Enrolment/ Roll No.92100588007

Practical No. 5

Aim: Introduction to Basic IoT Components.

Objectives:

1. To learn Arduino UNO basics
2. To interface 2 Push buttons, a Speaker with Arduino and write a program to turn ON LED and generate a 2 different notes on two button keyboard.

Theory:

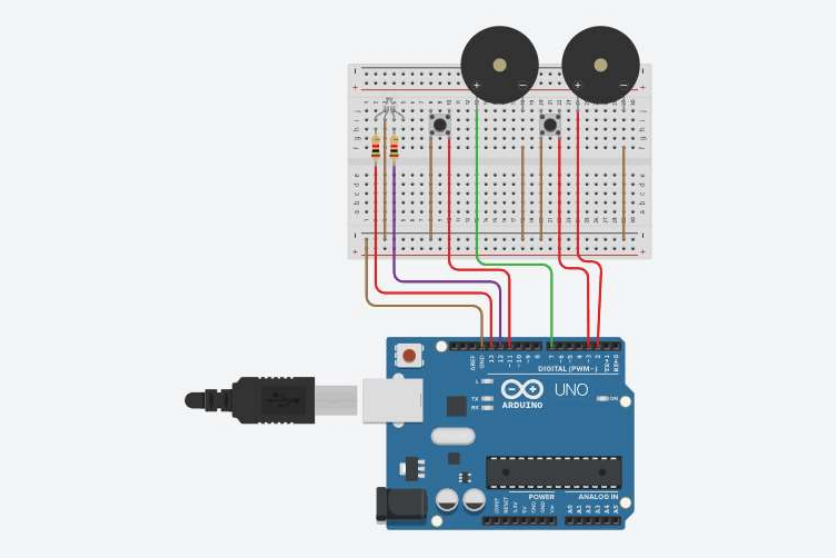
Hardware:

- Arduino board
- 2x Push buttons
- Speaker/buzzer
- 2x 220 ohm resistors
- Jumper wires

Function:

- The push buttons act as switches that connect the Arduino board to ground when they are pressed. The Arduino board can then detect that the buttons have been pressed and turn on the LED and generate a different tone on the speaker/buzzer for each button.

Circuit Diagram: (Download from tinkercad.com)



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Program:

```
// C++ code
//
void setup()
{
  pinMode(2, OUTPUT);
  pinMode(3,INPUT_PULLUP);
  pinMode(7, OUTPUT);
  pinMode(11,INPUT_PULLUP);
  pinMode(13, OUTPUT);
  pinMode(12, OUTPUT);
}

void loop()
{
  if(digitalRead(11)==LOW)
  {
    //digitalWrite(7,HIGH)
    tone(7,250);
    digitalWrite(13,HIGH);
  }

  else
  {
    noTone(7);
    digitalWrite(13,LOW);
  }

  if(digitalRead(3)==LOW)
  {
```

```
    //digitalWrite(2,HIGH)
    tone(2,450);
    digitalWrite(12,HIGH);
  }

  else
  {
    noTone(2);
    digitalWrite(12,LOW);
  }
}
```

Output: (Screenshot of LED On)

Conclusion:This is a simple example of how to interface two push buttons, a speaker with Arduino and write a program to turn ON LED and generate two different notes on two button keyboard for Tinkercad. You can use this same basic concept to control other devices, such as motors, servos, or relays.