# Report 2 – Software Project Management Plan

## Problem Definition

### Name of this Capstone Project

* **Official name:** Online Furniture Retailer
* **Vietnamese name:** Website bán hàng trực tuyến đồ nội ngoại thất
* **Abbreviation:** HouseDecor

### Problem Abstract

We build the system to support customer to find home building services and home products with high quality and reasonable price. Our system also support supplier to sell more products and have more customer use services. For that reason, we create a website that achieve their requirements.

In order to satisfy customer’s demand, we help them create idea books, buy products. Customer can also make a review about the suppliers.

For supplier, the system helps suppliers manage their online shop, their projects had built and notify suppliers about orders.

### Project Overview

#### 1.3.1 Current Situation

Below are the problems encountered in this project:

* Customer’s habit: Customers are used to buy home products at shop, showroom or ask family, friends, neighbors about home services when looking forward to building a house. Or search on the search engines, customers will find many results and the results are not grouped.
* Suppliers: Spend much money to marketing. Old-customer's introductions is the only way that suppliers have more customers.

#### 1.3.2 The Proposed System

Website provides following features:

* + - **For Admin:**
* Admin can manage all accounts: activate/deactivate.
* Admin can manage all products, idea books, projects, photos: view/accept/block.
* Admin can search accounts, products, idea books, projects.
  + - **For Guest:**
* Guest can view and share photos, idea books, projects, products, bookmarks, story and profile of others.
* Guest can manage their cart: add/edit/remove but can’t check out.
* Guest can search/filter products, projects, professionals.
* Guest can register account to be Member or Professional.
  + - **For Member:**
* Member can edit profile.
* Member can view and share photos, idea books, projects, products, bookmarks, story and profile of others.
* Member can manage their idea books, photos, bookmarks: add/edit/delete.
* Member can manage their cart: add/edit/delete and check out.
* Member can search/filter products, projects, professionals.
  + - **For Professional:**
* Professional can edit profile.
* Member can view and share photos, idea books, projects, products, bookmarks, story and profile of others.
* Professional can manage their idea books, projects, photos, bookmarks: add/edit/delete.
* Professional can manage their cart: add/edit/delete and check out.
* Professional can search/filter products, projects, professionals.
* Professional can register to be Seller.
  + - **For Seller:**
* Seller can manage their products: add/edit/delete.
* Seller can update order’s status.
* Seller can view sale-report by day, month.
  + - **For System:**
* System send email to Seller when Seller have an order.
* System tracking member, professional’s activities.
* System minus quantity of product when the product is ordered.
* System send promotions to member, professional.
* System hide/show account’s posts when the account is banned/unbanned.
* System send notification to Admin, Member, Professional, Seller (notify their activities).

### Boundaries of the system

* The web application provides a place to browse and save beautiful home photos, projects. The website helps to connect people each other about home services. The website provides following services:
  + Browse and save to idea book beautiful home photos.
  + Find and view detail of photos, products, projects, full stories about designers, home builders, home services, …
  + Find, view, buy other kinds of products (shop by categories: living room, bed room, …; Shop by style: Victoria, Chic, Modern, …; Shop by indoor, outdoor, …
  + Manager user accounts, this function includes:
* Edit profile.
* Idea books: A place to store all photo saved.
* Upload photos: You can share your photos.
* Bookmarks: A place to show all stories that marked so you can return to them again.
* Activity: you can see your comments, shared photos and some discussions about it.
  + Tracking user’s activity to send relative products, relative topic from the website to user’s email. The webmaster hopes that some of the audience will visit the website.
  + Send new promotions to user’s email.
  + other functions: View order info, view buying guides, FAQs, …

### Future Plans

With further research and development, the system can apply the following features:

* Provide online payment feature.
* Upgrade admin component: admin component divides into different roles/levels to manage website.
* Provide a master account and master component for owner business to manages admin component.

### Development Environment

#### Hardware requirements

* **For web application server**

|  |  |  |
| --- | --- | --- |
| Windows | Minimum Requirements | Recommended |
| Internet Connection | Cable, Wi-Fi (4 Mbps) | Cable, Wi-Fi (8 Mbps) |
| Operating System | Window Server 2008 R2 | Window Server 2012 R2 |
| Computer Processor | Intel® Xeon ® 1.4GHz | Intel® Xeon ® Quad Core |
| Computer Memory | 2GB of RAM | 4GB of RAM or more |

Table 1: Hardware Requirement for Server

#### Software requirements

|  |  |  |
| --- | --- | --- |
| Software | Name / Version | Description |
| Operating system | Window 10 Professional | Operating system and platform for development |
| Environment | JDK version 1.8.0 update 101 | Specification for developing web application |
| IDE | NetBeans IDE 8.2 | Use to implement website. |
| Design Model tool | StartUML v2.5.1 | Use to create modal and diagrams. |
| DBMS | MySQL | Use to create & manage the database for system |
| Document storage | GitHub | Use to store document |
| Store and manage source code | GitHub | Use to store all source code |
| Web browser | Chrome 42 or above | Testing browser |

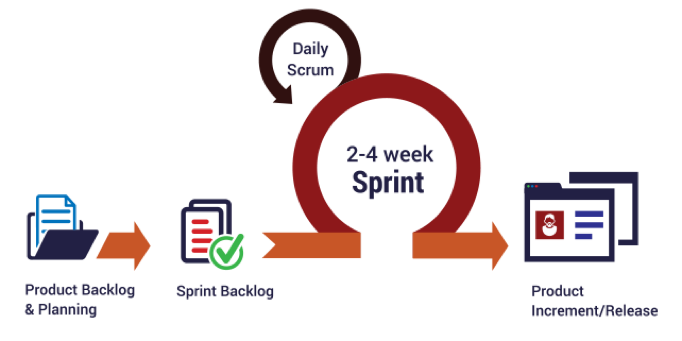
Table 2: Software requirements

## Project organization

### Software Process Model

This project is developed using Scrum Model. This model is appropriate under consideration of 2 following reasons:

* Prototypes are delivered frequently for evaluation.
* Team members can involve more in the development process.

  
Figure 1: Scrum model

Reference: <http://skytechnovation.com/scrum-development-model/>

### Roles and responsibilities

|  |  |  |  |
| --- | --- | --- | --- |
| No | Full name | Role in Group | Responsibilities |
| 1 | Thân Thị Ngọc Vân | Product owner, Project Manager | * Specify user requirements * Control the development process * Provide technical and business analysis support |
| 2 | Cao Đức Sơn Ngọc | Scrum leader, B.A, Developer, Tester | * Manage process * Design database * Clarify requirements * Prepare and combine documents * GUI design * Create test plan * Code * Test |
| 3 | Lê Đại An | Team member,  B.A, Developer,  Tester | * Design database * Clarify requirements * Prepare documents * GUI design * Create test plan * Code * Test |
| 4 | Võ Trần Hoàng Long | Team member,  B.A, Developer,  Tester | * Design database * Clarify requirements * Prepare documents * GUI design * Create test plan * Code * Test |

*Table 3: Roles and responsibilities*

### Tools and Techniques

|  |  |
| --- | --- |
| Tool | Name / Version |
| Web server | Tomcat |
| Development tool | NetBeans IDE 8.2 |
| DBMS | MySQL |
| Source control | GitHub |
| Modeling tool | StarUML v5.0.1 |
| Document tool | Microsoft Word 2016 |

*Table 4: Tools List*

|  |  |
| --- | --- |
| Technique | Name / version |
| Frontend | HTML, CSS, JavaScript, jQuery, Bootstrap |
| Backend | Java EE, Servlet, JSP, JPA, Hibernate |

*Table 5: Techniques List*

## Project Management Plan

### Software development life cycle

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Phase | Description | Deliverables | Resource needed | Dependencies and Constrains | Risks |
| Infrastructure | - Identify and clarify overall requirements.  - Determine the system architecture.  - Build infrastructure for the project.  - Prepare reports. | - System main structure. | 4 days |  | - Unclear project scope.  - Lack of member share of understand. |
| Modeling UML | - Define actors and role of each actor in system.  - Define types and features of each actor.  - Create system’s UML models.  - Prepare reports | - UML models. | 10 days | - Depends on “Infrastructure” | - Unclear project scope.  - Lack of experience. |
| Database | - Create ERD describe architecture, database.  - Generate Entity.  - Prepare reports. | - ERD, entity package. | 7 days | - Depends on “Modeling UML” | - Unclear project scope.  - Lack of experience. |
| Web services | - Add common library, JPA, JDBC.  - Prepare reports. | - Prototype, common project. | 1 days | - Depends on “Database” |  |
| Implements | - Members implement system’s features.  - Test modules.  - Combine modules into system. - Prepare reports. | - Completed system. | 56 days | - Depends on “Web services” | - Unclear system’s features.  - Lack of experience. |
| Test System | - Create use-cases and test system based on this.  - Prepare reports. | - Test reports and system with features are fixed bugs. | 5 days | - Depends on “Implements” | - Lack of experience. |
| Package | - Build setup-files.  - Deploy server.  - Burn CD.  - Complete reports. | - Reports, CD, setup-files. | 1 days | - Depends on “Test System” |  |

*Table 6: Software development life cycle*

### Phase Detail

* + 1. ***Phase 1: Infrastructure***

|  |  |  |
| --- | --- | --- |
| Task | Description | Author |
| 1. Assessment | - Determine requirements.  - Create product backlog. | * NgocCDS * AnLD * LongVTH |
| 2. Selection | - Determine system architecture: Spring Boot.  - Determine software design pattern: Repository & Service.  - Determine all core functions. | * NgocCDS * AnLD * LongVTH |
| 3. Development | - Create the main structure of project. | * NgocCDS * AnLD * LongVTH |
| 4. Review | - Review all completed works and presentation.  - Create sprint backlog. | * NgocCDS * AnLD * LongVTH |

*Table 7: Infrastructure*

* + 1. ***Phase 2: System & Web admin***

|  |  |  |
| --- | --- | --- |
| Task | Description | Author |
| 1. Assessment | - Determine requirements for System and Web app.  - Update product backlog. | * NgocCDS * AnLD * LongVTH |
| 2. Selection | - Determine all functions according to requirements of System and Web app. | * NgocCDS * AnLD * LongVTH |
| 3. Development | - Design and build prototype for web UI  - Create conceptual diagram  - Design class diagram  - Design database  - Implement the entire web UI: layouts, detail pages, etc.  - Implement all the functions in controllers.  - Build needed utility classes | * NgocCDS * AnLD * LongVTH |
| 4. Review | - Review all completed works and presentation.  - Create sprint backlog. | * NgocCDS * AnLD * LongVTH |

*Table 8: System and Web Admin*

* + 1. ***Phase 3: Web service***

|  |  |  |
| --- | --- | --- |
| Task | Description | Author |
| 1. Assessment | - Determine requirements for Web service.  - Update product backlog. | * NgocCDS * AnLD * LongVTH |
| 2. Selection | - Determine all functions according to requirements of Web service. | * NgocCDS * AnLD * LongVTH |
| 3. Development | - Implement all the functions on the web app. | * NgocCDS * AnLD * LongVTH |
| 4. Review | - Review all completed works and presentation.  - Create sprint backlog. | * NgocCDS * AnLD * LongVTH |

*Table 9: Web service*

### All Meeting Minutes

Meeting minutes are contained in folder “Meeting minutes” in the attached CD.

## Coding Convention

**Java:** Using to develop website and web service.

Summary:

* + Naming Convention:
* For variable’s name, use camel case. E.g.: minValue, maxValue…
* For function name, class name, use Pascal case. E.g.: AddIncome, AddExpense…
  + Layout Convention:
* Indent continuation one tab stop (four spaces).
* Add at least one blank line between method definitions and property definitions.
  + - Use parentheses to make clauses in an expression apparent.
* Using Java Code Convention from: <http://www.oracle.com/technetwork/java/codeconvtoc-136057.html>