SIT210: Embedded Systems Development

Task 2.1P Nano 33 IoT Programming - First Name Blinky

In this task, we will start basic programming with Arduino devices.
Please note: While we may refer to Nano 33 IoT device in the document, the programming and steps are similar for most Arduino devices.

Hardware Required

Arduino Nano 33 IoT Device
Micro-USB to USB A cable
WiFi-enabled device (laptop, smartphone)

Software Required

Arduino IDE 1.8.15 version

Pre-requisites: You must do the following before this task

Task 1.2P.

Task Objective

Here are some key steps in software development:
Step 1 - Requirements gathering (Find out in detail and analyse the needs of the system you are going to build)
Step 2 - Design and build the system
Step 3 - Test the system
Step 4 - Deliver what you built to the client (customer)
You will be using these steps throughout this unit for some lab tasks as well as your project.

For this task, your tutor/lecturer will be your client. Here are your client's requirements:

- **"We have an Arduino Nano 33 IoT board with an in-built LED light (similarly on other Arduino devices). We need the LED light to blink your first name in Morse code."**

Steps:

1. Arduino group has provided a nice example on how to write a program to make a Nano 3 IoT device blink its LED on pin D13. Read the tutorial available here: Blink | Arduino Documentation | Arduino Documentation

   a. Note that the LED pin could be different in other Arduino devices.
2. Modify your Blink an LED code to repeatedly blink your first name in Morse code. (Morse code lookup here: https://morsecode.scphillips.com/morse2.html . Use a long blink for a line and a short blink for a dot).

Task Submission Details

Q1: Describe the steps required to modify the code to blink your last name instead?

Q2: Discuss the effectiveness of your modifications. Reflect on how you should modify your code to be reusable and modular to adapt quickly to changes in requirements.

Q2: Create a repository named BlinkName on Github. Upload your code to the repository. Include the link to your repository here.

Q3: Take a five second video of your Arduino board with the LED blinking your first name and upload it to youtube. Include the link here.

Remember, anytime you submit a task to OnTrack, it is a good practice to check the status of any existing tasks, and the future tasks you are expected to complete. If you have got feedback on previous tasks, you may need to fix and resubmit some of your work. You want to check out why, so that you can learn from this and make it faster and easier to accomplish later work to the required standard.