جامعة جدة
University of Jeddah

College of Science and Computer Engineering

Department of Computer Science & Artificial Intelligence

CCAI 436

Advanced Topics in Artificial Intelligence

Lab#5

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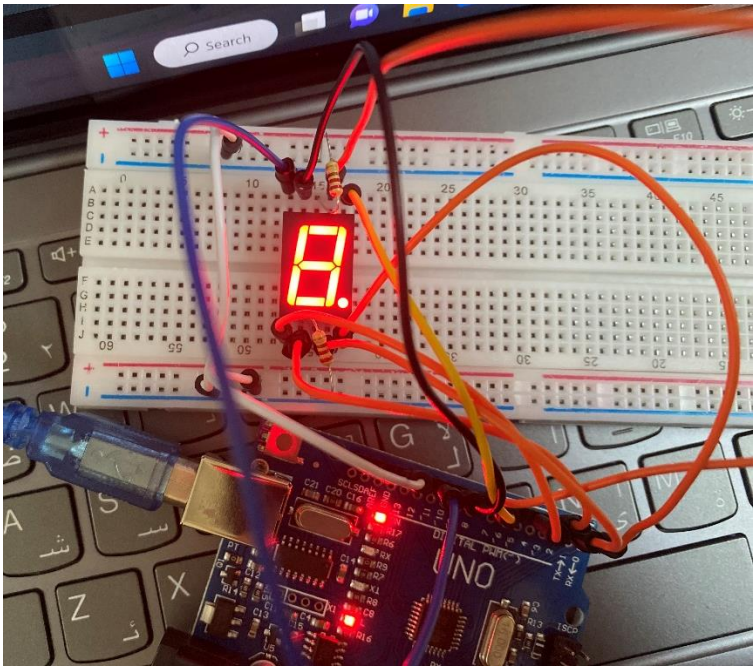
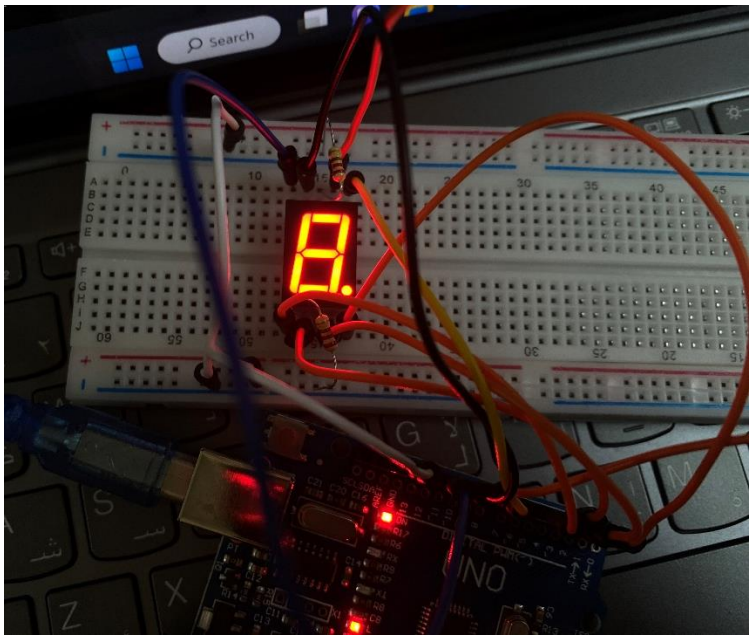
2023

Lab task -hardware-

7 segment display





- *Code:*

```
const byte numeral[10] = {
 B11111100, // 0
 B01100000, // 1
 B11011010, // 2
 B11110010, // 3
 B01100110, // 4
 B10110110, // 5
 B10111110, // 6
 B11100000, // 7
 B11111110, // 8
 B11110110, // 9
};
// pins for decimal point and each segment
// DP,G,F,E,D,C,B,A
const int segmentPins[8] = { 2, 11, 10, 5, 4, 3, 8, 9 }; //dp,g,f,e,d,c,b,a
void setup() {
 for (int i = 0; i < 8; i++) {
 pinMode(segmentPins[i], OUTPUT); // set segment and DP pins to output
 }
 }
void loop() {
 for (int i = 0; i <= 9; i++) {
 showdigit(i);
 delay(1000);
 }
// the last value if i is 10 and this will turn the display off
 delay(1000); // pause second with the display off
// Displays a number from 0 through 9 on a 7-segment display
// any value not within the range of 0-9 turns the display off
```

```
}
void showdigit(int number) {
 boolean isBitSet;
 for (int segment = 1; segment < 8; segment++) {
 isBitSet = bitRead(numeral[number], segment);
// isBitSet will be true if given bit is 1
 digitalWrite(segmentPins[segment], isBitSet);
 digitalWrite(segmentPins[0], HIGH);
 }
}
```