HOME AUTOMATION SYSTEM USING GOOGLE VOICE

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OUTLINE

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ABSTRACT

- Easy controlling from android phones.
- Design should be
  - Easy and effective for improved controlling.
  - Simple normal algorithms with advanced security at economic feasibility.
  - To reduce energy consumption by reducing human error.

- An automation system based on Internet Of Things.
  - The system completely uses the security provided by the Google which offers a better security than the other automation system.
  - The system offers easy accessibility to any users with a android phone for monitoring and controlling the electrical appliances.

INTRODUCTION

- Internet Of Things is used for easy accessibility and precise information.
- A quick and efficient way of approach for the modern day controlling of home automation measures.
- A method of controlling the home from anywhere you go.

LITERATURE SURVEY

Sl. No	Title of the paper	Name of the Journal	Month and Year of Publication	Observations Made
1.	Green Internet of Things for Smart World	SPECIAL SECTION ON CHALLENGES FOR SMART WORLDS	2015	• The combination of the new technologies in a greener way. • The way of implementing new technologies without hurting the safe and green environment.
2.	Smart City Implementation Models Based on IoT Technology	Advanced Science and Technology Letters	2016	• IoT-based smart city through the construction of a test bed for IoT verification and an integrated infrastructure.

Sl. No	Title of the paper	Name of the Journal	Month and Year of Publication	Observations Made
3.	Internet of Things for Smart Cities	IEEE INTERNET OF THINGS JOURNAL	VOL. 1, NO. 1, FEBRUARY 2014.	• Urban IoTs, in fact, are designed to support the Smart City vision, which aims at exploiting the most advanced communication technologies to support added-value services for the administration of the city and for the citizens.
4.	Internet of Things and Big Data Analytics for Smart and Connected Communities	SPECIAL SECTION ON SMART CITIES	March 11, 2016.	• Promotes the concept of smart and connected communities SCC, which is evolving from the concept of smart cities.

EXISTING WORK

- The control of the automated system is controlled either from a remote or either from a Smartphone application.
- It does not provide a distance live monitoring system.
- The existing system is supportive for voice commands with high complexity.
- The existing system is economically very highly priced.
- The existing system uses sunlight and other complex measures to control energy.
- It uses existing highly complex technologies and its own command sets which increases the complexity of the system.
- It is not viable for a small and economic home with less area.

DISADVANTAGES

- Most of existing systems are not economically viable.
- It has an complex energy conservation scheme by using natural resources.
- The live monitoring provided by the system is only available under limited area.

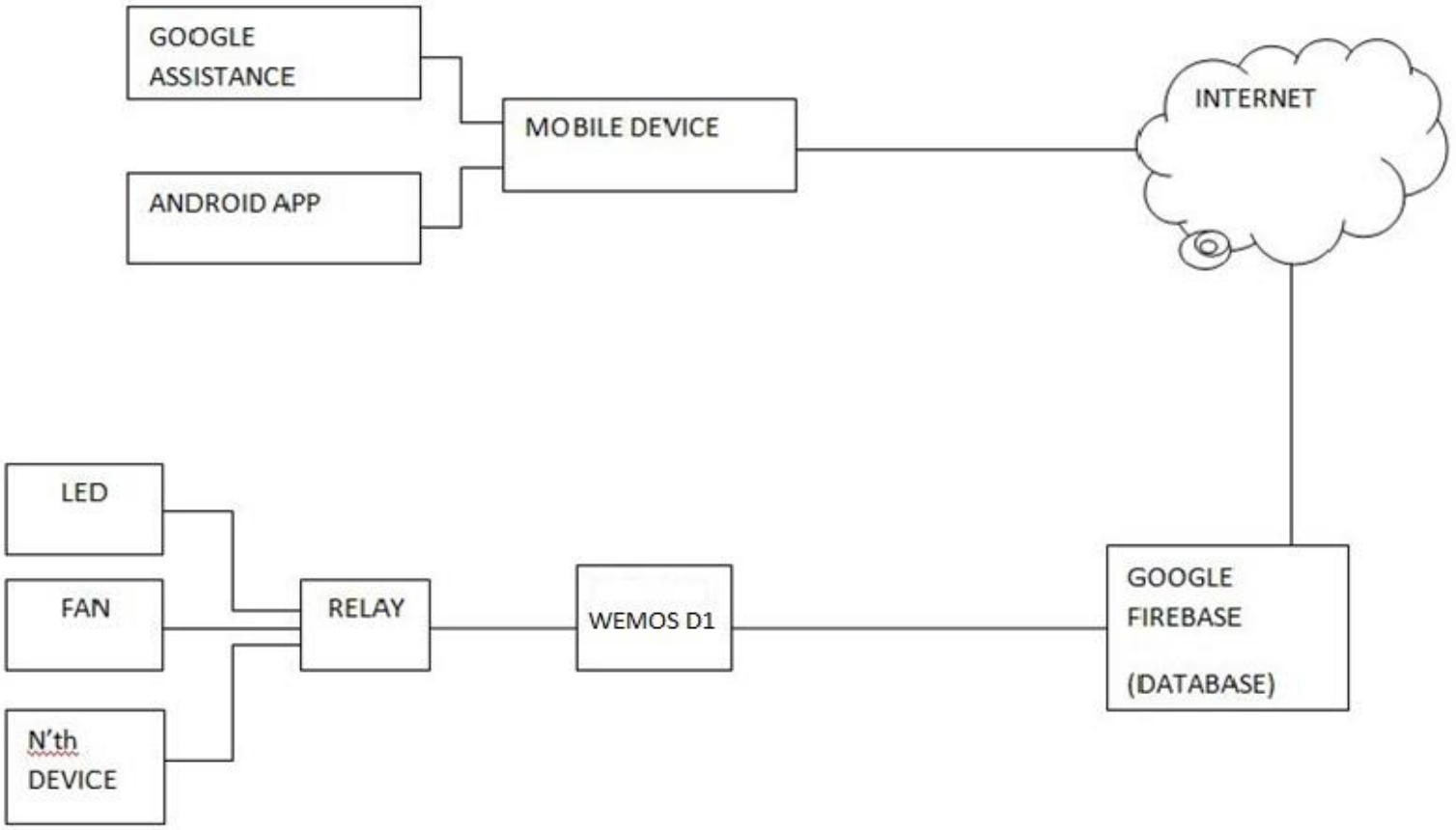
PROPOSED WORK

- The existing system uses commands or switches for controlling the system.
- The voice controlling aspect is one of the main highlights of the system.
- By using the Google log in for access of the system it adds the security in a cheaper way.
- The commands can be easily customized according to the user while implementing in commercial levels.
- The complexity of the project is very less which in turn helps to easily customize it further.
- Using this system we can conserve energy where energy loss is caused by human error.

ADVANTAGES

- Provides control over the system from any part of the world.
- Economically it is very much feasible.
- It has an high security aspect.
- It saves lot of energy which may be lost due to human error.

INFRASTRUCTURE



MODULE DESCRIPTION

Modules:

Google voice console

- For recognizing the voice commands we have to setup the Google voice console.Simple and normal commands are used to setup the Google voice controls.

Setup firebase

- The Google firebase which is a firebase cloud messaging(FCM) system to pass live notifications and messaging is coded using arduino programming language. The programs is to pass the message or command from the mobile device to the controller board.

Simulating firebase

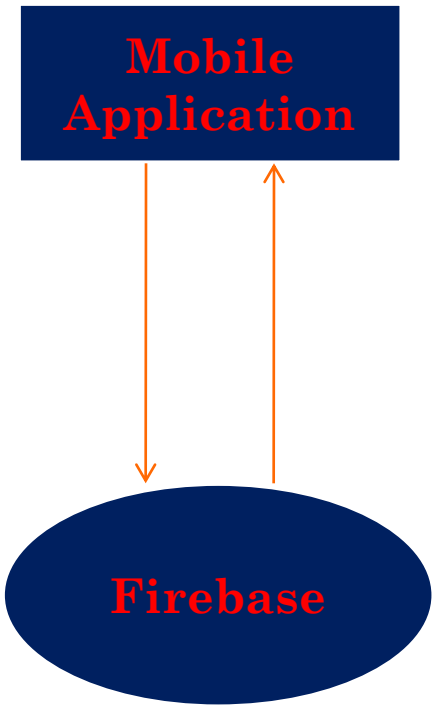
- This phase involves the passing of messages from the firebase to controlling board . This function is also coded using the basic arduino programming language.

Establish Control using microcontroller.

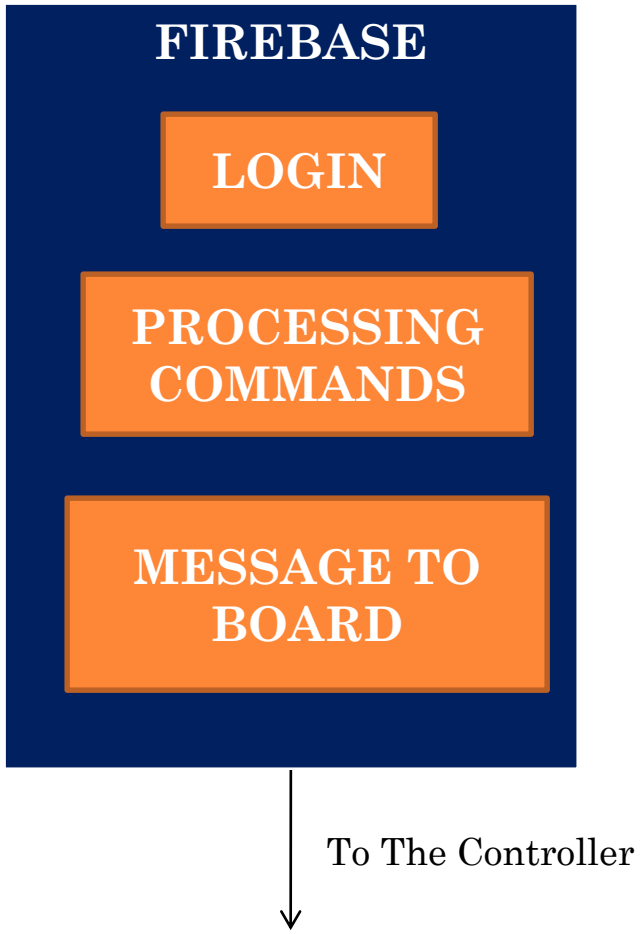
- This is the final phase where the message from the firebase received to the board is executed .
- The commands are passed in a serial order.
- The commands after execution passes a reply to the firebase where it is further passed to the mobile device.

BLOCK DIAGRAMS

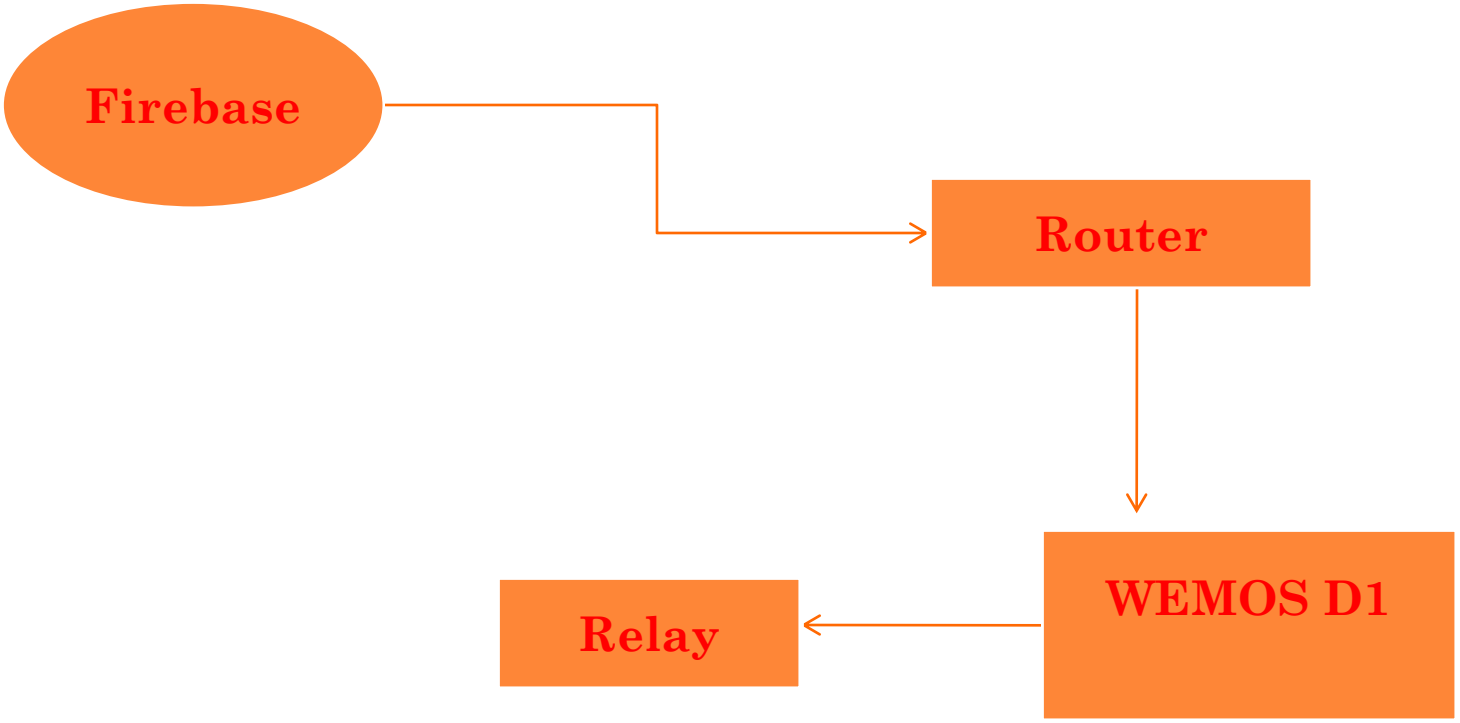
MONITORING



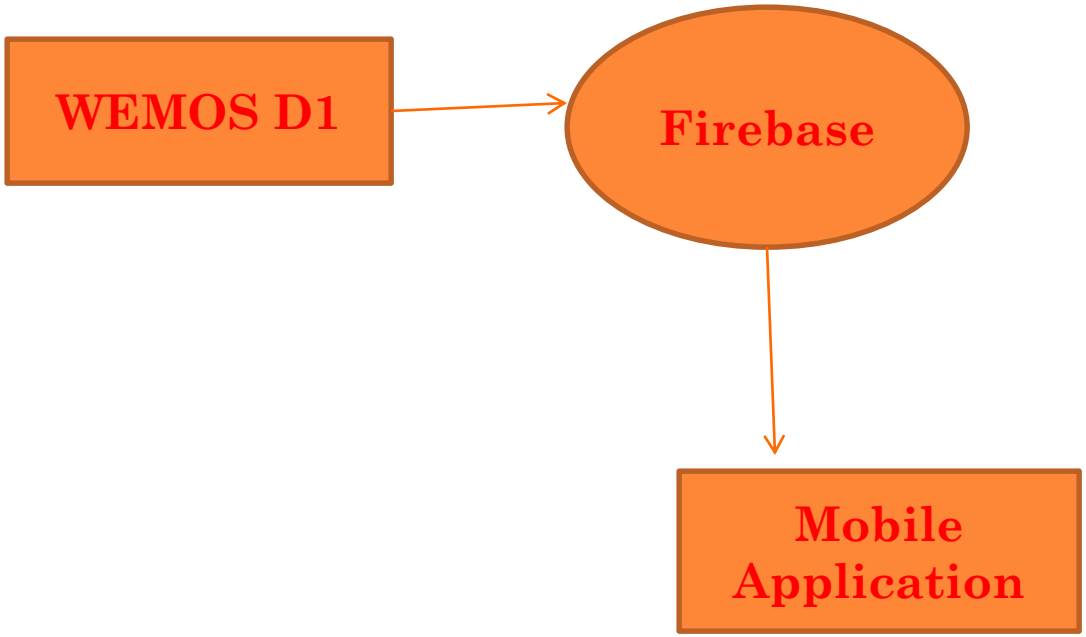
FIREBASE



ESTABLISHING CONTROL



RETURN OF MESSAGES



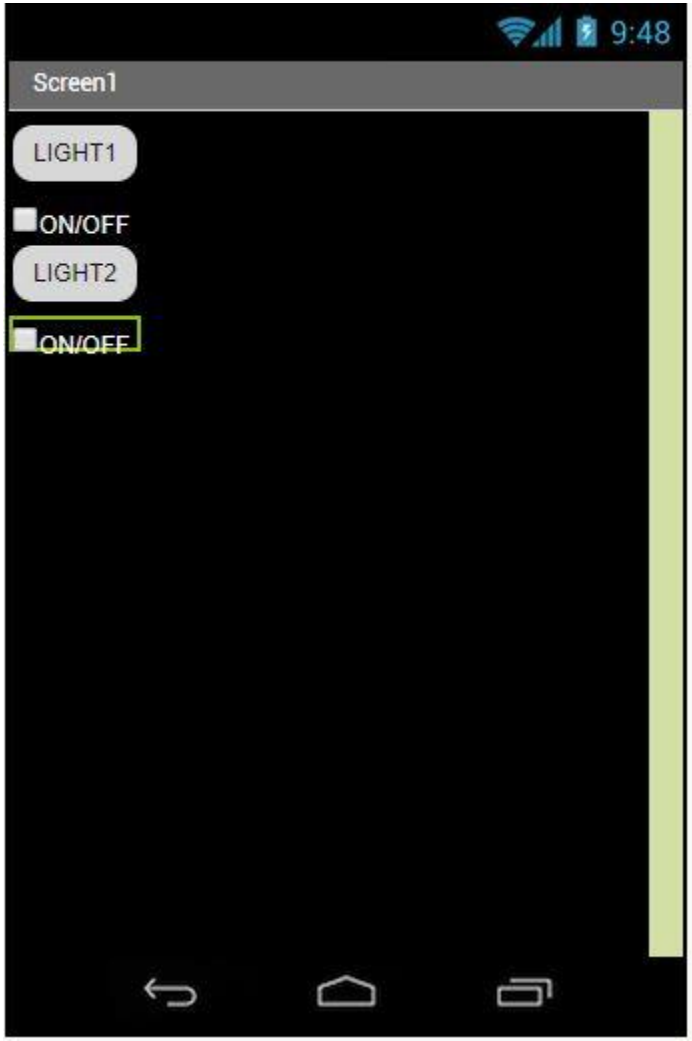
CODE IMPLEMENTATION

```
#include <FirebaseArduino.h>
#include <ESP8266WiFi.h>
// Set these to run example.
#define WIFI_SSID "YOUR_WIFI_SSID“
#define WIFI_PASSWORD "YOUR_WIFI_PASSWORD“
 void setup()
 {
Serial.begin(115200);
 pinMode(D1, OUTPUT);
pinMode(D2, OUTPUT);
WiFi.begin(WIFI_SSID, WIFI_PASSWORD);
 while (WiFi.status() != WL_CONNECTED)
{
 delay(500);
}
Firebase.begin("your_firebase_url", "your_database_secret_key");
Firebase.stream("/automation");
```

```
void loop() { if (Firebase.failed())
 {
 Serial.println("streaming error"); Serial.println(Firebase.error());
 }
if (Firebase.available())
 {
FirebaseObject event = Firebase.readEvent();
String eventType = event.getString("type");
eventType.toLowerCase();
Serial.print(eventType);
if (eventType == "put")
 { String path = event.getString("path");
 String data = event.getString("data");
 if (path.equals("/fan/value"))
 {
 if (data.equals("off"))
{
 digitalWrite(D1, HIGH);
 }
 else
 {
digitalWrite(D1, LOW);
}
```

```
}
 else if (path.equals("/light/value"))
 {
 if (data.equals("off"))
 { digitalWrite(D2, HIGH);
}
 else
 {
 digitalWrite(D2, LOW);
          }
        }
      }
    }
  }
```

SCREENSHOT



CONCLUSION

- An android phone user can easily handle this system.
- Simple system with voice control abilities.
- Reduces the human error which in term reduces energy consumption.
- Advanced security is offered with very simple system and set of easy commands.

FUTURE WORK

- The automated system can gather information from all the accounts and act accordingly using an artificial intelligence concept.

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THANK YOU…