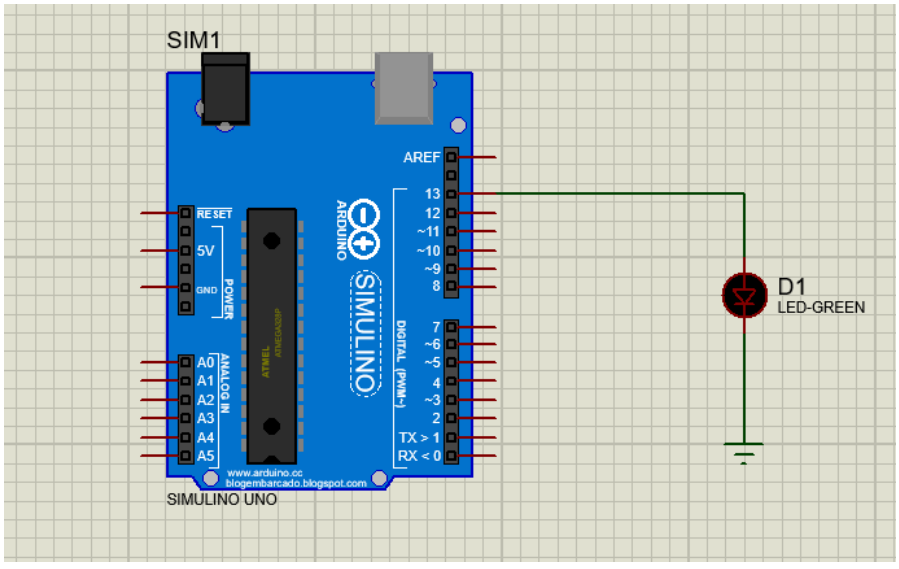
Sheet 1

Q(1):

The Code:

```
#define LED 13
void setup()
{
  pinMode(LED,OUTPUT);
}

void loop()
{
  digitalWrite(LED,HIGH);
  delay(500);
  digitalWrite(LED,LOW);
  delay(1500);
}
```

The Circuit:

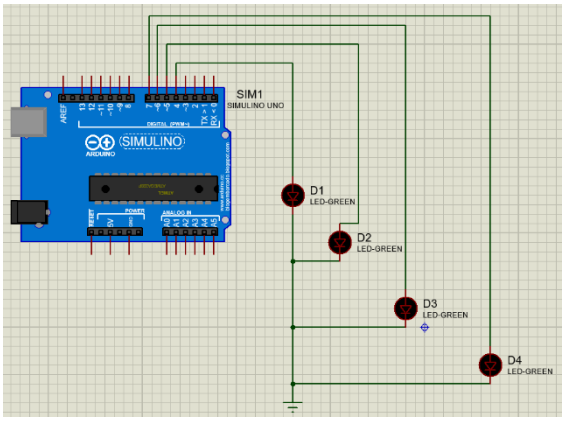


Q(2):

The Code:

```
int LED;
void setup()
{
  pinMode(LED,OUTPUT);
}

void loop()
{
  for(LED=4;LED<=7;LED++)
{
  digitalWrite(LED,HIGH);
  delay(1000);
  digitalWrite(LED,LOW);
  delay(1000);
  }
  for(LED=7;LED>=4;LED--)
  {
  digitalWrite(LED,HIGH);
  delay(1000);
  digitalWrite(LED,LOW);
  delay(1000);
  }
}
```

The Circuit:



Q(3):

The Code:

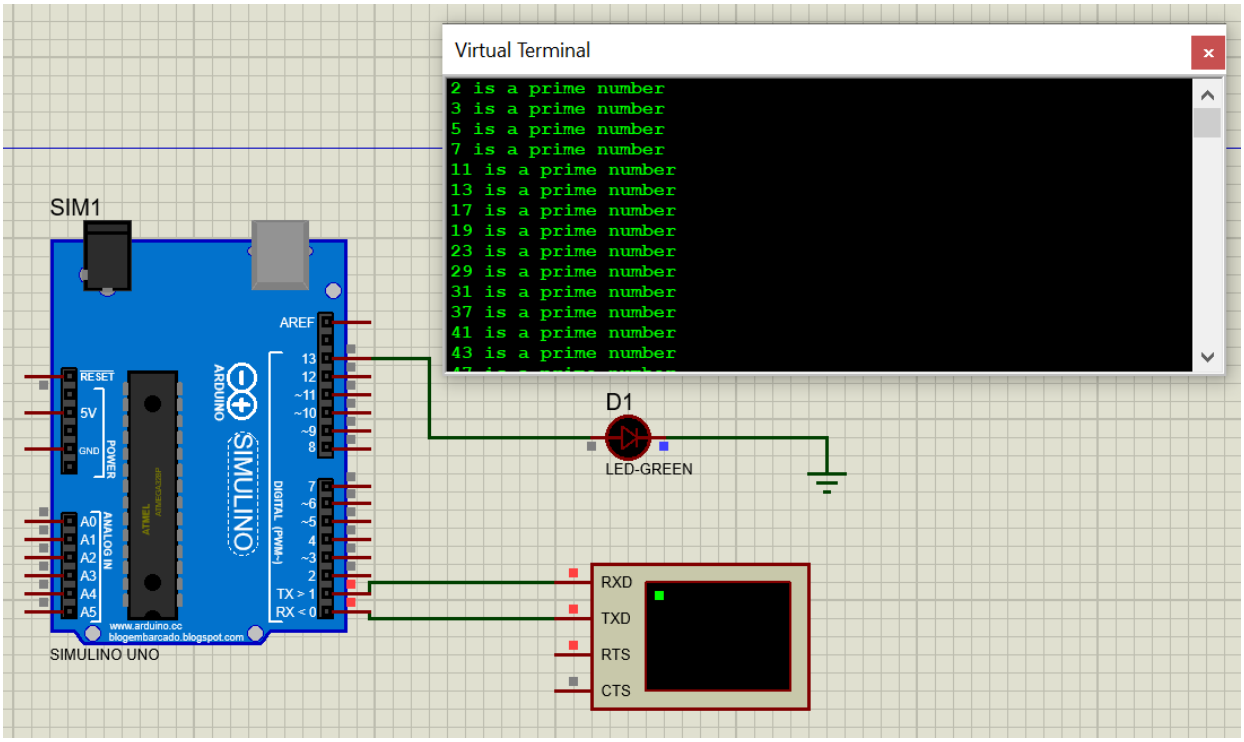
```
int i, a = 1, count;
void setup()
{
 Serial.begin(9600);
 while(a <= 7919)
 {
  count = 0;
  i = 2;
 while(i <= a/2)
 {
  if(a%i == 0)
  {
     count++;
    break;
  }
    i++;
 }
  if(count == 0 && a != 1 )
  {
   Serial.print(a, DEC);
   Serial.println(" is a prime number");
   delay(1000);
  }
  a++;
 }
}
```

The 1000 Prime number equals 7919

void loop()

{}

The Circuit:



Q(4):

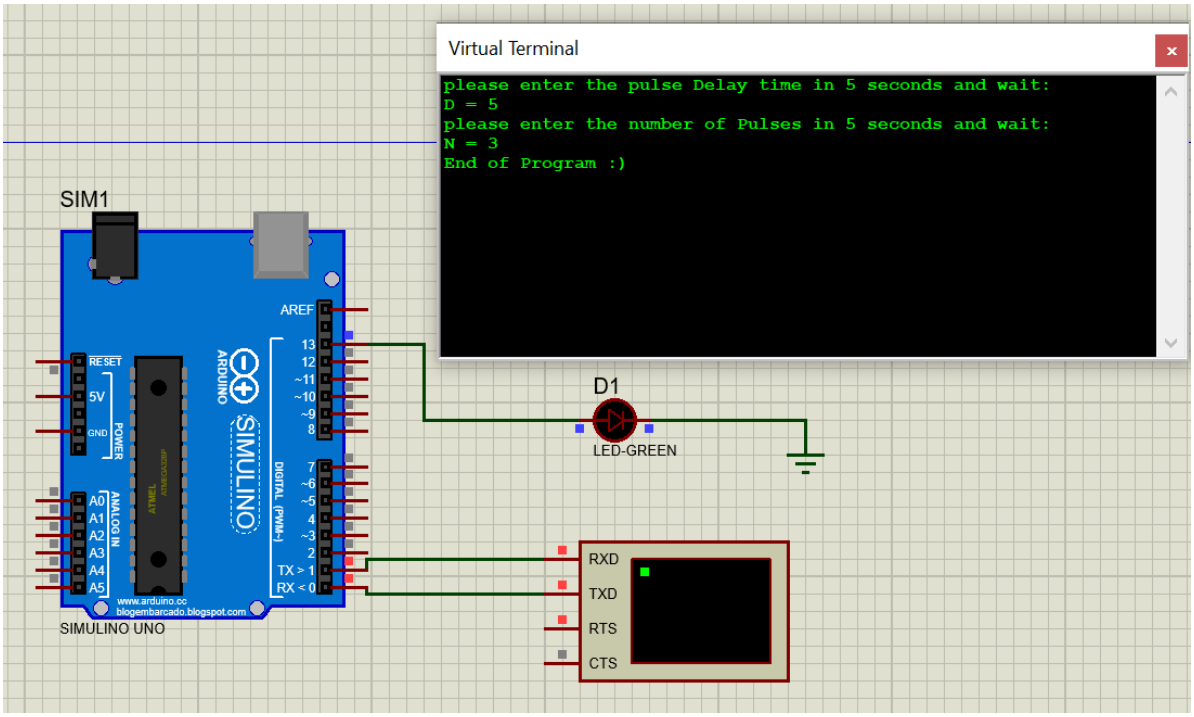
The Code:

```
void setup()
{
   Serial.begin(9600);
   pinMode(13,OUTPUT);
    int D;
  int N;
    Serial.println("please enter the pulse Delay time in 5 seconds and wait: ");
    delay(5000);
    D = Serial.parseInt();
    Serial.print("D = ");
    Serial.println(D,DEC);
    Serial.println("please enter the number of Pulses in 5 seconds and wait: ");
    delay(5000);
    N = Serial.parseInt();
    Serial.print("N = ");
    Serial.println(N,DEC);
    while(N>0)
     {
       digitalWrite(13,HIGH);
       delay(D*500);
       digitalWrite(13,LOW);
       delay(D*500);
       N--;
     }
   Serial.println("End of Program :) ");

}
```

void loop()

{}

The Circuit:



Q(6):

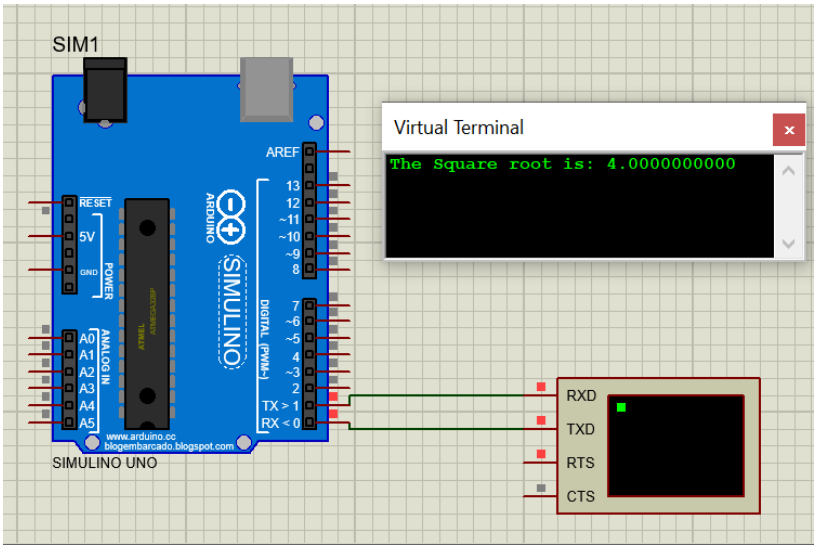
The Code:

```
void setup()
{
  Serial.begin(9600);
}

void loop()
{
  if(Serial.available()>0)
   {
    float i = Serial.parseFloat(  );
    Serial.print("The Square root is: ");
    Serial.println(sqrt(i),DEC);
   }

}
```

Note: **Serial.parseFloat is function gets a float value from the user, bec Serial.read reads a char values only**

`if (Serial.available()>0) {...}`	طريقة لاستقبال أي قيمة من المستخدم عبر الشاشة المتسلسلة serial monitor
`char x=Serial.read(); if (x=='y'){...}`	قراءة بايت من الشاشة المتسلسلة ككود ASCII لمعرفة الرقم المدخل اطرح 48 من القراءة
`Serial.parseInt();`	لقراءة قيمة ووضعها في متغير int
`Serial.parseFloat();`	لقراءة قيمة و وضعها في متغير float
`Serial.readString();`	لقراءة متغير (عبارة) و وضعها في String

The Circuit:


SIM1
Virtual Terminal
The Square root is: 4.0000000000
AREF
RESET
5V
GND
POWER
ANALOG IN
A0
A1
A2
A3
A4
A5
DIGITAL (PWM~)
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX > 1
RX < 0
www.arduino.cc
blogembarcado.blogspot.com
SIMULINO UNO
RXD
TXD
RTS
CTS