

## SMART AND INTELLIGENT ZEBRA CROSSING WITH TRAFFIC LIGHTS USING ARDUINO

### AIM:

Design and Development of Smart and Intelligent Zebra Crossing with Traffic Lights using Arduino.

### PURPOSE:

Metro cities become congested day by day especially on roads with daily increased vehicles. No one cares about people safety who are walking on roads. Even some accidents happen to people when they are walking on zebra crossing. Still traffic lights provision available on roads for pedestrians for crossing zebra line. But some rash bikers and high speed vehicles won't stop even in RED signal. Stop barriers are best option for stopping vehicles and pedestrians at zebra crossing. There are two stop barriers, one is for vehicles and other is for pedestrians. These systems will update information of traffic lights and barriers status to near traffic police using Bluetooth application. Proposed project title is smart and intelligent zebra crossing with traffic lights using Arduino.

### DESCRIPTION:

Bluetooth module (HC-05) interfaced with Arduino UART port. Two servo motors and traffic lights interfaced with Arduino digital pins.

### WORKING:

There are two barrier gates arranged at vehicles and pedestrians in perpendicular direction to stop and allow of vehicles and pedestrians. If pedestrian gate opens at the same time vehicle gate will close to stop vehicles passage on road. At this time Green lights will be ON For pedestrians and Rd light will be ON for vehicle. This condition remains for some time like 10 seconds. After this time reverse condition will come to allow vehicles and stop pedestrians on zebra crossing. This information will update to Bluetooth application.

## TECHNICAL SPECIFICATIONS:

### HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
Servo Motors	:	SG/MG series
Traffic LEDS	:	Red, Green and Yellow LEDs
Bluetooth	:	HC-05
Buzzer	:	5V DC
Power Source	:	12V 2 amp Adaptor

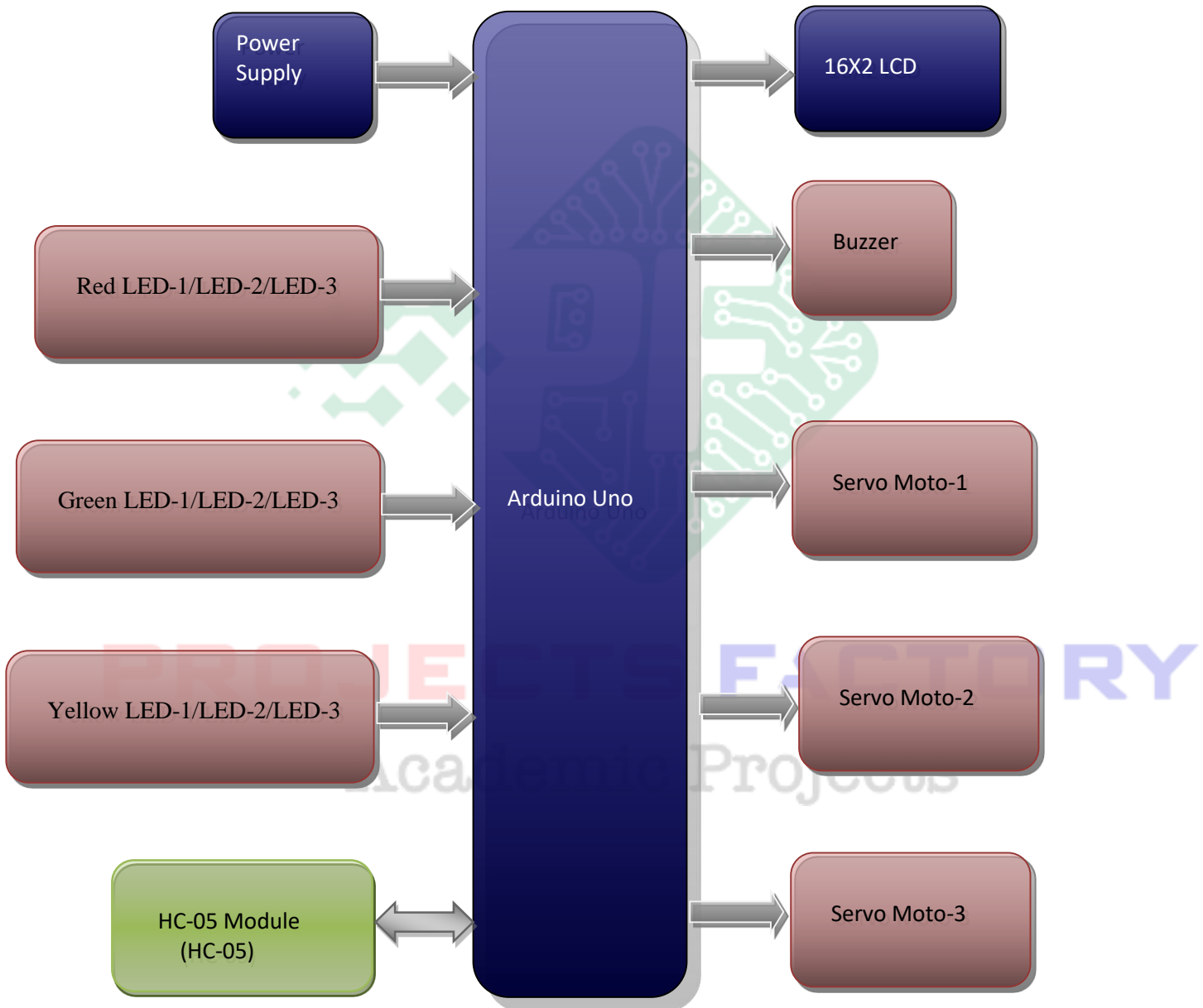
### SOFTWARE:

Arduino IDE  
Proteus based circuit diagram

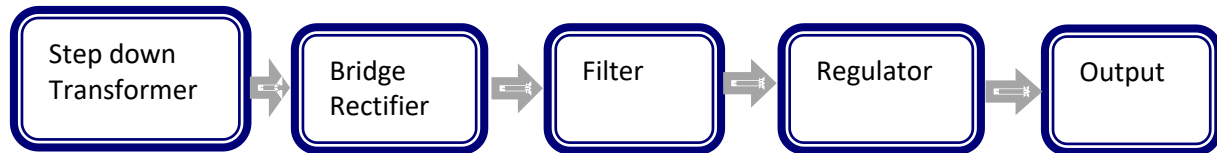
### APPLICATIONS:

- Intelligent Zebra crossing
- Automatic barrier control at zebra crossing
- Automatic vehicle stop system at zebra crossing

## BLOCK DIAGRAM:



## POWER SUPPLY BLOCKDIAGRAM:



## INTERFACES COVERED:

- We have covered Arduino and Bluetooth (HC-05) module interface
- Servo Motors and LED traffic light interface

**PROJECTS FACTORY**  
Academic Projects