|  | **MINISTRY OF EDUCATION AND TRAINING** |
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| **FPT UNIVERSITY** |
| --- |
| Capstone Project Document |
| [MoveMate Application] |

| **GFA24SE06** | |
| --- | --- |
| **Group Members** | Cổ Phước Vinh – Team Leader – SE161891  Lê Hàn Anh – Team Member – SE161941  Đặng Nguyễn Hoài Phương – Team Member – SE161958  Nguyễn Thành Vinh – Team Member – SE161950  Phan Văn Tuấn – Team Member – SE162029 |
| **Supervisor** | Mrs. Nguyễn Thị Cẩm Hương |
| **Capstone Project code** | FA24SE085 |

- Ho Chi Minh, Jun 2024 -

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# Acknowledgment

*[Fill team’s acknowledgment here…]*

# Definition and Acronyms

*[Fill all the definitions, acronyms,… used within the document] in the table format as below]*

| **Acronym** | **Definition** |
| --- | --- |
| PWM | Psychology website |
| AWS | Amazon Web Services |
| BA | Business Analysis |
| BR | Business Rule |
| ERD | Entity Relationship Diagram |
| GUI | Graphical User Interface |
| PM | Project Manager |
| SDD | Software Design Description |
| SPMP | Software Project Management Plan |
| SRS | Software Requirement Specification |
| UAT | User Acceptance Test |
| UC | Use Case |
| API | Application Program Interface |

# I. Project Introduction

## 1. Overview

### 1.1 Project Information

* Project name: MoveMate Application
* Project code: GFA24SE06
* Group name: FA24SE085
* Software type: Web application and Mobile application

### 1.2 Project Team

| **Full Name** | **Role** | **Email** | **Mobile** |
| --- | --- | --- | --- |
| Nguyễn Thị Cẩm Hương | Lecturer | HuongNTC2@fe.edu.vn | 0909912347 |
| Cổ Phước Vinh | Leader | vinhcpse161891@fpt.edu.vn | 0374027409 |
| Lê Hàn Anh | Member | anhlhse161941@fpt.edu.vn | 0915714533 |
| Đặng Nguyễn Hoài Phương | Member | phuongdnhse161958@fpt.edu.vn | 0386751935 |
| Nguyễn Thành Vinh | Member | vinhntse161950@fpt.edu.vn | 0382703625 |
| Phan Văn Tuấn | Member | tuanpvse162029@fpt.edu.vn | 0394581438 |

## 2. Product Background

Moving houses or offices can be a stressful and time-consuming process for individuals, families, and small businesses. Traditionally, people spend hours coordinating with moving services, trying to determine the right vehicle size, porter selection for loading and unloading, and dealing with costs that are often unclear. This process typically involves multiple calls, in-person meetings, and unforeseen issues that add to the stress.

Users often face challenges such as miscommunication with service providers, and time-consuming to find an appropriate service provider. These inefficiencies lead to wasted time, frustration, and sometimes even increased costs. Additionally, with no real-time tracking available, customers are left in the dark about the status of their service, increasing anxiety about the entire process.

Recognizing these pain points, the MoveMate app was created to streamline and simplify the entire moving experience. By integrating essential features like vehicle booking, porter service selection, transparent pricing, and real-time tracking. The idea was raised by customers who wanted a more efficient, modernized approach to managing moving houses without the typical challenges of dealing with multiple service providers and unclear processes.

## 3. Existing Systems

## Lalamove, Ahamove - Logistics services that help individuals and businesses move goods by booking trucks on demand. It provides real-time tracking and pricing transparency but doesn’t offer specific house-moving services and limited scope doesn’t cover customized pricing for larger homes and offices.

## 4. Business Opportunity

## The demand for moving services is on the rise, particularly in urban areas where more people are relocating for work and lifestyle changes. However, the moving process remains stressful due to unclear pricing, and unreliable labor. Traditional moving companies often lack transparency, leading to inefficiencies and customer dissatisfaction.

## Market Trends: As urban relocations and demand for convenient, digital services rise, MoveMate is perfectly positioned to offer a mobile-first, on-demand solution, aligning with modern consumer preferences for transparency and efficiency.

## 5. Software Product Vision

## MoveMate envisions moving is stress-free and transparent. By combining vehicle booking, porter service selection, and real-time tracking into one cohesive platform, we aim to eliminate the chaos and uncertainty of moving house. Whether it's a family relocating to a new home or a small business changing offices, MoveMate provides a reliable, customer-centric solution that adapts to individual needs. Our vision is to set a new standard for convenience and efficiency in the moving industry, offering transparent pricing and smart recommendations while ensuring a smooth transition for every user.

## MoveMate will not only simplify the moving process but also foster trust through reliable service and transparent operations. By aligning with the growing trend toward digitization and on-demand services, MoveMate positions itself as a leader in the future of moving solutions, balancing customer expectations with operational efficiency for long-term success.

## 6. Project Scope & Limitations

### Direct Connection: MoveMate will allow users to connect with trusted drivers and porters for seamless moving services.

### 

### Service Transparency and Assurance: The platform will provide detailed information about the assigned drivers, porters, and vehicles, ensuring users have confidence in the professionalism and reliability of their moving team.

### 

### Digital Platform: MoveMate will include a user-friendly online platform ( mobile applications) where customers can schedule moves, choose vehicles, and review services in real-time.

### 

### Payment Processing: MoveMate will create digital wallets for users, integrating secure payment methods to facilitate easy transactions for booking and service fees, including deposits and post-move payments.

### 6.1 Major Features

| **Role** | **Description** |
| --- | --- |
| As a Customer,  I want to | - see information about each service so that I can compare and make a reasonable choice.  - see all the trucks available so that I can make my choice more easily.  - receive information updates regarding my booking so that I can receive information about any delays or changes.  - manage my booking so that I can change the day to perform my booking one time or cancel my booking if my plans change.  - book a moving service so that I can easily schedule my move, select the right truck, and specify any additional services like loading or unloading.  - track the progress of my move in real time, so I can get notified of when the driver and porters will arrive and view the booking status.  **-** pay part of the deposit in advance so that I can commit to the order and secure my purchase.  - pay for my moving service online so that I can complete the transaction securely and conveniently without needing cash on hand.  **-** pay in cash so that I can have flexibility in paying for services  - manage my wallet so that I can recharge and withdraw money from my wallet for payment services within the app.  **-** view deposit history so that I can keep track of how much money for my booking.  **-** filter my transactions by time and status, so that I can easily find specific transactions in my wallet history.  - view my transaction history when I make a booking for a rental truck so that I can check the details of my previous payment.  **-** collect available vouchers so that I can apply them to my orders and save money.  **-** chat with the reviewer, driver, or porter so that I can receive advice and assistance regarding my inquiries.  **-** report issues about my belongings being broken during the move so that I can seek resolution and compensation for the damages.  **-** review the driver, porter and truck rental booking to move my house so that I can share how I really feel about the company and provide feedback for future improvements.  - give a bonus to the driver and porter so that I can encourage drivers and porters to maintain a high standard of service for future jobs.  - book a round-trip truck so that I can complete the transportation if it cannot be finished on the first trip.  - upload photos, videos or notes about the condition of the house or items so that I can receive appropriate reviews about the service I choose  - approve or reject changes to bookings (such as modifications in vehicle type, additional services, or fees) so that I can have control over any updates that affect the service I have booked and ensure that the changes align with my budget. |
| As a Driver,  I want to | **-** receive assignments so that I know when and where I need to be for each moving job.  **-** navigate to the customer’s location with real-time map integration so that I can arrive on time and avoid delays.  **-** update status booking when I have arrived at the location, loading and unloading so that I can inform to the customer the proceed of work and ensure the job is logged as finished, and payment can be processed.  **-** update the payment status when a customer pays in cash so that I can ensure accurate records keep track of completed transactions, and ensure that the system reflects the payment accurately.  **-** report incidents such as truck breakdowns or traffic jams to the system so that I can notify the system and customer of delays and request support and seek help from the system or support team if necessary, such as vehicle replacement.  **-** register as a porter so that I can earn additional income to increase my earnings by offering both driving and loading services.  **// update booking (thêm service, đổi xe, thêm fee)**  - create a request to the system to update a booking (such as adding services, changing the vehicle, or adjusting fees) when I see that the current details are not suitable, so that the system can notify the customer of the changes and allow them to either accept or reject the update. |
| As a Porter,  I want to | **-** confirm that all porter team members have arrived,  so that we can begin the packing, loading, and transportation process.  **-** update booking status so that I can make sure everything is on schedule and clear.  // nhận thông báo khi có cuốc, xem chi tiết booking  **-** receive notifications when a new booking is assigned to me so that I can be aware of upcoming jobs and respond promptly.  **-** view the detailed information of a booking so that I can fully understand the tasks and requirements for the job.  // báo cáo đc sự cố (bản thân và hư hại đồ đạt)  **-** report an issue if I cannot reach the designated location so that I can notify the team and customer promptly and receive assistance.  **-** report any damage to items during transportation so that I can promptly inform the team and customer, ensuring transparency and a resolution.  // up ảnh or video làm bằng chứng để tracker  **-** upload photos or videos as evidence, so that I can provide verified proof for incidents or completed tasks.  **// update booking (thêm service, đổi xe, thêm fee)**  - create a request to the system to update a booking (such as adding services, changing the vehicle, or adjusting fees) when I see that the current details are not suitable, so that the system can notify the customer of the changes and allow them to either accept or reject the update. |
| As a Manager,  I want to | - manage and monitor all ongoing bookings, including tracking the booking status, assigned drivers, porters, vehicles, and customer details, so that I can ensure smooth operations and timely moving service by having control over the entire process.  - assign or reassign drivers and porters to bookings as needed so that I can optimize resource allocation and handle changes in workload  - receive customer feedback and complaints so that I can address any issues, maintain customer satisfaction, and continuously improve service quality.  - review reports on completed jobs, and financials so that I can evaluate operational efficiency and make informed decisions to improve performance.  - connect with drivers, porters, and reviewers via chat or notification so that I can ensure clear coordination and handle any issues or updates in real-time.  // quản lý discount  - manage discounts, including setting, updating, and applying discount codes or promotions, so that I can control and optimize pricing strategies to attract customers.  // quản lý service  - manage services, including adding, modifying, or removing services offered, so that I can ensure the service list is accurate, up-to-date, and aligned with business objectives.  // duyệt driver, porter, review  - approve or reject drivers, porters, and reviewers, ensuring only qualified staff and valid reviews are processed, so that I can maintain service quality and operational standards.  // duyệt review bồi thường  - approve or reject compensation claims, based on the review of incident reports and customer feedback, so that I can ensure fair and transparent handling of damage claims and maintain customer trust. |
| As an Admin,  I want to | **-** manage customer list so that I can view, ban, or remove customer information  **-** manage driver list so that I can create account, update or remove driver details.  **-** manage porter list so that I can create an account including the ability to update or remove their profiles.  **-** manage manager list so that I can create account, update information about manager |
| As a Reviewer,  I want to | - view detailed information about the house provided by the customer (house type, number of rooms, floors, etc.) so that I can assess the moving requirements accurately.  - update status to the system after completing the house review so that the moving process can proceed to the next stage (booking confirmation).  - provide recommendations for customer regarding truck type, equipment needed, and other specifics based on my review so that the moving house is well-prepared.  - send a notification to the customer confirming that the review is complete so that they can proceed with the next steps.  // nhận được thông báo có booking, và xem đc booking đó là ONL hay OFFL  - receive notifications when a new booking is made, and view whether the booking is offline or online so that I can prioritize and manage the review process accordingly, preparing for either an online review or scheduling an offline review.  // có thể connect Customer qua chat  connect with the customer via chat so that I can quickly clarify details, answer questions, and provide timely support during the review process.  // có thể up ảnh or video khi tiến hành review Off  - upload photos or videos during the offline review to document the house details so that I can provide authenticity evidence for any updates to the booking, ensuring transparency and proper documentation for the customer and company.  // có thể update booking (đổi loại xe, time booking, thêm bớt service, thêm fee, ..)  - Update booking information, such as changing the truck type, modifying the booking time, adding or removing services, or adjusting fees so that I can ensure the booking reflects the most accurately and provide the customer with the correct services and pricing. |

### 6.2 Limitations & Exclusions

#### 6.2.1. Limitations

This system is not the best and most optimal solution*.*

The mobile application only supports Android OS

The system lacks integration with certain third-party services such as Lalamove or Ahamove specialized logistics providers and additional transport systems.

MoveMate's integration with payment services is currently limited to basic features, and advanced financial services like installment payments are not available.

#### 6.2.2. Exclusions

The system does not handle damage insurance claims for goods in transit. Customers will receive process claims directly after finishing the payment.

MoveMate does not offer a service for storing goods temporarily if the move-in location is unavailable.

It does not support direct communication between customers and drivers before a booking is confirmed.

# II. Project Management Plan

*[Provide final project plan information follow the template as part II in the Report #2]*

## 1. Overview

### 1.1 Scope & Estimation

[Create/Provide the list of software product following the table template as below. In this table, we categorize each software function into three levels of complexity (Simple, Medium, Complex) and estimate the total effort to complete each one in man-day]

### 1.2 Project Objectives

*[Provide the overall project objective description and then the specific target metrics of your project in term of quality, time, and cost (allocated effort distribution for project activities: requirement, design, coding, testing, project management, etc)]*

### 1.3 Project Risks

*[List out the details on project risks in the table below]*

## 2. Management Approach

*[Describe the approach you would use the manage and implement your project]*

### 2.1 Project Process

*[Draw and describe the software development process model that the team would apply into the project implementation]*

### 2.2 Quality Management

*[Provide the approach you would apply to improve the project quality, reach the project quality objectives*

### 2.3 Training Plan

*[You need to plan the training activities in case any of your team member lack of knowledge/skills to handle the project works]*

## 3. Project Deliverables

*[Given the main project deliverables. Those can be internal and/or external deliverables]*

## 4. Responsibility Assignments

*[Describe the main responsibilities in your project (to complete the outputs as defined in the above section), in the format as the sample below]*

## 5. Project Communications

*[Provide the details of project communication plan, the to-be-used tools, the project interface, etc.]*

## 6. Configuration Management

### 6.1 Document Management

*[Describe how you would manage project documents & their changes/versions]*

### 6.2 Source Code Management

*[Describe how you would manage project source codes & their changes/versions]*

### 6.3 Tools & Infrastructures

*[List out the tools & infrastructure that you would use in the software development and deployment]*

# III. Software Requirement Specification

*[Provide final software requirement specification follow the template as part II in the Report #3]*

## 1. Product Overview

*[This section presents a high-level overview of the product and the environment in which it will be used, the anticipated users, and known constraints, assumptions, and dependencies]*

## 2. User Requirements

*[Provide specification of the user requirement: actor, use case diagram(s), use case description, etc.]*

## 3. Functional Requirements

### 3.1 System Functional Overview

*[Provide functionality overview of software system: screen flow, screen descriptions, system user roles, screen authorization, non-screen functions, ERD]*

### 3.2 <Feature Name 1>

*[Profile functional specification for the feature, with the details on each function]*

#### 3.2.1 <Function Name 1.1>

…

### 3.3 <Feature Name 2>

#### 3.3.1 <Function Name 2.1>

…

## 4. Non-Functional Requirements

### 4.1 External Interfaces

*[This section provides information to ensure that the system will communicate properly with users and with external hardware or software elements.]*

### 4.2 Quality Attributes

*[List all the required system characteristics (quality attributes) specification]*

## 5. Requirement Appendix

*[List out other requirements, appendix information etc. in this part]*

### 5.1 Business Rules

*[Provide common business rules that you must follow. The information can be provided in the table format as the sample below]*

### 5.2 Common Requirements

*[Fill all the common requirements here..]*

### 5.3 Application Messages List

### 5.4 Other Requirements…

# IV. Software Design Description

*[Provide final software design information follow the template as part II in the Report #4]*

## 1. System Design

### 1.1 System Architecture

*[The content of this section includes the overall diagram which includes the sub-systems, the external systems, and the relationship/connection among them. You need also provide the explanation for each of the diagram components (modules, sub-systems, external systems, etc.)].*

### 1.2 Package Diagram

*[Provide the package diagram for each sub-system. The content of this section includes overall package diagram(s) and the explanation for each package (or namespace)]*

## 2. Database Design

*[Provide the files description, database table relationship & table descriptions]*

## 3. Detailed Design

### 3.1 <Feature/Function Name1>

*[Provide the detailed design for the feature <Feature Name1>. It includes Class Diagram, Class Specifications, and Sequence Diagram(s);* ***For the features/functions with the same structure of class & sequence diagrams, you need to provide the diagrams once for one feature/function and refer to those diagrams from other features/functions****]*

#### 3.1.1 Class Diagram

*[This part presents the class diagram for the relevant feature]*

***3.1.2 <Sequence Diagram Name1>***

*[Provide the sequence diagram(s) for the feature]*

***3.1.2 <Sequence Diagram Name2>***

***3.1.3 …***

### 3.2 <Feature/Function Name2>

…

# V. Software Testing Documentation

*[Provide final software testing information follow the template as part II in the Report #5]*

## 1. Scope of Testing

*[Describe the scopes of the test. Those include the target-of-test’s features, functions, and non-functional requirements that will or will not be tested.*

*Describe the stages/levels of testing that would be applied to your project - Unit, Integration, or System test. Each includes the in-charge, inputs/time, focuses, acceptance criteria.*

*List any constraints or assumptions made during the development of this document that may impact the design, development or implementation of testing]*

## 2. Test Strategy

*[List out and describe all testing types (you can refer the test types listed below or any other test types to selected the suitable ones for the project; for each selected test types you need to provide the following information: test objective, technique, completion criteria, etc.), test levels that those test types would be performed, & the details of test supporting tools would be used in the project]*

### 2.1 Testing Types

*[List out and describe here the testing types which you would apply in your project. You need to mention following information for each type of testing: objective, technique, completion criteria]*

### 2.2 Test Levels

*<List out and describe here the testing levels which you would execute in your project. Besides, clearly state the test types which are performed in each test level that you plan for this project>*

### 2.3 Supporting Tools

*<List of the test supporting tools which will be employed for this project>*

## 3. Test Plan

### 3.1 Human Resources

*[List and provide the details on roles and responsibilities of the project members who would involve in testing works]*

### 3.2 Test Environment

*[List and provide the details about the tools (software, hardware, infrastructure) which the project would use for testing]*

### 3.3 Test Milestones

*[Separate test milestones, which should be identified to communicate project status accomplishments]*

## 4. Test Cases

*[Prepare the details on the test cases following the provided template*

* *Unit Test Cases: Report5\_Unit Test.xls*
* *Other Test Cases (IT, ST, AT): Report5\_Test Report.xls]*

## 5. Test Reports

*[Provide the test result, statistics and the relevant test analysis for your testing in the project]*

# VI. Release Package & User Guides

*[Provide final software testing information follow the template as part II in the Report #6]*

## 1. Deliverable Package

*[The section will list all source programs, scripts, documents with version number in this release. You can see the example following table for reference, can customize or delete if not using belong to each project characteristics]*

| **No.** | **Deliverable Item** | **Description** |
| --- | --- | --- |
| 1 | Schedule/Task Tracking |  |
| 2 | Project Backlog |  |
| 3 | Source Codes |  |
| 4 | Database Script(s) |  |
| 5 | Final Report Document |  |
| 6 | Test Cases Document |  |
| 7 | Defects List |  |
| 8 | Issues List |  |
| 9 | Slide |  |

## 2. Installation Guides

### 2.1 System Requirements

*[Define any system requirements necessary to support the application, including the software and relevant configurations]*

### 2.2 Installation Instruction

*[Includes installation instructions and configuration guidelines]*

## 3. User Manual

### 3.1 Overview

*[Descript the overview of the application and if could, insert the features workflow to help user has the overview of all the features in this application]*

### 3.2 Workflow 1

*[Describe the purpose of this workflow, draw workflow diagram and other relevant diagrams]*

*[Describe the detailed guides for the workflow by providing the brief description, step by step guides (attached with user interface) of how to use that function]*

### 3.3 Workflow 2

…