**MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project

Final Report

[FPT Finding Motel Website]

**<FFM Team>**

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**Capstone Project**

**code** FFM

Hanoi, 9/2020

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**CHAPTER 1: INTRODUCTION**

1.1. PURPOSE

This chapter provides an overview of the FPT Finding Motel Website Project, including project information, supervisor and project member information, the overview and limitations of existing systems, the problem and solution of the project, brief description of expected application and out of scope of the project.

1.2. PROJECT INFORMATION

**Project name FPT FINDING MOTEL WEBSITE**

**Project code** FFM

**Project type** Web Application

**Project category** New Development

**Project manager** Duong Thi Kim Oanh

**Timeline**From May 18th, 2020 to September 9th,

2020

*Table 1.2.1: Project Information*

1.3. PROJECT MEMBERS

1.3.1. Supervisor

**Full name Phone Email Title Tran Dinh Tri** 0913091952 tritd@fe.edu.vn Lecturer *Table 1.3.1: Supervisor’s Information*

1.3.2. Team Members

**No. Full Name Roll Number Email Phone Position** 1 Duong Thi Kim Oanh SE05941 oanhdtkse05941@fpt.edu.vn 0343611888 Leader

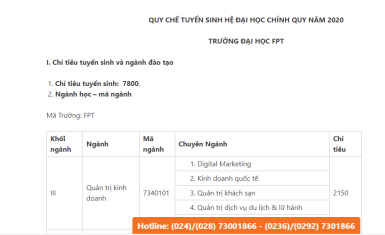
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2 Tran Van My SE06103 mytvse06103@fpt.edu.vn 0774831849 Member 3 Ngo Quang Truong SE05461 truongnqse05461@fpt.edu.vn 0929730706 Member 4 Le Quang Huy SE05499 huylqse05499@fpt.edu.vn 0965820222 Member 5 Chu Tien Dat SE06043 datctse06043@fpt.edu.vn 0968227855 Member *Table 1.3.2: Information of team members*

1.4. PROPOSAL

1.4.1. Problem

As we have known, the number of students of FPT University on Hoa Lac campus increases over the years. Therefore, the demand for accommodation also increases. However, the dormitory does not have enough room for all students. Many students have to rent motels around Thach That district. In 2020, the enrollment target of FPT University across the country is 7800 students, of which the target of Hoa Lac campus is 5200 students (information source: *https://daihoc.fpt.edu.vn/tuyen-sinh/quy-che/).* However, in the Summer 2020 semester, the number of available beds is only 729 on Hoa Lac campus (information source: *http://fap.fpt.edu.vn/*).

*Figure 1.4.1: FPT University’s enrollment target in 2020*

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*Figure 1.4.2: Number of available beds on Hoa Lac Campus in the Summer 2020 semester*

As far as our team knows, most landlords in Hoa Lac don't know how to post their motel's information on intermediary websites. In addition, all existing websites have a large amount of motel's information in different areas so FPT University students and landlords in Hoa Lac are not directly connected on them.

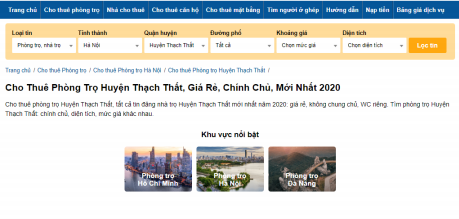
Currently, the landlords and the students communicate mainly via Facebook. We can easily see some limitations of posting motel's information on Facebook such as: uncontrollable information because there are many posts not providing enough necessary information for students; filtering information must be accurate according to the keyword. Besides, new students don't have the habit of using Facebook to find motel's information. Their parents have to come to Hoa Lac to find motel for them. However, not all parents have the conditions to do this.

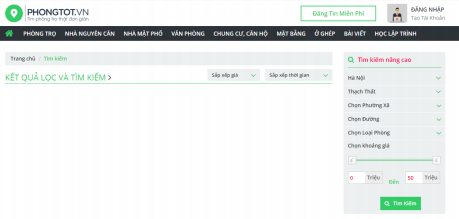
1.4.2. Existing System

We have inquired if some websites provide service for finding motel. In common, all of them are very helpful for users, but there are some problems to talk about. We will mention 2 websites, which are most similar to our website, they are “phongtro123.com” and “phongtot.vn”.

They are 2 of the most popular websites providing service for finding motel now. However, both of them are unable to directly approach the object we want to target as the landlords in Hoa Lac and students of FPT University. When we filter Hanoi City and Thach That District, there are no results found.

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*Figure 1.4.3: Result when filter Hanoi City and Thach That District on phongtro123.com*

*Figure 1.4.4: Result when filter Hanoi City and Thach That District on phongtot.vn*

In addition, neither of these systems clearly distinguishes between two different groups of users: the landlord and the renter, resulting in redundant or missing functions for each user group.

*1.4.2.1. Phongtro123.com*

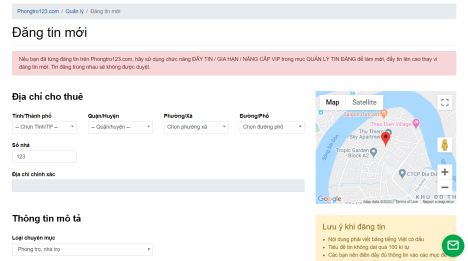
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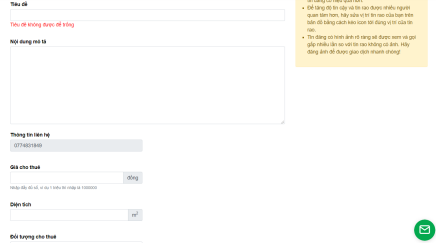
*Figure 1.4.5: phongtro123.com*

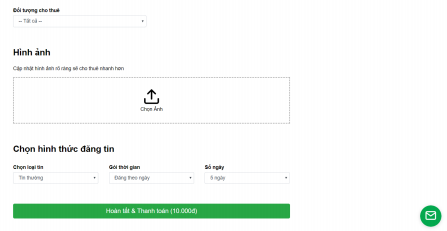
Home URL: https://phongtro123.com/

This is the most popular website now. Users can search and post information about their rooms. The posting steps are very simple and easy to use. This is a very good point that our website will try to have. However, the interface is not eye-catching.

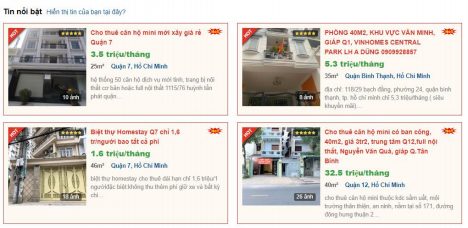
*Figure 1.4.6: Posting steps of phongtro123.com (1)*

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*Figure 1.4.7: Posting steps of phongtro123.com (2)*

*Figure 1.4.8: Posting steps on phongtro123.com (3)*

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*Figure 1.4.9: Interface of phongtro123.com*

*1.4.2.2. Phongtot.vn*

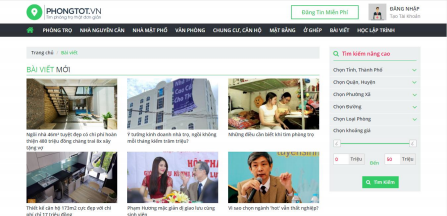
**

*Figure 1.4.10: phongtot.vn*

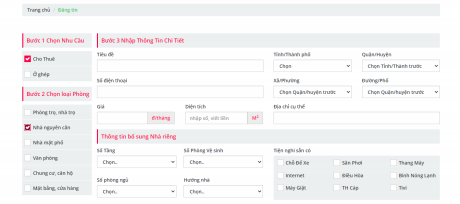
Home URL: http://phongtot.vn/

This is a free posting website with an eye-catching interface. Besides the information of the motel, this website has some unnecessary sections such as the article section, learning programming section. We will consider removing these sections to fit our website.

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*Figure 1.4.11: Interface of phongtot.vn*

Besides, the posting interface of “phongtot.vn” is not user-friendly. Therefore, we will not learn the posting interface of this site.

*Figure 1.4.12: Posting steps on phongtot.vn*

1.4.3. Solution

With all above reasons, the project team build a software system, a web-based application called FPT Finding Motel (FFM) to help FPT students in finding their motel. FFM was created to directly connect FPT students to the landlords in Hoa Lac.

Reviewing and analyzing the problem show that there are four groups of user in the system: guest, landlord, renter and administrator. Each role has a different level of access to the system:

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∙ Guest role: allowed to register, view information of rooms, view instruction, share room’s information on Facebook.

∙ Renter role: allowed to log in/log out, view the information of rooms, view instruction, share room’s information on Facebook, report a post, manage account information, manage wish list, send and manage their rental requests.

∙ Landlord role: allowed to log in/log out, view the information of rooms, view instruction, share room’s information on Facebook, pay into account, view history of payment into account, view history of payment for posting, post information of rooms, manage account information, manage posts, manage rooms of post, process list rental requests.

∙ Administrator role: allowed to log in/log out, view the information of rooms, view instruction, share room’s information on Facebook, manage account information, manage user, post, report and payment package, add money to landlord account.

1.4.4. Out of scope

Due to the limitation of time and ability, FFM will not contain these following functions: ∙ This project is just developed on web application and hasn’t been developed on mobile app yet. ∙ This website only supports Vietnamese interface.

∙ This website will not cover the payment and contract between landlord and renter.

∙ This project only makes payment into account on VNPAY's test environment because we don't have a business license to make payment on VNPAY's product environment.

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**CHAPTER 2: SOFTWARE PROJECT MANAGEMENT PLAN** 2.1. INTRODUCTION

2.1.1. Purpose

This chapter provides the overview of the project plan of FFM, including software process model, project organization, work schedule from start to the end of project, tools and techniques, project risk management plan and communication plan to ensure that the project will be managed well and continuously. Project manager use this chapter to manage and control the work of the project team. Team members follow it to complete assigned tasks and deadlines.

2.1.2. Acronyms and Definitions

**Acronym Definition**

**PM** Project Manager

**FFM** FPT Finding Motel

**SPMP** Software Project Management Plan

**SRS** Software Requirement Specification

**SDD** Software Design Description

**OS** Operating System

**DBMS** Database Management System

*Table 2.1.1: Acronyms and Definitions*

2.2. PROJECT OVERVIEW

2.2.1. Project Description

In this project, we will develop a web-based application that connects the landlords in Hoa Lac to FPT University students. FFM provides main functions for users such as allowing to log in/log out, view the information of rooms, post room information and filter post, manage account information, manage post information, manage room of post, pay into account, manage payment, manage wish list. FFM can help managers by having functions related to user management, post management, report management, payment package management, add money to landlord account.

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2.2.2. Scope

This project covers all processes from planning, requirement specification, design, development to testing.

The scope of this project includes these following stages:

• Develop user requirement and software requirement specification.

• Develop architecture and detailed design documents.

• Code and execute unit test.

• Improve test cases and execute integration test and system test, acceptance test. 2.2.3. Standard Objectives

This project must be finished by 09/03/2020.

All team members have to follow the task assigned by the PM.

All team members give their best effort to complete the project.

Project team learns new knowledge, new technology.

2.2.4. Milestone and Deliverables

*2.2.4.1. Milestone*

**No. Milestone Completion date**

**1** Kick-off project 05/18/2020

**2** End of Initiation phase 06/01/2020

**3** End of Iteration 1 07/21/2020

**4** End of Iteration 2 08/15/2020

**5** Release 09/03/2020

*Table 2.2.1: Milestone*

*2.2.4.2. Deliverables*

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**No. Deliverable name Format Delivery date Verified by Initiation Phase**

**1** Project introduction .docx 05/26/2020 Instructor **2** SPMP ver 1.0 .docx 06/02/2020 Instructor **3** Work Schedule .mpp 06/02/2020 Instructor **Iteration 1**

**4** SRS ver 1.0 .docx 06/09/2020 Instructor **5** SDD ver 1.0 .docx 06/09/2020 Instructor **6** Test plan ver 1.0 .docx 06/16/2020 Instructor **7** Test case ver 1.0 .xlsx 06/23/2020 Instructor **8** Report of test result .docx 07/21/2020 Instructor **Iteration 2**

**9** SRS ver 1.5 .docx 07/28/2020 Instructor **10** SDD ver 1.5 .docx 07/28/2020 Instructor **11** Test plan ver 1.5 .docx 08/04/2020 Instructor **12** Test case ver 1.5 .xlsx 08/04/2020 Instructor **13** Report of test result .docx 08/15/2020 Instructor **Closing phase**

*Table 2.2.2: Deliverables*

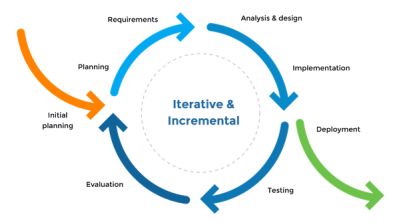
2.3. PROJECT ORGANIZATION

2.3.1. Software Process Model

In this project, we apply Iterative and Incremental model as development process model. Iterative and Incremental model is a process where creating requirements, designing, building and testing a system in

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small parts. This help to make modules very easily. In this model, the module passes through some phases like planning, requirements, analysis and design, coding, testing and evaluation.

*Figure 2.3.1: Iterative and Incremental model*

The reasons that we choose Iterative and Incremental model are:

∙ Can develop prioritized requirements first.

∙ Initial product delivery is faster.

∙ Requirement changes can be easily accommodated.

∙ Easier to test and debug during a smaller iteration.

∙ Less risky, handle risk easily because creating software in parts.

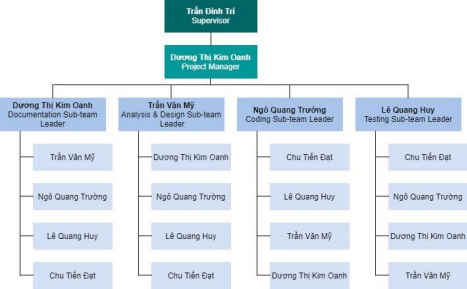
2.3.2. Project lifecycle

This project is divided into 4 phases: Initiation phase, Iteration 1, Iteration 2, and Closing phase. Each Iteration goes through planning, requirement specification, analysis and design, coding, testing and evaluation. In the Iteration 2, we base on the result of the Iteration 1 to plan and specify requirements and develop additional functions for the system.

2.3.3. Roles and Responsibilities

Below is the organization structure of the project team:

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*Figure 2.3.2: Organization chart*

Organization structure above includes 4 sub-teams: Documentation sub-team, Analysis & Design sub team, Coding sub-team and Testing sub-team. Each sub-team has a sub-team leader and sub-team members.

This is the detail description about role and responsibility of each member in the organization structure: **Role Name Responsibility**

**Supervisor** Tran Dinh Tri Give instruction for the project team Verify deliverables

Supervise project team’s status

**PM** Duong Thi Kim Oanh Have overall responsibility of the project Assign task to members

Tracking member’s work

Report working status to the instructor

**Documentation Sub-team**

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**Sub-team leader** Duong Thi Kim Oanh Complete all of the documents Project Introduction

Work Schedule

Requirements specification

User guide

Presentation Slide

**Member 1** Tran Van My Requirements specification **Member 2** Ngo Quang Truong Help SPMP document

**Member 3** Le Quang Huy Test plan document

Installation guide

**Member 4** Chu Tien Dat Help test plan document **Analysis & Design Sub-team**

**Sub-team leader** Tran Van My System Architecture design Screen design

Use case specification

Workflow

**Member 1** Duong Thi Kim Oanh Sequence diagram

Help create use case specification

ERD Diagram

Help database design

Database Dictionary

**Member 2** Ngo Quang Truong Database design

Help create class diagram

**Member 3** Le Quang Huy Help create Sequence diagram, Class diagram

**Member 4** Chu Tien Dat Use case specification

Class diagram

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CRC Cards

**Coding Sub-team**

**Sub-team leader** Ngo Quang Truong Decide technique and tools to be used Train other members about web development

Keeping track of development work done by other

coding team members

Coding back-end

Merge code

Control source code

**Member 1** Chu Tien Dat Coding back-end

**Member 2** Le Quang Huy Coding back-end

Deploy web application to host server

Create coding convention

**Member 3** Tran Van My Coding front-end

**Member 4** Duong Thi Kim Oanh Coding front-end

**Testing Sub-team**

**Sub-team leader** Le Quang Huy Create test plan

Responsible for test plan

Controlling testing activities

Create test report

Manage test resource and assign test tasks

Create unit test and bug log

Create test case (Acceptance test)

Report test result

Implement test case

**Member 1** Chu Tien Dat Create test case (Integration test, System test, Acceptance test)

Implement test case and fix bugs

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**Member 2** Ngo Quang Truong Create test case (Acceptance test) Implement test case and fix bugs

**Member 3** Duong Thi Kim Oanh Create test case (Integration test, System test, Acceptance test)

**Member 4** Tran Van My Create test case (Integration test, System test, Acceptance test)

*Table 2.3.1: Roles and Responsibilities*

2.4. TOOLS AND TECHNIQUES

2.4.1. Hardware

Minimum Requirement Specifications:

CPU: Intel® Core™ i3 1.7 GHz

RAM: 4GB

Hard Drive: 80GB of free space

Internet network connection.

2.4.2. Software

**Category Tool or technique name Logo OS** Microsoft Windows 10 Professional **Office tools** Microsoft Word 2016 Microsoft Excel 2016 

Microsoft PowerPoint 2016

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**Management tool** Microsoft Project 2016 Google Drive **Communication tool** Gmail Facebook Messenger Google Meet **Design tool** Draw.io Microsoft PowerPoint 2016 Lucidchart (https://app.lucidchart.com/) 

**Programming languages**

Java 8 HTML5

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CSS3 JavaScript ES6 **Framework** Bootstrap 4 Spring Framework 5.2.5 Hibernate 5.4.14 Vue.js 2.6.11 

**Template** Thymeleaf **Web Server** Tomcat 9.0.35 **Software architecture** MVC **IDE** IntelliJ Idea 2020.1 **DBMS** Microsoft SQL Server 2019

24

**Source code**

**management tool / Version control**

Github.com IntelliJ Version Control 

**Management bug** Microsoft Excel 2016 **Process Model** Iterative and Incremental Model *Figure 2.4.1: Tools and Techniques*

2.5. SCHEDULE

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Below is the image of the work schedule for this project. Refer to [FFM] WorkSchedule.mpp for detail. 

*Figure 2.5.1: Work Schedule*

2.6. COMMUNICATION MANAGEMENT

2.6.1. Stakeholders and Contacts

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**No. Name Role Email Phone number 1** Tran Dinh Tri Supervisor tritd@fe.edu.vn 0913091952 **2** Duong Thi Kim Oanh PM oanhdtkse05941@fpt.edu.vn 0343611888

**3** Ngo Quang Truong Coding Sub-team Leader

**4** Tran Van My Analysis & Design Sub team Leader

**5** Le Quang Huy Testing Sub-team Leader

truongnqse05461@fpt.edu.vn 0929730706 mytvse06103@fpt.edu.vn 0774831849 huylqse05499@fpt.edu.vn 0965820222

**6** Chu Tien Dat Developer datctse06043@fpt.edu.vn 0968227855 *Table 2.6.1: Stakeholders and Contacts*

2.6.2. Communication Management Approach

Project team communication frequently to ensure the progress of each member’s work, solve problems and have necessary adjustment.

2.6.3. Communication Requirements

Because all team members still take part in classes while doing this project, the project manager should create a communication plan for the project team.

Unscheduled meetings must be informed at least a day in advance.

Meeting minutes must be released to all participants within 24 hours after the meeting. 2.6.4. Communication Methods and Technologies

Create a group chat on Facebook for all team members to discuss and share information. Create a Facebook group to post reminder, meeting content.

Create a Google Meet room for daily meeting and when have important things to discuss and couldn't communicate face to face.

Use Gmail and Google Drive to share documents.

Contact via phone number when need to discuss quickly.

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Communicate face to face at least once a week to discuss difficult problems.

2.6.5. Meeting minutes

All meeting minutes are written following this template:

**MINUTES OF MEETING**

**Start time: End time:**

**Location:**

**Subject:**

**Attendees:**

**No. Full name Position Remarks 1**

**2**

**Purpose of meetings:**

**No. Issues Person in charge Remarks 1**

**2**

*Figure 2.6.1: Meeting Minutes*

2.6.6. Communication Plan

*2.6.6.1. Weekly Meeting Schedule*

Every week, the project team will have a meeting face to face with the supervisor at 05:40 PM Tuesday to report progress, discuss problems and resolve issues.

Before meeting the supervisor, at 04:00 PM Tuesday, the whole team will meet face to face to discuss working and done tasks for that week, discuss problems and resolve issues.

*2.6.6.2. Daily Meeting Schedule*

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Every day at 08:00 PM (off on Tuesday and weekend), the project team will use Google Meet to report daily progress. All team members have to report what they have done during that day, problems and what they will do on the next day. The whole team will then discuss problems and work together to resolve issues.

*2.6.6.3. Unscheduled Meeting*

In case there is an urgent problem, the project team will have an unscheduled meeting, usually on Google Meet or face to face.

2.7. RISK MANAGEMENT

2.7.1. Risk register

**No. Risk Description Root cause Contingency Probability Impact**

**R01 Project team misunderstand**

**the**

**requirements**

**R02 Team**

**members lack**

**of technical**

**skills and**

**knowledge**

**R03 Source code is conflicted**

**R04 Not enough time for**

The requirements are misinterpreted by the project

team creates a gap between

expectations and requirements

Team members lack technical skills and knowledge

Source code is conflicted

Not enough time for complete

project

The requirement may not be clear

Members don’t train together and self-study on the internet

Version

difference

The project

difficult or have

**Have meeting often to make sure the team**

**understand the requirements and know what they need to do**

**Coding sub-team leader finds out which skills the members lack of to train, team members learn by themselves**

**Use backup**

**version, discuss with other**

**members and continue to work**

**Ask for support measures**

Medium High Medium High

Medium High High High

29

**complete project**

so many

functions

*Table 2.7.1: Risk register*

2.7.2. Risk probability and impact

**High R04 Y**

**T**

**I**

**L**

Medium R01, R02, R03

**I**

**B**

**A**

**B**

Low

**O**

**R**

**P**

Low Medium High

**IMPACT**

*Table 2.7.2: Risk probability and impact*

2.8. CODING CONVENTION

2.8.1. Coding convention

Coding conventions are a set of guidelines and practices that developers adopt when writing code. They increase the readability of software project code. In this project, we use Java coding convention:

https://www.oracle.com/technetwork/java/codeconventions-150003.pdf

2.8.2. Comment convention

Because we are a team, every member must code their different modules. Therefore, we decided to use this Comment Convention so that we could easily understand the functions that others had done.

https://docs.oracle.com/en/java/javase/11/docs/specs/doc-comment-spec.html

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**CHAPTER 3: SOFTWARE REQUIREMENTS SPECIFICATION** 3.1. INTRODUCTION

3.1.1. Purpose

The purpose of this document is to give a complete and comprehensive description of the requirements for "FPT Finding Motel" software project, including functional and non-functional requirements. It will also explain system constraints, interface and interactions with other external applications.

3.1.2. System Purpose

FFM is a web-based application created to connect FPT students directly to the landlords in Hoa Lac. Landlords can provide information about their on the website. Students and their parents can easily search, filter information about the rooms and send rental requests to the landlord to process. The admin can manage user, post, report, payment package on this application.

3.1.3. Definitions, Acronyms And Abbreviations

**Term Definition**

**Guest** Someone who interacts with the web application without an account

**Landlord** Someone who has account to be able to post room information on the application

**Renter** Someone who has account to be able to send a rental request on the application

**Admin/Administrator** System administrator who is given specific permission for managing and controlling the system

*Table 3.1.1: Definitions, Acronyms and Abbreviations*

3.1.4. Project Scope

This project covers all processes from planning, requirement specification, design, development to testing.

The scope of this project includes these following stages:

• Develop user requirement and software requirement specification.

• Develop architecture and detailed design documents.

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• Code and execute unit test.

• Improve test cases and execute system test, UAT test.

3.1.5. References

Software Requirements Specification template.

3.2. OVERALL DESCRIPTION

3.2.1. System Perspective

FFM web application is a new, self-contained website which is aimed toward landlords and renters in Hoa Lac, especially FPT University students.

FFM is a website, which means it works on every web browser so that the user needs to have a device with internet and a browser installed on that device. The GUI should be as friendly as possible, easy to use and attractive to people. Admin side for FFM should run on any OS with a web browser and Internet supported.

3.2.2. User Requirements

In this software system, there are 4 user groups: Guest, Admin, Landlord, Renter. User requirements of each group are listed below:

• Guest:

- Register

- View all posts

- View information of post

- View related posts

- Filter post

- View instruction

- Share on Facebook

• Admin:

- Log in

- Log out

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- Forgot password

- View all posts

- View information of post

- View related posts

- Filter post

- View instruction

- Share on Facebook

- Manage account information: View account information, Edit Account information - Change phone number, Edit Account information - Change password, Edit Account information - Change user information

- Manage user: View list user, View information of user, Search user, Filter user by role, Ban/unban landlord

- Manage post: View list post, Search post, Filter post, Ban post

- Manage report: View list report, View information of report, Filter report by status, Search report, Delete report

- Manage payment package: View list payment package, Add payment package, Edit payment package, Change status of payment package

- Add money to landlord account

• Landlord:

- Log in

- Log out

- Forgot password

- View all posts

- View information of post

- View related posts

- Filter post

- View instruction

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- Share on Facebook

- Manage account information: View account information, Edit Account information - Change phone number, Edit Account information - Change password, Edit Account information - Change user information

- Upload new post

- Manage own post: View list post, Edit post, Hide/unhide post, Delete post, Extend time post - Manage room of post: View list room, Add room, Change room’s status

- Pay into account

- View history of payment into account

- View history of payment of posting

- Process rental request: View list rental request, View information of renter, Accept rental request, Reject rental request

- End rental agreement

• Renter:

- Log in

- Log out

- Forgot password

- View all posts

- View information of post

- View related posts

- Filter post

- View instruction

- Share on Facebook

- Manage account information: View account information, Edit Account information - Change phone number, Edit Account information - Change password, Edit Account information - Change user information

- Manage wish list: Add post to wish list, View wish list, Remove post from wish list

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- Send rental request

- Manage rental request: View list rental request, Cancel rental request - Report post

- End rental agreement

3.2.3. Operating Environment

Operating environment for the FFM system is as listed below: - Relational database

- Client/server system

- Operating system: Windows

- Database: SQL Server

- Platform: Java

3.2.4. Project Workflow

***Book a room workflow:***

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*Figure 3.2.1: Book a room workflow*

3.3. SPECIFIC REQUIREMENTS

3.3.1. Functional Requirements

*3.3.1.1. List of use cases*

**ID Use case Actor**

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**UC01** Register Guest **UC02** Log in Renter, Landlord, Admin **UC03** Log out Renter, Landlord, Admin **UC04** Forgot password Renter, Landlord, Admin **UC05** View notifications Renter, Landlord **UC06** View all posts Guest, Renter, Landlord, Admin **UC07** View information of post Guest, Renter, Landlord, Admin **UC08** View related posts Guest, Renter, Landlord, Admin **UC09** Filter post Guest, Renter, Landlord, Admin **UC10** View instruction Guest, Renter, Landlord, Admin **UC11** Share on Facebook Guest, Renter, Landlord, Admin **UC12** Manage account information - View account information Renter, Landlord, Admin

**UC13** Manage account information - Edit account information - Change phone number

**UC14** Manage account information - Edit account information - Change password

**UC15** Manage account information - Edit account information - Change user information

Renter, Landlord, Admin Renter, Landlord, Admin Renter, Landlord, Admin

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**UC16** Manage wish list - Add post to wish list Renter **UC17** Manage wish list - View wish list Renter **UC18** Manage wish list - Remove post from wish list Renter **UC19** Send rental request Renter **UC20** Manage rental request - View list rental request Renter **UC21** Manage rental request - Cancel rental request Renter **UC22** Report post Renter **UC23** Upload new post Landlord

**UC24** Manage own post - View list post Landlord **UC25** Manage own post - Edit post Landlord **UC26** Manage own post - Hide/unhide post Landlord **UC27** Manage own post - Delete post Landlord **UC28** Manage own post - Extend time post Landlord **UC29** Manage room of post - View list room Landlord **UC30** Manage room of post - Add room Landlord **UC31** Manage room of post - Change room’s status Landlord

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**UC32** Pay into account Landlord **UC33** View history of payment into account Landlord **UC34** View history of payment of posting Landlord **UC35** Process rental request - View list rental request Landlord **UC36** Process rental request - View information of renter Landlord **UC37** Process rental request - Accept rental request Landlord **UC38** Process rental request - Reject rental request Landlord **UC39** End rental agreement Landlord, Renter

**UC40** Manage user - View list user Admin **UC41** Manage user - View information of user Admin **UC42** Manage user - Ban/unban landlord Admin **UC43** Manage user - Search user Admin **UC44** Manage user - Filter user by role Admin **UC45** Manage post - View list post Admin **UC46** Manage post - Ban post Admin **UC47** Manage post - Filter post Admin

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**UC48** Manage post - Search post Admin **UC49** Manage report - View list report Admin **UC50** Manage report - Filter report by status Admin **UC51** Manage report - Search report Admin **UC52** Manage report - View information of report Admin **UC53** Manage report - Delete report Admin **UC54** Manage payment package - View list payment package Admin **UC55** Manage payment package - Add payment package Admin **UC56** Manage payment package - Edit payment package Admin

**UC57** Manage payment package - Change status of payment package

Admin

**UC58** Add money to landlord account Admin

*Table 3.3.1: List of use case*

*3.3.1.2. Use case diagram*

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*Figure 3.3.1: Use case diagram*

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*3.3.1.2.a. Actor guest*

*Figure 3.3.2: Guest’s use case diagram*

*3.3.1.2.b. Actor renter*

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*Figure 3.3.3: Renter’s use case diagram*

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*3.3.1.2.c. Actor landlord*

*Figure 3.3.4: Landlord’s use case diagram*

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*3.3.1.2.d. Actor admin*

*Figure 3.3.5: Admin’s use case diagram*

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*3.3.1.3. Business rule*

**No. Description**

**B01** One must have a renter account before sending a rental request, adding post to wish list **B02** One must have a landlord account and money in account before uploading new post **B03** Only renter can report a post

**B04** Renter that already has a rental request being processed can request other rooms

**B05** Renter who is renting a room on this website (status of rental request is accepted) cannotsend another rental request

**B06** If a rental request is accepted, all of other rental requests of this renter will be canceled

**B07** If a post is expired, the landlord can still manage rooms of this post but this post will not be displayed on our website, renter can view information of the post but cannot send rental request, share on Facebook, report the post

**B08** After request is sent, if landlord has not responded, renter can cancel the request

**B09** When landlord accept a rental request of a room, other rental request to this room will be rejected, the room status will be changed into “Đã cho thuê”

**B10** If a landlord is banned, he or she can log in to the system, manage their post but can’t upload new post, pay into account and their posts aren’t displayed on the website

**B11** If a post is banned, it won’t be displayed on the website, rental request to this room will be ended, landlord cannot edit, renter can view information of the post but cannot send rental request, share on Facebook, report the post

**B12** Only posts that have equal or more than 3 reports can be banned

**B13** Only landlords that have equal or more than 10 reports can be banned

**B14** Notifications that were created more than 30 days ago and have “Đã xem” status will be deleted

**B15** List of posts is displayed in chronological order

**B16** Wish list is displayed in chronological order

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**B17** Rental requests canceled after 30 days will be deleted

*Table 3.3.2: Business rule*

*3.3.1.4. Use Case Specification*

• *UC01: Register*

**Use case ID UC01**

**Use case name Register**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Guest

**Description** User registers to have an account

**Pre-conditions** User accesses to the website

**Post-conditions** User registers successfully to the website and go to log in screen User’s account is saved to the database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Đăng ký” item in dropdown

3. Register screen will be displayed

4. Enter username, display name, phone number, password, re-password 5. Choose a role “Chủ trọ” or “Người thuê”

6. Click on “Gửi mã” button

7. Enter verification code

8. Click on “Đăng ký” button

9. Register successfully

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**Alternative flow** ∙ User chooses register with Google account 1.1. Click on “Google” button

1.2. Display Google screen

1.3. Choose a Google account

1.4. Display register with Google screen

1.5. Enter username, display name, phone number

1.6. Go to step 5 of normal flow

∙ User chooses register with Facebook account

2.1. Click on “Facebook” button

2.2. Facebook screen will be displayed

2.3. Click on “Tiếp tục” button

2.4. Display register with Facebook screen

2.5. Enter username, phone number, display name

2.6. Go to step 5 of normal flow

**Exception** ∙ Invalid input. Display message and go to step 4 of normal flow - Username has existed

- Invalid username

- Invalid password

- Invalid phone number

- Forgot inputting fields having “\*”

- Input wrong verification code

- “Nhập lại mật khẩu” field is different from “Mật khẩu” field

∙ User clicks cancel. Use case ends

**Business Rules** N/A

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• *UC02: Log in*

**Use case ID UC02**

**Use case name Log in**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Renter, Landlord, Admin

**Description** User logs in to system

**Pre-conditions** User accesses to the website

User has an account

User hasn’t logged in to the system yet

**Post-conditions** User logs in successfully and go to homepage screen

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Đăng nhập” item in dropdown

3. Log in screen will be displayed

4. Enter username and password

5. Click on “Đăng nhập” button

6. Login successfully

**Alternative flow** ∙ User chooses log in with Google account 1.1.Click on “Google” button

1.2.Display Google screen

1.3.Choose a Google account

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1.4. Login successfully

∙ User chooses log in with Facebook account

2.1.Click on “Facebook” button

2.2. Facebook screen will be displayed

2.3.Click on “Tiếp tục” button

2.4. Login successfully

**Exception** ∙ Invalid input. Go to step 4 of normal flow ∙ Click on “Quên mật khẩu”. Use case ends

∙ User clicks cancel. Use case ends

**Business Rules** N/A

• *UC03: Log out*

**Use case ID UC03**

**Use case name Log out**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Renter, Landlord, Admin

**Description** User log out the system

**Pre-conditions** User has logged into the system

**Post-conditions** Log out successfully and go to homepage screen

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Đăng xuất” item in dropdown

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3. Log out successfully

**Alternative flow** 1. Click on “Đăng xuất” button in “Thông tin tài khoản” screen 2. Log out successfully

**Exception** N/A

**Business Rules** N/A

• *UC04: Forgot password*

**Use case ID UC04**

**Use case name Forgot password**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Renter, Landlord, Admin

**Description** User forgets their password and want to resets password

**Pre-conditions** User accesses to the website

User has an account

**Post-conditions** Reset password successfully and go to log in screen New password is saved to the database

**Normal flow** 1. Click on “Quên mật khẩu” link in log in screen 2. Forgot password screen will be displayed

3. Enter phone number

4. Click on “Gửi mã” button

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5. Enter verification code in “Nhập mã xác nhận” text field

6. Click on “Tiếp tục” button

7. Enter new password, re-enter password in “Nhập mật khẩu”, “Nhập lại

mật khẩu” text field

8. Click on “Xác nhận” button

9. Reset password successfully

**Alternative flow** N/A

**Exception** ∙ Input wrong phone number. Display message and move to step 3 of normal flow

∙ Input wrong verification code. Display message and move to step 5 of

normal flow

∙ Invalid password or “Nhập lại mật khẩu” field is different from “Nhập mật khẩu” field. Display message and move to step 7 of normal flow

∙ User clicks cancel. Use case ends

**Business Rules** N/A

• *UC05: View notifications*

**Use case ID UC05**

**Use case name View notifications**

**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 07/22/2020 **Date last updated** 07/22/2020

**Actors** Renter, Landlord

**Description** User can view notifications

**Pre-conditions** User has logged into the system as a renter or a landlord

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**Post-conditions** User views notifications and go to screen that related to notification **Normal flow** 1. Click on the bell icon in the upper right corner 2. Dropdown of list notification will be displayed

3. Click on a notification

4. Redirect to screen related to that notification

**Alternative flow** N/A

**Exception** N/A

**Business Rules** N/A

• *UC06: View all posts*

**Use case ID UC06**

**Use case name View all posts**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Guest, Renter, Landlord, Admin

**Description** User sees all posts of room

**Pre-conditions** User accesses to the website

**Post-conditions** Display all posts

**Normal flow** 1. Click on “TRANG CHỦ” menu or the logo of the website 2. All posts will be displayed

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**Alternative flow** N/A

**Exception** N/A

**Business Rules** B07, B12, B15

• *UC07: View information of post*

**Use case ID UC07**

**Use case name View information of post**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Guest, Renter, Landlord, Admin

**Description** User views information of a post

**Pre-conditions** User accesses to the website

**Post-conditions** Display screen detail information of the post

**Normal flow** 1. Click on title or image of a post in list post screen 2. The detail information of a post will be displayed

**Alternative flow** N/A

**Exception** N/A

**Business Rules** B07, B12

• *UC08: View related posts*

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**Use case ID UC08**

**Use case name View related posts**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 07/22/2020 **Date last updated** 07/22/2020 **Actors** Guest, Renter, Landlord, Admin

**Description** User views related posts

**Pre-conditions** User accesses to the website

**Post-conditions** Display screen detail information of the post **Normal flow** 1. Click on the title or image of a post in list post screen 2. Top 5 related post will be displayed

3. Click on a related post

4. Detail information of that post will be displayed

**Alternative flow** N/A

**Exception** N/A

**Business Rules** N/A

• *UC09: Filter post*

**Use case ID UC09**

**Use case name Filter post**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh

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**Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Guest, Renter, Landlord, Admin

**Description** Users filter post

**Pre-conditions** User accesses to the website

**Post-conditions** Display list post filtered by which user select

**Normal flow** ∙ Filter by type

1. Click on “TRANG CHỦ” menu

2. Select the type in “Loại tin” dropdown

3. Click on “Tìm kiếm” button

4. Display list post filtered by which user select

**Alternative flow** ∙ Filter by price

1.1. Click on “TRANG CHỦ”, “PHÒNG TRỌ” or “CĂN HỘ” menu

1.2. Select the price in “Giá” dropdown

1.3. Go to step 3 of normal flow

∙ Filter by distance

2.1. Click on “TRANG CHỦ”, “PHÒNG TRỌ” or “CĂN HỘ” menu

2.2. Select the distance in “Khoảng cách” dropdown

2.3. Go to step 3 of normal flow

∙ Filter by square

3.1. Click on “TRANG CHỦ”, “PHÒNG TRỌ” or “CĂN HỘ” menu

3.2. Select the square in “Diện tích” dropdown

3.3. Go to step 3 of normal flow

**Exception** N/A

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**Business Rules** N/A

• *UC10: View instruction*

**Use case ID UC10**

**Use case name View instruction**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Guest, Renter, Landlord, Admin

**Description** User views instruction to use the website **Pre-conditions** User accesses to the website

**Post-conditions** Instruction screen is displayed

**Normal flow** 1. Click on “Hướng dẫn” menu

2. Instruction screen will be displayed

**Alternative flow** N/A

**Exception** N/A

**Business Rules** B14

• *UC11: Share on Facebook*

**Use case ID UC11**

**Use case name Share on Facebook**

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**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Guest, Renter, Landlord, Admin

**Description** User can share the post on Facebook

**Pre-conditions** User accesses to the website

**Post-conditions** The post is shared on Facebook

**Normal flow** 1. Click on title or image of a post

2. The detail information of that post will be displayed

3. Click on “Chia sẻ” button

4. Facebook posting screen will be displayed

5. Select sharing options of Facebook and enter caption

6. Click on “Đăng Lên Facebook” button to complete sharing the post

7. The post has been shared on Facebook

**Alternative flow** N/A

**Exception** User clicks cancel. Use case ends

**Business Rules** B07, B11

• *UC12: Manage account information - View account information*

**Use case ID UC12**

**Use case name Manage account information - View account information Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh

58

**Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Renter, Landlord, Admin

**Description** User can view their account information

**Pre-conditions** User has logged into the system

**Post-conditions** Display account information of user

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Thông tin tài khoản” item in dropdown

3. Account information screen will be displayed

**Alternative flow** N/A

**Exception** N/A

**Business Rules** N/A

• *UC13: Manage account information - Edit account information - Change phone number* **Use case ID UC13**

**Use case name Manage account information - Edit account information - Change phone number Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Renter, Landlord, Admin

**Description** User can change their phone number

**Pre-conditions** User has logged into the system

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**Post-conditions** Phone number is changed successfully

New phone number is saved to the database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Thông tin tài khoản” item in dropdown

3. Click on “Thay đổi” button

4. Enter new phone number in “Số điện thoại” text field

5. Click on “Gửi mã” button

6. Enter verification code in “Mã xác nhận” text field

7. Click on “Xác nhận” button

8. The phone number has been changed successfully

**Alternative flow** N/A

**Exception** ∙ Enter wrong phone number. Go to step 4 of normal flow ∙ Enter wrong “Mã xác nhận”. Go to step 6 of normal flow

∙ Verification code isn’t sent. Go to step 5 of normal flow

∙ User clicks cancel. Use case ends

**Business Rules** N/A

• *UC14: Manage account information - Edit account information - Change password* **Use case ID UC14**

**Use case name Manage account information - Edit account information - Change password Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh

60

**Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Renter, Landlord, Admin

**Description** User can change their password

**Pre-conditions** User has logged into the system

**Post-conditions** Password is changed successfully

New password is saved to the database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Đổi mật khẩu” item in dropdown

3. Change password screen will be displayed

4. Enter “Mật khẩu cũ”, “Mật khẩu mới”, “Nhập lại mật khẩu” text field

5. Click on “Lưu thay đổi” button

6. Password has been changed successfully

**Alternative flow** N/A

**Exception** ∙ Invalid input. Go to step 4 of normal flow

- Enter wrong “Mật khẩu cũ”

- “Nhập lại mật khẩu” field is different from “Mật khẩu mới” field

**Business Rules** N/A

• *UC15: Manage account information - Edit account information - Change user information* **Use case ID UC15**

**Use case name** Manage account information - Edit account information - Change user information

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**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Renter, Landlord, Admin

**Description** User can change their personal information **Pre-conditions** User has logged into the system

**Post-conditions** User information is changed successfully

New user information is saved to the database

**Normal flow** ∙ Change display name

1. Mouse over the account icon in the upper right corner

2. Click on “Thông tin tài khoản” item in dropdown

3. Account information screen will be displayed

4. Enter the new display name in “Tên hiển thị” text field

5. Click on “Lưu thay đổi” button

6. Display name has been changed successfully

**Alternative flow** ∙ Change other user information

1.1. Mouse over the account icon in the upper right corner

1.2. Click on “Thông tin tài khoản” item in dropdown

1.3. Edit birthdate, career, gender

1.4. Click on “Lưu thay đổi” button

1.5. Other user information has been changed successfully

**Exception** ∙ Invalid input. Go to step 4 of normal flow **Business Rules** N/A

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• *UC16: Manage wish list - Add post to wish list*

**Use case ID UC16**

**Use case name Manage wish list - Add post to wish list**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Renter

**Description** Renter can add a post to their wish list

**Pre-conditions** User has logged into the system as a renter

**Post-conditions** Post is added to the wish list successfully

Update database

**Normal flow** 1. Click on “Lưu tin này” button in detail information of a post screen 2. Message “Đã thêm vào danh sách yêu thích” will be displayed

3. The post will be added to wish list

**Alternative flow** 1.1. Click on heart icon of a post in list post screen 1.2. Go to step 2 of normal flow

**Exception** N/A

**Business Rules** B01

• *UC17: Manage wish list - View wish list*

**Use case ID UC17**

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**Use case name Manage wish list - View wish list**

**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Renter

**Description** Renter can view their wish list

**Pre-conditions** User has logged into the system as a renter **Post-conditions** Display wish list

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Danh sách yêu thích” item in dropdown

3. Wish list will be displayed

**Alternative flow** N/A

**Exception** N/A

**Business Rules** B01, B16

• *UC18: Manage wish list - Remove post from wish list*

**Use case ID UC18**

**Use case name Manage wish list - Remove post from wish list Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Renter

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**Description** Renter can remove the post from their wish list

**Pre-conditions** User has logged into the system as a renter

**Post-conditions** The post will be removed form wish list

Update database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Danh sách yêu thích” item in dropdown

3. Wish list will be displayed

4. Click on close icon of a post

5. Message “Đã xóa bài đăng khỏi danh sách yêu thích” will be displayed 6. The post will be removed from wish list

**Alternative flow** ∙ In list post screen

1.1. Click on heart icon of a post in list post screen

1.2. Go to step 5 of normal flow

∙ In detail information of a post screen

2.1. Click on “Bỏ lưu tin” button

2.2. Go to step 5 of normal flow

**Exception** N/A

**Business Rules** B01

• *UC019: Manage wish list - Send rental request*

**Use case ID UC19**

**Use case name** Manage wish list - Send rental request

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**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Renter

**Description** Renter send a rental request into a room

**Pre-conditions** User has logged into the system as a renter

**Post-conditions** Rental request is sent to landlord and its status is processing

**Normal flow** 1. Click on title or image of a post

2. The detail information of that post will be displayed

3. Click on “Gửi yêu cầu” button

4. Select a room and start date

5. Click on “Xác nhận” button

6. Confirmation pop-up will be displayed

7. Click on “Đồng ý” button

8. Rental request is sent to landlord and its status is processing

**Alternative flow** N/A

**Exception** ∙ User clicks cancel. Use case ends

∙ User has another rental request with status “Đã được chấp nhận”. Display message “Bạn đang thuê một phòng khác. Không thể gửi yêu cầu thuê

phòng mới”. Use case ends

∙ Invalid input. Go to step 4 of normal flow

- User select a room with status “Đã cho thuê”.

- User select a day before the current date

**Business Rules** B01, B04, B05, B07, B12

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• *UC20: Manage rental request - View list rental request*

**Use case ID UC20**

**Use case name Manage rental request - View list rental request Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Renter

**Description** Renter can view their rental requests

**Pre-conditions** User has logged into the system as a renter **Post-conditions** Display list rental request of renter

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Danh sách yêu cầu” item in dropdown

3. List rental request will be displayed

**Alternative flow** N/A

**Exception** N/A

**Business Rules** B17

• *UC21: Manage rental request - Cancel rental request*

**Use case ID UC21**

**Use case name** Manage rental request - Cancel rental request **Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh

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**Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Renter

**Description** Renter can cancel their rental request if it hasn’t been processed by landlord

**Pre-conditions** User has logged into the system as a renter

User has sent a rental request

Landlord hasn’t processed this rental request yet

**Post-conditions** Rental request is canceled

Update database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Danh sách yêu cầu” item

3. List rental request will be displayed

4. Click on “Hủy” button of a post

5. Confirmation pop-up will be displayed

6. Click on “Đồng ý” button

7. Rental request is canceled

**Alternative flow** N/A

**Exception** ∙ User clicks cancel. Use case ends

**Business Rules** B08

• *UC22: Report post*

**Use case ID UC22**

**Use case name Report post**

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**Created by** Chu Tien Dat **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Renter

**Description** Renter can report posts which describe wrong information **Pre-conditions** User has logged into the system as a renter

**Post-conditions** The report is sent to admin to handle

Update database

**Normal flow** 1. Click on title or image of a post

2. The detail information of a post will be displayed

3. Click on “Báo cáo” button

4. Enter content of report

5. Click on “Xác nhận” button

6. The report will be sent to admin to handle

**Alternative flow** N/A

**Exception** ∙ User clicks cancel. Use case ends

∙ Content of report is empty. Go to step 4 of normal flow

**Business Rules** B03, B07, B12

• *UC23: Upload new post*

**Use case ID UC23**

**Use case name Upload new post**

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**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Landlord

**Description** Landlord post information about their rooms

**Pre-conditions** User has logged into the system as a landlord

User has enough money on their account

**Post-conditions** The post will be displayed on the website

The post is saved to the database

**Normal flow** 1. Click on “Đăng tin” button

2. Upload new post screen will be displayed

3. Select an item in “Loại phòng” dropdown

4. Enter “Tiêu đề, “Mô tả chi tiết”, “Giá cho thuê”, “Diện tích”, “Khoảng cách” 5. Enter room number and choose status of rooms

6. Select location in maps

7. Upload images

8. Select a payment package

9. Click on “Hoàn tất” button

10. The post will be posted

**Alternative flow** N/A

**Exception** ∙ Not choose a type of room. Display message and go to step 3 of normal flow

∙ Invalid input. Display message and go to step 4 of normal flow

- “Tiêu đề” field is less than 10 or more than 100 characters

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- “Mô tả chi tiết” field is less than 20 characters

- “Địa chỉ” field is less than 20 characters

- Price is less than 500.000 or more than 20.000.000

- Square is less than 5 or more than 1000

- Distance is less than 0 or more than 100

∙ Number of rooms is less than 1 or more than 100. Display message and go to step 5 of normal flow

∙ Upload less than 3 or more than 10 images. Display message and go to

step 7 of normal flow

∙ Not choose a payment package. Display message and go to step 8 of

normal flow

∙ User doesn’t have enough money on their account. Display message and go to step 8 of normal flow

**Business Rules** B02

• *UC24: Manage own post - View list post*

**Use case ID UC24**

**Use case name Manage own post - View list post**

**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Landlord

**Description** Landlord can view their list post

**Pre-conditions** User has logged into the system as a landlord

**Post-conditions** List post of user is displayed

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**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Quản lý bài đăng” item in dropdown

3. The list post of user will be displayed

**Alternative flow** N/A

**Exception** N/A

**Business Rules** N/A

• *UC25: Manage own post - Edit post*

**Use case ID UC25**

**Use case name Manage own post - Edit post**

**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Landlord

**Description** Landlord can edit their posts

**Pre-conditions** User has logged into the system as a landlord User has a post before

**Post-conditions** The post is updated

Update database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Quản lý bài đăng” item in dropdown

3. The list post of user will be displayed

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4. Click on edit icon in “Tác vụ” column of the post that user want to edit 5. Edit post screen will be displayed

6. Edit information of post

7. Click on “Hoàn thành” button

8. The post is updated

**Alternative flow** N/A

**Exception** ∙ Invalid input. Display message and go to step 6 of normal flow - “Tiêu đề” field is less than 10 or more than 100 characters

- “Mô tả chi tiết” field is less than 20 characters

- “Địa chỉ” field is less than 20 characters

- Number of rooms is less than 1 or more than 100

- Price is less than 500.000 or more than 20.000.000

- Square is less than 5 or more than 1000

- Distance is less than 0 or more than 100

- Upload less than 3 or more than 10 images

**Business Rules** B12

• *UC26: Manage own post - Hide/unhide post*

**Use case ID UC26**

**Use case name Manage own post - Hide/unhide post**

**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

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**Actors** Landlord

**Description** Landlord can hide or unhide their posts

**Pre-conditions** User has logged into the system as a landlord

User has a post before

The post is not banned or expired

**Post-conditions** The post is hidden or displayed again

Update database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Quản lý bài đăng” item in dropdown

3. The list post of user will be displayed

4. Click on hide/unhide icon in “Tác vụ” column of the post that user want to hide or unhide

5. Confirmation pop-up will be displayed.

6. Click on “Đồng ý” button

7. The post is hidden or displayed again

**Alternative flow** N/A

**Exception** ∙ The post is expired or banned. Use case ends

∙ User clicks cancel. Use case ends

**Business Rules** B07, B12

• *UC27: Manage own post - Delete post*

**Use case ID UC27**

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**Use case name Manage own post - Delete post**

**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Landlord

**Description** Landlord can delete their posts

**Pre-conditions** User has logged into the system as a landlord

User has a post before

**Post-conditions** The post is deleted

Update database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Quản lý bài đăng” item in dropdown

3. The list post of user will be displayed

4. Click on delete icon in “Tác vụ” column of the post that user want to delete 5. Confirmation pop-up will be displayed.

6. Click on “Đồng ý” button

7. The post is deleted

**Alternative flow** N/A

**Exception** User clicks cancel. Use case ends

**Business Rules** N/A

• *UC28: Manage own post - Extend time post*

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**Use case ID UC28**

**Use case name Manage own post - Extend time post**

**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Landlord

**Description** Landlord can extend time post when the post expired

**Pre-conditions** User has logged into the system as a landlord

User has enough money in account

**Post-conditions** Time post is extended

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Quản lý bài đăng” item in dropdown

3. The list post of user will be displayed

4. Click on extend time icon in “Tác vụ” column of the post that user want to extend time

5. Extend time post pop-up will be displayed

6. Select a payment package

7. Click on “Xác nhận” button

8. Time post is extended successfully

**Alternative flow** N/A

**Exception** ∙ User clicks cancel. Use case ends

∙ User doesn’t have enough money on their account. Go to step 6 of normal flow

**Business Rules** B12

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• *UC29: Manage room of post - View list room*

**Use case ID UC29**

**Use case name Manage room of post - View list room**

**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Landlord

**Description** Landlord can view list room of a post

**Pre-conditions** User has logged into the system as a landlord **Post-conditions** List room of post is displayed

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Quản lý bài đăng” item in dropdown

3. List post will be displayed

4. Click on “Xem phòng” icon in “Số phòng” column

5. List room of a post will be displayed

**Alternative flow** N/A

**Exception** N/A

**Business Rules** N/A

• *UC30: Manage room of post - Add room*

**Use case ID UC30**

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**Use case name Manage room of post - Add room**

**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 07/22/2020 **Date last updated** 07/22/2020 **Actors** Landlord

**Description** Landlord can add room of a post

**Pre-conditions** User has logged into the system as a renter

**Post-conditions** Room of a post is added

Update database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Quản lý bài đăng” item in dropdown

3. List post will be displayed

4. Click on edit icon in “Tác vụ” column

5. Edit post screen is displayed

6. Click on “Thêm phòng” button

7. Enter the number of rooms

8. Select status of rooms

9. Click on “Xác nhận” button

10. Click on “Hoàn thành” button

11. Add room successfully

**Alternative flow** N/A

**Exception** ∙ User clicks cancel. Use case ends

**Business Rules** N/A

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• *UC31: Manage room of post - Change room’s status*

**Use case ID UC31**

**Use case name Manage room of post - Change room’s status Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020 **Actors** Landlord

**Description** Landlord can change room’s status

**Pre-conditions** User has logged into the system as a renter

User had a post before

**Post-conditions** Room’s status is changed

Update database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Quản lý bài đăng” item in dropdown

3. List post of user will be displayed

4. Click on “Xem phòng” icon in “Số phòng” column

5. List room of post screen will be displayed

6. Click on or off switch button

7. Confirmation pop-up is displayed

8. Click on “Đồng ý” button

9. Room’s status is changed

**Alternative flow** 1.1. Mouse over the account icon in the upper right corner

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1.2. Click on “Quản lý bài đăng” item in dropdown

1.3. List post of user will be displayed

1.4. Click on edit icon in “Tác vụ” column

1.5. Edit post screen will be displayed

1.6. Go to step 6 of normal flow

**Exception** User clicks cancel. Use case ends

**Business Rules** N/A

• *UC32: Pay into account*

**Use case ID UC32**

**Use case name Pay into account**

**Created by** Tran Van My **Last updated by** Duong Thi Kim Oanh **Date created** 06/02/2020 **Date last updated** 07/22/2020

**Actors** Landlord

**Description** Landlord can pay into account to upload new post

**Pre-conditions** User has logged into the system as a landlord

**Post-conditions** Money will be added to account on this website

Update database

**Normal flow** 1. Mouse over the account icon in the upper right corner 2. Click on “Nạp tiền” item in dropdown

3. Payment screen will be displayed

4. Enter amount in “Số tiền” field, content of payment in “Nội dung” field

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