PIS 2024 – Winter Semester
In – class Activity with Arduino – Assignment 4
Total Marks:10

Arduino desktop IDE to Arduino UNO programming

We'll connect an LED to the Arduino Uno and compose a simple program to turn the LED on and off in three ways.
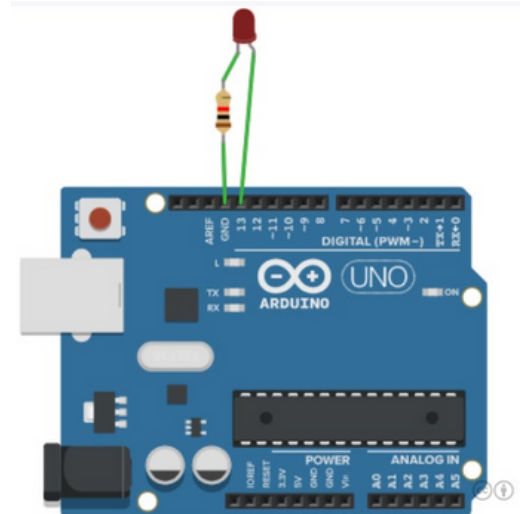
1) LED Sequential Control (on breadboard)15 mins   3 marks
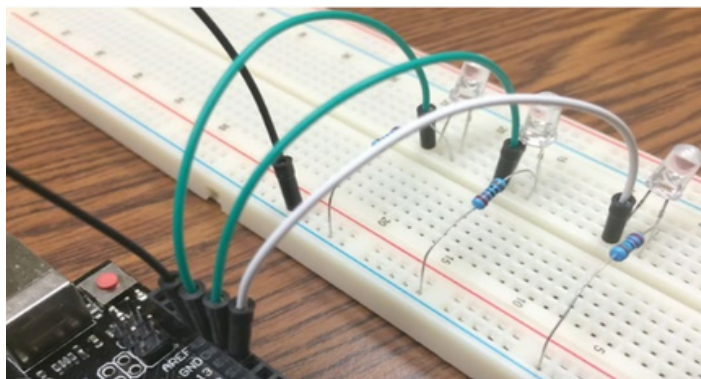
Components Needed: Arduino UNO and USB cable,

Breadboard, 2 to 3 LEDs, connecting jumper wires.

A. From the components panel, drag an Arduino Uno board, and LEDs onto the workspace.

B Connect all resources as shown below: (Pins used- 13 & Gnd)

You have to get two to three LEDs to turn on and turn off in a simple sequence (say with a gap of 1 sec).

Circuit

2.) Intensity control of 1 LED using potentiometer (on breadboard) (20 Mins) 3 marks

Using Arduino analog input function, control the brightness of the LED light by reading variable input voltage values through a potentiometer.

3.) Control 1 LED using LDR sensor (on Breadboard) connected with fix-value POT (20 mins) 3 marks

Initial state of LED is OFF. When the hand is brought near LDR sensor, say 10 cm than LED should glow, and when hand is brought 5 cm or less than it should be OFF.

In this case, LDR will be connected in series with fix small value of Potentiometer. And from middle, connection needs to be made with Arduino Analog port, while extreme both sides of this series connection will be connected one with ground and other with Arduino power port. LED will behave as a output which will be connected with digital pin of Arduino UNO.