PROGRAMMING “THINGS” PROJECT REPORT

This project was commenced on the 1st of January 2019 and it’s deadline is 28th January 2019. Below is the description of issues faced whilst completing the project, how it’s resolved and what have I achieved.

Issues faced

There were few issues encountered when **getting started on the project**. First being assembling the Zumo itself and understanding the ‘why(s)’ and ‘how(s)’ of things. After abandoning Zumo and Arduino for a few weeks to focus on other projects, my knowledge regarding these matters were a bit rusty. Because of my slow pace of understanding the project overall and how everything works together, it took some time to properly plan my project. This, in turn, greatly affected my time management and project planning. Another challenge faced is **writing the code**. I referred to the examples provided and tried to implement it into my own. Before doing so, I studied the code and tried to understand how all of them works and how can it benefit this project. However, when I used the example and implemented it into my own project, with a little bit of editing as to avoid redefinition or redeclaration, it did not compile properly. Best example was when I tried to make the Zumo stopped when it hits a wall (using codes from *BorderDetect*). When implementing it on the *BorderDetect* sketch, with a little editing, it works smoothly. However, when implementing the code on my project sketch, it does not work how I intended for it to work. This brings us to another issue faced which was that the **Zumo sometimes behaved wrongly**. One example would be the setting the sensors so that they can detect white background instead of black background. A number of trials and errors were played on this and number of different results came up. It took a great effort to find the reason behind that which resulted in great time loss.

Why and how I resolved (or attempted to resolve) key issues.

My first step to getting started was to **read the learning materials** provided in the BlackBoard. I find the learning materials extremely useful and helpful and therefore, have no need to seek more information on Google. Though, some amount of times were lost in trying to fully understand it, I managed to pull it through and was able to grasp the concept in the end. I **resorted to finding alternatives** when some codes do not work. I figured, rather than trying to fix the problem (which could turn out to be a wild goose chase and can be extremely time consuming), I tried to work my way around the problem as an alternative. For example, instead of manually coding the motors to move either left or right (which sometimes move either too quick or too slow), I used the example provided in the *SensorCaliberation* sketch. Unfortunately, because of great time loss, some **sacrifices had to be made**. One sacrifice I made was to drop Task 5 and Task 6. Aside from the fact that there hardly was any time left to complete Task 5 and Task 6, I dropped it in fear that it could disrupt the code that I’ve already written for Task 1 until Task 4.

What have I achieved

Throughout my time in completing this project, my **programming skills have increased quite satisfactorily**. I am **more confident and comfortable in writing codes** now than I used too. In this project’s case, I was able to make to make Task 1 until Task 4 work quite smoothly.

Sources acknowledgement

BorderDetect – used as a reference to make Zumo moved autonomously

SensorCaliberation – solely for caliberation

NewPingExample – to test if my sensor is working