

**CAPSTONE PROJECT REPORT**

**Report 2 – Project Management Plan**

– HoChiMinh, September 2020 –

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# I. Project Report

## 1. Status Report

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Work Item** | **Status** | **Notes (Work Item in Details)** |
| 1 |  | Pending |  |
| 2 |  | In Progress |  |
| 3 |  | Completed |  |

## 2. Team Involvements

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Task** | **Member** | **Notes (Task Details, etc.)** |
| 1 |  | Thaott |  |
| 2 |  | Datbc |  |
| 3 |  | Kiendst |  |
| 4 |  | Mytn |  |

## 3. Issues/Suggestions

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Issue** | **Status** | **Notes (Solution, Suggestion, etc.)** |
| 1 |  | Pending |  |
| 2 |  | In Progress |  |
| 3 |  | Completed |  |

# II. Project Management Plan

## 1. Overview

### 1.1 WBS & Estimation

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **WBS Item** | **Complexity** | **Est. Effort**  **(man-days)** |
| ***1*** | ***Initiating*** |  | ***5*** |
| 1.1 | Kick-off project   * Identify Project Goals & Vision * Get the Right Team Together * Define the Right Key Performance Indicators (KPIs) or Timeline * Project Tools & Methodologies * Project Kick-off Meeting Planning * Project Kick-off Meeting | Medium | 1 |
| 1.2 | Develop business case   * Confirm the opportunity * Analyse and develop shortlisted options * Evaluate the options * Implementation strategy * Recommendation | Medium | 2 |
| 1.3 | Assign Project Manager | Simple | 1 |
| 1.4 | Identify stake-holder   * Identifying * Analysing  1. Stakeholder Type 2. Contribution (value) 3. Legitimacy 4. Willingness to engage 5. Influence 6. Involvement  * Mapping | Medium | 1 |
| ***2*** | ***Planning*** |  | ***14*** |
| 2.1 | Create business plan   * Executive summary * Opportunity * Execution * Company and management summary * Financial plan * Appendix | Medium | 2 |
| 2.2 | Collect requirement | Complex | 7 |
| 2.3 | Define scope   * Identify the project needs * Confirm the objectives and goals of the Project * Project Scope description * Expectations and acceptance * Identify constraints * Identify necessary changes | Medium | 1 |
| 2.4 | Define vision   * Define outcome * Define what unique brings to the above outcome * Apply Add relatable, human, aspects | Medium | 1 |
| 2.5 | Create WBS   * Identify the most important pieces of scope * Break down the project * Identify the known attributes for each activity | Medium | 1 |
| 2.6 | Create Risk Management Plan   * Identify the Risk * Analyse the Risk * Evaluate or Rank the Risk * Treat the Risk * Monitor and Review the Risk | Medium | 1 |
| 2.7 | Create Human Resource Plan   * Analyse the objectives * Make an inventory of current human resources * Forecast your HR demand * Determine the number and extent of skills gaps * Draw up an action plan * Integrate and implement the plan * Monitoring, measurement, and feedback | Simple | 1 |
| ***3*** | ***Executing*** |  | ***22*** |
| **3.1** | **Analysis** |  |  |
| 3.1.1 | Analyse Requirements   * Identify customer's needs. * Evaluate system for feasibility. * Perform economic and technical analysis. * Allocate functions to system elements. * Establish schedule and constraints. * Create system definitions. | Medium | 2 |
| 3.1.2 | Create Use case diagram   * Identify the Actors * For each category of users, identify all roles played by the users relevant to the system * Identify what are the users required the system to be performed to achieve these goals * Create use cases for every goal * Structure the use cases | Medium | 1 |
| 3.1.3 | Create Use case specification   * Create a use case model showing the use cases and actors * Create an overview of the steps (content) of the use case * Write the use case specification | Complex | 1 |
| 3.1.4 | Create SRS   * Create an Outline * Start with a Purpose * Give an Overview * Detail Specific Requirements * Get Approval for the SRS | Medium | 2 |
| **3.2** | **Design** |  |  |
| 3.2.1 | Design System Architecture   * Analyse the requirements * Define use cases for the system * Identify processor/modules to implement the use cases * Select operating system and hardware platform * Define sequence diagrams | Medium | 2 |
| 3.2.2 | Design System Detail (Diagrams) | Medium | 3 |
| 3.2.3 | Design Database   * Determine the purpose * Find and organize the information required * Divide the information into tables * Turn information items into columns * Specify primary keys * Set up the table relationships * Refine your design * Apply the normalization rules | Medium | 3 |
| 3.2.4 | Design User Interface   * Briefing * Analytics * Wireframing * UX prototype * UI creation | Complex | 3 |
| **3.3** | **Prototype** |  |  |
| 3.3.1 | Define storyboard | Medium | 1 |
| 3.3.2 | Create paper prototype | Simple | 1 |
| 3.3.3 | Create digital prototype | Complex | 3 |
| **3.4** | **Implementation** |  |  |
| 3.4.1 | Coding/ implement every module defined in SRS | ***Medium*** | ***30*** |
| **3.5** | **Perform quality assurance** |  | ***7*** |
| 3.5.1 | Perform unit testing | Simple | 1 |
| 3.5.2 | Perform integration testing | Medium | 2 |
| 3.5.3 | Perform system testing | Medium | 2 |
| 3.5.4 | Perform acceptance testing | Medium | 2 |
| **3.6** | **Support** |  | ***7*** |
| 3.6.1 | Training | Medium | 2 |
| 3.6.2 | Documentation | Medium | 2 |
| 3.6.3 | User Support | Simple | 1 |
| 3.6.4 | Enhancement | Medium | 2 |
| ***4*** | ***Monitoring*** |  | ***3*** |
| 4.1 | Validate Scope | Medium | 2 |
| 4.2 | Monitor project work | Medium | 1 |
| ***5*** | ***Controlling*** |  | ***5*** |
| 5.1 | Control scope | *Medium* | *1* |
| 5.2 | Control quality | *Medium* | *1* |
| 5.3 | Control risks | *Medium* | *1* |
| 5.4 | Control schedule | *Medium* | *1* |
| 5.5 | Control communication | *Simple* | *1* |
| ***6*** | ***Closing*** |  | ***1*** |
| 6.1 | Close project | Simple | 1 |
| ***Total Estimated Effort (man-days)*** | | | FINAL PRESENTATION |
|  | | | ***94*** |

### 1.2 Project Objectives

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Quality Stage** | **No. of Defects** | **% of Defect** | **Notes** |
| 1 | Initiating | 2 | 8.7 | Must be completed in the first stage. |
| 2 | Planning | 4 | 17.4 | Plan to complete at least 80% of the project, and time distribution. |
| 3 | Analysis | 4 | 17.4 | Detailed project analysis. |
| 4 | Design | 2 | 8.8 | Design diagram and database. |
| 5 | Prototype | 4 | 17.4 | Make a prototype of a project |
| 6 | Implementation | 1 | 4.3 | Implementation of the plans. |
| 7 | Perform quality assurance | 2 | 8.8 | Write test cases to check the quality of the project. |
| 8 | Support | 1 | 4.3 | Discuss unclear issues with the instructor. |
| 9 | Monitoring | 1 | 4.3 | Monitoring the steps taken. |
| 10 | Controlling | 1 | 4.3 | Track the progress of the project |
| 11 | Closing | 1 | 4.3 | Review code and document. |
| ***Total*** | | ***23*** | ***100%*** |  |

### 1.3 Project Risks

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Risk Description** | **Impact** | **Possibility** | **Response Plans** |
| 1 | Most members find it unfamiliar to use flutter or spring framework | High | 30% | Hold training session to get familiar with them |
| 2 | Scrum model is applied for the first time hence there may be difficulties in system development | High | 30% | Hold daily meeting to avoid misunderstandings among members |
| 3 | Wrong estimation of time needed | Medium | 10% | Regularly track progress and update time estimation |
| 4 | Unexpected scope change | High | 10% | Be careful in planning to minimize impact of scope change |
| 5 | Poor code quality | Medium | 20% | Strictly follow code convention, carry out acceptance test to ensure quality source code |

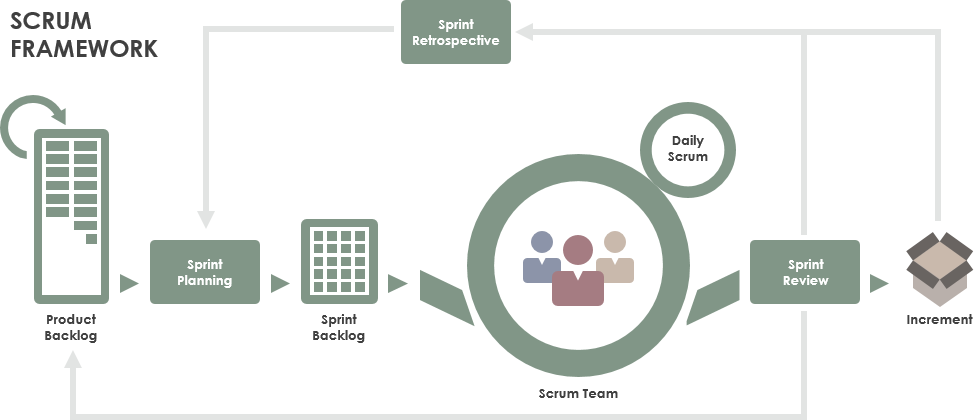
## 2. Management Approach

Scrum model would be implemented in the development of this project because it is appropriate for the process.

### 2.1 Project Process

We choose Scrum model to do this project because of the following reasons:

* The feature can be changed during the developing process to be suitable with the Scrum model we can adapt to change it easily and help reduce risk.
* Scrum allows us to learn new frameworks or technology and develop projects at the same time.
* Because dividing the project allows the team to check partial inspection, identify and fix problems faster.

*Reference:* [*https://www.scrum.org/resources/what-is-scrum*](https://www.scrum.org/resources/what-is-scrum)

***Figure SEQ Figure \\* ARABIC 1-Scrum Framework***

### 2.2 Quality Management

To increase the pace of the project, the team take following measures:

* Observe similar available applications.
* Discuss all requirements together to achieve the best quality.
* Hold daily meetings so that all members are acknowledged of the progress and others’ ability.

### 2.3 Training Plan

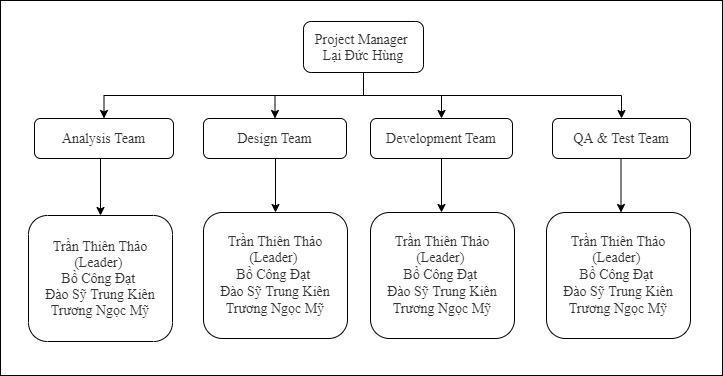
|  |  |  |  |
| --- | --- | --- | --- |
| **Training Area** | **Participants** | **When, Duration** | **Waiver Criteria** |
| Java Spring Boot | All team members | 3 days | Mandatory |
| Dart, Flutter | All team members | 4 days | Mandatory |
| Staruml | All team members | 3 days | Mandatory |
| MySql | All team members | 3 days | Mandatory |
| Git, Github | All team members | 1 days | Mandatory |

## 3. Master Schedule

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Deliverable** | **Due Date** | **Deliverable Scope** |
| 1 | Project Plan | 17/09/2020 | Make a goal plan, list tasks to do, time distribution. |
| 2 | Use case diagram | 24/09/2020 | Design use case diagram |
| 3 | Conceptual diagram | 24/09/2020 | Design conceptual diagram |
| 4 | ER diagram | 29/09/2020 | Design ER diagram |
| 5 | Database | 29/09/2020 | Design database |
| 6 | Design | 08/10/2020 | Architecture Design, Detailed Design |
| 7 | Screen prototype | 13/10/2020 | Design screen of application |
| 8 | Report 1 | 20/10/2020 | Project introduction |
| 9 | Report 2 | 20/10/2020 | Project management plan |
| 10 | Report 3 | 20/10/2020 | Software requirement specification |
| 11 | Report 4 | 20/10/2020 | Software design document |
| 12 | Report 5 | 26/11/2020 | Test case document, test documentation |
| 13 | Report 6 | 26/11/2020 | Software user guides |
| 14 | Report 7 | 26/11/2020 | Final project report |
| 15 | Code package 1 | 15/10/2020 | Code & Unit test, System test cases |
| 16 | Code package 2 | 05/11/2020 | Code & Unit test, System test cases |
| 17 | Code package 3 | 10/11/2020 | Code & Unit test, System test cases |
| 18 | Code front-end 1 | 15/10/2020 | Code & design screen |
| 19 | Code front-end 2 | 10/11/2020 | Code & design screen |
| 20 | Code front-end 3 | 24/11/2020 | Code & design screen |
| 21 | Final Package | 08/12/2020 | Final Codes & documents, User manual |

## 4. Project Organization

### 4.1 Team & Structures



***Figure 2- Team & Structures***

### 4.2 Roles & Responsibilities

|  |  |
| --- | --- |
| **Role** | **Responsibility** |
| Project Manager | Give guidance, check, and help correct mistakes in project |
| Analysis Leader | Give guidance and adjust projects’ requirement |
| Analysis Member | Create and update projects’ requirement |
| Design Leader | Give guidance, design and write code for website layouts |
| Design Member | Design and write code for website layouts |
| Technical Leader | Introduce new techniques to the team |
| Test Leader | Write test case and test plan for the project |
| Test Member | Write test case and test plan for the project |

## 5. Project Communication

### 5.1 Communication Plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Communication Item** | **Who/ Target** | **Purpose** | **When, Frequency** | **Type, Tool, Method(s)** |
| Kick off meeting | Project supervisor, project team | Introduce the project | Once | Meeting |
| Project status report | Project supervisor, Project team | Discuss project status, resolve potential issues or delays | Weekly | Meeting |
| Daily stand up meeting | Project team | Review each member work status or any happening problems | Daily | Meeting |
| Meeting minute reports | Project supervisor | Inform supervisor about meeting content | Weekly | Email |

### 5.2 External Interface

#### a. FU Contacts

|  |  |  |  |
| --- | --- | --- | --- |
| **Function** | **Contact Person**  **(name, position)** | **Contact address**  **(email, telephone)** | **Responsibility** |
| Supervisor | Lại Đức Hùng | Hungld5@fe.edu.vn | - Provide document template - Give instruction to project team - Review deliverables - Supervise project status  - Answer questions about the project |

#### b. Customer Contacts

|  |  |  |  |
| --- | --- | --- | --- |
| **Function** | **Contact Person**  **(name, position)** | **Contact address**  **(email, telephone)** | **Responsibility** |
| Supervisor | Lại Đức Hùng | Hungld5@fe.edu.vn | - Provide document template - Give instruction to project team - Review deliverables - Supervise project status  - Answer questions about the project |

## 6. Configuration Management

### 6.1 Tools & Infrastructures

|  |  |
| --- | --- |
| **Programming languages** | Java, Dart |
| **Framework** | Spring framework, Flutter |
| **API** | API |
| **DBMS** | MySQL |
| **IDEs/Editors** | Visual Studio Code, Android Studio, IntelliJ |
| **UML tools** | StarUML, Draw.io |
| **Version Control** | Github, Git |
| **Deployment server** | Heroku, AWS EC2 (backup) |
| **Project management tool** | Microsoft Excel |

### 6.2 Document Management

*https://github.com/thienthao/pbs/tree/master/Documents*

### 6.3 Source Code Management

*https://github.com/thienthao/pbs*