**Towson University**

**Software Project Management Plan**

for

COSC 412 Individual Project

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**Part 1: Introduction**

* 1. Project Overview

Project is the implementation of website for a House Plant Business. Business owners will be able to upload and delete inventory. Consumers will be able to browse catalogs and purchases items. Consumers will also be able to enter in specific requirement and the website will return with a plant suited to their needs. Project Lifecycle will consist of a waterfall method. This allows a planning of details to flow to the next step.

1.2 Project Deliverables

1. Requirements – 6.30.21 – Blackboard Submission
2. Use Cases – 6.30.21 – Blackboard Submission
3. Possible Tools - 6.30.21 – Blackboard Submission
4. SPMP – 6.30.21 – Blackboard Submission
5. Individual Project Presentation – 7.19.21 – Blackboard Submission
6. Project – 7.23.21 – Blackboard Submission
   1. Evolution of the SPMP

Plan is represented in section 2.1. Unanticipated changes in the code will be handled with error logging and test codes. Any changes in requirements by client will be factored into the process model to ensure deliverable follow scheduled time.

* 1. Reference Materials
* Codeburst.io
* Infoworld.com
* Meduim.com
* [Guru99](https://www.guru99.com/)
* Geeksforgeeks.org
  1. Definitions
* API - application programming interface is a specification of possible interactions with a software component.
* Error Handling - safeguard your code to catch errors as you go through designing website.
* Test Coverage - code is by writing tests to accompany your changes and helps to define expected behavior.

**Part 2: Project Organization**

2.1 Process Model

Delilah Andrusko Project Manager

Delilah Andrusko Developer

Delilah Andrusko Tester

Delilah Andrusko Designer

2.2 Organizational Structure

|  |  |  |  |
| --- | --- | --- | --- |
| Client | Management |  | Consultants |
|  |  |  |  |
| Functional Team |  | Development Team |  |
|  |  |  |  |
| User Interface |  | Home Page |  |
| Documentations |  | Care Tip Page |  |
| Design |  | Accessories Page |  |
|  |  | Contact Page |  |
|  |  | Filter Option |  |

2.3 Organizational Interfaces

* + The website will use external APIs to help organize code and make components more reusable.

2.4 Project Responsibilities

* + Project Manager – develops project plan.
  + Software Architect – document project and confirms requirements are met.
  + Test Engineer – ensure product is working correctly.
  + Database Administrator – works on the data base used to populate the website.
  + Developer/Project Team – complete work withing budget, timeline, and quality expectations.

**Part 3: Managerial Process**

3.1 Management Objectives and Priorities

The important requirements are to create a way for consumers to browse inventory and Owners to manage inventory. Following with the filter options for consumers when browsing through items. Then, the “find your perfect plant” requirement. The lowest level requirement on the list is number of sales for the day function for the owner. The schedule will follow the priority order of the requirements. This project will be based off a very low budget.

* 1. Assumptions, Dependencies and Constraints
* *Assumptions*

It is assumed that users will have experience using a website. The project will be completed by July 23rd. The presentation portion of the project should be completed by the date of the presentation, July 19th.

* *Dependencies*

External dependencies include holidays and scheduled lectures.

* *Constraints*

The time constraint for this project will be that it must be complete and running by July 23rd and this is a low budget project.

3.3 Risk Management

1. Unable to finish project by deadline.

Probability: Low

Impact: High

Prevention: Make more higher level features a priority.

1. Loss of critical information, documents, or code

Probability: Low

Impact: High

Prevention: GitHub will store all code and documents. If one version is lost the older version is available.

3.5 Monitoring and Controlling Mechanisms

* + GitHub generates documentation for each deliverable up to date of the final submissions. Error logging with keep track of code and notify if issues arise through the process. There will be a status update every week about the process of the project.

3.4 Staffing Plan

* This project will be completed with one staff personnel.

**Part 4: Technical Process**

* 1. Methods, Tools and Techniques
* Techniques
  + Error logging and handling
  + Test Coverage
  + Code Reviews
* Tools
  + GitHub will be used for collaboration and for records of changes to the code/process.
  + WordPress
  + Dream-host
  + Potential APIs include:

<https://www.programmableweb.com/api/plantid-rest-api/sample-source-code>

<https://www.growstuff.org/api-docs/index.html>

* 1. Software Documentation
  + Every step will be documents using GitHub. There will be a trail of every change that is made within the project from the last time worked on. After each change is made it will be pushed to the GitHub repository. All files used for requirements will be uploaded as well.
  1. Project Support Functions
     + Software quality assurance engineer will monitor every phase of software develpment process to ensure software adheres to set standards and design quality.
     + Configuration management plan (IEEE Std 1042)
       - Identify all items to define software configuration
       - Monitor State of Chnage requests
       - Complete listing of all changes since last baseline
       - Track progress and previous versions.
     + Verification and validation plan
       - Constant Inspections
       - Walkthroughs of site

**Part 5: Work Elements**

* 1. Work Breakdown Structure (WBS)

Website

Final Presentation

Systems

Functions

Site Layout

Hosting

Servers

Use cases.

Schedules

Requirements

* 1. Gantt ChartChart, bar chart

     Description automatically generated

References:

<https://www.guru99.com/software-configuration-management-tutorial.html>

<https://www.infoworld.com/article/3269878/what-is-an-api-application-programming-interfaces-explained.html>

<https://medium.com/@SherrieRose/software-project-team-roles-and-responsibilities-152a7d575759>

<https://www.geeksforgeeks.org/software-engineering-verification-and-validation/>

https://codeburst.io/5-unexpected-skills-to-master-as-a-beginner-software-engineer-96ada8b0ba11