

End-Term Lab Examination

Sai Ram. K

20181CSE0621

25-05-2021

Allotted Questions - 20181CSE0621 Q.17&33

Question No-17: Write and execute a program to Blink 5 LEDs alternatively or Displaying 6 LEDs ODD and EVEN fashion.

Question No-33: Raspberry pi program to implement blinking LED.

Q.17]

The image shows a handwritten student answer on lined paper. At the top right, there is a small box with 'Date' and 'Page' labels. The student has written the date '25/05/2021' on the left and their identification '20181CSE0621', 'SAI RAM.K', and '6-CSE-10' on the right. The title 'IOT END TERM EXAM' is written in the center. Below it, 'Q.17 & Q.33' is underlined. For Q.17, the student has written 'Blinking Odd & Even LED's' as the title. The answer is structured with three points: 'AIM: To display and blink the LED's in odd & even format', 'COMPONENTS:' followed by a list of five items (Arduino UNO, Breadboard Small, Jumper wires, LED's, Resistors), and 'Initial Circuit Design:-'.

Date _____
Page _____

25/05/2021

20181CSE0621
SAI RAM.K
6-CSE-10

IOT END TERM EXAM

Q.17 & Q.33

Q.17] Blinking Odd & Even LED's

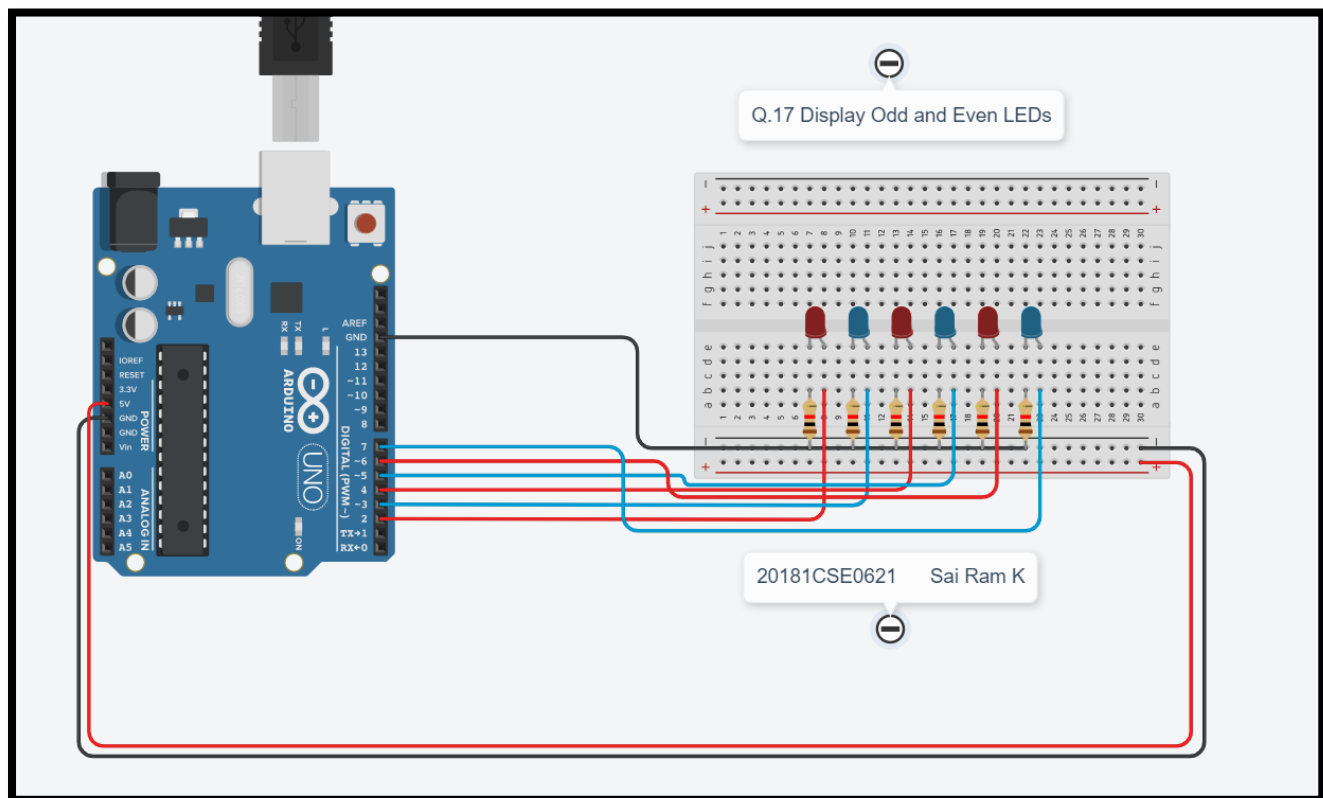
→ AIM: To display and blink the LED's in odd & even format

→ COMPONENTS :

1. Arduino UNO
2. Breadboard Small
3. Jumper wires
4. LED's
5. Resistors.

→ Initial Circuit Design:-

Initial Circuit Design: -



20181CSE0621

classmate
Date _____
Page _____

→ PROCEDURE:-

- Step 1] Choose an arduino uno board along with a small breadboard.
- Step 2] Take some jumper wires along with 6 LEDs and 6 resistors.
- Step 3] Place all the LEDs on the breadboard and connect their ^{Anode} to pins 2, 3, 4, 5, 6, 7 of the breadboard respectively using jumper wires.
- Step 4] Make a common ground and +5V point on the breadboard using the arduino.
- Step 5] Connect the cathode to terminal 2 to the resistor and terminal 1 to the ground.
- Step 6] Proceed by typing the following code into the code window.
- Step 7] You will find that the LED's are glowing in odd and even manner.



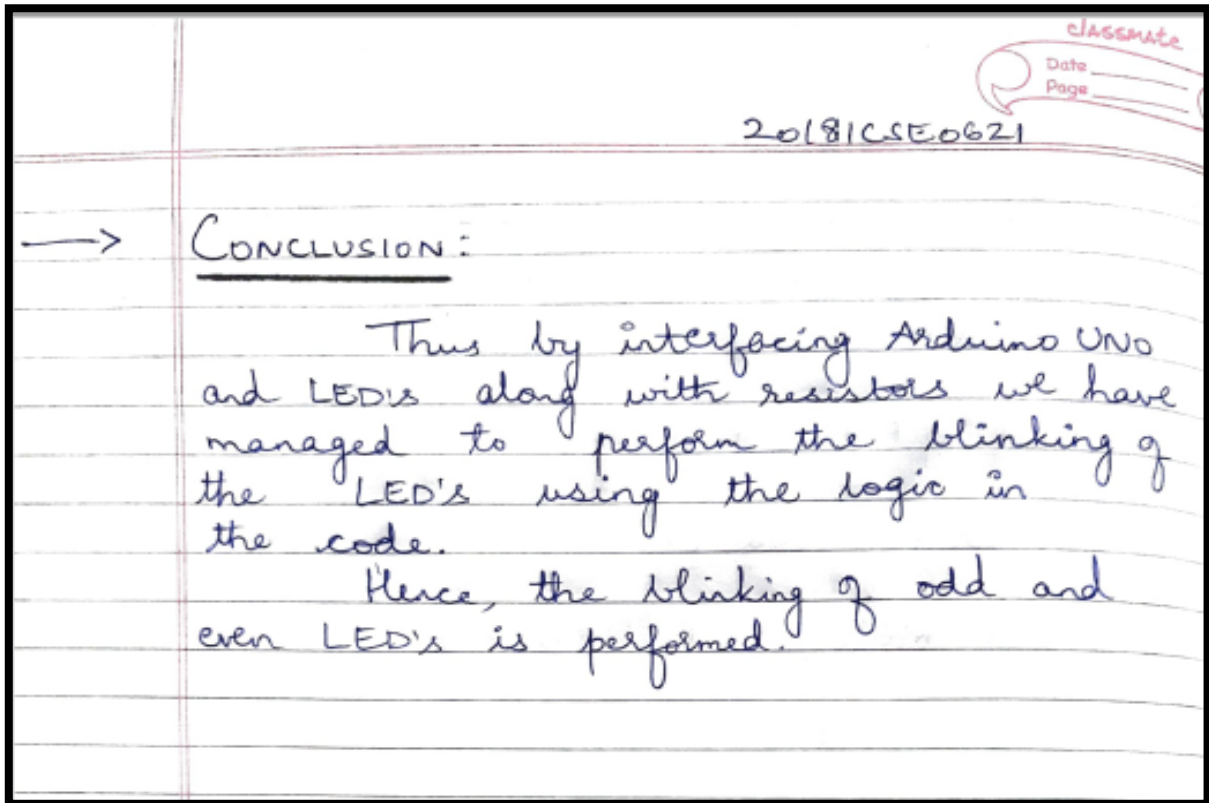
20181CSE0621

→ CODE:

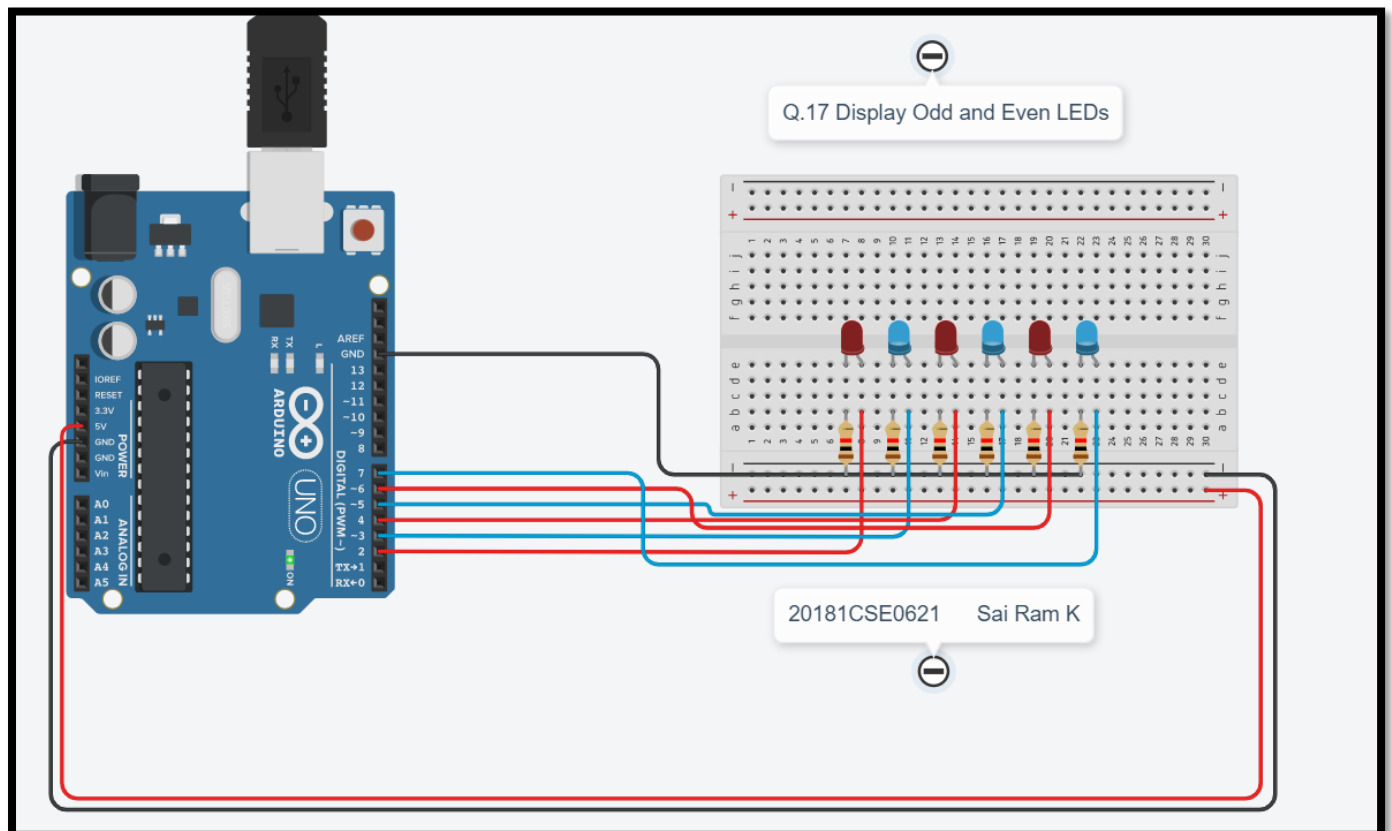
```
int pins[] = {2, 3, 4, 5, 6, 7};
int mod = 0;

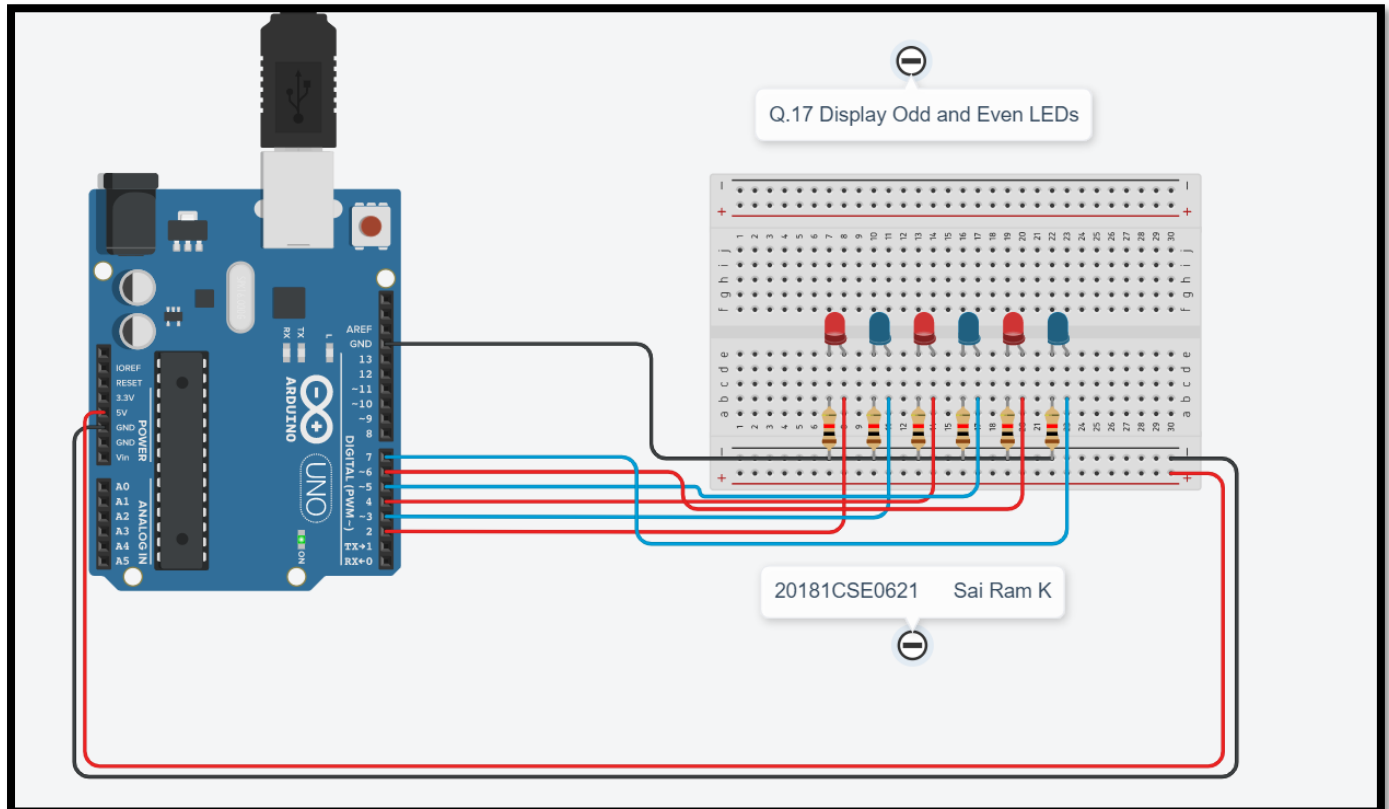
void setup()
{
    for(int i=0; i<6; i++)
    {
        pinMode(pins[i], OUTPUT);
    }
    Serial.begin(9600);
}

void loop()
{
    int del = 1000;
    Serial.println(mod);
    for(int i=0; i<6; i++)
    {
        if (i%2 == mod)
        {
            digitalWrite(pins[i], HIGH);
        }
        else {
            digitalWrite(pins[i], LOW);
        }
    }
    mod--;
    mod = abs(mod);
    delay(del);
}
```



Output: -





Serial Monitor: -



Q. 33]

Raspberry Pi Blinking Led

Date _____
Page _____

20181CSE0621

Q. 33] Blinking of LED

→ AIM: To implement the blinking of LED using Raspberry Pi.

→ COMPONENTS:

1. Raspberry Pi
2. VGA cable
3. Power Cable
4. Jumper cable
5. LED
6. Resistor

→ PIN OUT:

3.3V	■ ■	5V
GPIO2	■ ■	5V
GPIO3	■ ■	GND
GPIO4	■ ■	GPIO14
GND	■ ■	GPIO15
GPIO17	■ ■	GPIO18
GPIO27	■ ■	GND
GPIO22	■ ■	GPIO23
3.3V	■ ■	GPIO24
GPIO10	■ ■	GND
GPIO9	■ ■	GPIO25
GPIO11	■ ■	GPIO5
GND	■ ■	GPIO7
DNC	■ ■	DNC
GPIO5	■ ■	GND
GPIO6	■ ■	GPIO12
GPIO13	■ ■	GPIO
GPIO19	■ ■	GPIO16
GPIO26	■ ■	GPIO20
GND	■ ■	GPIO21

Pins above the line are present on all boards

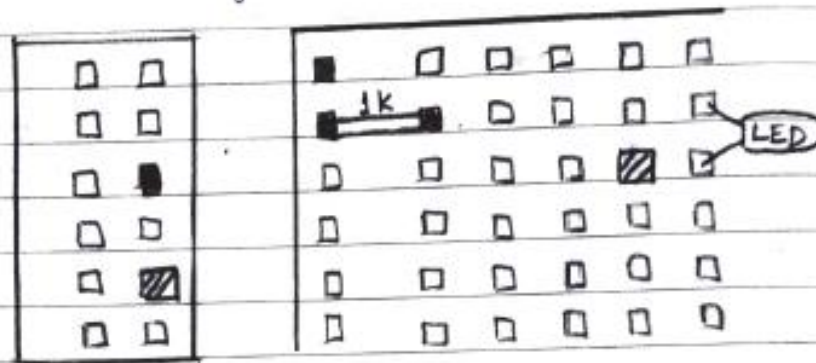
Pins below line are found on A1, P1 and P2

20181CSE0621

→ Procedure

Step 1: Assemble all the required components and refer pin out diagram.

Step 2: Connect the LED as per the below diagram.



20181CSE0621

Step3: Write the python program

```
import RPi.GPIO as GPIO
import time
GPIO.setmode(GPIO.BCM)
GPIO.setup(18, GPIO.OUT)
GPIO.output(18, GPIO.HIGH)
time.sleep(3)
GPIO.output(18, GPIO.LOW)
GPIO.cleanup()
```

Step4: Execute the code and you will find that the LED starts to glow

→ CODE:

```
import RPi.GPIO as GPIO
import time

GPIO.setmode(GPIO.BCM)
GPIO.setup(18, GPIO.OUT)
GPIO.output(18, GPIO.HIGH)

time.sleep(3)

GPIO.output(18, GPIO.LOW)
GPIO.cleanup()
```

20181CSE0621

→ CONCLUSION:

Thus, By using Raspberry Pi and the required components along with the use of GPIO module we have implemented the blinking of the LED.