FINGERPRINT AND PASSWORD BASED VEHICLE GARAGE DOOR CONTROL

AIM:

Design and Development of Fingerprint and password based Vehicle garage door control.

PURPOSE:

Multi-level security is high level security for expensive things. Luxury cars like Audi, BMW and Benz are expensive and theft cause more loses in financial aspect. Here we are providing two level securities for car garage. Password and finger prints are two level securities for garage door. Here project name is finger print and password based vehicle garage door control.

DESCRIPTION:

This project includes Finger print module (R307-biometric), which is connected to Arduino through UART interface. L293D controlled DC motor which is connected to Arduino digital pins. 4X4 matrix keypad connected to Arduino digital pins.

WORKING:

In this project we can control vehicle garage door by finger print and keypad password. We have to store finger prints in module using enroll button. Initially we have to access finger by keeping finger on module and press identification button. If finger print is authorized then it asks password ask password, if password is correct then garage door will be Open. Second time finger print access with password door will be Close. Also information will display on 16x2 LCD display.

TECHNICAL SPECIFICATIONS:

HARDWARE:

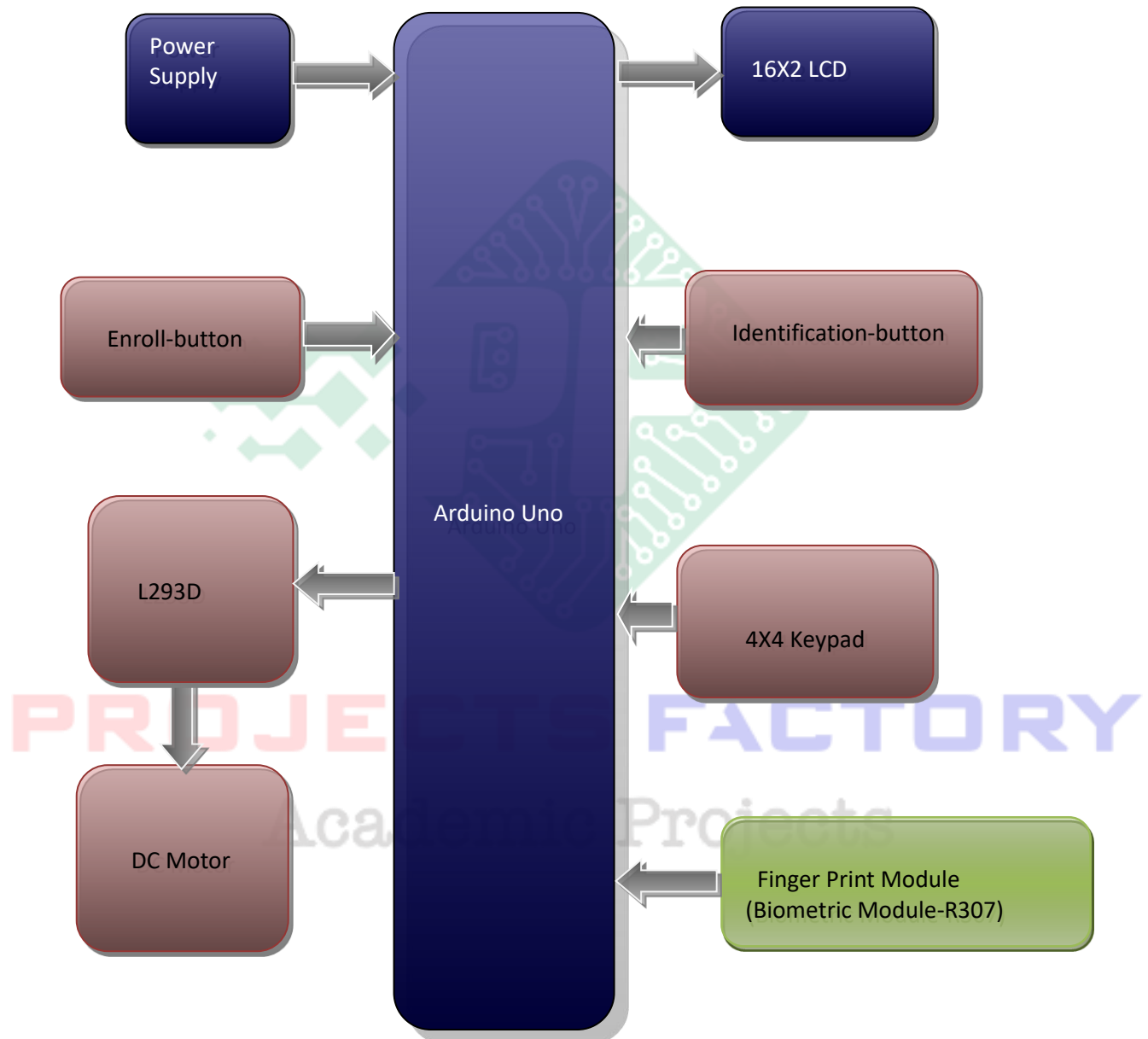|		
Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
Finger Print Module	:	Bio-metric Module (R307)
H-bridge IC	:	L293D
Garage Door	:	DC motor with sliding Door
Motor	:	12V/5V DC
Keypad	:	4X4 Matrix Keypad
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

Arduino IDE

Proteus based circuit diagram

APPLICATIONS:

➢ High level security systems

➢ Locker Applications

BLOCK DIAGRAM:

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┌──────────┐                              ┌──────────────┐
│  Power   │──────►   ┌─────────┐  ──────►│   16X2 LCD   │
│  Supply  │          │         │         └──────────────┘
└──────────┘          │         │
                      │         │
┌──────────┐          │         │         ┌──────────────────┐
│  Enroll- │──────►   │         │  ◄──────│  Identification-  │
│  button  │          │         │         │      button       │
└──────────┘          │ Arduino │         └──────────────────┘
                      │  Uno    │
┌──────────┐          │         │         ┌──────────────┐
│  L293D   │◄──────►  │         │  ◄──────│  4X4 Keypad  │
└──────────┘          │         │         └──────────────┘
     │                │         │
     ▼                │         │         ┌──────────────────────┐
┌──────────┐          │         │  ◄──────│  Finger Print Module │
│ DC Motor │          └─────────┘         │ (Biometric Module-   │
└──────────┘                              │      R307)           │
                                          └──────────────────────┘
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POWER SUPPLY BLOCKDIAGRAM:

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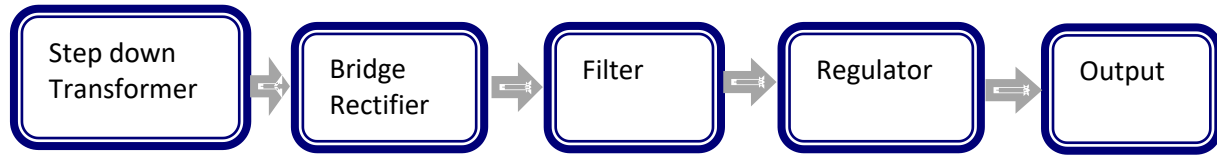
INTERFACES COVERD:

- We have covered finger print module (R307-Biometric Module) interfacing
- L293d H-bridge and DC motor with garage door mechanism
- 4X4 Matrix Keypad