IVRS BASED SMART HOME AUTOMATION

AIM:

Design and development of IVRS based smart home automation.

PURPOSE:

This project presents a novel approach to home automation using Interactive Voice Response Systems (IVRS). The proposed system integrates IVRS technology with smart home devices to enhance user convenience and accessibility. By leveraging voice commands, users can control various aspects of their home environment, such as lights without the need for traditional interfaces like touchscreens or mobile apps. The system employs a robust IVRS platform that processes voice commands and translates them into actionable instructions for smart devices. This integration aims to provide a seamless and intuitive user experience, allowing for hands-free operation and real-time adjustments. The effectiveness of the IVRS-based smart home automation is evaluated through user trials, demonstrating significant improvements in usability and operational efficiency compared to conventional smart home systems. The findings suggest that IVRS technology can substantially enhance the functionality and accessibility of home automation systems, making them more user-friendly and adaptable to diverse user needs. The proposed project title is IVRS based smart home automation using arduino.

DESCRIPTION:

This project includes GSM (Sim800c) module, which is connected to Arduino through UART interface. GSM module has audio pins and these two pins provide mic operation. IVRS commands processed through audio pins, these pins connected to Arduino digital pins. Two lights controlled by relays and relays connected to Arduino digital pins.

WORKING:

When user does call to GSM modem then it will answer automatically within after five rings. Voice announcement will come to mobile which will tell us about commands to control loads. It will be like this One for "light1 ON", two for "light1 OFF", three for "light2 ON", and three for "light2 OFF". When user presses one then light1 ON and acknowledge voice will come. This kind of voice response system nothing but IVRS (Interactive voice response system) . Status of lights information will display on 16x2 LCD display.

TECHNICAL SPECIFICATIONS:
HARDWARE:

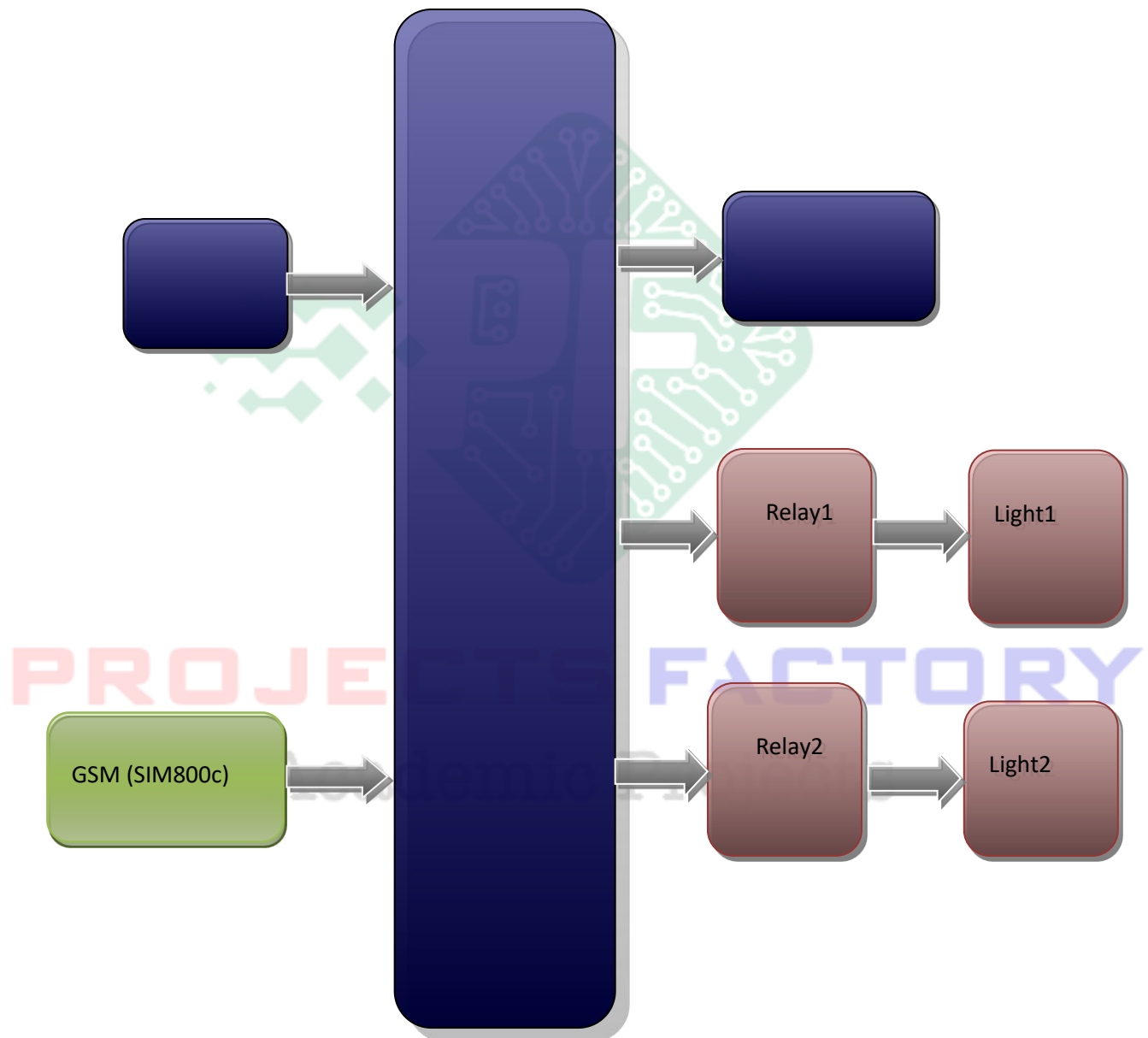|		
Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
GSM	:	SIM800C
Light	:	AC 230V
Relay	:	12v DC Coil type
Power Source	:	12v 2 amp Adaptor

SOFTWARE:
Arduino IDE
Proteus based circuit diagram
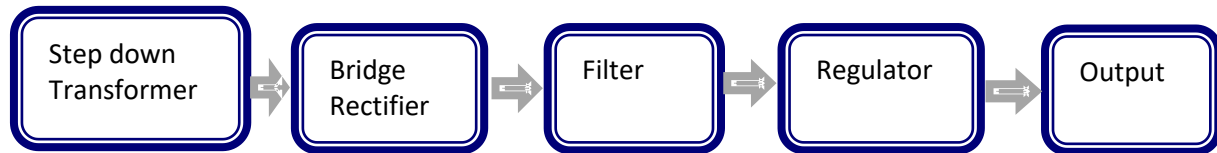
APPLICATIONS:
- ➢ Home Appliances
- ➢ IVRS based home automation
- ➢ Industrial Applications
- ➢ IVRS projects using Arduino

BLOCK DIAGRAM:

Relay1 → Light1

Relay2 → Light2

GSM (SIM800c)

POWER SUPPLY BLOCKDIAGRAM:

Step down Transformer	→	Bridge Rectifier	→	Filter	→	Regulator	→	Output

INTERFACES COVERD:

- We have covered GSM (SIM800C) module interfacing
- 12V DC Relays with loads like Light
- IVRS interface with SIM800C and Arduino