

Program - 01
LED BLINK

Code:-

```
int ledPin = 9;
void setup()
{
}
void loop()
{
  for (int fadevalue = 0; fadevalue <= 255; fadevalue += 5)
  {
    analogWrite(ledPin, fadevalue);
    delay(30);
  }
  for (int fadevalue = 255; fadevalue >= 0; fadevalue -= 5)
  {
    analogWrite(ledPin, fadevalue);
    delay(30);
  }
}
```

Program-2
LED Fading

Code

```
int brightness = 0;
void setup()
{
  pinMode(9, OUTPUT);
}
void loop()
{
  for (brightness = 0; brightness <= 255; brightness += 5)
  {
    analogWrite(9, brightness);
    delay(30);
  }
  for (brightness = 255; brightness >= 0; brightness -= 5)
  {
    analogWrite(9, brightness);
    delay(30);
  }
}
```

Program-3 Traffic Light Controller

Code1

```
int Green = 2;
int Yellow = 3;
int Red = 4;
int Delay-Green = 900;
int Delay-Yellow = 700;
int DELAY-RED = 900;
void setup()
{
  Pinmode (Green, OUTPUT);
  Pinmode (Yellow, OUTPUT);
  Pinmode (Red, OUTPUT);
}
void loop()
{
  red-light();
  delay (DELAY-RED);
  yellow-light();
  delay (Delay-Yellow);
  green-light();
  delay (Delay-Green);
}
void green-light()
{
  digitalWrite (Green, High);
  digitalWrite (Yellow, Low);
  digitalWrite (Red, Low);
}
```


void yellow-light()

{

digital write (Green, Low);

digital write (Yellow, High);

digital write (Red, Low);

}

void red-light()

{

digital write (Green, Low);

digital write (Yellow, Low);

digital write (red, High);

}

Program-4 Potentiometer

Code

```
int LED-PIN = 9;
void setup()
{
    Serial.begin(9600);
    pinMode(LED-PIN, OUTPUT);
}
void loop()
{
    int analogValue = analogRead(A0);
    int brightness = map(analogValue, 0, 1023, 0, 255);
    analogWrite(LED-PIN, brightness);
    Serial.print("Analog: ");
    Serial.print(analogValue);
    Serial.print(", Brightness: ");
    Serial.println(brightness);
    delay(100);
}
```

Program-05
Push button

Code:

```
int buttonState = 2;
int ledpin = 13;
int buttonState = 0;

void setup()
{
  pinMode(2, INPUT);
  pinMode(13, OUTPUT);
}

void loop()
{
  buttonState = digitalRead(2);
  if (buttonState == HIGH)
  {
    digitalWrite(13, HIGH);
  } else
  {
    digitalWrite(13, LOW);
  }
  delay(10);
}
```