**

**CAPSTONE PROJECT REGISTER**

Class: Duration time: from 12/2024…. To 04/2025…..

(\*) Profession: <Software Engineer> Specialty: <ES> <IS>

x

(\*) Kinds of person make registers: Lecturer Students

x

1. Register information for supervisor (if have)

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| --- | --- | --- | --- | --- |
|  | **Full name** | **Phone** | **E-Mail** | **Title** |
| Supervisor 1 | Vũ Thị Thùy Dương |  | [duongvtt9@fe.edu.vn](mailto:Duongvtt9@fe.edu.vn) | Ms. |
| Supervisor 2 |  |  |  |  |

2. Register information for students (if have)

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| --- | --- | --- | --- | --- | --- |
| **No.** | **Full name** | **Student code** | **Phone** | **E-mail** | **Role in Group** |
| 1 | Trần Quang Minh | SE62652 | 0981874736 | minhtqse62652@fpt.edu.vn | Team Leader |
| 2 | Nguyễn Phương Quang | SE130190 | 0917901487 | quangnpse130190@fpt.edu.vn | Member |
| 3 | Nguyễn Anh Quân | SE130105 | 0387824877 | quannase130105@fpt.edu.vn | Member |
| 4 | Lê Anh Tuấn | SE130185 | 0902896405 | tuanlase130185@fpt.edu.vn | Member |

(\*) 3.1. Capstone Project name:

English: DaiVietCat - Men’s haircut booking and customer management system

Vietnamese: Xây dựng hệ thống quản lý khách hàng và đặt lịch cắt tóc nam

Abbreviation: RM - DaiVietCat

Context:

Having a long wait at the barber shop is an uncomfortable experience for everyone. Typically, a barber shop has a peak time, when customers need to wait in a long list, and there are idle without customers. To reduce waiting time, a customer needs to predict when the shop is idle or having few customers or coming back later after peak hours. In the point of view of barber shop owners, they also need to fill up the idle time with the customers.

We propose a solution to the problem by designing and implementing a system which allows customers to book their haircuts, to choose custom/optional services and the barber. For barber shop owners, the system helps them manage customer bookings for better service preparations. The system could also manage and provide promotions to the customers as a form of membership or subscriptions.

(\*) 3.2. Main proposal content (including result and product)

* Scope and user context
* Shop Owner can manage the chain barber shop
* Branch Manager can manage the branch's stylists and masseurs.
* System doesn't support exchanging human resources between branches.
* Customers can choose a branch that is convenient for them, or the system can suggest nearby branches.
* Customers can book stylists, masseurs, or both who are working at the branch that they’ve chosen via mobile app or can book directly at branches.
* Booking via app: if Customer don’t choose any specific Stylist/Masseur, System will pick the best Stylist/Masseur that is available or the one who has the least booking on that day.
* Booking direct at branches: Receptionist helps the customers place bookings to the system and notify them of the estimated waiting time.
* The system supports hybrid booking (First come first serve, Book specific time slot).
* If the selected branch is fully booked (Every Stylist and Masseur of that branch have been booked), the system will suggest nearby branches.
* Complexity/technicality challenges
* A system design that smoothly manages the schedule of customer bookings and reflects them to the staff schedule.
* Need an algorithm to automatically assign staff for a customer booking.
* Need an algorithm for maintaining hybrid booking.
* Need to predict waiting time for each booking.
* How to deal with dynamic serving time? Typically, if serving time is fixed, we could divide the timetable for each day into time slots, then customers just need to fill in the available slot. For dynamic serving time, we need to propose a solution for that.
* Theory and practice (document):
* Students should apply the software development process and UML 2.0 in the modeling system.
* The documents include User Requirement, Software Requirement Specification, Architecture Design, Detail Design, System Implementation and Testing Document, Installation Guide, sources code and deployable software packages
* Back-end technologies :
* Server: Spring Boot 3+
* Database : MySQL
* Front-end technologies:
* Web client : Angular 12+
* Mobile Application: Flutter
* Products:
* Web API
* Shop Owner web application
* Branch Manager web application
* Receptionist web application
* Staff (Stylist/Masseur) mobile application
* Customer mobile application
* Functional Requirement:
* Shop Owner web application
* Shop Owner login to the web
* Shop Owner can view system’s profit
* Shop Owner can manage system’s account
* Shop Owner can manage branches
* Shop Owner can manage services
* Shop Owner can manage promotions
* Branch Manager web application
* Branch Manager login to the web
* Branch Manager can manage his/her profile
* Branch Manager view branch’s profit
* Branch Manager can manage branch’s Stylists and Masseurs, schedules
* Branch Manager can view services
* Receptionist web application
* Receptionist login to web
* Receptionist can manage his/her profile
* Receptionist can manage customer’s bookings
* Staff (Stylist/Masseur) mobile application
* Staff login to the app
* Staff can manage his/her profile
* Staff can manage their schedule
* Staff can manage process booking
* Customer mobile application
* Customer can register system account
* Customer can login to app
* Customer can view shop’s branches
* Customer can view shop’s barber’s information
* Customer can book shop’s services
* Customer can rate barbers and services
* Customer can manage membership
* Non-Functional Requirement:
* API must follow Restful API rules and conventions
* Proposed Tasks:
* Task package 1: Design Database for system (Minh)
* Task package 2: Develop API for the Real Man App (Minh).
* Task package 3: Develop Shop Owner web application (Quang, Quân).
* Task package 4: Develop Branch Manager web application (Quang Quân).
* Task package 5: Develop Staff web application (Quang, Quân)
* Task package 6: Develop Receptionist web application (Quang ,Quân).
* Task package 7: Develop Customer mobile application (Minh, Tuấn).
* Task package 8: Prepare all the required documents: system analysis and
* design, test plan, installation manual, user manual (Minh, Quang, Quân, Tuấn).
* Task package 9: Test Real Man App (Tuấn).

4. Other comments (propose all relative things if have)

N/A

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| **Supervisor (If have)**  *(Sign and full name)* | HCM city, date 00/00/2023  **On behalf of Registers**  *(Sign and full name)* |