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

| **GFA24SE06** | |
| --- | --- |
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| **Capstone Project code** | FA24SE085 |

- Ho Chi Minh, Dec 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** |
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## 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

### 

| **Feature ID** | **FEATURE DESCRIPTION** |
| --- | --- |
| FE1: Service Booking Management | This feature allows customers to create a booking request, specifying details like date, time, truck type, and pick-up/drop-off locations. Drivers, and porters receive notifications for new bookings and can accept or decline requests based on their availability. Reviewers evaluate the booking details submitted by users and recommend suitable trucks based on the customer’s requirements. |
| FE2: Service Management | This feature allows managers to define and manage the various services offered, including standard truck rentals, specialty services (like packing or loading), and additional features (such as insurance or equipment rental). Customers can browse and select from available services when making a booking, ensuring they receive the right support for their moving needs. Reviewers can assess the demand for specific services and suggest updates or changes based on customer feedback and usage data. Drivers are informed about the specific services included in each rental request, allowing them to prepare accordingly for each job. |
| FE3: Truck Management | This feature allows managers to manage the fleet of trucks, including adding new trucks and updating truck information. |
| FE4: User Management | This feature enables administrators to create, update, and manage user accounts, including setting roles and permissions for users, reviewers, and drivers. Users can update their personal information, view their booking history, and manage their profiles. |
| FE5: Fee Management | This feature enables managers to set and adjust rental fees based on factors like truck type, rental duration, distance, and additional services. Customers can view estimated costs for their rental requests, receive detailed invoices, and choose from multiple payment options such as credit cards or digital wallets. Reviewers can verify fee calculations for each rental request to ensure accuracy before confirming the booking. |
| FE6: Discount Management | This feature enables customers to collect and apply vouchers to their bookings. Managers are responsible for managing discount codes, ensuring customers benefit from special offers. Customers can view available discounts and apply them to their rental requests at checkout, enhancing their overall experience and encouraging repeat business.  Reviewers can monitor the usage and effectiveness of different discount campaigns, providing insights for future promotions. |
| FE7: Payment Management | This feature enables customers to pay for their moving service either online or via cash. Drivers are responsible for updating the payment status when cash is received. Managers can monitor and oversee financial reports, ensuring payment accuracy and proper accounting. |
| FE8: Real-Tracking Booking | Customers are kept informed about the progress of their booking, drivers and porters can update their status and notify of any issues, while managers monitor overall progress to ensure timely moving service. |
| FE9: Incident Management | This feature allows customers to report issues during the moving process. Drivers and porters can also report incidents like vehicle breakdowns or furniture damage. Managers then review and handle compensation requests |
| FE9: Communication Management | This feature allows seamless communication between customers, drivers, porters, reviewers, and managers through an in-app chat. |
| FE10: Notifications Management | All roles receive notifications for updates, incidents, and other booking-related information, allowing for swift response and coordination. |
| FE11: Service Customization and Approval | This feature allows customers to approve or reject any changes to their booking, such as adjustments in services, fees, or truck type. Drivers and porters can request updates to the booking details based on real-time |
| schedule management |  |

### 

### *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

…