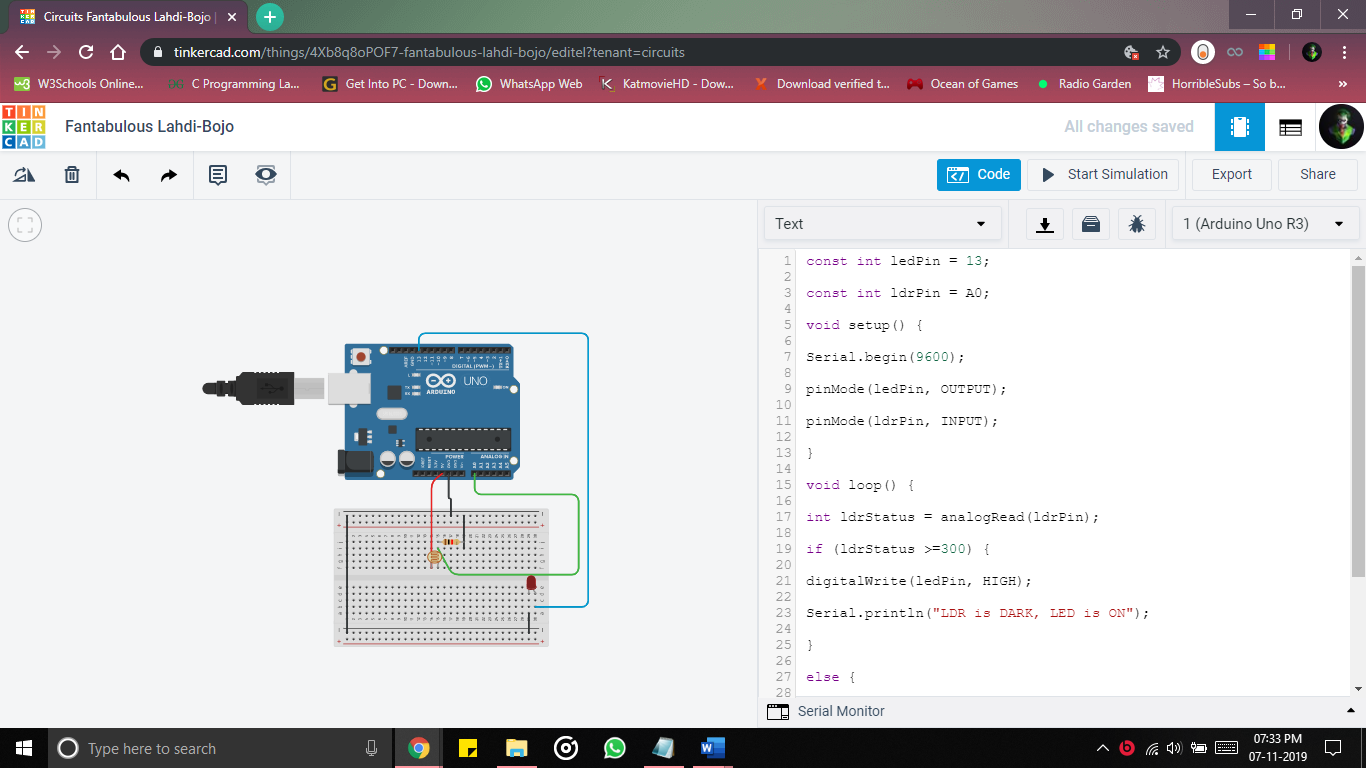
BEEE LAB EVALUATION

**Aim:**

Design a system that automatically turns on the lights inside an almirah whenever it is opened, (irrespective of day/night)

**Circuit Diagram:**



**Theory:**

**LEDs** are a particular type of diode that convert electrical energy into light. In fact, LED stands for “Light Emitting Diode.” (It does what it says on the tin!) And this is reflected in the similarity between the diode and LED schematic symbols.

In short, LEDs are like tiny lightbulbs. However, LEDs require a lot less power to light up by comparison. They’re also more energy efficient, so they don’t tend to get hot like conventional light bulbs do (unless you’re really pumping power into them). This makes them ideal for mobile devices and other low-power applications. Don’t count them out of the high-power game, though. High-intensity LEDs have found their way into accent lighting, spotlights and even automotive headlights!

The brightness of an LED is directly dependent on how much current it draws. That means two things. The first being that super bright LEDs drain batteries more quickly, because the extra brightness comes from the extra power being used. The second is that you can control the brightness of an LED by controlling the amount of current through it. But, setting the mood isn’t the only reason to cut back your current.

The **Arduino Uno** is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino.cc. The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. The board has 14 Digital pins, 6 Analog pins, and programmable with the Arduino IDE (Integrated Development Environment) via a type B USB cable. It can be powered by the USB cable or by an external 9-volt battery, though it accepts voltages between 7 and 20 volts.

**Concept Used:**

Light that is falling on the photoresistor is used to find the Door of almirah is opened or not, it will make the LED glow by detecting the amount of Light falling on the photoresistor, The light will get off when almirah is closed since there is almost no light falling on the photoresistor

**Learning and Observations:**

* Making circuits using Breadboard.
* Using Multimeter to apply Resistance on a given LED.
* Working of Arduino UNO.
* Coding to be done on Arduino.exe for stimulation of the experiment.

**Problems & Troubleshooting –**

No problems were occurred during the execution of the experiment.

**Precautions –**

1. The circuit made on breadboard can be wrong.
2. Any Element used can be defective.
3. Resistance of high value used therefore resulting in no current for LED to glow.
4. The coding done for Arduino Board can be incorrect due to which stimulation can be failed.
5. Port Selection for Arduino can be incorrect due to which it wont upload on Arduino Board and resulting in failure of experiment.

**Learning Outcomes –**

1. Setting up circuit on a Breadboard.
2. Using Multimeter.
3. Working and coding of Arduino and its IDE.

**Result:** The LED glows when the almirah was opened.