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Experiment 1

Aim: Control the LED with Arduino Board and tinkercad software.

Objective: To get the knowledge of Arduino Board and control of output device (LED)

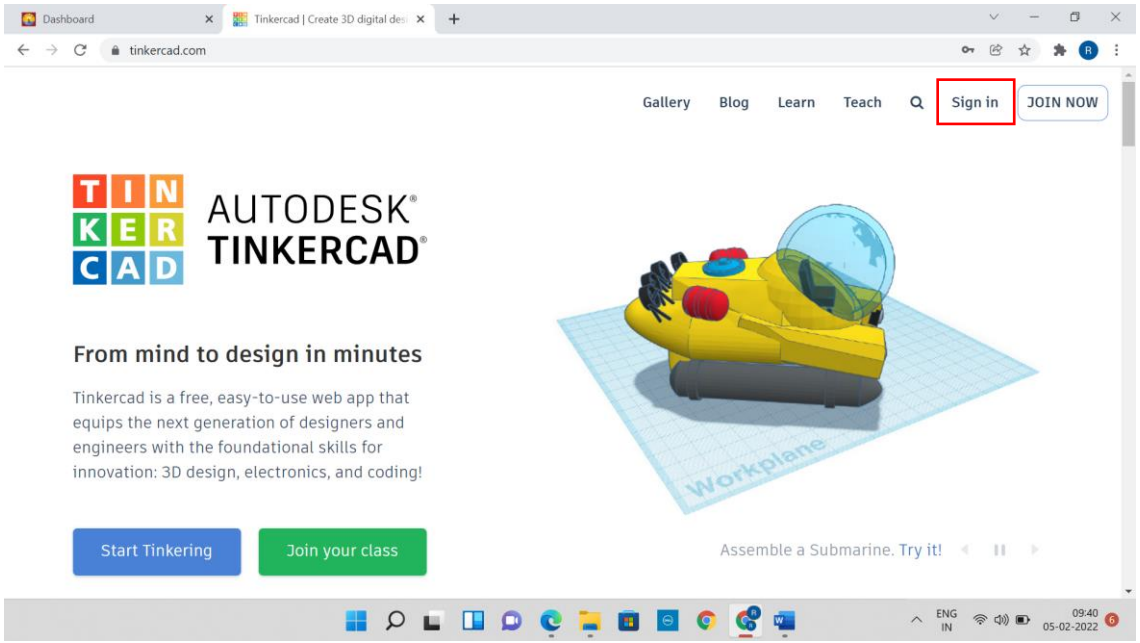
Outcome: To write a program using Arduino IDE for Blinking LED

Hardware Requirements:

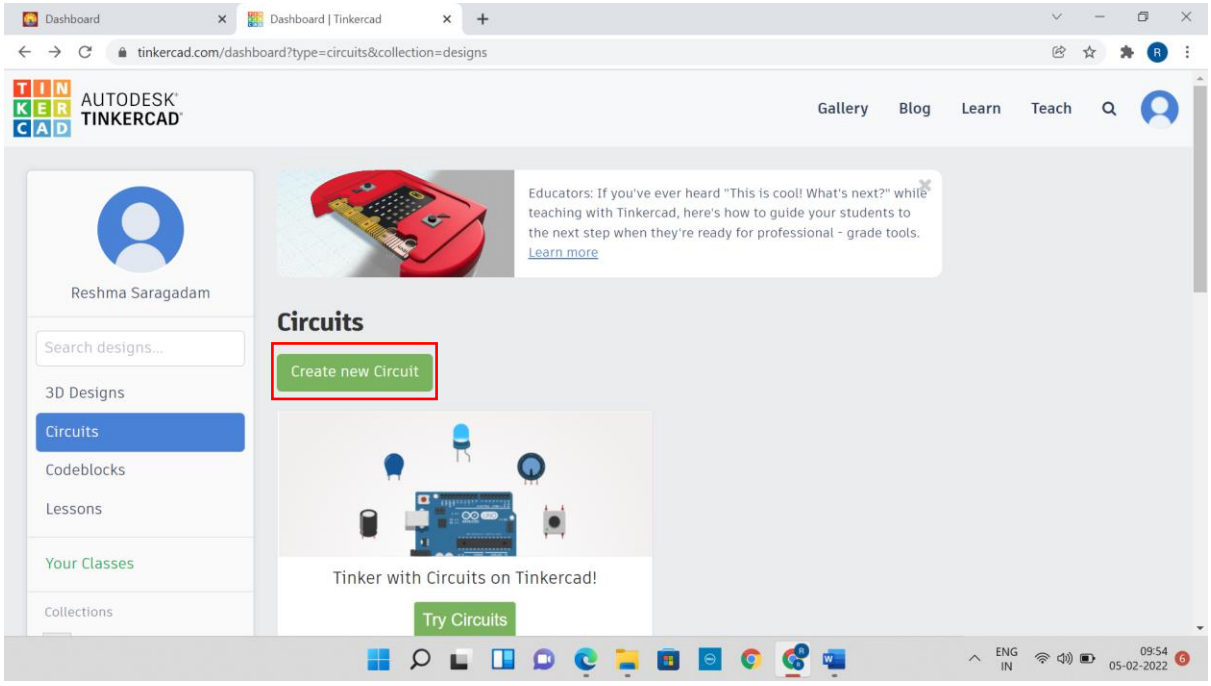
- 1x Breadboard
- 1x Arduino Uno
- 1x LED
- 1x 330Ω Resistor
- 2x Jumper Wires

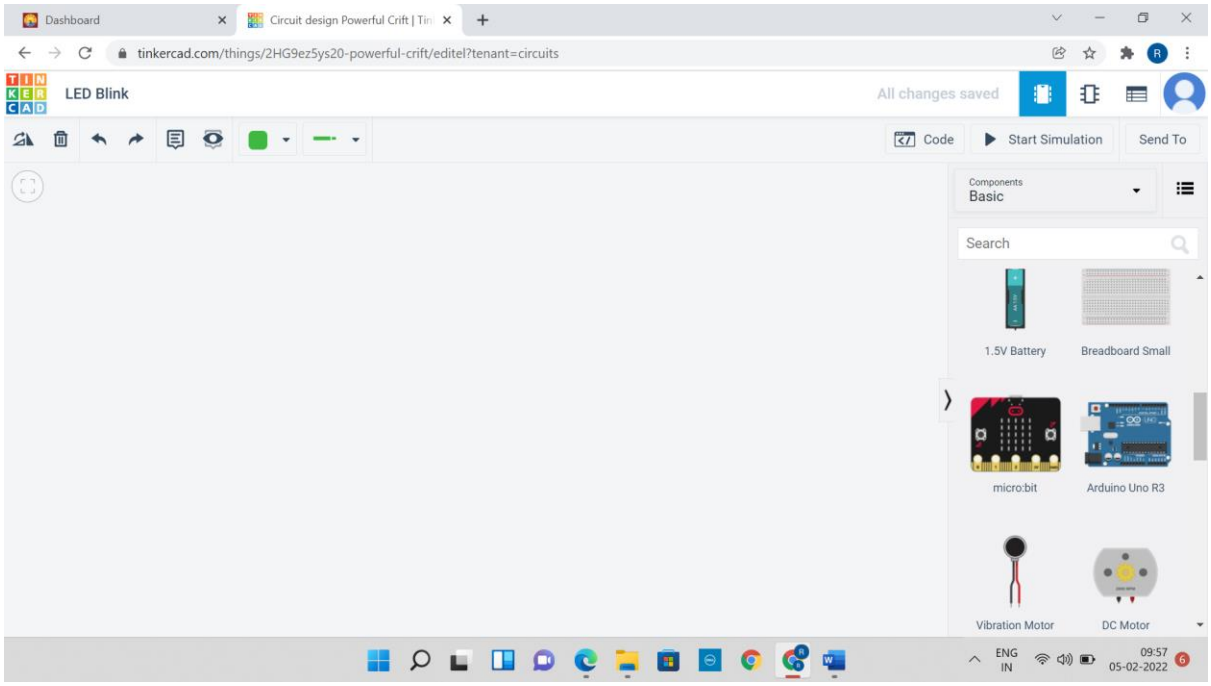
Procedure:

1. Create a new account in www.tinkercad.com or login with existing gmail account.

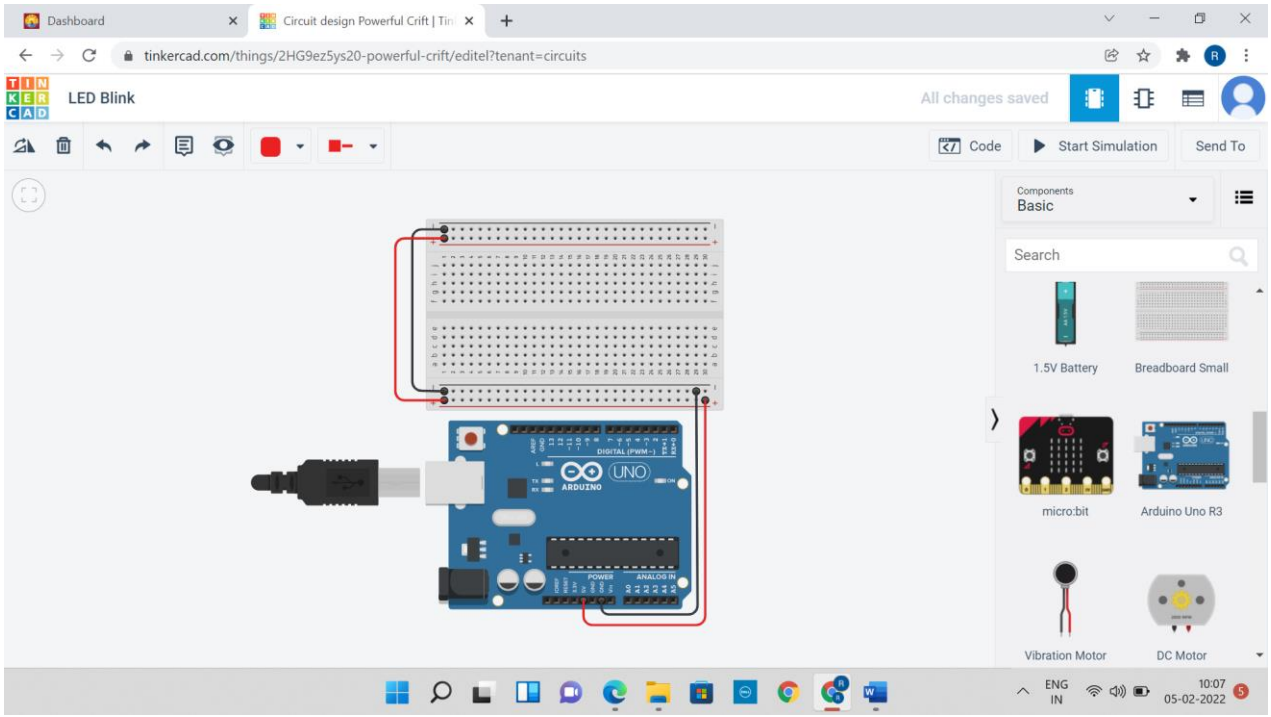


2. Click on create new circuit.

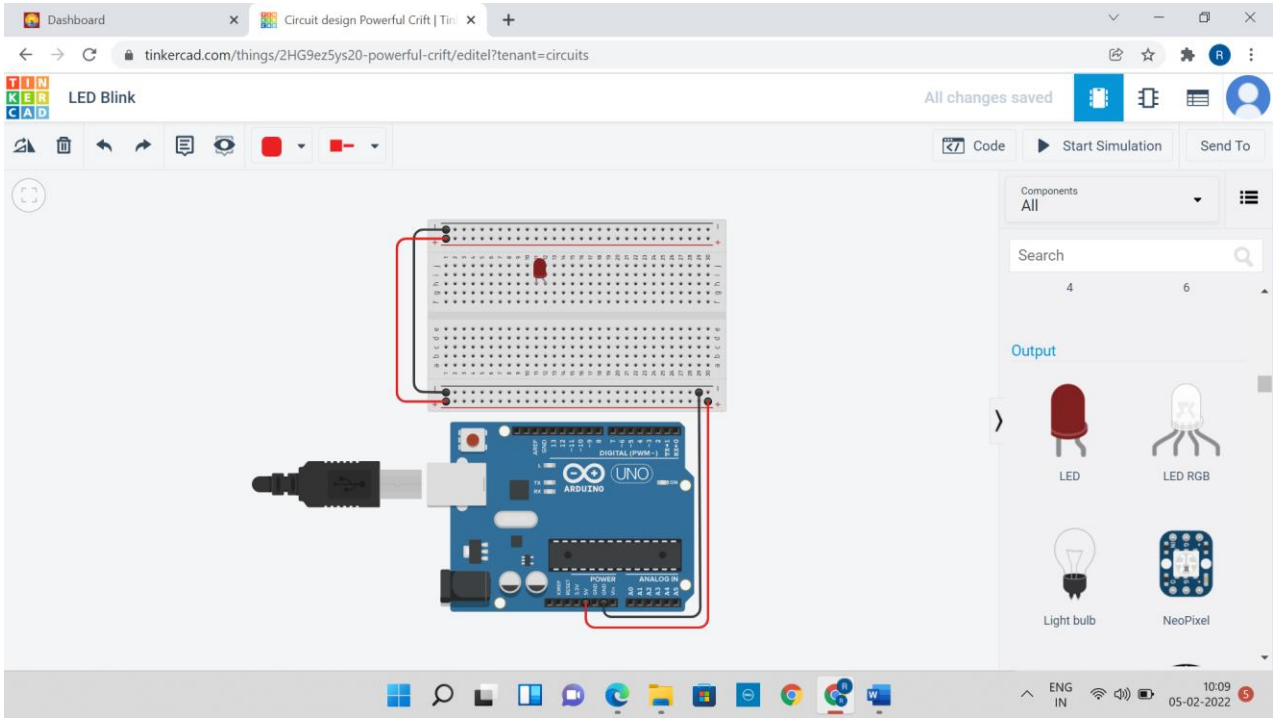


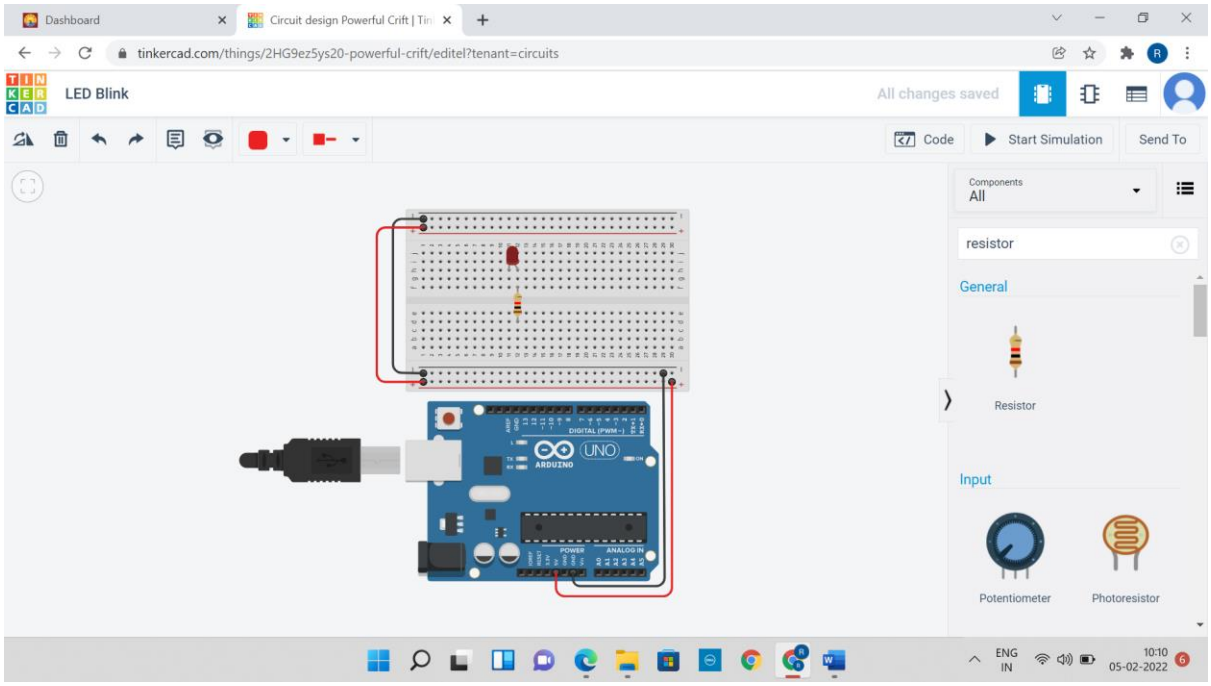


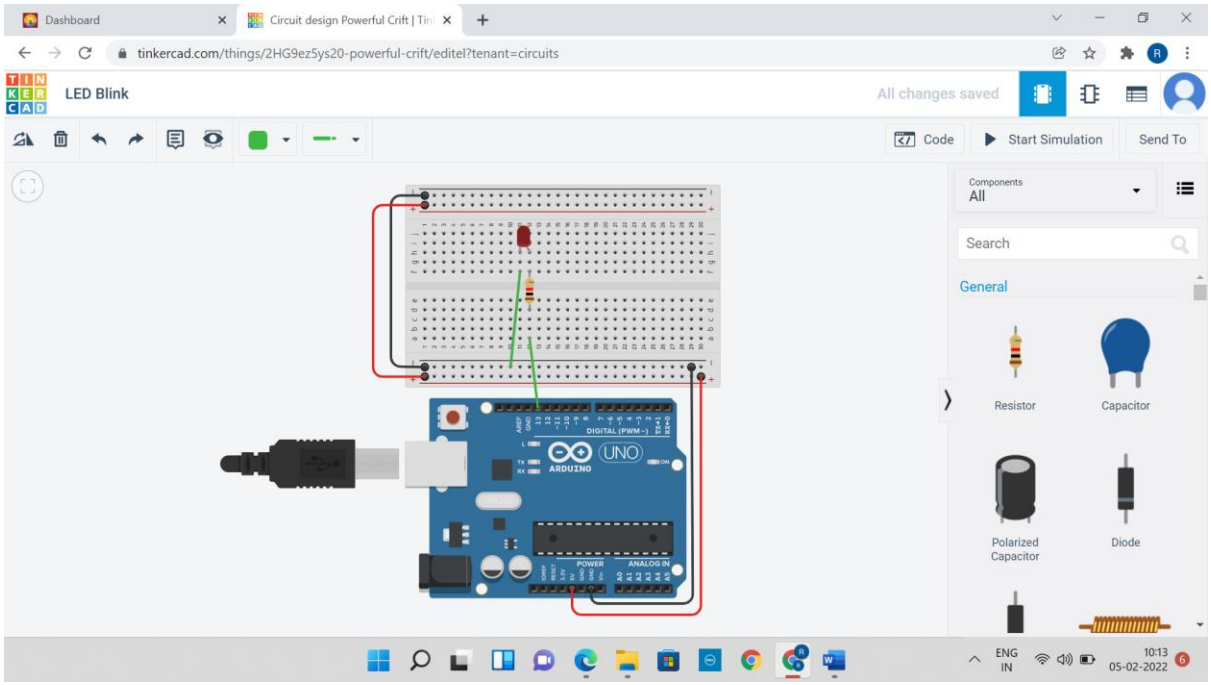
3. Select the Arduino and breadboard and place it in the design area.



4.Search the component LED and resistor, make connections as shown in below figures. Configure the resistor value as 330ohms.







5.Attach the LED to an output pin of the Arduino D13.

6.Once the circuit connection are ready, programming the Arduino can be done in three ways.

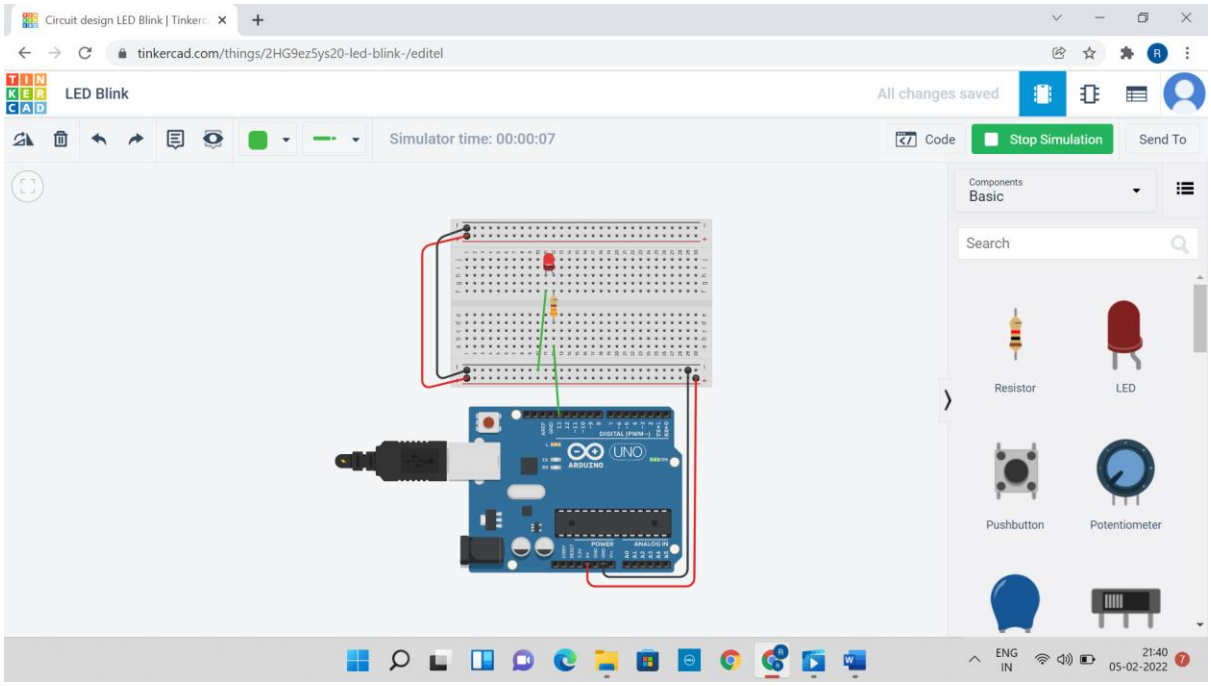
- Using code blocks
- Using code blocks + text programming

➢ With text program

Now from the code menu select blocks. The default program to blinking led with code blocks is provided. press start simulation, you will notice the blinking of LED with 1sec.

Now from the code menu select the text programming mode and place the below program to blink the led.

Arduino pin – D13

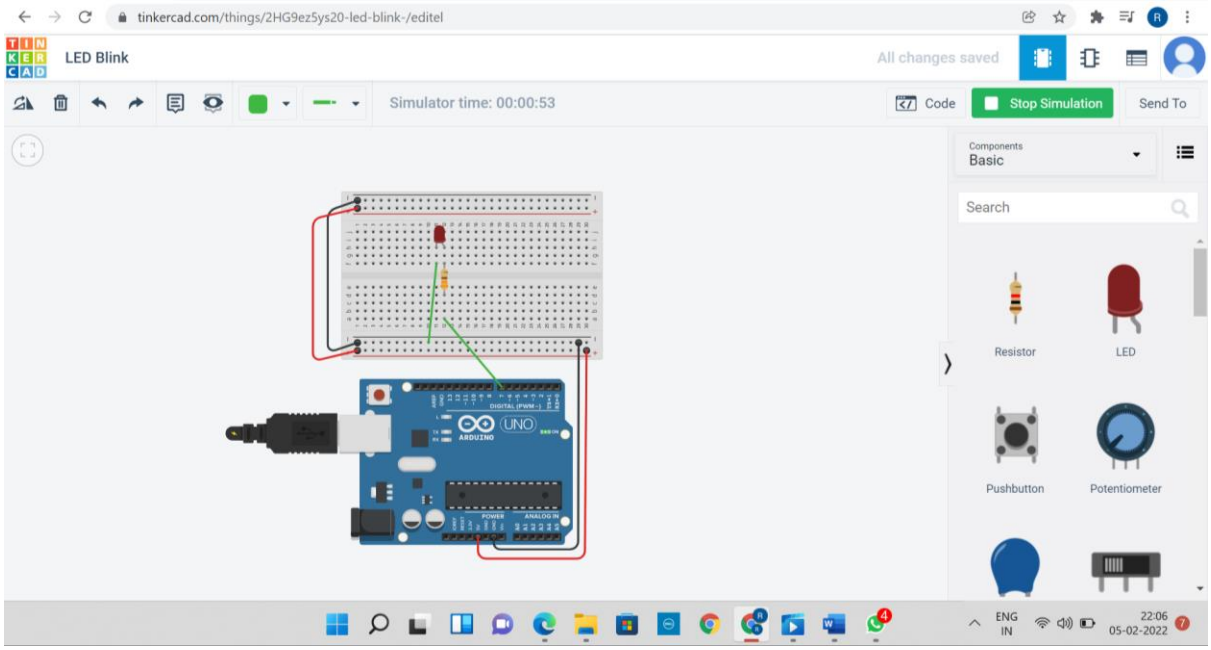


CODE-

```
// C++ code
//
int led=13;
void setup()
{
  pinMode(led, OUTPUT);
}

void loop()
{
  digitalWrite(led, HIGH);
  delay(2000); // Wait for 1000 millisecond(s)
  digitalWrite(led, LOW);
  delay(1000); // Wait for 1000 millisecond(s)
}
```

Lets try using a different pin of the Arduino – say D7. Move the red jumper lead from pin D13 to pin D7.




```
// C++ code
//
int led=7;
void setup()
{
  pinMode(led, OUTPUT);
}

void loop()
{
  digitalWrite(led, HIGH);
  delay(1000); // Wait for 1000 millisecond(s)
  digitalWrite(led, LOW);
  delay(1000); // Wait for 1000 millisecond(s)
}
```