



1DV600

Project Plan
- Iteration 1, 2 and 3



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Author: Sarpreet Singh Buttar

Contents

1	Introduction	1
1.1	Purpose	1
1.2	Background	1
1.3	Scope	1
1.4	Project Goals	1
1.5	Stakeholders Goals	2
1.6	Resources	2
1.6.1	Man-Power	2
1.6.2	Tools	2
1.7	Risks	2
1.8	Project Plan Versions	2
2	Development Process	3
2.1	Iteration # 1 (Personal Planning, Vision and Project Plan)	3
2.1.1	Goal	3
2.1.2	Work Breakdown Structure	3
2.1.3	Milestones	3
2.1.4	Iteration Deliverables	3
2.2	Iteration # 2 (Analysis, Design and Implementation)	4
2.2.1	Goal	4
2.2.2	Work Breakdown Structure	4
2.2.3	Milestones	4
2.2.4	Iteration Deliverables	4
2.3	Iteration # 3 (Testing)	5
2.3.1	Goal	5
2.3.2	Work Breakdown Structure	5
2.3.3	Milestones	5
2.3.4	Iteration Deliverables	5
2.4	Iteration #4 (Iterative Development)	6
2.4.1	Goal	6
2.4.2	Work Breakdown Structure	6
2.4.3	Milestones	6
2.4.4	Iteration Deliverables	6

1 Introduction

1.1 Purpose

The purpose of this project plan document is to achieve the followings objectives:

- complete the partially implemented back-end (server) with all the features that are present in the API specification such as create, read, update and delete (CRUD) a book.
- Testing the back-end functionality of the system.

1.2 Background

The given web application is a book library system and its purpose is to create, read, update and delete (CRUD) a book. It is a half-finished web application consists of two modules, the first module is a fully functional front end (client) which we will use to verify the code that we will write during the development of the partially implemented back end (server). The application stack is developed in a modern way which means these two modules will communicate via HTTP request specified in a given API. In result, no rendering is performed on server side because front end is implemented using Single Page Application (SPA) architecture and the only way to know how to communicate is to follow the API. Furthermore, for executing the application server, a virtual machine is required that is managed by Vagrant whereas the client side is executed in web browser.

1.3 Scope

This project plan applies to achieve the following *requirements*:

1. Create a book
2. Modify or Update a book
3. Delete a book
4. Testing back-end functionality of the system

1.4 Project Goals

The development phase follow the iterative process principles. In total there will be 4 iterations. The goal and end date of each iteration is as follows:

Iteration #	Goal	End Date
Iteration #1	Present a list of books as a JSON object (an associative array) for the user when the client requests it using http://localhost:9090/api/books/ to the server.	31 Jan 17
Iteration #2	Analyse(View a list of books and Delete a book), Design(The logic to fetch books in XML format and Delete a book) and Implement the design	12 Feb 2017
Iteration #3	Create test plan, test cases, unit tests as well as API tests	4 Mar 2017
Iteration #4	Complete the system in iterative development(1, 2 and 3)	13 Mar 2017

1.5 Stakeholders Goals

Stakeholder	Goal
User	Wants to create, update and delete a book using API
Developers	Wants fully tested back-end functionality of the system

1.6 Resources

The development process will use following resources:

1.6.1 Man-Power

- *Role:* Implementer
- *Worker:* 1
- *Responsibility:* Everything

1.6.2 Tools

Name	Type	Purpose
VS Code	Editor	Implementation
Vagrant	Virtual Machine	Code executor

1.7 Risks

Following are the possible problems which might occur during the development:

1. I am the only person working on this assignment and I might become unable to work on it because I have one part time work and two other courses to study.
 - *Effect:* The assignment will suffer greatly and ultimately might become a failure.
 - *Occurrence Level:* Medium
 - *Solution:* None
2. I have never programmed in editor.
 - *Effect:* It might be more time-consuming for me to implement.
 - *Occurrence Level:* High
 - *Solution:* Take this into consideration when planning the schedule.
3. I have never worked with vagrant.
 - *Effect:* It might show some error which I am not aware of and slow down the development process.
 - *Occurrence Level:* High
 - *Solution:* Take this into consideration when planning the schedule.

1.8 Project Plan Versions

Date	Version	Changes Made
31 Jan 2017	1.0	-
12 Feb 2017	1.1	Included Iteration 2
4 Mar 2017	1.2	Included Iteration 3
13 Mar 2017	1.3	Included Iteration 4

2 Development Process

The development is divided into three iterations. In this section, each iteration is described in detail.

2.1 Iteration # 1 (Personal Planning, Vision and Project Plan)

2.1.1 Goal

The goal of this iteration is to:

- present a list of books as a JSON object (an associative array) for the user when the client requests it using `http://localhost:9090/api/books/` to the server
- Create a vision document
- Create a project plan

2.1.2 Work Breakdown Structure

For achieving the goal, this iteration is further divided into three tasks.

No.	Task Name	Goal
1	Personal Planning	Present a list of books as a JSON object (an associative array) for the user when the client requests it using <code>http://localhost:9090/api/books/</code> to the server
2	Vision	Create a vision document
3	Project Plan	Create a project plan

In addition, Task #1 is further divided into three subtasks,

No.	Subtask Name	Goal
1	Books	Create a list of books and a method to get them
2	JSON	Convert Java objects into JSON objects and show in the terminal
3	Web	Display JSON objects on screen

2.1.3 Milestones

No.	Milestone	End date
1	Task 1 (Personal Planning) including all subtasks	28 Jan 2017
2	Task 2 (Vision)	28 Jan 2017
3	Task 3 (Project Plan)	31 Jan 2017

2.1.4 Iteration Deliverables

1. **Time Log:** It represents the time spent on each task during this iteration including start and end date.
2. **Source Code:** All the source code implemented in this iteration.
3. **Vision Document:** It represents general picture or description of the system.
4. **Report on Personal Reflection:** It represents the personal reflection on each task in this iteration.
5. **Project Plan:** It represents the general and Iteration #1 plan.

2.2 Iteration # 2 (Analysis, Design and Implementation)

2.2.1 Goal

The goal of this iteration is to:

- Analyse two use cases(View a list of books and Delete a book)
- Design the logic to fetch books in XML format and Delete a book
- Implement the design

2.2.2 Work Breakdown Structure

For achieving the goal, this iteration is further divided into three tasks.

No.	Task Name	Goal
1	Analysis	Identify two use cases and perform analysis using UML diagrams such as Activity, Robustness and Sequence diagram
2	Design	Design the logic to fetch books in XML format and Delete a book
3	Implementation	Implement the design

In addition, Task #1 is further divided into three subtasks,

No.	Subtask Name	Goal
1	Identifying Use Cases	Identifying two use cases and write their description and describe their flow using activity diagram
2	Robustness Diagrams	Analyse the steps of use cases to represent the usage requirements for the system
3	Use Case Realization	Describe more details of use cases in the form of sequence diagrams

2.2.3 Milestones

No.	Milestone	End date
1	Task 1 (Analysis) including all subtasks	12 Feb 2017
2	Task 2 (Design)	12 Feb 2017
3	Task 3 (Implementation)	12 Feb 2017

2.2.4 Iteration Deliverables

1. **Time Log:** It represents the time spent on each task during this iteration including start and end date.
2. **Source Code:** All the the source code implemented in this iteration.
3. **Report on Personal Reflection:** It represents the personal reflection on each task in this iteration.
4. **Project Plan:** It includes the general, Iteration #1 and Iteration #2 plan.
5. **UML Diagrams:** It includes activity, robustness and sequence diagrams made in Task 1 for analysis purpose
6. **Design:** It includes sequence, and class diagram made in Task 2 for design purpose

2.3 Iteration # 3 (Testing)

2.3.1 Goal

The goal of this iteration is to:

- Create a test plan
- Create test cases
- Implement unit tests
- Perform API tests

2.3.2 Work Breakdown Structure

For achieving the goal, this iteration is further divided into three tasks.

No.	Task Name	Goal
1	Test Plan	Identify the objectives and requirements, resources, milestones and test strategy for this iteration
2	Test Cases	Create test cases from the uses cases that has been identified in iteration #2
3	Unit Test	Create unit tests for the test cases as well as all the other functions which has been implemented during the last two iterations
4	API Test	Test the implemented API resources

2.3.3 Milestones

No.	Milestone	End date
1	Task 1 (Test Plan)	4 Mar 2017
2	Task 2 (Test Cases)	4 Mar 2017
3	Task 3 (Unit Tests)	4 Mar 2017
4	Task 4 (API Tests)	4 Mar 2017

2.3.4 Iteration Deliverables

1. **Time Log:** It represents the time spent on each task during this iteration including start and end date.
2. **Source Code:** All the the source code implemented in this iteration.
3. **Report on Personal Reflection:** It represents the personal reflection on each task in this iteration.
4. **Project Plan:** It includes the general, Iteration #1 and Iteration #2 and Iteration #3 plan.
5. **Test Plan:** It explains what and how should be tested in this iteration.
6. **Test Cases:** It reflects the two use cases which has been indentified in iteration #2.

2.4 Iteration #4 (Iterative Development)

2.4.1 Goal

The goal of this iteration is to:

- Plan the work in iterations in order to complete the system
- Perform iteration #1
- Perform iteration #2
- Perform iteration #3

2.4.2 Work Breakdown Structure

For achieving the goal, this iteration is further divided into planning task and three iterations.

No.	Task Name	Goal
1	Iteration Planning	Identify the the tasks and plan them in the iteration including the estimate time to complete the system
2	Iteration #1	The goal is to modify diagrams including use cases diagrams and design for Remove a book and View a list of books. In addition, modify test plan, test cases related to these use cases and its implementation.
3	Iteration #2	The goal is to create diagrams, design and implementation for Add a book, Edit a book and View a book. In addition, create test cases related to these use cases and implement them as well as implement unit test related to this newly implemented code.
4	Iteration #3	The goal is to create diagrams, design and implementation for Search a book by author or title. In addition, create test cases related to these use cases and implement them as well as implement unit test related to these newly implemented code. At last, perform API testing, update project plan and create test suits.

2.4.3 Milestones

No.	Milestone	End date
1	Iteration planning	13 Mar 2017
2	Iteration #1	13 Mar 2017
3	Iteration #2	13 Mar 2017
4	Iteration #3	13 Mar 2017

2.4.4 Iteration Deliverables

1. **Vision Document:** It represents general picture or description of the system.
2. **Project Plan:** It represents the complete project plan.
3. **Iteration plan for iteration #1, #2 and #3:** It represents the iteration goals and their tasks including estimate time to complete them.
4. **UML Diagrams:** It includes activity, robustness and sequence diagrams for all the requirements.
5. **Design:** It includes sequence for all the requirements and class diagram of whole system.

6. **Test Plan:** It explains how all the requirements should be tested. It also included the test cases and test results.
7. **Source Code:** All the the source code implemented in this iteration.
8. **Report on Personal Reflection:** It represents the personal reflection on each task in this iteration.
9. **Time Log:** It represents the time spent on each task during this iteration including start and end date.