Justin Bland - 218478549
SIT210 - Task 2.2C – Reflection and Notes

Assessment Guidelines

In this task you will create a tutorial video to teach someone how to complete task 2.1P. Your video would need to contain sufficient information for someone to successfully complete task 2.1P without any further documentation. You will start with describing the requirements of the task, the devices you will be using, how to get the code and modify it to satisfy the requirements, and how to flash your Particle device.

Task Submission Details

- **Q1:** Upload your video (to either YouTube, OneDrive or Deakin sites) and include a link.
- **Q2:** Write a short reflection outlining your experience compared to just completing task 2.1P.

Q1

YouTube Link: https://youtu.be/3jgG_xPrr9U

Q2

Creating a video teaching someone to complete Task 2.1P is a lot more difficult than I first thought. Trying to work out what needs to be covered and what I would expect the person following the video to know.

Citations and References

What Is Morse Code?, Morse code - Wikipedia - https://en.wikipedia.org/wiki/Morse_code

Morse Code Timings, Morse Code Timing | Morse Code World - https://morsecode.world/international/timing.html

Connecting, Flash Drive Next To A Usb Port High-Res Stock Photo - Getty Images - https://www.gettyimages.com.au/detail/photo/flash-drive-next-to-a-usb-port-royalty-free-image/535155197?adppopup=true

Script

[Topic Title] | {Visual}

[Introduction] | {Show Task Sheet}

For S I T 2 1 0 Task 2.2C we have been tasked to create an instructional video showing how to complete the previous task, 2.1P - Particle Programming.

This task will show you the steps needed to program a Particle Argon to use its On-Board LED to flash your first name in Morse Code

[What is Morse Code?] | {Show Screenshot of Morse Code Standard}

What is Morse Code? Morse Code is a telecommunication encoding standard used to encode alphanumeric characters into a series of dots and dashes developed by Samuel Morse in the middle of the 19th century.

Morse Code Timing Standards

- The space between dots and dashes of the same letter is 1 time unit
- The length of a dot is 1 time unit.
- A dash is 3-time units
- The space between letters is 3-time units.
- The space between words is 7-time units.

[Getting Started]

To get started with this task you will need the following

- Particle Argon Development Board
- Micro USB Cable
- Particle Cloud Account

[Connecting the Particle Argon to the PC] | {Video Connecting the Particle Argon to PC}

To Connect the Particle Argon to your P C, simply connect one end of the USB cable to the computer and the other to the Particle Argon

[Programming the Particle Argon] | {Video of The Particle IDE with Morse Sketch}

In order to program the Particle Argon to display the Morse Code message, you will need to write a sketch in the Particle Web I D E, for this you could start with a Blinky example however, these are simple enough to do,

Step 1, we initialise the variables we are going to need,

An L E D variable defining pin D 7, this will use the Argons built in L E D,

A Base Time variable defined as 100ms, this sets our base time unit for all other time calculations,

A Dot variable defined as Base Time, this is technical surplus to our needs but it helps visually differentiate dots and dashes

And the final variable, Dash defined as Base Time multiplied by 3

Step 2, We setup our L E D pin in the setup function by calling “Pin Mode” and passing the L E D variable and setting the type to Output

Step 3, To save time and lessen the code we have to write we will create a new function called Flash Light, this function will return void and take a single int variable called time, from here we will run each flash using the following process

L E D on

Delay by the passed time variable

L E D off

Delay by the Base Time Variable

Step 4, In the Loop function call the flash light function for each dot or dash in the letter we want to send, as shown here, at the end of each letter delay for Base Time multiplied by 3, & at the end of the word delay for Base Time multiplied by 7.

[Uploading the Program] | {Video Upload}

Once you have finished writing the code all that is left is to upload it to the Particle Argon, if the device is connected to your computer all you need to do is to click the “flash” button in the top left corner of the Web I D E, and after compiling – that is if you didn’t make any errors, it will flash the Particle Argon with your new code.

[Test] | {Video Showing Final Product}

Now hopefully once the Particle Argon reboots it will start flashing your name in Morse Code using its built in L E D.