**Software Development/Management Plan**

1. **Introduction**
   1. **Purpose –** The purpose of the project is to create an IoT platform that will be able to scale both upwards and downwards. This is because as the website gets more users, we will need it to scale upwards so that it does not crash and when the website does not have a lot of users, we can scale it downwards to save money.
   2. **Background –** We will be using an IoT Platform that is using an Ubuntu server. We will also be using MySQL and LAMP stack.
   3. **Organization and Responsibilities**

**1.3.1 Project Personnel –** There will be 4 people conducting this project. The group will be split up into two smaller groups. One will focus on creating the diagrams and administrative paper required for the project, while the other group is focused solely on the technical portions.

1. **Statement of Problem:** We will be using an IoT Platform that is using an Ubuntu server. We will also be using MySQL and LAMP stack. We will configure a message broker that is going to be used as a MQTT.

**2.1** – We will be using DigitalOcean as our IoT Platform

**2.2** – Operating system – Ubuntu Linux

**2.3** – Installing LAMP (Linux-Apache-MySQL-PHP)

**2.4** – Securing our software

**2.5 –** Buying and registering a domain name

**2.6** – Adding virtual hosts to our web server

**2.7 -** Installing SSL Certificates

**2.8 -** Installing Node.js and NodeRED

1. **Technical Approach**

**3.1 Reuse Strategy –** We are going to use the software and the configurations as described in the IoT Platform book

**3.2 Assumptions and Constraints –** We will be facing limited time to complete the project. Unfamiliar software that we will need to learn how to use.

**3.3 Anticipated and Unresolved Problems** – This project is conducted over the summer. Family issues or other responsibilities will get in the way of completing this project. We have not had any unresolved issues as of now.

**3.4 Development Environment** – We will be using DigitalOcean as out IoT platform. MySQL, Ubuntu Linux, and PhP will be used as well.

1. **Management Approach**

**4.1 Assumptions and Constraints –** Unexperienced manager. Can affect the entire project by prioritizing the wrong thing. Manager not knowing the team and their skillsets.

**4.2** **Resource Requirements** – The team will be needing the following resources:

**4.2.1** - Computers

**4.2.2** - Software

**4.2.3** - Licenses for the software

**4.2.4** - Internet

**4.2.5** – Training on how to use the software

**4.3 Milestones and Schedules -**

**4.3.1 Deadlines**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Assignment** | **Tools** | **Person** |
| July 3, 2022 | Iot Project – Chapter 6 | IoT Platform- Linux, LAMP PuTTy | Vincent |
| July 3, 2022 | Requirement Analysis Report | Recommended Approach to software Development | Fausto |
| July 3, 2022 | Software Development/Management Plant | Recommended Approach to software Development | Freddy & Xavier |
| July 10, 2022 | Iot Project – Chapter 7 | IoT Platform- Linux, LAMP PuTTy | Vincent & Freddy |
| July 10, 2022 | Preliminary Design Report | Recommended Approach to software Development | Fausto & Xavier |
| July 17, 2022 | IoT Project – Chapter 8 | Iot Platform – Linux, LAMP, PuTTy | Vincent |
| July 17, 2022 | Detaield Designed Document | Recommended Approach to software Development | Fausto |
| July 17, 2022 | Critical Design Review | Recommended Approach to software Development | Freddy & Xavier |
| July 24. 2022 | IoT Project – Chapter 9 | IoT Platform- Linux, LAMP PuTTy | Vincent & Freddy |
| July 24. 2022 | Test Plan Outline | Recommended Approach to software Development | Fausto |
| July 24. 2022 | Build Design Review | Recommended Approach to software Development | Xavier |
| July 31, 2022 | IoT Project – Chapter 10 | IoT Platform- Linux, LAMP PuTTy | Vincent & Freddy |
| July 31, 2022 | System Description | Recommended Approach to software Development | Xavier |
| August 7, 2022 | IoT Project – Chapter 11 | IoT Platform- Linux, LAMP PuTTy | Vincent & Freddy |
| August 7, 2022 | Software Development History | Recommended Approach to software Development | Fausto |

**4.4 Risk Management –** Out two main issues are time limitations and in-person communication. Since people have different schedules, everybody will be assigned a portion of the project during each phase and given a deadline. By doing this, everyone can complete their portions on their own time. We will be using Discord to communicate with each other. It is east to get ahold of the entire team there.

1. **Product Assurance**

**5.1 Assumptions and Constrains** – Limited time to learn the software. It may affect the quality of the IoT Platform.

**5.2 Configuration management**

|  |  |
| --- | --- |
| **Name** | **Description** |
| PuTTY | Used to configure Devices |
| HTTPS | Web server encryption |
| Ubuntu Linux | Operating system |
| DigitalOcean | Used to host the IoT Platform |
| SSH | TCP port 22 – used to remote into our devices securely |

1. **Appendix: Prototyping Plans** – Plans will be updated on the appendix as we progress throughout the project
2. **Plan Update History** – This section will be updated as we progress through the phases. We will provide updated on which sections were updated and when the last update was made.