PI PICO FIRE ALARM SYSTEM USING GSM AND GPS

AIM:

Design and Development of Pi Pico Fire alarm system using GSM and GPS.

PURPOSE:

Fire detecting systems helps to prevent from expansion of fires. Fire accidents happens in various places like building fire accidents, forest fire, EV vehicles fire accidents, chemical explosions and many more. We can stop fire accidents from expansion and it will result minor damages. To do this we have to detect fire and alert to fire department along with location. GSM and GPS technology will helps us to do this. Sensors like fire and smoke can detect initial stage of fire. Proposed project title is pi pico fire alarm system using GSM and GPS.

DESCRIPTION:

GSM module (SIM800C) interfaced with pi Pico through first uart port. GPS module (NE06) interfaced with pi Pico through second UART port. Fire sensor (IR receiver) and Smoke sensor (MQ2) connected to digital pins of pi Pico.

WORKING:

Initially user has to register mobile number and pi Pico stores this mobile number. This mobile number could be fire department or police. We can install this system in offices, industries, public areas and even in EV vehicles. This projects used in many ways like static places and dynamic places. If fire or smoke detected then SMS will send to registered mobile number along with Google location. Two sensors status will be displaying on 16x2 LCD display and buzzer will be ON when any one sensor gets activated.

TECHNICAL SPECIFICATIONS:

HARDWARE:

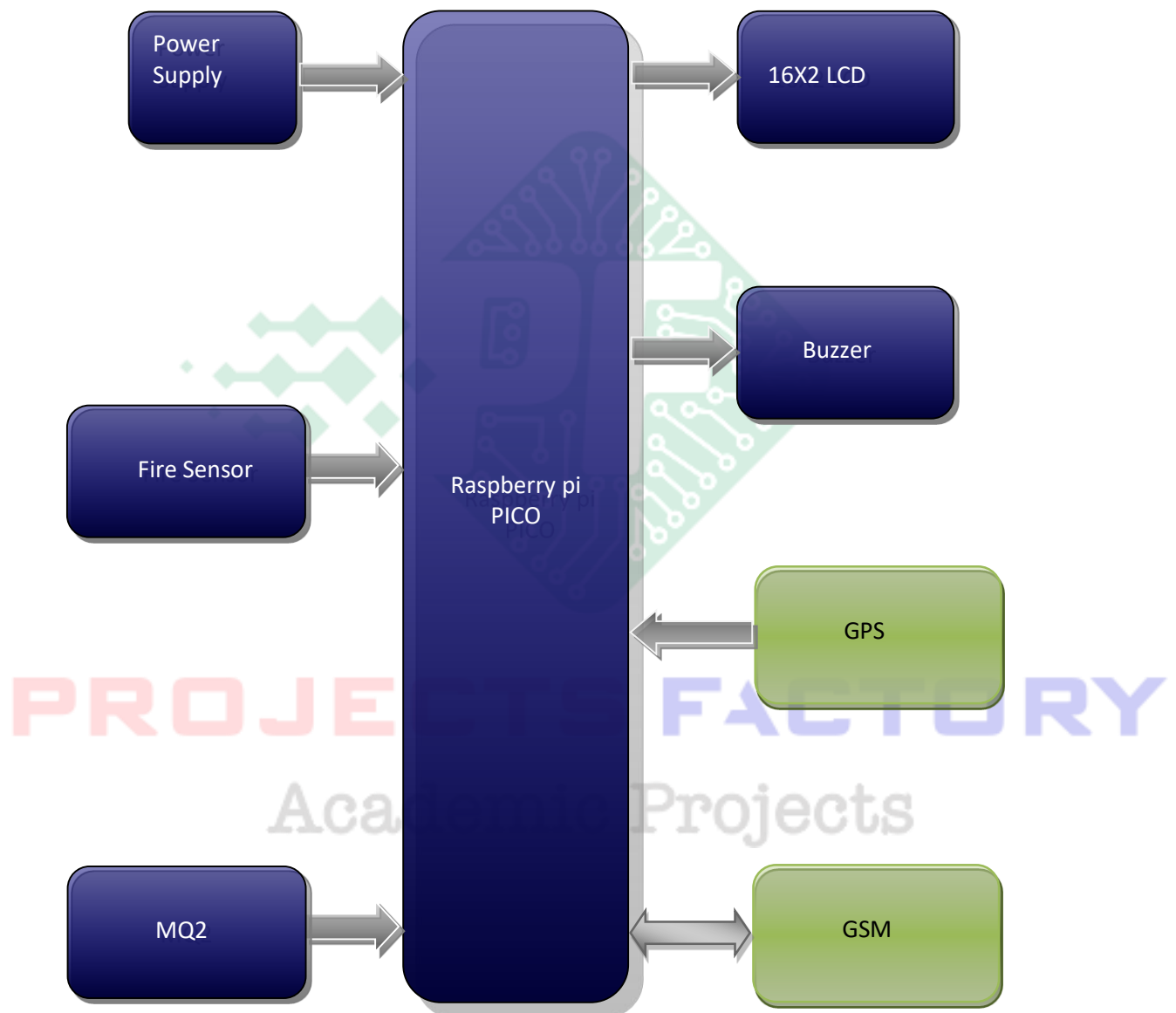|		
Microcontroller	:	Raspberry pi pico
LCD	:	16X2 LCD
GSM module	:	SIM800C
GPS module	:	NE06
Fire Sensor	:	IR receiver type
Smoke sensor	:	Mq2
Buzzer	:	DC 5V
Power Source	:	12v 1 amp DC Adaptor

SOFTWARE:

Arduino IDE

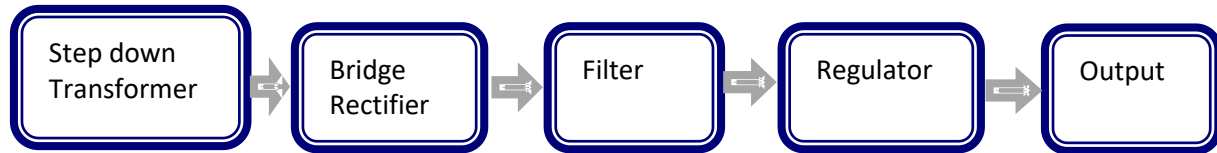Proteus based circuit diagram

APPLICATIONS:

- ➢ Fire alerting applications
- ➢ Forest fire detection
- ➢ Fire rescue systems

BLOCK DIAGRAM:

POWER SUPPLY BLOCKDIAGRAM:

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

INTERFACES COVERD:

- We have covered raspberry pi Pico programming

- Sensors like Mq2 and Fire sensor

- GSM and GPS interfacing