VOICE CONTROL HOME APPLIANCES

AIM:

Design and development of Voice control home appliances.

PURPOSE:

In homes and industries, there will be various loads to be operated and these loads are to be operated at some specific intervals according to our requirements and also based on the device constraints. For this manual intervention is needed always. Now days everybody has smart phones which can support any kind of applications. Here we propose voice control home appliances. This project can be developed by Bluetooth and mobile application.

DESCRIPTION:

This project includes Bluetooth (HC-04) module, which is connected to Arduino through UART interface. Two loads connected to Arduino digital pins which are light and fan respectively through relays.

WORKING:

User can control loads through voice commands. Here voice app (AMR_Voice App) converts voice commands into text format. This data transmitting to Arduino via Bluetooth. According to voice commands loads will be ON and OFF. Here voice commands are "light ON", "light OFF", "fan ON" and "fan OFF". Loads status displaying on LCD.

TECHNICAL SPECIFICATIONS:

HARDWARE:

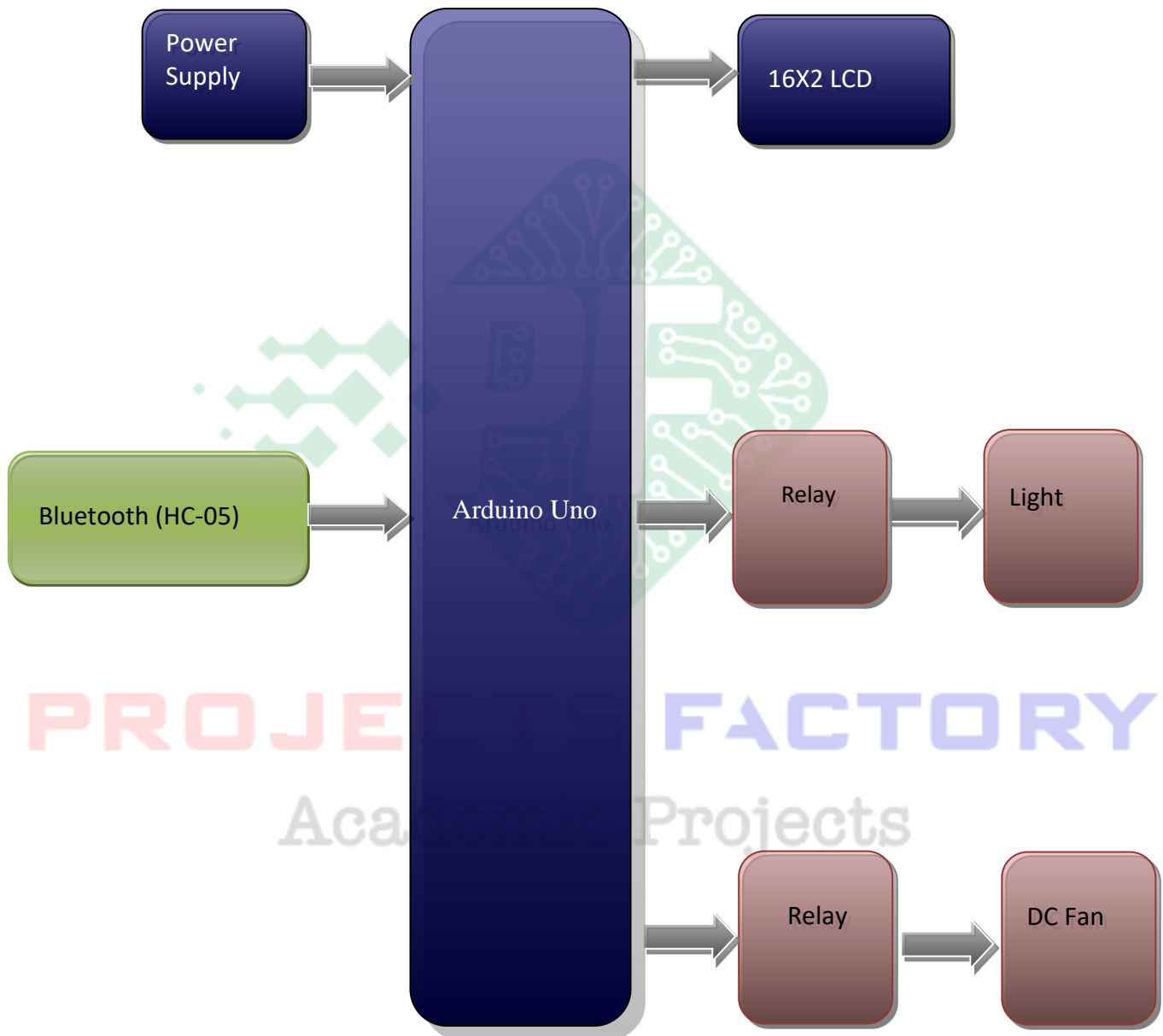|		
Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
Bluetooth	:	HC-05
Light	:	AC 230V
Fan	:	DC 12V
Relay	:	12v DC Coil type
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

Arduino IDE

Proteus based circuit diagram

APPLICATIONS:

- ➢ Home Appliances
- ➢ Industrial Applications

BLOCK DIAGRAM:

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┌──────────────┐                                      ┌──────────────┐
│ Power        │────────┐                    ┌────────▶│ 16X2 LCD     │
│ Supply       │        │                    │        └──────────────┘
└──────────────┘        │                    │
                        ▼                    │
                  ┌──────────────┐           │        ┌──────────┐     ┌──────────┐
┌──────────────┐  │              │───────────┼───────▶│  Relay   │────▶│  Light   │
│ Bluetooth    │─▶│  Arduino Uno │           │        └──────────┘     └──────────┘
│ (HC-05)      │  │              │           │
└──────────────┘  │              │           │        ┌──────────┐     ┌──────────┐
                  │              │───────────┴───────▶│  Relay   │────▶│  DC Fan  │
                  └──────────────┘                    └──────────┘     └──────────┘
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POWER SUPPLY BLOCKDIAGRAM:

Step down Transformer	→	Bridge Rectifier	→	Filter	→	Regulator	→	Output
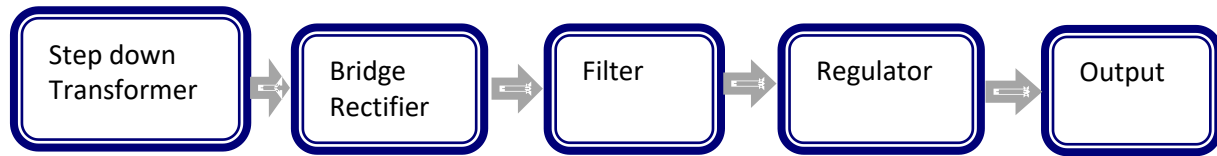
INTERFACES COVERD:

- We have covered Bluetooth (HC-05) module interfacing
- 12V DC Relays with loads like Light and Fan