

Task 3.1P - Arduino Blinky Project

Summary

- It was quite simple to assemble a fundamental circuit for Task 3.1P, the Arduino Blinky Project using the outlined materials which included an Arduino Uno microcontroller, LED and 220Ohm resistor. The Arduino was to be programmed to toggle the LED to make it blink at intervals of one second. To control the current the resistor was placed in series with the LED and the LED base was connected to the digital pin 13 via the bread board during conduction. After configuring the hardware I wrote a program using the Arduino IDE, where even though the hardware is comparatively more advanced, I relied on basics such as pinMode and digitalWrite to get the LED to blink. Next, I sent the program to the Arduino, and the LED blinked the way it is supposed to. I was able to control the rate at which the blink occurred by modifying the delay parameters. In doing this, I got to learn more about time delay functions in microcontroller based systems. In light of this, this assignment was helpful in enhancing basic features such as circuits and the microcontroller necessary for other complex projects in the future.

Reflection

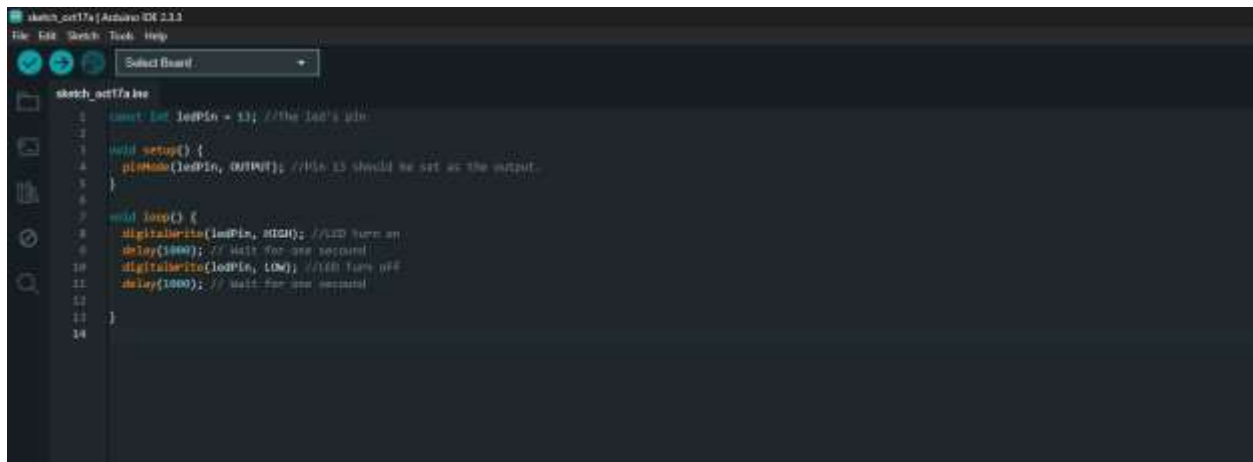
- From this particular assignment, I was to enhance my understanding of some core electrical and programming concepts with regard to the embedded systems. I am sure that I achieved the learning objectives because I was able to assemble the circuit in a right way and make the LED to blink in a way it was assigned, that means, I was in a position to combine the software programming and the hardware assembling. The biggest takeaway I had from this project was learning how to control microcontrollers with the help of Arduino Integrated Development Environment which will be useful in electronics and IoT devices. It also enabled me appreciate how the code can be used to control specific Hardware components.
- The prior knowledge I have of programming logic and hardware, which I learned from previous logic gate and computer architecture classes is in a way linked to the skills I developed from this work. Further, it has connections with the other ideas about computing such as timing and Input/output control that are critical for real-time systems. I believe that the knowledge obtained through such work could prove useful in future work using more complicated Arduino projects or other microcontroller systems. It will also be very useful for any project that involves parts of hardware with software such as in the development of embedded systems, robotics or home automation.

Arduino Code

```
const int ledPin = 13; //The led's pin

void setup() {
  pinMode(ledPin, OUTPUT); //Pin 13 should be set as the output.
}

void loop() {
  digitalWrite(ledPin, HIGH); //LED turn on
  delay(1000); // Wait for one second
  digitalWrite(ledPin, LOW); //LED Turn off
  delay(1000); // Wait for one second
}
```



Drive Link

https://drive.google.com/file/d/1j4hw9fX1g8Hj_MjTCokfKToWZPrtXf1s/view?usp=sharing

YouTube Link

<https://youtu.be/6MpQ1rZSZ44>