Experiment 1 :   Develop a program to blink 5 LEDs back and forth

Date :

Aim:

To develop an Arduino program to blink 5 LEDs sequentially from left to right and then right to left in a continuous loop, creating a back-and-forth (chasing) LED effect.
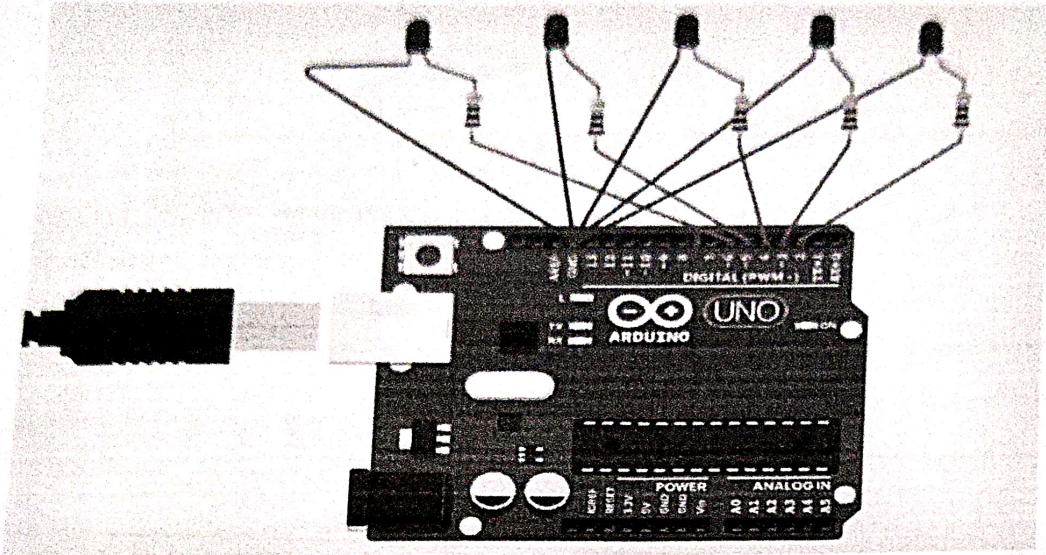
Components Required:

S.No	Components Name	Range/Rating	Quantity
1	Universal Bread Board		1
2	Arduino Uno board		1
3	Led		5
4	220 ohm Resisters		5
5	12V Adaptor		1
6	Power jack		1
7	USB Cable		1
8	Jumper Wires		required

Hardware Procedure:

- LED pin is Connected to Arduino Uno pin of 2.

- Power jack is connected to the Arduino Uno.

- USB connector is connected to Arduino Uno to monitor.

- Connect the 12V power supply to development board.

- Check the output from the development board.

Connection Diagram

Program

```
// Define LED pins
int ledPins[] = {2, 3, 4, 5, 6};
int numLEDs = 5;


void setup() {
// Set all LED pins as output
for (int i = 0; i < numLEDs; i++) {
  pinMode(ledPins[i], OUTPUT);
}
}


void loop() {
```

```
// Blink from left to right
for (int i = 0; i < numLEDs; i++) {
    digitalWrite(ledPins[i], HIGH);
    delay(100);
    digitalWrite(ledPins[i], LOW);
}


// Blink from right to left
for (int i = numLEDs - 2; i > 0; i--) {  // Avoid repeating ends
    digitalWrite(ledPins[i], HIGH);
    delay(100);
    digitalWrite(ledPins[i], LOW);
  }
} \
```

Working Observation:

- The program lights up each LED from left to right (D2 to D6), turning each on and off with a 100ms delay.

- Then it goes in reverse (D5 to D3), avoiding the ends to create a smooth "back and forth" effect.

RESULT: LED is successfully controlled by Arduino microcontroller Board.

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