University of Dar es Salaam

Project 1

Automatic Light Control System

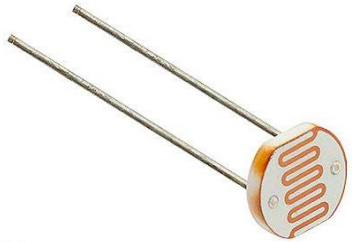
Project description

- This project aims at designing the light control system which operates automatically without human intervention.
- It uses the photosensor, in our case **Light Dependent Resistor(LDR)** which senses the amount of light falling on it.
- When the bright light falling on LDR, the microcontroller is programmed in a way that it automatically switches OFF the light(LED).
- When the dim light falling on LDR, the microcontroller is programmed in a way that it automatically switches ON the light(LED).

Short notes on Light Dependent resistor(LDR)

- LDR also known as **photoresistor.**
- It is a passive component that decreases resistance with respect to the receiving light on the component's sensitive surface.
- The resistance of the photoresistor decreases with the increase of incident light intensity.
- In the dark, a photoresistor can have a resistance as high as several megaohms (MΩ), while in the light, a photoresistor can have a resistance as low as a few hundred ohms.

Components to be used



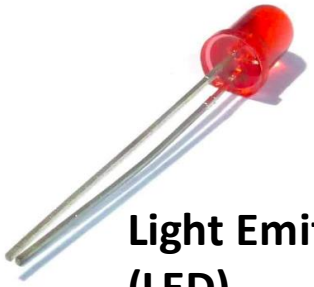
Light Dependent Resistor (LDR)

Arduino UNO R3 board

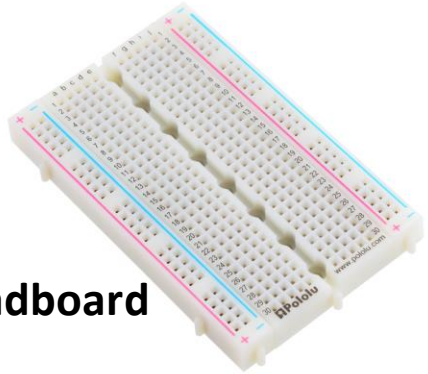
1k ohm

220 ohms

220 ohms



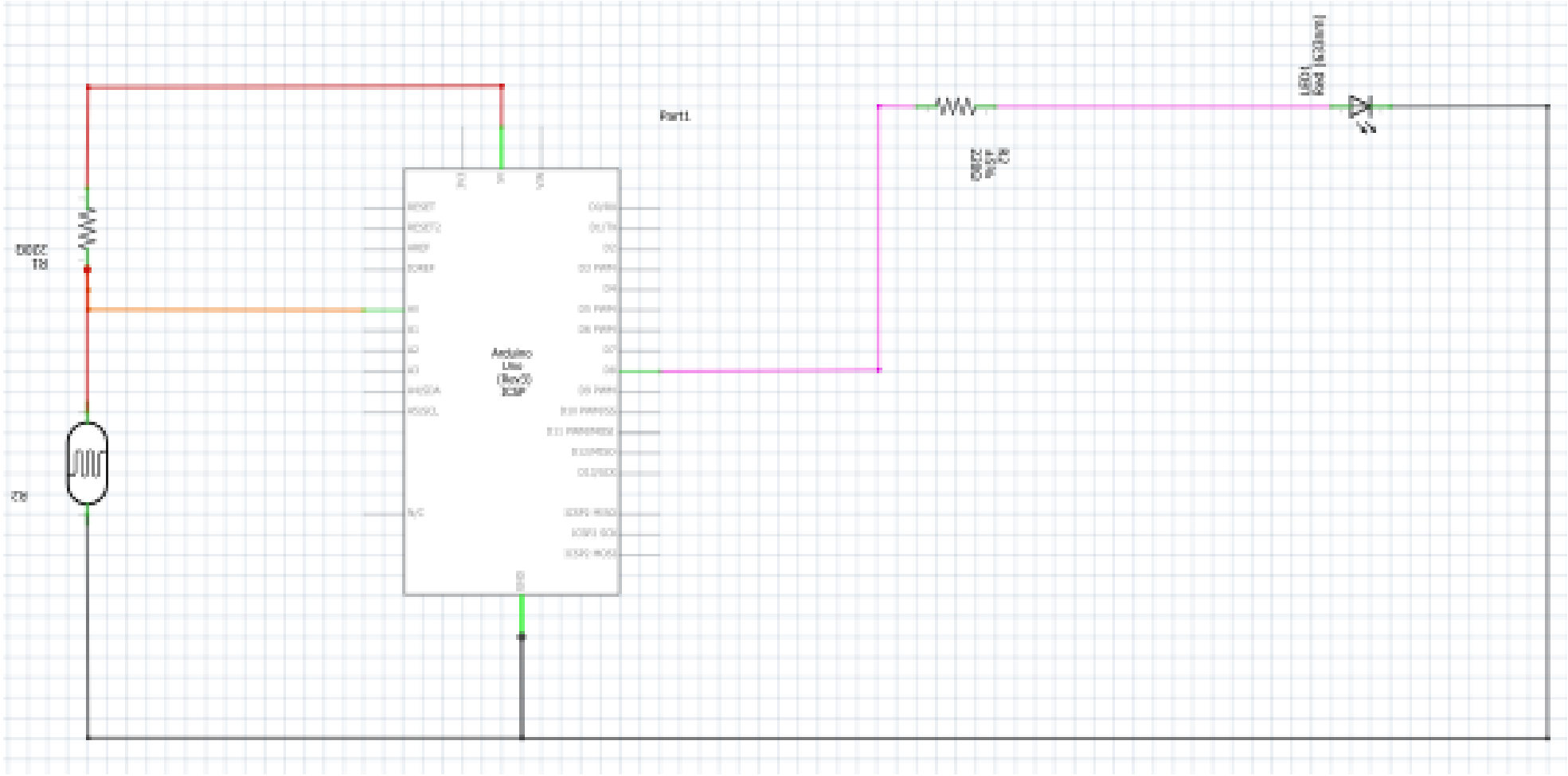
Light Emitting Diode (LED)

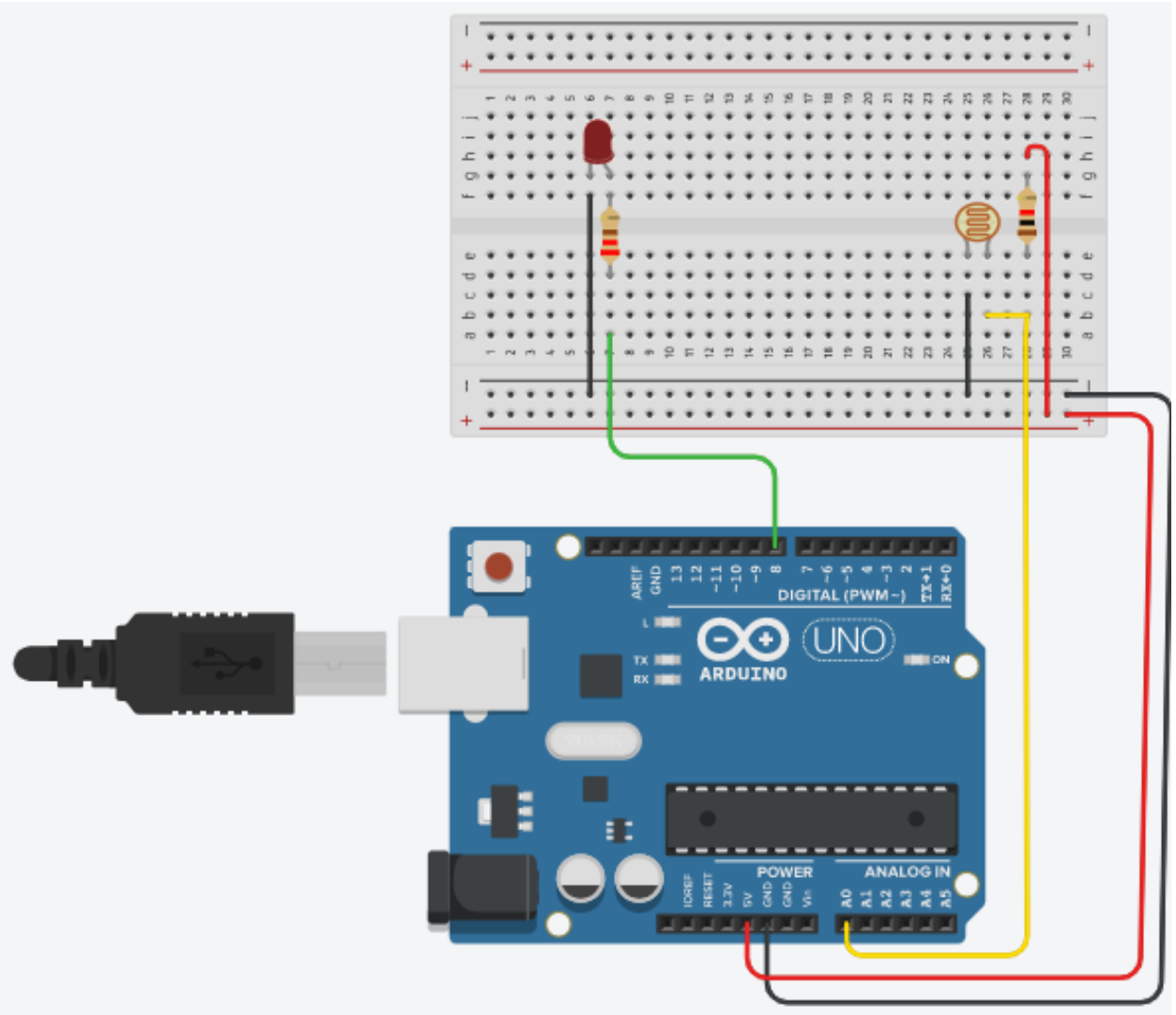


Breadboard

Jumpers

Circuit diagram




DIGITAL (PWM~)
UNO
ARDUINO
POWER
ANALOG IN

Applications of this project

- Street lights.
- Home lights to save electric energy usage.
- Light intensity meters.
- Bulgar alarm circuits.
- Alarm clock.


Thank you!