PROBLEM STATEMENT

As the modern software system, home automation control system should achieve any requirements from users by its intelligence and generalization. In our home automation system, the requirements of customer can be concluded as below:

**1. Identify the human languages**

It is impossible for any users to understand the instructions or algorithm of programming. The users require the system to identify the human languages instead of machine instructions.

*1.1 Human voice instruction*

Voice is the most directly and simple way for people to convey their requirement. For example, the user can just send a voice message just like Turn on the light to modify the brightness of the room. This requirement is the core case of the whole system.

*1.2 Simple gestures*

Some users also demand the system to be equipped with the alternative controlling ways. And gesture is a good choice particularly for someone who cannot speak. For example the user can slide one of his fingers to modify the volume of MP3 player. The technology of identifying gestures for system is complex in algorithm and hardware design, but it can really simplify the operation of users.

**2. Application on cellphone platform**

In general, the most frequently used device is cellphone for users. So the users require the system to be developed on the cellphone platform such as Android and IOS. As one application of mobile device, the users can log into the home automation system directly with less cost than a whole controller.

**3. Feedback information**

At any point of time, the user might want to know the status of the different elements of the house. For this purpose the user would require the system to send a feedback to the user interface. The users should know whether the system recognizes the correct information and execute the right actions.

**4. User data**

The users demand the system to storage the data of different IDs. In general users have two aspects of requirements of user’s data. With the data of history of special users, the system can easily recognized the messages the users send, and create a user friendly interface for different users. Also the system can create several classes for many users. With this function, the system can limit some functions for special classes or groups. For example, if the user A and B have been divided into the class Kids, A and B cannot operate some limited elements such as microwaves. In this way the system can also guarantee the safety of the house and its users.

ABSTRACT

Home automation gives you access to control devices in your home from a mobile device anywhere in the world. The term may be used for isolated programmable devices, like thermostats and sprinkler systems, but home automation more accurately describes homes in which nearly everything — lights, appliances, electrical outlets, heating and cooling systems — are hooked up to a remotely controllable network. From a home security perspective, this also includes your alarm system, and all of the doors, windows, locks, smoke detectors, surveillance cameras and any other sensors that are linked to it. Home automation is on the rise due to several reasons.

*Make Tasks More Convenient*

Many tasks that are repetitive in nature can be accomplished automatically or with fewer steps using home automation. Home automation allows you to accomplish many tasks with one button.

*Save Money on Utilities*

Home automation can turn off lights or lower the thermostat automatically when you aren’t using them and easily lower your utility bills by 10% to 25%.

*Home Security*

Home automation can trigger an alarm or a lock out action when the surveillance cameras detect intruders at night or during long periods of inactivity.

*Good for the Environment*

Home automation products can reduce power consumption and automatically turn off lights and appliances when they aren’t in use.

MODEL CHOSEN