LESSON 3: LED KNIGHT RIDER

INTRODUCTION

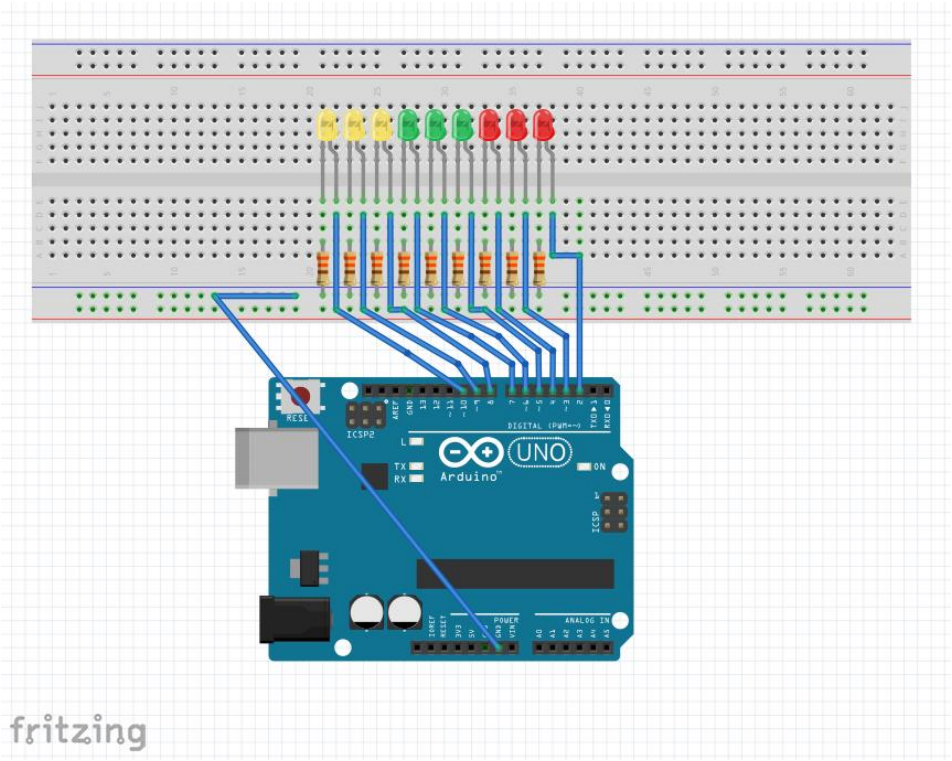
Ever watch knight rider movie? The car (KITT) have a very cool light bar in front and where most people like to have one of it. Here, we are going to make one of it using Arduino Uno interfacing with 9 LEDs. It is just like interfacing a single LED to the Arduino. A program is then loaded to the Arduino that will turn the nine LEDs into a "Knight rider" display.

COMPONENTS:

- 1x Arduino Uno Board
- 1x USB cable
- 1x breadboard
- 9x LEDs
- 9x 330Ω resistor
- Jumper wire

CONNECTION

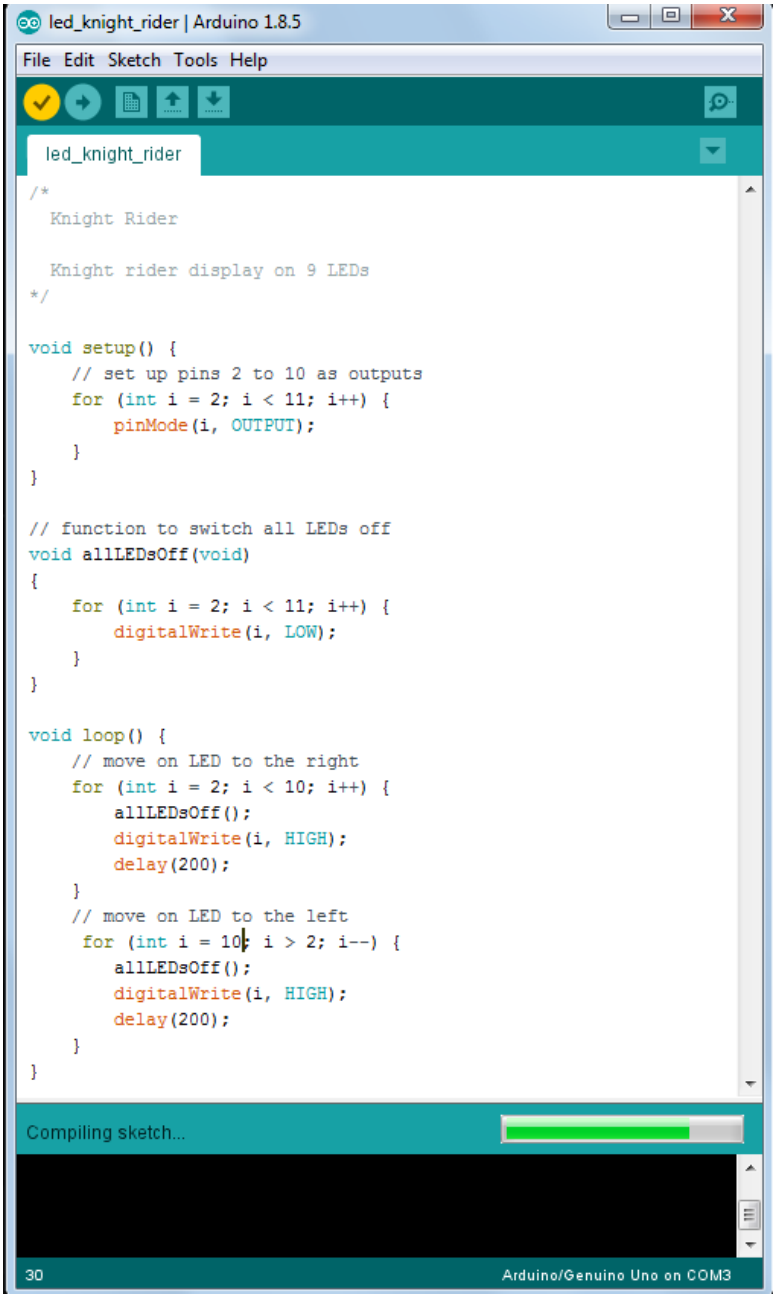
STEP 1: There are total of 9 LEDs using which the anode are all connected to digital port (2,3,4,5,6,7,8,9,10) which BLUE wires. On other hand, the cathode of LEDs are connected to 330Ω resistor then go to ground (GND).



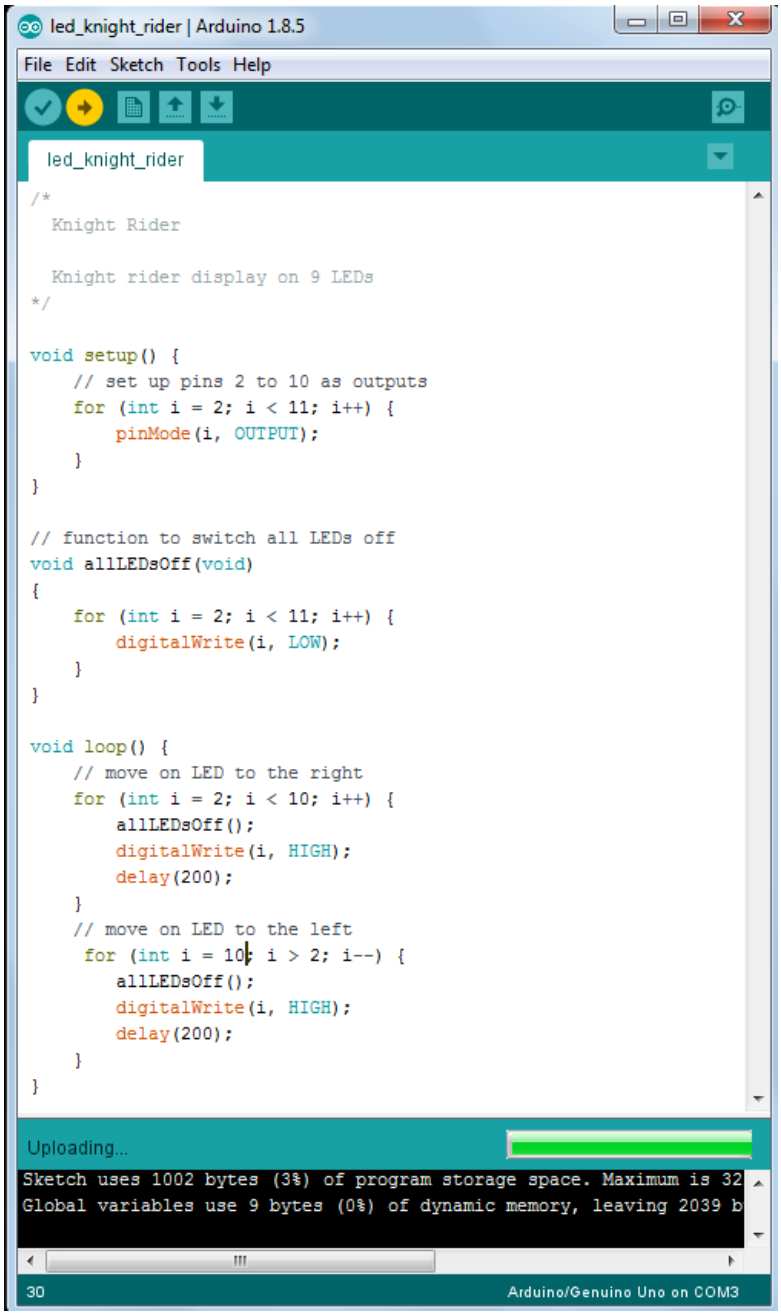
STEP 2: Program

```
/*
  Knight Rider

  Knight rider display on 9 LEDs
*/

void setup() {
   // set up pins 2 to 10 as outputs
   for (int i = 2; i < 11; i++) {
      pinMode(i, OUTPUT);
   }
}

// function to switch all LEDs off
void allLEDsOff(void)
{
   for (int i = 2; i < 11; i++) {
      digitalWrite(i, LOW);
   }
}

void loop() {
   // move on LED to the right
   for (int i = 2; i < 10; i++) {
      allLEDsOff();
      digitalWrite(i, HIGH);
      delay(200);
   }
   // move on LED to the left
    for (int i = 10; i > 2; i--) {
      allLEDsOff();
      digitalWrite(i, HIGH);
      delay(200);
   }
}
```

STEP 3: Compile the code



STEP 4: Upload the sketch to the Arduino Uno board.



RESULT:

The leds turn from rigth to left and then backwards.