Task – 2 interface LED/Buzzer with Arduino / Raspberry Pi

Aim

To interface LED/Buzzer with Arduino / Raspberry Pi and write a program to turn ON LED for 1 sec after every 2 seconds.

Apparatus required :

Sl.No	Item description	Quantity
1.	Bread board	1No.
2.	Arduino Board	1No.
3.	LED	1No.
4.	Resistor - 220Ω	1No.

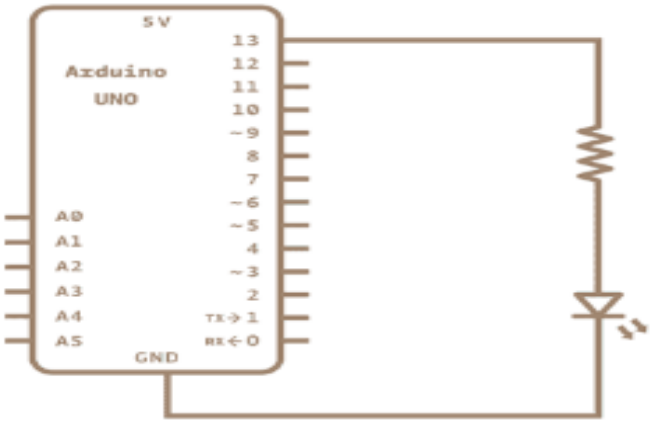
Procedure

1. Connect one end of the resistor to the digital pin correspondent to the *LED_BUILTIN* constant.
2. Connect the long leg of the LED (positive leg – Anode) to the other end of the resistor. Connect the short leg of the LED (negative leg – cathode) to GND.
3. In the diagram below, Arduino UNO board has D13 as the LED_BUILTIN value.
4. The value of the resistor in series with the LED may be of a different value than 220Ω; LED can be also light up with values up to 1K ohm.
5. Plug Arduino board into computer, start the Arduino Software (IDE) and enter the code below.
   - Initialize LED_BUILTIN pin as an output pin using the line,
   - pinMode(LED_BUILTIN, OUTPUT);
   - In the main loop, turn the LED on using the line:
   - digitalWrite(LED_BUILTIN, HIGH);
   - This supplies 5 volts to the LED anode, creates a voltage difference across the pins of the LED, and lights it up.
   - Now, turn it off the LED using the line:
   - digitalWrite(LED_BUILTIN, LOW);
     This initializes LED_BUILTIN pin back to 0 volts, and turns the LED off.
   - delay() commands shall be used to create delay for the specific period of time.

6. Download the program into Arduino board and observe that LED is turned ON / OFF periodically.

Program to turn ON LED

```
void setup()    {
                    pinMode(LED_BUILTIN, OUTPUT);
                }
void loop()     {
                    digitalWrite(LED_BUILTIN, HIGH);delay(1000);
                    digitalWrite(LED_BUILTIN, LOW);delay(1000);
                }
```



Result:

Thus, the LED was switched ON / OFF periodically using Arduino board.