



Faculty of Computer Science and Information Technology

CaptureEase – A Photography Services and Booking Mobile Application

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**CAPTUREEASE – A PHOTOGRAPHY SERVICES
AND BOOKING MOBILE APPLICATION**

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This project is submitted in partial fulfilment of
the requirements for the degree of Bachelor of Computer Science with
Honours (Software Engineering)

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SARAWAK
2025

**CAPTUREEASE – APLIKASI MUDAH ALIH
PERKHIDMATAN FOTOGRAFI DAN
TEMPAHAN**

PHUN JIA YI

Projek ini merupakan salah satu keperluan
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List of Abbreviations

Abbreviations	Definition
AI	Artificial Intelligence
API	Application Programming Interface
AWS	Amazon Web Services
HCI	Human-Computer Interaction
MySQL	Structured Query Language
OO	Object-Oriented
SDLC	Software Development Life Cycle
UAT	User Acceptance Testing

Abstract

CaptureEase aims to provide photography services that seamlessly integrate appointment booking, gallery management, and client interaction in one place. Targeted at photographers and clients in Sarawak, Malaysia, the platform uses cutting-edge technology, including AI-powered features to improve usability and efficiency. Currently, the process of booking photography sessions through social media is inefficient and prone to miscommunication, leading to scheduling conflicts, missed appointments, and disorganized photo galleries. CaptureEase addresses these issues by offering a centralized solution. The main functionalities are appointment scheduling and management, AI-powered gallery organization with auto-tagging photos, and tools for client communication and feedback collection. Software Development Life Cycle (SDLC) methodology is used to ensure a systematic and user-centric approach for design and development. The platform's features were tailored to cater the needs of photographers and clients through a survey. The resulting technology enhances the client experience while streamlining the operations for photographers. This innovative solution, which offers scalability and usefulness for the industry, has the potential to revolutionize photography service management.

Abstrak

CaptureEase bertujuan untuk menyediakan perkhidmatan fotografi yang mengintegrasikan penjadualan temujanji, pengurusan galeri, dan interaksi pelanggan dalam satu platform. Disasarkan kepada jurugambar dan pelanggan di Sarawak, Malaysia, platform ini menggunakan teknologi canggih termasuk ciri berkuasa AI untuk meningkatkan kemudahan penggunaan dan kecekapan. Pada masa ini, proses tempahan sesi fotografi melalui media sosial adalah tidak efisien dan mudah berlaku salah faham, yang boleh menyebabkan pertindihan jadual, janji temu terlepas, dan galeri foto yang tidak teratur. CaptureEase menangani isu-isu ini dengan menawarkan satu penyelesaian berpusat. Fungsi utamanya merangkumi penjadualan dan pengurusan temujanji, pengorganisasian galeri berkuasa AI dengan penandaan automatik foto, serta alat untuk komunikasi dan pengumpulan maklum balas pelanggan. Kaedah Kitar Hayat Pembangunan Perisian (SDLC) digunakan untuk memastikan pendekatan yang sistematik dan berpusatkan pengguna dalam reka bentuk dan pembangunan. Ciri-ciri platform ini disesuaikan berdasarkan keperluan jurugambar dan pelanggan melalui tinjauan. Teknologi yang dihasilkan meningkatkan pengalaman pelanggan sambil memudahkan operasi jurugambar. Penyelesaian inovatif ini, yang menawarkan skalabiliti dan manfaat kepada industri, berpotensi untuk merevolusikan pengurusan perkhidmatan fotografi.

Chapter 1: Introduction

1.1 Project Title

CaptureEase – A Photography Services and Booking Mobile Application

1.2 Introduction

CaptureEase is a mobile platform designed to connect photographers in Sarawak with potential clients by streamlining the appointment booking process and offering effective management tools. Currently, customers find it time-consuming to book a photo shoot with the photographer through social media. Therefore, this app addresses these issues by enabling customers to browse photographers' profiles, view available timeslots, and book appointments directly within the app. As for photographers, it provides a platform for them to showcase their photo gallery in a more organized way. Systematic booking management and advertisement posting enable them to attract more customers and expand their market reach.

Apart from these main functionalities, CaptureEase bridges the gap between photographers and customers by offering a centralized platform that facilitates seamless communication and improves accessibility to services. This application enables photographers to market their services professionally, providing easy-to-navigate tools that make their services more accessible. On the other hand, customers gain benefits from the convenience of having all the information they need in this application, reducing their time and energy with appointment booking through social media.

With the incorporation of AI-powered features, CaptureEase offers photo tagging function that groups photos into similar groups, facilitating easy organization and access. This not only enhances customer experience but also streamlines workflow for photographers, making CaptureEase a valuable tool for both parties. The inclusion of such cutting-edge technology highlights the app's commitment to innovation and its aim to provide a seamless experience for its users.

1.3 Problem Statement

Current method of booking a photo shooting session through social media is inefficient which may lead to confusion and miscommunication between photographers and customers. This process often causes schedule clash, missed appointments, and disorganized photo galleries. CaptureEase aims to solve these problems by developing a dedicated mobile application that streamlines the appointment booking process. This mobile app implements AI features for photo selection and management to improve the overall experience for photographers and customers. AI-driven image recognition feature is crucial and beneficial in photo applications as it helps the app to identify and detect photo patterns (Matuszewska & Miquido, 2024).

1.4 Objectives

This project aims to develop a user-friendly photography services and booking mobile application that enhances photographer-client interactions through an efficient booking system, improved photo gallery management, and AI-powered features for better photo selection and organization.

1. To design and develop Photography Services and Booking Mobile Application
2. To evaluate to usability of the mobile application's booking and photo gallery management for both photographers and customers
3. To assess the effectiveness of AI-powered features in improving photo selection and organization

1.5 Procedures / Methodologies

In order to develop a system that meets the requirements of photographers and customers who seek photography services in Kuching, Sarawak, this project adopts a System Development Life Cycle (SDLC) as its methodology. This approach facilitates a structured, step-by-step process to ensure a successful design and development of CaptureEase.

SDLC consists of seven crucial phases, which are Planning, Requirement Analysis, Design, Implementation, Testing, Deployment, and Maintenance (Team, 2024). The main reason that SDLC is chosen as the methodology is that it provides a clear and systematic approach to developing the application, minimizing the project risk and ensuring that the project will meet the objectives. It also improves project management by setting clear goals and providing a structured timeline. Additionally, the SDLC approach breaks down the software development processes into manageable steps, allowing tasks to be completed and evaluated more effectively.

The table below shows the important phases in SDLC and tasks to be done in each phase:

Phase	Description
Planning	In this first phase, the project objectives and scope are defined, together with the identification of the target audience and their needs. To reduce the project risk, the technical challenges will be evaluated, and the potential solutions will be explored early on. This phase also includes defining the project timeline, and resources, and determining the feasibility of the project. The project's goals and deliverables are outlined, allowing for the creation of a comprehensive project plan.
Requirement Analysis	The requirements of the stakeholders, which are photographers and customers, are analyzed. Interview and survey will be conducted to understand their expectations. The outcome is a clear requirements specification document, which is the foundation of design and implementation phase, ensuring alignment between stakeholders with the development, while addressing any technical constraints or limitations.
Design	Based on the gathered requirements, the design phase focuses on creating a detailed plan and framework for the system architecture and user interface. Figma will be used to design the interactive prototype for this mobile application. It can showcase the application's flow, layout, and functionalities such as appointment booking, photo gallery viewing, and AI-powered photo tagging. The user interface is designed to provide a seamless and intuitive experience for both photographers and customers.
Implementation	During the implementation phase, the actual development of the application begins. This phase includes coding the application, integrating all the important features which are appointment booking, AI-powered photo tagging, organized photo gallery, as well as implementing the backend infrastructure. The frontend will be using React Native to develop in order to support both iOS and Android devices, while the backend will be developed using Node.js to connect with the database.
Testing	To ensure the functionality and quality of the application, the

	testing phase is needed. Software testing will be done for checking purposes, ensuring there are no errors or issues overlooked during the coding stage. Potential improvement can be done before the application reaches to the end-users. The functions of the application, which are appointment booking and scheduling and photo gallery management are tested too. Various testing methods can be conducted such as unit testing, integration testing, system testing, and user acceptance testing (UAT).
Deployment	After a successful testing process, the application will be deployed to the end-users. In this phase, the application will be distributed through direct downloads or via a private distribution platform to the target audience. A live server will be set up for real-time data handling, ensuring the application can be operated and accessed well by the users.
Maintenance	The maintenance phase involves consistent improvement and updating of the application. Bugs and errors will be fixed as well if discover any of them. It will ensure the system remains compatible with any changes and it will continue to perform optimally. Besides, the latest feedback from users is important to help in updating and making changes the application so that it will fulfil their needs and expectations.

Table 1.1: Procedures and Methodologies of CaptureEase Project

1.6 Scope

Scope	Description
Platform and Technology	The CaptureEase application is developed using React Native to support both iOS and Android devices.
Target Audience	This application is designed especially for photographers in Kuching, Sarawak to promote their photography services and customers who seek a streamlined and systematic appointment booking platform.
Problem Focus	The application solves the problem of inefficient appointment scheduling and photo organization on social media.
Feature Boundaries	The main features of this application are limited to appointment scheduling, AI-driven photo tagging for gallery organization, and in-app advertising for photographers.

Table 1.2: Scope of CaptureEase Project

In conclusion, CaptureEase is a mobile application built with React Native, tailored for photographers and people seeking efficient photography services in Kuching, Sarawak. The application resolves the challenges in appointment scheduling and photo organization, providing a streamlined booking and advertising system with the support of AI-driven features.

1.7 Significant of the Project

This project contributes to the field of software engineering by advancing the application of AI into mobile technology, particularly within a multimedia organization and user-oriented appointment system. Through CaptureEase, the function of AI-powered photo selection and tagging indicates a practical use of machine learning for enhanced image organization, offering a relevant case study in mobile applications for creative industries. Apart from that, the booking system demonstrates scheduling algorithms that optimize real-time notifications and appointment management, potentially advancing time management solutions in software engineering.

In the research domain, CaptureEase bridges artificial intelligence with user experience, demonstrating how AI-driven features can improve usability in service-oriented applications. The findings can provide insights for research on human-computer interaction (HCI) and usability in AI-integrated systems. Furthermore, by developing a dedicated platform for photographers, the project serves as a model for service-based digital platforms, contributing to studies on user-centered platform design, digital marketplaces, and automated scheduling solutions, particularly relevant for service providers in creative industries.

1.8 Project Schedule

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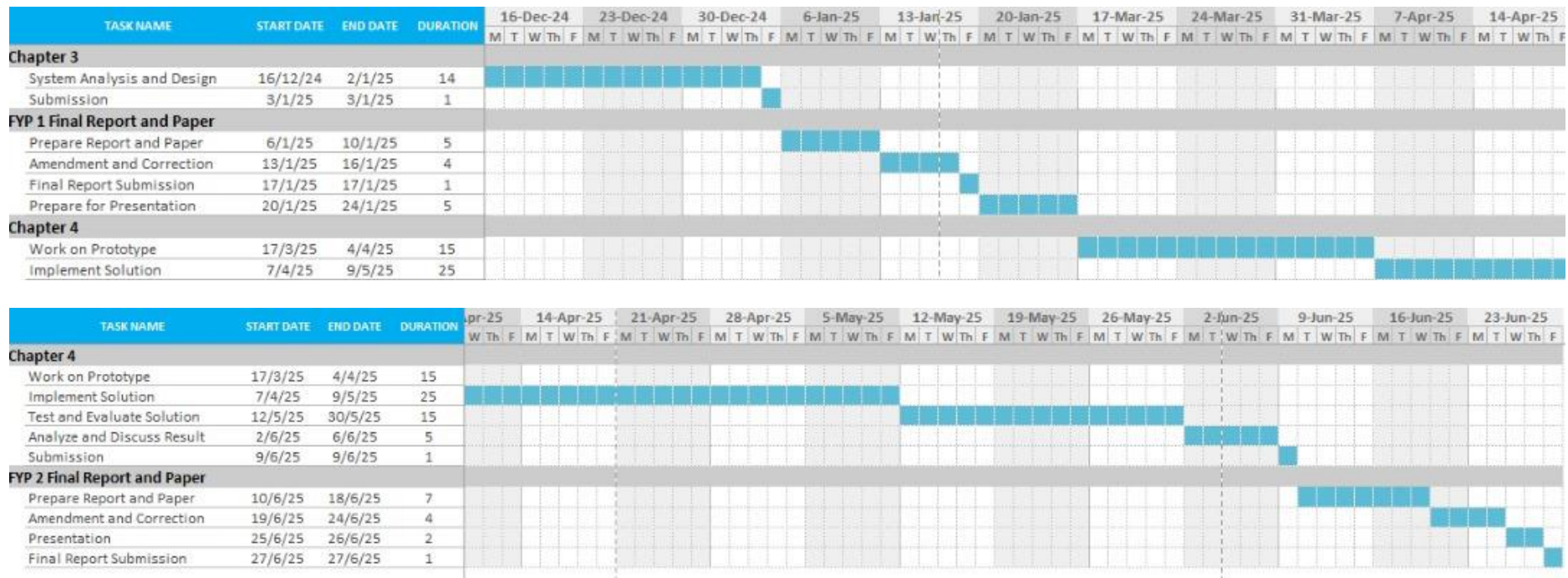


Figure 1.1: Project Schedule in Gantt Chart

1.9 Expected Outcome

CaptureEase is an appointment booking mobile application designed to streamline photo shooting scheduling, enabling quick bookings, and effective management for photographers. It also includes AI-driven tools for improved photo organization and supports users in honing their app development and design skills.

1.10 Project Outline

The project is outlined into 5 significant chapters as below:

- Chapter 1 Introduction - This chapter provides an overview of the project. It includes the introduction, problem statement, objectives, methodologies, scope, significance, project schedule, expected outcome, and project outline.
- Chapter 2 Literature Review – This chapter explores the foundational research and background information relevant to the project. It includes an existing system with similar features to CaptureEase and makes comparison by analyzing the functionalities of both systems to understand their strengths and limitations.
- Chapter 3 Methodology – This chapter explains more detailed on the methodology used to develop CaptureEase. Methodology includes the phases of planning, requirement analysis, design, implementation, testing, deployment, and maintenance.
- Chapter 4 Implementation and Testing – This chapter outlines the implementation stage of the project. It explains how the main features of CaptureEase will be developed such as appointment booking, photo tagging, and advertisement management. Testing will be done and the results are to record and be documented to evaluate the system's performance and usability.
- Chapter 5 Conclusion – The last chapter summarizes the project, emphasizing its contribution and how it solves the addressed problems. It examines the shortcomings of existing systems and proposes potential avenues for future improvements.

Chapter 2: Literature Review

2.1 Introduction

The literature review will provide a comprehensive examination and comparison of several existing systems similar to CaptureEase, a photography services platform tailored for photographers and customers in Kuching, Sarawak. This chapter explores the background and current advancements in appointment booking systems, photo gallery organization, and AI-powered features, establishing a foundation for the proposed system. The objective of this review is to analyze the features and functionalities of similar systems to gain a better insight into their strengths and weaknesses. This analysis will help to make improvement and innovation for CaptureEase, ensuring it offers an effective solution that meets the needs of the users. By studying and comparing the existing systems, the development of the proposed system can be streamlined and executed with greater efficiency.

2.2 Review on Similar Existing Systems

This section will review and evaluate the main criteria and features of each existing system. These systems chosen are Fiverr, Canva, and ShootProof. These systems were chosen for their significance in photography, creative services, and appointment booking features, making them highly relevant for comparison with the proposed system.

2.2.1 Fiverr

Fiverr is an online platform that connects freelancers with customers seeking digital services such as photography, graphic design, and creative content creation. The main feature of Fiverr is the freelance service marketplace, where freelancers can showcase their professions and skills. In another way, customers can search for their desired services and communicate with the service providers.

Customers can effortlessly search and browse for various types of services by using relevant keywords or by categories. It also provides advanced filtering options, such as seller details, budget, and delivery time, which allows customers to refine their search results. Furthermore, popular services are highlighted, giving customers a better idea of trending offers and helping them to make decisions based on what others prefer and choose frequently. The well-organized categories enhance usability, allowing customers to discover services that may not have been their initial search but relevant and helpful for their requirements.

In the homepage, Fiverr displays a collection of completed work posted by freelancers. When navigating to a particular work, it will show the category the work belongs to and the author's name. This feature helps customers by providing inspiration and a visual representation of the quality and style of work they can expect from each of the service providers. Besides, showcasing the work gallery can build trust between the platform and the customers, giving them confidence to continue using the platform.

As for freelancers, Fiverr offers a place for them to showcase their services, skills, and professions to a wide range of audiences. By posting their work, they can attract potential customers and connect to them directly, receive feedback, and build a reputation within their niche. This exposure helps them to grow their client base and expand their market reach.

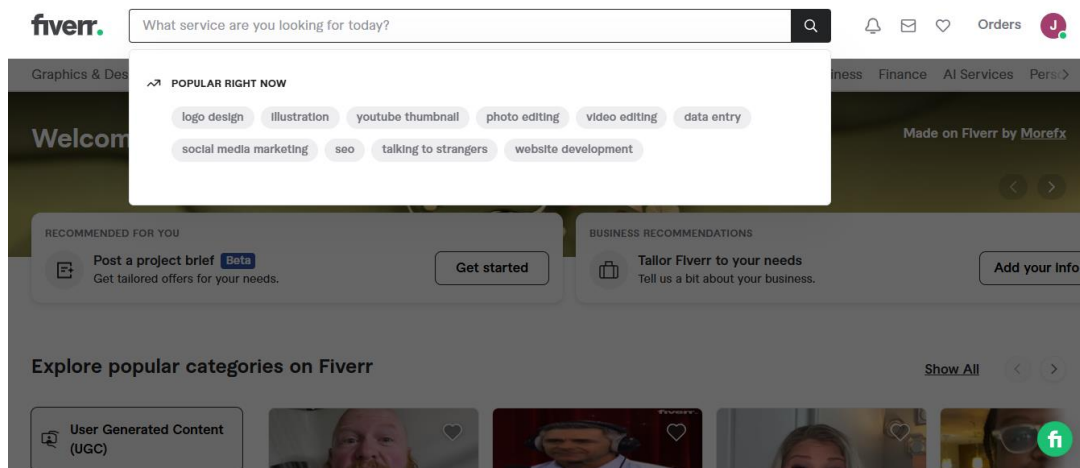


Figure 2.1: Search function by using relevant keywords

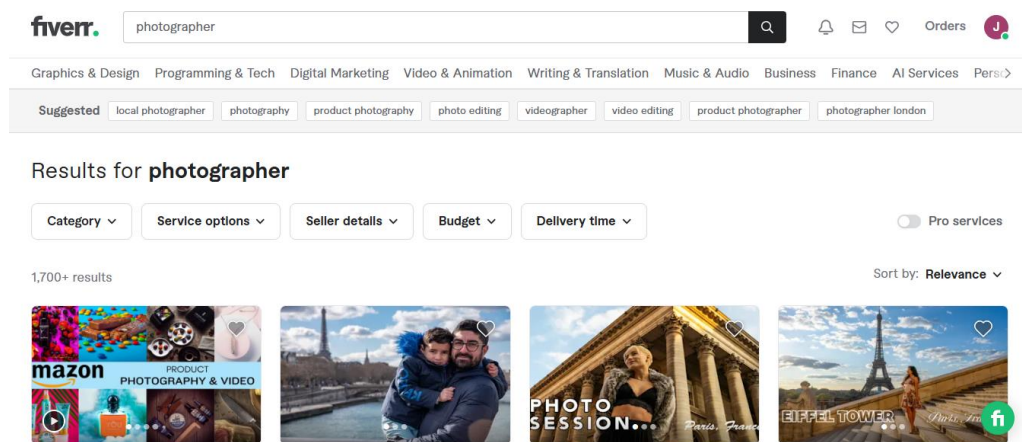


Figure 2.2: Advanced filtering options after searching for a category

Get inspired by work done in the Logo Design category

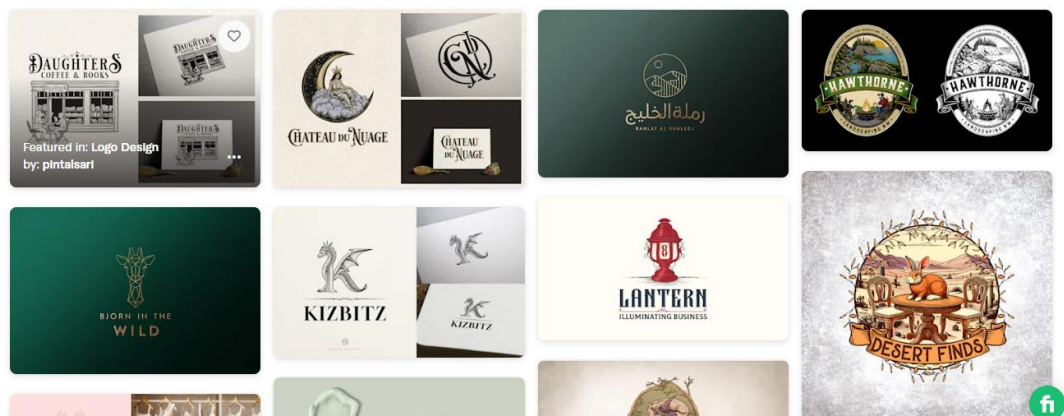


Figure 2.3: Completed work posted by freelancers

2.2.2 Canva

Canva is an online design platform that enables users to create visual content, such as posters, presentation slides, logo, and social media posts. It offers a wide range of templates, tools, and design elements, enabling users, even those without design skills, to create professional-looking graphics that are optimized for all types of devices (EmpowermentQuest[LadyL], 2023).

Users can personalize their designs according to their specific needs. They can adjust the colour, fonts, and layouts to create unique content. Uploading images or logo from own device are also allowed which helps users to maintain consistency across their designs. This level of customization ensures that each design reflects the user's personal style or brand identity, making it tailored to their objectives.

In Canva, the gallery organization plays a significant role in assisting users to manage their projects and designs. Users can view their completed work using filters based on the type of design. They can also create folders to categorize their designs and keep everything well-organized. The gallery also displays the thumbnail and preview of the designs so that users can view the content of each design without clicking into it. This organization helps to streamline the design workflow, making it easier and more convenient for users to access each design.

Apart from that, Canva supports collaboration with teams or clients by allowing users to share their folders and designs with collaborators. Each team member can access only the designated designs, ensuring that only relevant content is shared. This access control helps to maintain the confidentiality and security of the designs, protecting them from being accessed by an unauthorized person.

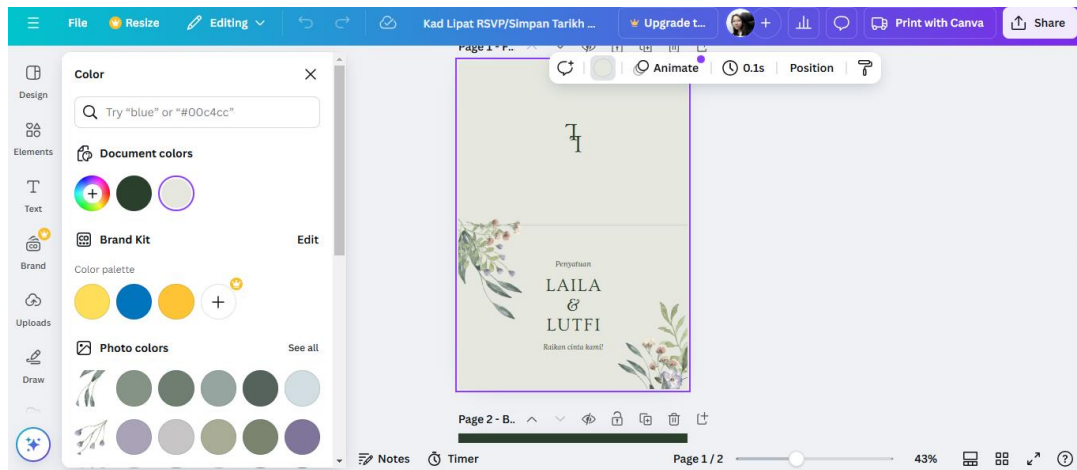


Figure 2.4: Adjustment and customization for each design

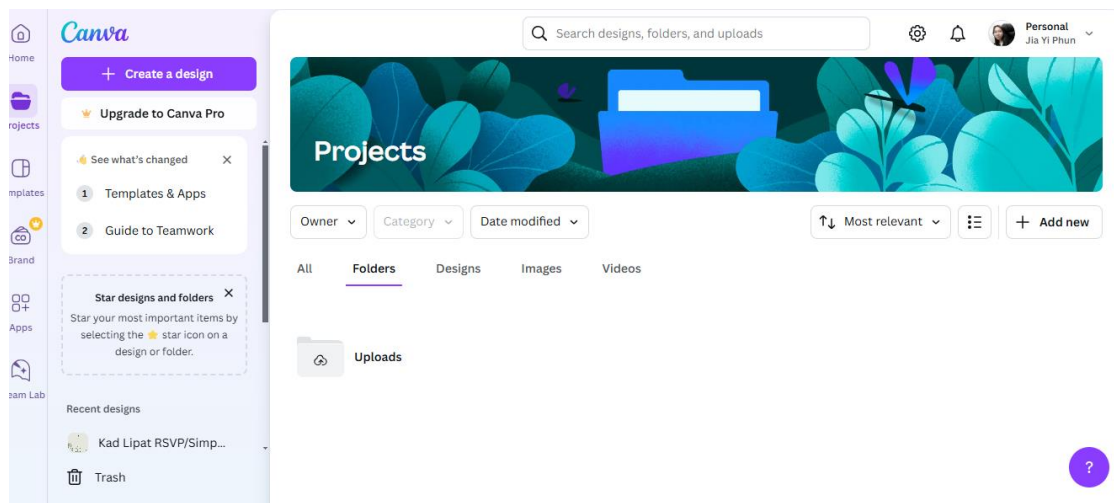


Figure 2.5: Personal gallery organization

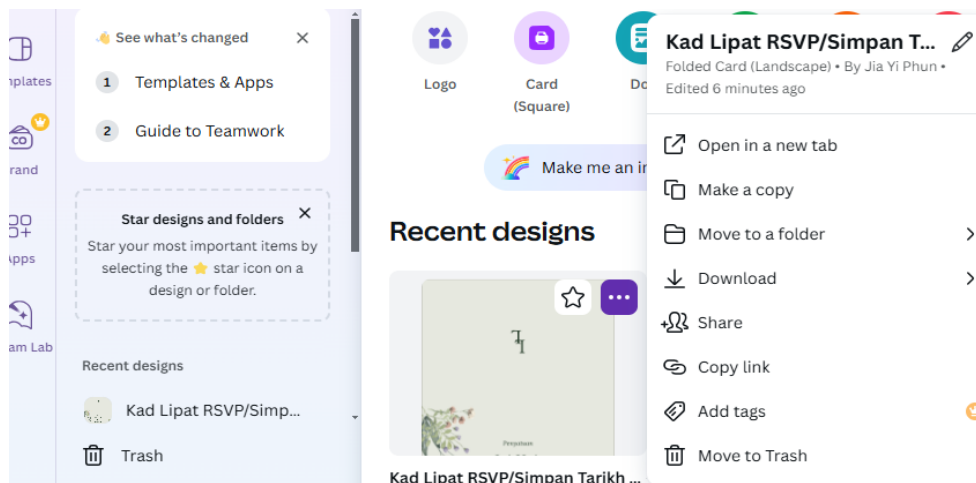


Figure 2.6: Allow sharing of design with collaborators

2.2.3 ShootProof

ShootProof is an online photography platform to support photographers in maintaining their business and client interactions. It provides a photography store to sell photo and gallery of the photographers, allowing them to showcase their work professionally. It also offers the customers with digital download and printing services.

One of the crucial features of ShootProof is customizable client galleries, enabling photographers to organize and display their photos in a professional and personalized manner. Customers can view, proof, and select the photo they want from the galleries. The organized photo collection feature enhances the user experience by providing a seamless and intuitive interface for customers to interact with the photographers.

Besides, ShootProof supports business management through tools such as contract management, invoicing, and payment processing. These features help the photographers to handle administrative tasks effectively. They can focus more on creating their work while smooth client interaction can be maintained. These tools help photographers to manage bookings and track payments in one platform, enabling them to deliver a more efficient service to their customers.

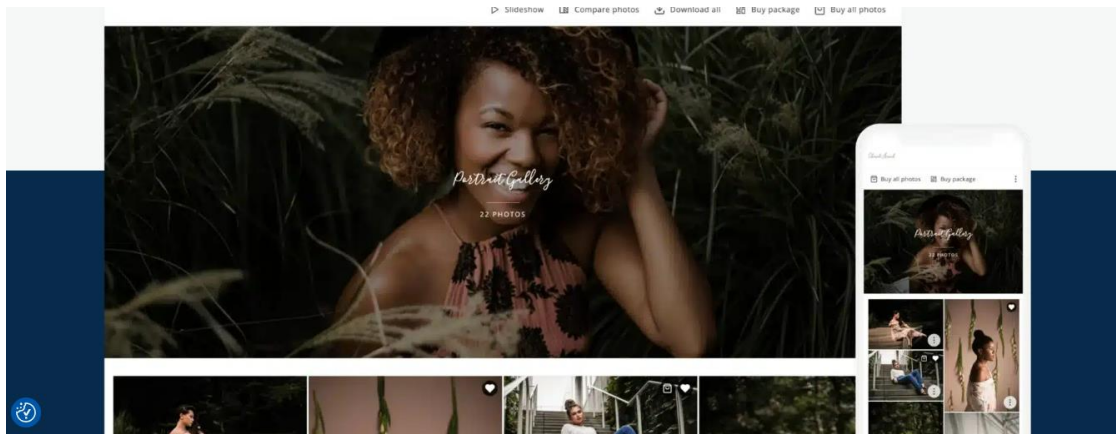


Figure 2.7: Example of client gallery

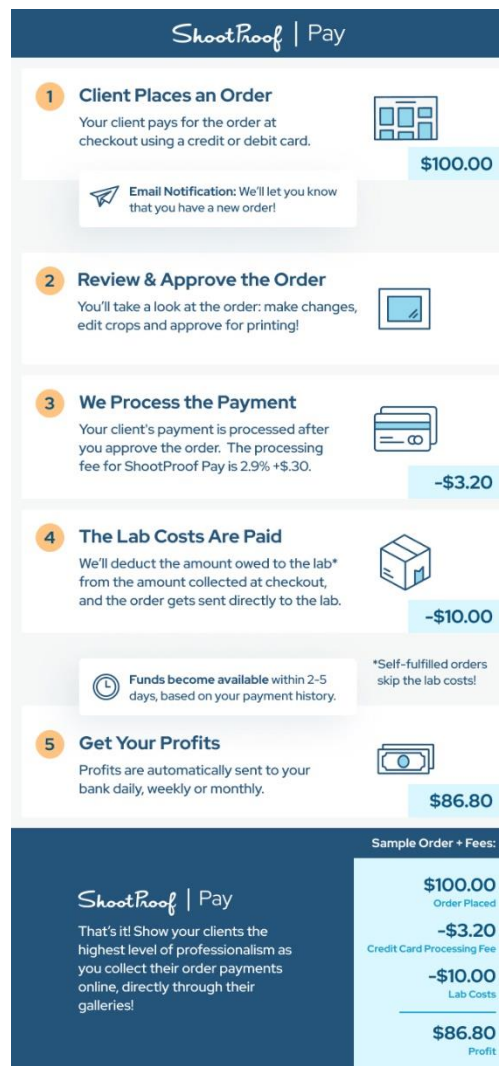


Figure 2.8: Payment processing

2.3 Results

In this section, the features of these 3 existing systems which are Fiverr, Canva, and ShootProof will be further analyzed and compared with proposed system. A comparison table that highlights the features and functionalities of each platform will be done to provide a clear understanding of their strengths and weaknesses. Below shows the comparison table:

Features and Functionalities	Fiverr	Canva	ShootProof	Proposed System
Real-time web or app platform	√	√	√	√
Appointment booking	X	X	X	√
Photo gallery organization	√	√	√	√
AI-Driven features	√	√	X	√
User registration/login	√	√	√	√
Product/service description	√	√	√	√
Customization for users	X	√	√	√
In-app advertising	√	X	X	√
Payment processing	√	X	√	√
Search functionality	√	√	X	√
Category filtering	√	√	X	√
Post for services/jobs	√	X	X	√
Contact with seller	√	X	X	√

Table 2.1: Comparison of Features and Functionalities Between Existing Systems with Proposed System

The table above shows the comparison of features and functionalities between 3 existing systems with the proposed system. Each of the existing systems has its strengths and weaknesses. The proposed system named CaptureEase, is a photography services and appointment booking mobile application. The table also highlights the similarities and differences between Fiverr, Canva, ShootProof, and CaptureEase.

From the results displayed, there are pros and cons for each existing system. While all systems contain the functions of real-time platform access, photo gallery organization, user registration, and service description, CaptureEase provides unique features such as appointment booking, AI-driven features, and advanced customization. It integrates the strengths of existing systems while addressing their weaknesses.

The comparison provides key insights that CaptureEase can utilize and enhance its functionalities. For example, Canva consists of customization options that demonstrate the importance of flexibility and creativity. ShootProof which also has this feature emphasizes the need for photographers to allocate their work in a well-organized way. This can inspire CaptureEase to include customized features in photo gallery, allowing customers to view the gallery based on their specific needs. Furthermore, Fiverr's comprehensive marketplace approach showcases the importance of connecting customers with the services, a concept that CaptureEase can adopt to improve its appointment booking and service discovery capabilities.

CaptureEase combines the strengths while overcoming the gaps and weaknesses of these three systems. By integrating the best features from Fiverr, Canva, and ShootProof, CaptureEase offers a well-rounded solution specialized for the photography service market. It provides a user-friendly interface for photo gallery organization, bringing convenience to photographers for them to allocate and distribute their photos in an organized way. CaptureEase also includes an appointment booking feature that allows customers to contact directly with the photographers. Moreover, it uses AI-driven features such as photo tagging which not only meets but exceeds user expectations.

The findings from the comparison can directly influence the design and development of CaptureEase. Combining all the useful features from the three existing systems makes CaptureEase a distinctive and all-encompassing platform for photographers. It also sets itself apart and different from its competitors. This analysis prioritizes a user-centric design and functionality, providing a unique and comprehensive experience to the users.

2.4 Review of Tools and Technologies

This section will discuss and analyze the tools and technologies utilized to design and develop CaptureEase. Selection of appropriate tools is important to ensure the application meets the objectives and requirements. The review includes frontend and backend framework, cloud services for hosting, database management, and AI tools.

2.4.1 Frontend Framework

To develop CaptureEase, React Native will be chosen as the primary framework. It enables the creation of high-performance mobile applications by using a single codebase to support both iOS and Android devices, which is cost-effective and time-saving for app development (Roller, 2023).

2.4.2 Backend Framework

The backend will be developed using Firebase to connect with the database. It can handle multiple concurrent requests such as user authentication, managing appointments, fetching user data, and real-time updates using Cloud functions and Firestore.

2.4.3 Cloud Services for Hosting

To store and deliver media files such as profile pictures and photo gallery images, CaptureEase will use Cloudinary. This platform provides a secure, optimized, and scalable data storage to manage a large amounts of media files in a more secure and efficient way.

2.4.4 Database Management

As for the database, Firebase Firestore will be considered to store the user data, appointment details, and photo gallery metadata.

2.4.5 AI Tools

Besides, CaptureEase also incorporates AI tools such as TensorFlow.js or Open AI APIs to include AI-driven features such as photo gallery organization and photo tagging.

These functionalities improve user experience, making CaptureEase a more advanced and intelligent platform. In conclusion, the selected tools and technologies help to build a solid foundation for CaptureEase, and serve as a reliable, scalable, and innovative platform for photographers and customers.

2.5 Summary

To summarize this literature review, provides an overview of the features and functionalities of the existing systems that have similarities with the proposed system. After a series of reviews, analyses, and comparisons among these systems, valuable insights were gained to design and develop the proposed system better. The strengths and weaknesses of each system were carefully evaluated to identify features that align with the objectives stated in Chapter 1. Therefore, the proposed system CaptureEase, will incorporate the key functionalities of those existing systems and overcome their limitations to serve the photography industry effectively. This platform assists photographers in managing appointment booking and client interactions. On the other hand, it helps customers who seek photography services by providing a convenient way to browse, compare, and book appointments with the photographers.

CaptureEase will be developed using React Native, ensuring cross-platform compatibility and intuitive user experience. By integrating these technologies, it is designed to fulfil the diverse needs of photographers and customers, achieve the objectives, and serve as an innovative solution in the photography marketplace.

Chapter 3: Research Methodology

3.1 Introduction

This chapter outlines the research methodology adopted for the design and development of CaptureEase, a photography services platform tailored for photographers and customers in Kuching, Sarawak. The methodology establishes a systematic framework for gathering and analysing data, ensuring the system will be developed based on the requirements of the users effectively. The research methodology encompasses a combination of qualitative and quantitative approaches, including user surveys, system analysis, and visual representations of the system. Based on the survey conducted to collect the requirements and specifications from the users, the responses will be analysed to identify the key features and functionalities that align with users' needs and expectations. In addition, the visual representations such as diagrams and user interface mockups to illustrate the design and workflow of the system. These visuals will complement the survey findings, providing a clear understanding on how the application aims to address the identified requirements. By incorporating user feedback and proposed designs, the methodology ensures a systematic approach to achieving the project's objectives while aligning with industry best practices.

3.2 Requirement Analysis

This section will discuss the requirement analysis phase of this project. It focuses on identifying and analyzing the necessary specifications for the CaptureEase application, evaluating the challenges faced by photographers and clients in managing photography services, and researching how the proposed system can address these issues. Surveys were conducted to gather valuable insights and data to define the system's requirements and ensure its alignment with user needs.

3.2.1 Analysis of Current Photography Service Challenges

The current method of booking a photography session through social media is inefficient and always leads to confusion and miscommunication between photographers and clients. Problems that may arise through this method are scheduling conflicts, missed appointments, and disorganized photo galleries. As for photographers, they often struggle with managing their appointments and administrative tasks. Existing systems may lack features that address these needs comprehensively. On the client side, it is time-consuming for them to book a photo session with photographers through social media. The challenges also include difficulty in discovering reliable photographers and find services that cater their specific needs. Many clients prefer a user-friendly interface that simplifies the booking process and provides a channel for them to communicate directly with the photographers.

3.2.2 Requirement Elicitation

In this project, questionnaires are used to collect system requirements and analyzes user needs. Utilizing questionnaires for this purpose provides an efficient and effective method for gathering critical information and conducting data analysis. The targeted respondents include photographers and clients interested in photography services. There were around 40 participants selected to respond to the survey. The questionnaire was carefully designed to ensure it effectively collects the necessary data. It included questions about the respondents' current experiences with booking photography services, the challenges they face, and their preferences for features and functionality in the proposed mobile application.

What challenges do you face in managing appointments and client interactions?

(14 条回复)

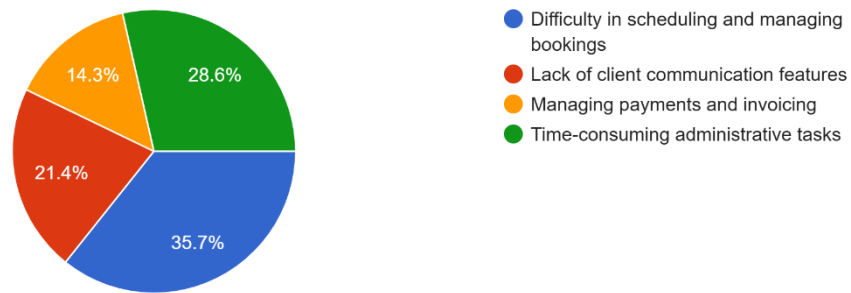


Figure 3.1: The Questionnaires - What challenges do you face in managing appointments and client interactions? (Photographers)

The figure shows a pie chart illustrating the challenges faced by photographers in managing appointments and client interactions. According to the data, the most significant challenge is difficulty in scheduling and managing bookings, which account for almost 40% of the responses. Time-consuming administrative tasks, lack of client communication features, and managing payments and invoicing each represent 28.6%, 21.4%, and 14.3% of the challenges. This highlights the need for a solution that addresses administrative inefficiencies and enhances communication and payment processes for better client interaction management.

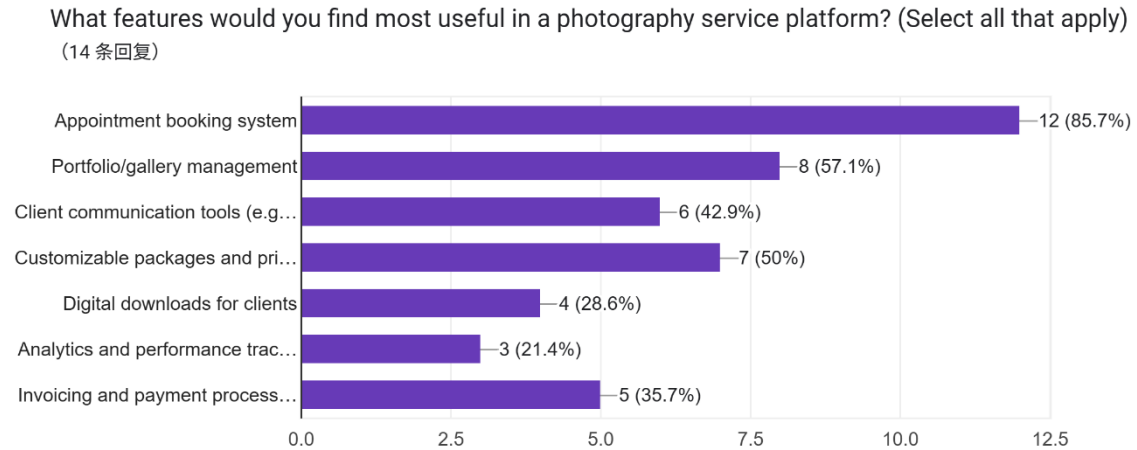


Figure 3.2: The Questionnaires - What features would you find most useful in a photography service platform? (Photographers)

This figure shows features that photographers find most useful in a photography service platform. Appointment booking system stand out as the most desired feature, with 85.7% of respondents selecting it. This is followed by portfolio/gallery management, customizable packages and pricing, client communication tools, and invoicing and payment processing. Digital downloads for clients, along with analytics and performance tracking, were less selected by the respondents. These insights emphasize the importance of seamless communication and efficient booking and management tools in enhancing the user experience.

What would make your photography business more efficient and profitable?
(14 条回复)

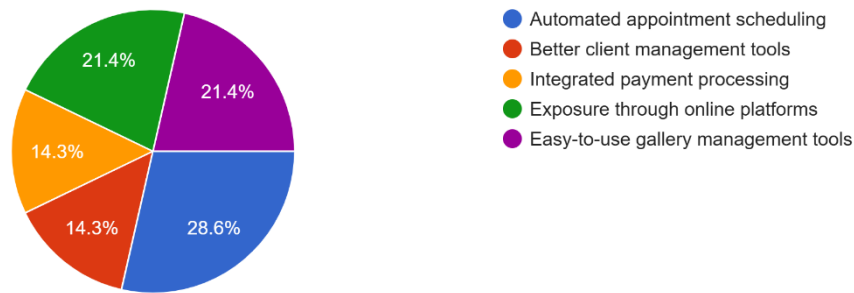


Figure 3.3: The Questionnaires – What would make your photography business more efficient and profitable? (Photographers)

The pie chart above illustrates factors that photographers think can make their photography business more efficient and profitable. The majority (28.6%) prioritize automated appointment scheduling as the most impactful factor. Meanwhile, easy-to-use gallery management tools and exposure through online platforms each account for 21.4% of the responses. This indicates a strong emphasis on online visibility, alongside the need for streamlined operational tools to support business growth.

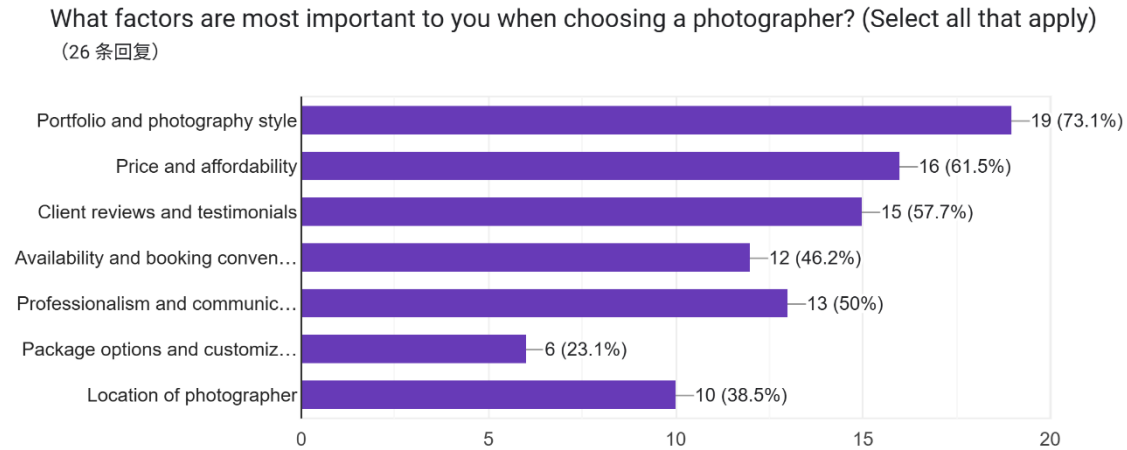


Figure 3.4: The Questionnaires - What factors are most important to you when choosing a photographer? (Clients)

The figure above shows the important factors for clients when choosing a photographer. The top factor is portfolio and photography style, selected by 73.1% of respondents. This is followed by prices and affordability at 61.5%, and client reviews and testimonials at 57.7%. Professionalism and communication, availability and booking convenience, and the location of the photographer were chosen by 50%, 46.2%, and 38.5% of respondents, respectively. Package options and customization were the least prioritized, with 23.1% of respondents selecting this factor. These results underscore the significance of cost-effectiveness, reputation, and quality in influencing client decisions.

What devices do you use for your photography business management?

(14 条回复)

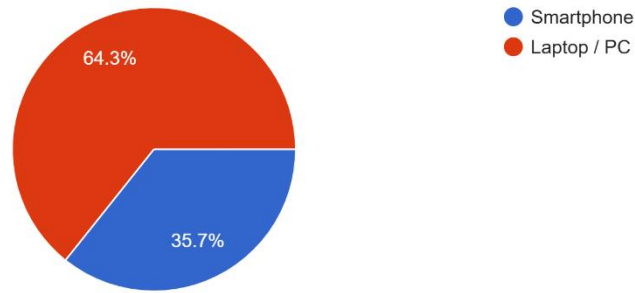


Figure 3.5: The Questionnaires – What devices do you use for your photography business management? (Photographers)

What device do you use for searching photography services?

(26 条回复)

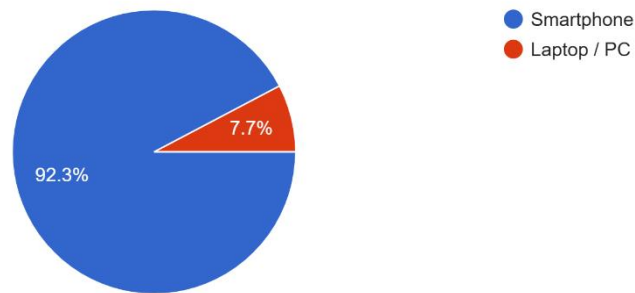


Figure 3.6: The Questionnaires - What devices do you use for searching photography services? (Clients)

The figures above compare the devices used by photographers for business management and clients for searching for photography services. Among photographers, 64.3% rely on laptops or PCs for managing their business, while only 35.7% use smartphones. In contrast, clients overwhelmingly prefer smartphones for searching photography services, with 92.3% selecting this option, and only 7.7% using laptops or PCs. This highlights a distinct difference in device preferences between photographers and clients, emphasizing the need for a platform that is optimized for both desktop and mobile devices to cater to these varying user behaviors.

How useful do you find the idea of an integrated appointment booking system for photography services?
(40 条回复)

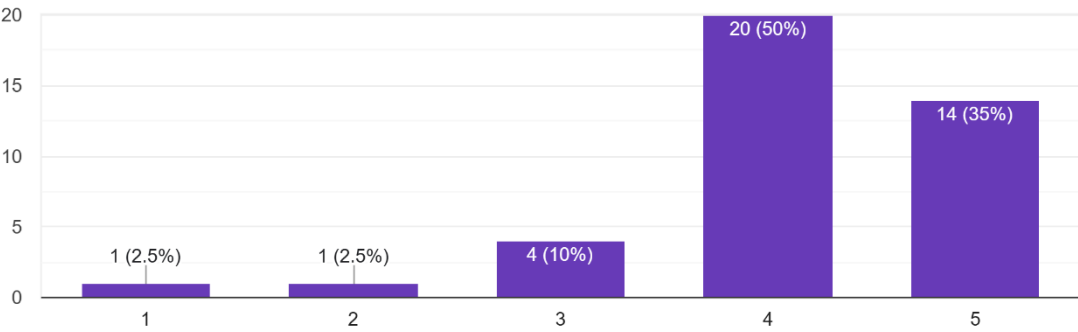


Figure 3.7: The Questionnaires - How useful do you find the idea of an integrated appointment booking system for photography services?

The figure above depicts the usefulness of an integrated appointment booking system for photography services to the respondents. The majority of respondents rated its usefulness highly, with 20 individuals giving a score of 4, indicating strong support for the idea. This is followed by 14 individuals rating it a 5, and 4 individuals giving it a 3. A smaller number of respondents rated it lower, with 1 person each assigning a score of 2 and 1. Overall, the data suggests that most participants recognize the value of such a system for enhancing photography services.

How likely are you to use a platform that combines portfolio viewing, booking, and payment in one place?

(40 条回复)

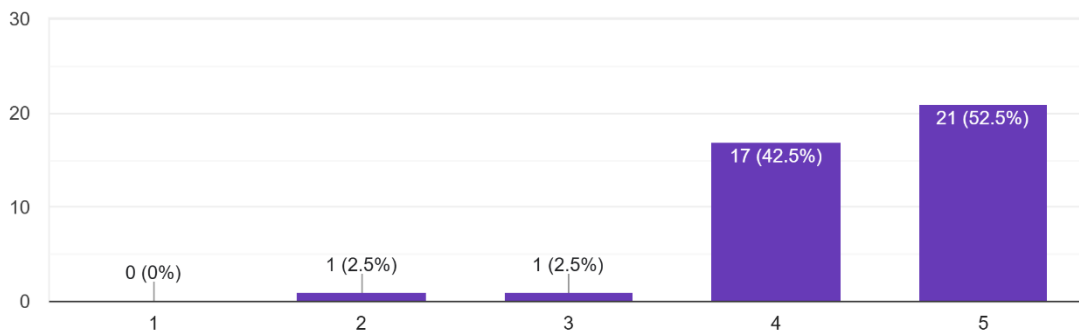


Figure 3.8: The Questionnaires – How likely are you to use a platform that combines portfolio viewing, booking, and payment in one place?

The bar chart above shows the respondents' likelihood of using a platform that integrates portfolio viewing, booking, and payment features in one place. The majority of participants expressed strong interest, with 21 individuals rating their likelihood as 5. This is followed by 17 individuals giving a rating of 4, showing moderate enthusiasm. Only 1 person each rated their likelihood as 3 or 2, and no respondents gave a rating of 1. Overall, the data indicates a high level of interest and potential demand for such an integrated platform.

Do you think it's important for the platform to have a feature for customer reviews and ratings of photographers?
(40 条回复)

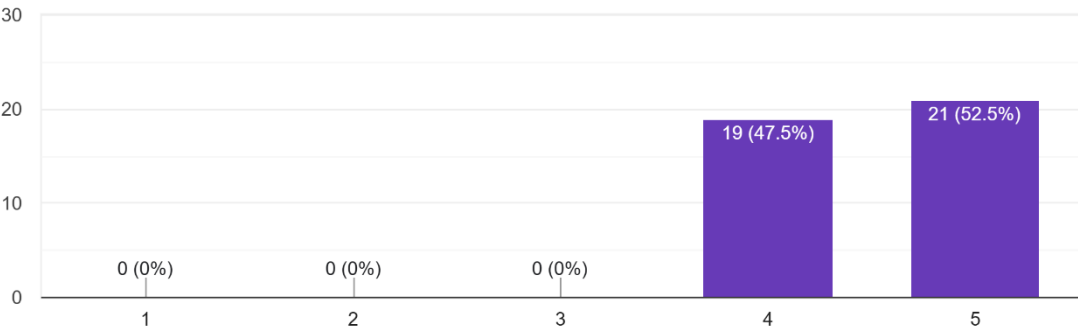


Figure 3.9: The Questionnaires – Do you think it's important for the platform to have a feature of customer reviews and ratings of photographers?

The figure above demonstrates the respondents' opinions on the importance of including a customer reviews and ratings feature for photographers on the platform. A significant majority, with 21 respondents, rated this feature as highly important with a score of 5. Additionally, 19 respondents rated its importance as 4. Notably, no participants rated this feature below 4, highlighting a strong consensus on the value of incorporating customer reviews and ratings to enhance the platform's utility and trustworthiness.

What is your opinion on the ability to book photography services directly through the mobile app?
(40 条回复)

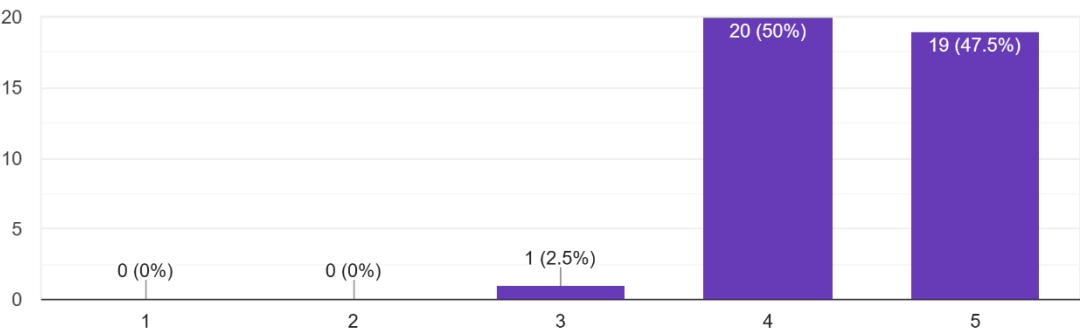


Figure 3.10: The Questionnaires – What is your opinion on having AI-driven features like image enhancement or automatic style recommendations?

The figure above illustrates respondents' opinions on incorporating AI-driven features such as image enhancement or automatic style recommendations into the platform. The majority, with 20 respondents, rated these features as favorable with a score of 4, indicating strong support. Additionally, 19 respondents each gave ratings of 5, 3, and 2, reflecting more interest on AI-driven features. Only 1 respondent rated these features as 3, suggesting minimal interest. Overall, there is a clear preference for integrating AI-driven functionalities to enhance the platform's value.

Would you be interested in a platform that combines photography portfolio management with appointment booking, payment processing, and client interaction in one place?

(14 条回复)

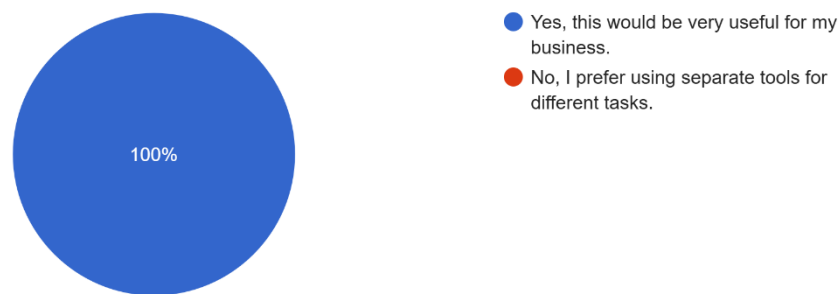


Figure 3.11: The Questionnaires - Would you be interested in a platform that combines photography portfolio management with appointment booking, payment processing, and client interaction in one place? (Photographers)

Would you be interested in using a platform that allows you to book photographers, view portfolios, and make payments all in one place?

(26 条回复)

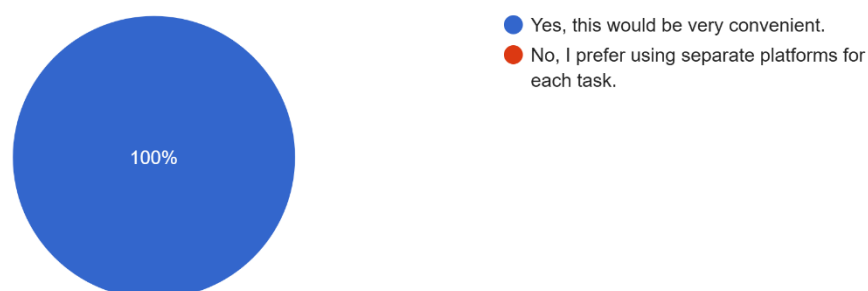


Figure 3.12: The Questionnaires - Would you be interested in a platform that allows you to book photographers, view portfolios, and make payments all in one place? (Clients)

Both pie charts above highlight the interest from photographers and clients to have a photography service platform that integrates multiple features. All respondents showed interest in a solution that combines key features, such as portfolio management, appointment booking, payment processing, and client interaction, in a single platform. Photographers see the potential to streamline their business operations and enhance efficiency, while clients appreciate the convenience of viewing portfolios, booking appointments, and making payments seamlessly in one place. This shared enthusiasm underscores the growing demand for a unified platform that simplifies workflows and creates a more user-friendly experience for both service providers and customers.

3.3 Functional Requirements

To ensure optimal performance and user satisfaction, CaptureEase will incorporate various functional requirements. These requirements are categorized using the MoSCoW method, which prioritizes features into must have, should have, could have, and will not have. CaptureEase is designed for two types of users: Photographers and Clients.

Functional requirements for photographers:

Category	Functional Requirements
Must have	• Ability to create an account and login with username and password • Ability to list available services, including session types, pricing, and availability • Ability to showcase photo gallery for clients to view and browse • Ability to view and manage booking requests from clients • A dashboard displaying upcoming appointments and booking history • Secure storage of client data and photos • Ability to communicate with customer through messaging feature
Should have	• Ability to set customizable photography package for clients • Ability to manage and edit photo gallery for marketing purposes • Multi-language support to cater to diverse clients
Could have	• Integration with payment gateways for clients to pay directly through the app • Feature to collect client reviews and feedback after a photography session • AI-powered tagging and categorization for uploaded photos
Will not have	• Management of physical photography equipment • Real-time location tracking for photographers • Advanced financial management features

Table 3.1: Functional Requirements for Photographers

Functional requirements for clients:

Category	Functional Requirements
Must have	• Ability to create an account and login with username and password • Ability to search for photographers based on availability, session type, and location • Ability to book appointment by selecting services, time slots, and preferences • Ability to view and browse photo gallery showcased by photographers • Ability to view photos from completed photography sessions • A user-friendly interface for browsing, booking, and communication
Should have	• Ability to save favourite photographers for future bookings • Option to view and manage booking history • Multi-language support for a broader user base
Could have	• Feature to leave reviews and feedback for photographers after a photography session • AI suggestions for recommended photographers based on preferences and past bookings • Ability to request custom services directly from photographers
Will not have	• Advanced photo editing capabilities within the app • Management of offline transactions • Physical delivery of printed photos

Table 3.2: Functional Requirements for Clients

3.4 Non-functional Requirements

To ensure the overall performance, usability, and user satisfaction, CaptureEase will meet the following non-functional requirements:

Non-functional Requirements	Description
Reliability	CaptureEase must be consistently available and operational, ensuring minimal downtime.
Scalability	CaptureEase must support an increasing number of users, bookings, and data uploads as the user base grows.
Performance	CaptureEase must handle requests, uploads, and transactions efficiently.
Security	CaptureEase must protect the user data, photos, and all the payment details complying with privacy laws and regulations.
User-friendliness	CaptureEase must provide a seamless interface that is easy to be used and managed.
Compatibility	CaptureEase must operate smoothly on major mobile platforms, including Android and iOS devices.
Testing and Validation	CaptureEase must undergo rigorous testing to ensure it meets both functional and non-functional requirements before deployment.

Table 3.3: Non-functional Requirements for Photographers and Clients

3.5 System Design

The system design of CaptureEase focuses on creating a comprehensive plan for how the application will function and the features it will include. This involves leveraging the Object-Oriented (OO) approach to ensure a modular and user-centric design that align's with the application's interactive and dynamic nature. The system design process will include use case diagram, acitivity diagram, class diagram, and user interface (UI) design.

3.5.1 Use Case Diagram

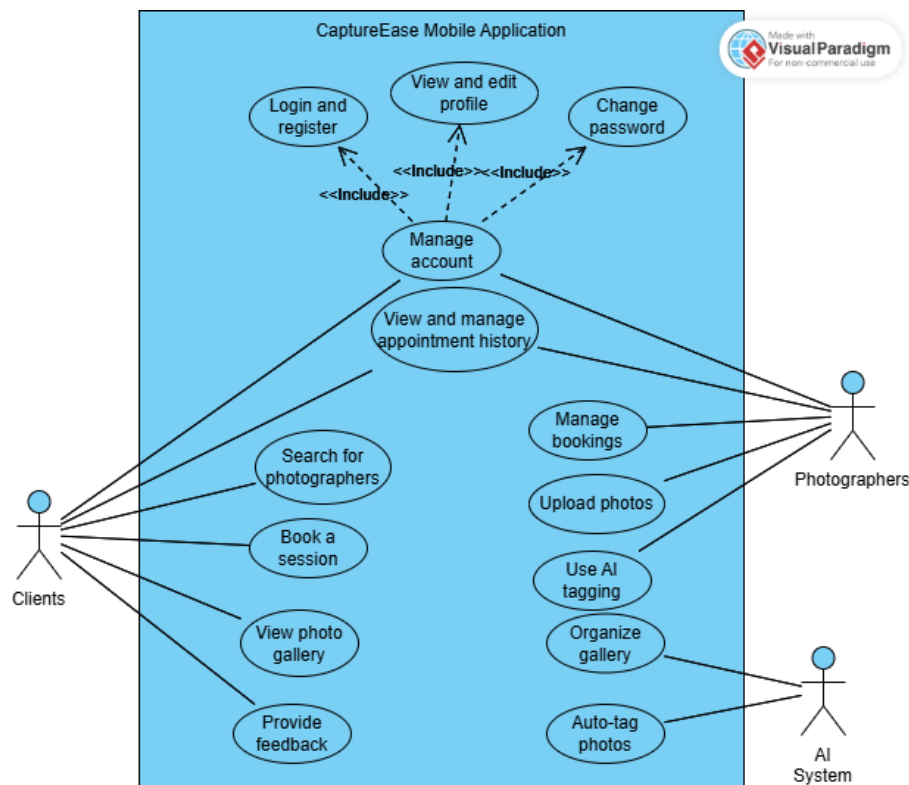


Figure 3.13: Use Case Diagram of the System

The figure above shows the use case diagram of the system, illustrating the main functionalities for both photographers and clients. For the clients side, their use cases include searching for photographers, booking a photography session, viewing photo gallery, and providing feedback after completing a photo session. Photographers, they are the service providers who will be managing the bookings, uploading photos for the gallery, and implementing AI tagging. Some functionalities such as login and register, view and edit profile, change password inside own account, are shared between both user roles. The use case diagram also highlights the role of the AI system which organizes photo gallery and helps to manage auto-tag photos.

Use Case Description

Use Case 1	Search for photographers
Actors	Client
Description	A client searches for photographers based on specific criteria such as location, specialization, or availability.
Pre-condition	• The client already registered and logged in to the system. • The photographer profile is ready and available to be viewed.
Post-condition	The client views the details of the selected photographer or refines their search.
Basic path	1. The client navigates to the search page. 2. The client enters keyword to search for photographers. 3. The system fetches a list of photographers based on keyword. 4. The client views the list of photographers. 5. The client selects a photographer for more details.
Alternative path	At step 3, the system displays a message of “No result found” based on the keyword entered. Then, the client can refine the search.
Exceptions	• System error while fetching data from the database. • Network connection issues interrupt the searching process.

Table 3.4: Use Case 1 – Search for Photographers

Use Case 2	Book a session
Actors	Client
Description	A client books a photography session with a selected photographer by choosing a date, time, and package.
Pre-condition	• The client already registered and logged in to the system. • The photographer profile and schedule are available.
Post-condition	The booking is successfully created and added to both client and photographer schedules.
Basic path	1. The client select the booking date and time. 2. The system checks on the photographer's availability. 3. The client confirms the booking details. 4. The system sends confirmation to both photographer and client.
Alternative path	At step 2, the system notifies the client about the photographer is unavailable on the selected timeslot. Then, the client can choose a different date or another photographer.
Exceptions	System downtime during thr booking process.

Table 3.5: Use Case 2 – Book a session

Use Case 3	View photo gallery
Actors	Client
Description	A client views the photo gallery uploaded by the photographers.
Pre-condition	• The client already registered and logged in to the system. • At least one gallery exists, and the photos have been uploaded by photographers.
Post-condition	The client successfully views the photos in the selected gallery.
Basic path	1. The client navigates to photo gallery section. 2. The system displays available and complete photo gallery lists. 3. The client selects specific gallery to view. 4. The system displays photo in the selected gallery.
Alternative path	At step 2, the system displays message that “No available photo gallery” if there is no gallery exists.
Exceptions	• System error occurs when loading the photo gallery. • The client’s internet connection is lost or times out.

Table 3.6: Use Case 3 – View Photo Gallery

Use Case 4	Provide feedback
Actors	Client
Description	A client provides feedback after completing a photography session.
Pre-condition	• The client already registered and logged in to the system. • The photography session is marked as completed.
Post-condition	The feedback is successfully submitted and linked to the specific photographer and booking.
Basic path	1. The client navigates to the Feedback section of the booking. 2. The system displays feedback form with ratings and comments. 3. The client fills the form and submits it. 4. The system validates the input and saves the entry into database. 5. The feedback is made visible for the photographer and stored for future analysis.
Alternative path	At step 3, if the client leaves required fields empty, the system prompts the client to complete the form before submission.
Exceptions	• Validation error if invalid data is entered. • The system fails to save the feedback to the database.

Table 3.7: Use Case 4 – Provide Feedback

Use Case 5	Manage bookings
Actors	Photographer
Description	A photographer can view, accept, or decline client bookings and monitor booking status.
Pre-condition	• The photographer already registered and logged into their account. • There must be at least one booking request in the system.
Post-condition	The booking status is updated, and relevant notifications are sent to the client.
Basic path	1. The photographer navigates to the Bookings section. 2. The system displays a list of booking requests. 3. The photographer selects a specific booking to view its details. 4. The photographer accepts or declines the booking based on availability. 5. The system updates the booking status and notifies the client of the confirmation of booking.
Alternative path	At step 2, the system displays the message about “No bookings available” if no booking requests exist.
Exceptions	• Notification fails to be sent to the clients. • Booking data cannot be retrieved due to system error.

Table 3.8: Use Case 5 – Manage Bookings

Use Case 6	Upload photos
Actors	Photographer
Description	A photographer uploads the photo to a gallery for clients to view.
Pre-condition	• The photographer already registered and logged into their account. • The system should have a gallery associated with the client booking.
Post-condition	The photos are successfully uploaded to the selected gallery and made available for the client to view.
Basic path	1. The photographer navigates to the photo gallery section. 2. The system displays available and complete photo gallery lists. 3. The photographer selects a gallery and click on Upload Photos button. 4. The system opens a file upload interface. 5. The photographer selects photos to upload. 6. The system validates the photos and uploads to gallery.
Alternative path	At step 5, the system displays an error message for upload failure due to file size or format. Then, the photographer can choose other photos.
Exceptions	• Selected photos are in invalid file formats. • Server failure during upload process.

Table 3.9: Use Case 6 – Upload Photos

Use Case 7	Use AI tagging
Actors	Photographer
Description	A photographer categorizes photo gallery with AI tagging, making it easier for clients to search.
Pre-condition	• The photographer already uploaded photos in the gallery. • The AI system is ready and operational.
Post-condition	The tags are stored in the database and can be used for searching and categorization.
Basic path	1. The photographer uploads photos to a gallery. 2. The system detects the newly uploaded photos and sends the photos to AI system. 3. The AI system analyzes the photos using machine learning algorithms. 4. The AI system generates relevant tags based on photo content. For example, Wedding, Portrait, Beach, etc. 5. The system associates the generated tags with the photos and updates the database. 6. The photographer reviews the AI-generated tags. 7. The photographer can edit or remove any tags if needed.
Alternative path	If the photographer prefers not to use AI tagging, they can manually tag the photos instead.
Exceptions	• Tagging error due to unsupported formats of photos or low quality of photos. • Server or AI module failure during tagging process.

Table 3.10: Use Case 10 – Use AI Tagging

Use Case 8	Organize gallery
Actors	AI System
Description	The AI system organizes the photo gallery automatically by categorizing and arranging photos based on predefined criteria, such as date, event type, or tags.
Pre-condition	• The photos are uploaded to the gallery. • The AI system is ready and operational. • Metadata (e.g., tags, dates, event types) for the photos must be available.
Post-condition	The gallery is organized into a structured format, enabling photographers and clients to easily browse photos.
Basic path	1. The system identifies photos uploaded by photographers. 2. The AI system retrieves metadata associated with the photos (e.g., tags, upload dates, and custom fields). 3. The AI categorizes photos into predefined categories, such as Wedding, Portrait, Beach, based on tags or content. 4. The AI organizes photos within each category chronologically or by relevance. 5. The AI creates a hierarchical structure or folders for easy navigation in the gallery. 6. The system updates the organized gallery and displays it to users.
Alternative path	If the AI cannot categorize certain photos, they are placed in a "Miscellaneous" or "Uncategorized" folder.
Exceptions	• AI system cannot retrieve sufficient metadata for a photo. • AI system encounters failure during organization process.

Table 3.11: Use Case 8 – Organize Gallery

Use Case 9	Auto-tag photos
Actors	AI System
Description	The AI system generates and assigns relevant tags to uploaded photos based on their content.
Pre-condition	• The photos are uploaded to the gallery. • The AI system is ready and operational. • The system should have a defined set of potential tags or criteria for generating new tags.
Post-condition	Photos are tagged with relevant keywords, improving their categorization and searchability.
Basic path	1. The system detects newly uploaded photos. 2. The AI system analyzes the photos based on their content using machine learning algorithms. 3. The AI system retrieves metadata to complement the analysis. 4. Based on the analysis, the AI system assigns relevant tags, such as Wedding, Portrait, Beach, etc. 5. The system stores the tags and connects them to the corresponding photos. 6. The AI notifies the photographer of the tagging results and updates the photo's metadata in the gallery.
Alternative path	If the photographer has provided tags during the upload process, the AI prioritizes or combines these with auto-generated tags.
Exceptions	• Tagging error due to unsupported formats of photos or low quality of photos. • Server or AI module failure during tagging process.

Table 3.12: Use Case 9 – Auto-tag Photos

Use Case 10	Manage account
Actors	Client, Photographer
Description	Both clients and photographers are allowed to manage their account settings, including login and registration, view and edit profile, and change their account password.
Pre-condition	• The user must have internet access to interact with the system. • The user already registered an account in the system.
Post-condition	• The user is successfully registered or logged in. • Profile information is updated and stored in the system. • The password is changed successfully.
Basic path	Login and register 1. The system displays the registration / login page. 2. For registration, the user enters their personal information and submits the form. The system validates the details and creates a new account. 3. For login, the user enters their username/email and password. The system verifies the inputs and grants access.
	View and edit profile 1. The user navigates to the Profile section. 2. The system displays their personal information. 3. The user edits their information, such as username, email, profile picture. 4. The user saves the changes. 5. The system validates the input and updates their profile.
	Change password 1. The user selects Change Password option. 2. The system prompts the user to enter their current password and the new password. 3. The system validates the input and saves the new changes.
Alternative path	• During login, if the user forgets their password, they select “Forgot Password”. • During registration, if the user provides incomplete details,

	the system prompts them to fill in the missing fields.
Exceptions	• Error occurs due to invalid login credentials or profile input. • New password does not meet the requirements.

Table 3.13: Use Case 10 – Manage Accounts

Use Case 11	View and manage appointment history
Actors	Client, Photographer
Description	Both clients and photographers are allowed to review their previous bookings and check the status of upcoming bookings.
Pre-condition	• The user already registered and logged in to the system. • The system must have stored booking data associated with the user.
Post-condition	• The user has successfully viewed or managed their appointment history. • Updated bookings are stored and synchronized with the system.
Basic path	1. The user navigates to the Booking History section. 2. The system retrieves a list of bookings associated with the user. 3. The user selects a specific booking for more details. 4. For clients, they can view booking details, cancel upcoming booking, or delete the history. While for photographer, they can view details, update the booking status, or reschedule the session. 5. The system saves the changes and updates the booking.
Alternative path	The user can filter bookings by date, status, or type for easier navigation.
Exceptions	• No booking history available for the user. • Appointment cancellation error if too close to the session date.

Table 3.14: Use Case 11 – View and Manage Appointment History

3.5.2 Activity Diagram

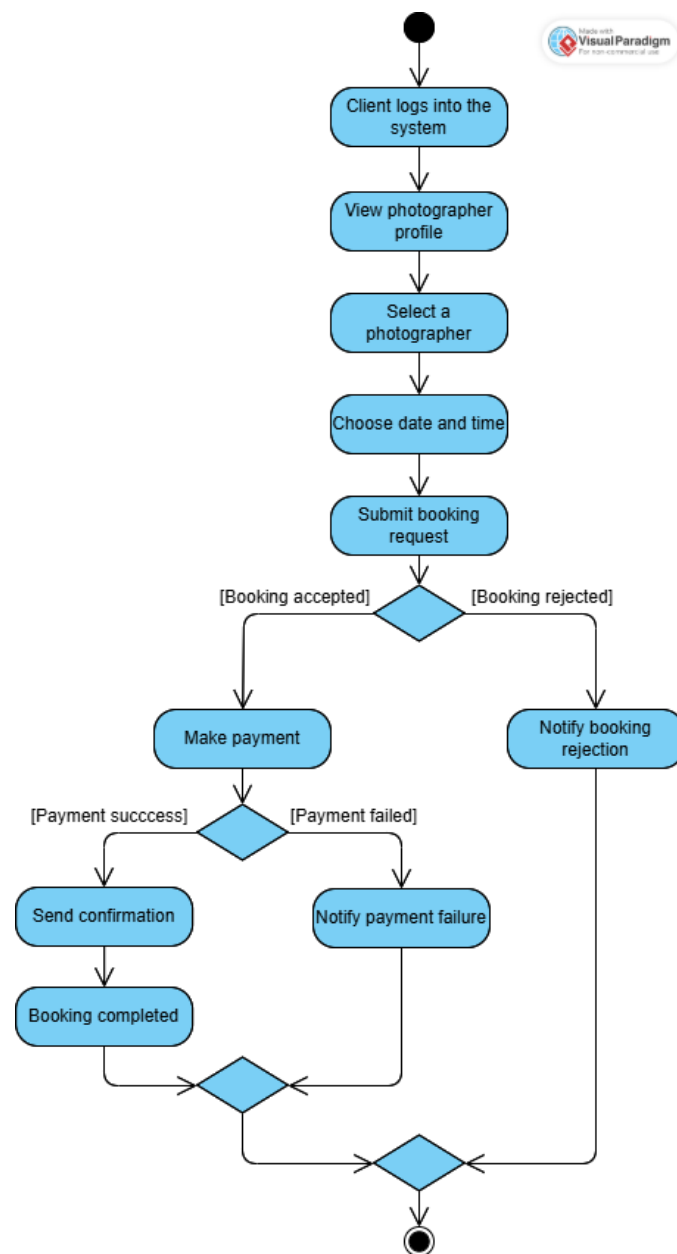


Figure 3.14: Activity Diagram of the System

The activity diagram illustrates the process of booking a photography session. The process begins with the client logging into the system. The client proceeds to view available photographers, select one, choose a preferred date and time, and submit a booking request. The system checks whether the booking is accepted by the photographer. If accepted, the client makes a payment. Upon successful payment, the system sends a confirmation, and the booking is completed. If the booking request or payment fails, the system notifies the client of the respective error, and the process terminates. This diagram captures the essential flow of booking and payment in a simple and user-friendly manner.

3.5.3 Sequence Diagram

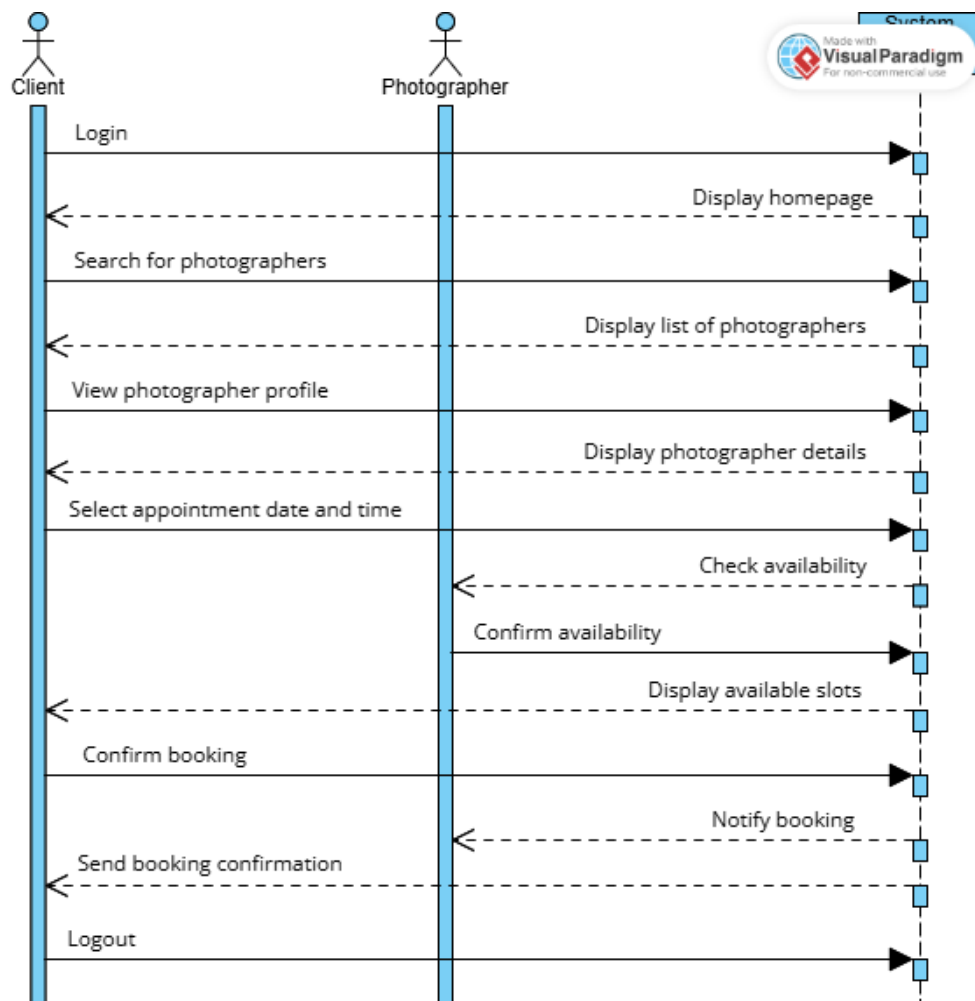


Figure 3.15: Sequence Diagram of the System

The figure above shows the sequence diagram of the system, illustrating the process of appointment booking of the photography session and interactions between clients, photographers, and the system. At first, the client logs in and the system will display the homepage. Client searches for photographers and a list of photographers will be shown. After selecting a desired photographer and view the photographer's profile and details, client selects the appointment date and time. The system will check the photographer's availability and waiting for his confirmation. The system then notifies the client with available slots and allows them to confirm the booking. Photographer will be notified with the new booking too and both parties will receive booking confirmation from the system. Finally, the client logs out the system. This sequence ensures a seamless interaction and communication between clients, photographers, and the system.

3.5.4 System Architecture

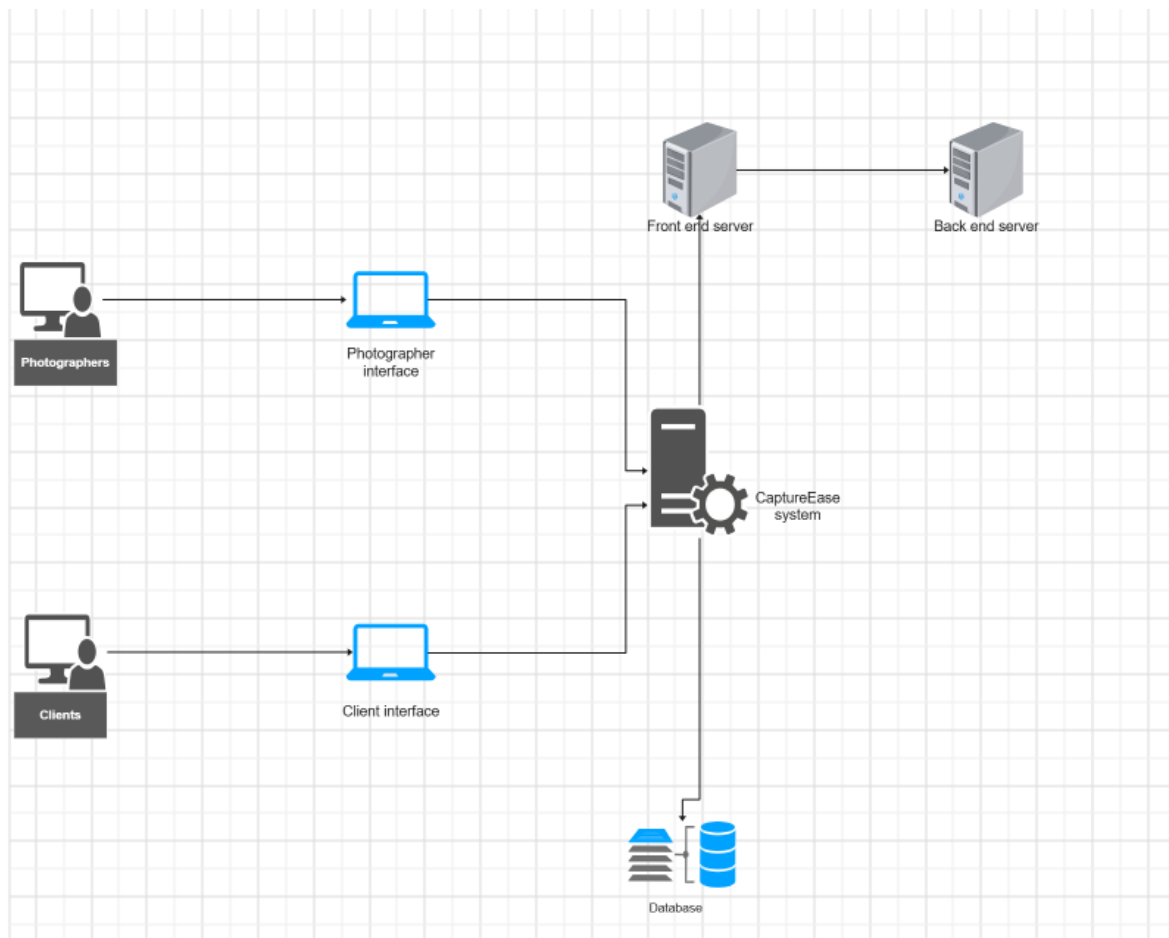


Figure 3.16: System Architecture Diagram

The diagram above displays the system architecture designed to optimize and streamline the interaction between photographers and clients with the system. It consists of a frontend layer for user interaction, a backend layer for handling business logic and API communication, and a database for persistent storage. It also shows the interconnections between the user interfaces with the central system.

3.5.5 Class Diagram

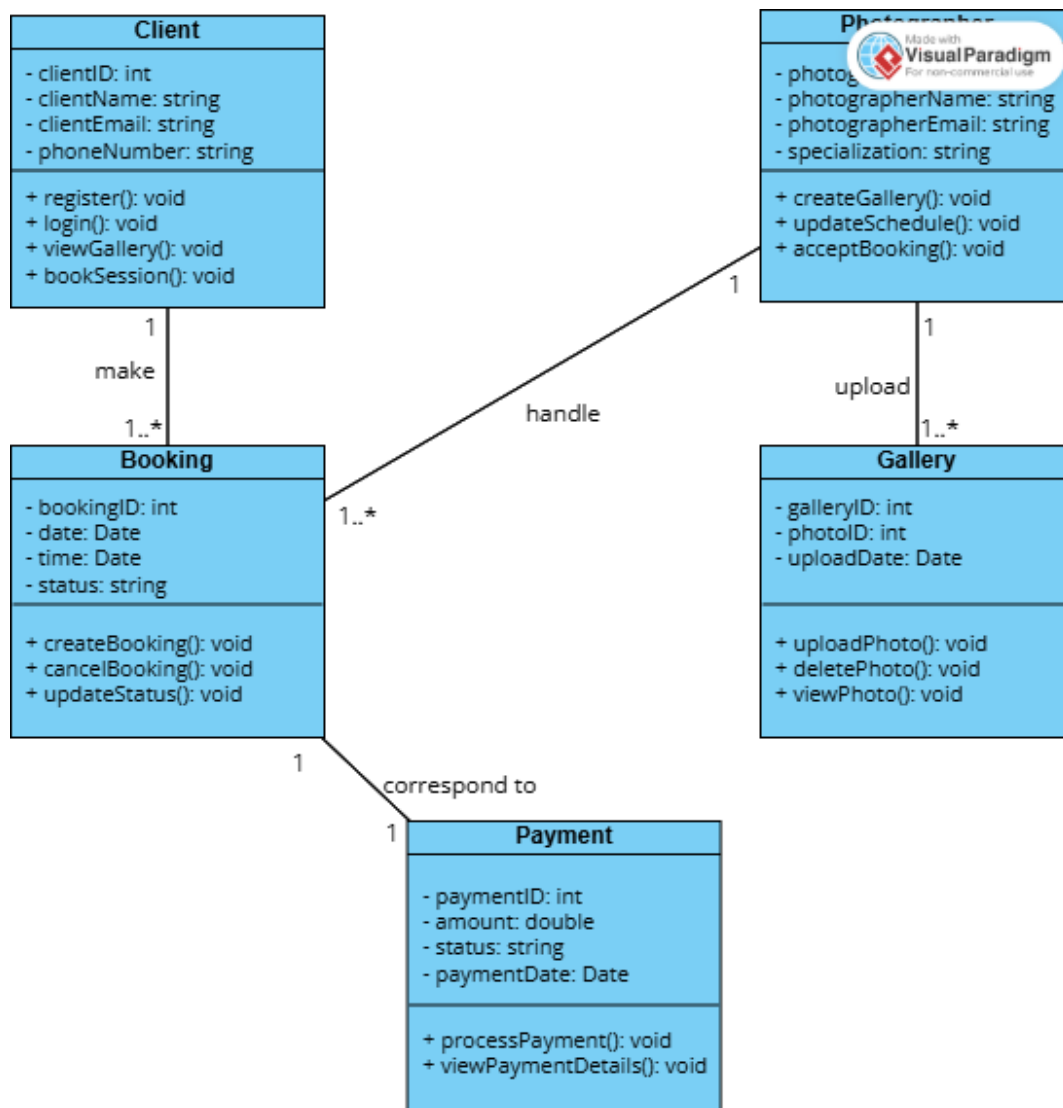


Figure 3.17: Class Diagram of the System

The class diagram illustrates the structure and relationships of system. Clients can register, log in, book sessions, and view galleries, while photographers manage portfolios, schedules, bookings, and galleries. Bookings track session details and are linked to a single payment, which handles transaction processing. Photographers can upload and manage multiple photos in their galleries. Relationships include one-to-many links between clients and bookings, photographers and bookings, and photographers and galleries, while each booking corresponds to a single payment. The diagram highlights the interconnected workflow of booking, payment, and photography services.

3.5.6 Interface Design

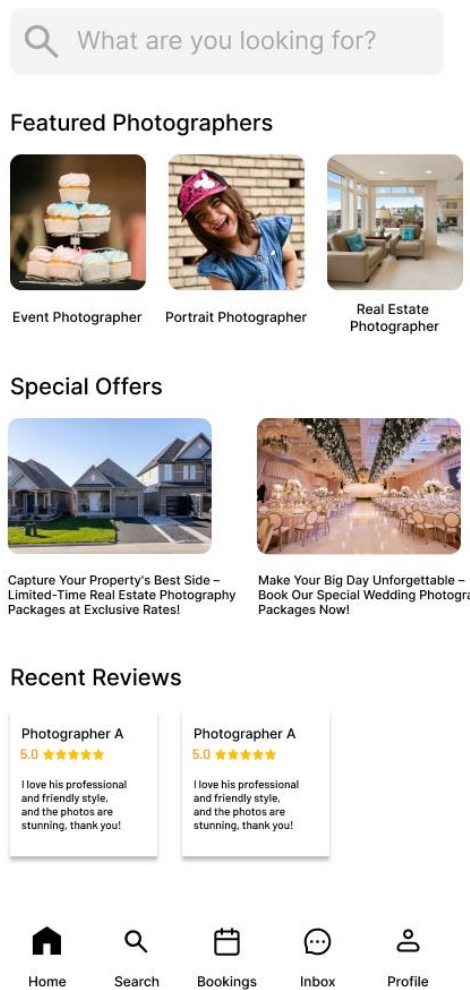


Figure 3.18: The Homepage

The homepage of CaptureEase application allows users to search for desired photography types or photographers by entering relevant keywords. The page also showcases a curated list of featured photographers, highlighting top talents. Users can stay informed with special offers and browse through recent reviews, providing them with the latest updates and insights into the photography services available.

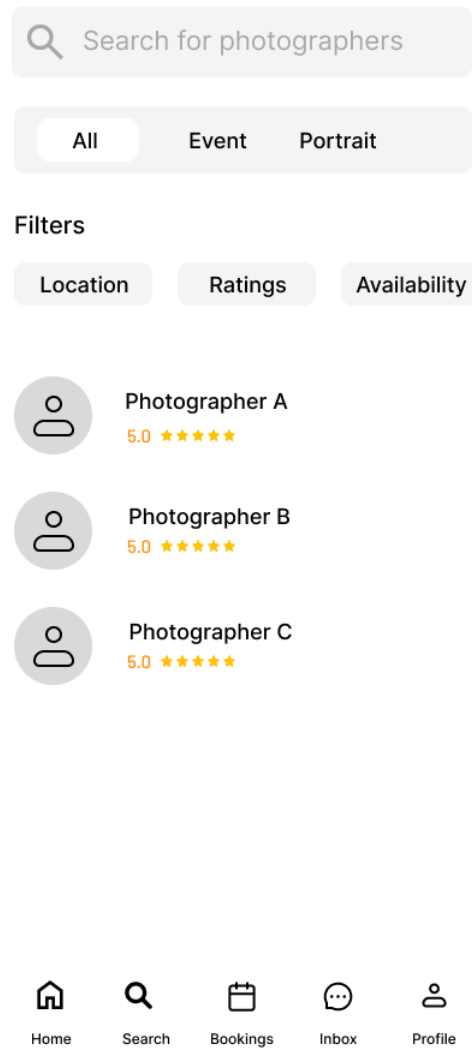


Figure 3.19: The Search Page

The Search page enables users to refine their search for photographers with ease. A search bar allows users to enter specific keywords, while the category filter lets them choose between All, Event Photographer, Portrait Photographer, and others. Additional filters such as location, ratings, and availability help users narrow down their options. The page displays a list of photographers that match the search criteria, providing users with detailed options to explore and select the perfect photographer for their needs.

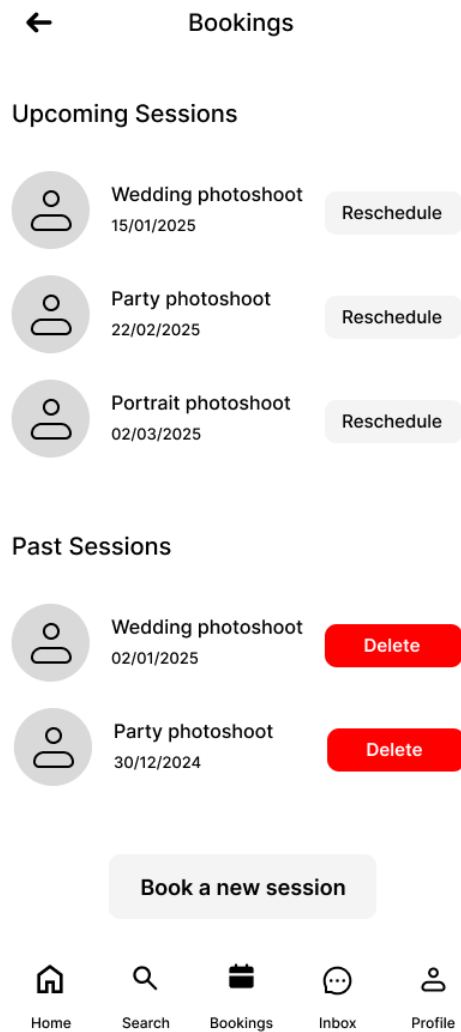


Figure 3.20: The Bookings Page

The Bookings page provides an organized view of both upcoming and past photography sessions. Users can easily access details of their upcoming sessions, with the option to reschedule if needed. Each session offers the ability to read through session details for better clarity. Past sessions are stored for reference, and users have the option to delete them once they are no longer needed, keeping the page clean and easy to navigate. There is a “Book a new session” button, allowing users to book a new appointment.

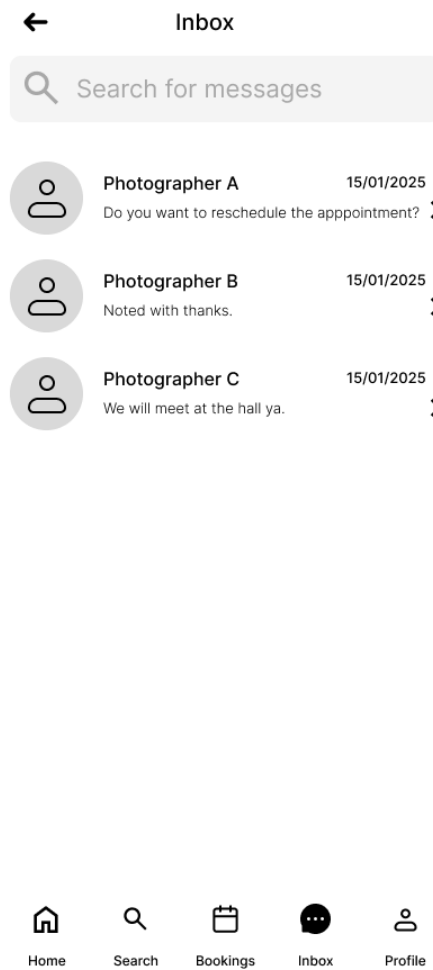


Figure 3.21: The Inbox Page

The Inbox page serves as the communication channel, where users can view and manage messages exchanged with photographers. Each message thread can be easily clicked on to open and read the conversation. A search feature allows users to quickly find relevant messages by entering keywords or photographer names, making it simple to track important discussions and maintain seamless communication with photographers.

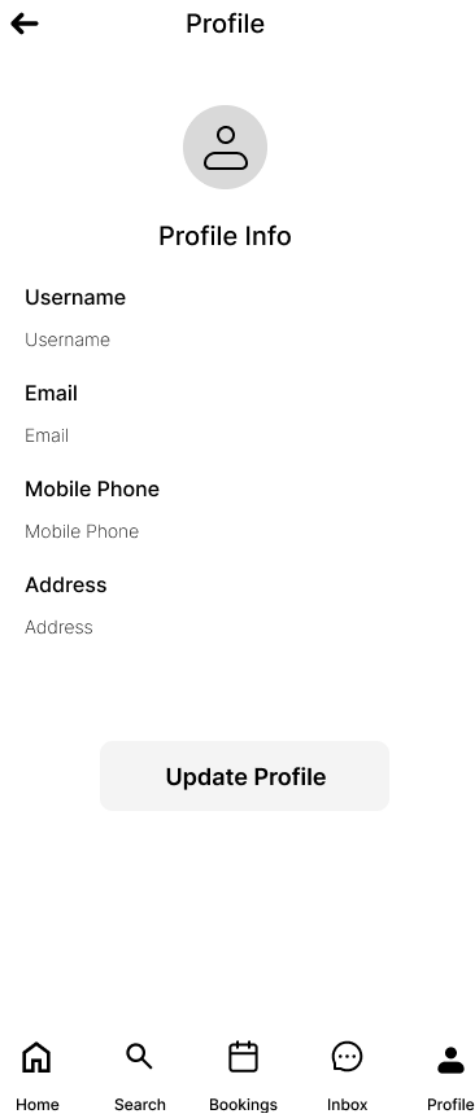
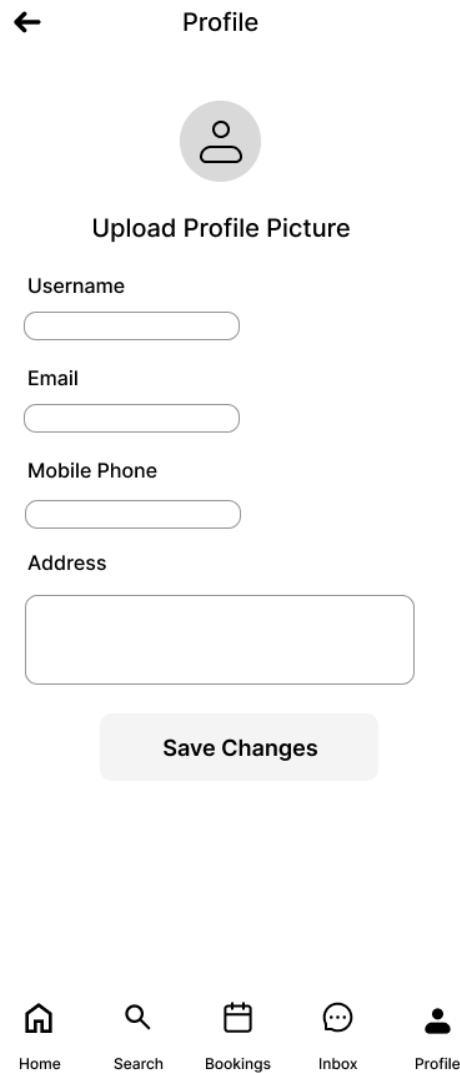


Figure 3.22: The Profile Page

The Profile page allows users to view and manage their personal information. It displays the user's profile picture, username, email, mobile phone number, and address for easy reference. Users can update their profile details by clicking the “Update Profile” button, ensuring that their information stays current and accurate within the app.



The screenshot shows a mobile application interface for updating a user's profile. At the top, there is a back arrow and the title "Profile". Below the title is a circular placeholder for a profile picture. Underneath the placeholder is the text "Upload Profile Picture". The form contains four input fields: "Username", "Email", "Mobile Phone", and "Address". Each field is represented by a rounded rectangular text box. At the bottom of the form is a button labeled "Save Changes". At the very bottom of the screen is a navigation bar with five icons and their corresponding labels: a house icon for "Home", a magnifying glass for "Search", a calendar for "Bookings", a speech bubble for "Inbox", and a person icon for "Profile".

← Profile

Upload Profile Picture

Username

Email

Mobile Phone

Address

Save Changes

Home Search Bookings Inbox Profile

Figure 3.23: The Update Profile Page

The Update Profile page allows users to manage and update their personal information conveniently. This page provides editable fields such as username, email, mobile phone, and address. Users can make changes and save all the new updates by clicking the button Save Changes. Besides, users can change profile picture by browsing their device to make changes on it.

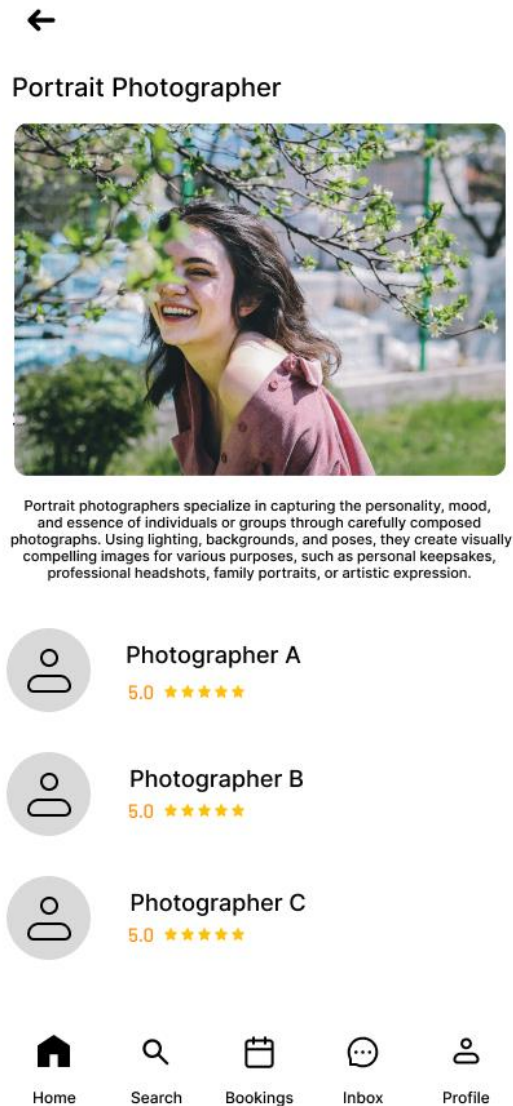


Figure 3.24: The Photographers List Page

The Photographers List Page displays the details of selected category of photographer. Clients select photographer category from the homepage and will be navigated to this page. It provides a brief introduction about the photographer and the specialization. Besides, it also displays a list of photographers for clients to browse and select.



Photographer A



Description

Category:	Portrait Photographer
Experience:	3 years
Location:	xxx
Price Range:	RMxxx

Photo Gallery



Home



Search



Bookings



Inbox



Profile

Figure 3.25: The Photographer Detail Page

After choosing a particular photographer, the Photographer Detail Page will be displayed. It will show the important description of the photographer such as the category he belongs to, the working experience as photographer, location, and the price range of the photography service. The photo gallery of this photographer will be displayed too for clients to know better about the style and the photographer's previous work.

←

Book an appointment

<

Jan 2025

>

Mo	Tu	We	Th	Fr	Sa	Su
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	0	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2

Timeslots
Select timeslots

Requirements
Requirements

Special Remarks
Special remarks

Book Now

Figure 3.26: The Appointment Booking Page

The Appointment Booking Page allows clients to make an appointment with the photographer. They are required to select the date and the timeslots they want. They also need to enter their requirements and special remarks for photographer to take note. After all is done, click on the Book Now button to confirm the booking.

3.7 Summary

Overall, this research methodology is significant in creating the platform CaptureEase successfully. Using the prototype model methodology ensures that the app meets user needs through iterative feedback, allowing for continuous improvement. This approach guarantees that key features like the booking system, photographer profiles, and AI tools are well-designed, making the app intuitive and efficient for both photographers and clients.

Chapter 4 System Implementation

4.1 Introduction

This chapter explains how CaptureEase is designed and implemented, detailing the hardware and software components utilized in the process. It also outlines the installation procedures and highlights any challenges faced during the implementation phase. The main objective of this chapter is to provide a comprehensive overview of the implementation process and to document the steps taken to ensure the successful deployment of the CaptureEase mobile application.

4.2 Hardware and Software Development Tools Requirements

Software and hardware development tools play an important role in the successful development of the CaptureEase application. This includes the use of specific software platforms and frameworks, as well as hardware specifications and testing devices required for building, testing, and debugging the CaptureEase system.

4.2.1 Hardware Development Tools

To ensure the system of CaptureEase is developed effectively, a suitable and reliable hardware setup is crucial. The development process is greatly impacted by the hardware requirements, which guarantee seamless operation, efficient coding, and streamlined debugging.

For the development of CaptureEase, a laptop equipped with specific hardware components is utilized. The laptop runs on an Intel(R) Core(TM) i5-8250U processor, offering a solid balance between performance and energy efficiency, suitable for software development tasks. It is supported by an NVIDIA GeForce MX110 graphics card, which aids in rendering user interface elements and enhances graphical performance during development.

With 20GB of RAM, the system handles multitasking and memory-intensive processes smoothly, allowing simultaneous operation of development tools, emulators, and other background services. Storage is managed by a 932GB SSD, which provides fast read/write speeds for efficient project builds, app compilation, and quick file access.

Unlike projects that rely on physical devices, CaptureEase is tested entirely using an Android emulator. This approach eliminates the need for external smartphones or tablets while still enabling effective app testing across various screen sizes and Android versions. The emulator simulates different devices, offering flexibility in verifying app responsiveness, layout behaviour, and performance under different conditions.

Overall, this hardware configuration—with a capable processor, dedicated graphics card, high memory capacity, and large SSD storage—provides a stable foundation for developing and testing the CaptureEase mobile application. It ensures a seamless development experience, contributing to the creation of a high-quality, optimized system.

4.2.2 Software Development Tools

For the CaptureEase system to be developed successfully, a proper software configuration is just as important as the hardware. A robust set of software tools and development frameworks plays a key role in enhancing productivity, maintaining code quality, supporting effective collaboration, and ensuring smooth integration throughout the development process.

4.2.2.1 Implementation of Integrated Development Environment (IDE)

The Integrated Development Environment (IDE) used to build CaptureEase system is Android Studio. It is developed and maintained by Google, providing a powerful and complete environment tailored specifically for Android application development. With its user-friendly interface, intelligent code editing, real-time debugging tools, and extensive support for emulators, Android Studio streamlines the development workflow and enhances productivity.

To ensure a smooth and efficient development, the latest version of Android Studio was installed and properly configured on the development machine. Keeping the IDE up to date ensures compatibility with the most recent Android SDK versions, allowing access to the latest tools, libraries, and APIs offered by the Android platform.

Below show the detailed steps on how to install and setup Android Studio:

1. Download Android Studio – The official Android Studio installer was downloaded from <https://developer.android.com/studio> which is Android Developer Website, ensuring compatibility with the Windows operating system.
2. Run the Installer - After downloading, the installer file was executed. The setup wizard guided the installation, where default settings were used for most options.
3. Select Components - Key components like the Android Virtual Device (AVD) and Intel HAXM were selected to enable smooth emulator usage and improve performance during development.
4. Choose Installation Directory - The preferred installation folder was selected, or the default location was accepted, and the installation process began.
5. Complete Initial Configuration – Once installed, Android Studio was launched. The standard setup was chosen, the UI theme was selected, and the necessary SDK components were downloaded.
6. Update and Finalize Setup – Android Studio checked for updates and additional tools. Once everything was up to date, the IDE was ready for use.

4.2.2.2 Implementation of Framework (React Native)

React Native, an open-source JavaScript framework developed by Meta (formerly Facebook), serves as the primary framework for the development of the CaptureEase system. React Native supports cross-platform mobile application development, allowing developers to create apps for both Android and iOS using a single codebase. It combines the best parts of native development with React, a leading JavaScript library for building user interfaces. React Native's component-based architecture, hot-reloading feature, and vast ecosystem empower developers to create responsive, scalable, and performant applications.

Below show the steps to implement CaptureEase system using React Native framework:

1. Install Node.js and React Native CLI – Node.js, which is required to run React Native, is installed. The Node.js installer can be downloaded from the official website at <https://nodejs.org>. After the installation, the React Native CLI was installed globally using the command “npm install -g react-native-cli”.
2. Set Up Development Environment - Android Studio was installed to provide the necessary Android SDK and emulator tools for testing the app. During setup, the following components were selected: Android SDK, Android SDK Platform, Android Virtual Device (AVD), and Intel HAXM (for emulator performance). Environment variables such as ANDROID_HOME were configured to allow React Native to communicate with the Android SDK.
3. Create a New React Native Project - A new React Native project was initialized using the CLI command “npx react-native init CaptureEase”. This generated the base structure of the application, including essential folders such as android, ios, and src.
4. Open and Configure the Project - The project was opened in a preferred code editor, such as Visual Studio Code. Configuration files such as build.gradle (for Android) and app.json were customized to match the project requirements.
5. Run the Project on Emulator - The Android emulator was launched using Android Studio. The app was run using the command “npx react-native run-android”. This installed and launched the app on emulator to do testing.
6. Edit and Develop Features - Development was carried out by editing files in the src folder, where UI components and logic were implemented using JSX and

React Native components. Integration with libraries such as Redux, React Navigation, and Axios enabled robust state management, navigation, and API communication.

7. Use Hot Reloading - React Native's hot reloading feature was leveraged during development to instantly reflect code changes without restarting the app, improving development speed and efficiency.
8. Test and Debug – The emulator was used to test the application regularly. To examine network calls, track state changes, and fix problems, debugging tools such as React Native Debugger and Chrome Developer Tools were utilized.
9. Build the Application - After completing development and testing, the application was built for release using “cd android” and “./gradlew assembleRelease”. This generated the APK file used for deployment or testing on physical devices.

CaptureEase was effectively designed with a scalable architecture, real-time debugging tools, and a modern UI / UX using React Native. The objectives and scope of the project were well-aligned with this framework, which worked well for creating a mobile application with excellent performance and cross-platform capabilities.

4.2.2.3 Implementation of Database Tool (Firebase)

Firebase, a cloud-based platform developed by Google, is utilized as the backend solution for the CaptureEase system. It offers a comprehensive suite of tools including real-time database services, secure user authentication, and cloud-based file storage. These features are necessary to support Capture with basic functionality, which include securely managing user accounts, storing and retrieving user data, and enabling real-time changes across multiple devices. The smooth integration between Firebase with React Native enables effective development and deployment of scalable mobile application.

Below show the steps on how to implement Firebase for CaptureEase project:

1. Create a Firebase Project – Sign in to the official Firebase website (<https://firebase.google.com/>) with a Google account. Click on “Add Project” and enter the project name which is CaptureEase. Follow the prompts to complete the setup process.
2. Install Firebase Dependencies – Inside the React Native CaptureEase project, install the required Firebase packages that enable integration with Firebase core, authentication, and Firestore services respectively.

3. Register the App in Firebase Console - In the Firebase console, go to the project settings and select “Add App.” Choose the Android platform and enter the Android package name. Register the app to generate the configuration file.
4. Download and Add google-services.json File – After the Android app is registered, download the google-services.json file and move it into the android/app directory of the project. This file contains essential configuration details required for Firebase integration.
5. Configure Android for Firebase – In android/build.gradle, add the Google services classpath inside the dependencies section. In android/app/build.gradle, apply the Google services plugin at the bottom of the file.
6. Initialize Firebase in React Native App – When the application is launched, Firebase will be initialized immediately if the google-services.json file is properly configured. No additional manual initialization is required in most cases.
7. Use Firebase Services – Firebase Authentication was used to implement secure sign-up and login processes. Data including user sessions, reservations, and profiles were stored and managed using Firestore. To develop capabilities tailored to CaptureEase’s requirements, Firebase API and documentation were referenced.
8. Test Firebase Integration – Both physical devices and Android emulators were used to properly test features such as user sign-in, data writing to Firestore, and real-time data changes. Console logs and debugging tools were utilized to ensure the system operated as intended.
9. Configure Firebase Security Rules – To control access to data, security rules were created in the Firebase console. By ensuring that only authorized users could view or write data, these regulations assisted in enforcing authentication requirements.
10. Monitor Performance and Analytics - Firebase tools such as Crashlytics, Performance Monitoring, and Analytics were enabled to collect data on app crashes, user behavior, and overall performance. These insights helped to optimize the app and enhance the user experience.

4.3 System Architecture

The system architecture of CaptureEase is designed to optimize and streamline the interaction between photographers and clients with the system. It consists of a frontend layer for user interaction, a backend layer for handling business logic and API communication, and a database for persistent storage. It also shows the interconnections between the user interfaces with the central system.

4.3.1 Presentation Layer

The Presentation Layer of CaptureEase handles and manages the user interface and user interactions within the mobile application. It utilizes React Native framework to build a consistent, visually appealing, and responsive UI across both Android and iOS platforms using a single codebase. Users can easily interact with the program and access a variety of functionality with the components of presentation layer, which include screens, reusable UI elements, and navigation controls. The main focus is to deliver an intuitive user experience with responsive layouts, seamless transitions, and simple navigation.

4.3.3 Business Logic Layer

The Business Logic Layer of CaptureEase system encompasses the core operations and essential functionalities that drive the application. It coordinates the connection between the user interface and data storage components, controls data processing, and upholds business standards. This layer is responsible for managing workflows such as appointment scheduling, photo galleries updates, AI-powered photo tagging, as well as verifying user identification, ensuring the accuracy of booking inputs, and processing secure payment transactions. In order to maintain safe access control and guarantee that only authorized users have access to sensitive data and features, Firebase Authentication is used and integrated. By maintaining strict adherence to business requirements, the Business Logic Layer supports a smooth, secure, and efficient experience for both photographers and clients.

4.3.4 Data Storage Layer

The Data Storage Layer of CaptureEase makes use of Firebase Firestore and Firebase Cloud Storage to effectively manage and store application data. Firebase Firestore, a scalable NoSQL document database, enables real-time synchronization and structured storage of key information such as user profiles, booking details, session records, and photo metadata. Through the use of collections and sub-collections, it organizes data to enable flexible, effective data management and retrieval across different components of the app. This is enhanced by Firebase Cloud Storage, which provides a dependable and safe way to store media files, such as uploaded photos, portfolio photos, and any documents associated with photography sessions. Together, Firestore and Cloud Storage ensure robust data integrity, smooth device synchronization, and safe management of user-generated content on the CaptureEase platform.

4.4 System Overview

CaptureEase system is a comprehensive photography service platform designed to simplify the process of booking and managing photography sessions, especially for users in Sarawak, Malaysia. It provides an easy-to-use mobile application with various features, such as appointment booking, photo gallery organization, AI-powered photo tagging, and in-app advertising for photographers. The system is intended to enhance service efficiency, reduce manual coordination, and improve the overall user experience for both photographers and clients. By offering a centralized hub for scheduling, portfolio showcasing, and customer interaction, CaptureEase helps streamline communication and ensures a more seamless, professional, and accessible photography service. This makes it an ideal solution for freelance photographers and small studios looking to grow their visibility and client base.

4.4.1 CaptureEase Users Description

Users	Description
Clients	Clients are individuals using the CaptureEase mobile application to search for, book, and manage photography sessions. These individuals include families, couples, or event organizers. They can browse photographer profiles, view portfolios, select available time slots, make appointments, and communicate directly with photographers. Through the app, clients can also check their photo galleries, write reviews, and receive session updates.
Photographers	Photographers are registered service providers on the CaptureEase platform who offer their photography services to clients. They can manage their service listings, showcase their portfolio, set availability schedules, respond to client bookings, and upload photo galleries. Photographers may also use the platform's AI-powered features for organizing and tagging photos, and they benefit from in-app advertising to reach a wider audience.
Visitors	Visitors are unregistered users or new potential customers who browse the CaptureEase application to explore more about the photography services. Although they might not be able to use every feature, they can view public portfolios, check prices, and register an account if they want to schedule a session.
System Administrator	The system administrator oversees the overall operation and maintenance of the CaptureEase platform. Their responsibilities include managing user accounts, allocating roles and permissions, monitoring performance, protecting data, and ensuring system stability through frequent updates and backups. To ensure a seamless user experience across the platform, the administrator also manages complaints, content moderation, and technical debugging.

Table 4.1: CaptureEase User Description

4.4.2 CaptureEase Module Implementation

Module	Description / Implementation
User Authentication and Onboarding	• Allows both photographers and clients to create accounts securely, log in, and register with relevant personal and professional details. • Offers an onboarding process to guide new users through the app's key features, including how to book appointment, manage schedules, and use AI-powered features.
Photographer Profile and Portfolio Management	• Allows photographers to create and manage professional profiles that include their bio, schedule availability, pricing, and service offered. • Supports the uploading and categorization of portfolio images for potential clients to view.
Appointment Booking	• Allows clients to search for photographers, check their availability, and schedule sessions by choosing their preferred dates, times and service types. • Sends booking confirmation and allows clients to view and manage their upcoming appointments within the app.
AI-Powered Photo Tagging	• Integrates AI tools to automatically identify, categorize, and arrange photos according to themes, peoples, or events, enabling the galleries easier to be explored and managed. • Assists photographers in categorizing images more efficiently for faster delivery and improved client experience.
In-App Messaging and Communication	• Uses encrypted in-app chat to enable direct communication between photographers and clients. • Allows both parties to discuss session details, special requirements, and post-session follow-ups.
Payment Integration	• Integrates secure payment gateways to support various payment methods such as credit/debit cards and online

	transfers. • Allows clients to make payments for sessions, and provides invoices and receipts while updating payment status in real time.
Notifications and Reminders	• Sends notifications to both photographers and clients about upcoming appointment reminders, session updates, or payment confirmation. • Notifies users of promotional campaigns, new service offerings, and app announcements.
Feedback and Review System	• Allows client to rate and write review on photographers based on service quality and overall satisfaction for improvement. • Helps maintain service standards and builds trust within the CaptureEase community.

Table 4.2: CaptureEase Module Implementation

4.5 Interface Design of CaptureEase

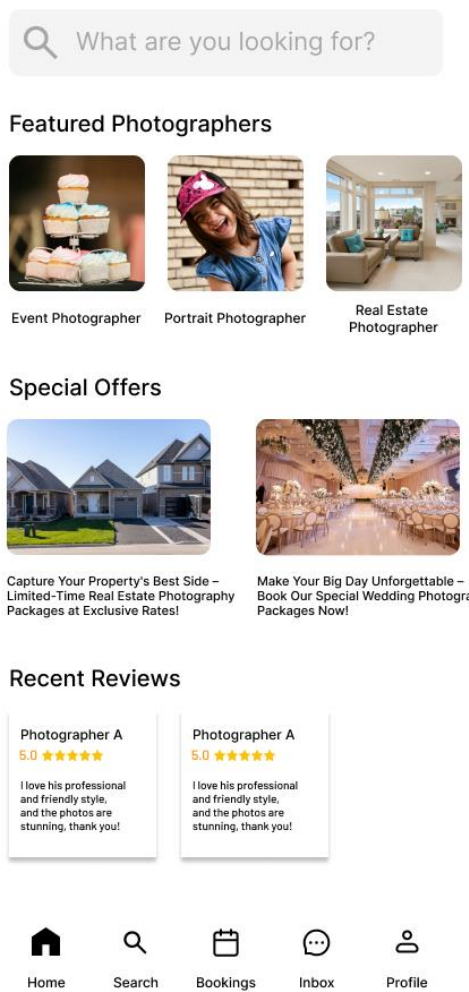


Figure 4.1: The Homepage

The homepage of CaptureEase application allows users to search for desired photography types or photographers by entering relevant keywords. The page also showcases a curated list of featured photographers, highlighting top talents. Users can stay informed with special offers and browse through recent reviews, providing them with the latest updates and insights into the photography services available.

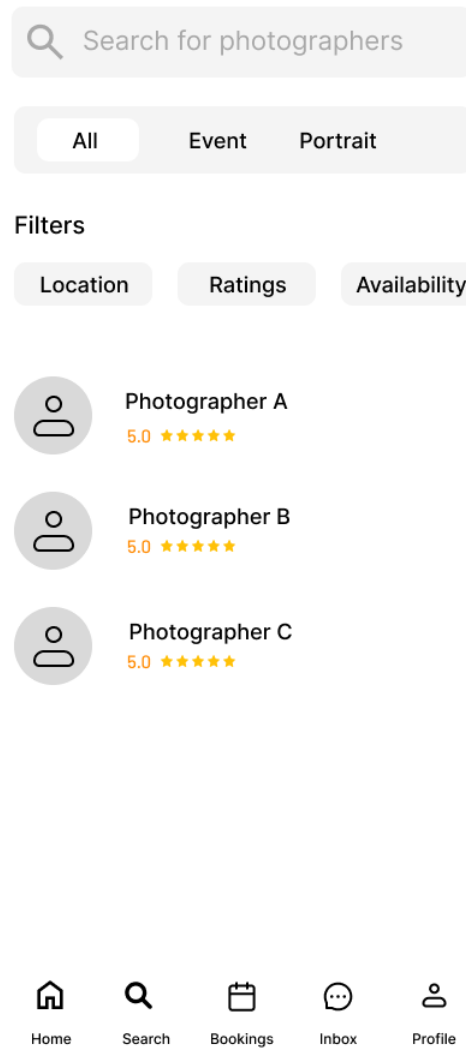


Figure 4.2: The Search Page

The Search page enables users to refine their search for photographers with ease. A search bar allows users to enter specific keywords, while the category filter lets them choose between All, Event Photographer, Portrait Photographer, and others. Additional filters such as location, ratings, and availability help users narrow down their options. The page displays a list of photographers that match the search criteria, providing users with detailed options to explore and select the perfect photographer for their needs.

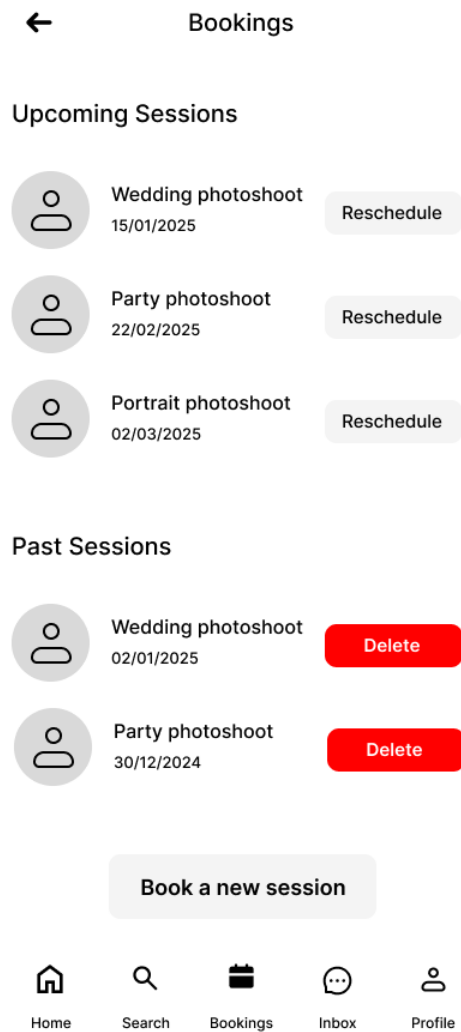


Figure 4.3: The Bookings Page

The Bookings page provides an organized view of both upcoming and past photography sessions. Users can easily access details of their upcoming sessions, with the option to reschedule if needed. Each session offers the ability to read through session details for better clarity. Past sessions are stored for reference, and users have the option to delete them once they are no longer needed, keeping the page clean and easy to navigate. There is a “Book a new session” button, allowing users to book a new appointment.

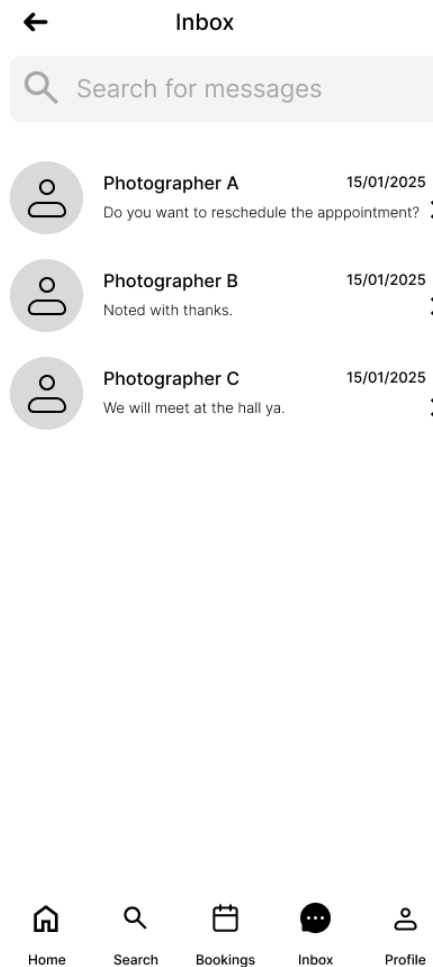


Figure 4.4: The Inbox Page

The Inbox page serves as the communication channel, where users can view and manage messages exchanged with photographers. Each message thread can be easily clicked on to open and read the conversation. A search feature allows users to quickly find relevant messages by entering keywords or photographer names, making it simple to track important discussions and maintain seamless communication with photographers.

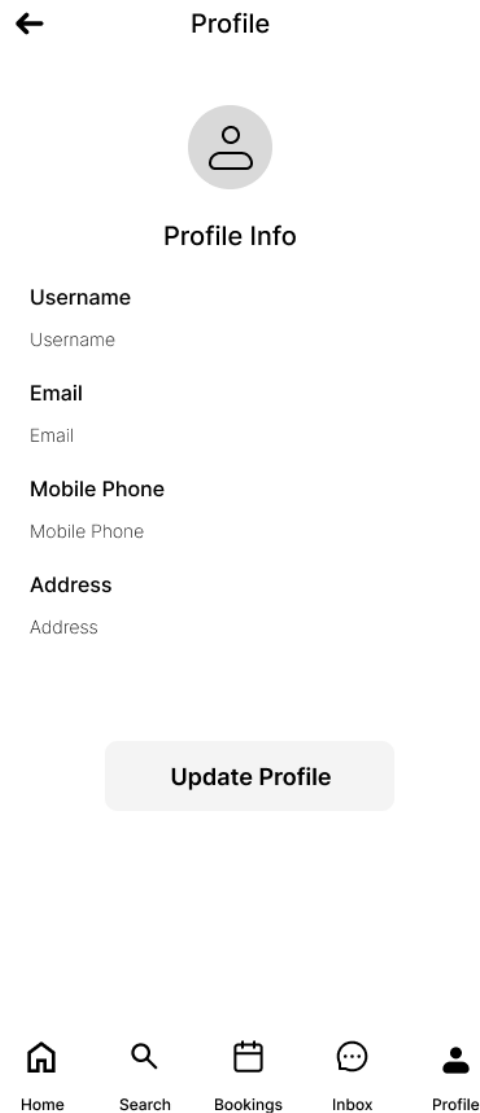


Figure 4.5: The Profile Page

The Profile page allows users to view and manage their personal information. It displays the user's profile picture, username, email, mobile phone number, and address for easy reference. Users can update their profile details by clicking the “Update Profile” button, ensuring that their information stays current and accurate within the app.

←

Profile



Upload Profile Picture

Username

Email

Mobile Phone

Address

Save Changes

Home

Search

Bookings

Inbox

Profile

Figure 4.6: The Update Profile Page

The Update Profile page allows users to manage and update their personal information conveniently. This page provides editable fields such as username, email, mobile phone, and address. Users can make changes and save all the new updates by clicking the button Save Changes. Besides, users can change profile picture by browsing their device to make changes on it.

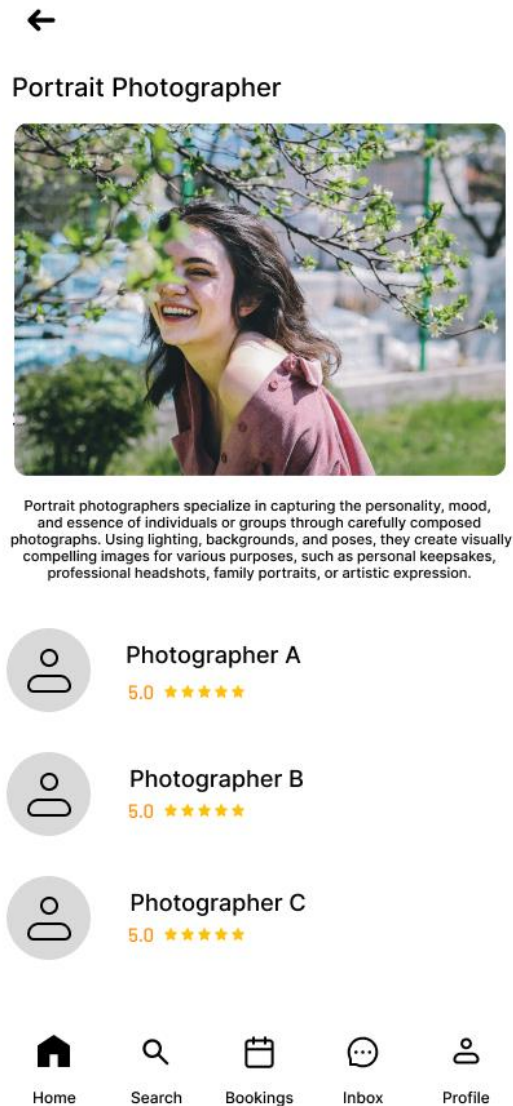


Figure 4.7: The Photographers List Page

The Photographers List Page displays the details of selected category of photographer. Clients select photographer category from the homepage and will be navigated to this page. It provides a brief introduction about the photographer and the specialization. Besides, it also displays a list of photographers for clients to browse and select.



Photographer A



Description

Category:	Portrait Photographer
Experience:	3 years
Location:	xxx
Price Range:	RMxxx

Photo Gallery



Home



Search



Bookings



Inbox



Profile

Figure 4.8: The Photographer Detail Page

After choosing a particular photographer, the Photographer Detail Page will be displayed. It will show the important description of the photographer such as the category he belongs to, the working experience as photographer, location, and the price range of the photography service. The photo gallery of this photographer will be displayed too for clients to know better about the style and the photographer's previous work.

←

Book an appointment

<

Jan 2025

>

Mo	Tu	We	Th	Fr	Sa	Su
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	0	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2

Timeslots

Select timeslots

Requirements

Requirements

Special Remarks

Special remarks

Book Now

Figure 4.9: The Appointment Booking Page

The Appointment Booking Page allows clients to make an appointment with the photographer. They are required to select the date and the timeslots they want. They also need to enter their requirements and special remarks for photographer to take note. After all is done, click on the Book Now button to confirm the booking.

Chapter 5 System Testing

5.1 Introduction

System testing is an essential phase that ensures CaptureEase application satisfies all users and system requirements and functions as intended. To verify its performance, usability, and reliability, the entire app is tested including the booking, browsing, and user interaction functionalities. This chapter outlines the testing approaches used and highlights how can the test cases be utilized to validate the app based on real-world usage scenarios.

5.2 Functional Testing

Functional testing for CaptureEase was conducted to ensure that its main features, which are appointment booking, browsing for photographers, and user account management, operate according to the specific requirements. This testing aimed to confirm that each function behaves as expected, processes inputs accurately, handles errors appropriately, and provides seamless user interactions.

A total of 8 test cases were developed and executed, encompassing a range of user scenarios such as scheduling a session, searching for photographers, rescheduling, logging in and out, and updating user information. These test cases were prioritized based on their significance in delivering the core user experience.

All test cases passed successfully, demonstrating that the essential features of the application can work well and producing the desired outcomes. Any defects or usability problems found during the testing process were promptly addressed and resolved to ensure a smoother experience. This responsive handling of issues enhanced the overall stability and reliability of the application, making it better prepared for actual use. The successful results of the functional testing confirm that CaptureEase fulfils its intended functions and provides a dependable, user-friendly platform for both photographers and users.

Below show the test cases for each functionality:

5.2.1 Test Case for Successful Login

Test Scenario ID		Login-1		Test Case ID	Login-1A	
Test Title		Successful Login		Test Module	Login Page	
Test Case Description		Verify login with valid email and password		Test Priority	High	
Pre-Requisite		User has a registered account		Post-Requisite	User is redirected to home screen	
Step	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Open the application	Application icon	Launch splash screen	Splash screen shown	Pass	Launch successfully
2	Enter email	User email	Email accepted	Email accepted	Pass	Email is entered successfully
3	Enter password	User password	Password accepted	Password accepted	Pass	Password is entered successfully
4	Tap “Login” button	“Login” button	Redirect to home page	Redirected to homepage	Pass	Redirect successfully

Table 5.1: Test Case for Successful Login

5.2.2 Test Case for Browse Photo Gallery

Test Scenario ID		Browse-1		Test Case ID	Browse-1A	
Test Title		Browse Photo Gallery		Test Module	Home Page	
Test Case Description		Verify that user can view uploaded photo gallery		Test Priority	High	
Pre-Requisite		User is logged in		Post-Requisite	Photo gallery is displayed	
Step	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Open home page	-	Load photo gallery list	List displayed	Pass	List displayed successfully
2	Scroll list	-	More profiles loaded	Loaded successfully	Pass	Loaded successfully

Table 5.2: Test Case for Browse Photo Gallery

5.2.3 Test Case for Search Photographers

Test Scenario ID		Search-1		Test Case ID	Search-1A	
Test Title		Search for specific photographers		Test Module	Search Page	
Test Case Description		Verify that user can search for a photographer specifically		Test Priority	Medium	
Pre-Requisite		User is logged in		Post-Requisite	Search results shown	
Step	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Open Search page	Search page button	Load photographer list	Loaded successfully	Pass	Loaded successfully
2	Tap Search Bar	“Portrait Photographer”	Show results with “Portrait Photographer”	Results shown	Pass	Result shown successfully

Table 5.3: Test Case for Search Photographers

5.2.4 Test Case for Book an Appointment

Test Scenario ID		Booking-1		Test Case ID	Booking-1A	
Test Title		Book an Appointment		Test Module	Appointment Page	
Test Case Description		Verify that user can book an appointment with selected photographer		Test Priority	High	
Pre-Requisite		User is logged in		Post-Requisite	Booking saved in the system	
Step	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Open Appointment page	Appointment page button	Load appointment booking page	Loaded successfully	Pass	Loaded successfully
2	Choose photographer	“xxx studio”	Load profile	Profile loaded	Pass	Profile loaded successfully
3	Select suitable date and time	12 June, 2pm	Date and time selected	Data saved	Pass	Data saved successfully
4	Tap “Book Now”	“Book Now” button	Booking confirmed	Booking confirmed	Pass	Booking confirmed successfully

Table 5.4: Test Case for Book an Appointment

5.2.5 Test Case for Reschedule Appointment

Test Scenario ID		Booking-2		Test Case ID	Booking-2A	
Test Title		Reschedule Appointment		Test Module	Bookings Page	
Test Case Description		Verify that user can change appointment date or time		Test Priority	High	
Pre-Requisite		Existing session booked		Post-Requisite	New data saved in the system	
Step	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Open Bookings page	Bookings page button	Load past and upcoming bookings list	Loaded successfully	Pass	Loaded successfully
2	Tap “Reschedule” for upcoming booking	“Reschedule” button	Show reschedule form	Form shown	Pass	Form shown successfully
3	Select new date and time	12 June, 3pm	Updated confirmed	Data updated	Pass	New data updated successfully

Table 5.5: Test Case for Reschedule Appointment

5.2.6 Test Case for View Booking History

Test Scenario ID		Booking-3		Test Case ID	Booking-3A	
Test Title		View Booking History		Test Module	Bookings Page	
Test Case Description		Verify that user can view their past and upcoming sessions		Test Priority	Medium	
Pre-Requisite		User has past bookings		Post-Requisite	Sessions displayed	
Step	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Open Bookings page	Bookings page button	Load past and upcoming bookings list	Loaded successfully	Pass	Loaded successfully

Table 5.6: Test Case for View Booking History

5.2.7 Test Case for Update User Profile

Test Scenario ID		Profile-1		Test Case ID	Profile-1A	
Test Title		Update User Profile		Test Module	Profile Page	
Test Case Description		Verify that user can update their profile details		Test Priority	Medium	
Pre-Requisite		User is logged in		Post-Requisite	Changes saved	
Step	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Open Profile page	Profile page button	Load user profile details	Loaded successfully	Pass	Loaded successfully
2	Tap “Edit”	“Edit” button	Show editable fields	Fields shown	Pass	Fields shown successfully
3	Update details	“Update” button	Changes updated	Changes saved	Pass	Changes saved successfully

Table 5.7: Test Case for Update User Profile

5.2.8 Test Case for Logout from Application

Test Scenario ID		Logout-1		Test Case ID	Logout-1A	
Test Title		Logout from Application		Test Module	Profile / Settings	
Test Case Description		Verify that user can logout from the system		Test Priority	High	
Pre-Requisite		User is logged in		Post-Requisite	Redirected to login screen	
Step	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Tap “Logout”	“Logout” button	Session cleared, redirect to login	Redirected to login	Pass	Redirected successfully

Table 5.8: Test Case for Logout from Application

5.3 Non-functional Testing

Non-functional testing for CaptureEase aims to assess key quality attributes of the application, including its performance, usability, and reliability. While functional testing ensures that specific features can function as intended, non-functional testing verifies that the system works efficiently, user-friendly, and stable under many circumstances. This form of testing evaluates how responsively the application interacts with user input, how intuitive the user interface is for both photographers and clients, and whether the system continues to function consistently under normal and high usage. By performing non-functional testing, the objective is to ensure that CaptureEase not only satisfies technical and functional requirements, but also provides a seamless, responsive, and intuitive experience that fosters long-term user satisfaction and continued engagement.

5.3.1 Performance Testing

Performance testing for CaptureEase assess the responsiveness, stability, and scalability of the application across different usage scenarios. The objective is to ensure that the main features, such as browsing photo gallery, booking an appointment, and photo tagging are executed efficiently and within acceptable response times.

Testing was carried out under both typical usage and simulated high-traffic scenarios, such as several users attempting to book sessions at the same time, to uncover any performance issues. Key metrics like app launch time, navigation speed between screens, and API response times were carefully tracked and evaluated.

The testing ensured that CaptureEase can provide a seamless user experience by handling concurrent usage with ease, maintaining stable operation and quick response times even during peak interaction.

Test Scenario ID		Performance-1			Test Case ID	Performance-1A	
Test Title		Performance Testing			Test Module	CaptureEase	
Test Case Description		Testing the performance and responsiveness of CaptureEase application under different load conditions			Test Priority	High	
Pre-Requisite		CaptureEase application and test environment set up			Post-Requisite	Performance test report and analysis	
Step	Test Type	Description	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Load Testing	Test system with 10 users logging in simultaneously	Simulate 10 concurrent login requests	All logins processed within 3s	All logins successful	Pass	System handled load well
2	Stress Testing	Test system under extreme usage	Simulate 50 login and booking attempts simultaneously	System remains stable, minor slowdowns acceptable	Minor delayed observed, no crashes	Pass	Acceptable under stress load
3	Endurance Testing	Run app continuously for 6 hours	Simulate typical user activity over 6 hours	No memory leaks or major slowdowns	App remained stable over duration	Pass	No performance degradation noticed
4	Response Time	Measure operation	Measure login,	Login < 3s,	All within limits	Pass	Meets acceptable

	Testing	times	booking, image upload, and session retrieval	Booking < 5s, Upload < 10s			response benchmarks
5	Scalability Testing	Gradually increase users from 10 to 20	Simulate increasing user load over time	App should remain responsive and stable	Performance remained stable	Pass	Scalable within tested limit

Table 5.9: Performance Testing

5.3.2 Usability Testing

The usability testing process for CaptureEase was designed to evaluate how intuitive and user-friendly the mobile application in real-world scenarios. The testing team assessed how easily users could navigate through the app, book photography sessions, input special requirements, and access relevant service information. Through this evaluation, user interface that could be improved would be identified, ensuring that the overall experience is smooth, efficient, and aligned with user expectations.

Test Scenario ID	Usability-1	Test Case ID	Usability-1A
Test Title	Usability Testing	Test Module	CaptureEase
Test Case Description	To evaluate the ease of use, clarity, and intuitiveness of the app interface for new and existing users.	Test Priority	High
Pre-Requisite	Latest version of CaptureEase installed, test users recruited	Post-Requisite	Usability feedback and improvement recommendations documented

Step	Action	Input	Expected Output	Actual Output	Test Result	Test Comment
1	Test onboarding flow	Open app as new user	User understands how to use the app via onboarding instructions	User navigates through onboarding screens successfully	Pass	Onboarding content is cleared
2	Test booking a session	Select a date, time, and service	Booking form is easy to fill and submit	User completes booking with minimal guidance	Pass	Form layout is user-friendly
3	Test navigation to “Bookings”	Tap on bottom tab or menu	App navigates to user’s booking history	User views past and upcoming sessions	Pass	Navigation is intuitive
4	Test special requirements inputs	Add test notes in booking	Input field accepts and displays entered text	Test is saved and shown in summary	Pass	Input area is responsive
5	Test error message clarity	Submit form with missing field	Descriptive validation message appears	User receives clear prompts on what to correct	Pass	Helpful error messaging
6	Test readability and design	View different screens	Text and buttons are legible and well-placed	Users can read and interact with elements easily	Pass	Fonts and colors are appropriate

Table 5.10: Usability Testing

5.4 User Acceptance Testing (UAT)

User Acceptance Testing (UAT) for CaptureEase was conducted by distributing a questionnaire to a group of 40 participants. The objective of doing this testing was to determine whether the application satisfies the needs and requirements of the target users. The questionnaire addressed a number of app-related aspects, including functionalities and features, ease of use, user interface design, and overall satisfaction. Participants were asked to rate their experience and satisfactory with the application and provide additional feedback for enhancement if there is any. The responses collected helped to identify potential technical issues, bugs, or areas for improvement before the final deployment. To ensure that CaptureEase provides a seamless, reliable, and easy-to-use experience for both photographers and clients, users were encouraged to provide honest and constructive feedback.

Please rate your overall satisfaction with CaptureEase.

(40 条回复)

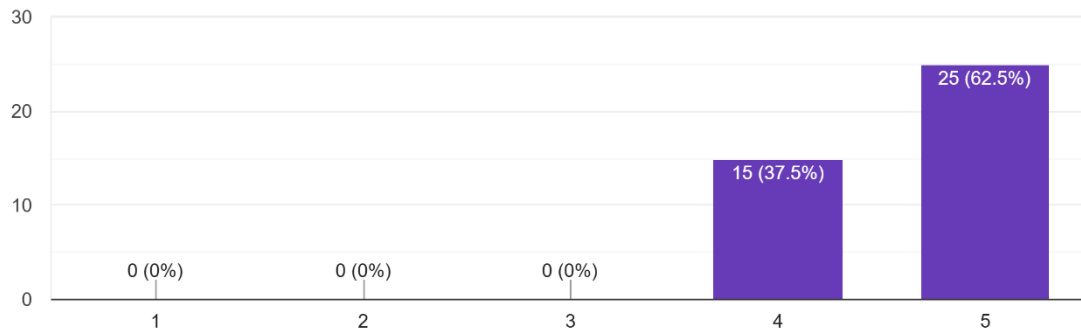


Figure 5.1: UAT Questionnaires – Please rate your overall satisfaction with CaptureEase

To evaluate the overall satisfaction of users with CaptureEase, users were asked to rate their experience on a scale from 1 (very dissatisfied) to 5 (very satisfied). The result shows that 15 participants selected a rating of 4, while 25 participants rate the application with the highest rating of 5. This indicates that majority of users were satisfied or very satisfied with the app, reflecting a generally positive user feedback.

How would you rate the user interface (UI) of CaptureEase?

(40 条回复)

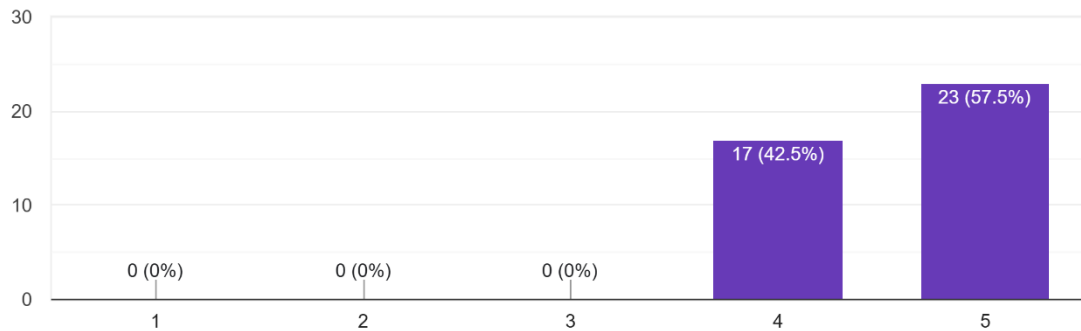


Figure 5.2: UAT Questionnaires – How would you rate the user interface (UI) of CaptureEase?

To evaluate the user interface (UI) of CaptureEase, participants were asked to rate their experience on a scale of 1 (very poor) to 5 (excellent). The result showed that 17 participants rated the UI as 4, while 23 participants gave it the highest rating of 5. This feedback indicates that the majority of users found the interface to be user-friendly, visually appealing, and easy to navigate. The consistently high scores suggest that CaptureEase successfully delivers an intuitive design that enhances the overall user experience, supporting smooth interaction and accessibility across its core features.

Did you find the login process easy and intuitive?
(40 条回复)

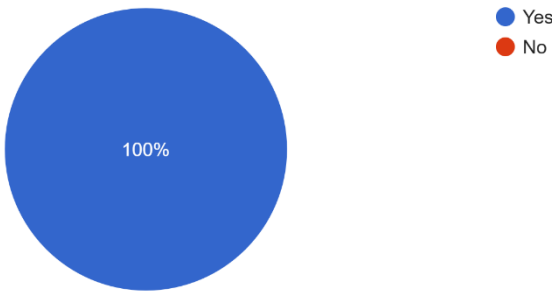


Figure 5.3: UAT Questionnaires – Did you find the login process easy and intuitive?

To assess the ease of access, participants were asked whether they found the login process of CaptureEase easy and intuitive. All respondents selected the option Yes, indicating that the majority experienced a smooth and straightforward login process. This feedback highlights the effectiveness of the application’s authentication flow, suggesting that users were able to access the platform without difficulty.

Rate your experience with the registration process of CaptureEase.

(40 条回复)

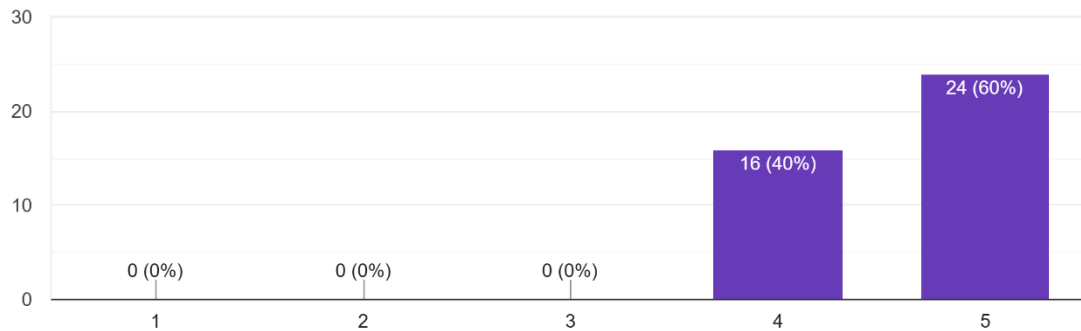


Figure 5.4: UAT Questionnaires – Rate your experience with the registration process of CaptureEase

To evaluate the onboarding experience, respondents were asked to rate their experience with the registration process of CaptureEase. Among the respondents, 16 of them rated a scale of 4, while 24 respondents rated the highest rating of 5. This indicates that most users found the registration process to be smooth, easy-to-use, and effective. The majority positive feedback suggests that the sign-up flow was generally well-designed, with minimal friction or confusion.

How satisfied are you with the functionalities and features of CaptureEase?

(40 条回复)

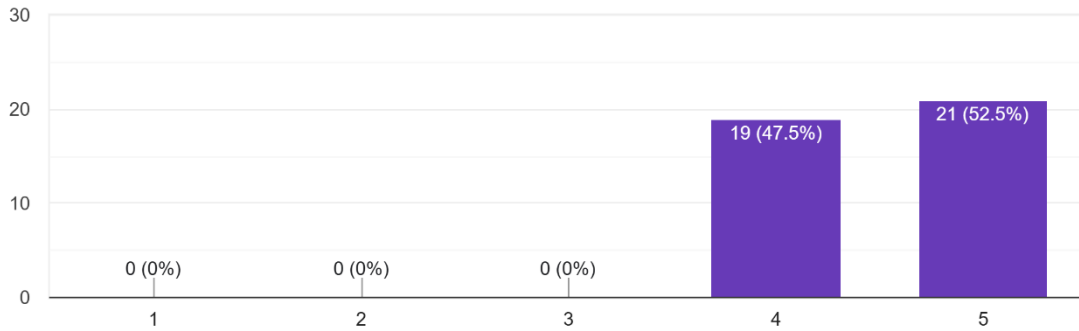


Figure 5.5: UAT Questionnaires – How satisfied are you with the functionalities and features of CaptureEase?

To assess user satisfaction with the functionalities and features of CaptureEase, participants were asked to rate their satisfactory. 19 respondents gave a rating of 4, while 21 respondents rated a scale of 5. This result indicated that most of the users were pleased with the application's key functionalities, such as booking sessions, browsing photo gallery, and managing their accounts. The positive ratings show that the application meets user needs effectively and delivers the intended functionalities.

Did you encounter any technical issues while using CaptureEase?

(40 条回复)

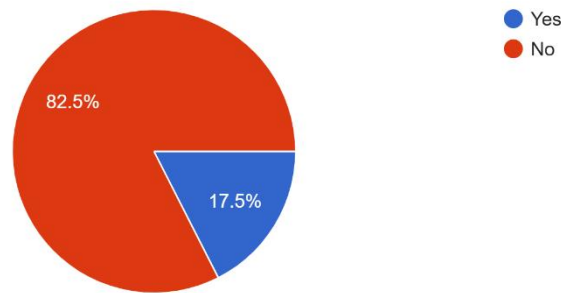


Figure 5.6: UAT Questionnaires – Did you encounter any technical issues while using CaptureEase?

In response to whether users encountered any technical issues while using CaptureEase, 82.5% of participants reported no problem, while only 17.5% of respondents encountered some issues. This indicates that the majority of the users experienced a smooth and stable performance throughout their interaction with the application. The minimal number of technical issues suggests the importance of ongoing testing and refinement for enhancement and user satisfaction.

Rate the performance and responsiveness of CaptureEase
(40 条回复)

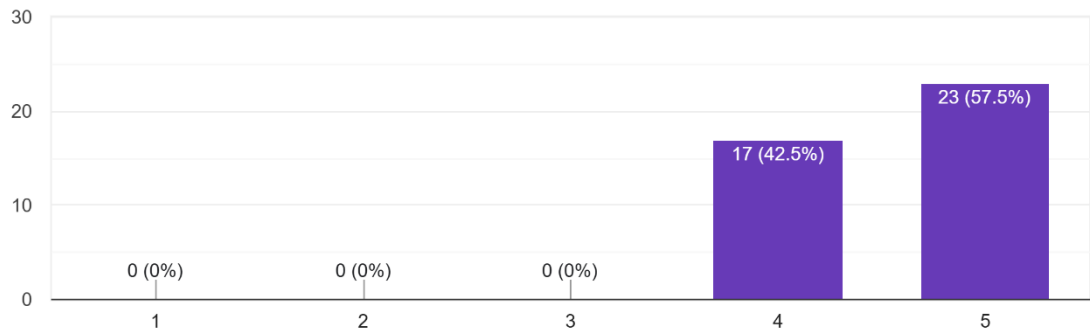


Figure 5.7: UAT Questionnaires – Rate the performance and responsiveness of CaptureEase

When asked to rate the performance and responsiveness of CaptureEase, 17 respondents gave a scale of 4, while 23 respondents rated for a scale of 5. This indicated that the majority of users found the app to perform well, with smooth screen transitions, fast loading times, and reliable responsiveness during use. The positive feedback reflects that CaptureEase generally meets users' expectations in terms of speed and efficiency.

Would you recommend CaptureEase to others?

(40 条回复)

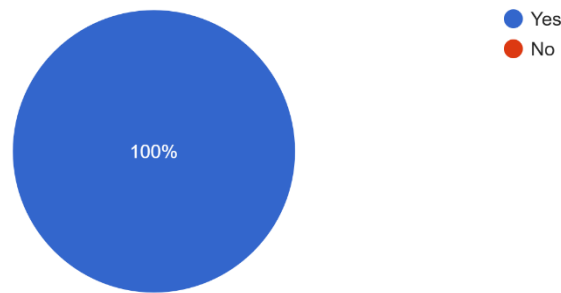


Figure 5.8: UAT Questionnaires – Would you recommend CaptureEase to others?

All respondents responded positively when asked if they would recommend CaptureEase application to others. This strong endorsement shows that a high level of satisfaction with the application's features, usability, and overall experience. This also suggests that users find CaptureEase valuable and reliable enough to suggest to their peers, reflecting both confidence in its functionality and appreciation for the benefits it offers.

Chapter 6 Conclusion and Future Work

6.1 Conclusion

The development of CaptureEase has successfully achieved its objective, which is to offer an intuitive and efficient platform for both photographers and clients to connect, communicate and manage appointment booking. The application streamlines the entire process for both parties with features including user account management, scheduling an appointment, browsing photo gallery and photographers' profile, and photo tagging.

CaptureEase has demonstrated reliable performance, seamless navigation, and efficient management of user inputs and workloads through comprehensive functional and non-functional testing. Issues identified during testing were promptly addressed and resolved, ensuring that the application is reliable and ready for real-world use.

Overall, CaptureEase provides a smooth and useful solution specifically for photography industry in Sarawak, Malaysia, with potential for future enhancements and scalability.

6.2 Achievements

The successful development of CaptureEase has delivered significant outcomes that align with the project's objectives. By providing a centralized mobile solution, CaptureEase streamlines the photography booking process, particularly in Sarawak, Malaysia. The use of Firebase for secure authentication and real-time data storage enhances both security and efficiency, ensuring a smooth user experience. Key features such as appointment booking, photo gallery management, and potential AI advancements demonstrate the app's innovative approach to enhancing the photography service industry. Through rigorous testing, the app's functionality and stability are verified to be ready for deployment, marking a major milestone in meeting both business and client demands.

Objectives	Achievements
To design and develop Photography Services and Booking Mobile Application	Successfully developed the CaptureEase mobile app with core features like user registration, appointment booking, gallery viewing, and ad posting.
To evaluate to usability of the mobile application's booking and photo gallery management for both photographers and customers	Conducted usability testing with users to ensure a smooth and user-friendly experience for both photographers and customers.
To assess the effectiveness of AI-powered features in improving photo selection and organization	Integrated AI-based photo tagging functionality to assist in automatic photo grouping, improving organization and workflow efficiency.

Table 6.1: Objectives and Achievements

6.3 Limitations and Constraints

Although CaptureEase offers several advantages and accomplishes its main objectives, it is important to recognize certain limitations and constraints:

Limitations and Constraints	Description
Geographical Limitation	CaptureEase is primarily designed and used in Sarawak, Malaysia. Therefore, its services may not be applicable or available to users outside of this region. This constraint could restrict its broader adoption and functionality.
Internet Dependency	The app relies on a stable internet connection for seamless operation. Users with unstable internet connection may have trouble when exploring photographers, photo gallery, making appointment, or receiving notifications, which will negatively impact their experience.
Device Limitations	Optimal performance may not be applicable on older devices or unsupported operating systems. Compatibility issues, particularly with outdated Android or iOS versions, could limit its appeal to certain user groups.

Adoption Challenges	The platform's efficacy depends on its broad adoption by photographers and clients. If users remain unaware of its capabilities or hesitant to move away from conventional booking methods, uptake may be sluggish.
Data Privacy Obligations	Strict adherence to data protection regulations is necessary for CaptureEase to manage user data securely. How information is gathered, maintained, and share with third parties may be limited in order to comply with legal and ethical requirements.
Resource Limitations	Sustaining the app's development and support demands adequate funding, technical skills, and server capacity. Limited resources may affect the pace of future updates, feature expansion, or customer support responsiveness.
Third-Party Reliance	Key functionalities such as AI tools and calendar syncing require third-party services. Disruptions, outages, or incompatibilities with these services could compromise the app's reliability.
Scalability Issues	Scalable infrastructure is necessary for an expanding user base. The application may experience performance bottlenecks during high usage periods if the backend is not properly optimized.

Table 6.2: Limitations and Constraints

6.4 Future Works

While CaptureEase has successfully achieved its primary objectives and provided a strong foundation for photography service bookings, there are several opportunities for future enhancements to improve the app's usability, functionality, and overall impact:

Future Works	Description
Video Portfolio Integration	Future updates may enable photographers to upload brief video portfolios or behind-the-scenes material to exhibit their work in a more engaging way, giving clients a better understanding of their creative process.
Seamless In-App Payments	Integrating secure payment gateways for smoother and more reliable transactions.
Guest Booking Option	Users are allowed to book sessions without creating an account to attract casual users and improve accessibility.
Calendar Sync for Photographers	Integrating sync with outside calendars (such as Google Calendar) to assist photographers in managing reservations effectively and avoid scheduling conflicts.
Enhanced Securing with 2FA & Biometrics	Introducing two-factor authentication (2FA) and biometric login options (fingerprint/face recognition) to strengthen account security.
Offline Mode with Auto-Sync	Users can browse services and draft bookings offline, with automatic synchronization once internet access is restored, which is ideal for areas with poor connectivity.
Photographer Analytics Dashboard	Reporting and analytics features are added for photographers, such as booking trends, customer feedback insights, and income tracking, supporting business growth and data-driven decision-making.
Advanced Admin Controls	Admin panel can be improved to manage flagged content, user disputes, and system logs, assisting in maintaining a healthy platform ecosystem.

Table 6.3: Future Works

6.5 Conclusion

In conclusion, CaptureEase has successfully transformed the way photography services are discovered and booked by offering an intuitive and efficient mobile platform. By allowing for easy scheduling and showcasing photographers' portfolios, the application effectively bridges the gap between photographers and clients. Rigorous development and testing have ensured a smooth and reliable experience for both service providers and users, fulfilling the project's core objectives. This project not only addresses a real-world need within the photography industry, particularly in Sarawak, Malaysia, but also opens opportunities for future enhancements, such as real-time payment solutions and allowing offline mode. With continuous improvements and wider adoption, CaptureEase has the potential to become a leading platform for photography service management in local communities and beyond.

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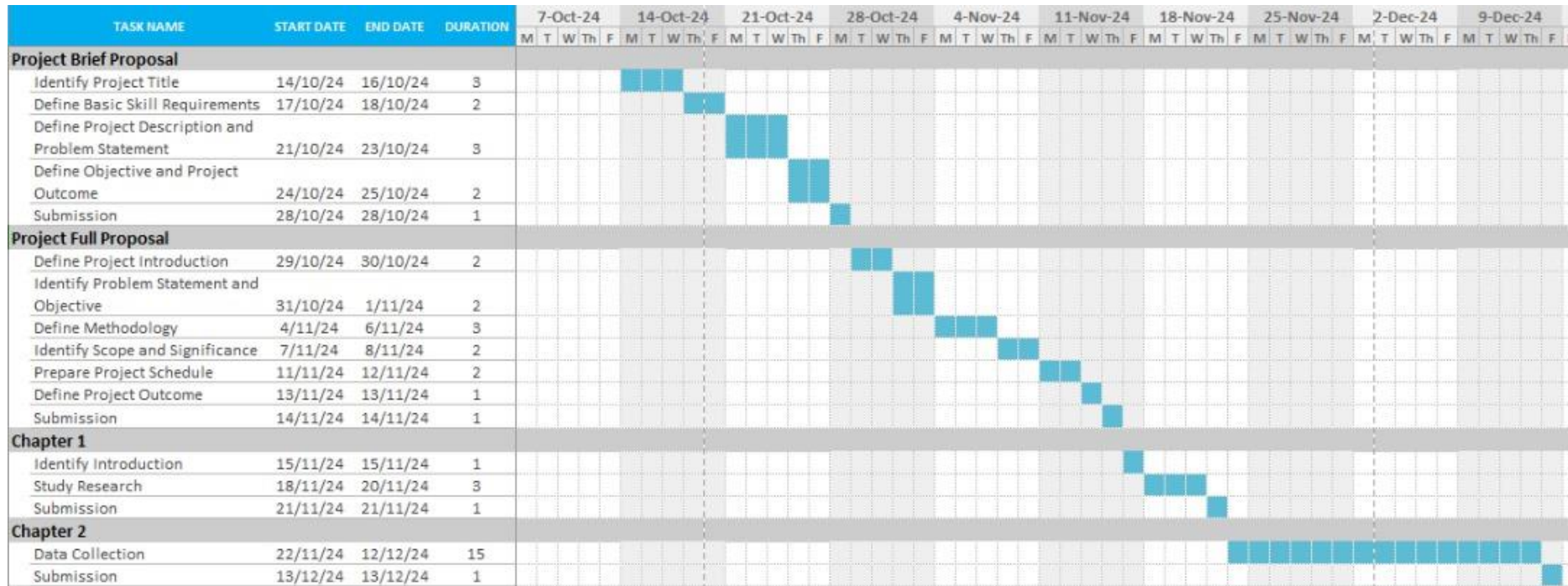
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Appendices

Appendix A – Gantt Chart



Appendix B - Questionnaires

CaptureEase User Research: A Final Year Project on Mobile Photography Service Solutions

👋 Hello, and Thank You for Your Participation!

I am Phun Jia Yi, a final-year Software Engineering student at Unimas. As part of my Final Year Project, I am developing a mobile application titled "**CaptureEase – A Photography Service and Appointment Booking Platform.**" This application aims to provide photographers with a streamlined way to manage appointments, display their portfolios, and connect with clients more efficiently. At the same time, it offers customers an easy-to-use platform to book photography services and browse photographer profiles.

Your input through this survey will play a key role in shaping the features and design of CaptureEase, ensuring it meets the needs of users like you. The survey is divided into three parts:

- 1 Demographic Information
- 2 Photography Service Preferences and Experiences
- 3 Feedback on Proposed Features

Rest assured, your responses will remain confidential and will be used solely for academic purposes. The survey should take no more than 10 minutes to complete. If you have any questions about the survey or project, feel free to contact me.

Contact: 011-16408669

Email: 80969@siswa.unimas.my

Thank you for your time and valuable feedback. Your contribution will directly impact the success of CaptureEase!

Part 1: Demographic Information

In this section, we aim to gather basic information about you to better understand the background of our respondents.

Gender *

- ☐ Male
- ☐ Female

Age Group *

- ☐ Under 18
- ☐ 18 - 24
- ☐ 25 - 34
- ☐ 35 - 44
- ☐ 45 - 54
- ☐ 55 and above

Current Occupation *

- ☐ Student
- ☐ Photographer
- ☐ Freelancer
- ☐ Business Owner
- ☐ Other

Primary Role *

- ☐ Photographer
- ☐ Client (seeking for photography services)

Part 2: Photography Service Preferences and Experiences (Photographer)

As a photographer, your feedback is valuable in understanding the features and tools you need to enhance your service offering.

What type of photography services do you provide? *

- ☐ Event photography (e.g., weddings, parties)
- ☐ Portrait photography (e.g., personal, family)
- ☐ Commercial photography (e.g., product, corporate)
- ☐ Real estate photography

How do you currently advertise your photography services? (Select all that apply) *

- ☐ Social media platforms (Instagram, Facebook, etc.)
- ☐ Personal website
- ☐ Photography service platforms (Fiverr, ShootProof, etc.)
- ☐ Word-of-mouth referrals

What challenges do you face in managing appointments and client interactions? *

- ☐ Difficulty in scheduling and managing bookings
- ☐ Lack of client communication features
- ☐ Managing payments and invoicing
- ☐ Time-consuming administrative tasks

Do you offer customized photography packages for your clients? *

- ☐ Yes, I offer customizable packages based on client needs.
- ☐ No, I have fixed pricing packages.
- ☐ I am considering offering customized packages in the future.

What features would you find most useful in a photography service platform? *

(Select all that apply)

- ☐ Appointment booking system
- ☐ Portfolio/gallery management
- ☐ Client communication tools (e.g., messaging, notifications)
- ☐ Customizable packages and pricing
- ☐ Digital downloads for clients
- ☐ Analytics and performance tracking
- ☐ Invoicing and payment processing

How do you prefer to manage payments for your services? *

- ☐ Online Banking
- ☐ Credit / Debit Card
- ☐ Cash Payment

What would make your photography business more efficient and profitable? *

- ☐ Automated appointment scheduling
- ☐ Better client management tools
- ☐ Integrated payment processing
- ☐ Exposure through online platforms
- ☐ Easy-to-use gallery management tools

What devices do you use for your photography business management? *

- ☐ Smartphone
- ☐ Laptop / PC

Would you be interested in a platform that combines photography portfolio management with appointment booking, payment processing, and client interaction in one place? *

- ☐ Yes, this would be very useful for my business.
- ☐ No, I prefer using separate tools for different tasks.

Part 2: Photography Service Preferences and Experiences (Client)

As a client seeking photography services, your input is essential in understanding the features and tools that would enhance your experience when booking a photographer.

How often do you engage with photography services? *

- ☐ Weekly
- ☐ Monthly
- ☐ Few times a year

What type of photography services do you seek? *

- ☐ Event photography (e.g., weddings, parties)
- ☐ Portrait photography (e.g., personal, family)
- ☐ Commercial photography (e.g., product, corporate)
- ☐ Real estate photography

How do you usually find photographers for your needs? (Select all that apply) *

- ☐ Social media platforms (Instagram, Facebook, etc.)
- ☐ Online photography service platforms (Fiverr, ShootProof, etc.)
- ☐ Recommendations from friends and family
- ☐ Search engines (Google, etc.)

What factors are most important to you when choosing a photographer? (Select all that apply) *

- ☐ Portfolio and photography style
- ☐ Price and affordability
- ☐ Client reviews and testimonials
- ☐ Availability and booking convenience
- ☐ Professionalism and communication
- ☐ Package options and customization
- ☐ Location of photographer

Have you ever faced any challenges when booking a photographer? *

☐ Yes

☐ No

If yes, please describe the challenges you faced.

您的回答

What features would you find most useful in a photography service platform? *
(Select all that apply)

☐ Easy-to-use booking system

☐ Clear pricing and package options

☐ Ability to view portfolios and photographer styles

☐ Communication tools with photographers (e.g., messaging, notifications)

☐ Online payment and invoicing

☐ Ability to leave reviews and feedback

☐ Photo gallery access after the shoot

How important is it for you to be able to customize your photography packages? *

- ☐ Very important
- ☐ Somewhat important
- ☐ Not important
- ☐ I prefer fixed packages

How do you usually prefer to pay for photography services? *

- ☐ Online Banking
- ☐ Credit / Debit Card
- ☐ Cash Payment

What device do you use for searching photography services? *

- ☐ Smartphone
- ☐ Laptop / PC

Would you be interested in using a platform that allows you to book photographers, view portfolios, and make payments all in one place? *

- ☐ Yes, this would be very convenient.
- ☐ No, I prefer using separate platforms for each task.

Part 3: Feedback on Proposed Features

This part aims to gather your feedback on the proposed features and functionalities of the CaptureEase platform.

How useful do you find the idea of an integrated appointment booking system for photography services? *

	1	2	3	4	5	
Not useful	☐	☐	☐	☐	☐	Very useful

How likely are you to use a platform that combines portfolio viewing, booking, and payment in one place? *

	1	2	3	4	5	
Very unlikely	☐	☐	☐	☐	☐	Very likely

What is your opinion on having AI-driven features like image enhancement or automatic style recommendations? *

	1	2	3	4	5	
Not useful	☐	☐	☐	☐	☐	Very useful

Do you think it's important for the platform to have a feature for customer reviews and ratings of photographers? *

	1	2	3	4	5	
Not important	☐	☐	☐	☐	☐	Very important

How important is it for you to have real-time communication tools (e.g., messaging, notifications) with photographers / clients? *

	1	2	3	4	5	
Not important	☐	☐	☐	☐	☐	Very important

What is your opinion on the ability to book photography services directly through the mobile app? *

1 2 3 4 5

Not convenient ☐ ☐ ☐ ☐ ☐ Very convenient

How would you rate the importance of having multiple payment options (credit card, online transfer, etc.) on the platform? *

1 2 3 4 5

Not important ☐ ☐ ☐ ☐ ☐ Very important

What additional features or improvements would you suggest for CaptureEase to enhance your experience? *

您的回答

Appendix C – User Acceptance Testing (UAT) Questionnaires for CaptureEase

CaptureEase User Research: A Final Year Project on Mobile Photography Service Solutions

👋 Hello, and Thank You for Participating!

I'm **Phun Jia Yi**, a final-year Software Engineering student at **UNIMAS**. As part of my Final Year Project, I've developed a mobile application called **CaptureEase – A Photography Service and Appointment Booking Platform**.

This app aims to help photographers manage their services and showcase their portfolios, while providing users with a simple way to discover and book photography sessions.

🌱 You are invited to take part in this **User Acceptance Testing (UAT)** to share your thoughts and experience with the app. Your feedback will help me improve the app's features, usability, and overall user experience.

The survey includes a few short questions to understand your general impression of the app, how easy and enjoyable it is to use, and any suggestions or issues you encountered. It will only take **5–10 minutes**, and all responses will be kept confidential for academic use only.

If you have any questions, feel free to contact me:

☎ 011-16408669

✉ 80969@siswa.unimas.my

🙏 Thank you again for your time and support. Your feedback is incredibly valuable in helping **CaptureEase** grow!

Please rate your overall satisfaction with CaptureEase. *

	1	2	3	4	5	
Very dissatisfied	☐	☐	☐	☐	☐	Very Satisfied

How would you rate the user interface (UI) of CaptureEase? *

	1	2	3	4	5	
Very poor	☐	☐	☐	☐	☐	Excellent

Did you find the login process easy and intuitive? *

- ☐ Yes
- ☐ No

Rate your experience with the registration process of CaptureEase. *

	1	2	3	4	5	
Very dissatisfied	☐	☐	☐	☐	☐	Very satisfied

How satisfied are you with the functionalities and features of CaptureEase? *

	1	2	3	4	5	
Very dissatisfied	☐	☐	☐	☐	☐	Very satisfied

Did you encounter any technical issues while using CaptureEase? *

- ☐ Yes
- ☐ No

Rate the performance and responsiveness of CaptureEase *

	1	2	3	4	5	
Very poor	☐	☐	☐	☐	☐	Excellent

Would you recommend CaptureEase to others? *

- ☐ Yes
- ☐ No