**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 consists of a waterfall method with a combination of the agile process.

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Tasks | Week1 | Week2 | Week3 | Week4 |
| Home Page |  |  |  |  |
| Plant Page |  |  |  |  |
| Accessories Pages |  |  |  |  |
| Care Tip Page |  |  |  |  |
| Contact Page |  |  |  |  |
| Filter Options |  |  |  |  |
| Perfect Plant Option |  |  |  |  |
| Add to Cart Option |  |  |  |  |
| Check out Option |  |  |  |  |

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.

3.2 Assumptions, Dependencies and Constraints

* + The external constraint on the project consists of a hard due date in July.
  + Project is also constrained by a low budget.
  + Depends on the system used and licensing.
  + Assumes the use has used a retail site previously.

3.3 Risk Management

1. Risk factors is developer is un-able to complete project within time frame.
2. Client could dislike the project.

3.5 Monitoring and Controlling Mechanisms

* + GitHub generate 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.

3.4 Staffing Plan

* This project will be completed with one staff personal.

**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 or Wix will be used to host and create website.
  + Potential APIs include:

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

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

4.2 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.

4.3 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
      * Reviews
      * Walkthroughs of site

**Part 5: Work Elements**

* 1. Work Breakdown Structure (WBS)

House Plant Website

Software Development

Design/Tools Documents

Requirements/Use Cases Documents

Project Management

Database Implementation

Catalog Engine

Transaction Processing

Content Creation

Graphics and Interface

Design and Creation

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