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1 System Overview

The software product that is being developed is a half-finished web application which is the foundation of a library system for books. The system can add books, modify the books, and remove the books. the system stack is implemented in a modern way and the two modules (the client and the server) will communicate via HTTP requests. The front end is implemented using a

Single Page Application (SPA) architecture, which means that no rendering is done on server side all logic for the visual part is done locally and no reload of the page is needed. This also means that the border between back end and front end is very sharp, the only way to know how to communicate is to use the API. The application server is executed in a virtual machine that is managed via Vagrant, the client is executed in your web browser.

1.1 Project purpose and scope

the propose of the project is to create a system and insure that the system is functioning properly and completing the partially implemented back end (server).

The scope of the project is to achieve:

- Create a book, modify a book, remove a book.
- Test the functionality of the system.

2 Management Plan

this section discusses the management plan of the project.

2.1 Project Deadlines and Objectives

the project development will be conducted through an iteration process approach.

iteration #	Objectives	Deadline
iteration 1	Show a list of books as a JSON object and view it in the web (local host API).	2/5/2018
iteration 2	Analysis, Design and Implementation	2/19/2018
iteration 3	Create test plan, cases, unit test and API test	3/5/2018
iteration 4	Complete the development of the system iteratively 1,2 and 3	3/18/2018

2.2 Resource Management

Management plan for the resources which will be used in this project.

Resource	type	Discription
Developer	Human resources.	The one who is programing the system
Vagrant	Software, virtual machine	Software which runs virtual machine
ATOM	Text editor.	Software for edition java codes
Note pad ++	Text editor.	Software for edition java codes

2.3 Stockholders

1. User: a customer using the system for adding, removing or modifying a book using API.
2. Developer: a fully functional system that have been tested.

2.4 Risk Management

Potential risks and problems that might happen during the development process.

Risk type	Discription	effects
Size underestimate.	The planning of the system has been underestimated. The time required to develop the software is underestimated Which can lead to delays.	Effect: Project. The project will be delayed because the planning was not prepared correctly Risk level: serious.

Software tool Underperformance.	<p>Software tools that which are used to develop the project do not perform as anticipated.</p> <p>Code generated by code development tools is inefficient and incorrect. inexperience using vs code, notepad ++, vagrant</p>	<p>Effect: Project. Minor errors which could lead to a defect</p> <p>Risk level: high.</p>
People	Staff are ill at critical times in the project development.	<p>Effect: project. Delays or defect</p> <p>Risk: Serious</p>

3 Development management

This section outlines the development process which is divided into four iterations.

3.1 Work Break Down Structure of Iteration Number One.

3.1.1 Personal Planning, Vision and Project Plan

This iteration is divided into three tasks which will be the objective for iteration number one.

Personal planning: show a list of books as a JSON object

vision: Create a vision document

project plan: Create a project plan

3.1.1.1 Personal Planning.

show a list of books as a JSON object (an associative array) when the user request the client it in the web (local host API books).

This task divided into additional three subtasks.

- A. Subtask A books: Create a list of books.
- B. Subtask B JSON: Convert the java output to JSON objects and view it in localhost:9090/api/books.
- C. Subtask C Web: Show the JSON objects output on monitor.

Associated milestone: 1/26/2018.

3.1.1.2 Vision.

Create a vision document for the system.

Associated milestone: 1/29/2018.

3.1.1.3 Project Plan.

Write a project plan for the project.

Associated milestone: 2/4/2018.

3.1.2 Iteration Number One Deliverables

Vision document: general documentation about the system specifications.

Project plan: plan of the project it describes the risks, resources and development process of iteration number one.

Implementation: the src code implemented for the program.

Report and personal reflection: personal planning and reflection on each iteration and task.

Time log: deadlines and time spent on each iteration, tasks and subtasks.

3.2 Work Break Down Structure of Iteration Number Two.

3.2.1 Analysis, Design and implementation

This iteration is divided into three tasks which will be the objective for iteration number Two.

Analysis: distinguish two use cases (View a list of books and Delete a book) and Design UML diagrams (activity, robustness and sequence)

Design: Create and design the Fetch books in XML formant as well as the delete a book

implementation: the implementation of the design

3.2.1.1 Analysis

This iteration is divided into three tasks which will be our objective for iteration number two.

3.2.1.1.1 Identifying Use Cases

This task divided into additional three subtasks.

- A. Subtask A Identifying Use Cases: Identifying use cases and documenting their event and create an activity diagram.
- B. Subtask B Robustness Diagram: diagram that describe and analyse the steps of use cases to represent the usage requirement of the system
- C. Subtask C Use Case Realization: Sequence diagram which describe the case with more details.

Associated milestone: 2/13/2018.

3.2.1.2 Design.

Design a Sequence diagram to show the logic in fetch books in xml formant and design the delete a book.

Associated milestone: 2/14/2018.

3.2.1.3 Implementation.

Implementation of the Sequence Diagram.

Associated milestone: 2/16/2018.

3.2.2 Iteration Number Two Deliverables

Vision document: general documentation about the system specifications.

Project plan: plan of the project it describes the risks, resources and development process of iteration number 1 and 2.

Implementation: the src code implemented for the program.

Report and personal reflection: personal planning and reflection on each iteration and task.

Time log: deadlines and time spent on each iteration, tasks and subtasks.

UML Diagrams: The activity diagrams, robustness diagram and a sequence diagram from task 1 and the sequence diagram designed for task 3.

3.3 Work Break Down Structure of Iteration Number Three.

3.3.1 Testing

This iteration is divided into Four tasks which will be the objective for iteration number Three.

Test plan: create a test plan

Test Cases: create test cases

Unit tests: Implementations of unit tests

Automated API test: API test

3.3.1.1 Test plan

Establish the objective, requirements, resources, milestones and test strategy for the current iteration

Associated milestone: 3/4/2018.

3.3.1.2 Test Cases

Create test cases for the established uses cases from the 2nd Iteration

Associated milestone: 3/4/2018.

3.3.1.3 Unit Test

Create unit test for the established implementation and uses cases up to the 2nd Iteration

Associated milestone: 3/4/2018.

3.3.1.4 API Test

Test the implementation API

Associated milestone: 3/4/2018.

3.3.2 Iteration Number Three Deliverables

Project plan: plan of the project it describes the risks, resources and development process of iteration number 1,2 and 3.

Implementation: the src code implemented for the program.

Report and personal reflection: personal planning and reflection on each iteration and task.

Time log: deadlines and time spent on each iteration, tasks and subtasks.

Test Cases: the use cases which have been established in 2nd Iteration and how should they be tested.

Test Plan: Document that illustrate what should be test and how to test it in the current iteration.

3.4 Work Break Down Structure of Iteration Number four.

3.4.1 Iterative Development

This iteration is divided into three tasks which will be the objective for iteration number Four.

Iteration planning: planning how to complete the system

Iteration 1: Modify old implementation (diagrams test plan and test cases)

Iteration 2: create new diagrams for new implementations (add a book, edit a book view a book)

3.4.1.1 Iteration planning

Establish the task and what needs to be finished and plan them in an iterative method with how long are the implementation is going to take to be completed.

Associated milestone: 3/9/2018.

3.4.1.2 Iteration 1

Modify and update old diagrams, design and the uses cases for remove a book and view a list of books. Also, update the test plan and test cases for the use cases related to the impregnation.

Associated milestone: 3/9/2018.

3.4.1.3 Iteration 2

Create diagrams, design for the new implemented Add a book, Edit a book and View a book. Also, create test cases, unit test related to the uses cases.

Associated milestone: 3/9/2018.

3.4.2 Iteration Number Four Deliverables

Project plan: a completed project plan that describe the risks, resources and development process of iteration number 1,2,3 and 4.

Implementation: the src code implemented for the program.

Report and personal reflection: personal planning and reflection on each iteration and task.

Time log: deadlines and time spent on each iteration, tasks and subtasks.

Test Plan: Document that illustrate what should be test and how to test it in the current iteration.

UML Diagrams: The activity diagrams, robustness diagram and a sequence diagram.

Design: The Sequence diagram of all requirements.

Iteration plan for iteration 1,2: it describes the objective of each iteration and task and how log for each task/objective to be completed.

4 Project Plan Releases

Initial release	Version
2/5/2018	V 1.1
2/19/2018	V 1.2
3/5/2018	V 1.3
3/18/2018	V 1.4

