Ex: 9 LED Pattern with Push Button

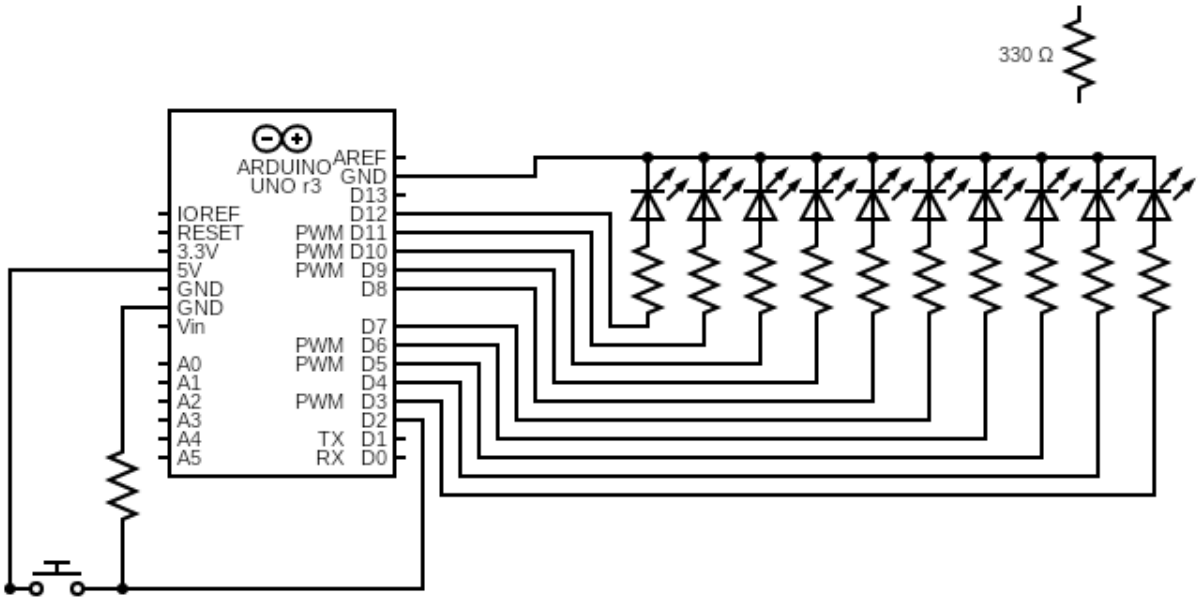
Aim:

To implement LED Pattern with push button controls using Arduino Uno.

Components Required:

- Arduino Uno Board
- PUSH Button
- LED
- 330 ohm Resister
- Jumpers

Circuit Connection:



Sketch

```
int btn1 = 2; //PIN 2 for button input
int opt = 0;
void setup() {
  int i;
  for(i=3;i<=12;i++)
  {
    pinMode(i,OUTPUT);
    digitalWrite(i, LOW);
  }
  pinMode(btn1, INPUT);
  //Serial.begin(9600);
}//End of Setup

void loop() {
  int btnstate;
  btnstate = digitalRead(btn1);
  if(btnstate == HIGH)
  {
    opt++;
  }
  //Serial.println(opt);
  //Start LED Pattern for First Each Button Press
  if(opt == 1)
  {
    pat1();
  }
  else if(opt == 2)
  {
    pat2();
  }
  else if(opt == 3)
  {
    pat3();
  }
  else if(opt == 4)
  {
    pat4();
  }
  else
    opt = 0;
}//End of Loop
```

```
void pat1()
{
 int i;
 for(i=3;i<=12;i++)
 {
  delay(100);
  digitalWrite(i, HIGH);
 }
}

void pat2()
{
 int i;
 for(i=12;i>=3;i--)
 {
  delay(100);
  digitalWrite(i, LOW);
 }
}

void pat3()
{
 int i;
 for(i=0;i<5;i++)
 {
  delay(150);
  digitalWrite(i+3, HIGH);
  digitalWrite(12-i, HIGH);
 }
}

void pat4()
{
 int i;
 for(i=0;i<5;i++)
 {
  delay(150);
  digitalWrite(i+3, LOW);
  digitalWrite(12-i, LOW);
 }
}
```

Result:

Thus Arduino Uno board is utilized to perform LED pattern generation with Push button.