For more Project details visit:

http://www.projectsof8051.com/voice-operated-home-appliance-control-system/

Code	Project Title
1020	Voice controlled Home appliances using Bluetooth on Android mobile

Synopsis for
Voice controlled Home appliances using Bluetooth on Android mobile

Introduction

This project is designed to control home appliances using a voice-controlled Android application. The concept of controlling home appliances using human voice is an interesting. A Bluetooth device is interfaced to the control unit for sensing signals transmitted by the Android application. This data is conveyed to the control unit which switches on loads ON/OFF as desired. An 8051 series microcontroller 89s51 is used in this project as a controlling device.
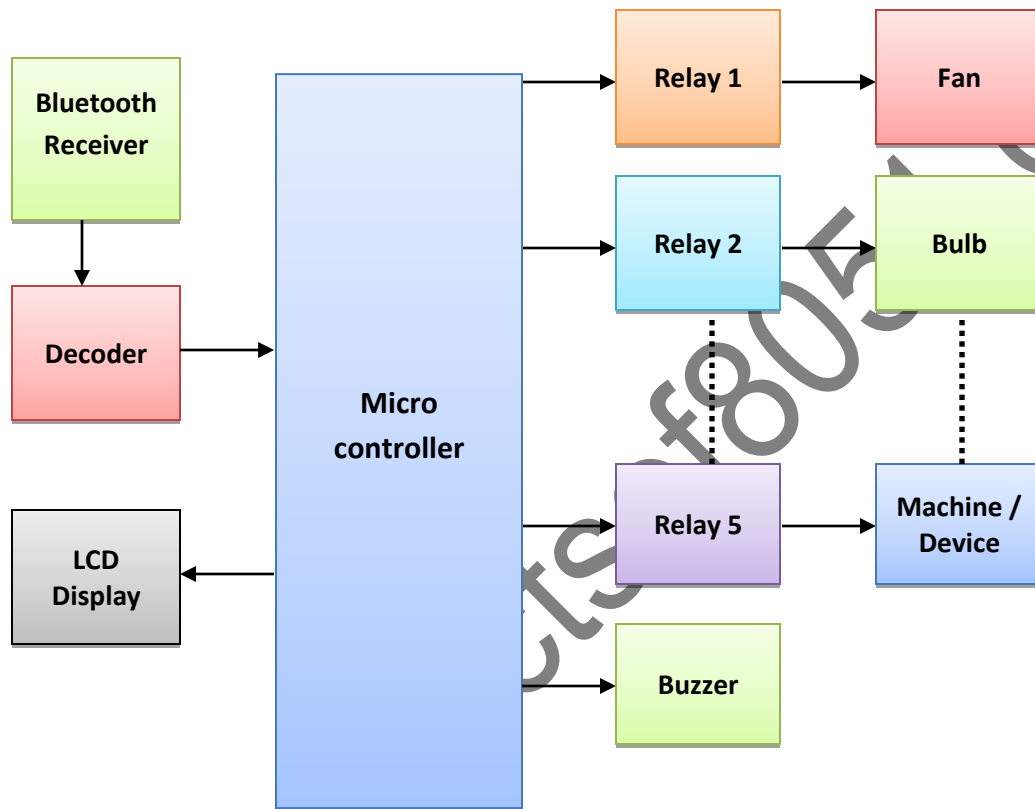
Remote operation is achieved by any smart-phone or Tablet with Android OS, upon aApp voice operation. The transmitting end uses an Android application for the voice commands that are transmitted to digital bits. At the receiver end, these commands are used

for controlling the home appliances on and off.At the receiving end, the appliances are driven by Relay that are interfaced to the microcontroller.

Serial communication data sent from the Android application is received by a Bluetooth receiver interfaced to the microcontroller. The program on the microcontroller refers to the serial data to generate respective output based on the input data to operate the Relay.

This project has integration of Android mobile technology and embedded system. Android mobile user has to install an application on his mobile handset to control the devices. Then he/she can give command using the voice on that application. For this you have to turn on the Bluetooth on mobile, so the main wireless controlling technique used in this project is Bluetooth technology. Bluetooth receiver will be connected to the project. This Bluetooth device is connected to the circuit which has a decoder. It sends out a code for respective command sent by user. Then the respective device connected to the circuit will be turned on or off depending on the command given. For example: Turn on motor, Turn off motor. Turn on buzzer etc.Such that by giving commands from mobile you can control home appliances.

BLOCK DIAGRAM:

```
Bluetooth Receiver ──┐
                     │
                     ▼
                  Decoder ────────► ┌──────────────┐        ┌─────────┐        ┌──────┐
                                    │              │───────►│ Relay 1 │───────►│ Fan  │
                                    │              │        └─────────┘        └──────┘
                                    │              │        ┌─────────┐        ┌─────────┐
                                    │    Micro     │───────►│ Relay 2 │───────►│ Bulb    │
                                    │  controller  │        └─────────┘        └─────────┘
LCD Display ◄─────────────────────── │              │        ┌─────────┐        ┌──────────────┐
                                    │              │───────►│ Relay 5 │───────►│ Machine /    │
                                    │              │        └─────────┘        │ Device       │
                                    │              │        ┌─────────┐        └──────────────┘
                                    │              │───────►│ Buzzer  │
                                    └──────────────┘        └─────────┘
```

Transmitter / Controlling Unit

Bluetooth enabled android mobile

Block Diagram Description:

This project mainly consists of following blocks

1. Android mobile

2. Bluetooth receiver unit

3. Microcontroller

4. LCD Display

5. Relays

6. Output devices

ADVANTAGES:

1. Can control device without going near the device, thus it gives ease of access.

2. Simple operationand efficient.

3. No need to carry separate remote or any other controlling unit.

APPLICATIONS:

1. Home automation - This project can be used to control various devices in the Home

2. Can also be used for security purpose after modification (we can control gate system or we can interface wireless camera and can control it using our mobile)