HANDS ON EXPERIMENT-G5

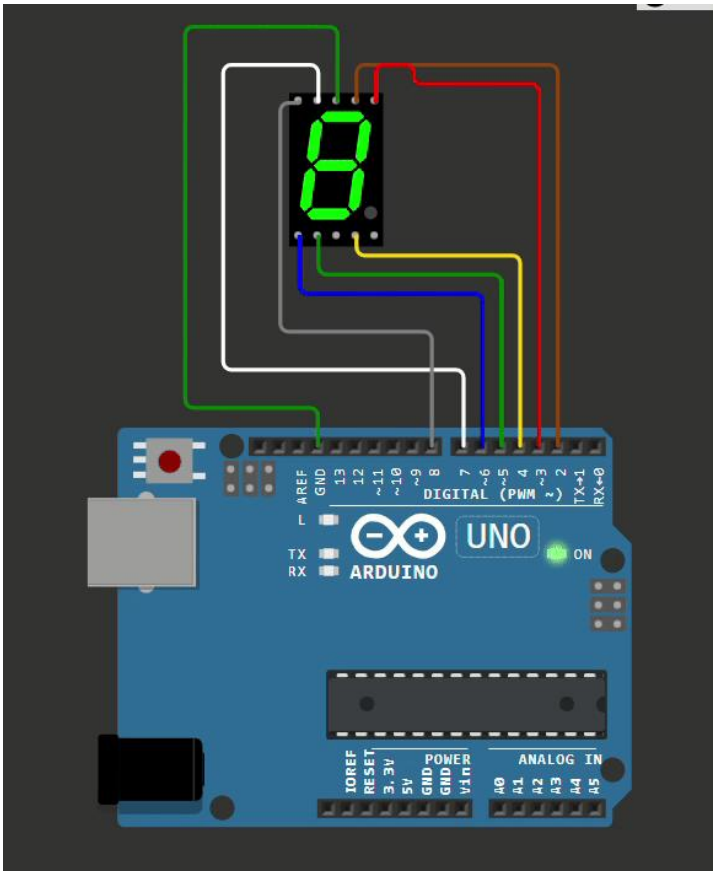
The 7 segment Display

EXPERIMENT 1: Printing Numbers to the Single Digit Display

CODE:

```
const int segmentPins[8] = {2, 3, 4, 5, 6, 7, 8};
const int commonCathodePin = 9;
const byte numbers[11] = {
  B11111100,
  B01100000,
  B11011010,
  B11110010,
  B01100110,
  B10110110,
  B10111110,
  B11100000,
  B11111110,
  B11110110
};

void setup() {
  for (int i = 0; i < 7; i++) {
    pinMode(segmentPins[i], OUTPUT);
  }
```

```
  pinMode(commonCathodePin, OUTPUT);
}
void loop() {
  for (int i = 0; i < 10; i++)
  {
    displayNumber(i);

    delay(1000);
  }
}

void displayNumber(int num) {

  for (int i = 0; i < 8; i++) {
    digitalWrite(segmentPins[i], HIGH);
  }
  for (int i = 0; i < 8; i++) {
    if (bitRead(numbers[num], i) == LOW)
{
      digitalWrite(segmentPins[7-i],
LOW);
    }
  }
}
```



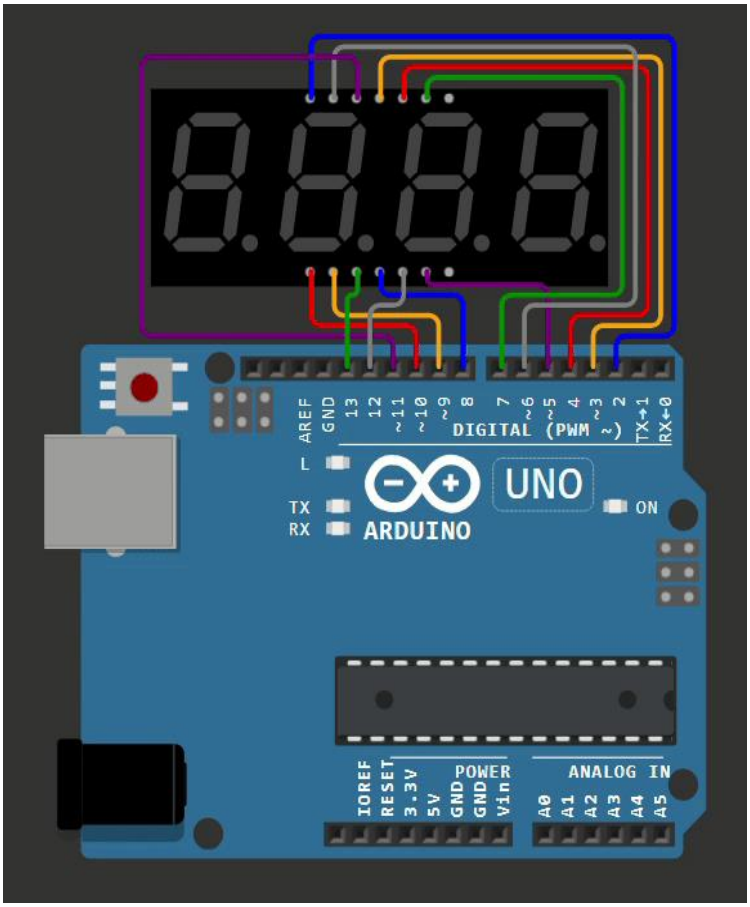
Link of the Project: HANDS ON EXP 1

EXPERIMENT 2: Printing Numbers using the SevSeg library with a 4-digit display. It displays a counter that counts up, showing Deci seconds.

CODE:

```
#include "SevSeg.h"

SevSeg sevseg;


void setup() {
  byte numDigits = 4;
  byte digitPins[] = {2, 3, 4, 5};
  byte segmentPins[] = {6, 7, 8, 9, 10, 11, 12, 13};
  bool resistorsOnSegments = false;
  byte hardwareConfig = COMMON_ANODE;
  bool updateWithDelays = false;
  bool leadingZeros = false;
  bool disableDecPoint = false;


  sevseg.begin(hardwareConfig, numDigits, digitPins, segmentPins,
resistorsOnSegments,
  updateWithDelays, leadingZeros, disableDecPoint);
  sevseg.setBrightness(90);
}


void loop() {
  static unsigned long timer = millis();
```

```
  static int deciSeconds = 0;


  if (millis() - timer >= 100) {
    timer += 100;
    deciSeconds++;


    if (deciSeconds == 10000) {
      deciSeconds=0;
    }
    sevseg.setNumber(deciSeconds, 1);
  }


  sevseg.refreshDisplay();
}
```



Link of the Project: [HANDS ON EXP 2]

EXPERIMENT 3: DIGITAL DICE USING 7 DIGIT DISPLAY

CODE:

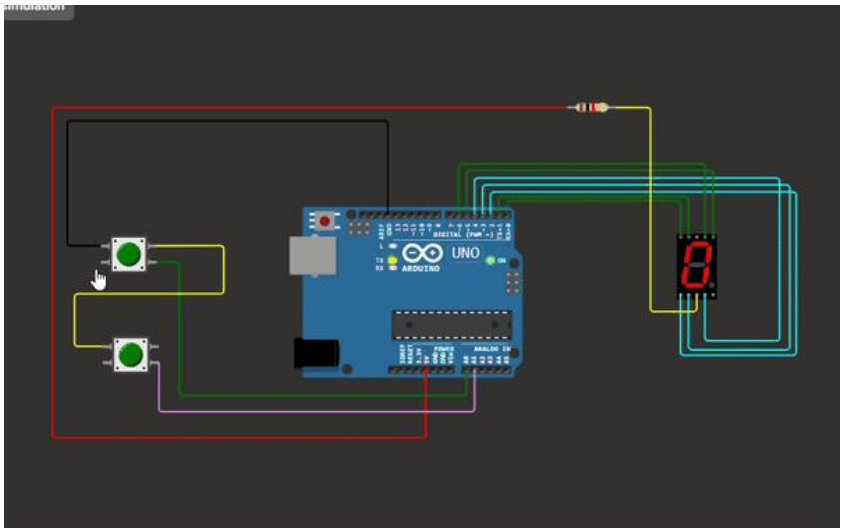
```
#define resett 15

#define dice 14

char digit[6]={0x02, 0x79, 0x24, 0x30, 0x19, 0x12};

int pin[7]={6,5,4,3,2,1,0};

void setup()

{

 for(int i=0;i<7;i++)

 pinMode(pin[i], OUTPUT);

 pinMode(dice, INPUT);

 pinMode(resett, INPUT);

 digitalWrite(dice, HIGH);
```

```
  digitalWrite(resett, HIGH);

   int temp=0x40;

    for(int i=0;i<7;i++)

    {

      int temp1=temp&0x01;

      digitalWrite(pin[i], temp1);

      temp=temp>>1;

    }

    delay(1000);

}

void loop()

{
```

```
int temp=rand();

if(digitalRead(dice)==0)

{

 int k=temp%6;

 temp=digit[k];

 wait();

 for(int i=0;i<7;i++)

 {

  int temp1=temp&0x01;

  digitalWrite(pin[i], temp1);

  temp=temp>>1;

 }
```

```
   delay(200);

  }
  if(digitalRead(resett)==0)

  {
   temp=0x40;

   for(int i=0;i<7;i++)

   {

    int temp1=temp&0x01;

    digitalWrite(pin[i], temp1);
    temp=temp>>1;

   }

  }

}

void wait()
```

```
{

 for(int m=0;m<10;m++)
 {

  for(int k=0;k<6;k++)

  {
   int ch=digit[k];

   for(int l=0;l<7;l++)
   {

    char tem2=ch&0x01;

    digitalWrite(pin[l], tem2);

    ch=ch>>1;
   }
delay(50);
  }
 }
}
```



Link of the Project: [HAND ON EXP 3]