Name: Yaseen Islam

Code: 60

My code :

```
#include <Keypad.h>   // call for the keypad library
#include <LiquidCrystal.h>//call for the LCD library
#include <Servo.h>//call for the servo motor library

LiquidCrystal lcd(A0, A1, A2, A3, A4, A5); // lcd pins intialization

int led_redlight=255;  // maximum bright

int counter=0,i=0,check=1;
char pass_nums[1000]; //to store the digits the user will write
```

```
char password[8]={'7','4','6','2','1','6','5','8'}; // the correct password to compare with
const byte ROWS = 4; // keypad four rows
const byte COLS = 4; //keypad four  columns
char keys[ROWS][COLS] = {
  {'1','2','3','A'},
  {'4','5','6','B'},
  {'7','8','9','C'},
  {'*','0','#','D'}
};    // values of each button in the keypad
byte rowPins[ROWS] = {9, 8, 7, 6}; //connect to the row pinouts of the keypad
byte colPins[COLS] = {5, 4, 3,2}; //connect to the column pinouts of the keypad
Servo Door;  // creating object for the servo motor
Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );//// creating object for the keypad

void setup(){
```

```
   lcd.begin(16, 2);// initialize the lcd
// Print a message to the LCD.

  lcd.setCursor(0,0);// set the cursor of the lcd
at row 0 column 0

  lcd.print("enter password");

  lcd.setCursor(0,1);
  pinMode(12,OUTPUT); // buzzer initialization
  Door.attach(13);    //servo motor intialization
  pinMode(10,OUTPUT); // Green led
intialization
  pinMode(11,OUTPUT);  // Red led intialization

}

void loop(){

  delay(10);  // delay to avoid bouncing
  char key = keypad.getKey(); // to get the
password digits from the user
```

```
  if (key){  // to store the digits of the written password and display the digits the user write in the form of #
    if(key!='9')// to avoid printing # when preesing number 9 because number 9 is an enter
    {lcd.print('#');}
    pass_nums[counter++]=key;
  }
  if(key=='9'&&counter==9)// check wheather the entered password equal to the right one
  {
  for(i;i<8&&check!=0;++i)
  {if (pass_nums[i]==password[i])
   {check=1;}
   else
   {check=0;}
  }



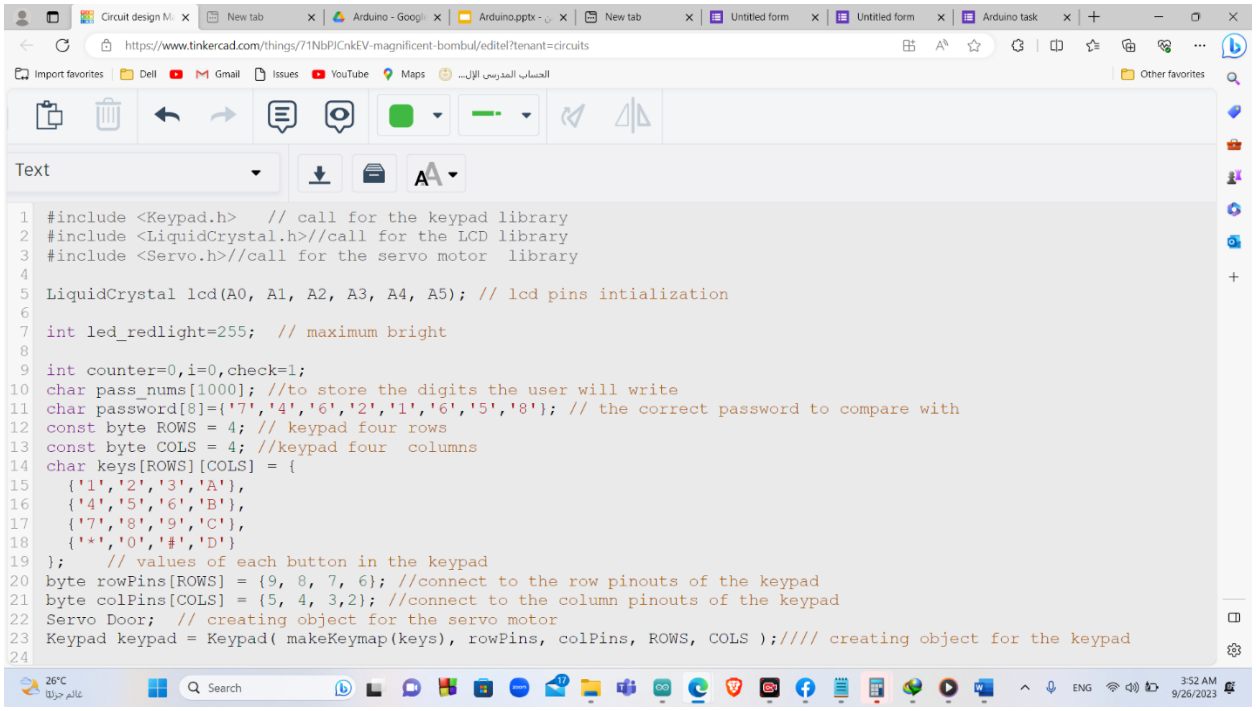
  }
    if (check==1&&key=='9'&&counter==9) //if he entered the right 8 digits then presed 9
```

```
as the enter button the green light will light
up and the door will open
  {digitalWrite(10,HIGH);
    Door.write(180); // to open the door
    delay(2000);     // waiting for 2 seconds
    Door.write(90);  // for the door to lock again
    digitalWrite(10,LOW);
    delay(500);
    counter=0;
    i=0;
    pass_nums[100]={0}; // to allow more trials
   lcd.clear();// to clear the lcd from the old try
   lcd.setCursor(0,0);
   lcd.print("enter password");
    lcd.setCursor(0,1);
  }
   else if (key=='9'&&(counter!=9||check==0))
// if he entered less than 8 digits then the
password is wrong or if he entered the wrong
8 digits the password also is wrong
  {//digitalWrite(11,HIGH);
     tone(12,200,1000);
   digitalWrite(12,HIGH);
```

```
    for (led_redlight;led_redlight>=0;--
led_redlight)
{digitalWrite(11,led_redlight);
 delay(25);  // to decreese its brightness
gradually
}

   digitalWrite(12,LOW); // to stop the buzzer

   delay(500);
   counter=0;
   i=0;
  pass_nums[100]={0};
      lcd.clear();
   lcd.setCursor(0,0);
   lcd.print("enter password");
    lcd.setCursor(0,1);
     led_redlight=255;// to reset if he entered
wrong password again
  }
}
```



```
#include <Keypad.h>   // call for the keypad library
#include <LiquidCrystal.h>//call for the LCD library
#include <Servo.h>//call for the servo motor  library

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int led_redlight=255;  // maximum bright

int counter=0,i=0,check=1;
char pass_nums[1000]; //to store the digits the user will write
char password[8]={'7','4','6','2','1','6','5','8'}; // the correct password to compare with
const byte ROWS = 4; // keypad four rows
const byte COLS = 4; //keypad four  columns
char keys[ROWS][COLS] = {
  {'1','2','3','A'},
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  {'7','8','9','C'},
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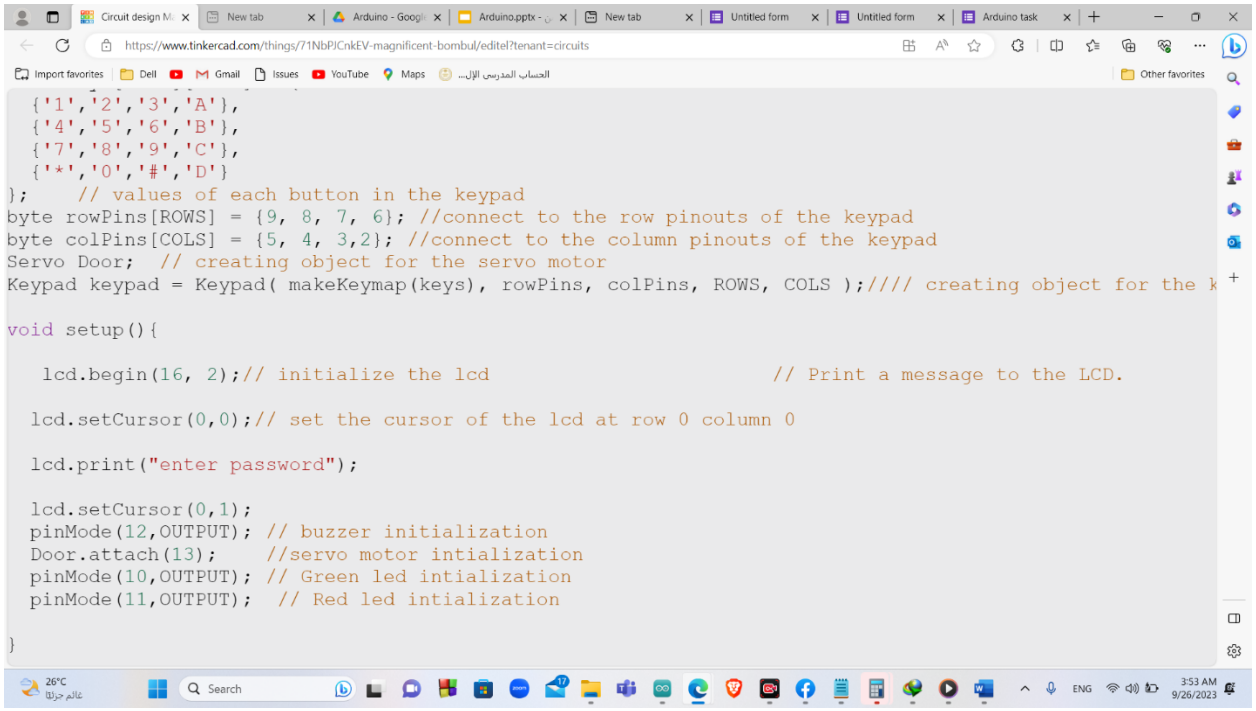
};    // values of each button in the keypad
byte rowPins[ROWS] = {9, 8, 7, 6}; //connect to the row pinouts of the keypad
byte colPins[COLS] = {5, 4, 3,2}; //connect to the column pinouts of the keypad
Servo Door;  // creating object for the servo motor
Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );//// creating object for the keypad

```



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Servo Door;  // creating object for the servo motor
Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );//// creating object for the k

void setup(){

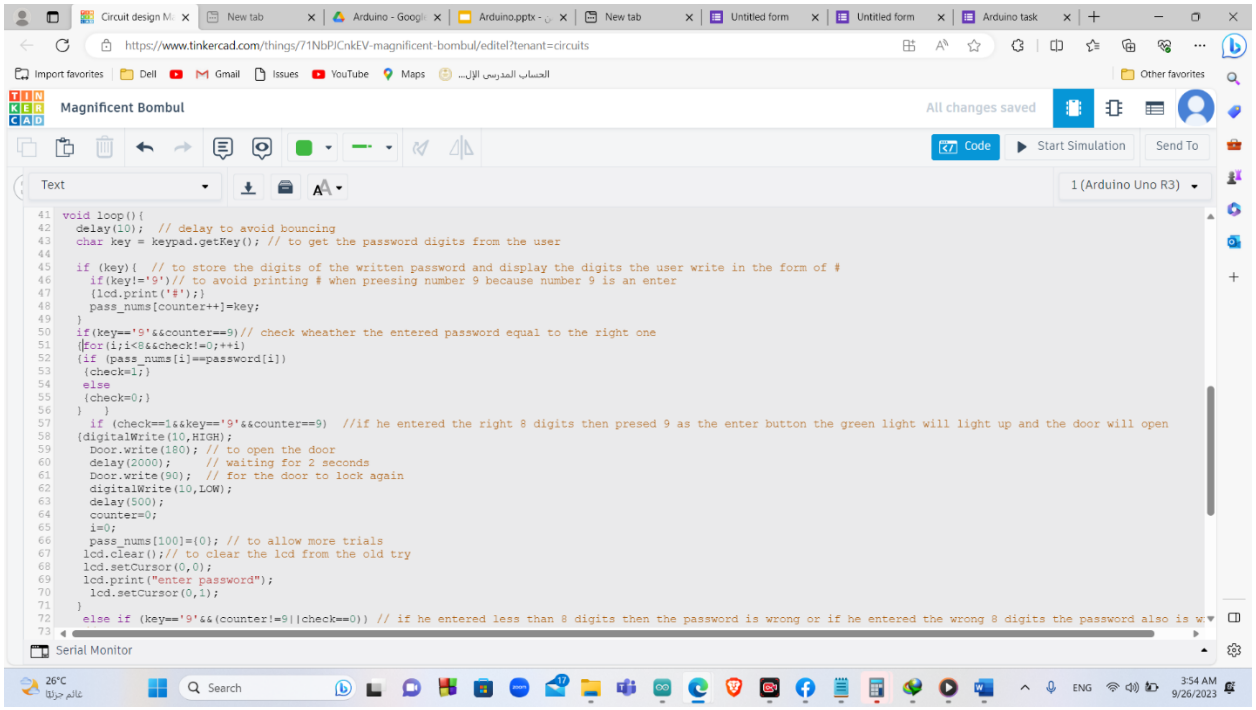
   lcd.begin(16, 2);// initialize the lcd                       // Print a message to the LCD.

  lcd.setCursor(0,0);// set the cursor of the lcd at row 0 column 0

  lcd.print("enter password");

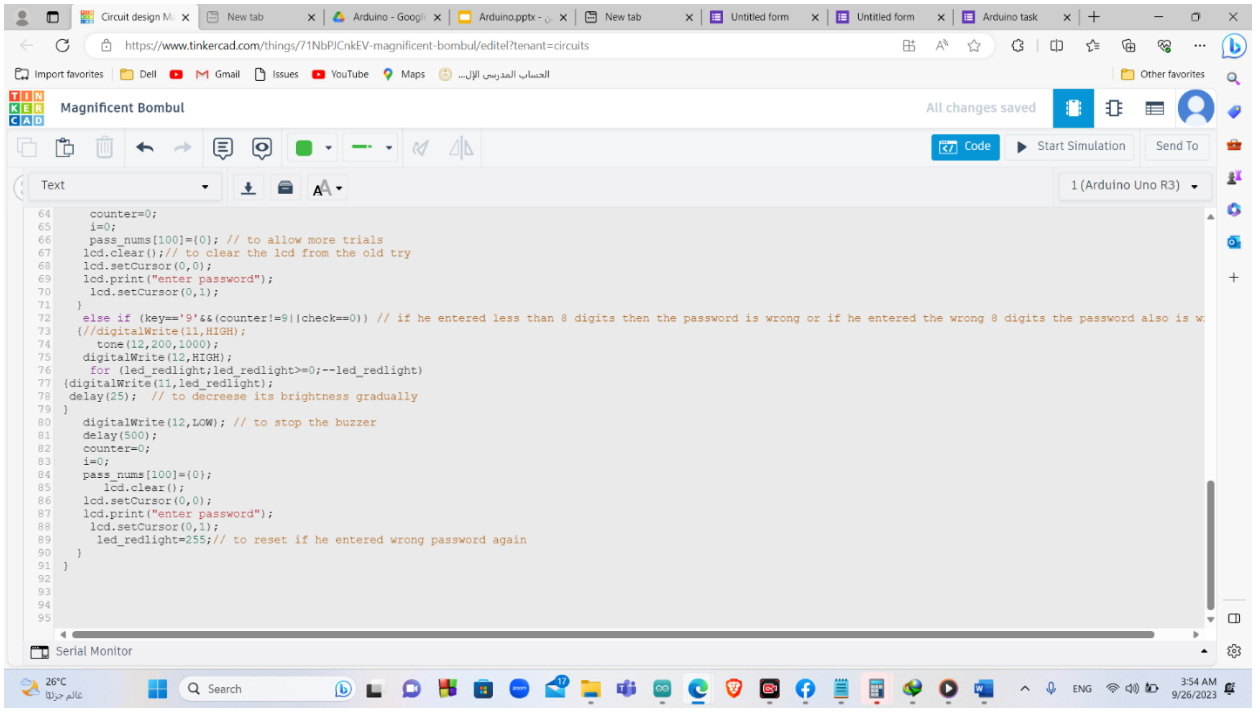
  lcd.setCursor(0,1);
  pinMode(12,OUTPUT); // buzzer initialization
  Door.attach(13);    //servo motor intialization
  pinMode(10,OUTPUT); // Green led intialization
  pinMode(11,OUTPUT);  // Red led intialization

}
```



```
void loop(){
  delay(10);  // delay to avoid bouncing
  char key = keypad.getKey(); // to get the password digits from the user

  if (key){  // to store the digits of the written password and display the digits the user write in the form of #
    if(key!='9')// to avoid printing # when preesing number 9 because number 9 is an enter
    {lcd.print('#');}
    pass_nums[counter++]=key;
  }
  if(key=='9'&&counter==9)// check wheather the entered password equal to the right one
  {for(i;i<8&&check!=0;++i)
  {if (pass_nums[i]==password[i])
   {check=1;}
   else
   {check=0;}
  }   }
    if (check==1&&key=='9'&&counter==9)  //if he entered the right 8 digits then presed 9 as the enter button the green light will light up and the door will open
  {digitalWrite(10,HIGH);
    Door.write(180); // to open the door
    delay(2000);     // waiting for 2 seconds
    Door.write(90);  // for the door to lock again
    digitalWrite(10,LOW);
    delay(500);
    counter=0;
    i=0;
    pass_nums[100]={0}; // to allow more trials
   lcd.clear();// to clear the lcd from the old try
   lcd.setCursor(0,0);
   lcd.print("enter password");
    lcd.setCursor(0,1);
  }
   else if (key=='9'&&(counter!=9||check==0)) // if he entered less than 8 digits then the password is wrong or if he entered the wrong 8 digits the password also is w
```


Magnificent Bombul
All changes saved
Code
Start Simulation
Send To
Text
1 (Arduino Uno R3)
counter=0;
i=0;
pass_nums[100]={0}; // to allow more trials
lcd.clear();// to clear the lcd from the old try
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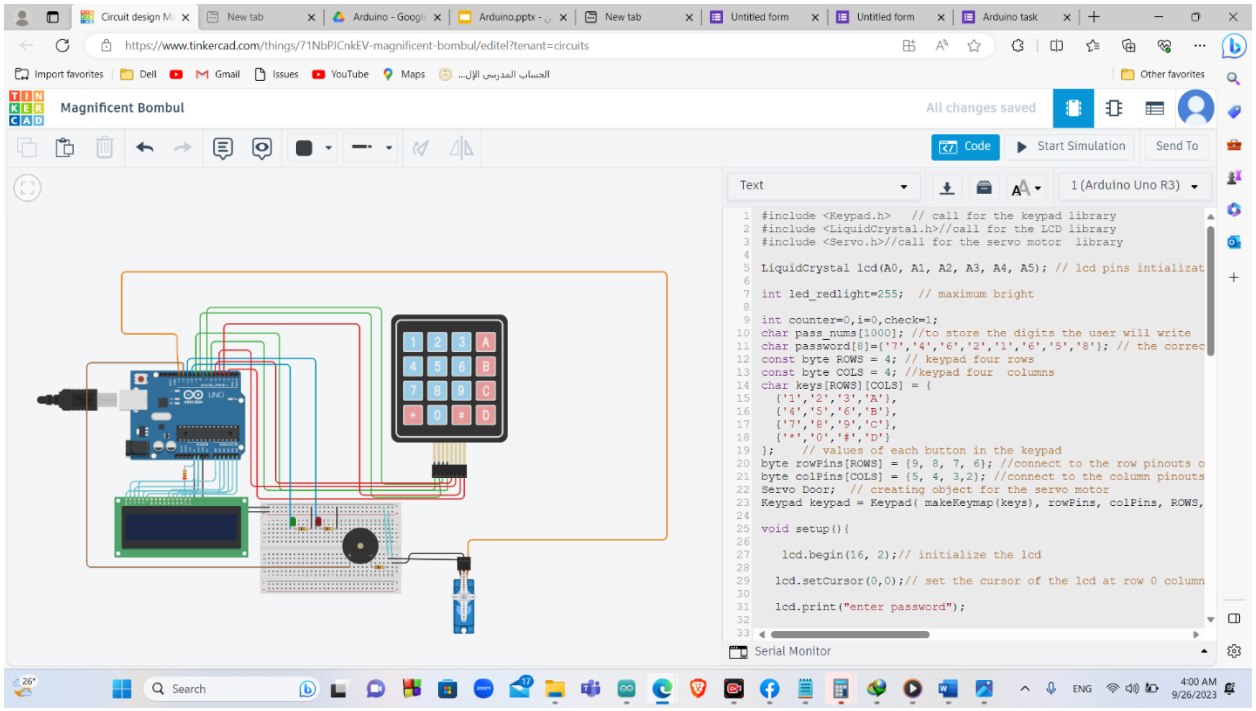
{//digitalWrite(11,HIGH);
tone(12,200,1000);
digitalWrite(12,HIGH);
for (led_redlight;led_redlight>=0;--led_redlight)
{digitalWrite(11,led_redlight);
delay(25); // to decreese its brightness gradually
}
digitalWrite(12,LOW); // to stop the buzzer
delay(500);
counter=0;
i=0;
pass_nums[100]={0};
lcd.clear();
lcd.setCursor(0,0);
lcd.print("enter password");
lcd.setCursor(0,1);
led_redlight=255;// to reset if he entered wrong password again
}
}
Serial Monitor

Circuit:


Magnificent Bombul
All changes saved
Code
Start Simulation
Send To
Text
1 (Arduino Uno R3)
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#include <LiquidCrystal.h>//call for the LCD library
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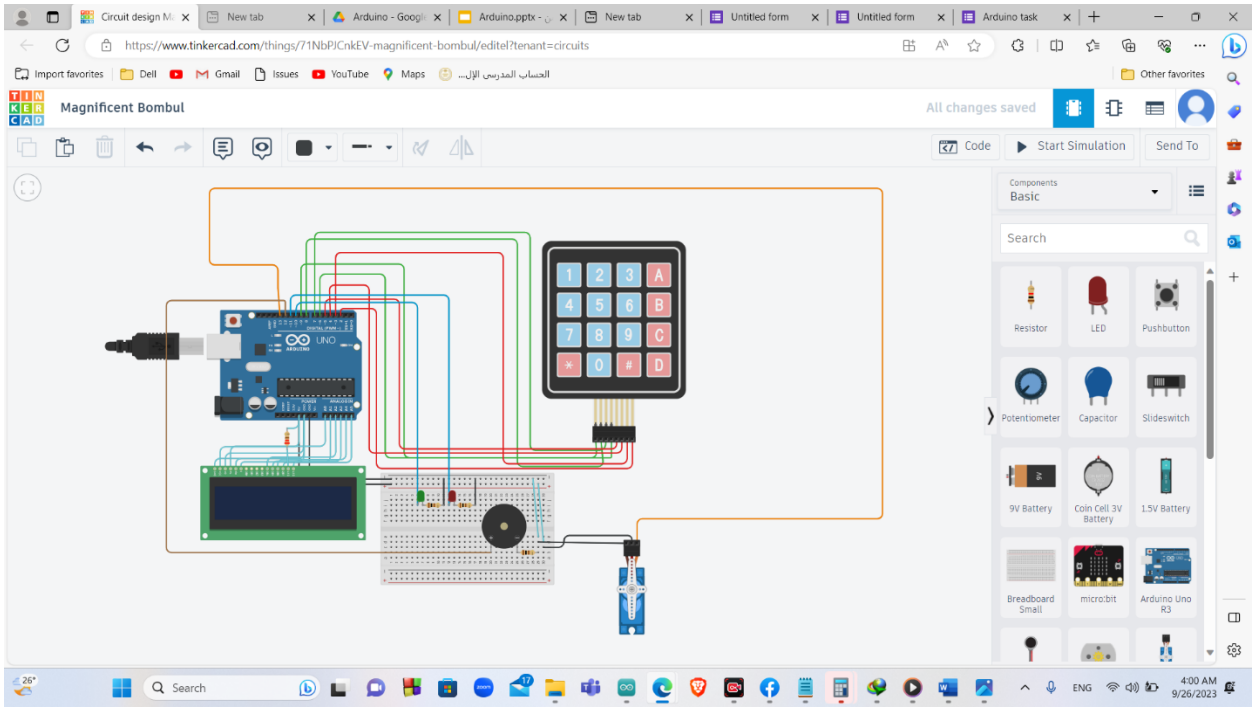
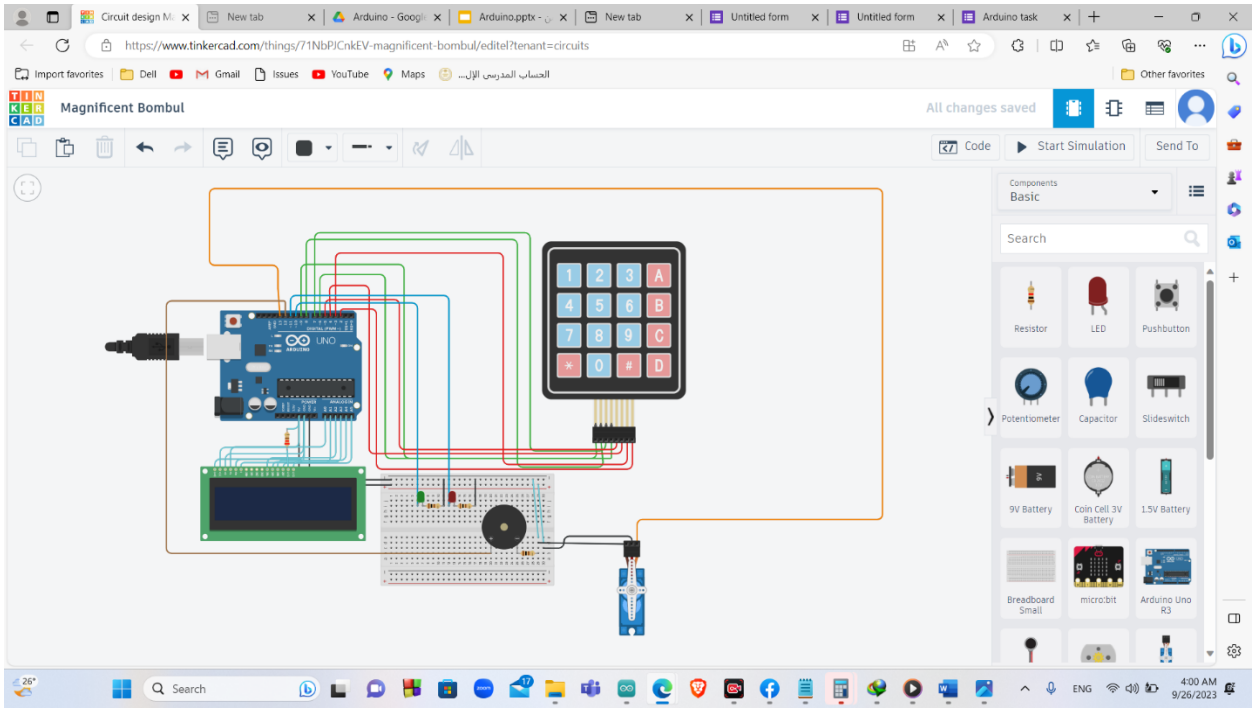
Servo Door; // creating object for the servo motor
Keypad keypad = Keypad(makeKeymap(keys), rowPins, colPins, ROWS,
void setup(){
lcd.begin(16, 2);// initialize the lcd
lcd.setCursor(0,0);// set the cursor of the lcd at row 0 column
lcd.print("enter password");
Serial Monitor
Search
ENG
4:00 AM
9/26/2023


Magnificent Bombul
All changes saved
Code
Start Simulation
Send To
Components
Basic
Search
Resistor
LED
Pushbutton
Potentiometer
Capacitor
Slideswitch
9V Battery
Coin Cell 3V Battery
1.5V Battery
Breadboard Small
micro:bit
Arduino Uno R3
Search
ENG
4:00 AM
9/26/2023



Tinker cad link :

[https://www.tinkercad.com/things/71NbPJCnkEV]