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EXPERIMENT NO.– 7

Problem Statement:
Create an Arduino program that:

- B → Makes the green LED blink.
- g → Illuminates the green LED continuously.
- y → Illuminates the yellow LED continuously.
- r → Illuminates the red LED continuously.

Components Required:

- Arduino Board (UNO, Mega, etc.)
- 3 LEDs (Green, Yellow, Red)
- 3 × 220Ω Resistors
- Breadboard
- Jumper Wires
- Arduino IDE

Circuit Connections:

1. Green LED
   Anode (long leg) – Digital Pin 7
   Cathode(short leg) – GND
2. Yellow LED
   Anode(long leg) – Digital Pin 8
   Cathode(short leg) – GND
3. Red LED
   Anode(long leg) – Digital pin 9
   Cathode(short leg) - GND

Arduino Code :

```
#define GREEN_LED 7
#define YELLOW_LED 8
#define RED_LED 9

char userInput;

void setup() {
  Serial.begin(9600);
  pinMode(GREEN_LED, OUTPUT);
  pinMode(YELLOW_LED, OUTPUT);
  pinMode(RED_LED, OUTPUT);

  digitalWrite(GREEN_LED, LOW);
  digitalWrite(YELLOW_LED, LOW);
  digitalWrite(RED_LED, LOW);

  Serial.println("Enter B, g, y, or r:");
}

void loop() {
  if (Serial.available() > 0) {
    userInput = Serial.read();

    digitalWrite(GREEN_LED, LOW);
    digitalWrite(YELLOW_LED, LOW);
    digitalWrite(RED_LED, LOW);

    switch (userInput) {
      case 'B': // Blink the Green LED
        for (int i = 0; i < 5; i++) {  // Blink 5 times
          digitalWrite(GREEN_LED, HIGH);
          delay(300);
          digitalWrite(GREEN_LED, LOW);
          delay(300);
        }
```

```
      break;

    case 'g':
      digitalWrite(GREEN_LED, HIGH);
      break;

    case 'y':
      digitalWrite(YELLOW_LED, HIGH);
      break;

    case 'r':
      digitalWrite(RED_LED, HIGH);
      break;

    default:
      Serial.println("Invalid input. Enter B, g, y, or r.");
      break;
  }
 }
}
```

Output:

1. When the user types B → The green LED blinks 5 times.
2. When the user types g → The green LED stays illuminated.
3. When the user types y → The yellow LED stays illuminated.
4. When the user types r → The red LED stays illuminated.
5. For invalid inputs, the message "Invalid input. Enter B, g, y, or r." is displayed on the Serial Monitor.