seeking luxury and complex home automation platforms; others target those with special desires just like the aged and also the disabled. The aim of the reported Wireless Home Automation System is to produce those with special desires with a system that may reply to voice commands and management the on/off standing of electrical devices, like lamps, fans, tv etc., within the home. The system ought to be moderately low-cost, straightforward to tack together, and simple to run.

There are many industrial analysis comes on good homes and voice recognition systems has an integrated platform for home security, observance and automation (SMA) from management. The system may be a 7-inch bit screen that may wirelessly be connected to security alarms and different home appliances. the house automation through this method needs holding and interacting with an oversized panel that constraints the physical movements of the user. Another fashionable commercially accessible system for home automation is from Home machine-controlled Living (HAL). HAL code faucets the facility of AN existing laptop to regulate the house. It provides speech command interface. a giant advantage of this method is it will send commands everywhere the house victimization the present route of electrical wires within the home's walls. the present market leaders in home automation technologies area unit Google home, Amazon echo, Alexa, wink hub.

II. PROBLEM STATEMENT

Generally typical home exploitation easy latching switch that being connected to the ability provide for dominant electrical appliances like lighting. This switch sometimes settled at inclose sight of the controlled appliances. These days new technologies produce new answer for home system. This improvisation referred to as home automation. There are many business and analysis comes on sensible homes. Several of the business product use device whether or not it's button or totally bit screen. Still, observation and dominant the appliances would like some movement and physical contact. Thus, this may be a burden to disable person particularly for the disabled and older folks.

III. EXISTING WORK

- **Home Automation exploitation Infrared And line Communication**

Home automation system, heat ray and line communication are wont to management the house appliances system. This method helps user to checks the standing of appliances and controls them remotely from all over.

This is done through their cell phone or web. Exploitation their mobile phone or web user offers commands to appliances to regulate their operation.

- **Home Automation exploitation Personal Computers**

Home automation may also be done exploitation personal computers. A system that controls the house appliances exploitation the private pc. This method is developed by exploitation the Visual Basic vi.0 as artificial language and Microsoft voice engine tools for speech recognition purpose. Appliances may be either controlled by timer or by voice command.

- **Home automation exploitation SMS and GSM Network**

A system for dominant home appliances remotely that's helpful for those who aren't reception largely. The most objective of the system is to supply security and management the house appliances like AC, lights and alarms.

The system is enforced by SMS technology that's wont to transfer knowledge from sender to receiver over GSM network. One or additional computers may be wont to management the house appliances. System send AN alert SMS to approved user once any intrusion is detected and user will successively respond so as to beat things. What is more user will send SMS to system to induce the standing of home appliances and dominant them.

IV. PROPOSED WORK

In this project IoT technology is used to control the home appliances wirelessly over the internet. The computing module used is a Raspberry pi development board. The project also aims to provide a speech control interface to the users to control the appliances. With speech recognition physically challenged people can control appliances with much more ease.

List of Modules

1. **Home automation Module**

A. Door opening system through RFID card

Generally, traditional locks are heavy and that are not strong as they can damage simply by using some tools. Electronic locks are better over mechanical locks.

Radio-frequency identification (RFID) uses electromagnetic fields to automatically identify and track tags attached to objects. The tags contain electronically-stored information. Passive tags collect energy from a nearby RFID reader's interrogating radio waves. Hence to provide better security we implement door opening system though RFID cards.

B. Door closing system

In this project we are implementing Door closing system through speech recognition.

C. Hall, Kitchen, Bedroom light

A light-dependent resistor (LDR) sensor is used to sense the intensity of the light available in home. Based on the result we get through the sensor we can turn on or off the lights. Also we are using speech recognition technique to operate lights.

D. W/C and Passage light

If a person is in the W/C or in passage the lights will remain always ON otherwise OFF.

E. Fan system

Depending on the room temperature and humidity fan and AC will turn ON or OFF.

F. Water level alert system

These systems are extensively used to prevent water loss, which saves manual labor by switching the motor on and off as per the varying water level in the tank. Operations When Overhead Tank gets empty, then Water Pump will turn ON.

2. **Security Module**

A. LPG leakage alert system kitchen

To check if LPG gas is leaked So that major damages like fire can be prevented.

B. Fire Detection system

To check if there is fire in home or not. If fire is detected then this module give alert to home owner.

C. Robot for security

At night time, robot will provide security at outside the house. If person comes near home then it will automatically turn the house lights on and will ring alarm to alert the person in the home.

3. **Robot**

At day time robot will work according to order given to him like moving things anywhere in house according to command given to him

V. SYSTEM ARCHITECTURE

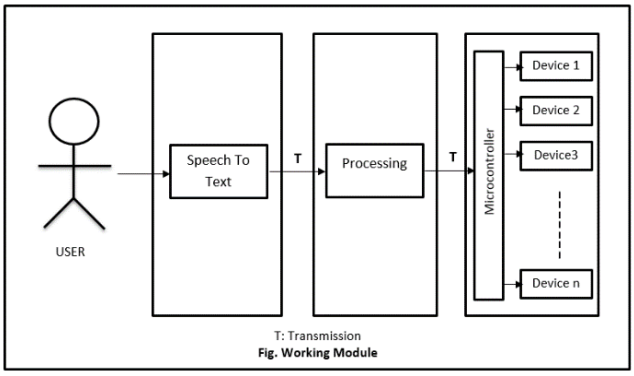

fig. working model

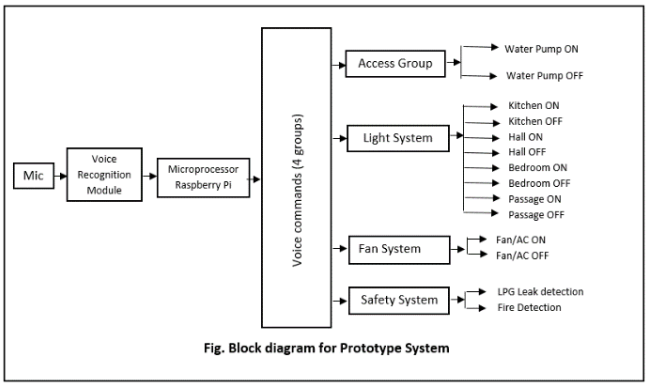

fig.diagram for prototype system

VI. ADVANTAGES OF PROPOSED SYSTEM

The benefits of home automation typically fall into a few categories, including savings, safety, convenience, and control. Additionally, some consumers purchase home automation for comfort and peace of mind.

Here's a closer look at some of the biggest benefits that home automation provides.

1. **Savings:** Smart thermostats and smart light bulbs save energy, cutting utility costs over time. Some home automation technologies monitor water usage, too, helping to prevent exorbitant water bills. Certain devices even offer rebates.
2. **Safety:** Many home automation technologies fall under the umbrella of home security. Consumers purchase these devices because they want to make their homes safer and more secure. Automated lighting thwarts would-be burglars, and motion sensors help people enter doors and walk hallways late at night.
3. **Convenience:** Because home automation technology performs rote tasks automatically, end users experience great convenience. Lots of smart gadgets are compatible with one another, and you can set different triggers between devices to automate regular home processes. For instance, you could set your smart locks to turn on your smart lighting when you unlock the front door.
4. **Control:** Consumers also choose smart home devices to better control functions within the home. With home automation technology, you can know what's happening inside your home at all times.
5. **Comfort:** Some people use smart technology to record shows or to play music throughout the home. Connected devices can also help create a comfortable atmosphere—they provide intelligent and adaptive lighting, sound, and temperature, which can all help create an inviting environment.
6. **Peace of Mind:** Finally, many consumers invest in home automation technology for peace of mind. A new mom or dad can check on their little one thanks to smart cameras and other technologies. Or, if you can't remember whether you closed the garage after you left, you can verify remotely with an app.
7. **Energy Saving:** Home automation systems have definitely proven themselves in the arena of energy efficiency. Automated thermostats allow you to pre-program temperatures based on the time of day and the day of the week. And some even adjust to your behaviours, learning and adapting to your temperature preferences without your ever inputting a pre-selected schedule. Traditional or behaviour-based automation can also be applied to virtually every gadget that can be remotely controlled – from sprinkler systems to coffee makers.

VII. DISADVANTAGES OF PROPOSED SYSTEM

1. **Installation**: Depending on the complexity of the system, installing a home automation device can be a significant burden on the homeowner. It can either cost you money if you hire an outside contractor or cost you time if you venture to do it yourself.

2. **Complex Technology**: Automating everything in life may sound extremely appealing, but sometimes a good old-fashioned flip of the switch is a lot easier than reaching for your smart phone to turn lights on and off. Before you decide which system is right for you, think about how far you really want to take home automation in your household.
3. **System Compatibility**: Controlling all aspects of home automation from one centralized platform is important, but not all systems are compatible with one another. Your security system, for example, may require you to log in to one location to manage settings, while your smart thermostat may require you to log in to another platform to turn the air conditioner on and off. To truly leverage the convenience of home automation, you may need to invest in centralized platform technology to control all systems and devices from one location.
4. **Cost**: Even though the price of home automation systems has become much more affordable in recent years, the cost to purchase and install a device can still add up. Consumer Reports offers a wide range of information and insights – including costs – on the best home automation systems on the market.
5. **Human errors:** If the human does not handle the kit safely or if he/she does not use the correct keys to perform the operations, human errors may occur. Human errors also lead to destructions of the machine. Then there will be a huge system crash.
6. **Reliability:** In very rare cases, the reliability of the home automated devices varies (decreases). It depends mostly on the technology used and the advancements being done.

VIII. CONCLUSION

Home Automation is undeniably a resource which can make a home environment automated. People can control their electrical devices via these Home Automation devices and set up the controlling actions in the computer. We think this product have high potential for marketing in the future. At the moment the components are a bit too high to be able to produce these devices for an interesting price. This project work is complete on its own in remotely and automatically switching on and off of any electrical appliance not limited to household appliances, and sends a feedback message indicating the new present state of the appliance. It does not implement control of multiple appliances or automatic detection of faults in the controlled appliance.

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