

# Art Tattoo Lover Platform

- Ho Chi Minh, 2023 -

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## Definition and Acronyms

Acronym	Definition
ATL	Art Tattoo Lover
AZS	Azure 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 Requirements Specification
UAT	User Acceptance Test
UC	Use Case
API	Application Program Interface
MP	Min Price
MAP	Max price

# I. Project Introduction

## 1. Overview

### 1.1 Project Information

- Project name: Art Tattoo Lover Platform (ATL Platform)
- Project code: ATL
- Software type: Web, Mobile Application

### 1.2 Project Team

Full Name	Role	Email	Mobile

## 2. Product Background

Art tattoo refers to a type of tattoo that incorporates fine lines, and intricate details, and often features a variety of colours. It is characterised by its detailed and realistic style, often resembling traditional art forms such as painting or illustration. Art tattoos can depict a wide range of subjects, including animals, landscapes, and abstract designs.

An art tattoo artist is a professional who specialises in creating art tattoos. These artists are skilled in the art of tattooing and have expertise in creating intricate and detailed designs. They are known for their ability to incorporate fine lines and realistic details into their work, often resembling traditional art forms such as painting or illustration. Art tattoo artists have a deep understanding of colour theory and use a variety of colours to bring the tattoo design to life. They work closely with clients to understand their desired tattoo design and then create a unique and personalised tattoo that meets the client's vision. Art tattoo artists often have a portfolio of their previous work to showcase their talent and style.

An art tattoo platform is an online space where tattoo artists can showcase their work, connect with potential clients, and grow their businesses. It typically features a portfolio of their designs, customer reviews, and contact information. The platform may also offer tools for artists to manage their appointments, inventory, and marketing efforts.

The platform can provide a platform for tattoo artists to showcase their portfolio, gain exposure, and attract potential clients. By featuring artists and their work, the platform can help talented tattoo artists gain recognition and reach a wider audience. This can be beneficial for both emerging artists and established professionals, fostering growth and collaboration within the tattoo industry. In addition to tattoo-related information, the platform can offer resources and guidance on tattoo removal techniques, including laser removal, cover-up options, and the associated costs and risks. This would provide a comprehensive resource for users who wish to explore the possibility of modifying or removing existing tattoos.

## 3. Existing Systems

### 3.1. TattooDo: tattoodo.com

TattooDo description: TattooDo is a platform with a background similar to the background we provide. Including providing information about studios and their artists, tattooDo also allows users to view samples that tattoo artists have done. At the same time, it also allows tattoo artists to post informative posts about tattoo art.

### **3.2. InkSearch: inksearch.co**

Inksearch description: Inksearch is a multinational platform that allows studios to register and operate their websites for a monthly fee. A studio's rights will increase according to their monthly package fee. In addition, Inksearch is also a social network where bloggers and artists can post and update tattoo art content to users.

### **3.3. InkBox: inbox.com**

InkBox description: InkBox is a special platform because unlike TattooDo and Inksearch, InkBox is more oriented towards business than connecting people like the two platforms mentioned above. InkBox allows us to consult and order tattoo products such as creams, tattoo pens, tattoo ink, etc... What makes Inkbox different from the two platforms mentioned above is that users can directly make an appointment with the artist. tattoo artist through the website.

## **4. Business Opportunity**

Currently, there are many websites and mobile applications that allow art tattoo centres or services to promote the images, designs, services, and techniques of art tattoo artists/designers, but there is no connecting platform for tattoo art in Vietnam. From the above descriptions, it is necessary to build a tattoo art platform that supports booking services and services for tattoo lovers and tattoo artist management companies. In addition to tattoo-related information, the platform can offer resources and guidance on tattoo removal techniques, including laser removal, cover-up options, and the associated costs and risks. This would provide a comprehensive resource for users who wish to explore the possibility of modifying or removing existing tattoos.

## **5. Software Product Vision**

For customers who want to get a tattoo from the studio's artist, the Art Tattoo Platform is an Internet-based and smartphone-enabled application that will provide many options such as viewing portfolios from many artists, booking an appointment with tattoo's studio, and tracking personal tattoo profiles and payments. Unlike the current telephone and manual booking processes, customers who use Art Tattoo Platform will not have to put a lot of effort to find a tattoo studio that fits their style and will not have to ask every single studio about available schedules, which will save them time and will increase their tattoo options available for them.

For tattoo studios and artists who want to find customers and provide customer convenience services, the Art Tattoo Platform is an Internet-based application that will allow them to customise schedules with fixed slots, accept and cancel an appointment, and charge proper deposit fee for booking and designing. Unlike the current telephone, social media and manual booking processes, studio and artist who use Art Tattoo Platform will ensure their appointments with customers take places by deposit, a new chance to showcase portfolio and attract customers, which will save them time and increase their fame.

## **6. Project Scope & Limitations**

### **6.1 Major Features**

MF-01: Booking Management

MF-02: Tattoo Art Management

MF-03: Report Statistics (this feature is used for Platform Administrator)

MF-04: Studio Management

MF-05: Platform's Package Management

MF-06: Profile Management

## 6.2 Source Code Management

To manage our project's source code, we use github. The specific management of source code is mentioned as follows:

- Specific source codes (private):
  - Link git for backends: [GitBackend](#)
  - Link git for frontends: [GitFrontend \(Social media\)](#) + [GitFrontend\(Admin\)](#)
  - Link git for mobile application: [GitMobile](#)

## II. Project Management Plan

### 1. Overview

#### 1.1 Scope & Estimation

#	WBS Item	Complexity	Est. Effort
<b>1</b>	<b><i>Initiating</i></b>		<b>13</b>
1.1	Kick-off meeting	Simple	3
1.2	Collect requirements	Medium	5
1.3	Create project Introduction	Medium	5
<b>2</b>	<b><i>Planning</i></b>		<b>10</b>
2.1	Create plan document	Complex	10
<b>3</b>	<b><i>Executing</i></b>		
<b>3.1</b>	<b><i>Analysis</i></b>		<b>20</b>
3.1.1	Analysis requirement	Complex	10
3.1.2	Create a Software Requirement Specification	Complex	10
<b>3.2</b>	<b><i>Design</i></b>		<b>50</b>
3.2.1	Design Customer mobile application	Complex	10
3.2.2	Design Artist mobile application	Medium	5
3.2.3	Design Customer web application	Complex	10
3.2.4	Design Artist web application	Complex	10
3.2.5	Design Studio Manager application	Complex	10
3.2.6	Design Administrator web application	Medium	5
<b>3.3</b>	<b><i>Prototyping</i></b>		<b>10</b>
3.3.1	Mock up	Complex	10
<b>3.4</b>	<b><i>Implementation</i></b>		<b>284</b>
<b>3.4.1</b>	<b><i>Implement features for guest</i></b>		<b>39</b>
3.4.1.1	Login with email and password	Medium	5
3.4.1.2	Login with google	Complex	10
3.4.1.3	Register	Simple	3
3.4.1.4	Search tattoo art	Simple	3

3.4.1.5	Filter tattoo art	Complex	10
3.4.1.6	View tattoo art	Simple	3
3.4.1.7	View tattoo art detail	Medium	5
<b>3.4.2</b>	<b><i>Implement features for authorized member</i></b>		<b>64</b>
3.4.2.1	Logout	Simple	3
3.4.2.2	View Studio interior	Simple	3
3.4.2.3	View personal profile	Complex	10
3.4.2.4	Edit personal profile	Medium	5
3.4.2.5	Receive notification via email	Medium	5
3.4.2.6	View booking	Complex	10
3.4.2.7	View others profile	Complex	5
3.4.2.8	Follow others	Medium	5
3.4.2.9	Like tattoo art	Simple	3
3.4.2.10	Comment on tattoo art	Medium	5
3.4.2.11	Edit comments	Medium	5
3.4.2.12	Get link to share tattoo art	Medium	5
<b>3.4.3</b>	<b><i>Implement features for customers</i></b>		<b>40</b>
3.4.3.1	Create booking	Complex	10
3.4.3.2	Cancel booking	Complex	10
3.4.3.3	Create feedback	Complex	10
3.4.3.4	Edit feedback	Medium	5
3.4.3.5	Delete feedback	Medium	5
<b>3.4.4</b>	<b><i>Implement features for artists</i></b>		<b>28</b>
3.4.4.1	Generate token	Complex	10
3.4.4.2	Create tattoo art	Complex	10
3.4.4.3	Edit tattoo art	Complex	10
3.4.4.4	Delete tattoo art	Complex	10
3.4.4.5	Create tattoo art stage	Complex	10
3.4.4.6	Edit tattoo art stage	Complex	10
3.4.4.7	Delete tattoo art stage	Complex	10

<b>3.4.5</b>	<b><i>Implement features for studio managers</i></b>		<b>93</b>
3.4.5.1	View booking details	Complex	10
3.4.5.2	Create booking details	Complex	10
3.4.5.3	Update booking details	Complex	10
3.4.5.4	Cancel booking	Medium	5
3.4.5.5	Add artist	Medium	5
3.4.5.6	Dismiss artist	Complex	10
3.4.5.7	View report statistic	Medium	5
3.4.5.8	Search report statistic	Medium	5
3.4.5.9	Sort report statistic	Complex	10
3.4.5.10	Add interior	Medium	5
3.4.5.11	Delete interior	Medium	5
3.4.5.12	View packages	Simple	3
3.4.5.13	Buy packages	Complex	10
<b>3.4.6</b>	<b><i>Implement features for administrator</i></b>		<b>20</b>
3.4.6.1	View studio list	Meidum	5
3.4.6.2	View packages	Medium	5
3.4.6.3	Create packages	Complex	10
<b>3.5</b>	<b>Testing</b>		<b>40</b>
3.5.1	Create test cases	Complex	10
3.5.2	Unit Test	Complex	10
3.5.3	Integration Test	Complex	10
3.5.4	System Test	Complex	10
<b>4</b>	<b><i>Monitoring and Controlling</i></b>		<b>20</b>
4.1	Control the process	Complex	10
4.2	Track performance quality	Complex	10
<b>5</b>	<b><i>Closing</i></b>		<b>20</b>
5.1	Create final project report	Complex	10
5.2	Create reports	Complex	10

**Total Estimated Effort (man-days)**      **467**

## 1.2 Project Objectives

#	Testing Stage	Test Coverage	No. of Defects	% of Defect	Notes
1	Reviewing	120	24	20%	
2	Unit Test	150	30	20%	
3	Integration Test	80	10	12.5%	
4	System Test	95	19	20%	

Timeliness: 70%

Allocated Effort: 5 (members) \* 4 (months) \* 20 (days/month) = 400 man-days

## 1.3 Project Risks

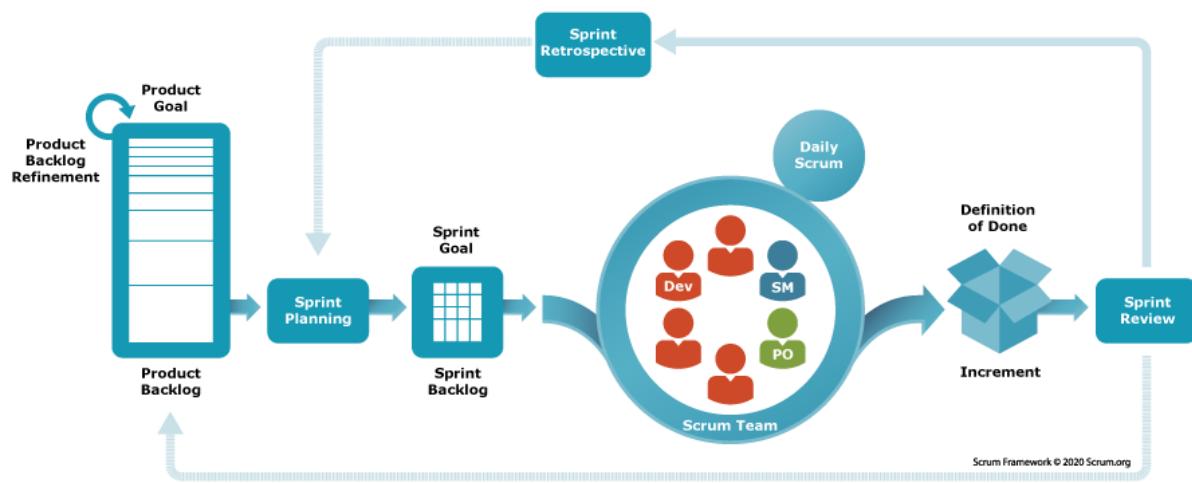
#	Risk Description	Impact	Possibility	Response Plans
1	The project's requirements are more about business than social networks.	Medium	Medium	Improve interaction features for customer, artist, and studio roles in the customer page.
2	Team members have not yet been exposed to Flutter.	Medium	Simple	Plan to train members whose role is mobile developer.

## 2. Management Approach

### 2.1 Project Process

Our project applies the Scrum model of Agile Software Development methodologies. There are 3 reasons of choosing this model as follows:

- Easily adapt to any changes.
- Break down milestones into smaller phases.
- Reduce risks or mitigation.



**Figure 1:** Scrum Framework (<https://www.scrum.org/resources/scrum-framework-poster>)

## 2.2 Quality Management

- Write down meeting minutes for every meeting
- Analyse requirements with team members and mentors.
- Review the tasks of previous sprints, define missing tasks, and prepare new tasks for the next sprint.
- Review code and design before integrating into a project.
- Weekly report with mentor.

## 2.3 Training Plan

Training Area	Participants	When, Duration	Waiver Criteria
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## 3. Project Deliverables

#	Deliverable	Due Date	Notes
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## 4. Responsibility Assignments

D~Do; R~Review; S~Support; I~Informed; <blank>- Omitted

## 5. Project Communications

Communication Item	Who/Target	Purpose	When, Frequency	Type, Tool, Method(s)
Meeting group online	Team members	Report the progress Raise and handle problems	Twice per week	Google Meet

		Assign new tasks		
Online communication	Team members	Raise and handle problems Discuss requirements and business rules Notify the important events and notes of the project Internal conversations	Always	Messenger
Tracking progress	Team members	Track the status of task Track issues and defects	Always	Github
Offline meeting	Team members	Discuss about progress, tasks, and issues Execute integration test Practice for reviews and final presentation	Once per 2 weeks	FPT University
Archives	Team members	Everyone has accesses to project resources	Always	Google Drive

## 6. Configuration Management

### 6.1 Document Management

- Use Google Drive to save meeting minutes, diagrams, reports, images, reference links, and documents.
- Use Google Doc for real-time editing and reviewing with team members and mentors.

### 6.2 Source Code Management

- GitHub server to store source code.
  - Link git for backends:
  - Link git for frontends:
  - Link git for mobile application:

### 6.3 Tools & Infrastructures

Category	Tools/Infrastructure
Technology	NextJS, Flutter, C#
Database	SQLServer, FireBase, Cloudinary
IDEs/Editors	Visual Studio Code, Visual Studio
Diagramming	Visual Paradigm, StarUML
Documentation	MS Office, Google Docs/Sheets/Slides
Version Control	Github, Google Drive
Deployment server	Amazon Web Service, Netlify
Project management	Trello

### III. Software Requirements Specification

#### 1. Product Overview

Art Tattoo Lover is a platform providing services for customers to book a date with their favourite studio or artist and create their own style of tattoo. ATL is also a place where artists and other tattoo lover can share their style of art and other thoughts about tattoos to connect everyone together. The context diagram below illustrates the external entities and the platform interface for version 1.0

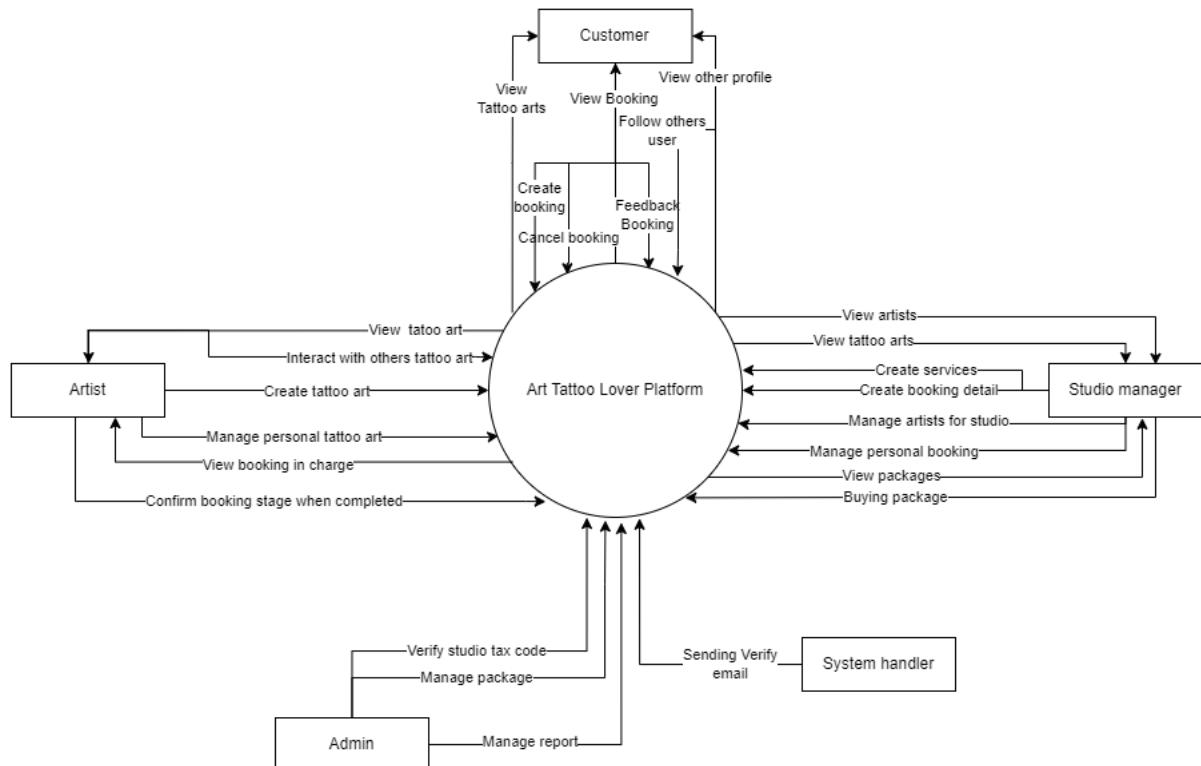


Figure 2: System overview

#### 2. User Requirements

##### 2.1 Actors

#	Actor	Description
01	Guest	<ul style="list-style-type: none"> <li>View tattoo arts</li> <li>View tattoo art details</li> <li>Register</li> <li>Login with email and password</li> <li>Search tattoo art</li> <li>Filter tattoo art</li> </ul>
02	Authorized member	<ul style="list-style-type: none"> <li>Search tattoo art</li> <li>Filter tattoo art</li> </ul>

		<ul style="list-style-type: none"> <li>● View studio interior</li> <li>● View personal profile</li> <li>● Edit personal profile</li> <li>● Receive notification via Email</li> <li>● View booking</li> <li>● View others profile</li> <li>● Follows others</li> <li>● Report accounts</li> <li>● View tattoo arts</li> <li>● Like, comment on tattoo arts</li> <li>● Get link tattoo arts to share</li> <li>● Edit personal comments</li> <li>● Delete personal comments</li> <li>● Report comments, tattoo arts and others account</li> </ul>
02	Studio Manager	<ul style="list-style-type: none"> <li>● Manage studio and their artists</li> <li>● View booking</li> <li>● Cancel booking</li> <li>● Update booking</li> <li>● Create booking detail</li> <li>● View packages</li> <li>● Buying packages</li> <li>● View personal report statistic</li> <li>● Sort and search report statistic</li> <li>● Create transaction for booking detail</li> </ul>
03	Artist	<ul style="list-style-type: none"> <li>● Create Tattoo art</li> <li>● Manage personal profile</li> <li>● Manage personal tattoo art</li> <li>● View booking in charge</li> <li>● Confirm booking stage completed status</li> <li>● Get personal key</li> </ul>

04	Customer	<ul style="list-style-type: none"> <li>● Create booking</li> <li>● Cancel booking</li> <li>● View booking</li> <li>● Manage personal profile</li> </ul>
05	Admin	<ul style="list-style-type: none"> <li>● View reported.</li> <li>● Ban account</li> <li>● Restrict reported tattoo arts.</li> <li>● Delete reported comments.</li> <li>● View packages</li> <li>● Create packages.</li> <li>● Update packages</li> <li>● Filter, sort reports</li> </ul>
06	System Handler	<ul style="list-style-type: none"> <li>● Send notification to authorized members via website and email.</li> <li>● Send verify email to users.</li> <li>● Send authorized member report to administrator</li> </ul>

## 2.2 Use Cases

### 2.2.1 Diagram

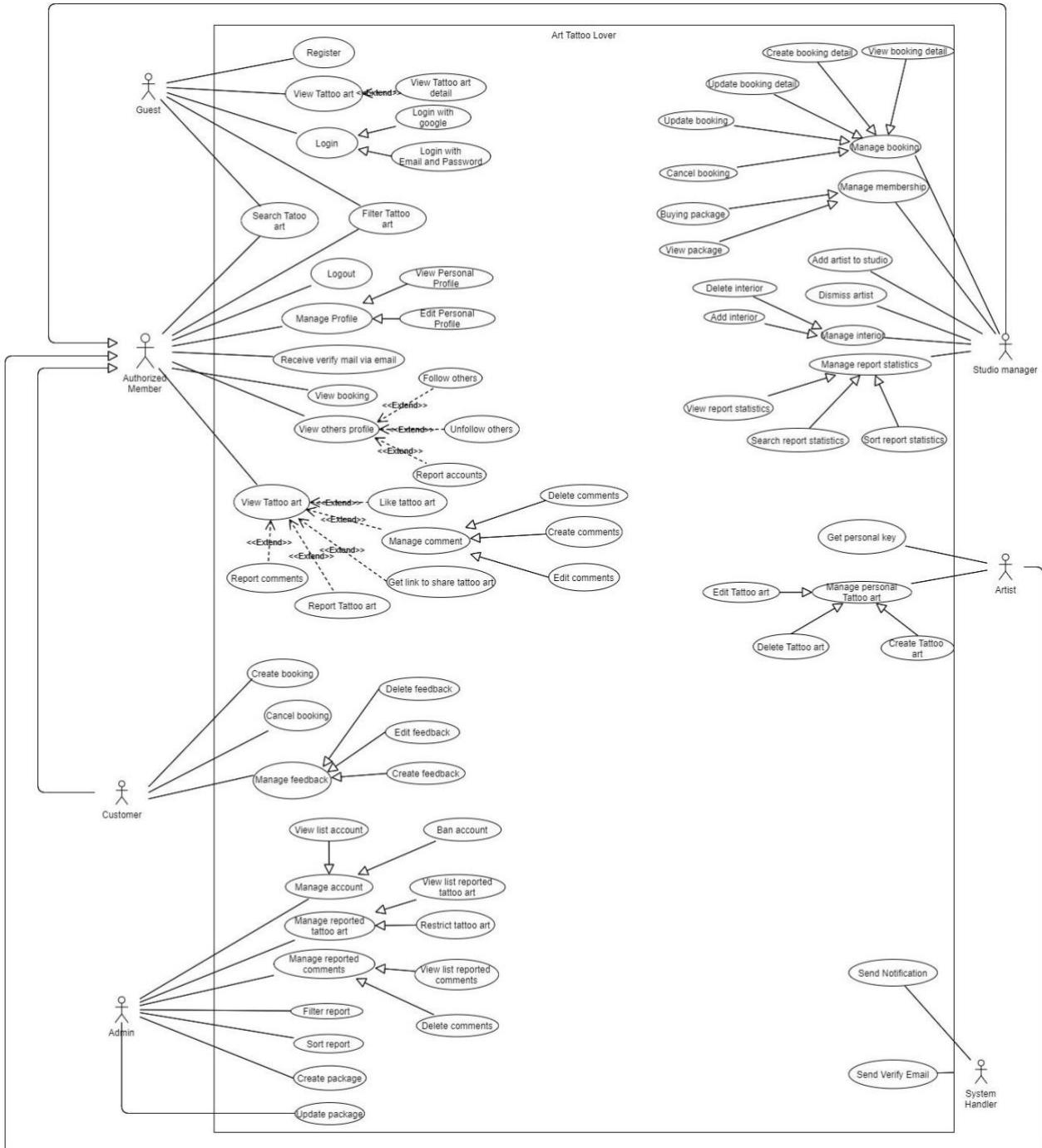


Figure 3: ATL Use case diagram

### 2.2.2 Descriptions

ID	Use Case	Actors	Use Case Description
----	----------	--------	----------------------

01	Register	Guest	In this use case, a guest can register a new account by providing necessary information.
02	Search tattoo art	Guest, Authorized member	In this use case, a guest or an authorized member can search tattoo art by name
03	Filter tattoo art	Guest, Authorized member	In this use case, a guest or an authorized member can filter tattoo art with the following given information.
04	View tattoo art	Guest, Authorized member	In this use case, a guest or an authorized member can view all tattoo art
05	View tattoo art detail	Guest, Authorized member	In this use case, a guest or an authorized member can view all tattoo art details.
06	Login with email and password	Guest	In this use case, a guest that have had account on website can login with email and password
07	Login with google	Guest	In this use case, a guest can login with their google accounts on the website.
08	View personal profile	Authorized member	In this use case, authorized members can view their personal profile.
09	Edit personal profile	Authorized member	In this use case, authorized members can edit their personal profile.
10	View booking	Authorized member	In this use case, authorized members can view their personal booking.
11	Create booking	Customer	In this use case, customers can create booking with studios or artists through a studio..
12	Cancel booking	Customer, Studio Manager	In this use case, customers and studio managers can cancel booking with reason.
13	Comment in tattoo art	Authorized member	In this use case, authorized members can comment on tattoo art.
14	Like tattoo art	Authorized member	In this use case, authorized members can like an tattoo art
15	Get link to share tattoo art	Authorized member	In this use case, authorized members can get a link that leads to current tattoo art to share with others.

16	Report tattoo art	Authorized member	In this use case, authorized members can report inappropriate tattoo art.
17	View other profile	Authorized member, Guest	In this use case, authorized members and guest can view others profile
18	Follow others	Authorized member	In this use case, authorized members can follow artists or studios.
19	Report account	Authorized member	In this use case, authorized members can report other accounts to the admin.
20	Delete comments	Authorized member	In this use case, authorized members can delete their comments.
21	Edit comments	Authorized member	In this use case, authorized members can edit their comments.
22	Update booking	Studio manager	In this use case, studio managers can update booking from their customer, reject the booking or accept booking.
23	Buying package	Studio manager	In this use case, Studio managers have to buy packages from the website in order to continue using ATL website service.
24	View package	Studio manager, Admin	In this use case, the studio manager and admin can see all types of packages.
25	Create tattoo art	Artist	In this use case, artists can create tattoo art and publish it on the ATL website.
26	Edit tattoo art	Artist	In this use case, artists can edit their personal tattoo art
27	Delete tattoo art	Artist	In this use case, artists can delete their personal tattoo art.
28	View list account	Admin	In this use case, the admin can view a list of all accounts of the ATL website.
29	Ban account	Admin	In this use case, admin can ban accounts that have been reported if it violates community standards based on policy and privacy
30	View list reported tattoo art	Admin	In this use case, the admin can view a list of reported tattoo art.
31	Restrict tattoo art	Admin	In this use case, the admin can change status of an reported tattoo art if it violates community standards based on policy and privacy
32	View list reported comments	Admin	In this use case, the admin can view a list of reported comments.

33	Filter report	Admin	In this use case, the admin can filter reports based on given information.
34	Sort report	Admin	In this use case, the admin can sort reports.
35	Create package	Admin	In this use case, the admin can create a new package for the studio manager..
36	Update package	Admin	In this use case, the admin can update information of packages such as price, duration.
37	View report statistic	Studio manager	In this use case, studio managers can view their report statistics about the previous month.
38	Search report statistic	Studio manager	In this use case, the admin can search their report statistics.
39	Sort report statistic	Studio manager	In this use case, the admin can sort their report statistics.
40	View booking detail	Customer, Studio manager	In this use case, customers and studio managers can view their personal booking details..
41	Create booking detail	Studio manager	In this use case, studio managers can create booking details for each stage of the tattoo art.
42	Update booking detail	Studio manager	In this use case, studio managers can update their personal booking details.
43	Add interior	Studio manager	In this use case, studio managers can add interior.
44	Delete interior	Studio manager	In this use case, studio managers can delete their interior
45	View interior	Authorized member	In this use case, authorized members can view studio interiors.
46	Add artist to studio	Studio manager	In this use case, studio managers can add an artist that accepts their request via email to their profile.
47	Dismiss artist	Studio manager	In this use case, studio managers can dismiss an artist that no longer belongs to them.
48	Create feedback	Customer	In this use case, customers can create feedback for their personal booking.
49	Update feedback	Customer	In this use case, customers can update their personal feedback.
50	Delete feedback	Customer	In this use case, customers can delete their personal feedback.
51	Send notification	System handler	In this use case, the system handler will send notification for authorized members in some cases.
52	Send verify email	System handler	In this use case, the system handler will send a verified email when a guest signs up a new account.

53	Receive notification via email	Authorized member	In this use case, authorized member will receive notification via email from system handler in some cases
----	--------------------------------	-------------------	---

### 3. Functional Requirements

#### 3.1 System Functional Overview

##### 3.1.1 Screen Flow

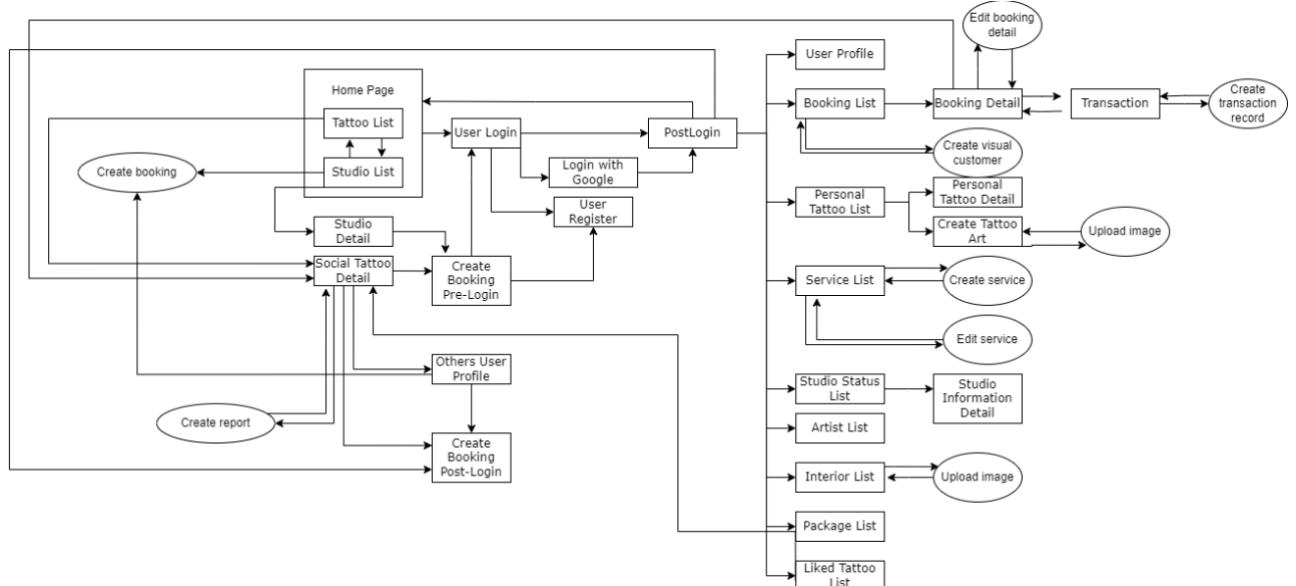


Figure 4: Web application screen flow

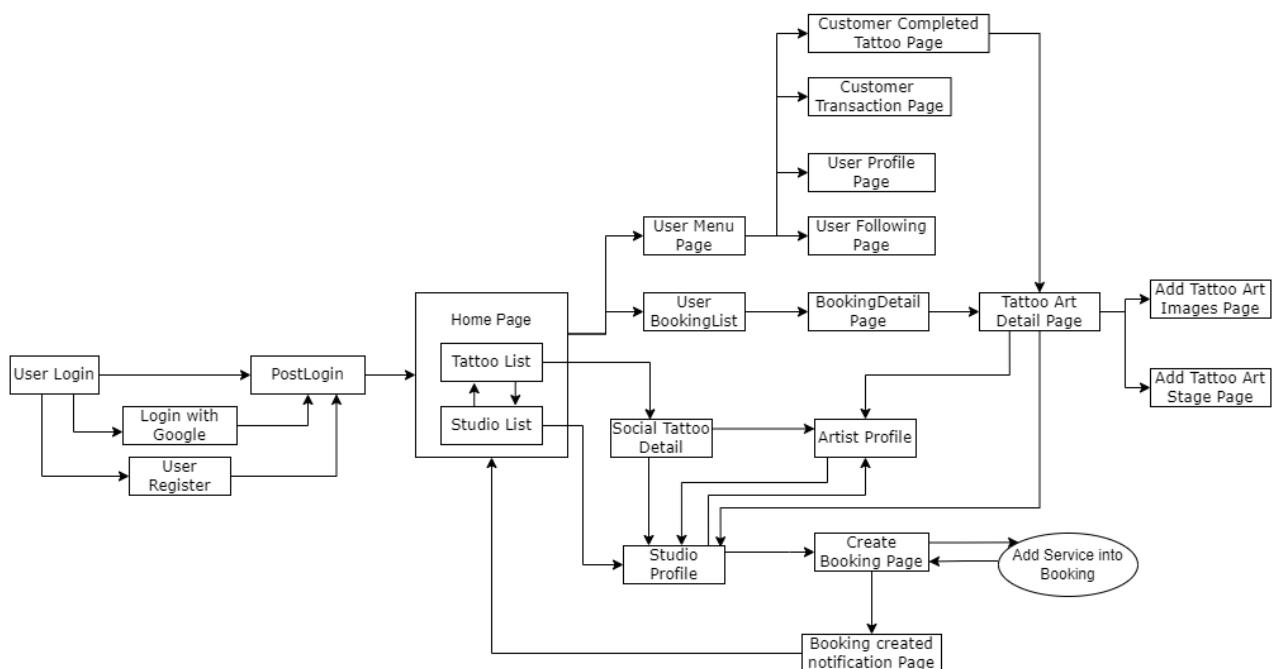


Figure 5: Mobile application screen flow

### **3.1.2 Screen Descriptions**

#	Feature	Screen	Description
1	Authentication	User login	Guest login with email and password
2	Authentication	Login with Google	Guest login with google.
3	Authentication	User register	Guest register new account with expected role.
4	Tattoo Art Management	Tattoo list	All ATL users can view tattoo art at website home page
5	Studio Management	Studio list	All ATL users can view list of current studio on the website at home page
6	Tattoo Art Management	Social tattoo art detail	All ATL users can view details of tattoo art on the home page.
7	Studio Management	Studio detail	All ATL users can view studio detail when clicking on the studio icon or studio name.
8	Booking Management	Create booking Pre-login	When a guest create a booking ATL website will lead them to a screen that remind them need to login to create a booking
9	Profile Management	Others user profile	All ATL users can view others' profiles when clicking on their icon or name.
10	Booking Management	Create booking post-login	Customers can create a booking with several information given by the studio.
11	Profile Management	User profile	Authorized member can edit their profile after their account have been verified
12	Booking Management	Booking list	Customers, artists and studio managers can view a personal booking list.
13	Booking Management	Booking detail	Customers can view their personal booking detail
14	Booking Management	Transaction	Studio managers create transaction for a booking
15	Tattoo Art Management	Personal tattoo list	Artist view list of their personal tattoo art

16	Tattoo Art Management	Personal tattoo detail	Artist can see detail of their personal tattoo art
17	Tattoo Art Management	Create tattoo art	Artist create new tattoo art
18	Tattoo Art Management	Personal tattoo detail	Artist update a personal tattoo art
19	Studio Management	Service list	Studio manager create new service for their Studio an
20	Tattoo Art Management	Personal tattoo detail	Artist can see detail of their personal tattoo art
21	Tattoo Art Management	Create tattoo art	Artist create new tattoo art
22	Tattoo Art Management	Personal tattoo detail	Artist update personal tattoo art
23	Studio Management	Studio status list	List of studio status that only admin can see
24	Studio Management	Studio status list	Admin manages studio status.
25	Studio Management	Studio information detail	Admin can view any studio information including privacy information when the studio register such as tax code.
26	Studio Management	Artist list	Studio managers add artists by their key and can dismiss them from the studio.
27	Studio Management	Interior list	Studio manager upload for other customer to view their interior images
28	Platform's Package Management	Package list	Page shows all the packages for the studio to buy and for the admin to manage.

29	Tattoo Art Management	Liked tattoo list	Customer, artist and studio manager can view all the tattoo art they had liked before.
30	Customer create booking	Create booking	A redirect page for booking
31	Report Statistics	Create report	A pop up screen when authorized members report a tattoo art or report other user comments.
32	Booking Management	Edit booking detail	A pop up screen when studio manager edit booking detail information of a booking
33	Booking Management	Create transaction record	A pop up screen when the studio manager creates a transaction record for one or many booking details of a booking.
34	Tattoo Art Management	Upload image	A pop up screen when artist create new tattoo art. This pop up screen allows artist to upload picture from their device or take a screenshot.
35	Studio Management	Create service	A pop up screen like a form with required style for a service. Studio manager fills out this form to create a new service.
36	Studio Management	Edit service	A pop up screen like create service form but information can edit.

### 3.1.3 Screen Authorization

Screen	Customer	Artist	Studio Manager	Admin
User login	X	X	X	X
Login with google	X	X	X	
User register	X	X	X	
Tattoo list	X	X	X	
Studio list	X	X	X	X
Social tattoo art detail	X	X	X	
Studio detail	X	X	X	
Create booking pre-login	X			

Other users profile	X	X	X	
Create booking post-login	X			
User profile	X	X	X	
Booking list	X	X	X	
Booking detail	X	X	X	
Transaction			X	
Personal tattoo list		X	X	
Personal tattoo detail		X	X	
Create tattoo art		X		
Personal tattoo detail		X	X	
Service list			X	
Personal tattoo detail				X
Studio status list				X
Studio information detail				X
Artist list			X	
Interior list			X	
Package list			X	X
Liked tattoo list	X	X	X	

### 3.1.4 Non-Screen Functions

#	Feature	System Function	Description
1	Share tattoo art	Get tattoo art link	The ATL API gets the link of the tattoo art.
2	Send verify email	send email	The ATL API send verify email to register account
3	Admin handle report	Admin change report status	Admin change report status when handling it.
4	Mapping booking	Mapping visual booking	The ATL platform automatically maps booking of a visual account created by a studio to a register account with the same information ( phone, full name ).

### 3.1.5 Entity Relationship Diagram

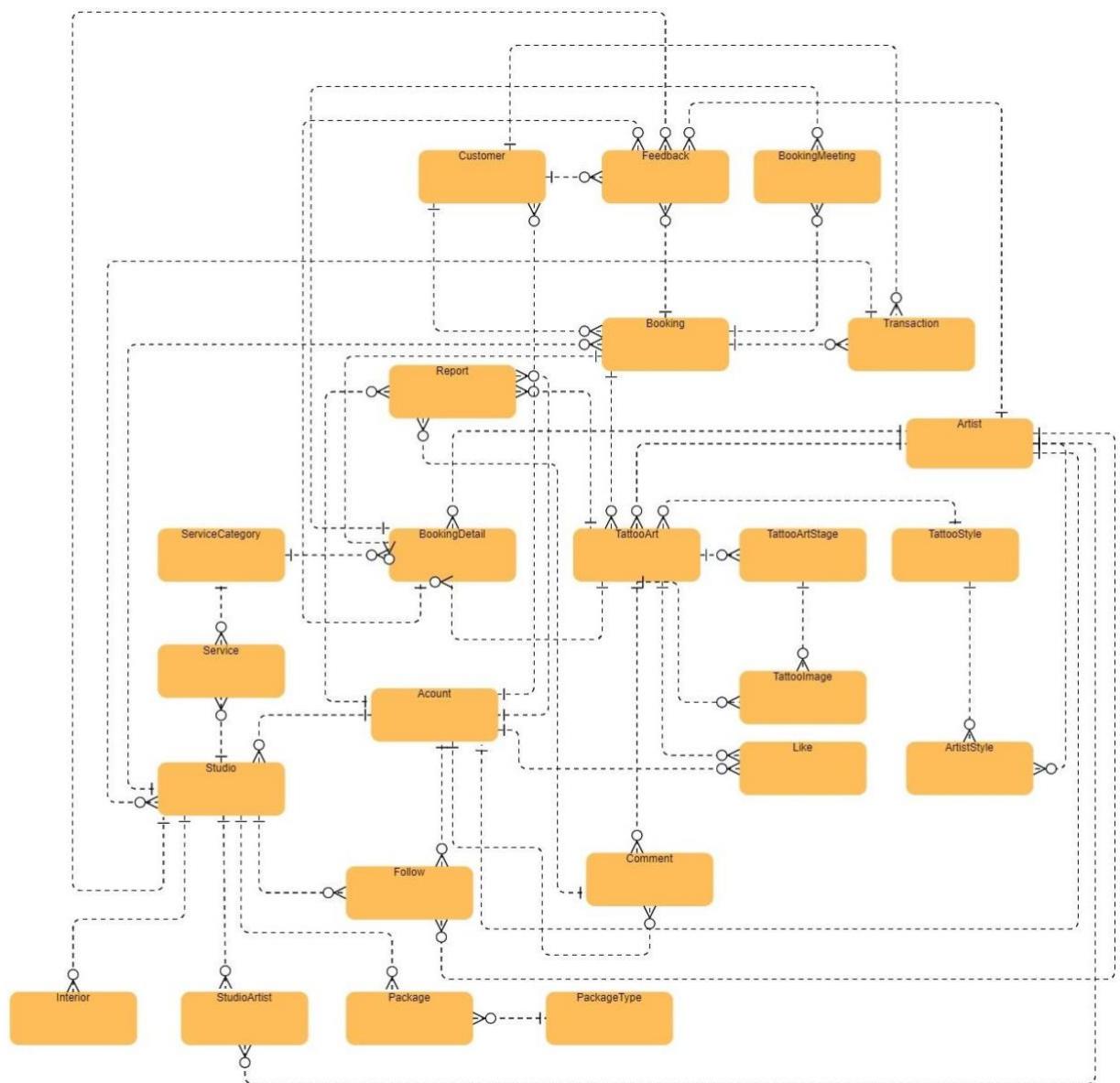


Figure 6: ATL Conceptual ERD

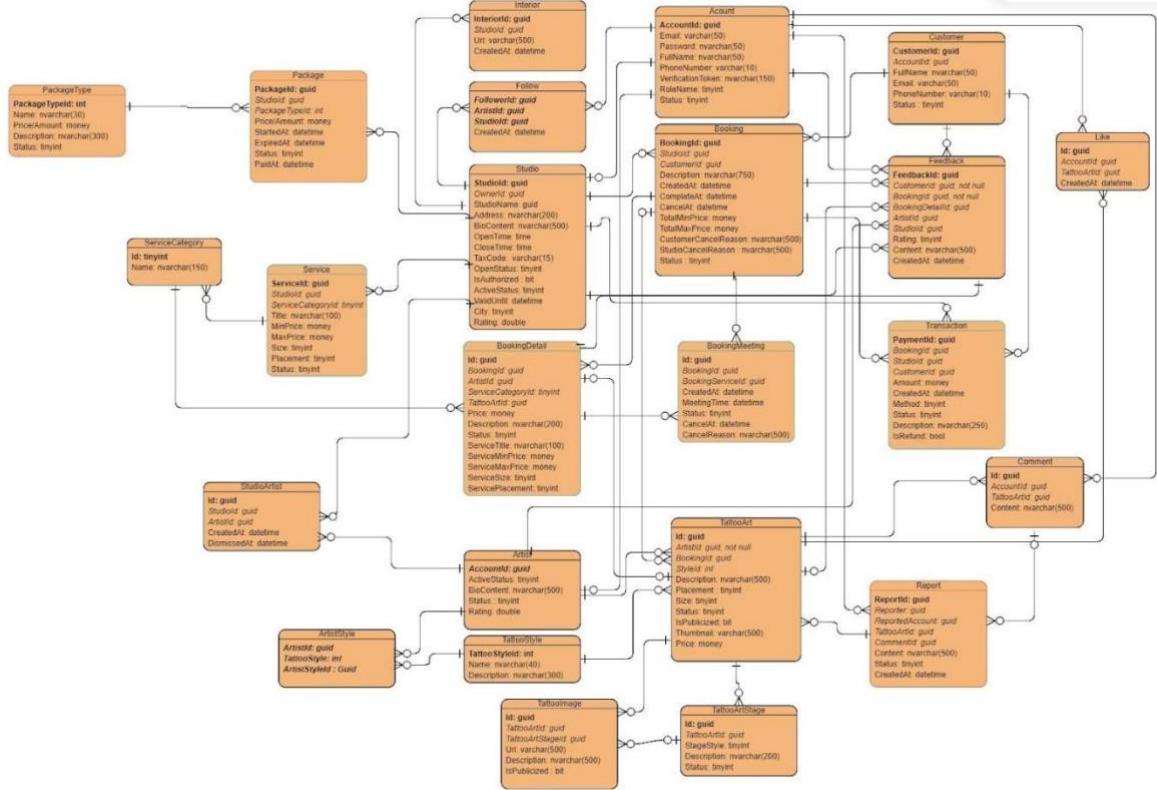


Figure 7: ATL Logical ERD

## Entities Description

### Account Entity

#	Entity	Description
1	AccountId	Unique definition of Account
2	Email	Email of the account
3	Password	Password of the account
4	FirstName	First name of the account
5	LastName	Last name of the account
6	PhoneNumber	Phone number of the account
7	VerificationToken	Check account is created with Username and password or created with Gmail
8	Role	Role of the account for authorise
9	Status	Status of the account for admin to manage

### Artist Entity

#	Entity	Description

1	ArtistId	Unique definition of Artist
2	BioContent	Artist Bio content
3	IsVerified	Is artist verified or not
4	Status	Status of the artist

#### ArtistStyle Entity

#	Entity	Description
1	ArtistStyleId	Unique definition of Artist Style
2	ArtistId	Unique definition of Artist
3	StyleId	Unique definition of Style

#### Booking Entity

#	Entity	Description
1	BookingId	Unique definition of Booking
2	StudioId	Unique definition of Studio
3	CustomerId	Unique definition of Customer
4	CreateAt	Booking created time
5	Date	Booking meeting date
6	Description	Description of Booking
7	TotalMinPrice	Min price of the booking
8	TotalMaxPrice	Max price of the booking
9	CancelAt	Time booking canceled if occur
10	CustomerCancelReason	Customer reason for cancel
11	StudioCancelReason	Studio reason for cancel
12	WantedTattooImage	Main tattoo that customer want when booking
13	Status	Status of the booking

#### Booking detail Entity

#	Entity	Description
1	BookingDetailId	Unique definition of Booking detail
2	BookingId	Unique definition of Booking

3	ArtistId	Unique definition of Artist
4	TattooArtId	Unique definition of Tattoo art
5	OperationId	Unique definition of Operation
6	Price	Total of the booking
7	CreateAt	Time booking detail created

#### BookingServices Entity

#	Entity	Description
1	BookingId	Unique definition of Booking
2	ServiceId	Unique definition of Service

#### Comment Entity

#	Entity	Description
1	CommentId	Unique definition of Comment
2	AccountId	Unique definition of Working time slot
3	TattooArtId	Unique definition of Tattoo art
4	Content	Content of the comment

#### Customer Entity

#	Entity	Description
1	CustomerId	Unique definition of Customer
2	AccountId	Unique definition of Account
3	FirstName	First name of the customer
4	LastName	Last name of the customer
5	Email	Email of the customer
6	PhoneNumber	Phone number of the customer
7	Status	Status of the customer

#### Feedback Entity

#	Entity	Description
1	FeedbackId	Unique definition of Feedback

2	AccountId	Unique definition of Account
3	BookingId	Unique definition of Booking
4	TattooArtId	Unique definition of Tattoo art
5	Rating	Rate for the booking of the feedback
6	Content	Content of the feedback

### Interior Entity

#	Entity	Description
1	InteriorId	Unique definition of Interior
2	StudioId	Unique definition of Studio
3	Url	Link for the image of the interior
4	CreatedAt	Interior Created time

### Like Entity

#	Entity	Description
1	LikId	Unique definition of Like
2	AccountId	Unique definition of Account
3	TattooArtId	Unique definition of Tattoo art
4	CreatedAt	Time like created

### OperationType Entity

#	Entity	Description
1	OperationTypId	Unique definition of Operation type
2	OperationName	Name of the operation

### Package Entity

#	Entity	Description
1	PackageId	Unique definition of Package
2	StudioId	Unique definition of Studio
3	PackageTypeId	Unique definition of Package type
4	Amount	Price of the package
5	PaidAt	Time that transaction have been done
6	CreatedAt	Time that package created
7	ExpiredAt	Time that package expired
8	Status	Status of the package

### PackageType Entity

#	Entity	Description
1	PackageTypeId	Unique definition of Package type
2	Name	Name of the package type
3	Amount	Price of the package type
4	Status	Status of the package type

### Payment Entity

#	Entity	Description
1	PaymentId	Unique definition of Payment
2	BookingId	Unique definition of Booking
3	BookingDetailId	Unique definition of Booking detail
4	Amount	Amount money of the payment
5	CreatedAt	Time payment created
6	Method	Method used to paid
7	Status	Status of the Payment

### Report Entity

#	Entity	Description
1	ReportId	Unique definition of Report

2	Reporter	User that report
3	ReportedAccount	Account that been reported
4	TattooArtId	Unique definition of Tattoo Art
5	CommentId	Unique definition of Comment
6	Content	Content of the report
7	Status	Status of the report
8	CreatedAt	Time report created

### Service Entity

#	Entity	Description
1	ServiceId	Unique definition of Service
2	StudioId	Unique definition of Studio
3	Size	Size of the tattoo
4	Placement	Place of the tattoo
5	HasColor	Tattoo has colour or not
6	IsDifficult	Difficult of the tattoo to make
7	MinPrice	Min price of the tattoo
8	MaxPrice	Max price of the tattoo
9	Ink	Ink used for tattoo

### Studio Entity

#	Entity	Description
1	StudioId	Unique definition of Studio
2	OwnerId	Unique definition of Owner
3	StudioName	Name of the Studio
4	Address	Address of the Studio
5	BioContent	Bio's content of the studio
6	OpenTime	Studio open time
7	CloseTime	Studio close time
8	Certificate	Studio certificate
9	IsAuthorized	Verify that Studio have bought normal package

10	IsPrioritized	Studio bought boosted package
11	Status	Status of the studio

#### StudioArtist Entity

#	Entity	Description
1	StudioArtistId	Unique definition of Studio Artist
2	StudioId	Unique definition of Studio
3	ArtistId	Unique definition of Artist
4	CreatedAt	Studio artist created time

#### TattooArt Entity

#	Entity	Description
1	TattooArtId	Unique definition of Tattoo Art
2	ArtistId	Unique definition of Artist
3	StyleId	Unique definition of Style
4	Description	Description of the Tattoo art
5	Size	Size of the tattoo in the Tattoo art
6	Placement	Place of the tattoo in the Tattoo art
7	IsPublicized	Permission for other to view or not
8	Status	Status of Tattoo art

#### TattooArtStage Entity

#	Entity	Description
1	TattooArtStageId	Unique definition of Tattoo Art Stage
2	TattooArtId	Unique definition of Tattoo Art
3	StageStyle	Style of the tattoo art stage
4	Description	Description of the Tattoo Art Stage
5	Status	Status of the Tattoo Art Stage

#### TattooImageCategory Entity

#	Entity	Description

1	ImageId	Unique definition of Image
2	TattooArtId	Unique definition of Tattoo Art

### TattooMedia Entity

#	Entity	Description
1	TattooMediald	Unique definition of Tattoo Media
2	TattooArtStageId	Unique definition of Tattoo Art Stage
3	Type	Type of the Tattoo media
4	Url	Link for the image of the tattoo
5	Description	Description for the tattoo media
6	IsPublicized	Permission for other to view tattoo media

### TattooStyle Entity

#	Entity	Description
1	TattooStyleId	Unique definition of Tattoo Style
2	Name	Name of the tattoo style
3	Description	Description for the tattoo style

## 3.2 Authentication

### **3.2.1 Guest register as customer or artist**

- **Function trigger:** Users click “Tạo tài khoản” in the “Đăng Nhập” page, input their email, first name, last name, phone number, password and confirm password, check the box if guest want new account create as artist role, then click the “đăng ký” button.
- **Function description:** Guests create a new ATL customer account or artist account
- **Function details:** Guests create a new account in the system by providing email, first name, last name, phone, password and confirm password. The email has to be in valid format and unique. All information needed for sign up length must be greater than 0.. The confirmed password has to be the same as the password. If information is valid, the system will send a confirmation email to the user to verify the email account. If registration fails, an error message will be shown on the screen. By clicking the very link in the email, the user account is available to use in the ATL platform..
- **Business rules:** BR-62
- **Screen layout:**



## ART TATTOO LOVER

Tạo tài khoản để mở Studio và sử dụng dịch vụ quản lý tiệm xăm của Art Tattoo Lover Platform

Tên <input type="text" value="Tên"/>	Password <input type="password" value="Password"/>
Số điện thoại <input type="text" value="Email"/>	Xác nhận password <input type="password" value="Xác nhận password"/>
Email <input type="text" value="Email"/>	
<input type="checkbox"/> <a href="#">Tạo tài khoản nghệ sĩ xăm</a>	
<a href="#" style="color: white; text-decoration: none;">Đăng ký</a>	
<a href="#">Đã có tài khoản? Đăng nhập tại đây</a>	

**Figure 8:** Customer/Artist register form

### 3.2.2 Guest register as studio manager

- **Function trigger:** Guest click “Tạo tài khoản” in the “Đăng nhập” page in the studio website.
- **Function description:** Guests register as an studio manager
- **Function detail:** Guests will have to enter some more information to create an account as studio manager. After verifying the account they can use the main feature of the studio manager role.
- **Business rules:** BR-01 ,BR-04, BR-05

- Screen

layout:

Tạo tài khoản để mở tiệm xăm và sử dụng dịch vụ quản lí tiệm xăm của Art Tattoo Lover Platform

**Tiệm xăm**

**Quản lí tiệm xăm**

Mã số thuế \*

Tên \*

Thành phố \*

Số điện thoại \*

Địa chỉ \*

Email \*

Giờ mở cửa \*

Giờ đóng cửa \*

Đăng ký

Đã có tài khoản? Đăng nhập tại đây

Thay logo

Tên tiệm xăm \*

09:00:00

21:00:00

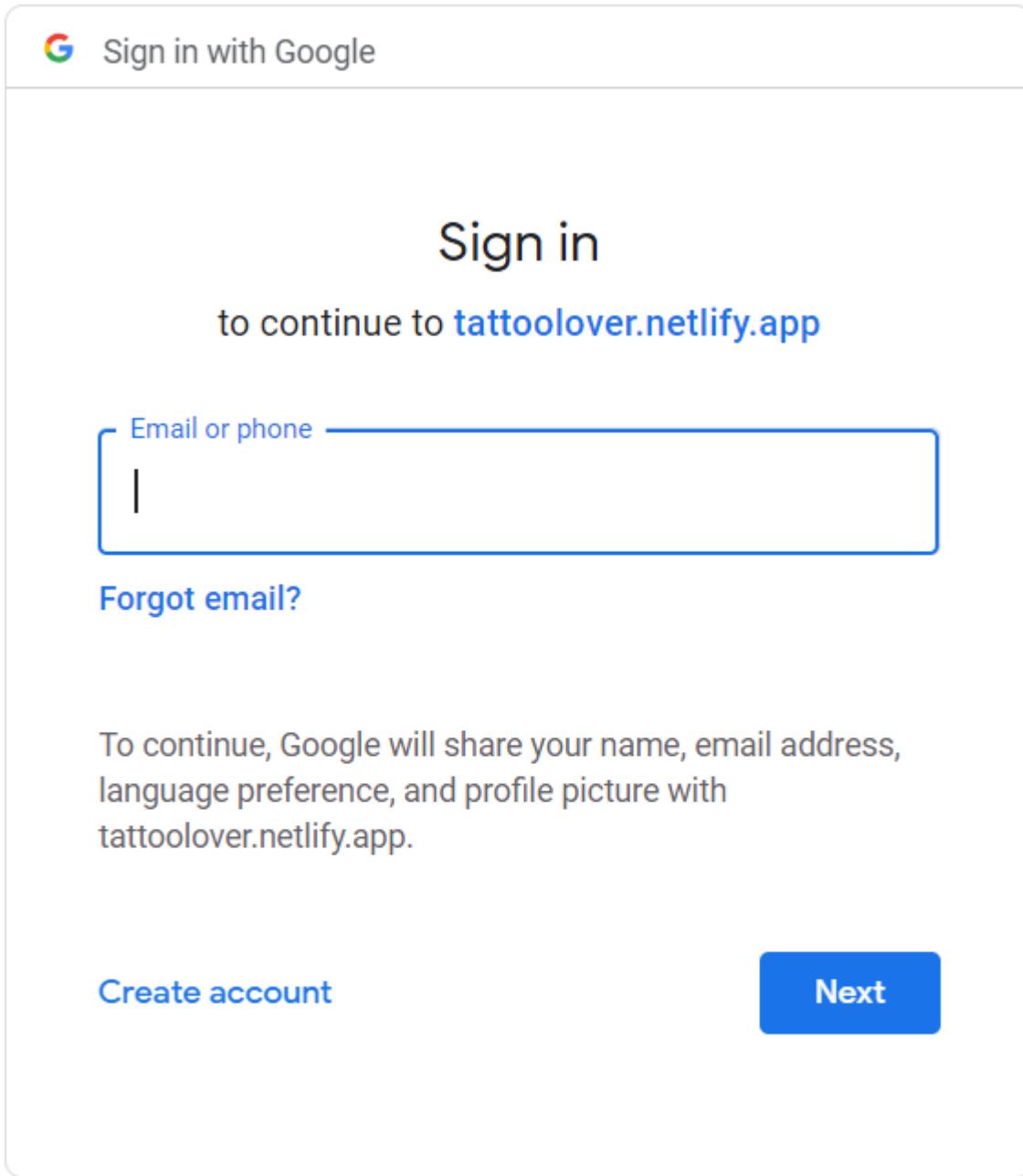
Xác nhận password \*

Xác nhận password

**Figure 9:** Studio manager register form

### **3.2.3 Customer login with Google**

- **Function trigger:** Users click “Đăng nhập với tài khoản google” in the “Đăng Nhập” page, choose google account or fill in Gmail and password to login in.
- **Function description:** Guests login as an customer with Gmail account
- **Function detail:** Beside login with email and password, guests can also login with their google account, after login with google account guest will continue as role customer and need to verify gmail to perform main function on the website such as booking.
- **Business rules:** BR-62
- **Screen layout:**

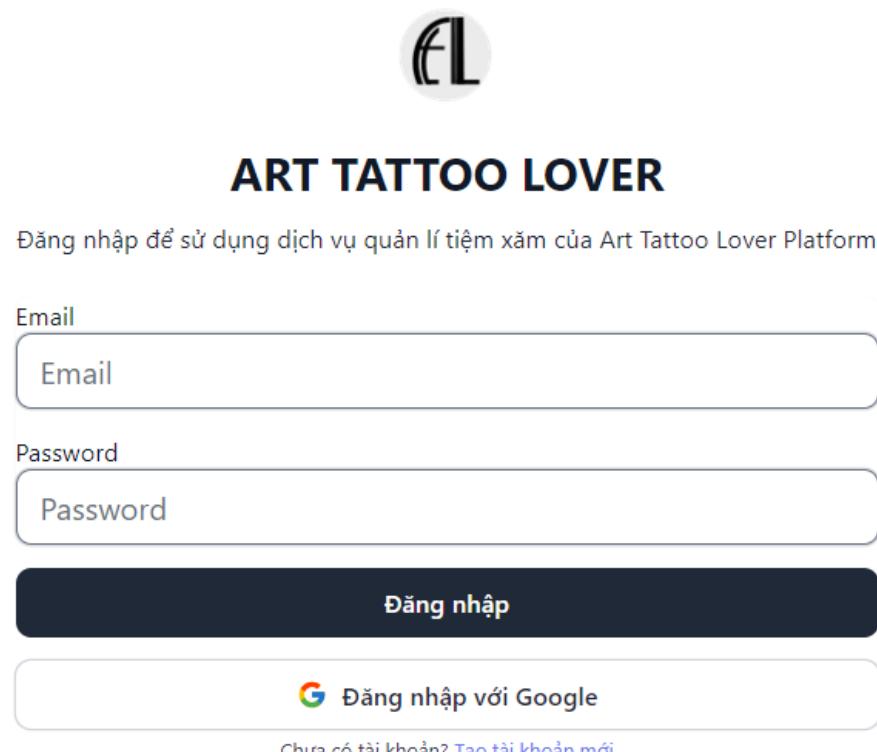


**Figure 10:** Sign in with gmail screen

### **3.2.4 Customer/Artist/Studio login with email and password**

- **Function trigger:** Users filling in email and password then click the “Đăng nhập” button.
- **Function description:** User login with email and password of the website.
- **Function detail:** Users login to ATL platform by providing email and password, email and password cannot be empty. If the account is valid, a success toast will notify the user and the user will be logged into the platform. If the account is invalid due to wrong information, blocked account or staff account, an error message will be shown on the screen.

- Business rules: BR-62
- Screen layout:



**Figure 11:** Login screen

### 3.2.5 Customer/Artist/Studio Logout

- **Function trigger:** Users click the “Đăng xuất” tab in the profile icon.
- **Function description:** User logout the ATL platform.
- **Function detail:** Users click the profile icon to show more tabs, then click the “Đăng xuất” tab. After logout if the user will still be in the home page as a guest role. If the studio manager logs out in the studio manage web page. They will go back to the “Đăng nhập” page.
- **Screen layout:**

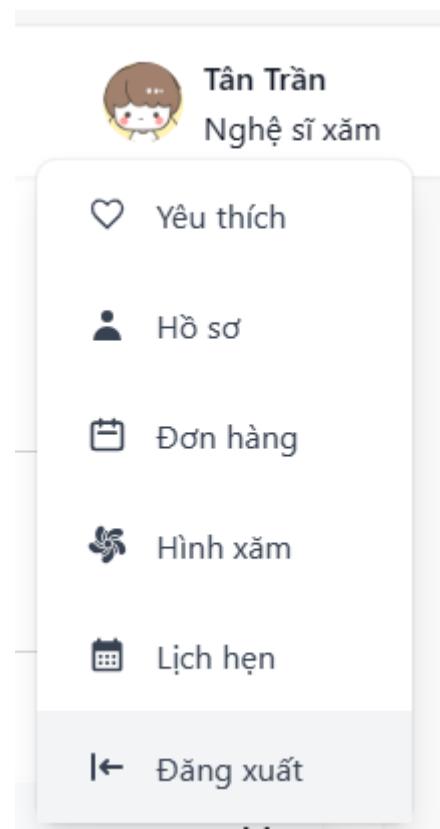


Figure 12: User logout screen

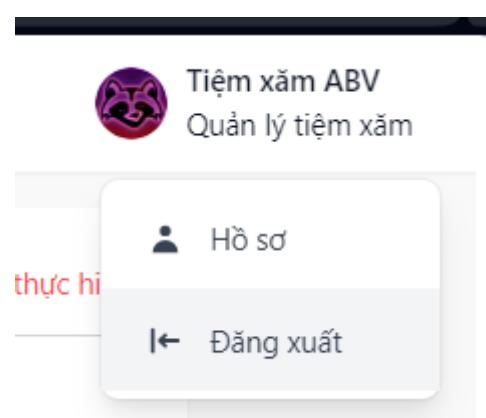


Figure 13: Studio manager logout screen

### 3.3 Booking management

#### 3.3.1 Customer create booking

- **Function trigger:** Customer click “Đặt hẹn” button in an tattoo art or Studio/artist profile.
- **Function description:** Customer creates new booking with wanted information.
- **Function detail:** Customers clicking the “Đặt hẹn” button and filling in all the information for the booking as they want including: Services, artist performs, Date and time for the meeting and description or note. When filling all the information needed for creating a booking, customers click the “Xác nhận” button to finish.
- **Business rules:** BR-09
- **Screen layout:**

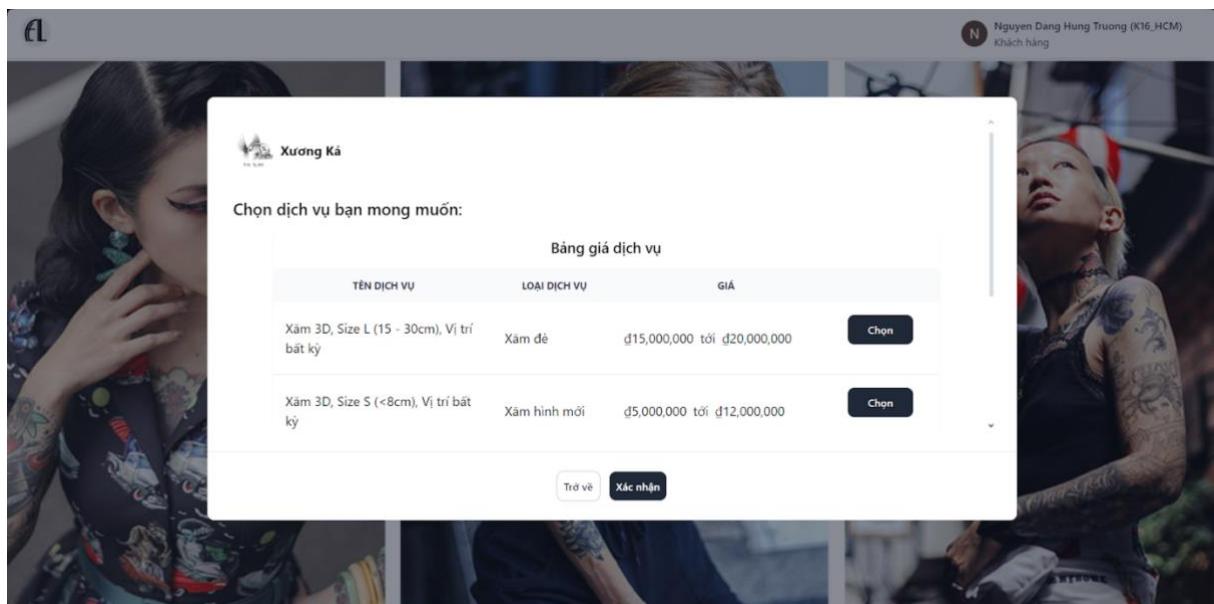
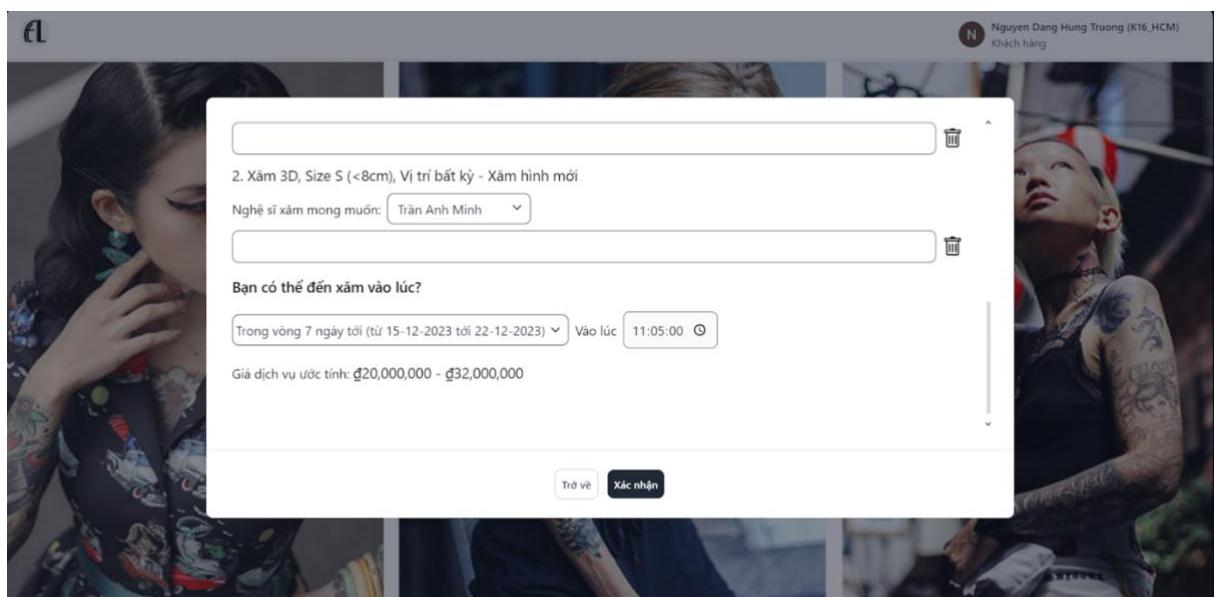


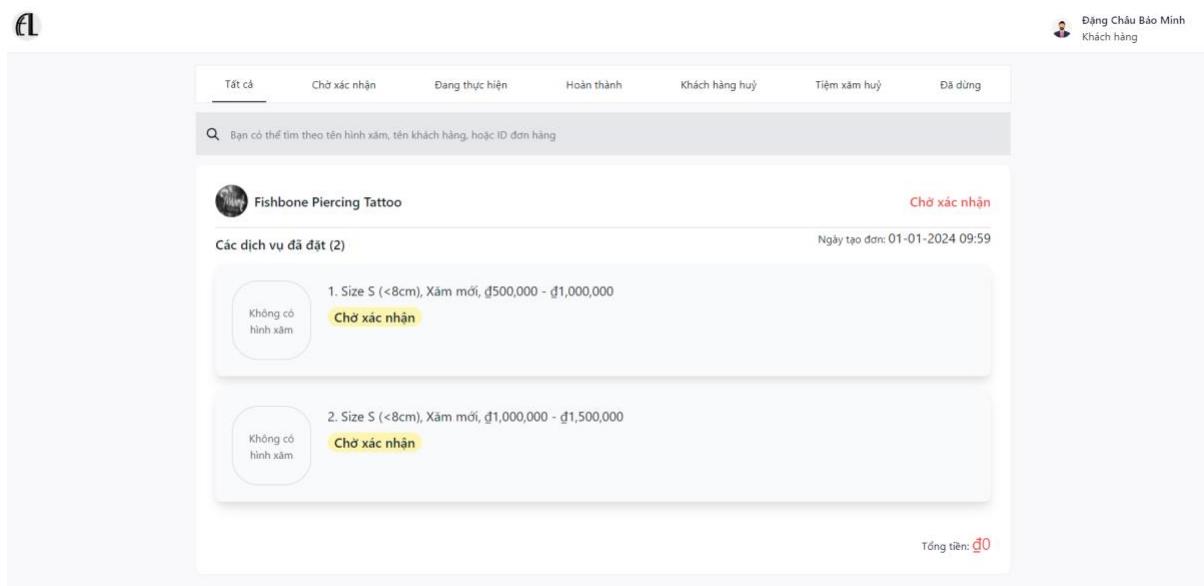
Figure 14: Customer choosing service for booking screen.



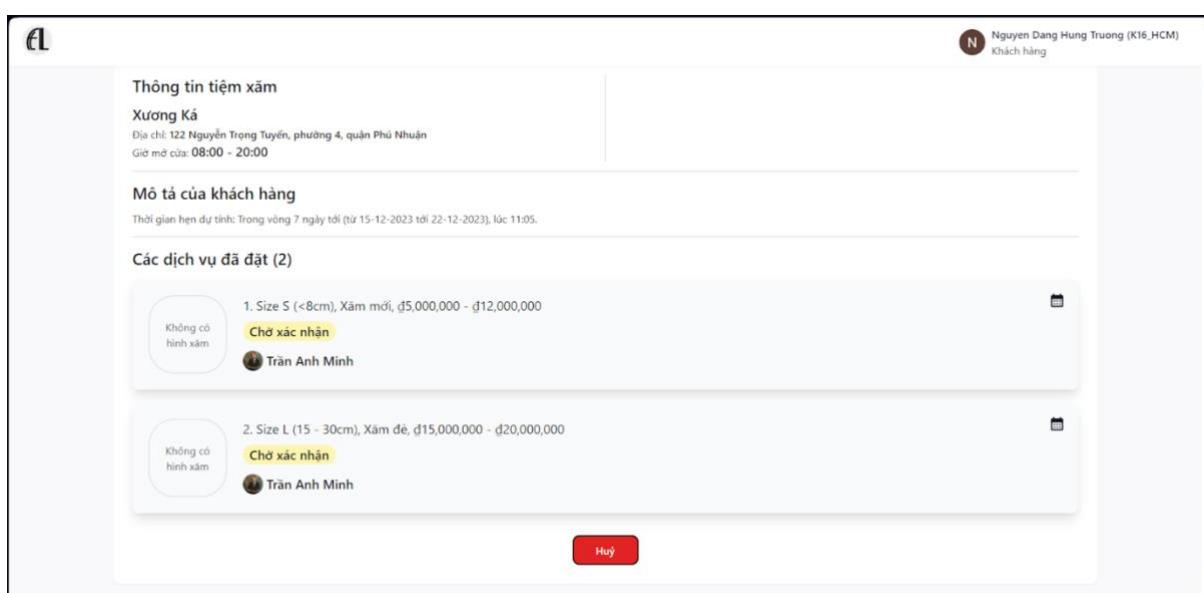
**Figure 15:** Customer confirms booking meeting screen (artist who performs/ date of the booking/ description...)

### 3.3.2 Customer cancel booking

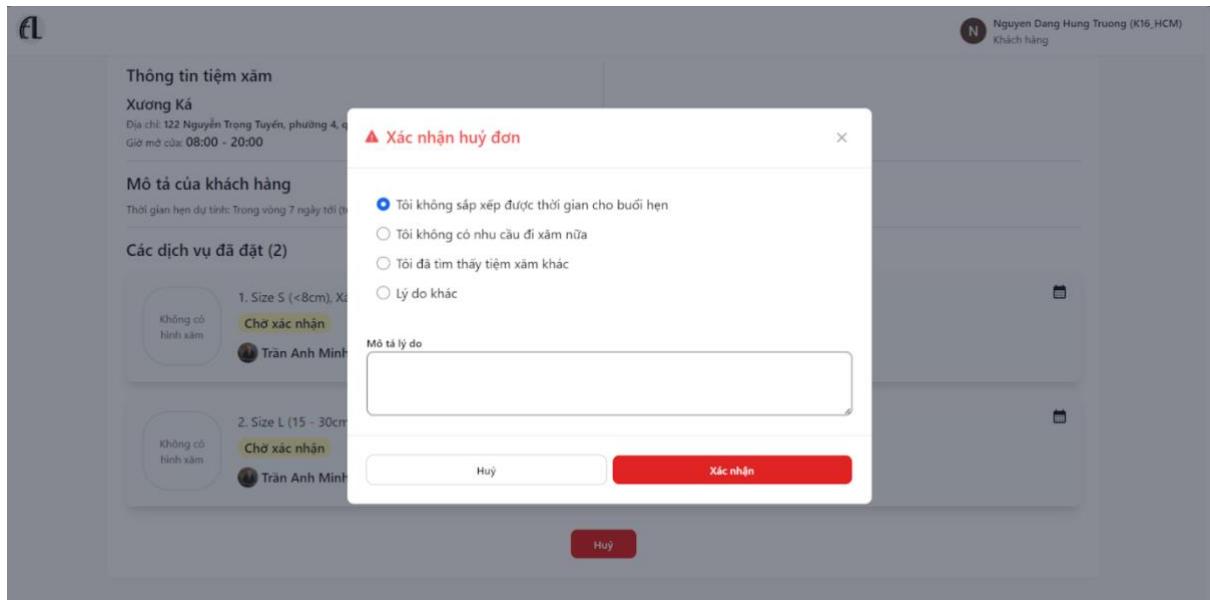
- **Function trigger:** Customers click “Hủy” button in an booking detail and choose reason then confirm.
- **Function description:** Customer cancels a booking with reasons.
- **Function detail:** Customers click the “Đơn hàng” tab in the profile icon to view all the booking in current. Choose the booking that needs to be canceled. Enter reasons why they cancel the booking and click the “Xác nhận” button.
- **Business rules:** BR-11
- **Screen layout:**



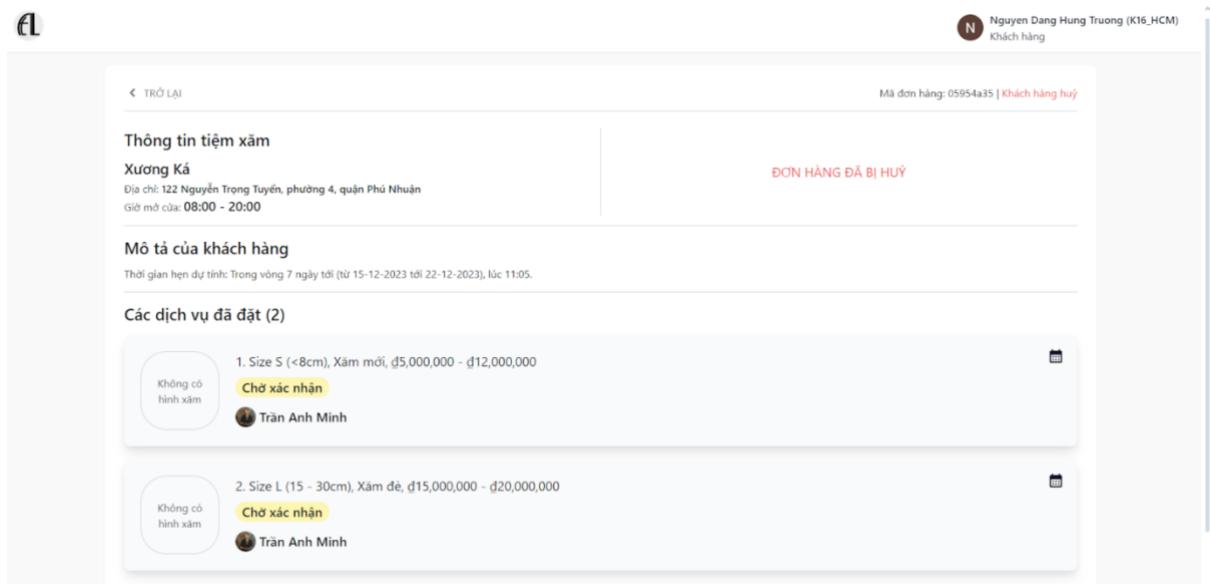
**Figure 16:** Customer view all their booking screen



**Figure 17:** Customer view booking detail screen



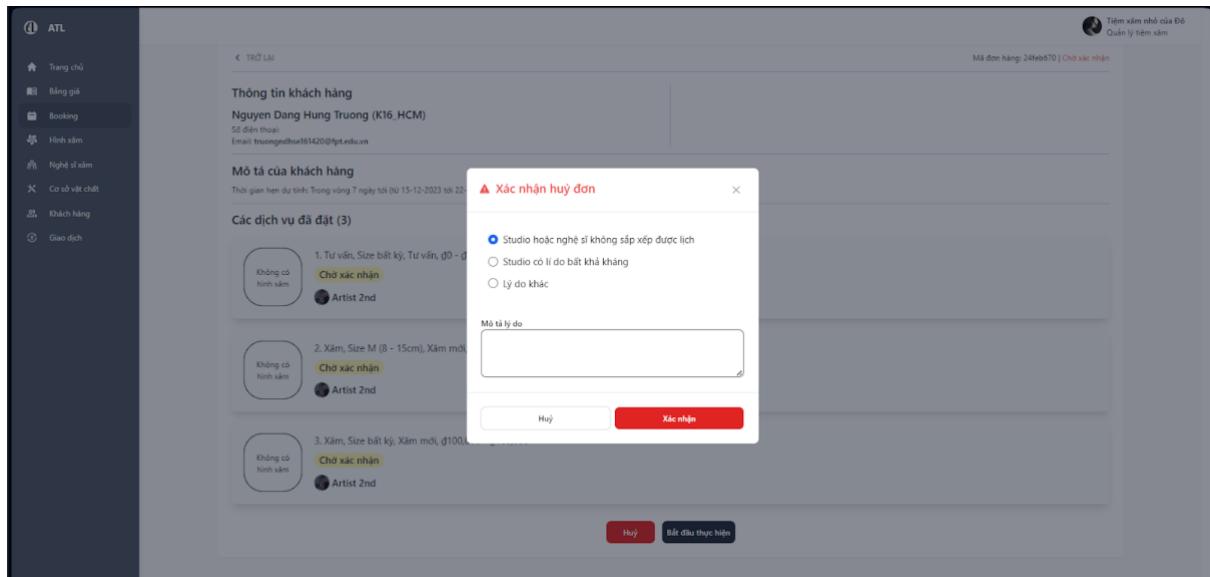
**Figure 18:** Customer cancels booking confirmation screen.



**Figure 19:** Customer view canceled booking screen.

### 3.3.3 Studio cancel booking

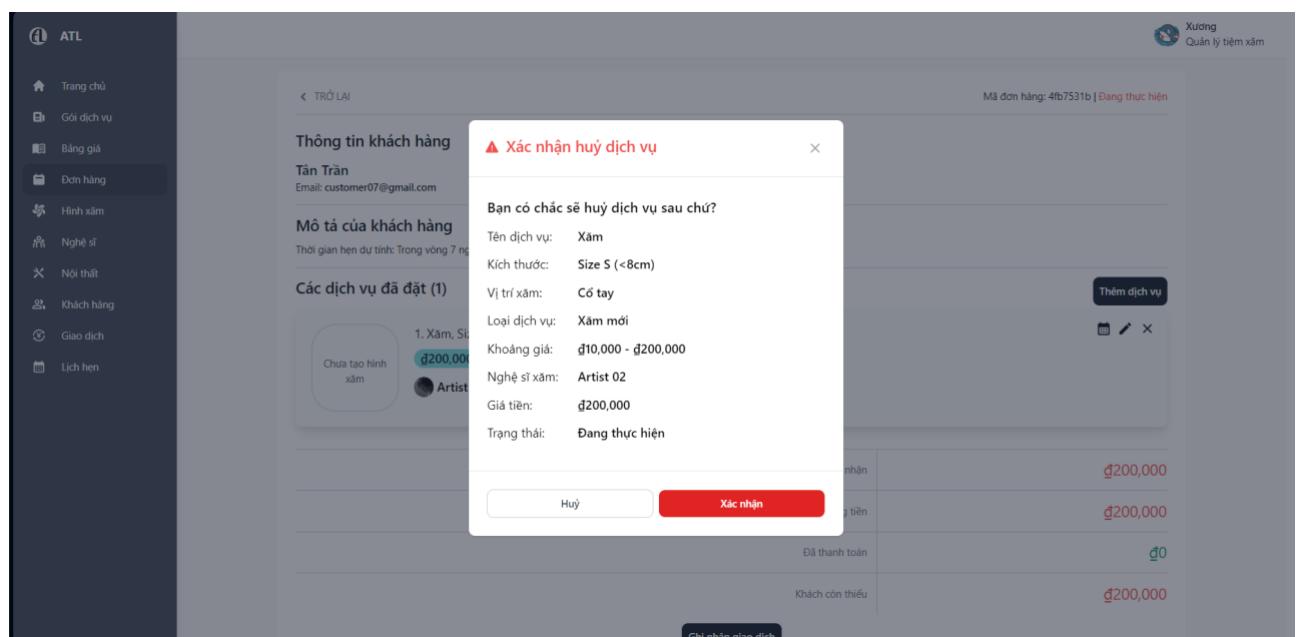
- **Function trigger:** Studio manager click “Hủy” button in an booking detail and choose reason then confirm.
- **Function description:** Studio manager cancels a booking with reasons.
- **Function detail:** Studio manager clicks the “Đơn hàng” tab in the navigation bar on the left to view all the current booking. Choose the booking that needs to be canceled. Enter reasons why they cancel the booking and click the “Xác nhận” button.
- **Business rules:** BR-11
- **Screen layout:**



**Figure 20:** Studio manager cancel booking confirmation screen

### 3.3.4 Studio cancel booking detail

- **Function trigger:** Studio manager click the “X” icon in the booking detail.
- **Function description:** Studio manager cancel booking detail
- **Function detail:** Studio manager click a booking to view booking detail then click “X” icon in the booking detail and choose reason for cancellation then click “Xác nhận” button to complete cancel booking detail.
- **Business rules:** BR-11
- **Screen layout:**



**Figure 21:** Studio manager cancel booking detail

### 3.3.5 Studio confirm customer booking

- **Function trigger:** Studio manager click the “Thêm” button in the booking.
- **Function description:** Studio manager adds new booking detail for customer booking.
- **Function detail:** Studio manager click a booking then click “Thêm” button. Choose services and click the “Xác nhận” button.
- **Business rules:** BR-22
- **Screen layout:**

The screenshot shows a modal window titled "Thêm dịch vụ" (Add service). Inside, there's a table for service prices:

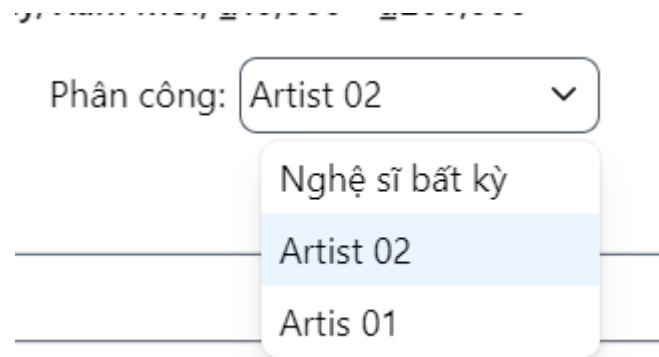
TÊN DỊCH VỤ	LOẠI DỊCH VỤ	ĐỐI TƯỢNG	GIÁ
Xăm, Size S (<8cm), Cổ tay	Xăm hình mới	Mọi người	đ10,000 tới đ200,000

Below the table are dropdowns for "Chọn nghệ sĩ:" (Select artist:) set to "Nghệ sĩ bất kỳ" (Any artist) and "Giá tiền:" (Price:) set to "đ Nhập giá tiền" (Enter price). There's also a "Ghi chú:" (Note:) input field with placeholder "Thêm ghi chú". At the bottom are "Huỷ" (Cancel) and "Xác nhận" (Confirm) buttons. The background shows a dark sidebar with various studio management options like Trang chủ, Gói dịch vụ, Bảng giá, etc.

Figure 22: Studio create booking detail

### 3.3.6 Studio manager assigns artist to booking detail

- **Function trigger:** Studio manager click the pencil icon in the booking detail then click “Phân công” dropdown bar and choose artist.
- **Function description:** Studio manager assigns artist who perform to booking detail.
- **Function detail:** Studio manager click the pencil icon in the booking detail then click “Phân công” dropdown bar and choose artist then click “Xác nhận” button.
- **Business rules:** BR-22
- **Screen layout:**



**Figure 23:** Studio manager assigns artist into the booking.

### 3.3.7 Studio manager cancels booking meeting date.

- **Function trigger:** Studio manager click the calendar icon in the booking detail. Then click bin icon in the booking meeting date
- **Function description:** Studio manager cancel booking meeting date for a booking detail
- **Function detail:** Studio manager click the calendar icon in the booking detail. Then click bin icon in the booking meeting date
- **Business rules:** BR-22, BR-19, BR-20
- **Screen layout:**

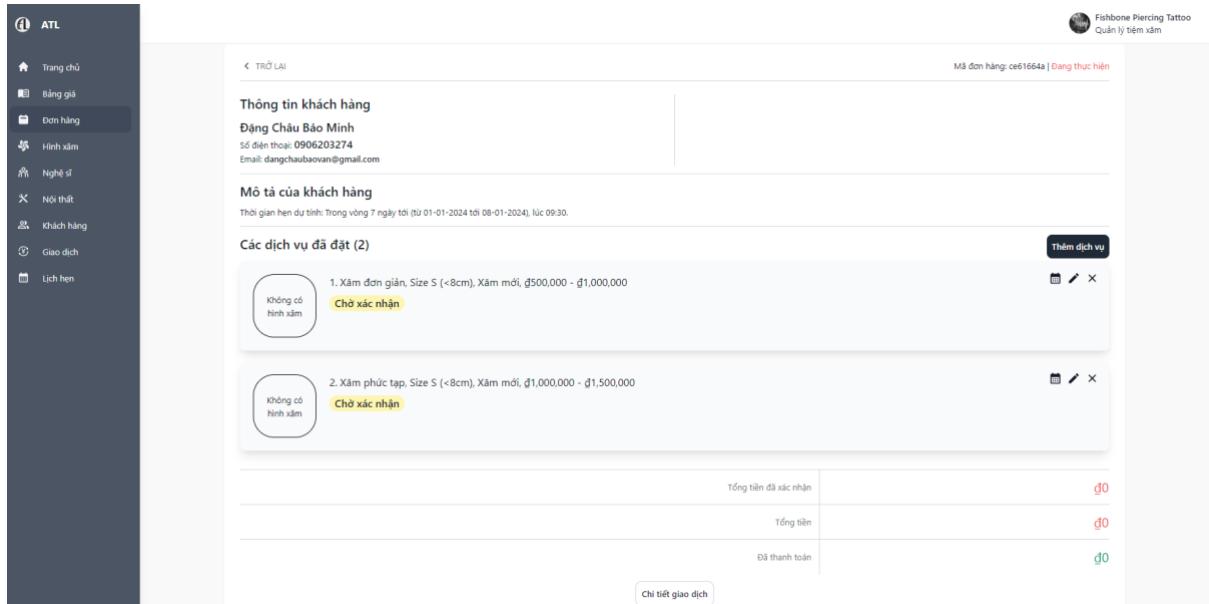


**Figure 24:** Studio manager cancel booking meeting date

### 3.3.8 Studio confirm customer booking

- **Function trigger:** Studio manager click the “Bắt đầu thực hiện” button in booking detail.
- **Function description:** Studio manager confirms booking from customer.

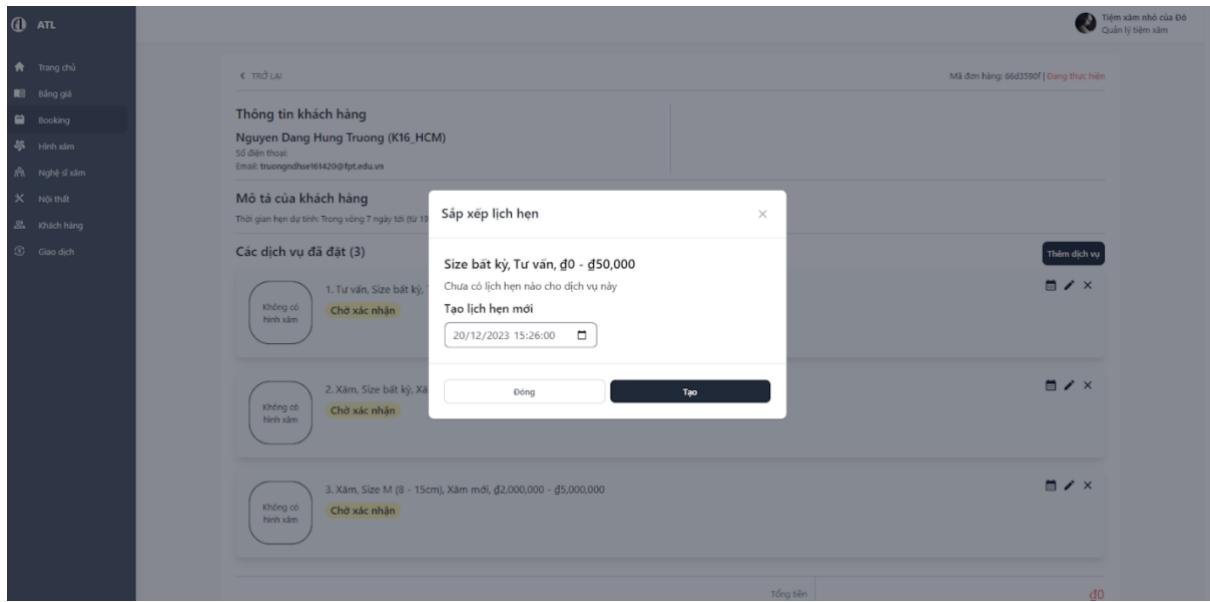
- **Function detail:** Studio manager click to view a booking detail and choose to confirm booking by clicking the “Bắt đầu thực hiện” button. After that booking status will change from “Chờ xác nhận” to “Đang thực hiện”.
- **Business rules:** BR-12
- **Screen layout:**



**Figure 25:** Booking confirmed by studio manager screen

### 3.3.9 Studio manager confirm meeting date for booking detail

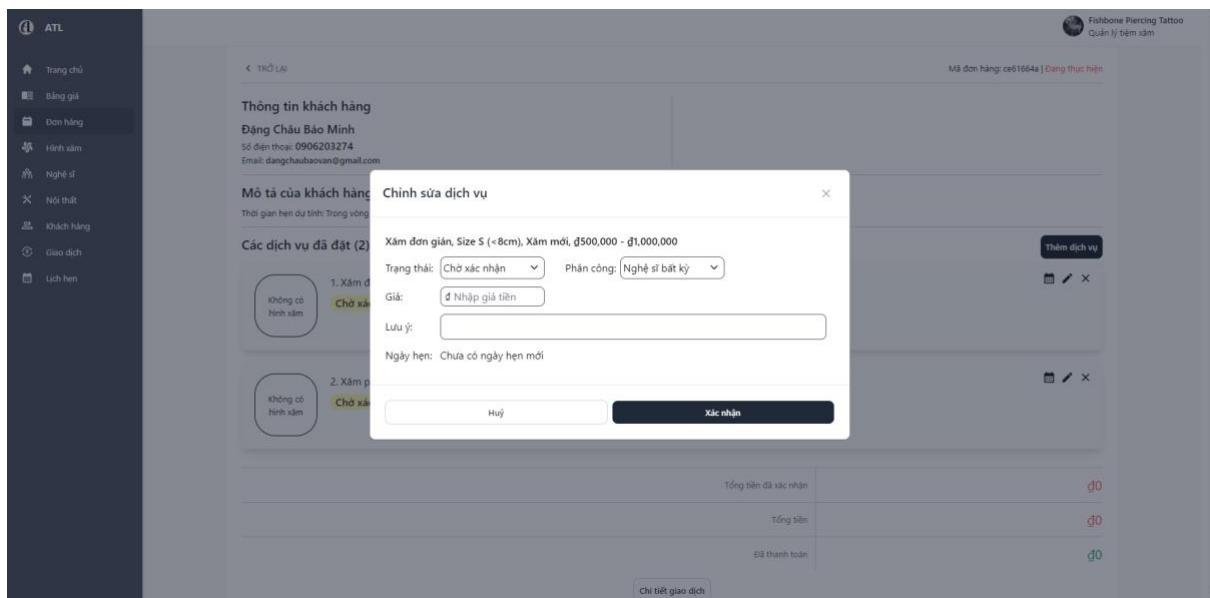
- **Function trigger:** Studio manager clicks on the calendar icon to confirm the date for the appointment.
- **Function description:** Studio manager create date for appointment of an booking service
- **Function detail:** In the booking detail screen, studio manager click the calendar icon next to an booking service to set up date for appointment of an booking service.
- **Business rule:** BR-19, BR-20, BR-21
- **Screen layout:**



**Figure 26:** Studio manager choose date for appointment of an booking service screen

### 3.3.10 Studio manager edit booking detail

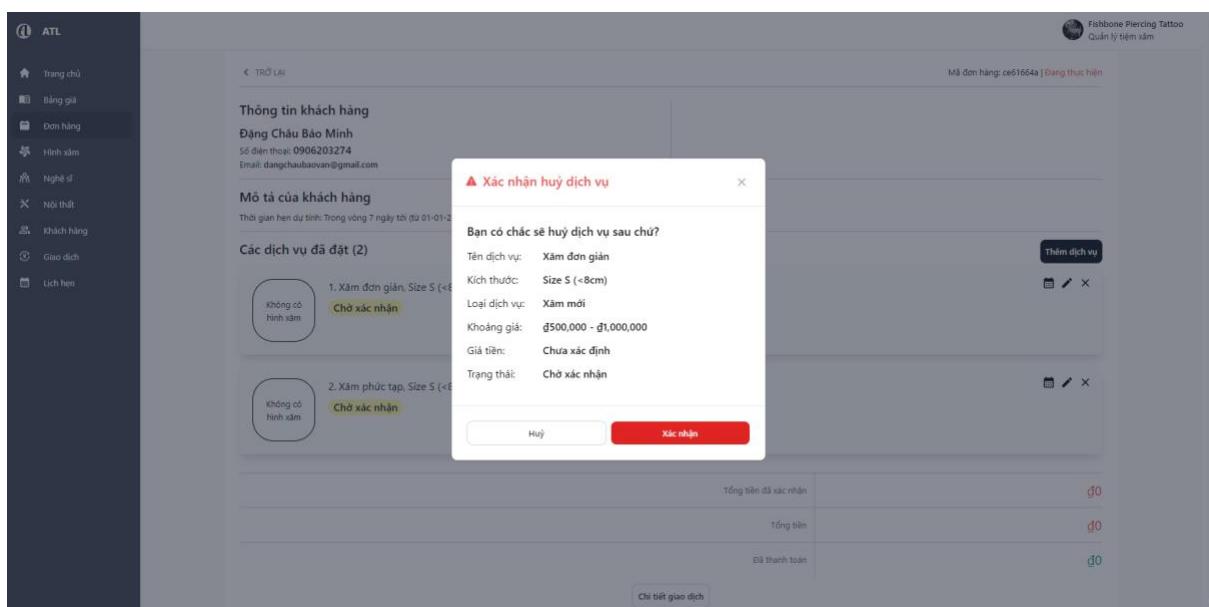
- **Function trigger:** Studio manager click the pencil icon next to an booking service.
- **Function description:** After the meeting with customer, studio edit information of booking service for suitable
- **Function detail:** After the meeting with the customer, the studio edit information of the booking service for suitable. Studio manager clicks the pencil icon next to a booking service to edit booking service information such as (Status, price, artist perform, description) then click the “Xác nhận” button to confirm edit action.
- **Business rules:** BR-22, BR-14, BR-15, BR-12
- **Screen layout:**



**Figure 27:** Booking service edit screen

### 3.3.11 Studio manager cancel booking detail

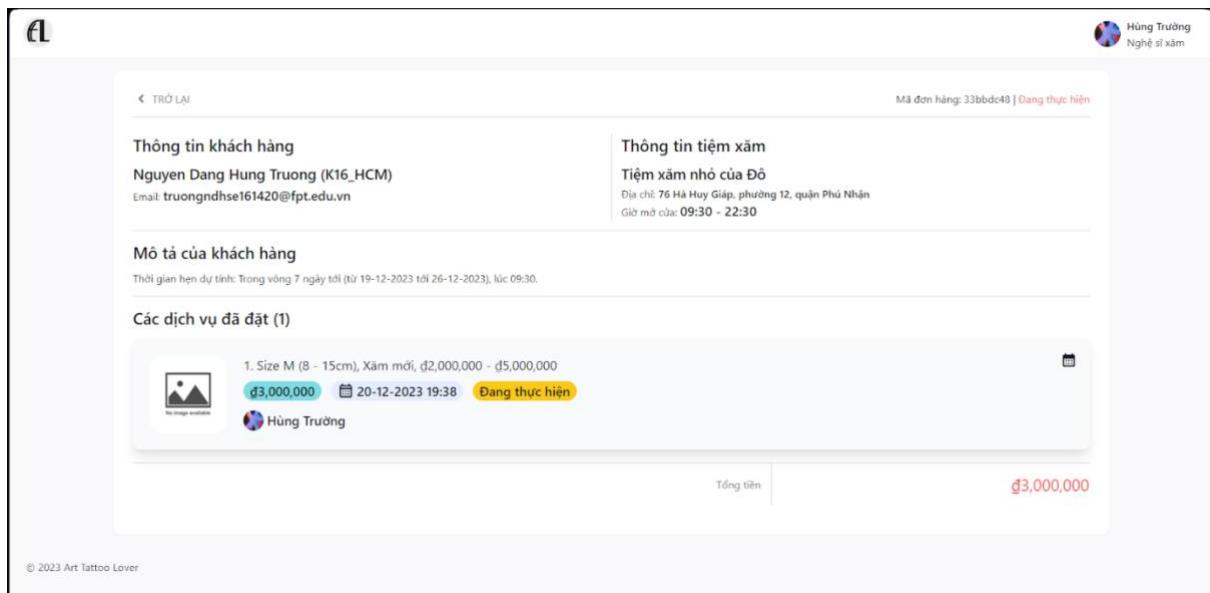
- **Function trigger:** Studio manager click the “X” icon next to an booking service.
- **Function description:** After the meeting with the customer, the studio knows what booking service can perform and what is not necessary. Studio managers can cancel booking services that are not necessary or cannot perform.
- **Function detail:** If there is any booking service that cannot perform or not necessary when customer booking, the studio can cancel that booking service by clicking the “X” icon next to the booking service then clicking the “Xác nhận” button.
- **Business rules:** BR-12, BR-58, BR-18
- **Screen layout:**



**Figure 28:** Booking service cancels confirmation screen.

### 3.3.12 Artist view booking detail

- **Function trigger:** Artist click on the booking in charge
- **Function description:** Artists view booking detail of a booking in charge
- **Function detail:** Artist click on the booking in charge in the “Đơn Hàng” page.
- **Business rules:** BR-10
- **Screen layout:**



**Figure 29:** Artist view booking service in charge screen

### 3.3.13 Artist create tattoo art stage

- **Function trigger:** Artist click the “Thêm giai đoạn” button.
- **Function description:** Artist create tattoo art stage for a tattoo art
- **Function detail:** Artist click the “Thêm giai đoạn” button, choose stage for tattoo art, enter description, and upload image. Click the “Lưu” button.
- **Business rules:** BR-26, BR-28, BR-29, BR-24
- **Screen layout:**

**Figure 30:** Artist adds booking service tattoo art stage screen.

### 3.3.14 Studio manager create transaction record for booking

- **Function trigger:** Studio manager clicks the “Thanh toán” button then chooses services that have been paid and clicks the “Thanh toán” button to confirm the information.

- **Function description:** Studio create transaction for booking
- **Function detail:** Studio managers in the booking detail click the “Thanh toán” button to view details of booking service price, paying method. Studio managers choose services that have been paid and their paying method then clicks the “Thanh toán” button again to confirm the information of the transaction created. If there any change money, studio manager can choose box “Hoàn tiền” then click the “Thanh toán button” to make a record about change money.
- **Business rules:** BR-60, BR-57
- **Screen layout:**

Nguyen Dang Hung Truong (K16, HCM)  
Số điện thoại:  
Email: truongndhse161420@fpt.edu.vn

**Chi tiết đơn hàng**

CHỌN	DỊCH VỤ	TRẠNG THÁI	GIÁ
<input type="checkbox"/>	Xăm 3D, Xăm hình mới, Size S (<8cm), Cổ	Đang thực hiện	đ300.000
<input type="checkbox"/>	Xăm, Xăm hình mới, Size bất kỳ, Vị trí bất kỳ	Đang thực hiện	đ100.000
<input type="checkbox"/>	Xăm, Xăm hình mới, Size M (8 - 15cm), Vị trí bất kỳ	Đang thực hiện	đ2.600.000
			Tổng tiền đã xác nhận: đ3.000.000
			Tổng tiền: đ3.000.000

Còn lại: đ3,000,000  
Chọn phương thức thanh toán:

Tiền mặt  Thanh toán qua ngân hàng  Ví điện tử  
 Hoàn tiền  Nhập giá tiền

Ghi chú:

**Thanh toán**

Figure 31: Create transaction record screen

Email: truongndhse161420@fpt.edu.vn

**Lịch sử thanh toán**

THỜI GIAN	PHƯƠNG THỨC THANH TOÁN	GHI CHÚ	SỐ TIỀN
24-12-2023 16:14	Tiền mặt	Thanh toán Xăm 3D, Xăm hình mới, Size S (<8cm), Cổ. Thanh toán Xăm, Xăm hình mới, Size bất kỳ, Vị trí bất kỳ.	đ400.000
			Tổng tiền: đ400.000

**Chi tiết đơn hàng**

CHỌN	DỊCH VỤ	TRẠNG THÁI	GIÁ
<input checked="" type="checkbox"/>	Xăm 3D, Xăm hình mới, Size S (<8cm), Cổ	Hoàn thành	đ300.000
<input checked="" type="checkbox"/>	Xăm, Xăm hình mới, Size bất kỳ, Vị trí bất kỳ	Hoàn thành	đ100.000
<input type="checkbox"/>	Xăm, Xăm hình mới, Size M (8 - 15cm), Vị trí bất kỳ	Đang thực hiện	đ2.600.000
			Tổng tiền đã xác nhận: đ1.000.000
			Tổng tiền: đ1.000.000

Còn lại: đ2.600.000  
Chọn phương thức thanh toán:

Tiền mặt  Thanh toán qua ngân hàng  Ví điện tử  
 Hoàn tiền  Nhập giá tiền

Ghi chú:

**Thanh toán**

Figure 32: Create transaction record for each booking service screen.

Lịch sử thanh toán

THỜI GIAN	PHƯƠNG THỨC THANH TOÁN	GÓI CHỦ	SỐ TIỀN
24-12-2023 16:21	Tiền mặt	Khách tạm hủy	-đ1,000,000
24-12-2023 16:20	Tiền mặt	Khách trả trước	đ1,000,000
24-12-2023 16:14	Tiền mặt	Thanh toán Xăm 3D, Xăm hình mới, Size S (<8cm), Cổ. Thanh toán Xăm, Xăm hình mới, size bất kỳ, Vị trí bất kỳ.	đ400,000
		<b>Tổng tiền</b>	<b>đ400,000</b>

Chi tiết đơn hàng

CHỌN	DỊCH VỤ	TRẠNG THÁI	GIÁ
<input type="checkbox"/>	Xăm 3D, Xăm hình mới, Size S (<8cm), Cổ	Hoàn thành	đ200,000
<input type="checkbox"/>	Xăm, Xăm hình mới, Size bất kỳ, Vị trí bất kỳ	Hoàn thành	đ100,000
<input checked="" type="checkbox"/>	Xăm, Xăm hình mới, Size M (8 - 15cm), Vị trí bất kỳ	<b>Đang thực hiện</b>	<b>đ2,600,000</b>
		<b>Tổng tiền đã xác nhận</b>	<b>đ3,000,000</b>
		<b>Tổng tiền</b>	<b>đ3,000,000</b>

Còn lại: ₫2,600,000

Chọn phương thức thanh toán:

Hoàn tiền ₫ 0  Tiền mặt  Thanh toán qua ngân hàng  Ví điện tử

Ghi chú

Figure 33: Create transaction record for change fee screen.

### 3.3.15 Customer create feedback

- Function trigger:** Customer click the “Đánh giá” button.
- Function description:** Customer create feedback for personal completed booking.
- Function detail:** Customer click a booking completed and click the “Đánh giá” button then enter content feedback and choose rating star then click the “Gửi đánh giá” button.
- Business rules:** BR-25, BR-32
- Screen layout:**

Đánh giá chất lượng dịch vụ

1. Size S (<8cm), Xăm mới, ₫250,000 - ₫400,000  
đ250,000  
Artis 01

★★★★★

Xăm rất xin xin cảm ơn.

Gửi đánh giá

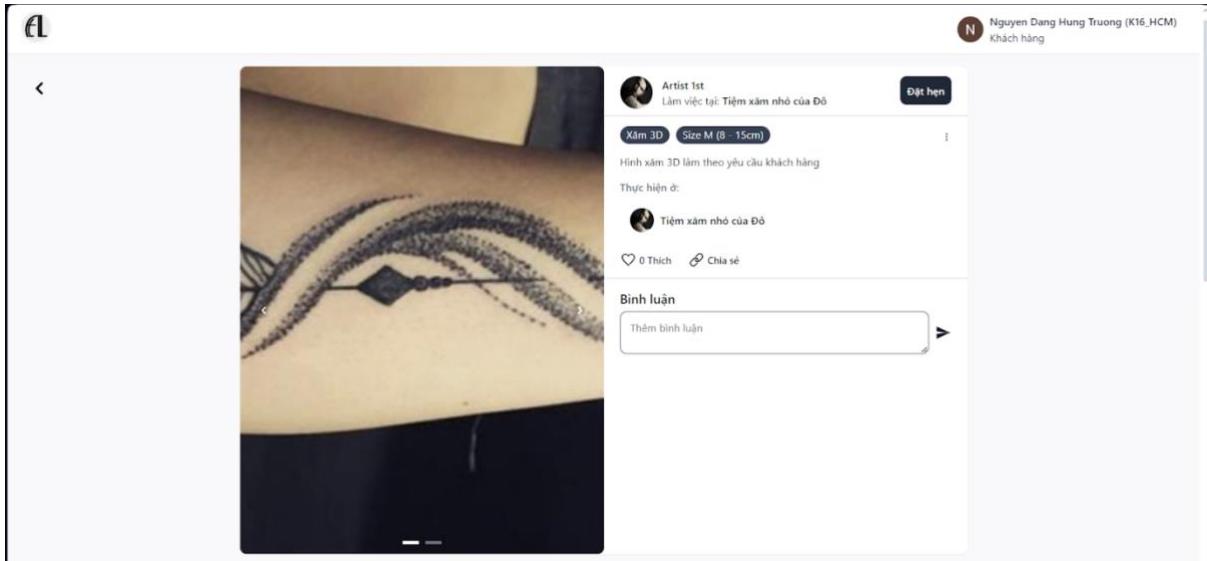
Figure 34: Customer create feedback for booking completed

## 3.4 Social media

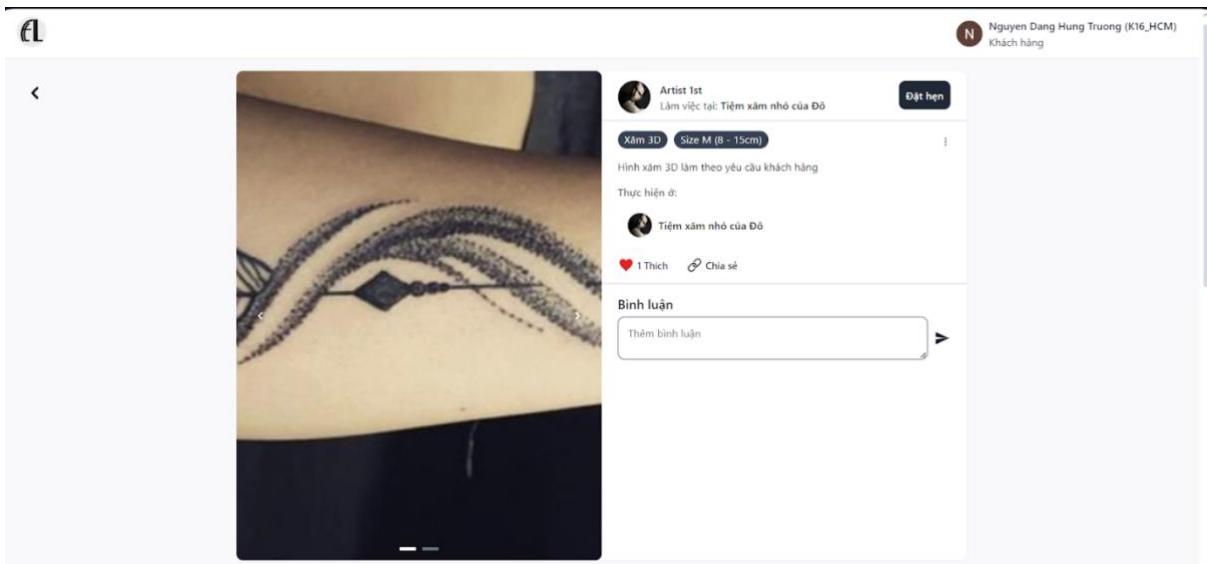
### 3.4.1 User like an tattoo art

- Function trigger:** User clicks the heart icon in the tattoo art.
- Function description:** Users like tattoo art.

- **Function detail:** Users clicking the heart icon in the tattoo art to turn it red mean they have liked the tattoo art. Users can also click the red heart icon to unlike the tattoo art.
- **Business rules:** BR-32
- **Screen layout:**



**Figure 35:** Tattoo art before the user clicks the like button screen.



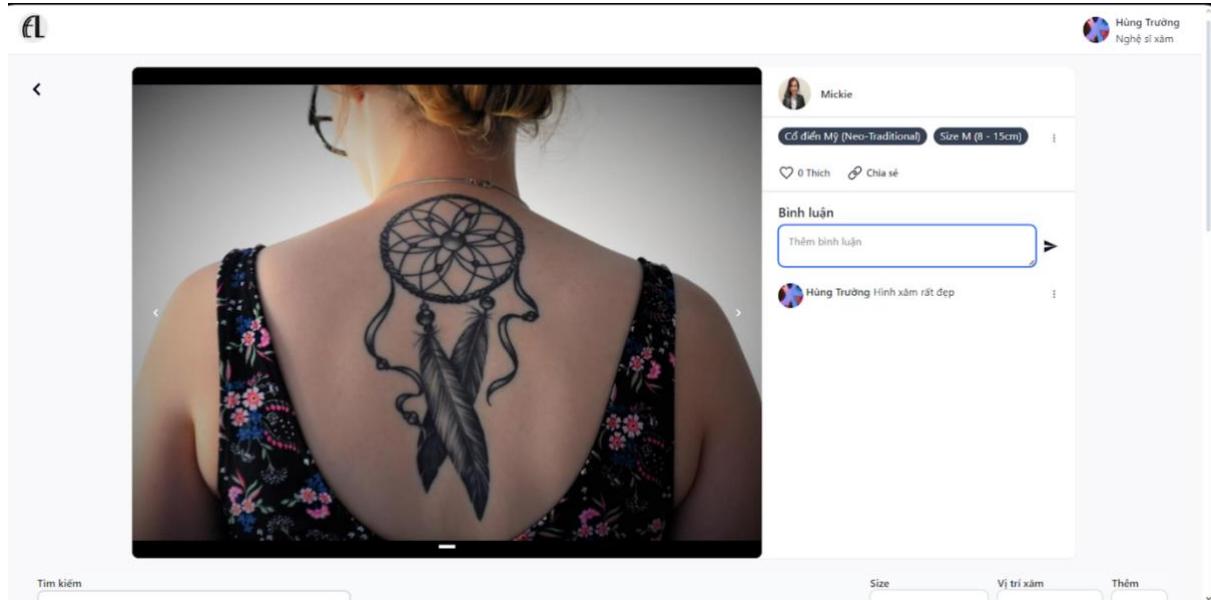
**Figure 36:** Tattoo art after the user clicks the like button screen.

#### 3.4.2 User comment an tattoo art

- **Function trigger:** User enter comment in the comment section of a tattoo art then click the arrow icon or press enter.
- **Function description:** Customer, artist, studio manager comment to an art tattoo comment section.
- **Function detail:** Users can enter what they think into a comment section of an art tattoo then press Enter or click the arrow icon to submit their comment for others users and the creator of the art tattoo to see.

- **Business rules:** BR-32

- **Screen layout:**



**Figure 37:** User comment in tattoo art comment section screen.

### 3.4.3 User report other user's comment

- **Function trigger:** User click three dot icon next to other user's comment then click "Báo cáo bình luận".
- **Function description:** User reports inappropriate comment to admin.
- **Function detail:** User click on a tattoo art and click the three dot icon next to another user's comment then click "Báo cáo bình luận". A reason for the report form will pop up, the user chooses the reason for reporting then click "Xác nhận".
- **Business rules:** BR-36
- **Screen layout:**

**Hồ Tâm**  
Làm việc tại: Catholic Ink  
(Thành phố Hồ Chí Minh)

Đen (Blackwork / Blackout) Size L (15 - 30cm) :

Heart 2 Thích Share

**Bình luận**

Thêm bình luận ➤

Artis 01 Hình xăm đẹp :  
Artist 02 Quá đẹp.

Báo cáo bình luận :

Figure 38: User click icon to view report option.

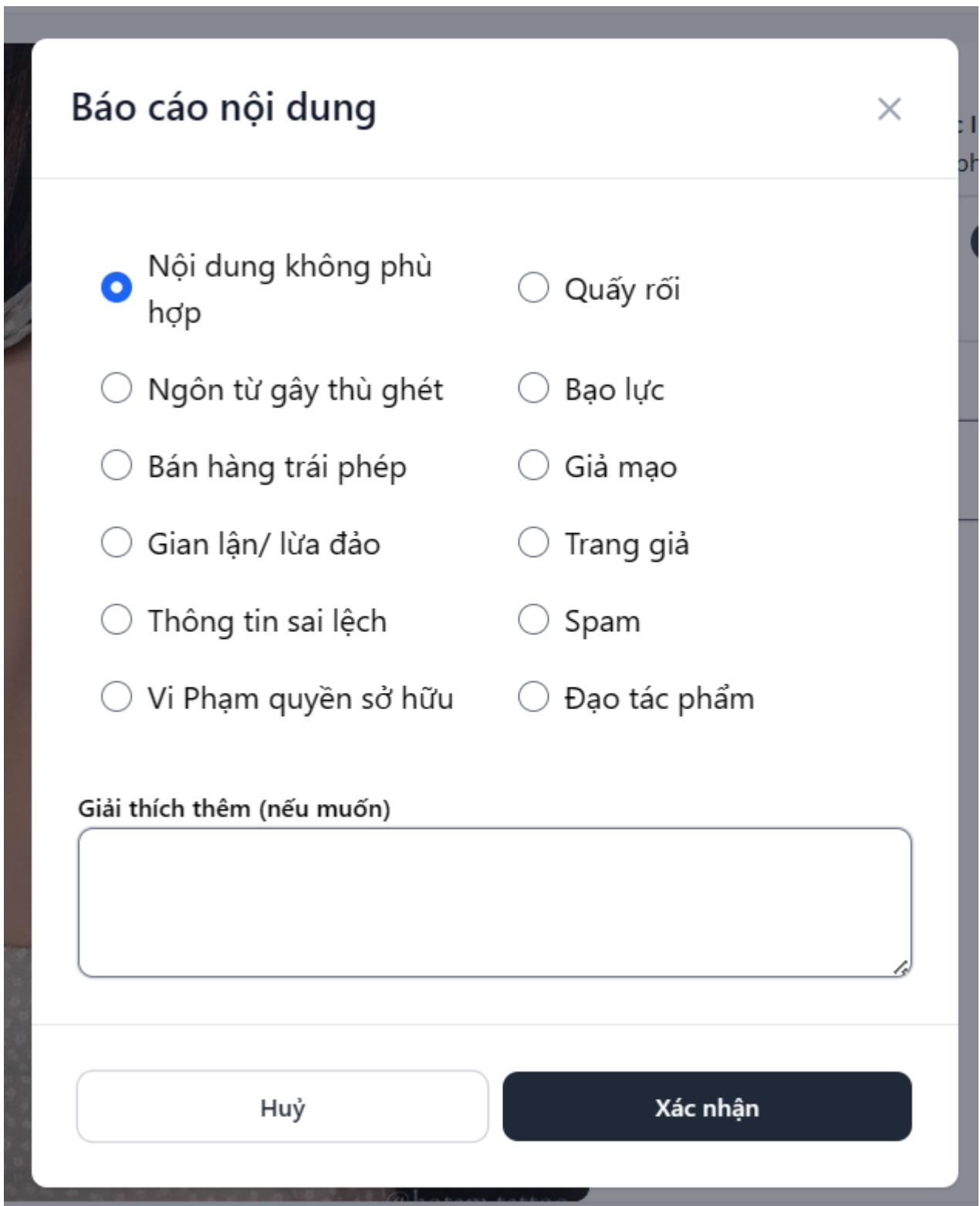
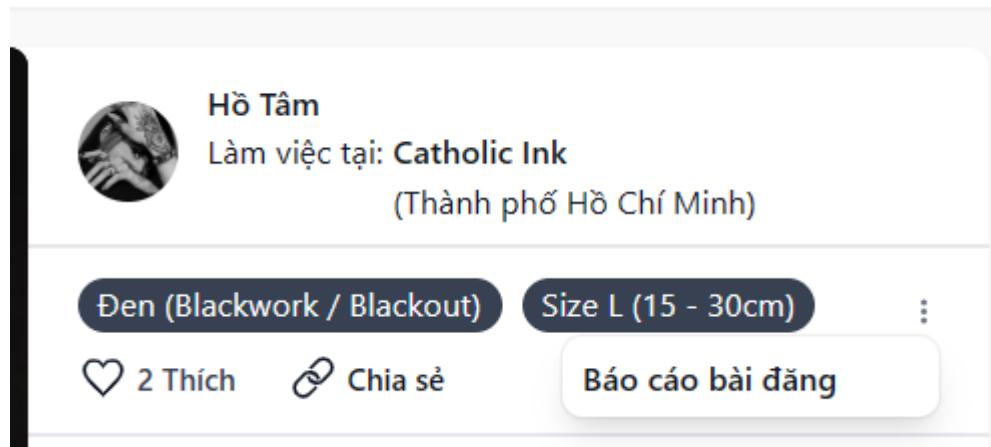


Figure 39: Choose reason for the report

#### 3.4.4 User report tattoo art

- **Function trigger:** User click three dot icon in the tattoo art. Click “Báo cáo bài đăng”.
- **Function description:** User reports inappropriate tattoo art to admin.

- **Function detail:** User click on a tattoo art and click the three dot icon next to another user's comment then click "Báo cáo bài đăng". A reason for the report form will pop up, the user chooses the reason for reporting then click "Xác nhận".
- **Business rules:** BR-36
- **Screen layout:**



**Figure 40:** User clicks three dots to view the report option.

### 3.4.5 User view studio profile

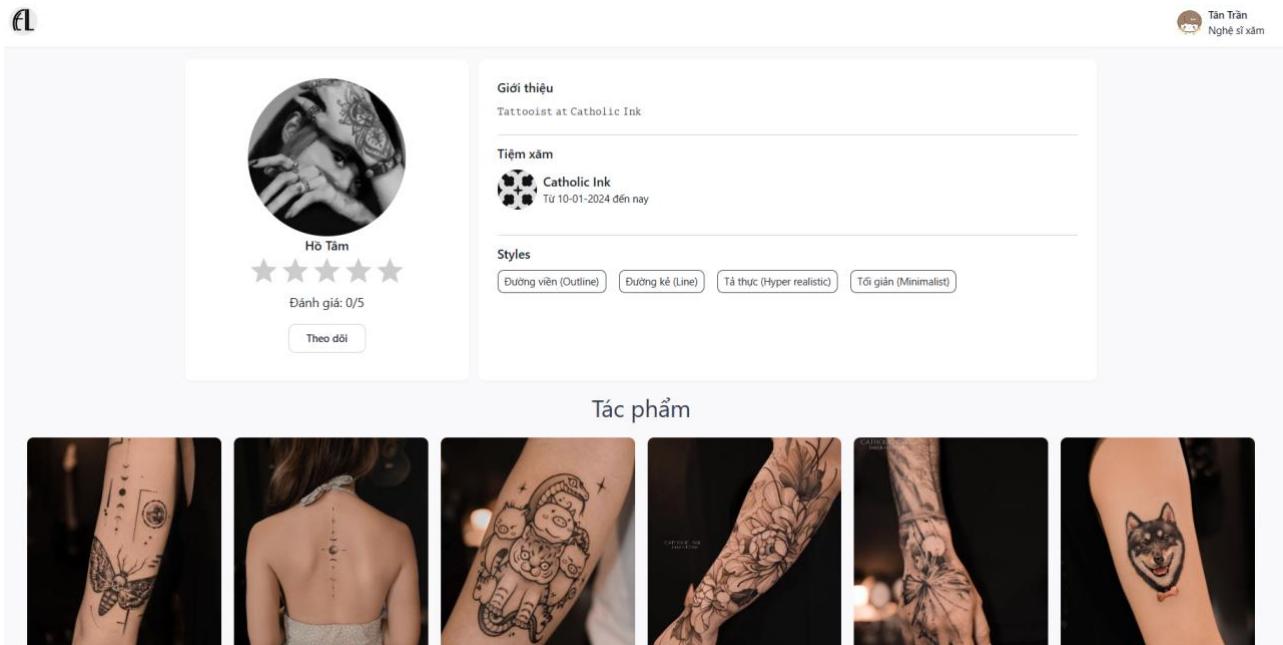
- **Function trigger:** User click studio avatar..
- **Function description:** User view studio profile.
- **Function detail:** User click the "Tiệm xăm" tab on the home page. Click on the studio avatar.
- **Business rules**
- **Screen layout:**

The screenshot shows a profile card for a tattoo studio named 'Tattoo Champions'. On the left, there is a large gold-colored logo consisting of stylized letters 'TC'. Below the logo, the studio's name 'Tattoo Champions' is written in a smaller font. To the right of the logo, there is contact information: '252/17b, Cao Thắng, phường 12, quận 10', '0963-457-404', and '09:30 - 20:00'. Below this information is a section titled 'Giới thiệu' with the text 'Tại TATTOO CHAMPIONS Studio, chúng tôi tin rằng, mỗi hình xăm đều ẩn chứa những sức mạnh đặc biệt.' To the right of the contact information is a section titled 'Đánh giá' showing a 5-star rating with a total of 4.5/5. Below the rating, there is a section titled 'Nghệ sĩ xăm' featuring two profile pictures: 'Lily Mai' and 'Trang Linh'. At the bottom, there is a section titled 'Tác phẩm' displaying five small thumbnail images of various tattoo designs.

**Figure 41:** User view studio profile

### 3.4.6 User view artist profile

- **Function trigger:** User click artist avatar..
- **Function description:** User view artist profile.
- **Function detail:** User clicks the artist avatar or artist name in the tattoo art to view their profile.
- **Business rules:** BR-45
- **Screen layout:**



**Figure 42:** User view artist profile

### 3.4.7 Admin handle report

- **Function trigger:** Admin click the magnifying glass in the report.
- **Function description:** Admin handle report. Decide which one is appropriate which one is inappropriate
- **Function detail:** User clicks the artist avatar or artist name in the tattoo art to view their profile.
- **Business rules:** BR-36
- **Screen layout:**

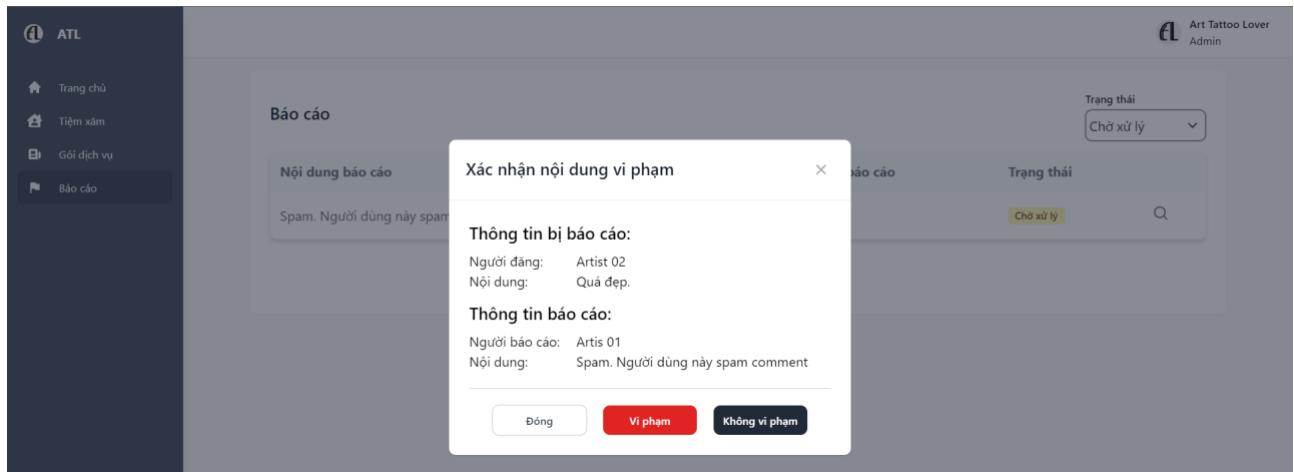


Figure 43: Admin handle report

### 3.5 Studio management

#### 3.5.1 Studio manager create new service

- Function trigger:** Studio manager clicks the “Tạo thêm” button in the service page.
- Function description:** Studio manager adds new service for their studio.
- Function detail:** Studio manager clicks the “Dịch vụ” in nav bar on the left to view all the studio services then clicks the “Tạo thêm” button in order to add new service for their studio. New service include following information: Service name, service category, tattoo size, tattoo placement.
- Business rules:** BR-54, BR-55, BR-56
- Screen layout:**

Bảng giá dịch vụ					
TÊN DỊCH VỤ	LOẠI DỊCH VỤ	KÍCH THƯỚC	VỊ TRÍ XÂM	GIÁ	ĐỐI TƯỢNG ÁP DỤNG
Tattoo	Tattoo	Size bất kỳ	Vị trí bất kỳ	đ0 tới đ50,000	Mọi người
Thiết kế	Tattoo	Size S (<8cm)	Vị trí bất kỳ	đ0 tới đ200,000	Mọi người
Xăm	Xăm đẽ	Size S (<8cm)	Vai	đ500,000 tới đ750,000	Mọi người
Xăm	Xăm hình mới	Size bất kỳ	Vị trí bất kỳ	đ100,000 tới đ100,000	Mọi người
Xăm	Xăm hình mới	Size M (8 - 15cm)	Vị trí bất kỳ	đ2,000,000 tới đ5,000,000	Mọi người
Xăm 3D	Xăm hình mới	Size S (<8cm)	Cổ	đ300,000 tới đ600,000	Mọi người
Sửa xăm	Bảo hành sau xăm	Size S (<8cm)	Vị trí bất kỳ	đ0 tới đ500,000	Khách hàng cũ
Dặm lại	Bảo hành sau xăm	Size bất kỳ	Vị trí bất kỳ	Miễn phí	Khách hàng cũ
Xăm phát sáng	Xăm hình mới	Size S (<8cm)	Vị trí bất kỳ	đ1,000,000 tới đ2,000,000	Không ai cả (đã trả)
Xăm tát thực không màu	Xăm hình mới	Size M (8 - 15cm)	Bàn tay	đ50,000 tới đ150,000	Không ai cả (đã trả)
Xăm 3D có màu	Xăm hình mới	Size M (8 - 15cm)	Cổ	đ100,000 tới đ200,000	Không ai cả (đã trả)

Figure 44: Studio manager views all their service screen.

Thêm dịch vụ mới

X

Tên dịch vụ	Xăm
Loại dịch vụ	Xăm hình mới
Kích thước	Size bất kỳ
Vị trí xăm	Vị trí bất kỳ
Đối tượng	Mọi người
Giá	đ Nhập giá tiền

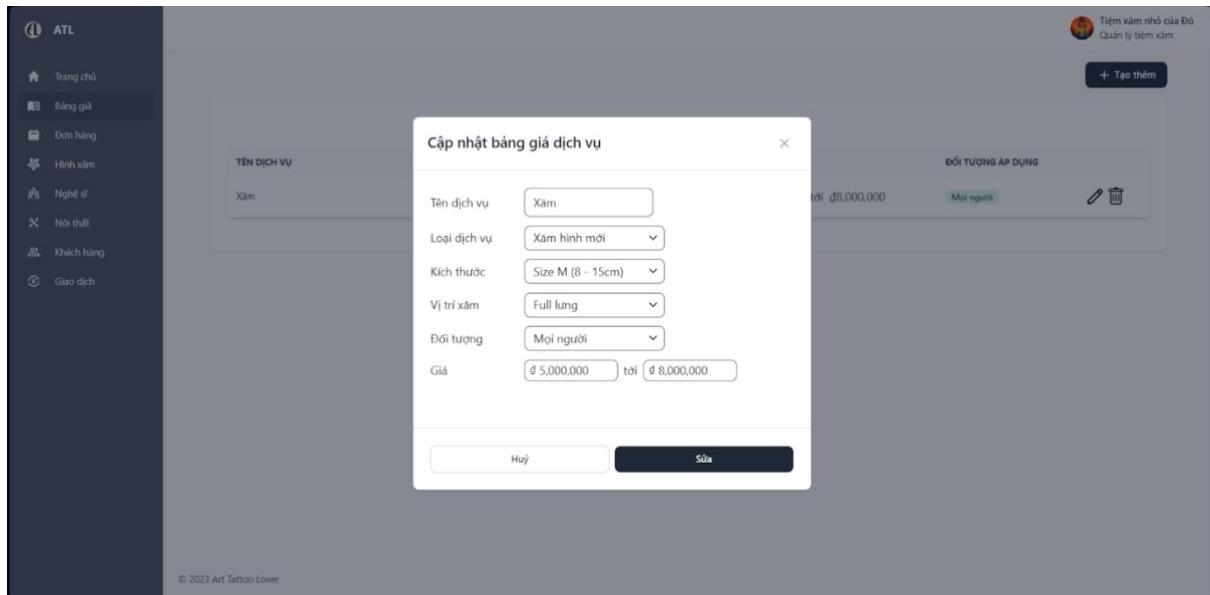
Huỷ

Tạo

Figure 45: Add new service screen

### 3.5.2 Studio manager edit services

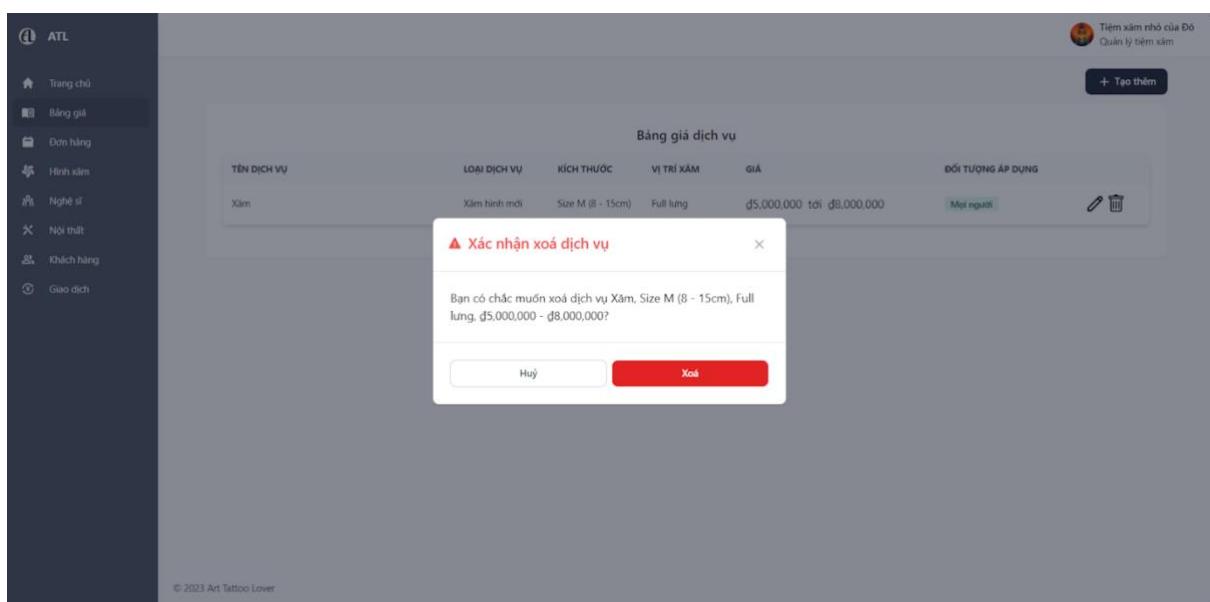
- **Function trigger:** Studio manager clicks the pencil icon on the right of a service in the “Bảng giá” page.
- **Function description:** Studio manager edit information for services.
- **Function detail:** Studio manager click the “Bảng giá” tab on the left of the screen to view all the services then click the pencil icon on the right, edit service information as want and press the “Sửa” button.
- **Business rules:** BR-54, BR-55, BR-56
- **Screen layout:**



**Figure 46:** Edit service screen

### 3.5.3 Studio manager delete services

- **Function trigger:** Studio manager clicks the bin icon on the right of a service in the “Bảng giá” page.
- **Function description:** Studio manager delete services.
- **Function detail:** Studio manager click the “Bảng giá” tab on the left of the screen to view all the services then click the bin icon on the right, a warning will pop up to make sure that studio manager wants to delete the service. Then the studio manager clicks the “Xóa” button to confirm the delete action.
- **Business rules:** BR-55
- **Screen layout:**



**Figure 47:** Delete service screen

### 3.5.4 Studio manager adding interior images

- **Function trigger:** Studio manager clicks the “Thêm ảnh” icon on the top left in the “Nội thất” page.
- **Function description:** Studio manager adds images about their interior.
- **Function detail:** Studio manager click the “Nội thất” tab on the left of the screen to view all the interior images then click the “Thêm ảnh” button to add images about their interior then click the button “Done” to complete.
- **Screen layout:**

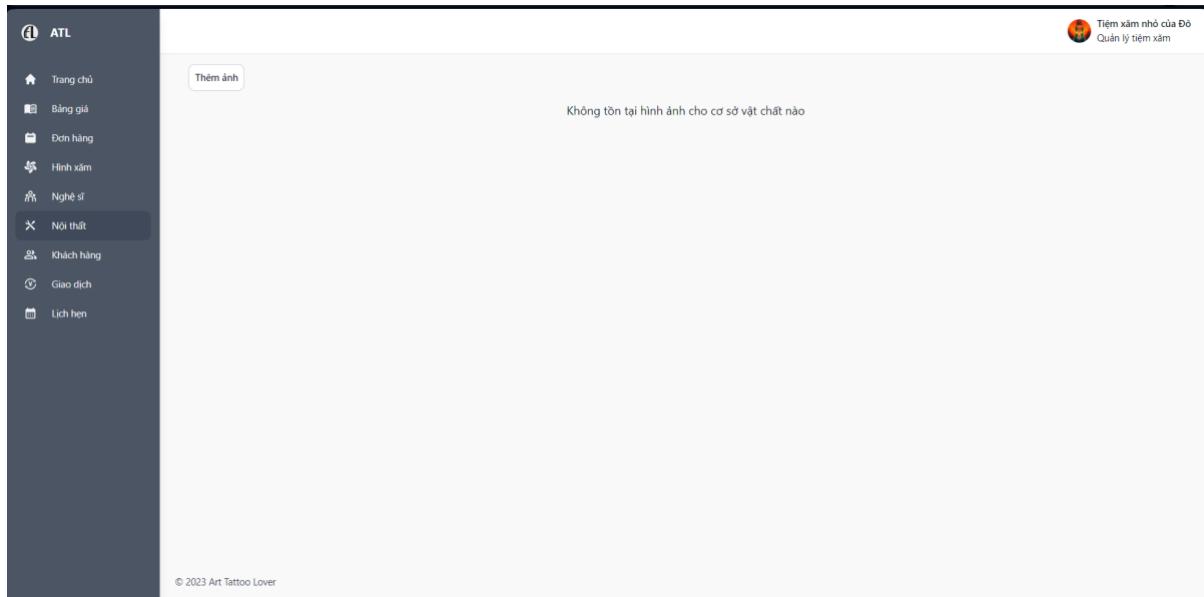


Figure 48: View all interior images screen.

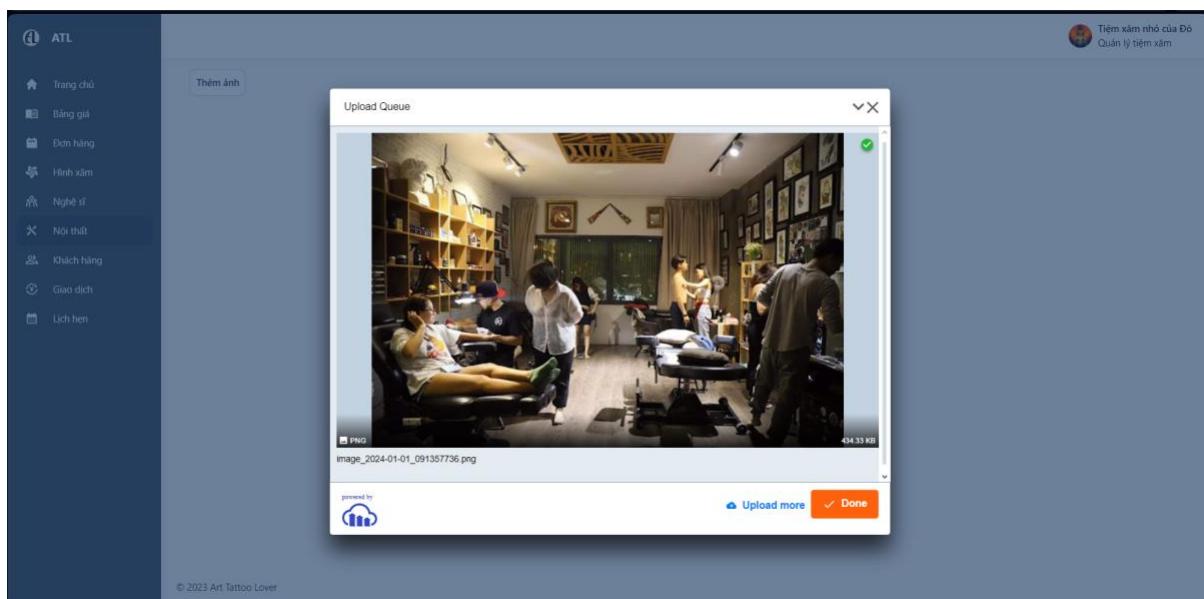
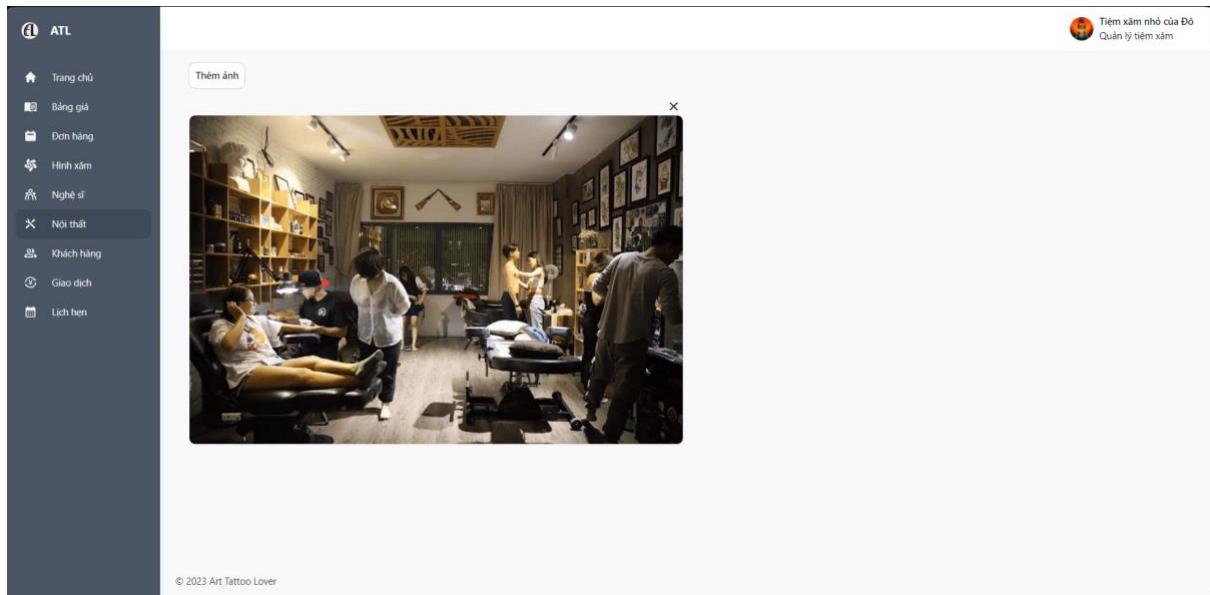


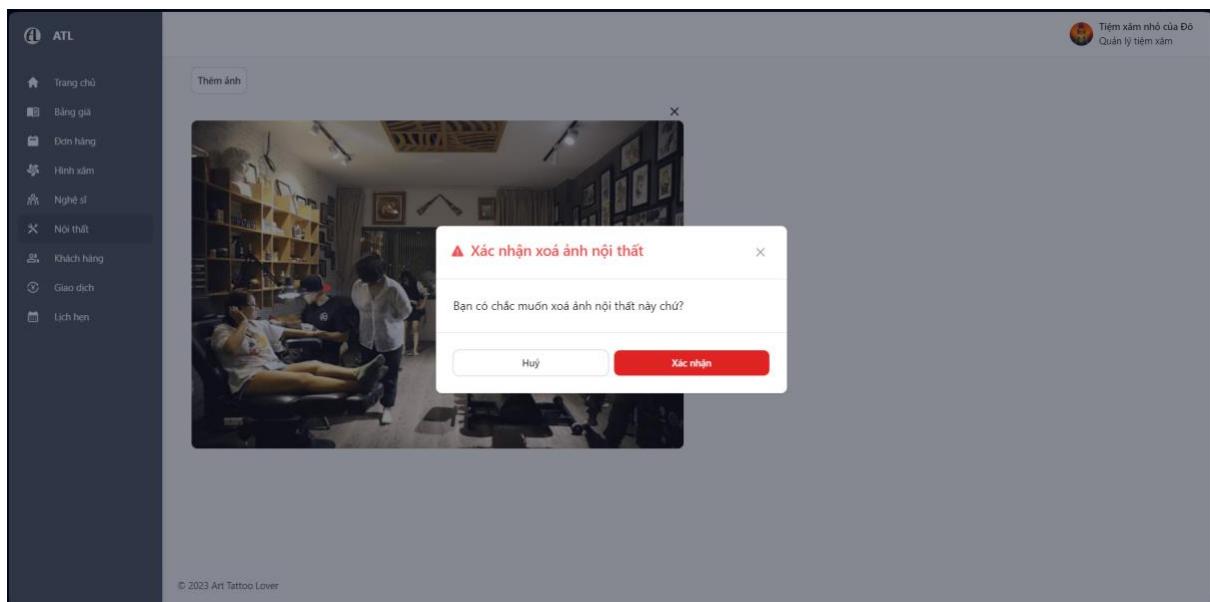
Figure 49: Add new interior image screen.



**Figure 50:** Interior image screen.

### 3.5.5 Studio manager delete interior images

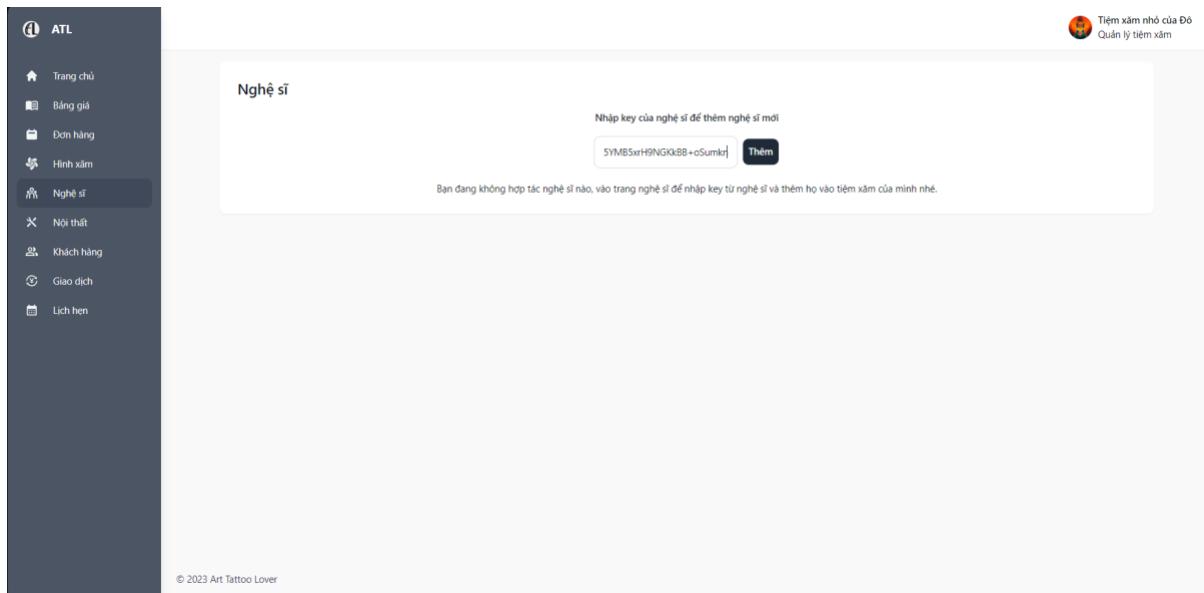
- **Function trigger:** Studio manager clicks the small “X” icon on the top right of an interior image.
- **Function description:** Studio manager delete images about their interior.
- **Function detail:** Studio manager click the “Nội thất” tab on the left of the screen to view all the interior images then click the small “X” icon to delete images about their interior, a confirm will popup to make sure studio manager want to delete interior images, click the “Xác nhận” button to confirm delete action.
- **Business rules:** BR-03
- **Screen layout:**



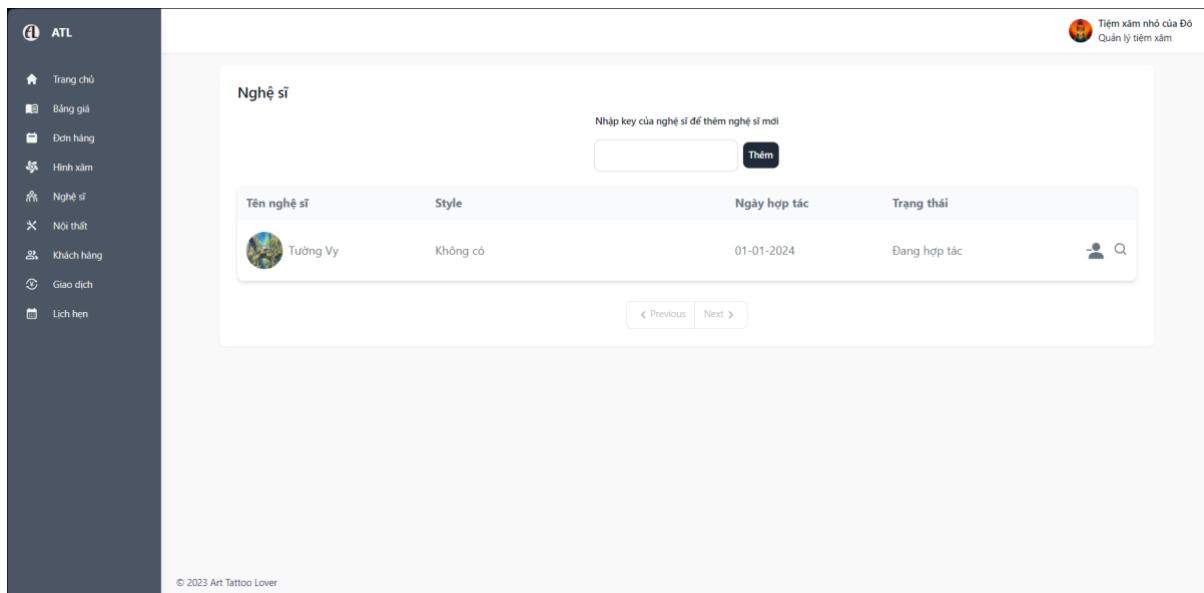
**Figure 51:** Delete interior image screen.

### **3.5.6 Studio manager adding artist to their studio by key.**

- **Function trigger:** Studio manager enter artist's key and click the “Thêm” button
- **Function description:** Studio manager adds artist to their studio.
- **Function detail:** Studio manager clicks the “Nghệ sĩ” tab on the left of the screen to view all their artists. Enter a new artist's key and click the “Thêm” button to add the artist to the studio.
- **Business rules:** BR-53, BR-04
- **Screen layout:**



**Figure 52: Enter artist's key screen.**

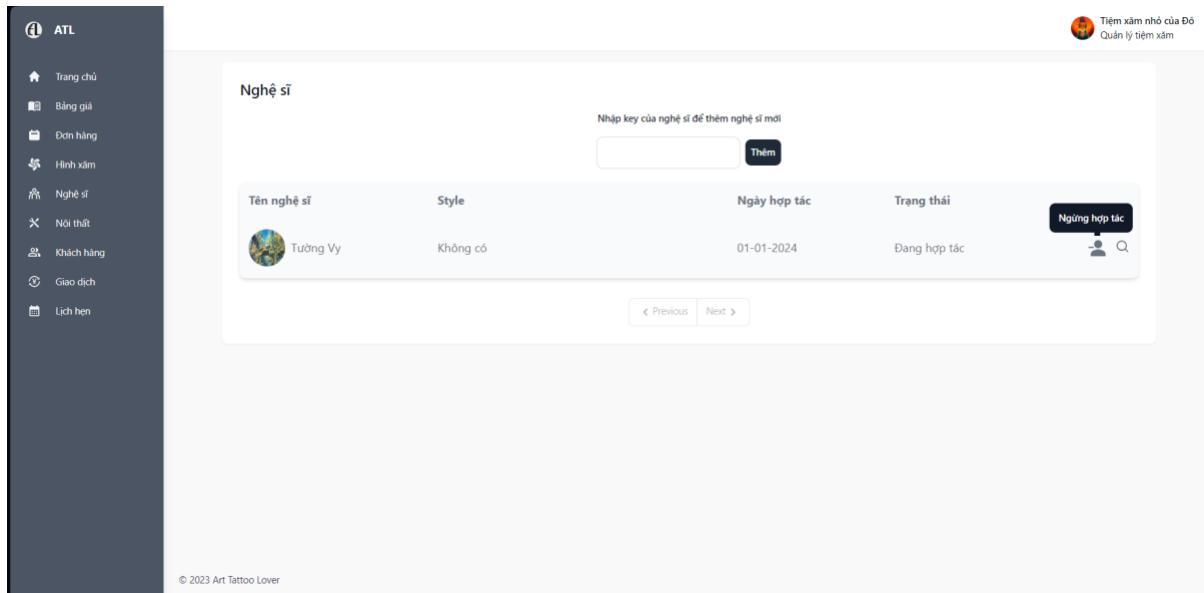


**Figure 53: View all artists on the studio screen.**

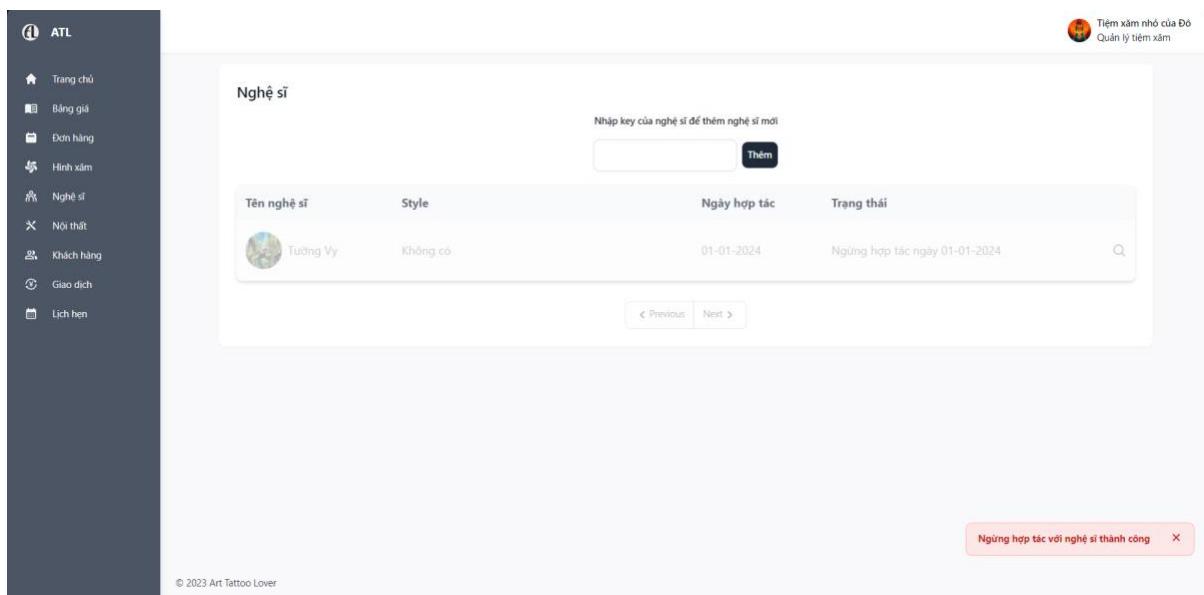
### **3.5.7 Studio manager dismiss artist from studio.**

- **Function trigger:** Studio manager clicks the dismiss icon on the left of an artist in the “Nghệ sĩ” page.

- **Function description:** Studio manager dismiss artist from their studio.
- **Function detail:** Studio manager click the “Nghệ sĩ” tab on the left of the screen to view all their artists then click the dismiss icon on the left of an artist.
- **Business rules:** BR-52
- **Screen layout:**



**Figure 54:** Dismiss artist screen

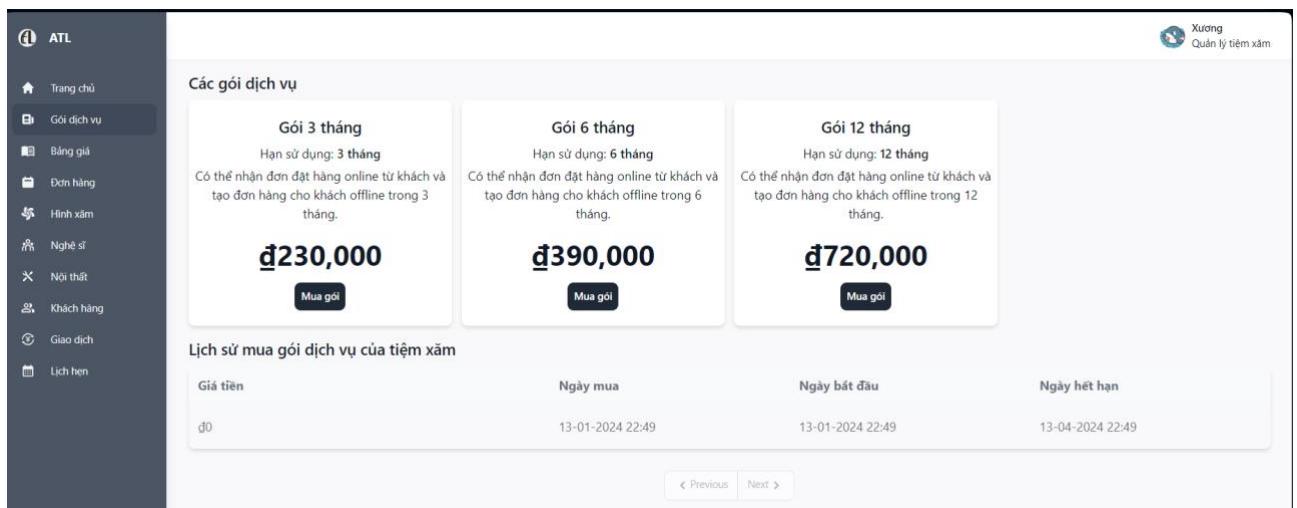


**Figure 55:** View artist after dismissing screen.

### 3.5.8 Studio manager buying package.

- **Function trigger:** Studio manager click “Mua gói” in the “Gói dịch vụ” tab
- **Function description:** Studio manager buys a package to active account.

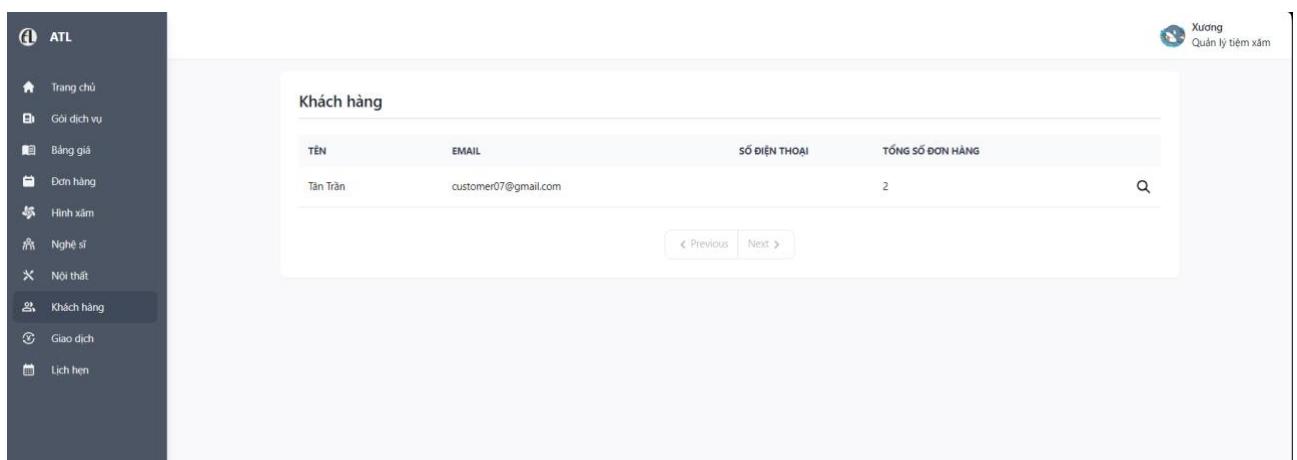
- **Function detail:** Studio manager click the “Gói giao dịch” tab then click “Mua gói”. Studio manager will now be redirected to VNPay page and choose payment method then fill out all information for the purchase.
- **Business rules:** BR-02
- **Screen layout:**



**Figure 56:** Studio manager buy package

### 3.5.9 Studio manager view customer booked list.

- **Function trigger:** Studio manager clicks the “Khách hàng” tab.
- **Function description:** Studio manager view customer booked list
- **Function detail:** Studio manager clicks the “Khách hàng” tab.
- **Business rules:** BR-63
- **Screen layout:**



**Figure 57:** Studio view customer booked list

### 3.6 Filter

#### 3.6.1 User filter tattoo art by size

- **Function trigger:** User click dropdown bar “Size” in the home page. Choose size.
- **Function description:** User filter tattoo art by size.
- **Function detail:** User click dropdown bar “Size” in the home page. Choose size.
- **Business rules:** BR-50
- **Screen layout:**

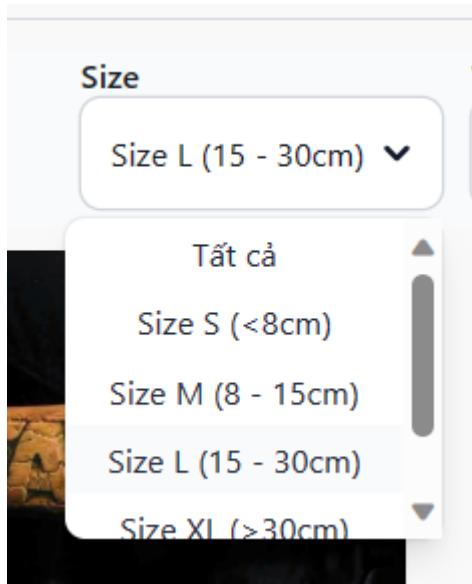
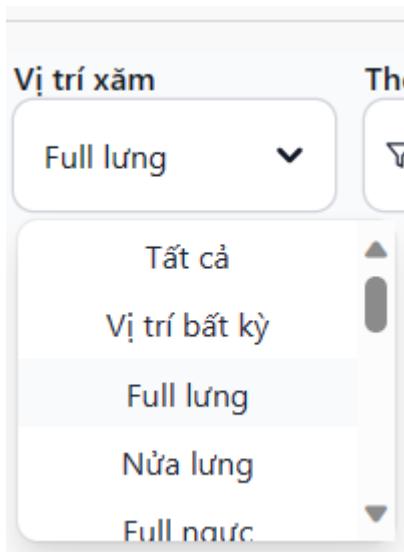


Figure 58: User choose size to filter tattoo art

#### 3.6.2 User filter tattoo art by tattoo placement

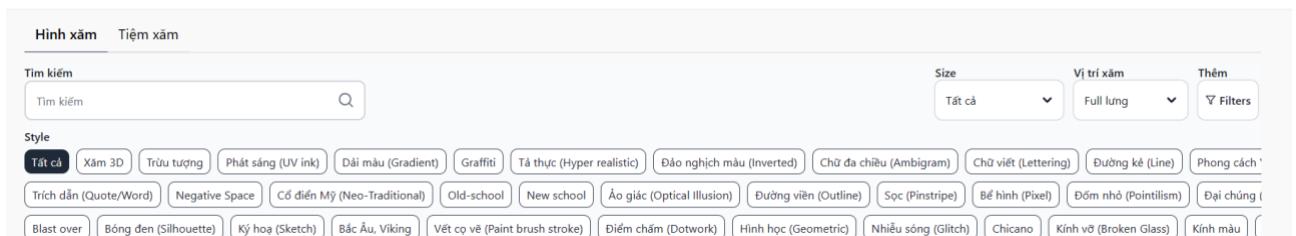
- **Function trigger:** User click dropdown bar “Vị trí xăm” in the home page. Choose tattoo art placement.
- **Function description:** User filter tattoo art by tattoo art placement..
- **Function detail:** User click dropdown bar “Vị trí xăm” in the home page. Choose tattoo art placement.
- **Business rules:** BR-50
- **Screen layout:**



**Figure 59:** User choose tattoo art placement to filter tattoo art.

### 3.6.3 User filter tattoo art by tattoo style

- **Function trigger:** User click “Thêm” button to view all available style. Choose styles to filter tattoo art.
- **Function description:** User filter tattoo art by tattoo art style..
- **Function detail:** User clicks the “Thêm” button to view all available styles. Choose styles to filter tattoo art.
- **Business rules:** BR-49
- **Screen layout:**



**Figure 60:** User choose tattoo art style

### 3.6.4 User filter booking by status

- **Function trigger:** User click booking status in booking page to filter their personal booking.
- **Function description:** User filter personal booking
- **Function detail:** User clicks the profile icon then clicks the “Đơn hàng” tab to view all personal booking. Click on booking status to filter personal booking.
- **Screen layout:**

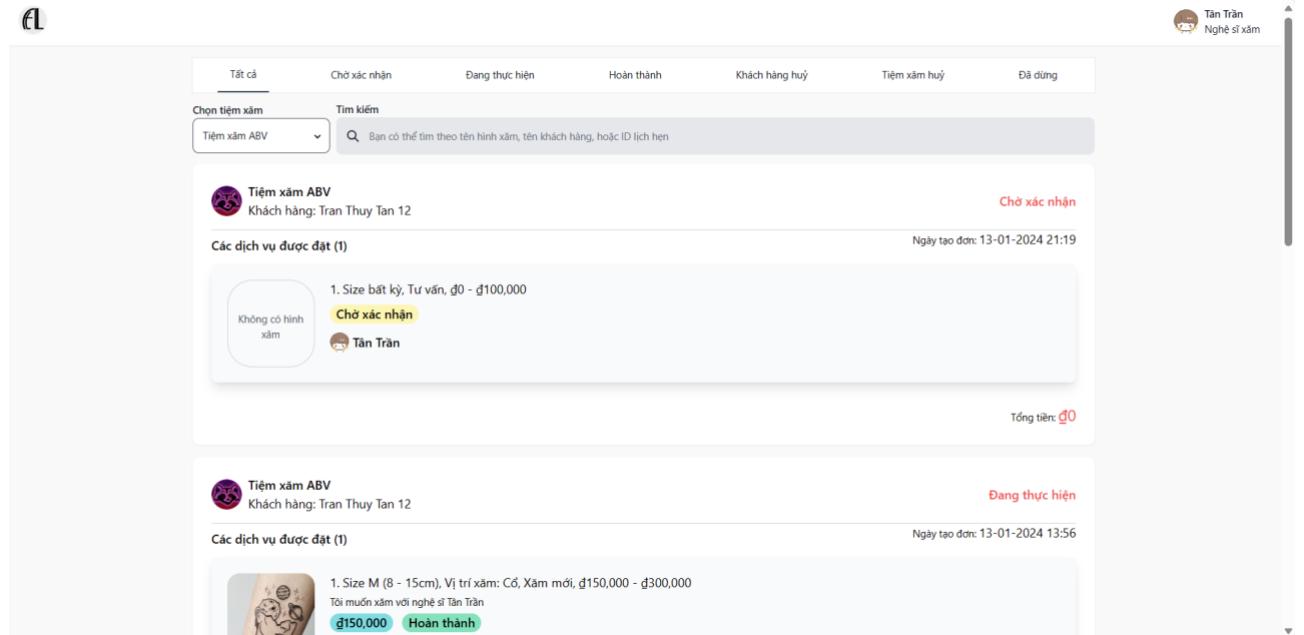


Figure 61: Customer personal booking before filter.

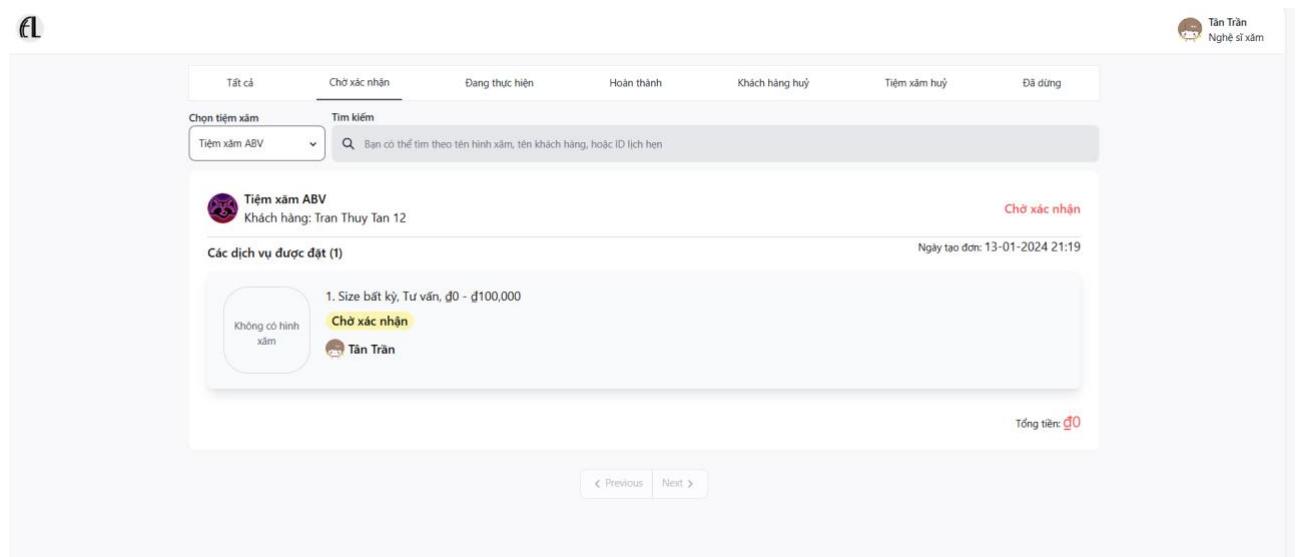


Figure 62: Customer personal booking after filter with status “Chờ xác nhận”.

### 3.6.5 Artist filter booking by studio name

- **Function trigger:** User click the “Chọn tiệm xăm” button then choose tiệm xăm
- **Function description:** Artist filters personal booking by studio name that had worked or currently working for.
- **Function detail:** User click the “Chọn tiệm xăm” button in the “Đơn hàng” page then choose studio that had worked or currently working for
- **Business rules:** BR-07, BR-08
- **Screen layout:**

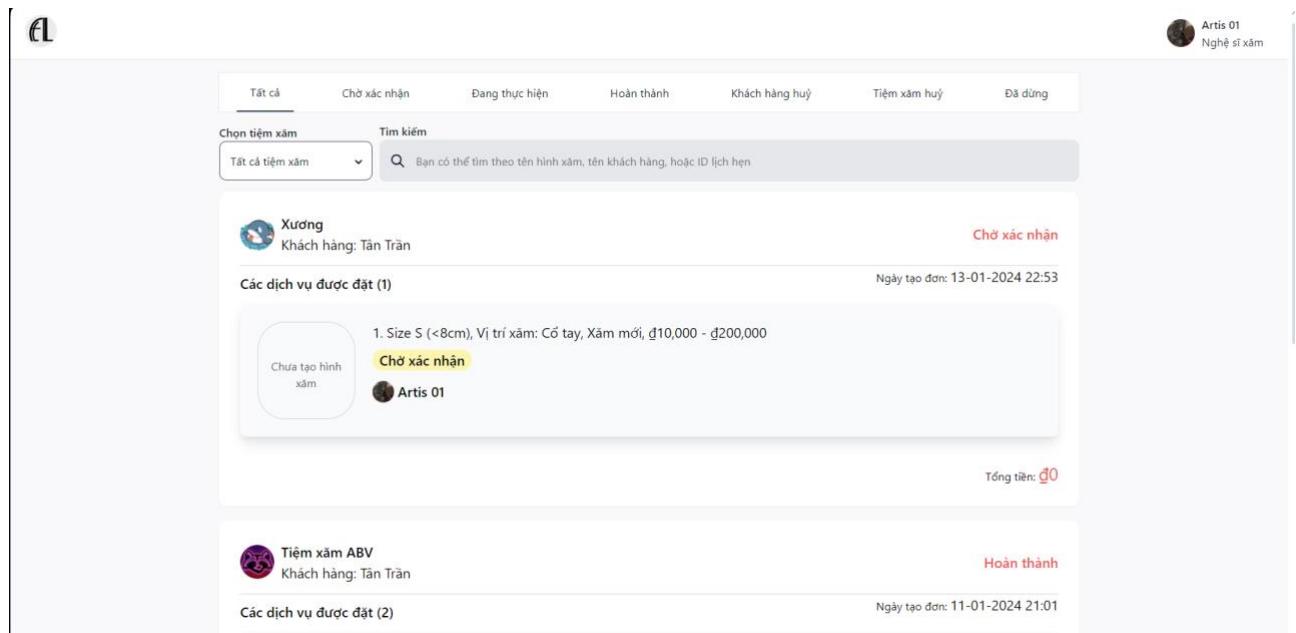


Figure 63: Artist booking before filter by studio name

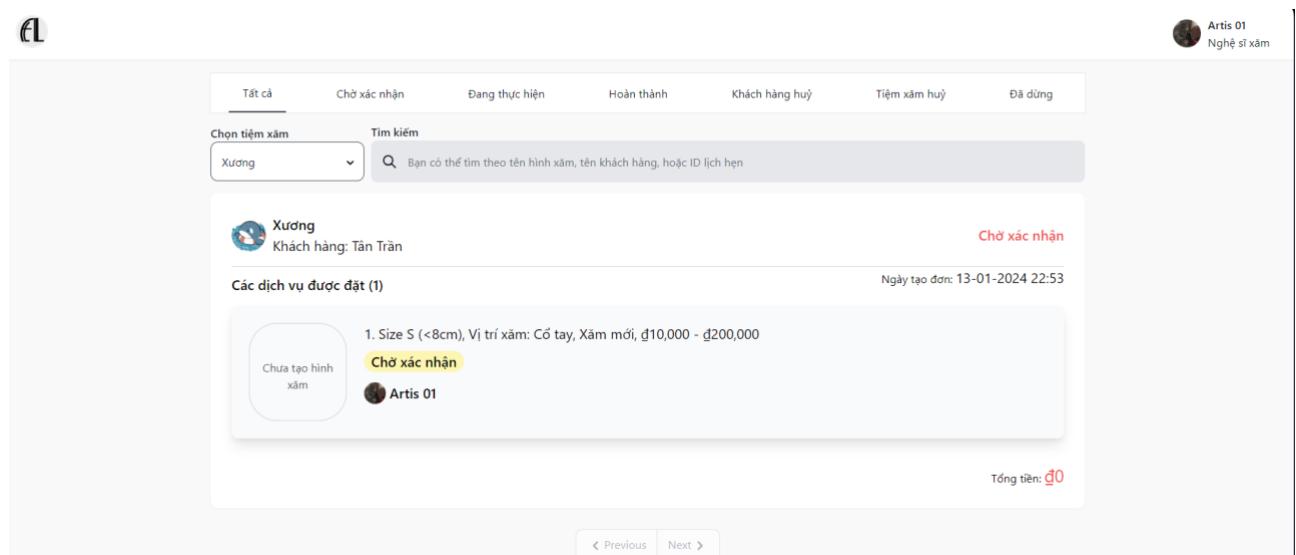


Figure 64: Artist booking after filter by studio name

### 3.6.6 Studio manager filter booking meeting of an artist of the booking detail by status

- **Function trigger:** Studio manager click the “Tìm kiếm” button in the booking meeting date.
- **Function description:** Studio manager filter to see artist calendar when creating booking meeting date.
- **Function detail:** Studio manager clicks the calendar icon in the booking detail where an artist has been assigned to. Click the “Chọn trạng thái” drop down button and choose booking status, choose range of search and click the “Tìm kiếm” button.
- **Screen layout:**

## Lịch hẹn của nghệ sĩ Artist 02

The screenshot shows a search interface for filtering artist bookings. At the top, there are two dropdown menus: 'Chọn khoảng thời gian' (Select time period) set to 'Từ 13-01-2024 tới 21-01-2024' and 'Chọn trạng thái' (Select status) set to 'Tất cả lịch hẹn'. A 'Tim kiếm' (Search) button is to the right. Below the search bar is a table header with columns: 'THỜI GIAN HẸN ↑', 'NGHỆ SĨ', and 'KHÁCH HÀNG'. Underneath, a single booking entry is listed: '13-01-2024 23:01' for 'Artist 02' and 'Tân Trần'. Navigation arrows and 'Previous/Next' buttons are at the bottom.

Figure 65: Studio manager filter artist calendar when create booking meeting for booking detail

### 3.6.7 Admin filter report by status

- **Function trigger:** Admin click the dropdown “Trạng thái” button and choose status to filter.
- **Function description:** Admin filter report list by status.
- **Function detail:** Admin click the “Báo cáo” tab to view report list then click the dropdown “Trạng thái” button and choose status to filter
- **Screen layout:**

The screenshot shows a report list interface. On the left is a sidebar with 'ATL' logo and navigation links: 'Trang chủ', 'Tiệm xăm', 'Gói dịch vụ', and 'Báo cáo' (which is highlighted). The main area has a title 'Báo cáo' and a 'Trạng thái' dropdown set to 'Tất cả'. A table lists reports with columns: 'Nội dung báo cáo', 'Người báo cáo', 'Người bị báo cáo', and 'Trạng thái'. Each row includes a delete icon ('Q'). The data in the table is as follows:

Nội dung báo cáo	Người báo cáo	Người bị báo cáo	Trạng thái
Spam.	Lily Mai	Tường Vy Luân	Vi phạm
Nội dung không phù hợp.	Lily Mai	Kimo	Không vi phạm
Spam.	Trường Hùng	Tran Thuy Tan 12	Vi phạm
Spam.	Tan 123	Kimo	Vi phạm
Nội dung không phù hợp. huhu	thinh	Kimo	Vi phạm
Nội dung không phù hợp.	Customer 03	Artist 05	Không vi phạm
Spam.	Tran Thuy Tan 12	Kimo	Vi phạm
Spam.	Lily Mai	Tường Vy Luân	Vi phạm

Figure 66: Report list before filtered

Nội dung báo cáo	Người báo cáo	Người bị báo cáo	Trạng thái
Nội dung không phù hợp.	Lily Mai	Kimo	Không vi phạm
Nội dung không phù hợp.	Customer 03	Artist 05	Không vi phạm
Giả mạo.	Artis 01	Hồ Tâm	Không vi phạm
Nội dung không phù hợp.	Artis 01	Tấn Trần	Không vi phạm
Đạo tác phẩm.	Tran Thuy Tan 12	Lily Mai	Không vi phạm
Giả mạo.	Tran Thuy Tan 12	Lily Mai	Không vi phạm

**Filter 67:** Report list after filtered

### 3.7 Admin management

#### 3.7.1 Admin edit package

- Function trigger:** Admin click the pencil icon in the package.
- Function description:** Admin edit package information
- Function detail:** Admin click the “Gói giao dịch” tab and click the pencil icon in the package. Edit package information and click the “Xác nhận” button.
- Business rules:** BR-43, BR-61
- Screen layout:**

**Figure 68:** Admin edit package information

#### 3.7.2 Admin view studio list

- Function trigger:** Admin click the “Tiệm xăm” tab.

- **Function description:** Admin view studio list
- **Function detail:** Admin click the “Tiệm xăm” tab.
- **Business rules:**
- **Screen layout:**

TÊN TIỆM XĂM	ĐỊA CHỈ	THÀNH PHỐ	MÃ SỐ THUẾ	TÌNH TRẠNG GIẤY PHÉP	ĐƯỢC PHÉP HOẠT ĐỘNG
Catholic Ink	351/34B Lê Văn Sỹ , Phường 13, Quận 3	Thành phố Hồ Chí Minh	0314084931	Giấy phép hợp lệ	Đang hoạt động
Nghệ	123 Nguyễn Trọng Tuyển, phường 4, quận 12	Thành phố Hồ Chí Minh	3703180048	Giấy phép hợp lệ	Đang hoạt động
Tiệm xăm ABV	123 Phường 12 đường Nguyễn Bình Khiêm	Tỉnh Hà Giang	0110561992	Giấy phép hợp lệ	Đang hoạt động
Xưởng	122 Nguyễn Trọng Tuyển, phường 4, quận 12	Thành phố Hồ Chí Minh	3702581047	Giấy phép hợp lệ	Đang hoạt động
Chun Hack Tattoo	Lầu 2, Phòng 209, 130 Pasteur, quận 1	Thành phố Hồ Chí Minh	0108747679	Giấy phép hợp lệ	Đang hoạt động
Freestyle Studio	125 Nguyễn Trọng Tuyển, phường 4, quận 12	Thành phố Hồ Chí Minh	0401742224	Giấy phép hợp lệ	Đang hoạt động
Fishbone Piercing	149 Âu Cơ, Tây Hồ	Thành phố Hà Nội	0310634373	Giấy phép hợp lệ	Đang hoạt động

Figure 69: Admin view studio list

## 4. Non-Functional Requirements

### 4.1 External Interfaces

- Language for Web application and Mobile application is Vietnamese and English.
- Web applications are responsive based on screen size.

### 4.2 Quality Attributes

#### 4.2.1 Usability

- Language for Web application and Mobile application is suitable for users whose language is Vietnamese.
- The layout and design of web application and Mobile application shall be designed based on roles.(Web app for admin, customer, artist, studio manager. Mobile app for customer and artist)

#### 4.2.2 Security

- ATL uses JWT for authentication and authorization.
- Data shall be validated before saving into the database.
- Guests and clients shall have their own functions

## 5. Requirement Appendix

### 5.1 Business Rules

ID	Rule Definition
BR-01	The studio manager creates a new account with a phone number, email, tax code, avatar, and studio owner information.
BR-02	Studio has a free trial for 3 months. After that they need to join membership by buying packing to continue receiving bookings from online customers or creating bookings for offline customers.
BR-03	The studio managers are able to edit the studio information, including the services price, open time, close time, and update previous booking details even when they do not purchase the packages.
BR-04	Studio tax code must be a unique and valid code. If the tax code has been checked and found automatically, the studio is authorized without waiting for verification from the administrator.
BR-05	Each studio can only have one branch.
BR-06	The artist creates a new account with personal information.
BR-07	An artist can work for only one studio at a time.
BR-08	An artist must be a member of a studio to receive appointments from that studio.
BR-09	When a customer creates a booking, the studio will create a booking meeting for each booking detail, so that the customer and related artist can be informed.
BR-10	Both the studio, artist and the customer can view the booking history.
BR-11	The studio and the customer can cancel bookings on the website when bookings are still pending.
BR-12	When booking is in progress, the studio manager can create booking details corresponding to the selected tattoo service.
BR-13	Booking detail depends on its service category so that it must have a tattoo art or not.
BR-14	When a customer wants a tattoo, the tattoo art must be created from the booking details. Booking details will specify price information, while tattoo art will contain detailed information about the tattoo design.
BR-15	Booking details actual price must be in the price range of the selected service.
BR-16	A booking detail can have many booking meetings.
BR-17	Booking meetings can be canceled by artist, customer, studio.
BR-18	Pending booking meeting will be automatically canceled when booking is done, not completed or canceled
BR-19	Booking meetings are created only by the studio.

BR-20	Booking meeting time can be duplicated (warning appear)
BR-21	Booking meeting must be later than the current time.
BR-22	Booking details only switch into progress when the artist is assigned to the booking details and the actual price is defined.
BR-23	Artists can view only bookings that include booking details assigned to them
BR-24	Artist can only edit booking details assigned to them
BR-25	After the booking is completed, the customer can provide feedback on the booking.
BR-26	Artists can create tattoo art from booking details assigned by the studio or upload their old tattoo arts.
BR-27	Each tattoo art can include a thumbnail and many tattoo stages and tattoo images.
BR-28	Tattoo stages contain information about different stages of the tattoo design.
BR-29	A tattoo stage can include many tattoo images.
BR-30	After completing a tattoo art, artists have the right to make it public and choose the visibility settings for the whole tattoo art and for each tattoo image.
BR-21	Only artists are authorized to public tattoo art.
BR-32	Users can comment, like, and share tattoo art, but only customers who have booked for the tattoo art can provide feedback.
BR-33	Artist feedback rate is an average feedback rate from booking details that have been done by the artist.
BR-34	Studio feedback rate is an average feedback rate from booking details that have been done by the studio.
BR-35	Consultation session can be free for customer
BR-36	Users can report inappropriate tattoo art for admin reviews. After the admin confirms the tattoo art is inappropriate, that tattoo art will not be shown publicly. However, the artist, studio manager, and customer related to that tattoo art is still able to see its details.
BR-37	Booking details which has the category "Xăm mới" or "Xăm đè" can only be completed when the tattoo is completed
BR-38	Valid day will be add after buying package
BR-39	Package cannot be refund after buying
BR-40	Only studio with full conditions (authorized, opened, activated) can receive new booking
BR-41	After a valid date, the studio can see and edit old booking before the valid date, but it cannot create new booking for customers or receive bookings from online customers.

BR-42	Reported content is only confirmed by the admin role.
BR-43	Admin can only update package information.
BR-44	User can delete his/her own comment, like, follow.
BR-45	Artists and studios cannot follow themselves.
BR-46	Studio can only assign artist that belong to studio
BR-47	When all booking details is canceled, booking automatically change status to canceled by studio
BR-48	When a tattoo art of booking detail has been created, the studio manager cannot assign that booking detail to another artist.
BR-49	Each tattoo art only have one style
BR-50	Each tattoo art only have one size and one placement
BR-51	Studio can add booking services when booking is in in progress status
BR-52	Before dismissing an artist, the studio manager must make sure there is no pending or in progress booking detail assigned to that artist.
BR-53	Artists can get a key to send to the studio so that the studio can add the artist into its workforce. The key from the artist will expire after 15 minutes. Artists cannot get that key when they are currently working for a studio.
BR-54	Studio managers can choose objectives of their service. Online customers can only book services that are for anyone. Services that are for old customers can only be booked by the studio manager.
BR-55	Studio managers can delete a service so that no one can book it. Studio managers can change that service objective later so that it could be in use again.
BR-56	Services can be updated by the studio manager. Updated services will only be applied for later booking details. Booking details that had updated services before will not be affected.
BR-57	To complete a booking detail in general, studio managers must record transaction(s) that meet the price of that booking detail.
BR-58	When being canceled, in progress booking details will be changed into not complete booking details.
BR-59	When a booking is completed, customers can give feedback to only completed booking details of that booking.
BR-60	Studio manager can create a refund transaction for the booking. However, the minimum value of that booking must not be smaller than the total price of completed booking details.
BR-61	Platform admin can configure the free package if they want
BR-62	Customer and artist must fill valid information when login and register

BR-63	Studio will store customer information into it list
-------	---

## 5.2 Common Requirements

- All required field in the system need to fill out
- All required fields need to be filled with the correct data type (phone only contains 10 digits, email must be correct form....)

## 5.3 Application Messages List

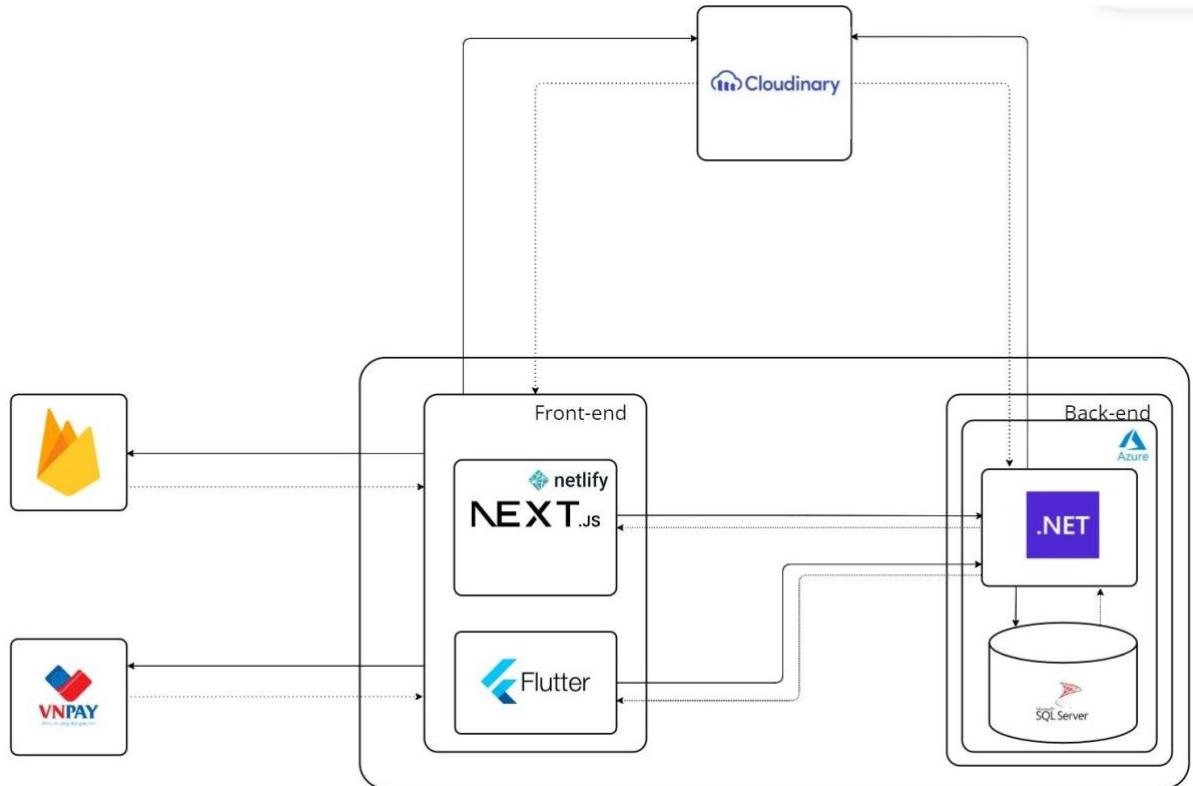
#	Message code	Message Type	Context	Content
1	MSG01	Toast message	Login	Đăng nhập thất bại. Sai email hoặc password
2	MSG02	Toast message		Đang đăng nhập tài khoản
3	MSG03	Alert		Thông tin không được để trống
4	MSG04	Alert		Email phải có dấu @
5	MSG05	Alert		Email chưa hợp lệ
6	MSG06	In blue, pop up	Register	Đang đăng ký tài khoản
7	MSG07	In green, pop up		Đăng ký tài khoản thành công
8	MSG08	In red, pop up		Đăng ký tài khoản thất bại
9	MSG09	Toast message	Booking	Đặt hẹn thành công
10	MSG10	Toast message		Tạo lịch hẹn thất bại
11	MSG11	In green, pop up		Tạo ghi nhận thanh toán thành công
12	MSG12	Toast message		Tổng tiền ghi nhận thanh toán không được vượt quá tiền dịch vụ.
13	MSG13	Toast message		Tổng tiền thanh toán phải lớn hơn 1000đ
14	MSG14	Toast message		Giá tiền cho dịch vụ này phải nằm trong khoảng MP tới MAP
15	MSG15	Hover		Copy link bài viết này
16	MSG16	Hover	Share	Copy link bài viết thành công

17	MSG17	Pop up	Feedback	Đã đánh giá thành công
18	MSG18	Toast message	Booking detail	Ở trạng thái này phải có phân công nghệ sĩ
19	MSG18	Toast message		Hình xăm phải hoàn thành mới được cập nhật.
20	MSG19	Toast message		Giá tiền cho dịch vụ này phải nằm trong khoảng MP tới MAP
21	MSG19	Pop up message	Service	Bạn đã có những dịch vụ này với loại dịch vụ là Xăm hình mới, kích thước Size bất kỳ, vị trí xăm Vị trí bất kỳ và dành cho Mọi người. Bạn có chắc muốn tạo thêm dịch vụ này không hay cập nhật dịch vụ cũ?
22	MSG20	Pop up message	Package	Mua gói thành công
23	MSG21	Pop up message		Mua gói thất bại
24	MSG22	In blue, toast message	Tattoo art	Đang tạo hình xăm
25	MSG23	In blue, toast message		Đang cập nhật hình xăm
26	MSG24	In red, toast message		Tạo hình xăm thất bại
27	MSG25	In red, toast message		Cập nhật hình xăm thất bại
28	MSG26	In green, toast message		Tạo hình xăm thành công
29	MSG27	In green, toast message		Cập nhật hình xăm thành công

## IV. Software Design Description

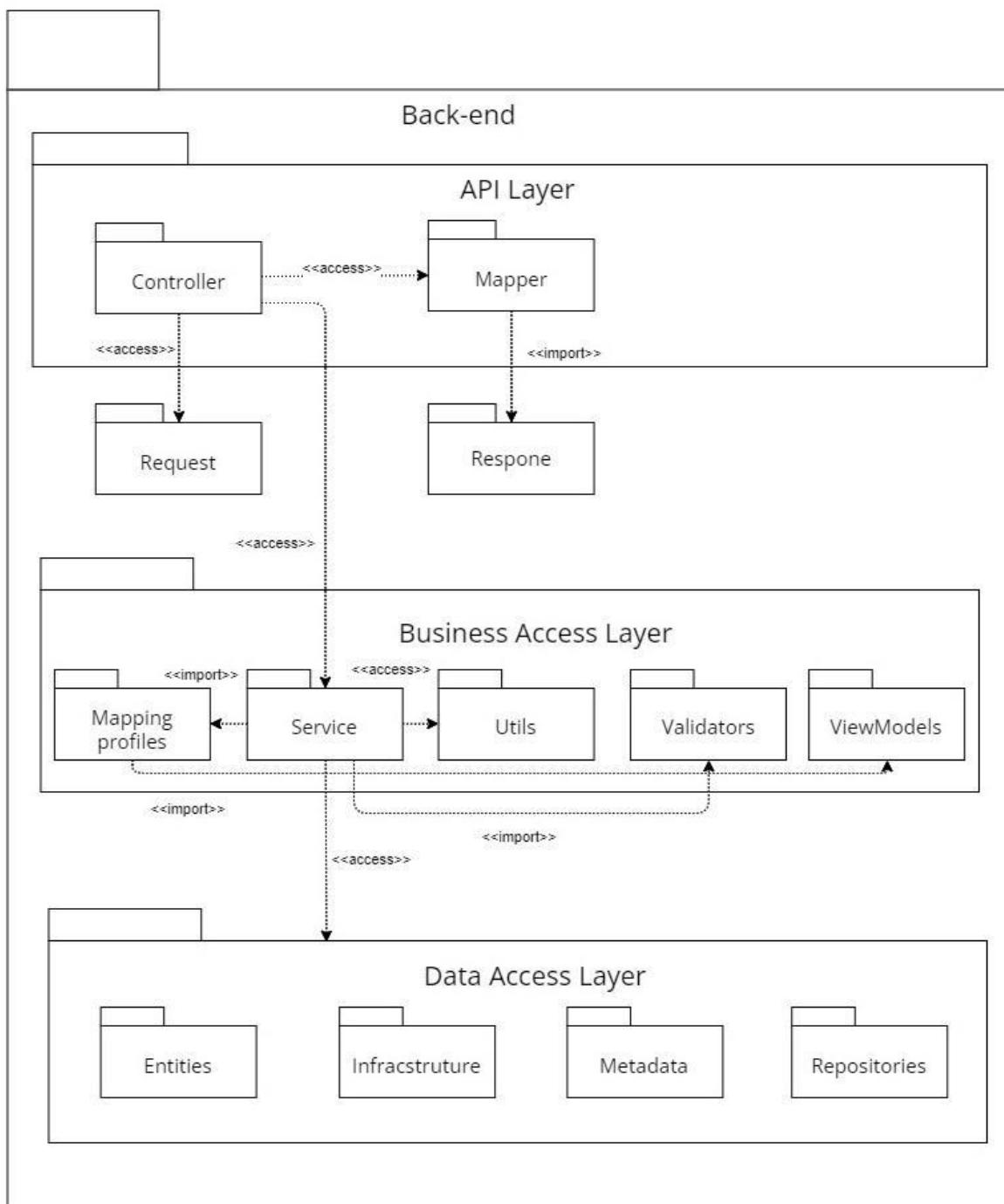
### 1. System Design

#### 1.1 System Architecture



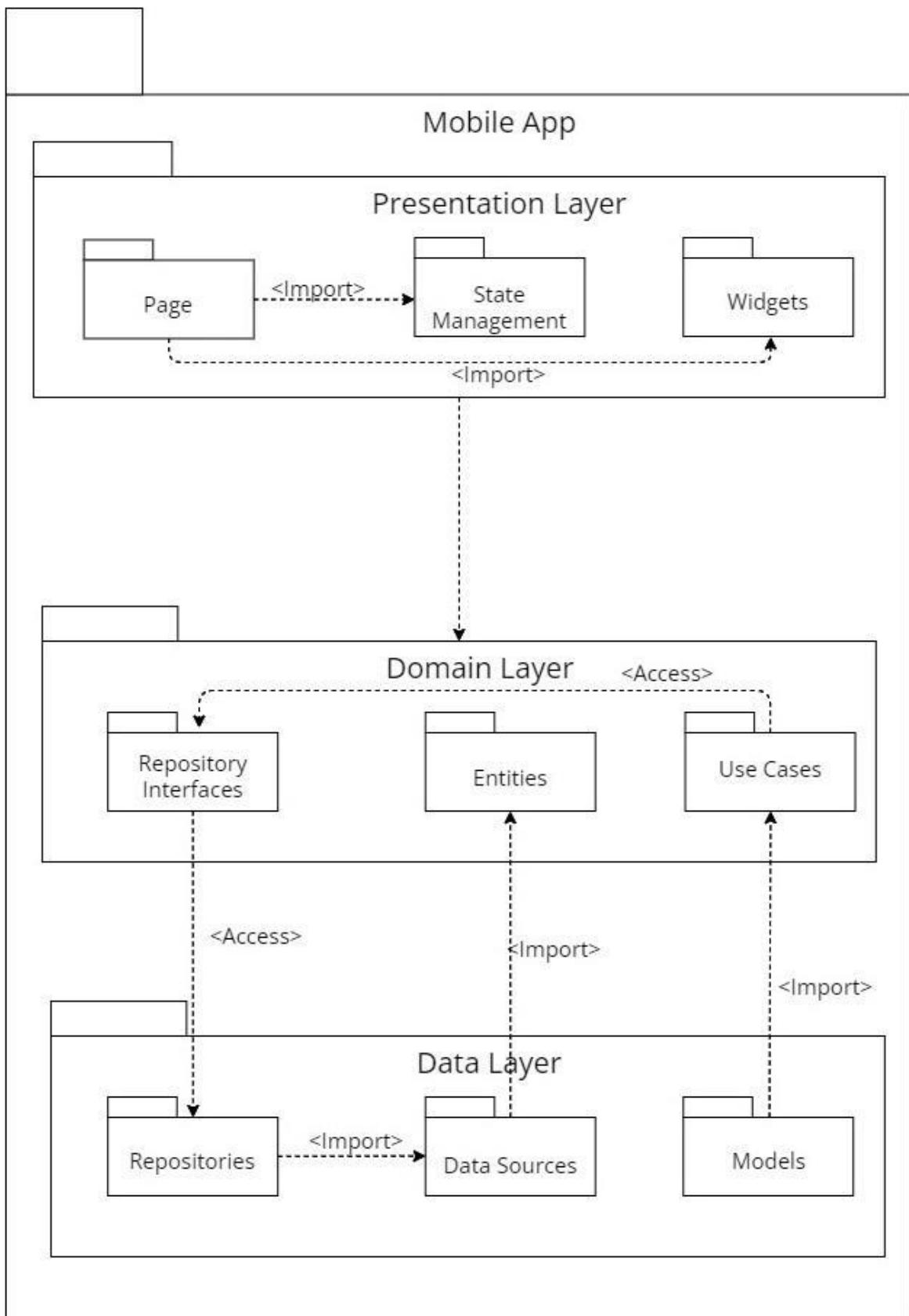
**Figure 70:** ATL system architecture

## 1.2 Package Diagram



No	Package	Description
01	Controller	It is an important package that invokes all requests from the calling API.
02	Mapper	An automapper between object and model.
03	Request	Requests of API calls.
04	Response	Responses of API results.
05	Mapping profiles	Handle signal R real time.
06	Utils	Contains utilities that the Visual Basic compiler uses.
07	Service	It mediates communication between a controller and data access objects and contains business logic or validation logic. Including domain-specific data services, email service and background job service.
08	Validator	A business for validate service.
09	ViewModels	It represents domain-specific data and business logic. It represents the shape of the data as public properties and business logic as methods.
10	Entities	Packages contain entities when scaffold.
11	Infrastructure	Package contains every base method and dbcontext of the project.
12	Metadata	Metadata is information stored in the assembly that describes the types and methods of the assembly and provides other useful information about the assembly.
13	Repositories	Holds the code responsible for communicating with external APIs to fetch data. It serves as a central hub for managing API interactions, ensuring consistent and organized data retrieval throughout the application.

**Figure 71:** Web application package diagram



**Figure 72:** Mobile application package diagram

#### ***Package Descriptions***

No	Package	Description
01	Page	Folder contains the layout of the screen.
02	State Management	Folder contains state and others set state.
03	Widgets	Folder contains UI components.
04	Repository Interfaces	A package contains all interfaces for repositories implementing a specific business logic.
05	Entities	Package contains all entities when scaffold.
06	Use Cases	The abstract use case to be implemented by all use cases.
07	Repositories	A class that will handle getting data into and out of your database (data store).
08	Data Sources	This package will help to consume a cloud firebase using a generic datasource.
09	Models	It represents domain-specific data and business logic. It represents the shape of the data as public properties and business logic as methods.

## 2. Database Design

### Table Descriptions

No	Table	Description
01	Account	Describe an authenticated user of the system.
02	Artist	Describe an artist of the system.
03	ArtistStyle	Describe an artist style of the system.
04	Booking	Describe a booking of the system.
05	BookingDetail	Describe a booking detail of the system.
06	BookingMeeting	Describe a booking meeting of the system.
07	Comment	Describe a comment of the system.
08	Customer	Describe a customer of the system.
09	Feedback	Describe a feedback of the system.

10	Follow	Describe a follow of the system.
11	Interior	Describe the interior of the system.
12	Like	Describe a like of the system.
13	Package	Describe a package of the system.
14	PackageType	Describe a package type of the system.
15	Report	Describe a report of the system.
16	Service	Describe a service of the system.
17	ServiceCategory	Describe a category of service of the system.
18	Studio	Describe a studio of the system.
19	StudioArtist	Describe the collaboration between a studio and an artist of the system.
20	TattooArt	Describe a tattoo art of the system.
21	TattooArtStage	Describe a stage of the tattoo art of the system.
22	TattooImage	Describe an image of the tattoo art of the system.
23	TattooStyle	Describe a style of the tattoo art of the system.
24	Transaction	Describe a transaction of the system.

### **Attribute Data Dictionary**

Entity Name	Field Name	Type	Allow nulls	Unique	PK/FK	Note
Account	Id	Guid			PK	
	Email	varchar(100)	X			
	Password	nvarchar(50)	X			
	FullName	nvarchar(50)				
	PhoneNumber	varchar(10)	X			
	Avatar	nvarchar(max)	X			
	Role	tinyint	X			
	Status	tinyint	X			
Artist	Id	Guid			PK	
	BioContent	nvarchar(500)	X			
	ActiveStatus	tinyint				
	Status	nvarchar(50)	X			
	Rating	decimal(3,1)	X			
ArtistStyle	Id	Guid			PK	
	ArtistId	Guid	X		FK	
	StyleId	Guid	X		FK	
Booking	Id	Guid			PK	
	StudioId	Guid			FK	
	CustomerId	Guid			FK	
	CreatedAt	Datetime				
	CompletedAt	Datetime	X			
	CancelledAt	Datetime	X			
	Description	varchar(10)	X			
	TotalMinPrice	money	X			
	TotalMaxPrice	money	X			
	CustomerCancelReason	nvarchar(500)	X			

	StudioCancelReason	nvarchar(500)	<b>X</b>			
	Status	tinyint	<b>X</b>			
BookingDetail	Id	Guid			PK	
	BookingId	Guid			FK	
	ArtistId	Guid	<b>X</b>		FK	
	ServiceCategoryId	tinyint			FK	
	TattooArtId	Guid	<b>X</b>		FK	
	Price	Money	<b>X</b>			
	Description	nvarchar(200)	<b>X</b>			
	Status	tinyint	<b>X</b>			
	ServiceTitle	nvarchar(100)	<b>X</b>			
	ServiceMinPrice	money	<b>X</b>			
	ServiceMaxPrice	money	<b>X</b>			
	ServiceSize	tinyint	<b>X</b>			
	ServicePlacement	tinyint	<b>X</b>			
BookingMeeting	Id	Guid			PK	
	BookingId	Guid			FK	
	BookingDetailId	Guid			FK	
	CreatedAt	Datetime				
	MeetingTime	Datetime				
	Status	tinyint				
	CancelledAt	Datetime	<b>X</b>			
	CancelReason	nvarchar(500)	<b>X</b>			
Comment	Id	Guid			PK	
	AccountId	Guid			FK	
	TattooArtId	Guid			FK	
	Content	nvarchar(500)				

Customer	<b>Id</b>	Guid			PK	
	<b>AccountId</b>	Guid	<b>X</b>		FK	
	<b>FullName</b>	nvarchar(50)				
	<b>PhoneNumber</b>	varchar(10)	<b>X</b>			
	<b>Email</b>	varchar(100)	<b>X</b>			
	<b>Status</b>	tinyint	<b>X</b>			
Feedback	<b>Id</b>	Guid			PK	
	<b>CustomerId</b>	Guid			FK	
	<b>ArtistId</b>	Guid			FK	
	<b>StudioId</b>	Guid			FK	
	<b>BookingId</b>	Guid			FK	
	<b>BookingDetailId</b>	Guid			FK	
	<b>Rating</b>	tinyInt				
	<b>CreatedAt</b>	Datetime				
	<b>UpdatedAt</b>	Datetime				
Follow	<b>Id</b>	Guid			PK	
	<b>FollowerId</b>	Guid			FK	
	<b>ArtistId</b>	Guid	<b>X</b>		FK	
	<b>StudioId</b>	Guid	<b>X</b>		FK	
	<b>CreatedAt</b>	Datetime	<b>X</b>			
Interior	<b>Id</b>	Guid			PK	
	<b>StudioId</b>	Guid			FK	
	<b>Url</b>	varchar(500)	<b>X</b>			
	<b>CreatedAt</b>	Datetime	<b>X</b>			
Like	<b>Id</b>	Guid			PK	
	<b>AccountId</b>	Guid			FK	

	TattooArtId	Guid			FK	
	CreatedAt	Datetime	X			
Package	Id	Guid			PK	
	StudioId	Guid			FK	
	PackageTypeId	int			FK	
	Price	Money				
	PaidAt	Datetime				
	CreatedAt	Datetime	X			
	ExpiredAt	Datetime	X			
	Status	tinyint	X			
PackageType	Id	Int			PK	
	Name	nvarchar(30)				
	Price	Money				
	MaxQuantity	tinyint	X			
	NoOfMonths	tinyint	X			
	Status	Tinyint	X			
Report	Id	Guid			PK	
	Reporter	Guid			FK	
	ReportedAccount	Guid			FK	
	TattooArtId	Guid			FK	
	CommentId	Guid	X		FK	
	Content	nvarchar(500)	X			
	Status	Tinyint	X			
	CreatedAt	Datetime	X			
Service	Id	Guid			PK	
	StudioId	Guid			FK	
	ServiceCategoryId	Tinyint			FK	
	Placement	Tinyint				

	Size	Tinyint				
	MinPrice	Money	X			
	MaxPrice	Money	X			
	Status	Tinyint	X			
Studio	Id	Guid			PK	
	OwnerId	Guid			FK	
	StudioName	nvarchar(300)				
	Address	nvarchar(300)				
	BioContent	nvarchar(500)	X			
	OpenTime	Time(7)	X			
	CloseTime	Time(7)	X			
	City	Tinyint	X			
	IsAuthorized	Bit				
	IsActive	Bit	X			
	Rating	Decimal(3,1)	X			
StudioArtist	Id	Guid			PK	
	StudioId	Guid			FK	
	ArtistId	Guid			FK	
	CreatedAt	Datetime				
	DismissedAt	Datetime	X			
TattooArt	Id	Guid			PK	
	ArtistId	Guid			FK	
	BookingId	Guid			FK	
	StyleId	Int	X		FK	
	Thumbnail	varchar(500)	X			
	Size	Tinyint	X			
	Placement	Tinyint	X			
	IsPublicized	Bit				

	IsCompleted	Bit	X			
	CreatedAt	Datetime				
	Status	Tinyint	X			
TattooArt Stage	Id	Guid			PK	
	TattooArtId	Guid	X		FK	
	StageStyle	TinyInt	X			
	Description	Nvarchar(300)	X			
	Status	Tinyint	X			
TattooImage	Id	Guid			PK	
	TattooArtId	Guid				
	TattooArtStageId	Guid			FK	
	Url	nvarchar(500)	X			
	Description	nvarchar(500)	X			
	IsPublicized	Bit				
TattooStyle	Id	Int			PK	
	Name	nvarchar(100)				
	Description	nvarchar(300)	X			
Transaction	Id	Guid			PK	
	BookingId	Guid			FK	
	StudioId	Guid			FK	
	CustomerId	Guid			FK	
	Price	Money				
	Description	Nvarchar(250)	X			
	IsRefund	Bit				
	CreatedAt	Datetime	X			
	Method	Tinyint	X			
	Status	Tinyint	X			

### 3. Detailed Design

#### 3.1 Authentication

##### 3.1.1 Register

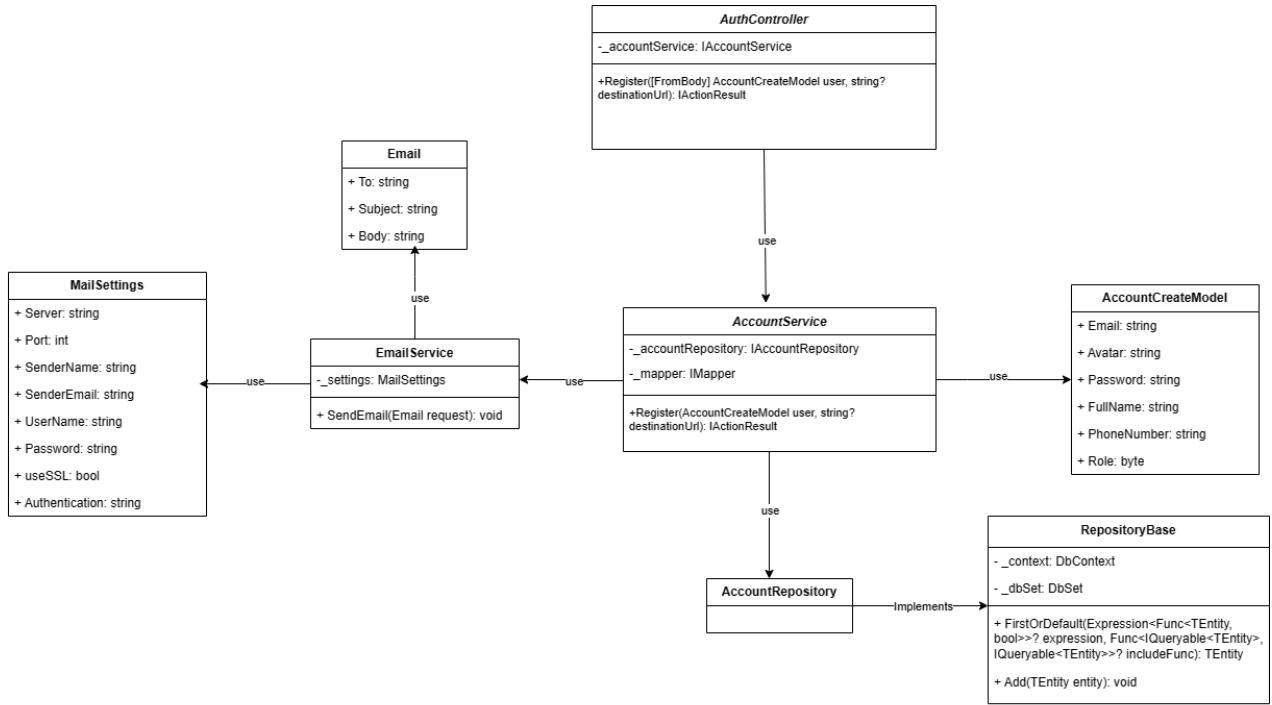
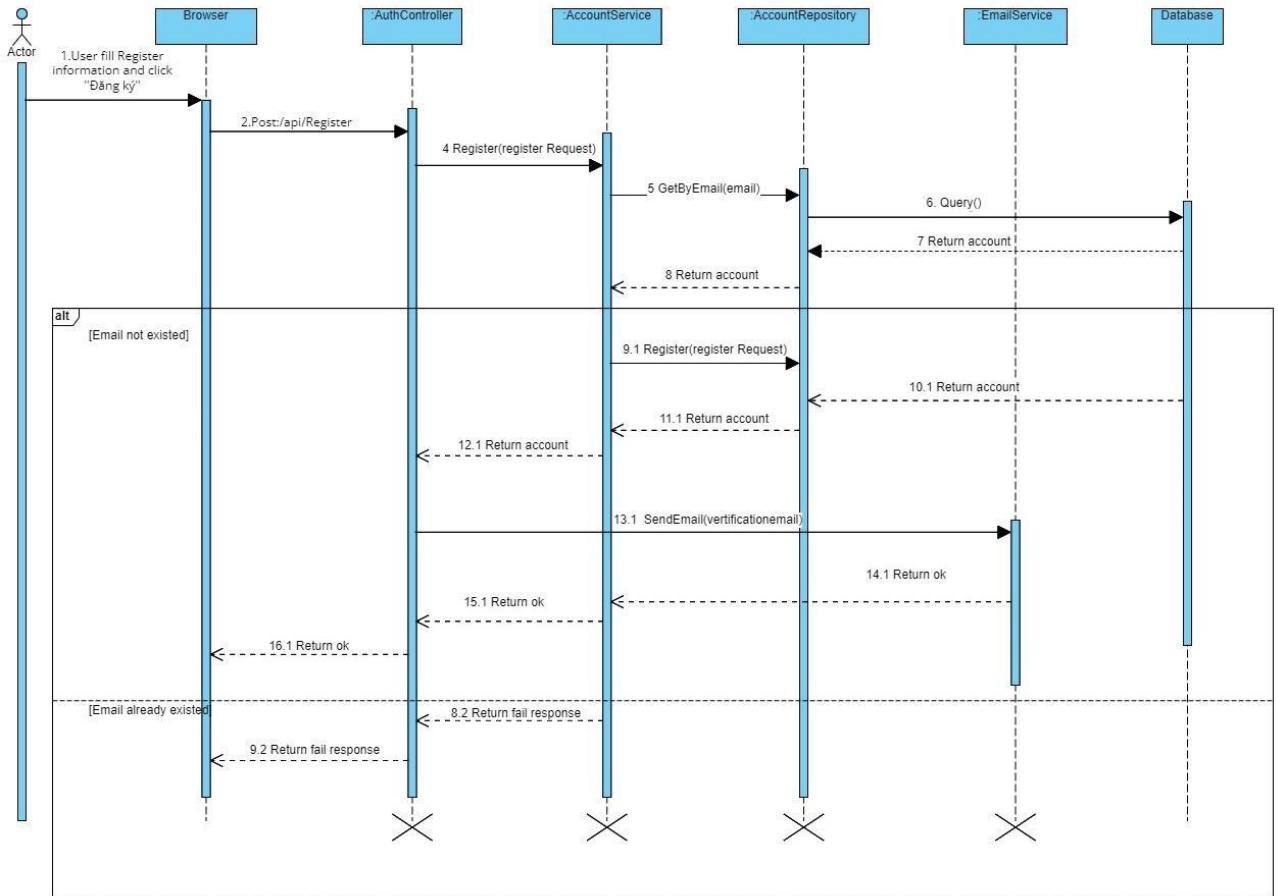
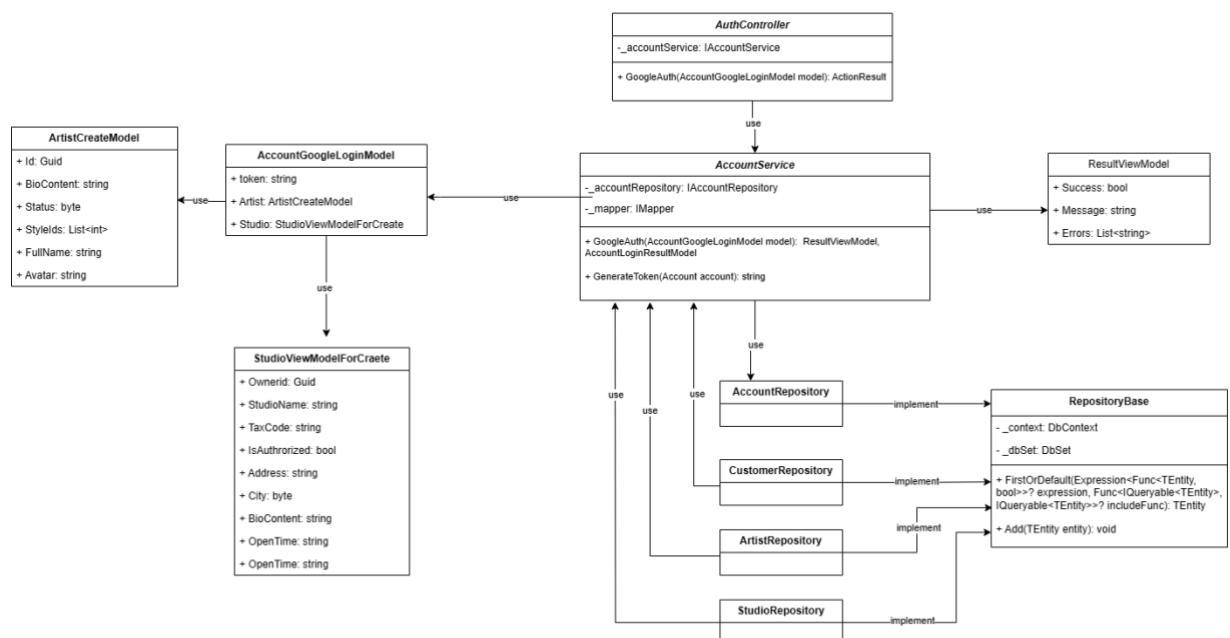


Figure 73: Register class diagram

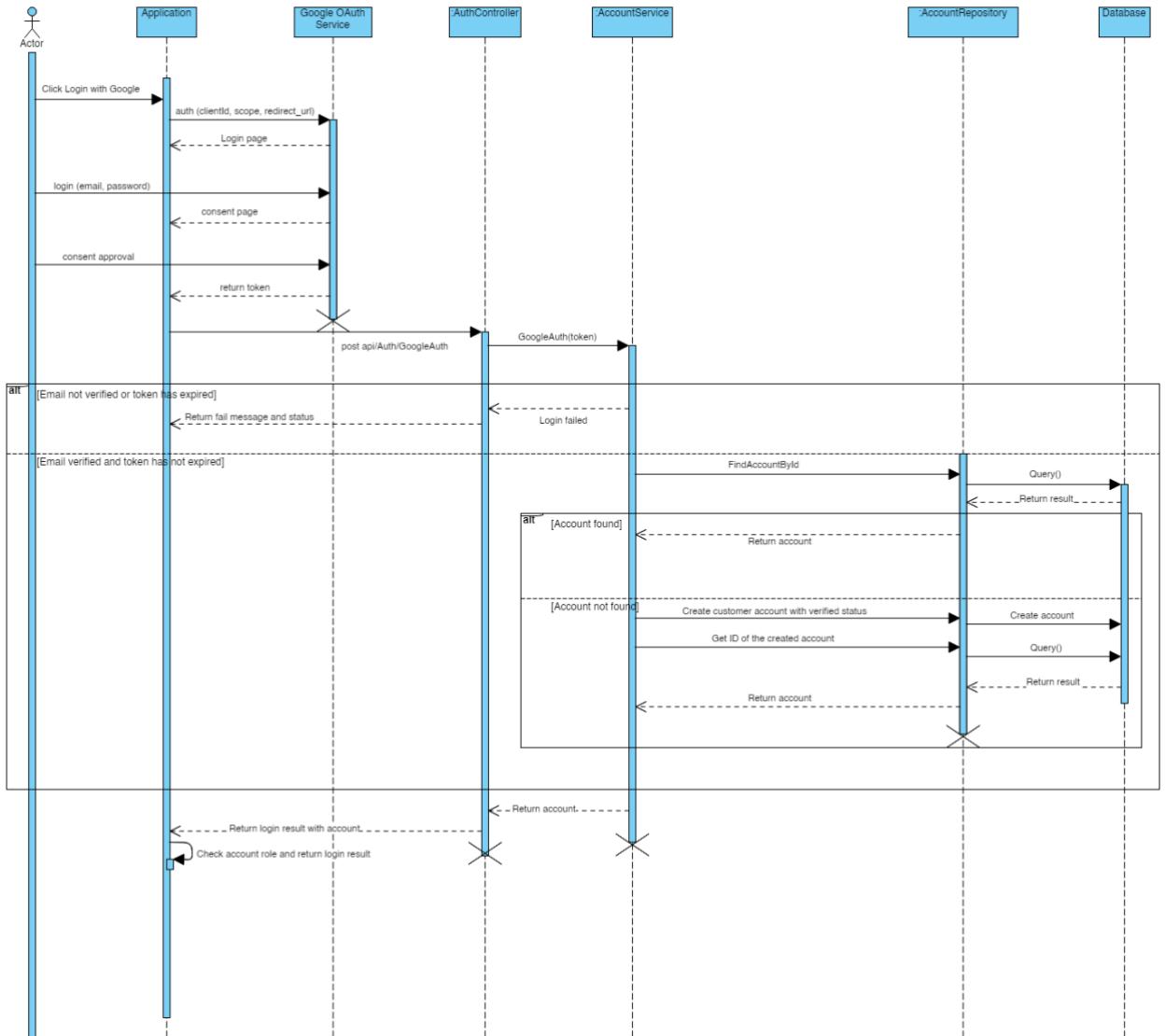


**Figure 74:** Register sequence diagram

### 3.1.2 Login with Google Auth



**Figure 75:** Login with Google class diagram



**Figure 76:** Login with Google sequence diagram

### 3.1.4 Login with email and password

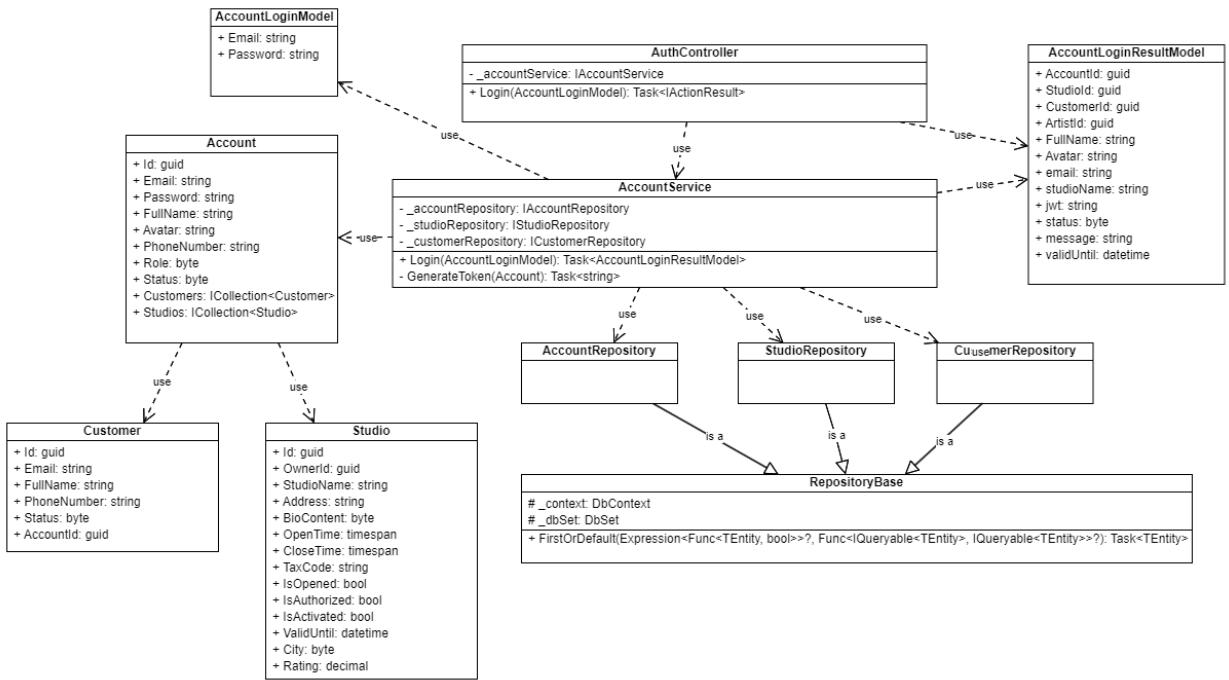
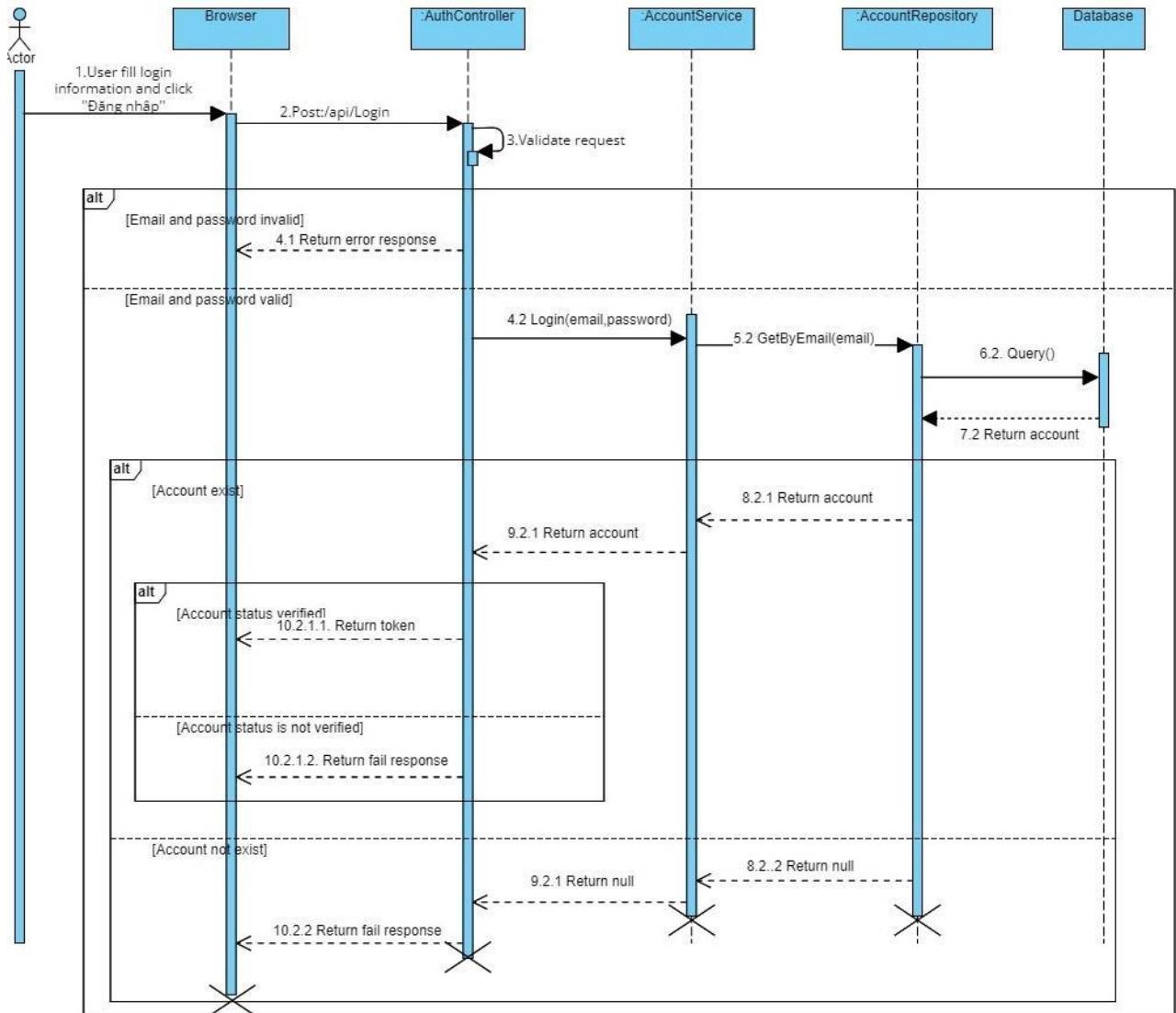


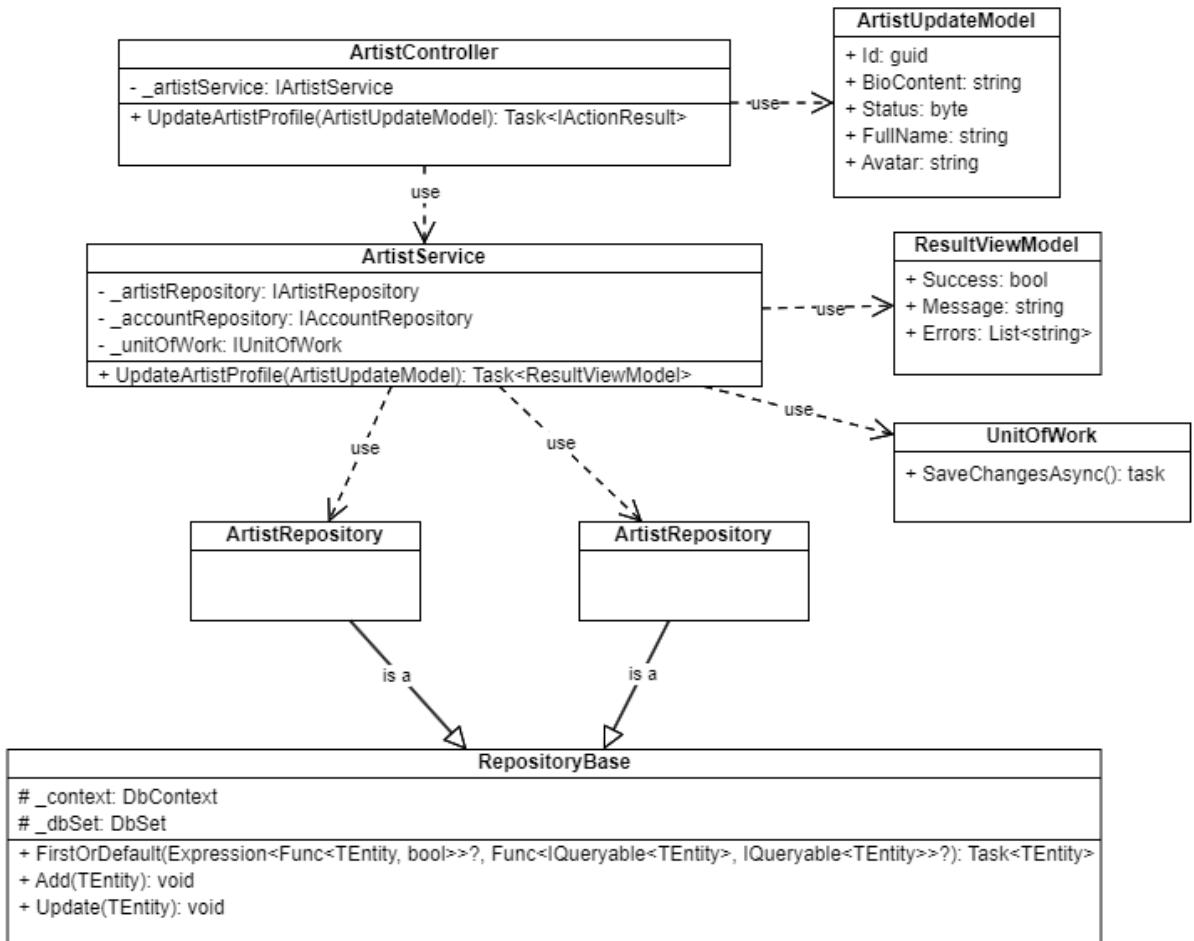
Figure 77: Login with email and password class diagram



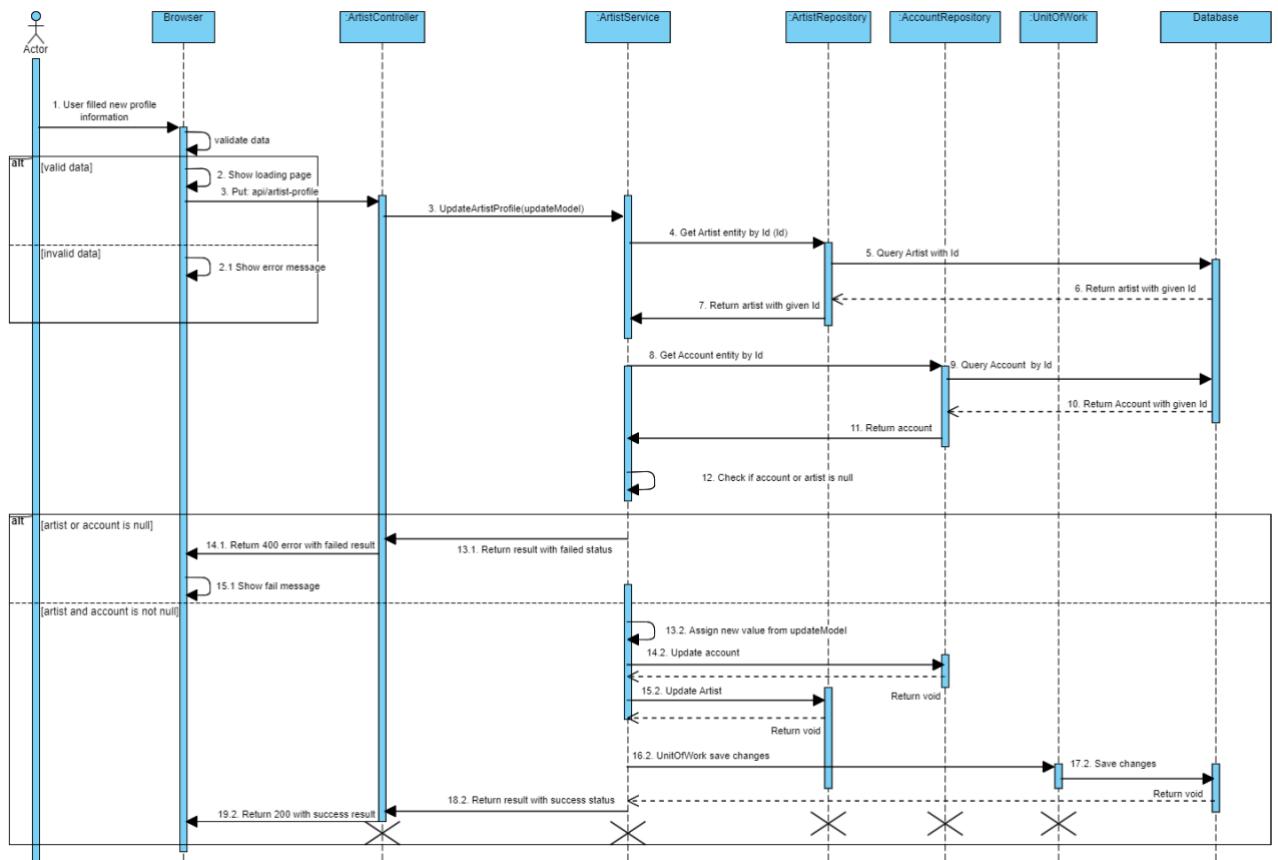
**Figure 78:** Login with email and password sequence diagram

### 3.2 Artist manage account

#### 3.2.1 Artist update profile



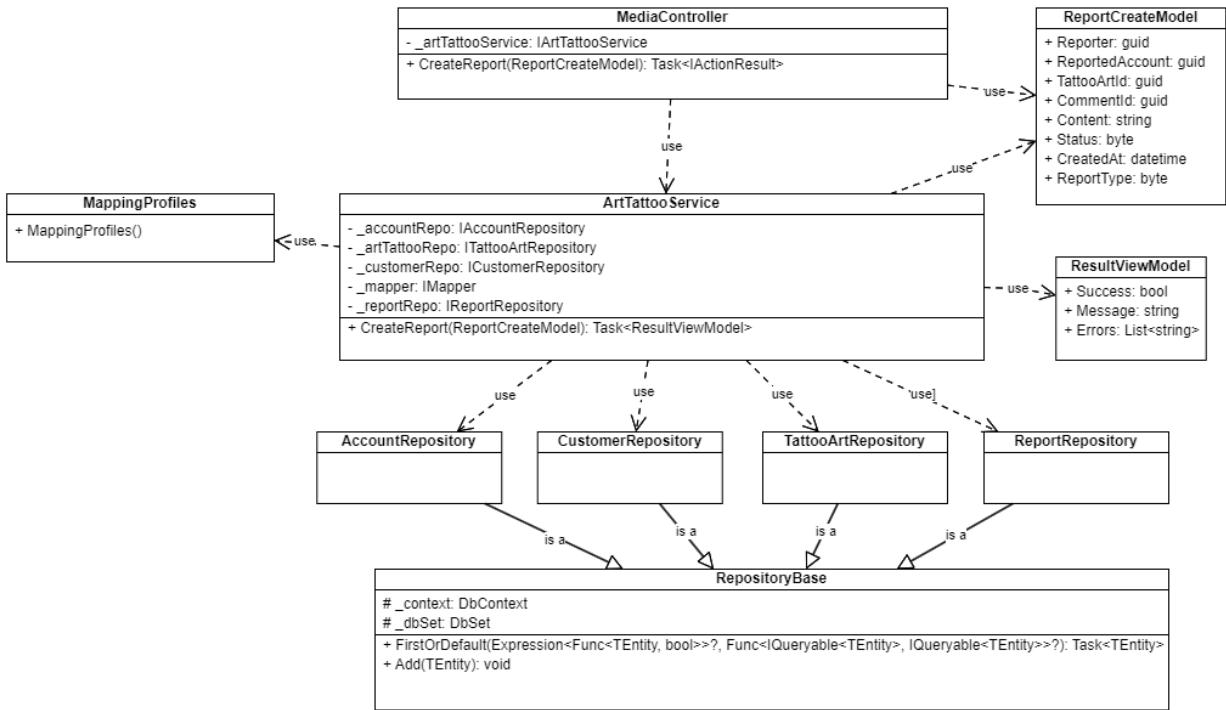
**Figure 79:** Artist update profile class diagram



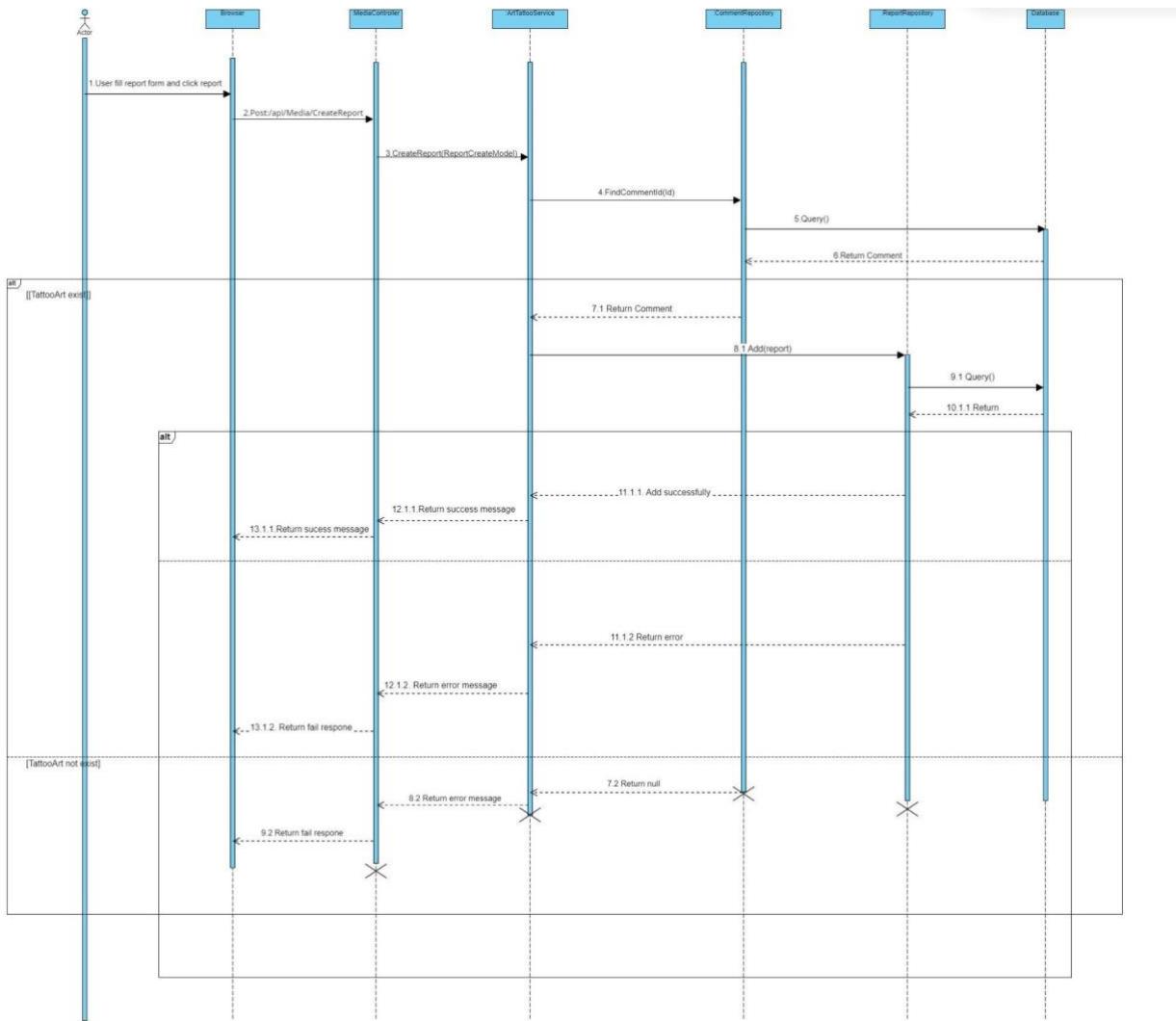
**Figure 80:** Artist update profile sequence diagram

### 3.4 Report

#### 3.4.1 Report comment



**Figure 81:** Report comment class diagram



**Figure 82:** Report comment sequence diagram

### 3.4.2 Report art tattoo

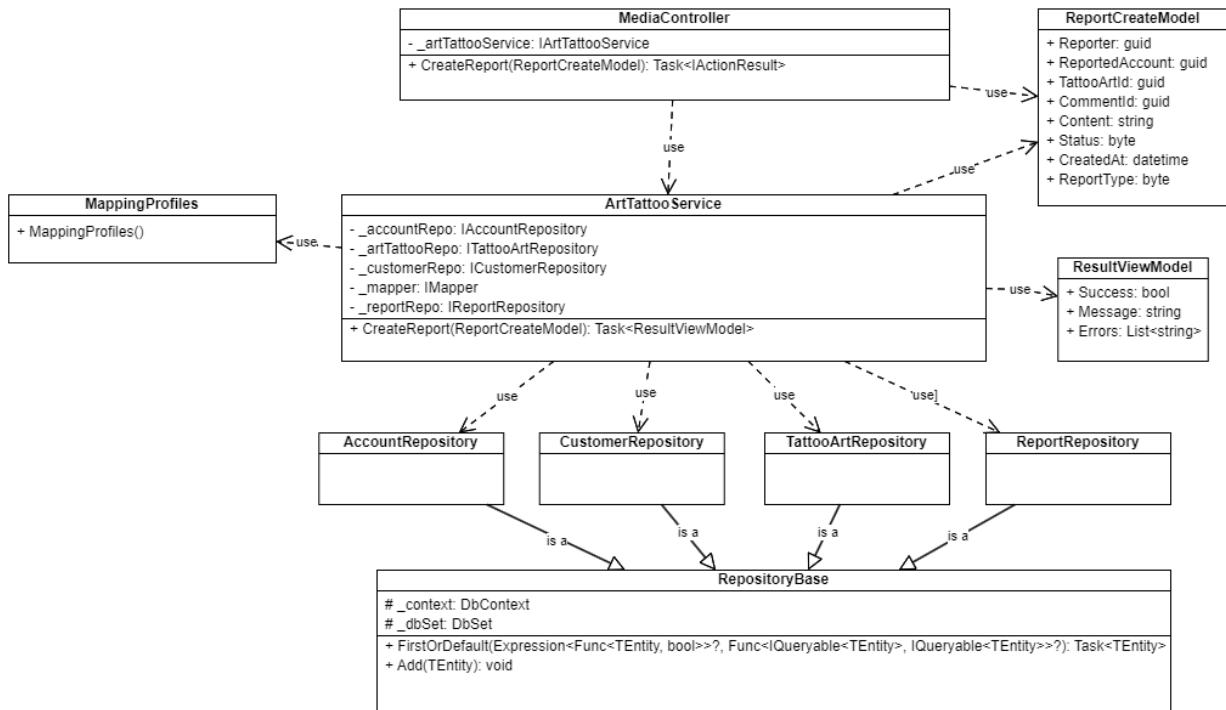
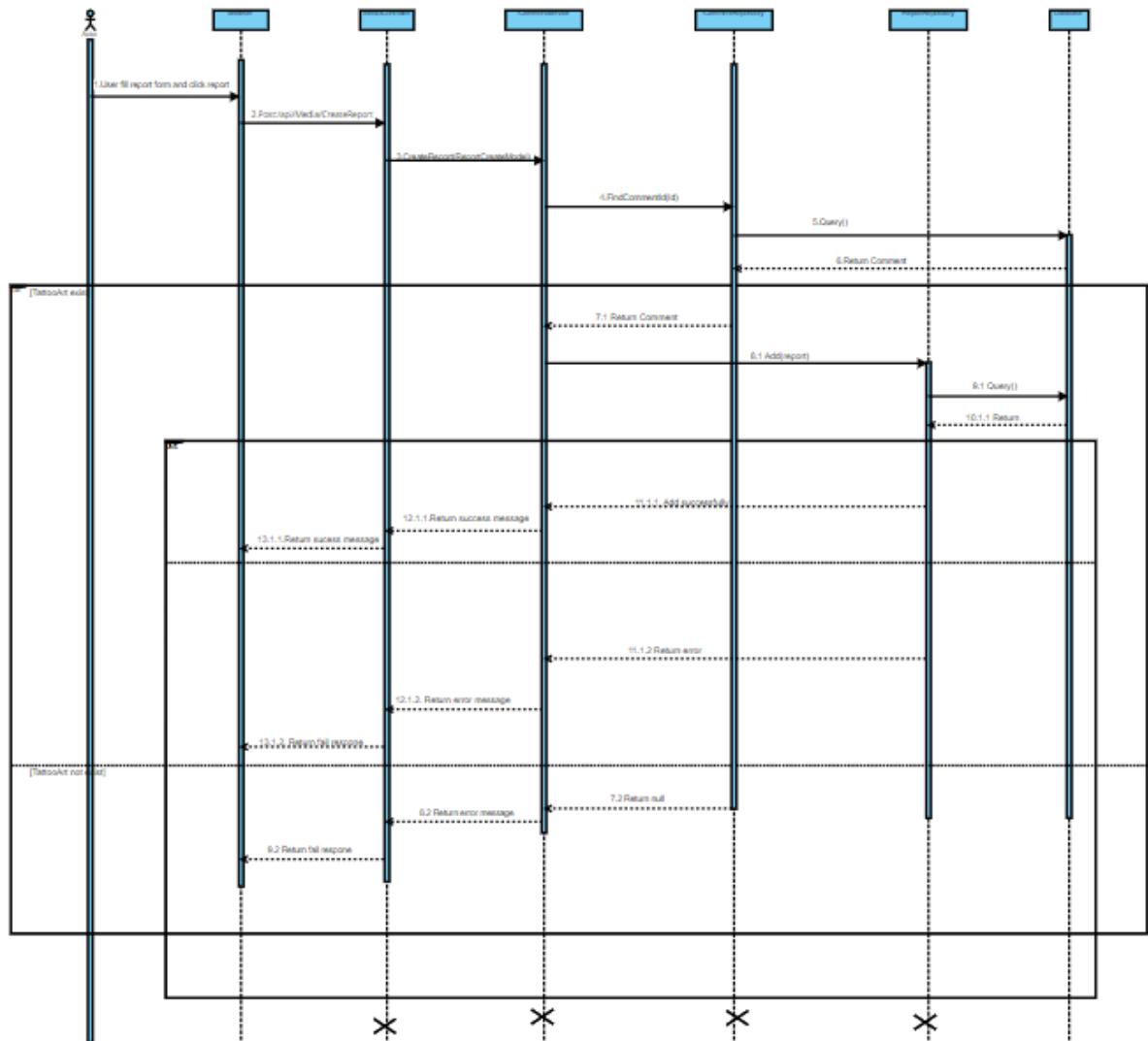


Figure 83: Report art tattoo class diagram



**Figure 84:** Report art tattoo sequence diagram

### **3.4.3 Report art tattoo**

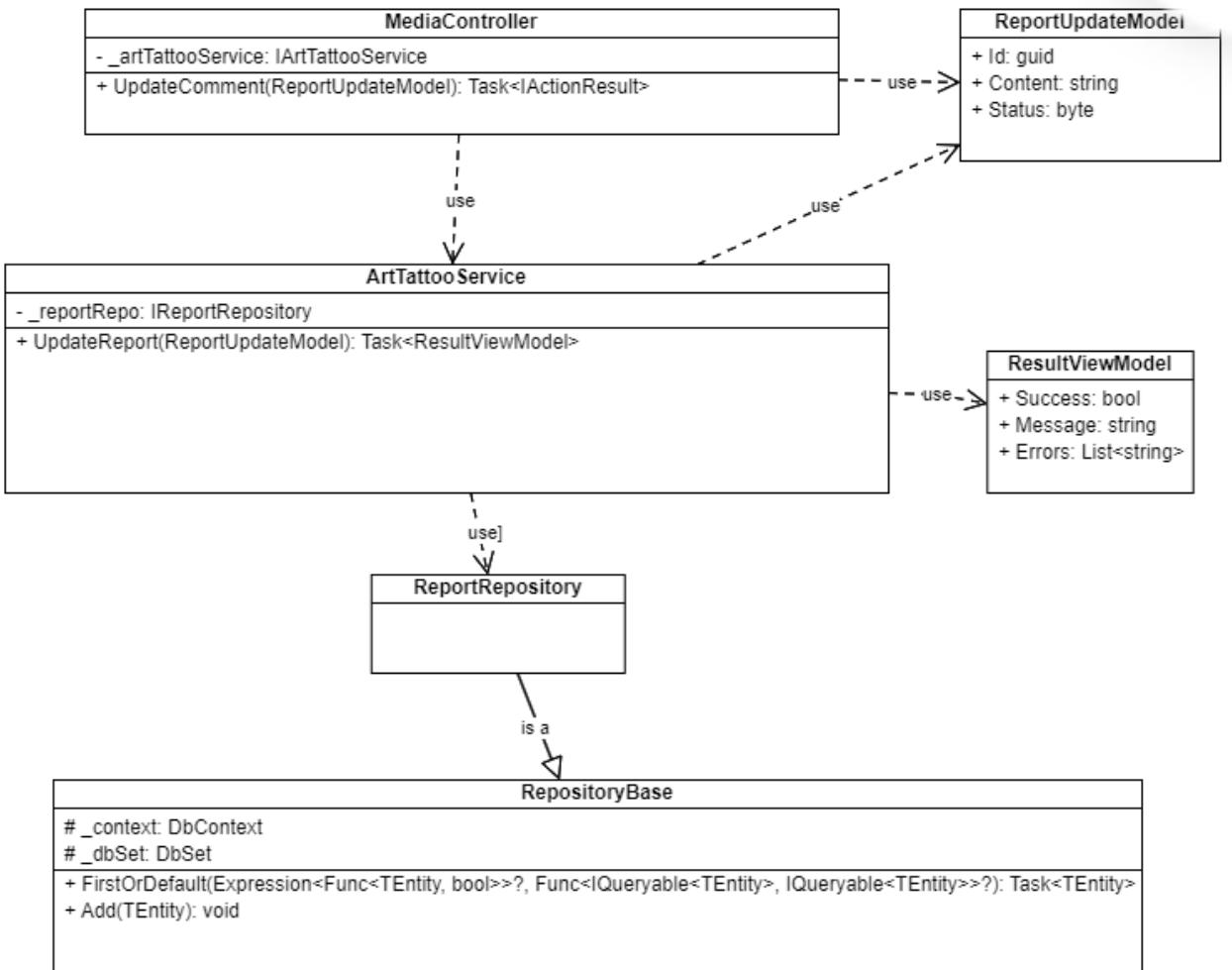
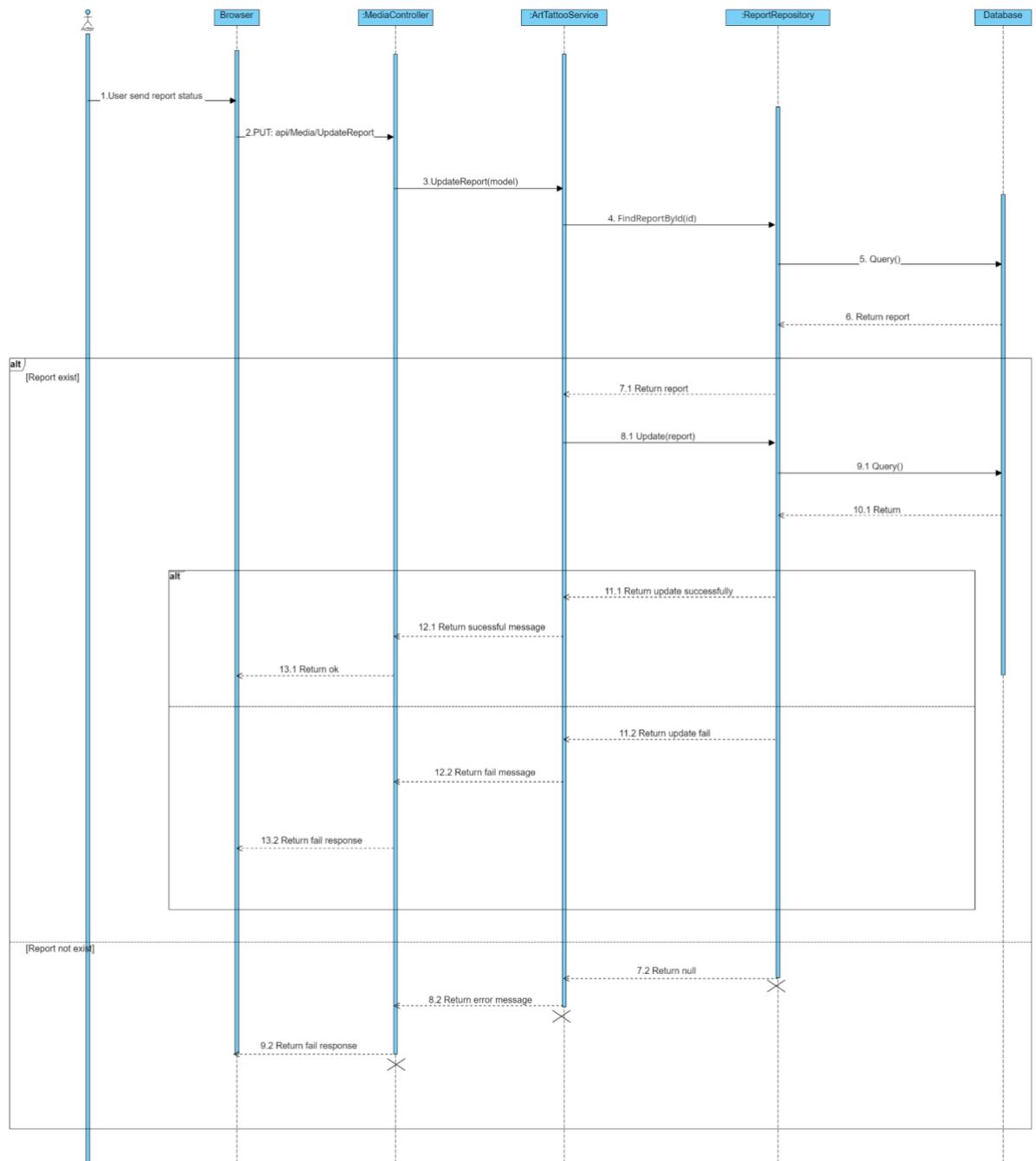


Figure 85: Report art tattoo class diagram



**Figure 86:** Report art tattoo sequence diagram

## 3.5 Package

### 3.5.1 Studio manager buys package

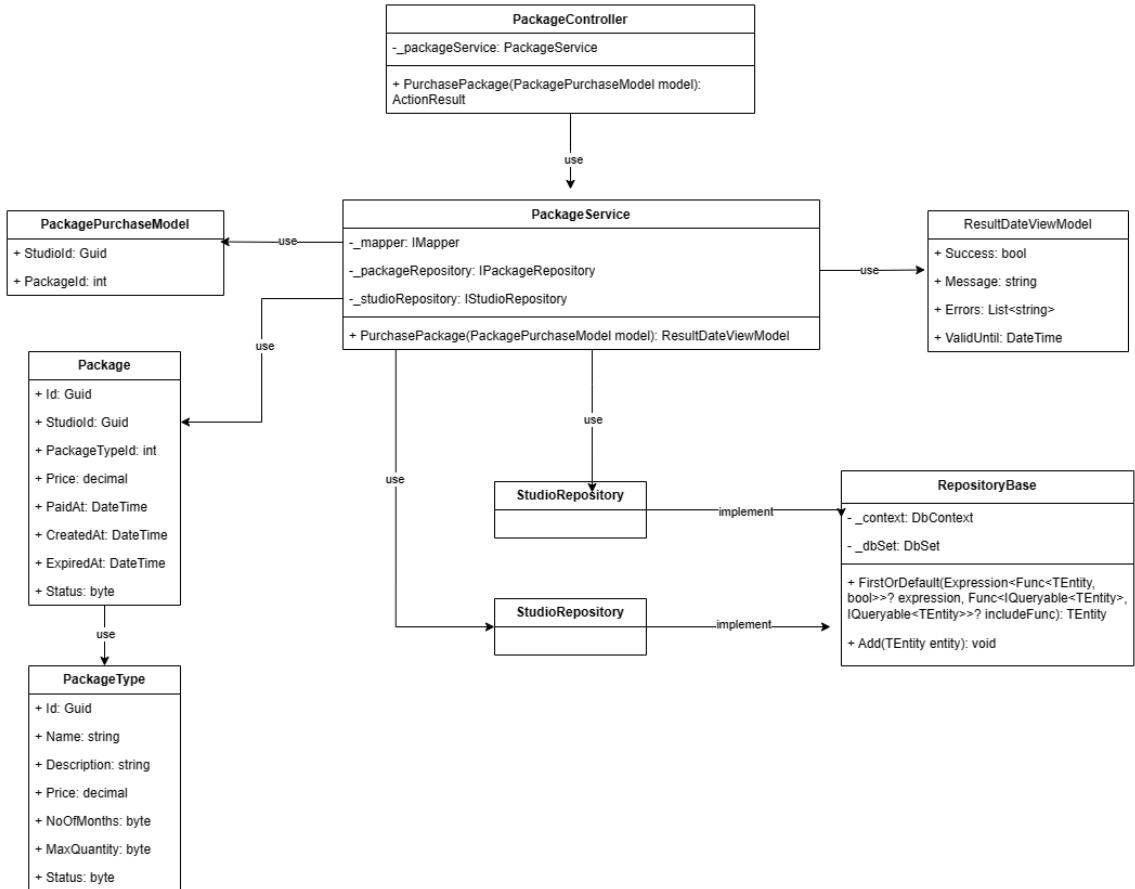


Figure 87: Studio manager buys package class diagram

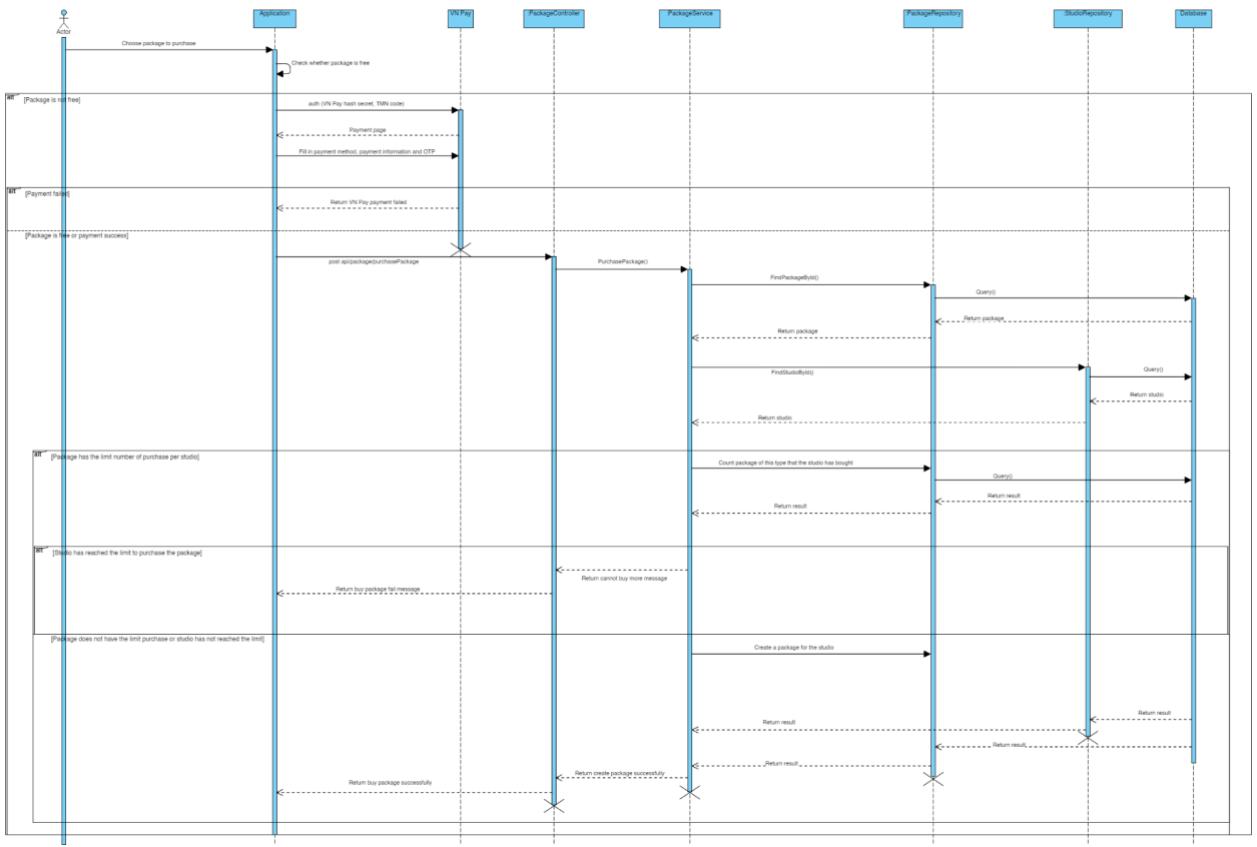


Figure 88: Studio manager buys package sequence diagram

## 3.6 Create booking

### 3.6.1 Studio create booking for customer

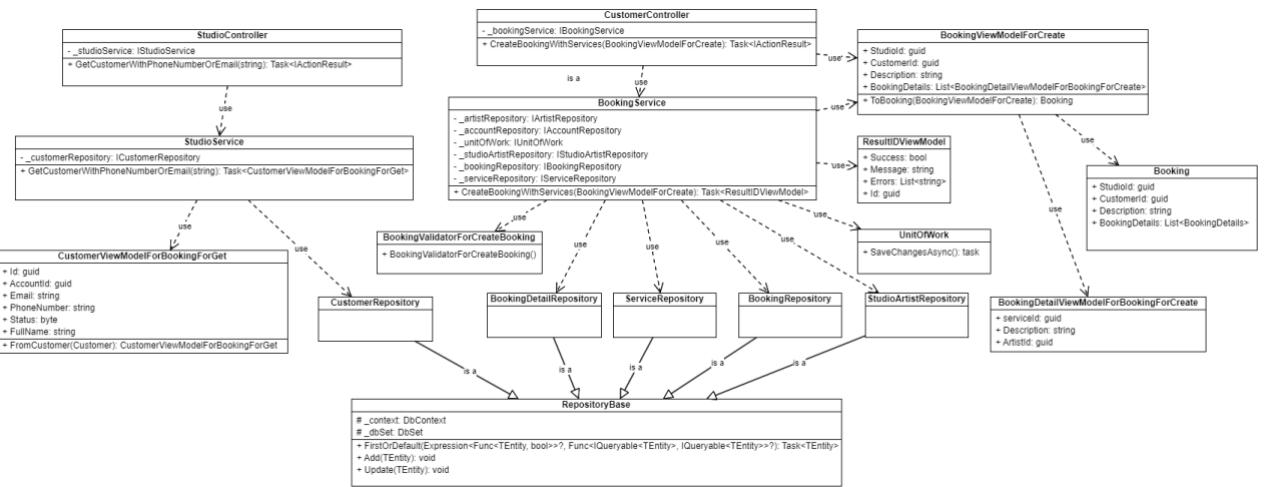


Figure 89: Studio create booking for customer class diagram

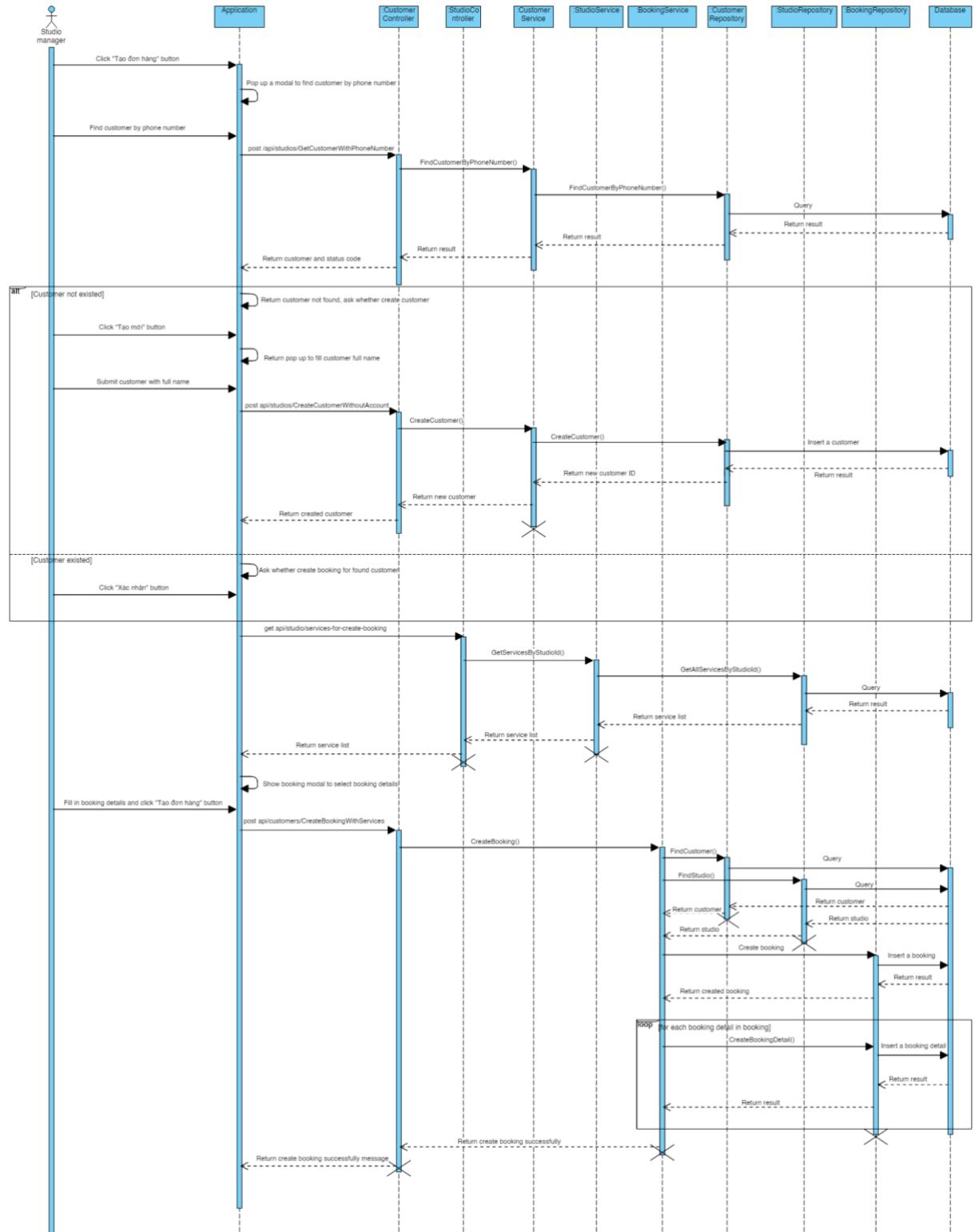


Figure 90: Studio create booking for customer sequence diagram

### 3.6.2 Customer create booking

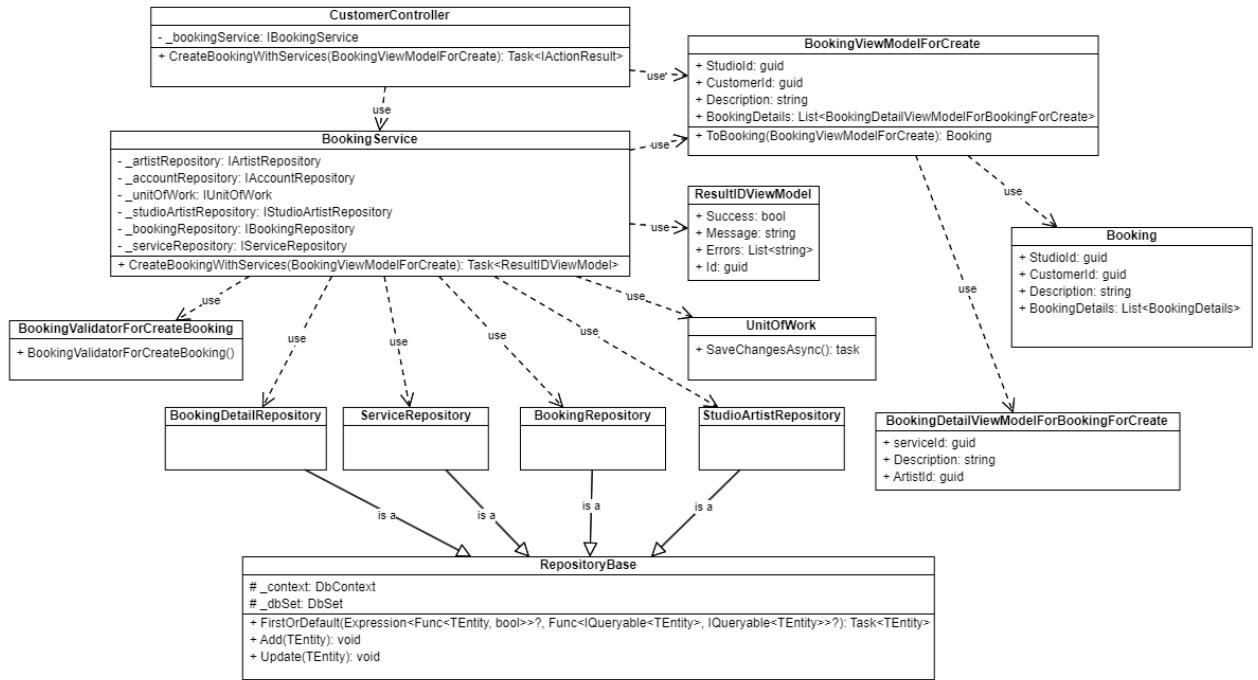


Figure 91: Customer create booking class diagram

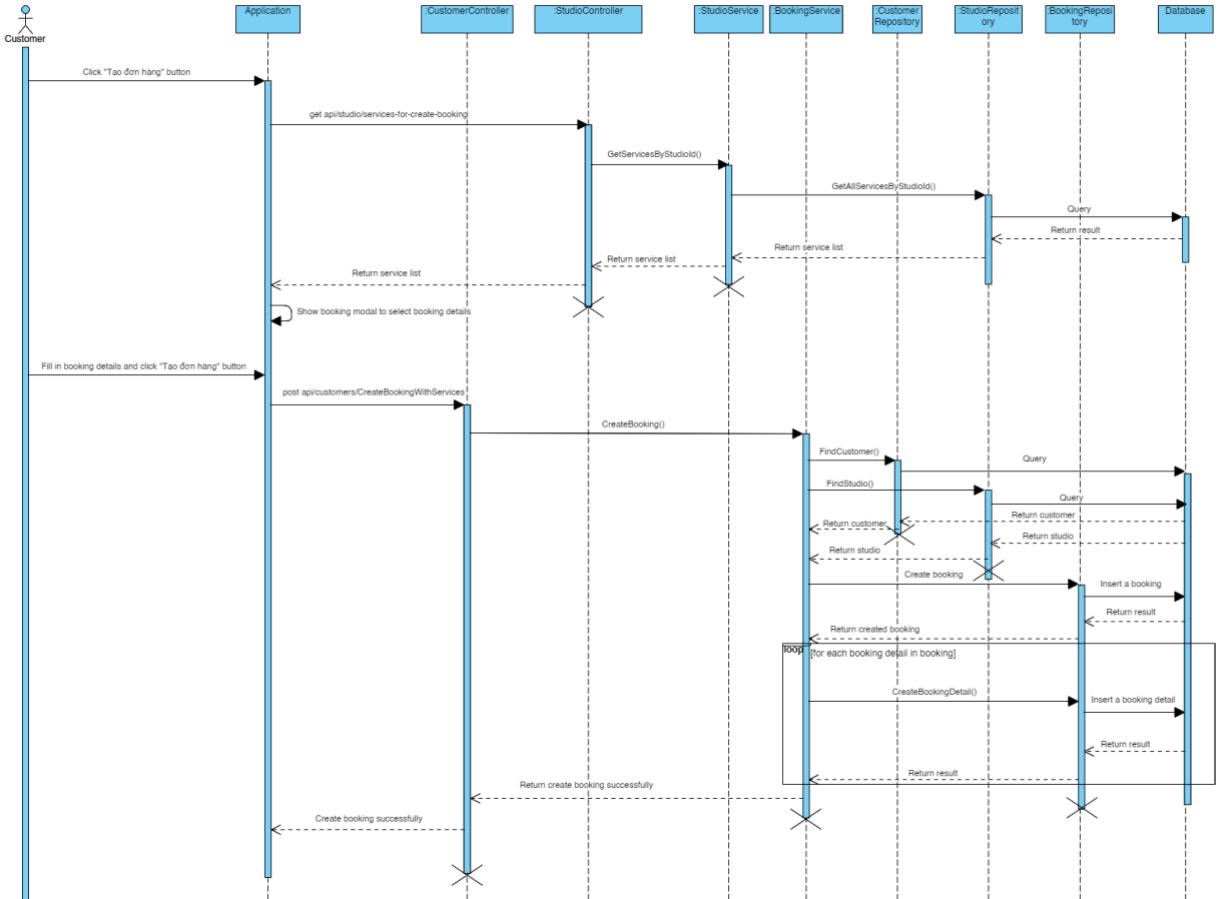
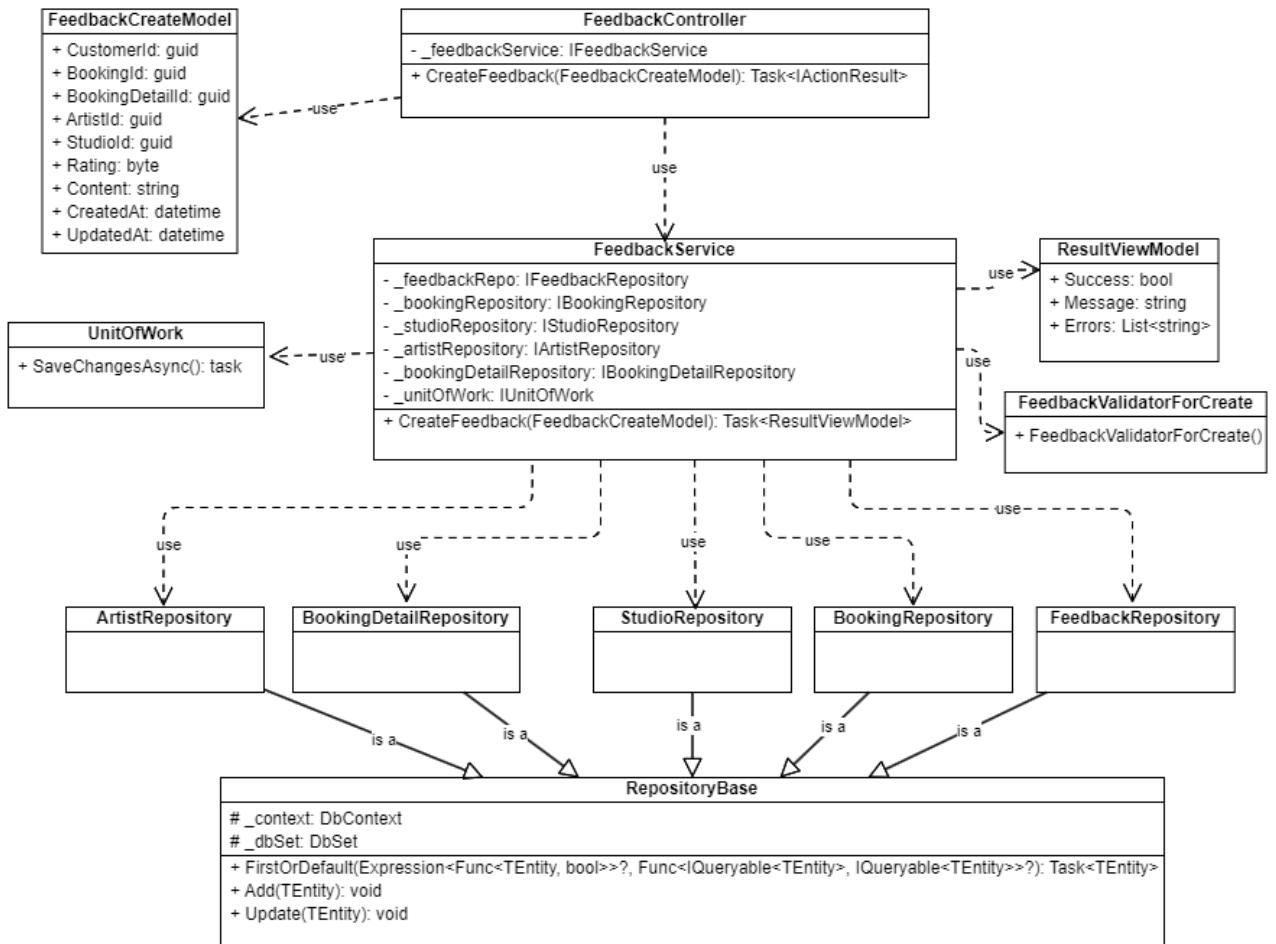


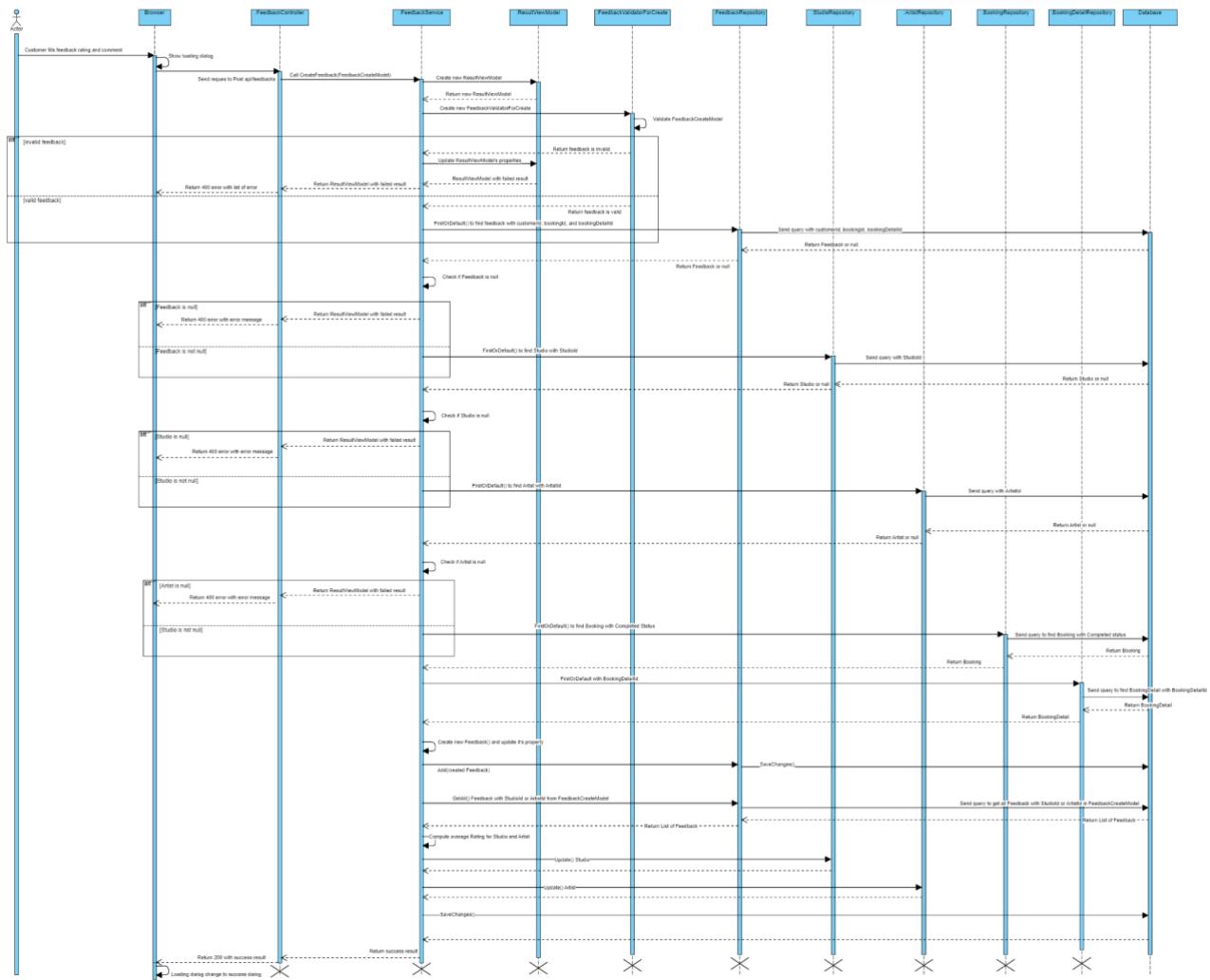
Figure 92: Customer create booking sequence diagram

## 3.7 Customer manage feedback

### 3.7.1 Customer create feedback



**Figure 93:** Customer create feedback sequence diagram



**Figure 94:** Customer create feedback sequence diagram

## V. Software Testing Documentation

### 1. Scope of Testing

TBD

### 2. Test Strategy

#### 2.1 Testing Types

Objective	Technique	Completion criteria
Testing the verification and validation of the units of code	Unit testing	Methods, class, etc.
Testing application environment in real situations	End-to-end testing	Database, third-party, payment, etc.
Testing the group of integration modules	Integration testing	Modules
Testing the communication between components or systems by data and control	Interface testing	Requests, responses, etc.

#### 2.2 Test Levels

Type of Tests	Test Level			
	Unit	Integration	System	Acceptance
Unit Testing	x			
Interface Testing	x	x		
Integration Testing		x		
End-to-end Testing				x

#### 2.3 Supporting Tools

Purpose	Tool	Vendor/In-house	Version
API testing	Postman/Swagger	Postman/Swagger	10.20

### 3. Test Plan

#### 3.1 Human Resources

Worker/Doer	Role	Specific Responsibilities/Comments

#### 3.2 Test Environment

Purpose	Tool	Provider	Version
Testing API tools	Window	Microsoft	10 and 11

### **3.3 Test Milestones**

Milestone Task	Start Date	End Date

### **4. Test Cases**

- *Unit Test Cases:*
- *Other Test Cases (IT, ST, AT):*

### **5. Test Reports**