CONDUCTOR LESS BUS TICKETING SYSTEM USING RFID AND ACCIDENT INFORMATION THROUGH GPS AND GSM

AIM:

Design and Development of Conductor less bus ticketing system using RFID and accident information through GPS and GSM.

PURPOSE:

The main purpose of this project is to implement a system that will have multi features like seats count, conductor less bus ticketing, tracking of vehicle, auto fare calculation based on stops count and accident detection. We will use multiple technologies like GSM, GPS and RFID. Also it has automatic entry and exit door operation when passengers in and out. This will be useful for metro rails, buses and for any kind of road based public or private transports. Proposed project title is conductor less bus ticketing system using RFID and accident detection using GSM, GPS using Arduino microcontroller.

DESCRIPTION:

RFID, GSM and GPS modules interfaced to Arduino UART ports through relay module. Here relay module acts like serial shifter in between GSM and GPS. Two servo motors and two buttons connected to Arduino digital pins. Fire Sensor and limit switch connected to Arduino digital pins. L293d H-bridge controlled DC gear motor. Assume DC gear motor as bus.

WORKING:

Two buttons for bus start and stop. When bus stop, passengers can IN through RFID swiping. Arduino shows seats availability based on number of passengers IN. When bus stop entry and exit door will open automatically, while bus start two doors will be closed. Based on number of stops crossed, fare will be deducted and SMS will send to registered mobile number. In SMS Arduino sends GPS location to know bus location on Google maps. It has limit switch attached in front of vehicle or bus and it can detect vehicle collision or accident. Fire sensor installed inside of vehicle or bus and it will detect fire accidents. If any sensor gets activated then SMS will send along with Google maps location.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
RFID Module	:	EM-18
GSM Module	:	SIM800c
GPS Module	:	NE06
DC Gear Motor	:	10 R.P.M
H-Bridge	:	L293D
Servo Motors	:	SG90
Buttons	:	2 Pin Toggle
H-Bridge	:	L293D
Accident sensor	:	Limit switch
Fire sensor	:	IR receiver sensor
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

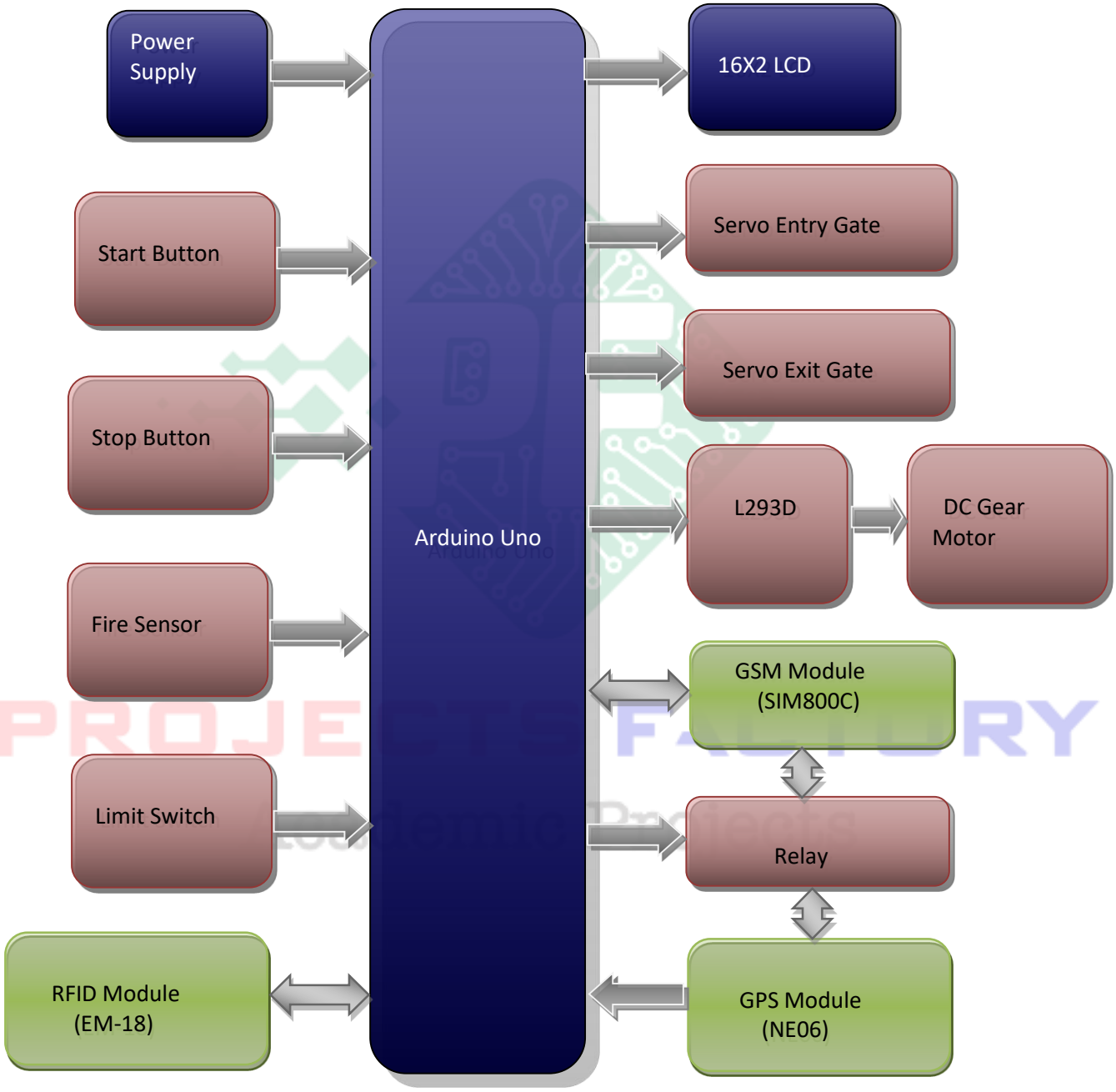
Arduino IDE

Proteus based circuit diagram

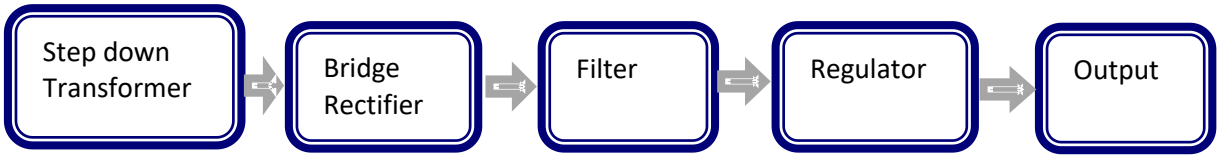
APPLICATIONS:

- Conductor less bus ticketing system
- Automatic bus ticketing system
- Smart bus automation
- RFID ticketing system
- Accident alert system GSM and GPS

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- We have covered GSM module (SIM800C), GPS module (NE-06) and RFID module (EM-18) interfacing
- Servo motors and DC gear motor interface