# Project Management Plan (PMP)



## Problem Definition



### Name of this Capstone Project

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| --- | --- |
| **Official name** | Office Rental Service |
| **Vietnamese name** | Dịch vụ cho thuê văn phòng |
| **Abbreviation** | ORS |

### Problem Abstract

Almost medium and small companies don’t build a new office. They usually look up on internet to rent office. But they can’t find a suitable office for them. Or the price to hire a third party broker company is too high. Besides, the office they rent doesn’t provide the necessary equipment and the time to repair is too long. So, our system will solve that problem. It not only helps you find a suitable office but also has other useful services.

### Project Overview

#### Current Situation

There are some current websites such as vanphongthue.com.vn, rongbay.com, timvanphong.vn, etc. All of them have some advantages and disadvantages.

* Advantages:
  + Friendly and specialized interface.
  + Providing search engines criteria.
  + Direct consultation with the manager.
* Disadvantages:
  + Only supply direct meeting, not arrange for a meeting.
  + Not regularly updated information.
  + Not support map.
  + Few pictures describing office.
  + Not provide equipment.

#### The Proposed System

The system will help customers find suitable office. If you don’t find a suitable office, you can make a request. When our system find some office that meet your requirement, it will send email for you. If you need repair office, our system will send staff to fix that problem as soon as possible. Moreover, our system also provide rental equipment for you.

In more detail, the system would contain following features:

##### Website

* Guess can search office and view detail. If they want to make appointment, they need to register.
* Customer can review office, request appointment, request office (if they can’t find ones), request rental equipment and request repair.
* Admin can manage staff and manager.
* Manager can create and delete contract. They also can assign staff to repair for customer and view statistic of system.
* Staff can view list, create, update and delete office. When staff finish repair for customer, they can report to manager. They also can approve or delete rental equipment.

##### Mobile Application

* Staff can check appointment task and update status request repair.

#### Boundaries of the System

* The system is intended for customers who want to rent office (such as businessman, medium or small company,…).
* The language of the system is Vietnamese
* The complete product includes:
  + The website, for admin, staff, customers and guest to interactive with the system.
  + Mobile application for staff to check task and update status request repair.
  + All the process involved document.

#### Development Environment

* **Hardware requirement for server computer**

|  |  |  |
| --- | --- | --- |
| Windows | Minimum Requirements | Recommended |
| Internet Connection | Cable, Wi-Fi (2Mbps) | Cable, Wi-Fi (8 Mbps) |
| Operating System | Window server 2008 | Window server 2012 |
| Computer Processor | Intel® Celeron® Processor 2957U (1.40 GHz) | Intel® Core™ i3-3210 Processor |
| Computer Memory | 1GB RAM | 4GB or more |

Table : Hardware Requirement for Server

* **Hardware Requirement for Web User**

|  |  |  |
| --- | --- | --- |
| **Web** | **Minimum Requirements** | **Recommended** |
| **Internet Connection** | 2Mbps | 4Mbps |
| **Web Browser** | Firefox, Chrome, IE 8 | Firefox, Chrome, IE 9 |

Table : Hardware Requirement for Web User

All computers must be connected to the Internet.

* **Hardware requirement for mobile app**

|  |  |  |
| --- | --- | --- |
| Windows | Minimum Requirements | Recommended |
| Internet Connection | 2Mbps | 4 Mbps |
| Operating System | Android 4.0 | Android 4.4 |
| Hardware |  |  |
| Memory | 10MB | 10MB |

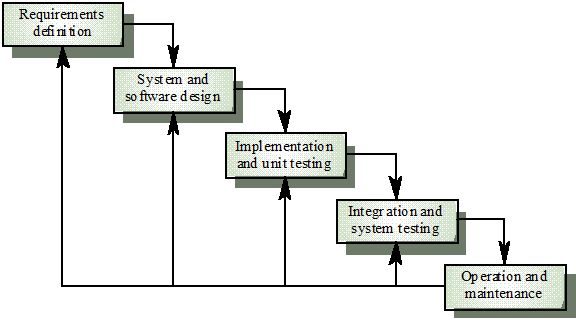
* **Software requirements**
  + Operating system: Windows 7, or above;
  + Framework: Hibernate with Java Persistence;
  + Modeling Tool: Visual Paradigm Community;
  + IDE: Intellji Idea;
  + DBMS: Microsoft SQL Server;
  + Source Control: GitHub, Git for windows, Tortoise Git.

## Project organization



### Software Process Model

We choose waterfall model.



This model is easy to manage and understand. For our project, we don’t have a lot of time so we use this model to help us release our project on time. This model uses for short project and it suitable for our project, which is small with 4 months and requirements are easy to clear.

### Roles and Responsibilities

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Full name** | **Role in Group** | **Responsibilities** |
| **1** | Nguyễn Trọng Tài | Supervisor/ Project manager | * Specify user requirement. * Control the development process. * Support technical and business analysis. * Review document and product application. |
| **2** | Lê Xuân Tiến | Team Leader, Developer, Tester | * Monitor process * Create project plan and distribute tasks * Clarify requirements. * Design database. * Prepare documents. * GUI Design. * Create code guide and form. * Coding. * Testing. * Deploy final product. |
| **3** | Nguyễn Vũ Hoàng Quốc | Developer, Tester | * Clarify requirements. * Prepare documents. * Review Database. * GUI Design. * Create test cases. * Coding. * Testing. |
| **4** | Trương Tiến Thành | Developer, Tester | * Clarify requirements. * Prepare documents. * Review Database. * GUI Design. * Create test cases. * Coding. * Testing. |
| **5** | Trần Lê Tuấn | Developer, Tester | * Clarify requirements. * Prepare documents. * Review Database. * GUI Design. * Create test cases. * Coding. * Testing. |

### Tools and Techniques

* *Front-end*: CSS3, HTML5, JavaScript, JQuery, Ajax, AngularJS, Java Android, PhoneGap.
* *Back-end*: Java 1.7, Hibernate, Java Persistence.
* *Web Server*: Tomcat 7.
* *Developing Tool*: JetBrains IntelliJ IDEA 14, Eclipse.
* *Database Management System:* Microsoft SQL Server 2008.
* *Source Control:* Git-1.9.5-preview, TortoiseGit-1.8.14.0.
* *Modeling Tool*: Visual Paradigm 12.0 Commnunity.
* *Document Tool*: Microsoft Office 2013.

## Project management plan



### Software development life cycle

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| --- | --- | --- | --- | --- | --- |
| **Phase** | **Description** | **Deliverables** | **Resource**  **needed** | **Dependencies**  **and Constrains** | **Risks** |
| **Requirement**  **Analysis** | - Collect requirements.  - Analyze requirements  -Identify and clarify requirements for the system in general. | -Introduction of proposed system. (report 1)  -Project Task Plan. (report 2)  -Software requirement specification. (report 3) | 40 man-days | N/A | - Missing requirement  - Unclear scope of project  - Lack of member share  - Time resource not well managed |
| **Design** | - Design database  - Architecture design for the system  - Detail design using top-down break down  - Choose Architecture style | - Software Design Document  - Base code structure  - Architecture notes  (report 4) | 74 man-days | Depend on “Requirement Analysis” | - Lack of experience.  - Not fulfil requirement. |
| **Implement** | - Implement all system functions | - Source code  - Final deploy packet | 120 man-days | - Software requirement specification.  - Software Design Document | - Lack of member experience.  - Different of member skill |
| **Testing** | - Create test plan  - Create test cases  - Perform unit test cases and system integration test | - Test plan  - Test cases  - Test report  (report 5) | 80 man-days | - Coding is finished  - Based on SRS | - Lack of experience leads to lack of test cases  - Time schedule |
| **Operation and maintenance** | - Create user’s manual, includes server deployment and end-user manual | - Report 6: System User’s Manual | 20 man-days | - Testing is finished  - Based on SRS | - Lack of experience can lead to hard-to-understand document for user  - Time deadline |

### Phase Detail

Below are all the major tasks that need to be performed sequentially during the development of the system.

#### Phase 1: Requirement Analysis

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| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Collect and analyze requirements** | Find the traditional approach for the service, and current IS system for office rental services. Analyze their strengths and weaknesses | TienLX, QuocNVH, ThanhTT, TuanTL |
| **2. Identify and clarify main functions.** | Define main flows which system will build to adapt, and main functions for system. | TienLX, QuocNVH, ThanhTT, TuanTL |
| **3. Create project management plan** | Define the overview of the project  Create project plan | TienLX, QuocNVH |

#### Phase 2: Design

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| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Defined overall system design** | Design basis system architecture design | TienLX |
| **2. Create entity-relationship diagram** | From the defined use cases, create the ERD for the system | TienLX, QuocNVH |
| **3. Create logical database diagram** | Define the logical database diagram based on ERD | ThanhTT, TuanTL |
| **4. Create class diagrams and definition** | Create the classes with attributes and functions, along with its definition | TienLX, QuocNVH, ThanhTT, TuanTL |
| **5. Create interaction diagrams** | Include sequences diagrams and activity diagrams | TienLX, QuocNVH, ThanhTT, TuanTL |
| **6. Create interface design** | Design the user interface for the system applications | TienLX, QuocNVH, ThanhTT, TuanTL |
| **7. Define main algorithms** | Analyze and define the required algorithms for the system | TienLX, QuocNVH, ThanhTT, TuanTL |

#### Phase 3: Implement

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| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Design physical database** | Define the physical database design on SQL Server, and create database dictionary | TienLX, QuocNVH, ThanhTT, TuanTL |
| **2. Define base structure** | Define the base structure for the program | TienLX |
| **3. Coding admin functions** | Include manage account | TuanTL |
| **4. Coding manager functions** | Include manage repair list and manage contract list | ThanhTT |
| **5. Coding staff functions** | Include manage office | TienLX |
| **6. Coding customer functions** |  |  |
| **6.1. Coding request office flow** | Include search office, request office, request appointment | BE: QuocNVH  FE: TienLX |
| **6.2. Coding contract signing flow** | Include the assign flow for manager and view assigned flow for staff | ThanhTT |
| **6.3. Coding contract extend/cancel flow** | Include request extend contract and cancel contract | QuocNVH |
| **6.4. Coding request repair flow** | Include request repair office for customers | TuanTL |
| **7. Coding additional mobile app** | Include view assigned job for staff, view assigned and update the repair job for staff | BE: QuocNVH, TuanTL  FE: TienLX, ThanhTT |

#### Phase 4: Testing

|  |  |  |
| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Create test plan** | Create the test plan document for the system | TienLX |
| **2. Create unit testing** | Create the test cases for each functions describe in the implementation |  |
| **2.1. For admin functions** | Create test cases for functions in manage account | TienLX |
| **2.2. For manager functions** | Create test cases for functions in manage repair and contract | TuanTL |
| **2.3. For staff functions** | Create test cases for functions in manage office | ThanhTT |
| **2.4. For customer functions** | Create test cases for functions for customer | QuocNVH |
| **2.5. For mobile app** | Create test cases for functions for mobile app | TuanTL |
| **3. Testing and fix bugs** | Base on the test cases, test the functions and fix bugs | TienLX, QuocNVH, ThanhTT, TuanTL |
| **4. System integration test** | Test the overall of the system, measure the performance of the system | TienLX, QuocNVH, ThanhTT, TuanTL |
|  |  |  |

#### Phase 5: Operation and maintenance

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| --- | --- | --- |
| **Task** | **Description** | **Author** |
| **1. Create installation guide** | Define the system requirement for the server and client. document installation guild | TienLX, QuocNVH |
| **2. Create User guide** | Define the user manual for operating the system | TienLX, QuocNVH, ThanhTT, TuanTL |
| **3. Maintenance and fix bugs** | Tracking the system and fix the remains bugs while installation | ThanhTT, TuanTL |

### All Meeting Minutes

Refer to Meeting Minutes folder.

## Coding Convention

**Indentation:**

* Four spaces should be used as the unit of indentation
* Tabs must be set exactly every 8 spaces
* Avoid lines longer than 80 characters
* Break after a comma.

**Declarations:**

* One declaration per line
* Put declarations only at the beginning of blocks
* No space between a method name and the parenthesis "(" starting its parameter list
* Open brace "{" appears at the end of the same line as the declaration statement
* Closing brace "}" starts a line by itself indented to match its corresponding opening statement, except when it is a null statement the "}" should appear immediately after the "{"

**White Space:**

* Between sections of a source file
* Between class and interface definitions
* Between methods

**Naming Conventions:**

* Class names should be noun
* Methods should be verbs

Reference: <http://www.oracle.com/technetwork/java/codeconvtoc-136057.html>