RFID BASED PETROL PUMP AUTOMATION SYSTEM

AIM:

Design and development of RFID based petrol pump automation system.

PURPOSE:

Normal petrol pumps are manual type. Vehicle holders need to interact with operator. Converting these into automation helps to vehicle holders and saving time. By removing manual power we can decrease maintenance cost. Here we proposed solution like RFID based petrol pump automation system.

DESCRIPTION:

RFID reader (EM-18) Interfaced to Arduino through UART interfaces. AC pump operated by relay which is connected to Arduino digital pin. 4X4 matrix keypad connected to Arduino digital pins.

WORKING:

In this project initially we have to swipe RFID card and need to enter password. If password is correct then it asks amount. After entering amount pump will ON and fuel will dispense according to amount. For wrong password buzzer will be ON. Amount will reduced from RFID card based on entered amount. For insufficient amount buzzer will be ON. All this information will be displayed on 16X2 LCD display.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller : Arduino Uno

Crystal : 16 MHz

LCD : 16X2 LCD

RFID reader : EM-18

Relay : 12V DC

Pump : 230V AC submersible
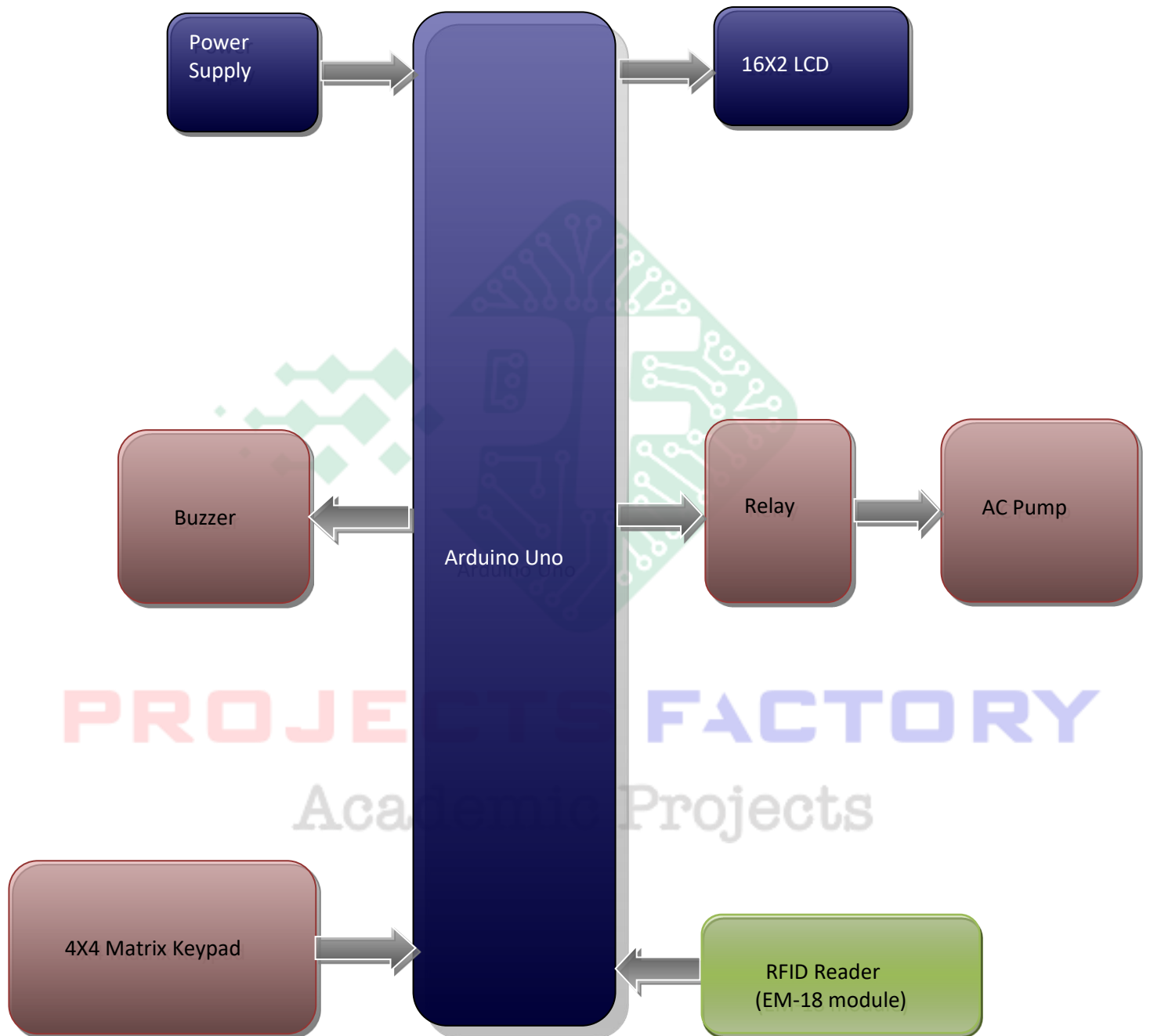
Power Source : 12v 2 amp Adaptor

SOFTWARE:

Arduino IDE

Proteus based circuit diagram

APPLICATIONS:

➢ Petrol Pumps

➢ Fuel filling stations

BLOCK DIAGRAM:

POWER SUPPLY BLOCKDIAGRAM:

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

INTERFACES COVERD:

- We have covered RFID (EM-18) module interfacing
- 4x4 matrix keypad interface
- AC pump along with relay