1. Write a program using Arduino to control LED (One or more ON/OFF). Or Blinking:

```
void setup() {
  pinMode(13,OUTPUT);
  pinMode(9,OUTPUT);
  pinMode(10,OUTPUT);

  // put your setup code here, to run once:

}

void loop() {
  digitalWrite(13,HIGH);
  delay(1000);
  digitalWrite(13,LOW);
  delay(1000);
  digitalWrite(9,HIGH);
  delay(1000);
  digitalWrite(9,LOW);
  delay(1000);
  digitalWrite(10,HIGH);
  delay(1000);
  digitalWrite(10,LOW);
  delay(1000);
  // put your main code here, to run repeatedly:
}
```

2.Create a program that illuminates the green LED if the counter is less than 100, illuminates the yellow LED if the counter is between 101 and 200 and illuminates the red LED if the counter is greater than 200

```
const int greenLED = 9;
const int yellowLED = 10;
const int redLED = 11;
int counter = 0;
void setup() {
  pinMode(greenLED ,OUTPUT);
   pinMode(yellowLED ,OUTPUT);
    pinMode(redLED ,OUTPUT);
  // put your setup code here, to run once:
}
void loop() {
  counter++;
  if(counter>255){
    counter=0;
  }
  digitalWrite(greenLED,LOW);
  digitalWrite(yellowLED,LOW);
  digitalWrite(redLED,LOW);
  if(counter<100){
```

```
   digitalWrite(greenLED,HIGH);
  }
  else if(counter >=101&&counter<=200){
     digitalWrite(yellowLED,HIGH);
  }
  else if(counter >200){
    digitalWrite(redLED,HIGH);

  }
  delay(100);

  // put your main code here, to run repeatedly:

}
```

3. Create a program so that when the user enters ‘b’ the green light blinks, ‘g’ the green light is illuminated ‘y’ the yellow light is illuminated and ‘r’ the red light is illuminated

```
const int greenPin=6;
const int yellowPin=2;
const int redPin=3;
void setup() {
  Serial.begin(4800);
  pinMode(greenPin,OUTPUT);
  pinMode(yellowPin,OUTPUT);
  pinMode(redPin,OUTPUT);

  digitalWrite(greenPin,LOW);
  digitalWrite(yellowPin,LOW);
  digitalWrite(redPin,LOW);
}

void loop() {
  if(Serial.available()>0)
  {
    char input = Serial.read();
    if(input =='b'){
      blinkGreenLight();
    }
    else if (input =='y'){
      illuminateYellow();
    }
     else if (input =='g'){
       illuminateGreen();
     }
        else if (input =='r'){
           illuminateRed();
        }
  }

}
```

```
void blinkGreenLight(){
  for(int i=1; i<20;i++){
    digitalWrite(greenPin,HIGH);
    delay(500);
     digitalWrite(greenPin,LOW);
    delay(500);

  }
}
void illuminateGreen(){
  digitalWrite(greenPin,HIGH);

  digitalWrite(yellowPin,LOW);
}
void illuminateRed(){
   digitalWrite(greenPin,LOW);
    digitalWrite(redPin,HIGH);
    digitalWrite(yellowPin,LOW);
}
void illuminateYellow(){
  digitalWrite(greenPin,LOW);
  digitalWrite(redPin,LOW);
    digitalWrite(yellowPin,HIGH);

}
```

4. Write a program that asks the user for a number and outputs the number squared that is entered

```
int inputnumber =0;
int squaredresult=0;
void setup() {
  Serial.begin(9600);
  Serial.println("please enter a number");

  // put your setup code here, to run once:

}

void loop() {
  if(Serial.available()>0);{
    inputnumber= Serial.parseInt();
    squaredresult=inputnumber*inputnumber;
     Serial.print("the square of:");
      Serial.print(inputnumber);
       Serial.print("is:");
        Serial.println(squaredresult);
        delay(1000);
         Serial.println("please enter another number:");

  }
  // put your main code here, to run repeatedly:
```

```
}
```

5. Write a program to control the color of the LED by turning 3 different potentiometers. One will be read for the value of Red, one for the value of Green, and one for the value of Blue

```
const int redPin=9;
const int greenPin=10;
const int bluePin=11;

const int potPin=A0;

void setup() {
  pinMode(redPin,OUTPUT);
  pinMode(greenPin,OUTPUT);
  pinMode(bluePin,OUTPUT);
  Serial.begin (9600);
}

void loop() {
  int potValue = analogRead(potPin);
  int brightness= map(potValue ,0,1023,0,255);

  analogWrite(redPin , brightness);
  analogWrite(greenPin , brightness/6);
  analogWrite(bluePin , brightness);
  delay(50);
  // put your main code here, to run repeatedly:

}
```

6. TrigPin code

```
#define echoPin 2
#define trigPin 3
#define ledPin 13

long duration;
int distance;

void setup() {
  pinMode(trigPin,OUTPUT);
  pinMode(echoPin ,OUTPUT);
  pinMode(ledPin ,OUTPUT);
  Serial.begin(9600);
  Serial.println("distance measurement using arduino uno :");

  // put your setup code here, to run once:

}
```

```
void loop() {
  digitalWrite(trigPin,LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin,LOW);
  duration=pulseIn(echoPin,HIGH);
  distance = duration*0.0344/2;

  Serial.print("Distance:");
  Serial.print("distance:");
   Serial.print("cm");

   if (distance<=10){
    digitalWrite(ledPin,HIGH);
   }else{
    digitalWrite(ledPin,LOW);
   }
   }
```