Experiment 1.4

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Branch: BE-CSE **Section/Group:902/A**
Semester: 6th
Subject Name: IOT **Subject Code:20CSP358**

1. Aim/Overview of the practical:

Program to interface the Arduino/Raspberry Pi with LED and blinking application.

2. Apparatus / Simulator Used:

Components Required:

- You will need the following components − 1 × Breadboard
- 1 × Arduino Uno R3
- 1 × LED
- 1 × 330Ω Resistor
- 2 × Jumper

3. Objective:

1. Learn about interfacing.
2. Learn about IoT programming.

4. Theory:

LEDs are small, powerful lights that are used in many different applications. To start, wewill work on blinking an LED, the Hello World of micro controllers.

It is as simple as turning a light on and off. Establishing this important baseline will giveyou a solid foundation as we work towards experiments that are more complex.

Arduino is a project, open-source hardware, and software platform used to design andbuild electronic devices. It designs and manufactures microcontroller kits and single- board interfaces for building electronics projects.
The Arduino boards were initially created to help the students with the non-technicalbackground.

The designs of Arduino boards use a variety of controllers and microprocessors.

The Arduino board consists of sets of analog and digital I/O (Input / Output) pins, whichare further interfaced to breadboard, expansion boards, and other circuits.

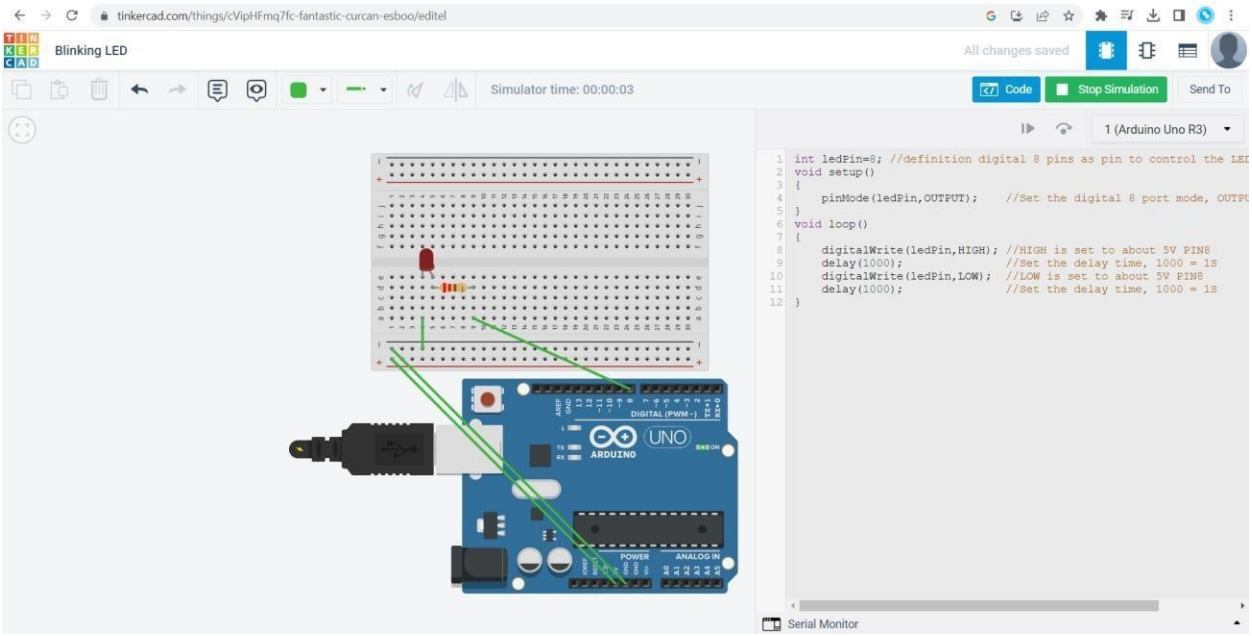
Such boards feature the model, Universal Serial Bus (USB), and serial communicationinterfaces, which are used for loading programs from the computers.

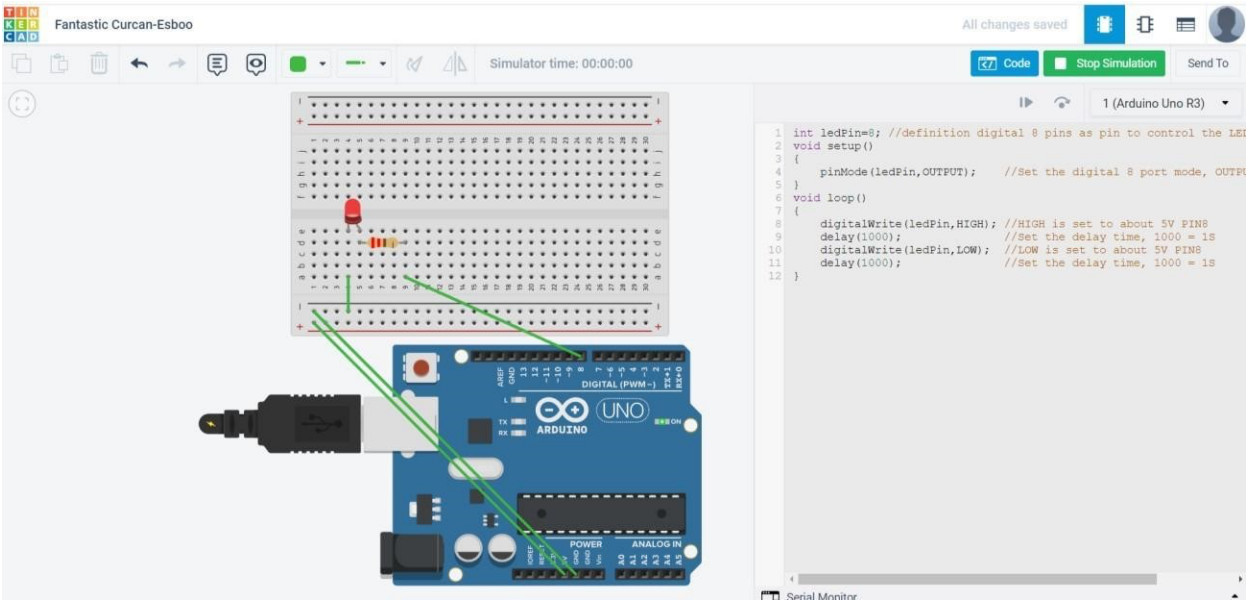
- Step 1: Start a new sketch in the Arduino IDE. Start a new sketch in the Arduino IDE.
- Step 2: Set the pin Mode for Pin 3.
- Step 3: Set Pin 3 HIGH.
- Step 4: Compile the code.
- Step 5: Upload the code to Arduino.

Code:-

```
int ledPin=8; //definition digital 8 pins as pin to control the LED void
setup()
{ pinMode(ledPin,OUTPUT); //Set the digital 8 port mode, OUTPUT: Output mode
} void loop()
{ digitalWrite(ledPin,HIGH); //HIGH is set to about 5V PIN8 delay(1000);
          //Set the delay time, 1000 = 1S
   digitalWrite(ledPin,LOW); //LOW is set to about 5V PIN8
   delay(1000);                  //Set the delay time, 1000 = 1S
}
```

Output:-


tinkercad.com/things/cVipHFmq7fc-fantastic-curcan-esboo/editel
Blinking LED
All changes saved
Simulator time: 00:00:03
Code
Stop Simulation
Send To
1 (Arduino Uno R3)
int ledPin=8; //definition digital 8 pins as pin to control the LED
void setup()
{
pinMode(ledPin,OUTPUT); //Set the digital 8 port mode, OUTPUT
}
void loop()
{
digitalWrite(ledPin,HIGH); //HIGH is set to about 5V PIN8
delay(1000); //Set the delay time, 1000 = 1S
digitalWrite(ledPin,LOW); //LOW is set to about 5V PIN8
delay(1000); //Set the delay time, 1000 = 1S
}
Serial Monitor


Fantastic Curcan-Esboo
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