



MULTIMEDIA UNIVERSITY

FACULTY OF COMPUTING & INFORMATION TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

TECH CARE

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Submitted in partial fulfilment of the requirements of Bachelor of Science
Software Engineering.

DECLARATION

I hereby declare that this Project is my own work and has, to the best of my knowledge, not been submitted to any other institution of higher learning.

Student : _____ **Registration Number:** _____

Signature: **Date:**.....

This project has been submitted as a partial fulfilment of requirements for the Bachelor of Science in Software Engineering of Multimedia University of Kenya with my approval as the University supervisor.

Supervisor: _____

Signature: **Date:**

DEDICATION

I would like to dedicate this project to all the hardworking technicians' professionals who strive to provide quality care to their users. With the rapid advancements in technology, booking bookings for technical consultations has become much easier and efficient. This project delves into the topic of booking bookings using the Tech Care mobile application. I hope this project contributes to the growing body of knowledge on how technology can facilitate technician's access and improve user outcomes.

ACKNOWLEDGEMENT

I would like to express my gratitude to several individuals for their support and contribution my project.

Firstly, I would like to thank my supervisor for providing me with valuable guidance throughout the duration of this project. Your insights and feedback have been instrumental in shaping the direction of this project.

I would also like to extend my thanks my friends who participated in the user testing phase of this project. Your time and expertise were invaluable in helping me to understand the needs of technician's providers and users in relation to repair booking systems.

Additionally, I would like to thank me who was behind Tech Care for creating a user-friendly mobile application that has the potential to improve access to technicians for many individuals.

Finally, I would like to thank my family and friends for their unwavering support and encouragement throughout my academic journey. Your support has been crucial in enabling me to achieve my academic goals.

ABSTRACT

This project explores the use of a mobile application, Tech Care, for booking technical bookings. The project begins with a review of the existing literature on booking systems in technicians and their impact on access to care. The project then describes the design and development of the Tech Care mobile application, including the features and functionalities that were incorporated into the platform.

The project presents the results of user testing conducted with technician's providers and users to evaluate the usability and effectiveness of Tech Care for booking. The findings suggest that Tech Care is a user-friendly and efficient platform that can improve access to technicians for users and streamline the booking process for technician's providers.

Overall, this project demonstrates the potential for mobile applications like Tech Care to address some of the challenges associated with booking in technicians, and highlights the importance of user-centred design in the development of such platforms.

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LIST OF ABBREVIATIONS AND ACRONYMS

DFD	Data Flow Diagram
UML	Unified Modelling Language
RAD	Rapid Application Development
UI	User Interface
Mongo DB	Mongo Database
Node JS	Node JavaScript

CHAPTER 1 – INTRODUCTION

1.1 Background of Study

The background of the study for the Tech Care app revolves around the increasing demand for efficient and reliable technical services in today's digital age. With the proliferation of technology in various aspects of life, there is a growing need for a platform that can seamlessly connect clients with skilled technicians to address their technical needs.

The traditional methods of finding technicians, such as word-of-mouth referrals or online searches, can often be time-consuming and inefficient. Clients may struggle to find technicians with the right expertise and availability, while technicians may face challenges in reaching potential clients and managing service requests effectively.

The Tech Care app aims to bridge this gap by providing a centralized platform where clients can easily submit service requests and find qualified technicians, while technicians can efficiently manage their schedules, communicate with clients, and showcase their skills and services.

By leveraging the power of mobile technology and location-based services, the Tech Care app offers a convenient and user-friendly solution for both clients and technicians. It seeks to streamline the process of connecting clients with technicians, ultimately enhancing the overall experience for both parties involved.

In summary, the background of the study highlights the need for a modern, efficient, and reliable platform like Tech Care to address the evolving demands of the technical service industry and improve the way clients and technicians interact and engage with each other.

1.2 Problem Statement

The problem statement addressed by the Tech Care app is the inefficiency and lack of transparency in the process of connecting clients with skilled technicians for technical services. Traditional methods of finding technicians often involve time-consuming searches, unreliable referrals, and difficulty in assessing the credibility and expertise of service providers.

Specifically, the key problems include:

1. **Difficulty in Finding Qualified Technicians:** Clients struggle to find technicians with the required skills and expertise for their specific technical needs. This often leads to delays in obtaining services and frustration among clients.
2. **Lack of Transparency:** Both clients and technicians face challenges in understanding each other's availability and service offerings. This lack of transparency can result in miscommunication and dissatisfaction on both sides.
3. **Inefficient Communication:** Communication between clients and technicians is often fragmented, relying on phone calls, text messages, or emails. This can lead to missed messages, scheduling conflicts, and delays in service delivery.
4. **Limited Visibility for Technicians:** Skilled technicians may struggle to reach potential clients and showcase their expertise effectively. As a result, they may miss out on opportunities to expand their customer base and grow their business.
5. **Ineffective Scheduling and Management:** Technicians often have to manually manage their schedules, leading to inefficiencies and potential conflicts with service bookings.

Overall, the problem statement revolves around the need for a streamlined and transparent platform that facilitates seamless communication, efficient scheduling, and reliable connections between clients and technicians in the technical service

industry. The Tech Care app aims to address these challenges and improve the overall experience for both clients and technicians.

1.3 Aim of the study

The aim of the study is to develop and implement the Tech Care app, a comprehensive platform designed to address the challenges faced by clients and technicians in the technical service industry. The primary objectives include:

1. **Facilitating Seamless Connections:** The app aims to provide a user-friendly interface that allows clients to easily find qualified technicians based on their specific technical needs and preferences. This includes features such as technician profiles, and ratings.
2. **Enhancing Transparency:** Tech Care aims to promote transparency by providing detailed information about technicians' qualifications and service offerings. Clients can make informed decisions, while technicians can showcase their expertise and professionalism.
3. **Improving Communication Channels:** The app will offer efficient communication channels, such as notifications, to facilitate smooth interactions between clients and technicians. This will help reduce misunderstandings, streamline communication, and ensure timely responses.
4. **Optimizing Scheduling and Management:** Tech Care will include scheduling tools that allow technicians to manage their bookings, view their upcoming tasks, and synchronize their calendars with client bookings. This will help minimize scheduling conflicts and improve overall efficiency.
5. **Empowering Technicians:** The app aims to empower technicians by providing them with a platform to market their services, expand their client base, and manage their businesses more effectively.

Overall, the aim of the study is to develop a comprehensive solution that revolutionizes the way clients and technicians connect and interact in the technical

service industry, ultimately enhancing the overall experience for all stakeholders involved.

1.3.1 Research objectives

- i. Getting ICT equipment repaired by connecting users with skilled technicians swiftly and efficiently.
- ii. Provide a user-friendly platform where customers can easily submit repair requests, and select technicians that match their specific repair needs.
- iii. Empower customers with information, enabling them to make informed decisions by comparing the services they need from a given technician.

1.4 Justification of the study

The justification for the study lies in the recognition of several key factors. Firstly, there is a growing demand for technical services across various industries and sectors due to the increasing complexity of technology in everyday life. However, finding reliable and qualified technicians to address specific technical needs can be challenging for consumers. Existing methods of searching for technicians may not always yield satisfactory results, leading to frustration and delays in issue resolution. Moreover, there is often a lack of transparency in the technical service industry regarding technicians' qualifications, pricing, and availability, further complicating the process for consumers. Conversely, many qualified technicians struggle to market their services effectively and expand their client base. The Tech Care app aims to address these challenges by leveraging technology to enhance transparency, facilitate seamless connections between consumers and technicians, improve communication channels, and empower technicians to showcase their skills and manage their businesses efficiently. Thus, the study seeks to contribute to the enhancement of the technical service industry, ultimately improving the overall experience for all stakeholders involved.

1.4Scope

The Tech Care app ambitiously aims to revolutionize the technical service industry by providing a comprehensive platform that connects consumers with skilled technicians

seamlessly. With a vast array of service categories ranging from plumbing and electrical work to IT support and automotive maintenance, the app caters to diverse consumer needs. Operating initially within specific geographic regions, it offers localized solutions while also harbouring scalability potential for broader expansion in the future. Through distinct user roles tailored for consumers and technicians, the app facilitates efficient service discovery, booking, and management processes. Key features include user authentication, real-time messaging, booking scheduling, and secure payment processing, ensuring a user-friendly experience. Compatible with Android devices, the app prioritizes accessibility across various platforms. Furthermore, its revenue model incorporates service fees, subscription options, premium listings, and potential advertising avenues. Compliant with regulatory standards, the app maintains data security and privacy while adhering to industry best practices. In essence, the Tech Care app aspires to streamline the technical service landscape, fostering convenience and reliability for all stakeholders involved.

1.5 Assumptions

The Tech Care app operates under several assumptions to facilitate its functionality and effectiveness. Firstly, it assumes that users have access to compatible mobile devices, such as smartphones or tablets, with stable internet connections to access the app's features. Additionally, it assumes that users are comfortable with utilizing mobile applications and are willing to engage with digital platforms for service procurement. The app also assumes that technicians registered on the platform possess the necessary skills and qualifications to provide quality services to consumers. Furthermore, it assumes that users will accurately provide information such as service requirements, location details, and payment information to facilitate smooth service transactions. Another assumption is that users trust the platform to safeguard their personal and financial data securely. Lastly, the app assumes that there is sufficient demand for technical services within the target regions to sustain user engagement and facilitate business growth. These assumptions underpin the functionality and viability of the Tech Care app, guiding its development and implementation strategies.

1.6 Limitations

- i. Reliance on technician-provided information: Inaccurate or incomplete user-provided information may affect the efficiency and accuracy of service.
- ii. Technical issues and bugs: Technical issues or bugs within the app's interface or functionality may disrupt user experience and service provision.

CHAPTER 2 – LITERATURE REVIEW

2.1 Introduction

In this regard, the literature review provides an in-depth exploration of various themes, theories, and concepts related to the research area. It involves examining different perspectives, methodologies, and findings from previous studies, thereby enabling researchers to identify key patterns, trends, and gaps in the literature. By analysing the strengths and limitations of existing research, scholars can develop a nuanced understanding of the topic and formulate research questions that contribute meaningfully to the academic discourse.

Moreover, the literature review facilitates the establishment of a theoretical framework that underpins the research methodology and analytical approach. It involves synthesizing theoretical perspectives and conceptual models relevant to the study, thereby providing a theoretical foundation upon which the research is built. Additionally, the literature review helps researchers situate their study within the broader scholarly conversation, demonstrating how their work builds upon, challenges, or extends existing theories and empirical findings.

2.2 Related systems

Health Systems and Uber applications work in almost the same way as this one since the logic appears to be the same but the field is the one which is distinct since TechCare deals with the tech or computing field.

2.3 Limitations

It may not be accessible to users who do not have access to a mobile device or those who are not comfortable using mobile-based applications.

2.4 How your proposed solution will handle these weaknesses.

The proposed solution for addressing the limitations associated with electronics-based "Tech Care" involves a comprehensive strategy focused on enhancing accuracy, user engagement, privacy, equity, and regulatory compliance in electronic repairs. To ensure the reliability and precision of repairs, stringent validation and calibration procedures will be implemented, drawing on industry best practices and continuous monitoring to maintain consistent repair standards. User engagement will be prioritized through intuitive service interfaces and proactive communication channels, fostering a positive customer experience and encouraging repeat business.

Efforts to promote equity in access to repair services will include community outreach initiatives, affordability programs, and partnerships with local organizations to address socioeconomic disparities and ensure that repair services are accessible to all individuals. Finally, collaboration with regulatory authorities and adherence to industry standards will ensure compliance with legal requirements and promote a culture of accountability and responsibility in electronic repair practices.

CHAPTER 3 – METHODOLOGY

3.1 Introduction

The systematic approach employed to tackle Tech Care, focusing on electronic repair services. This segment outlines the research design, data collection techniques, and analytical methods utilized to evaluate the effectiveness and efficiency of Tech Care in addressing electronic repair needs. By providing a structured framework for the research process, this methodology aims to ensure the reliability, validity, and reproducibility of the study's findings. Through a combination of qualitative and quantitative methods, including surveys, interviews, and observational studies, this chapter delineates the steps taken to gather comprehensive data on the functionality and performance of Tech Care. Additionally, the methodology section discusses the ethical considerations and potential limitations of the research approach, highlighting the strategies implemented to mitigate biases and enhance the credibility of the study.

3.2 Methodology

Rapid Application Development (RAD)

Rapid Application Development (RAD) holds significant relevance in the context of TechCare, especially considering its focus on electronic repairs and services. Here's how RAD can be applied to enhance the development and maintenance of TechCare's software platform:

1. **Iterative Prototyping:** RAD enables TechCare to rapidly prototype new features or improvements to its platform. This approach allows for quick validation of ideas and concepts, ensuring that the final product meets the needs of both technicians and customers.
2. **User-Centric Design:** With RAD, TechCare can actively involve technicians and customers in the development process, gathering feedback early and often. By incorporating user input throughout the iterative cycles, TechCare can ensure that its platform is intuitive, efficient, and tailored to the specific requirements of electronic repair professionals.

3. **Agile Development:** Adopting an agile approach within RAD allows TechCare to adapt to changing market trends and customer demands swiftly. By breaking down development tasks into manageable sprints, TechCare can deliver incremental updates to its platform, ensuring continuous improvement and alignment with evolving industry standards.
4. **Time-to-Market:** RAD emphasizes rapid delivery of functional prototypes, enabling TechCare to accelerate its time-to-market for new features or services. By streamlining the development process and eliminating unnecessary overhead, TechCare can remain competitive in the fast-paced electronics repair industry.
5. **Collaborative Environment:** RAD promotes collaboration among cross-functional teams, including developers, designers, and domain experts. TechCare can leverage this collaborative environment to foster innovation, drive problem-solving, and capitalize on the collective expertise of its workforce.
6. **Reusable Components:** RAD encourages the reuse of existing components and modules, enabling TechCare to build upon its existing software infrastructure. By leveraging reusable assets and libraries, TechCare can expedite development efforts while maintaining consistency and reliability across its platform.

Here is the RAD Methodology diagram:

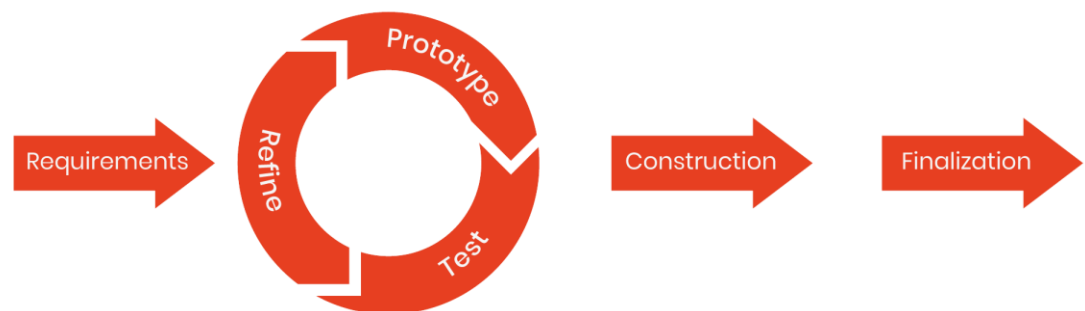


Figure 1: Rapid Application Development

3.3 Data collection methods and tools

Some of the common data collection methods that I used are:

i. Customer Feedback Forms

TechCare can implement customer feedback forms within its platform to gather insights from users regarding their satisfaction levels, service experiences, and suggestions for improvement. These forms can be integrated into the app or mobile site, allowing customers to provide feedback conveniently after using TechCare's services.

ii. Surveys and Questionnaires

Conducting surveys and questionnaires among both technicians and customers can help TechCare understand their preferences, needs, and pain points. By designing targeted surveys, TechCare can collect structured data on topics such as service quality, pricing satisfaction, repair turnaround times, and overall user satisfaction.

iii. Usage Analytics

TechCare can leverage usage analytics tools to track user interactions and behaviours within its platform. By analyzing metrics such as session duration, click-through rates, most accessed features, and device types, TechCare can gain valuable insights into user engagement patterns and identify areas for optimization.

3.4 Project Resources (Hardware/Software)

Hardware

The hardware resources required for the implementation of the Tech Care Platforms were relatively minimal, as the platform is mobile-based and can be accessed through any mobile device. However, during the development and testing phases, the following hardware resources were used:

i. Laptop for application development and testing

- ii. Servers for hosting and testing the platform

Software

The development of the Tech Care platform required the use of several software tools and technologies. These included:

a) Programming languages

The platform was primarily developed using JavaScript

b) Frameworks

The React Native JavaScript framework was used for building the user interface, while Node.js and Express were used for server-side development.

c) Databases

MongoDB was used as the primary database for storing user and order data.

3.5 Project Schedule

The development and implementation of the Tech Care platform was carried out over a period of 6 months, from September 2023 to March 2024. The project was broken down into several phases, each with its own set of milestones and deliverables.

Phase 1: Planning and Requirements Gathering

Duration

Early September 2023 to 20th January 2024

Milestones

- Completion of project proposal and approval
- Development of project plan and timeline

Deliverables

- Project proposal and plan

Phase 2: Design and Development

Duration

21st January 2024 to 20th February 2024

Milestones

- Completion of user interface (UI) design
- Development of backend functionality

Deliverables

- Working booking and management system

Phase 3: Deployment and Launch

Duration

20th February 2024 to 31st March 2024

Milestones

- Final deployment of Tech Care platform to production environment

Deliverables

- Fully functional Tech Care platform

Overall, the project schedule helped to guide the development and implementation of the Tech Care platform and ensure that it was delivered on time.

3.6 Project budget.

The development and implementation of the Tech Care platform required a significant amount of resources and no funding since I could do all the tasks needed for development.

CHAPTER 4 – SYSTEM ANALYSIS

4.1 Detailed analysis of current system using DFDs, UML, Context diagrams

To understand the existing process and system of bookings, I used various diagrams to illustrate the flow and interactions within the system. I created the following diagrams.

Context Diagram

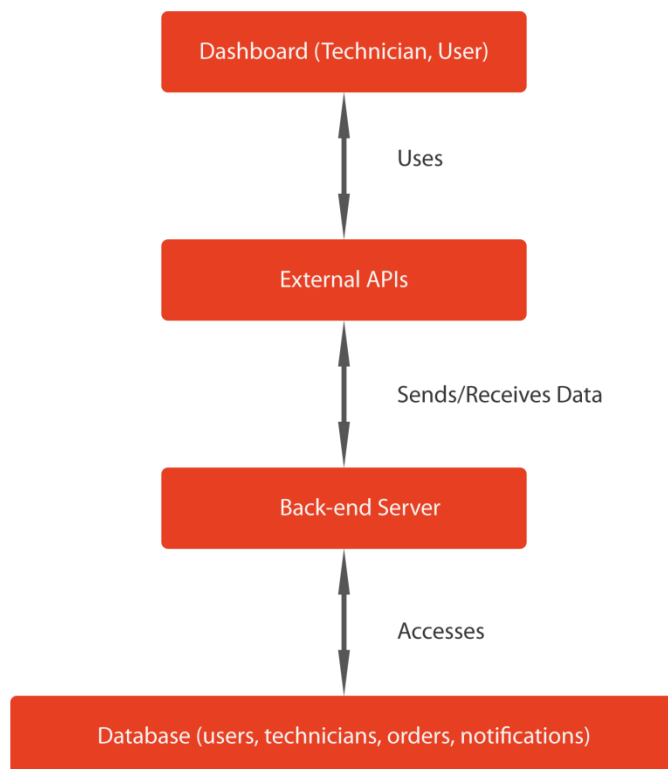


Figure 2: Context Diagram

Data Flow Diagrams (DFDs)

The **Level 0** DFD shows the entire system

The external entities represent everyone that interacts with the system.

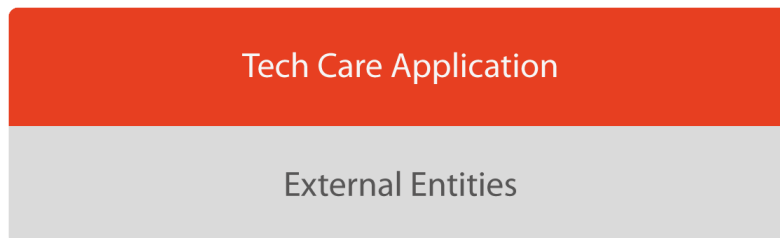


Figure 3: Level 0 Data Flow Diagram

The **Level 1** DFD provides a more detailed view of the order placement process. It shows the sub-processes involved, such as managing orders, managing users, ratings and notifications.

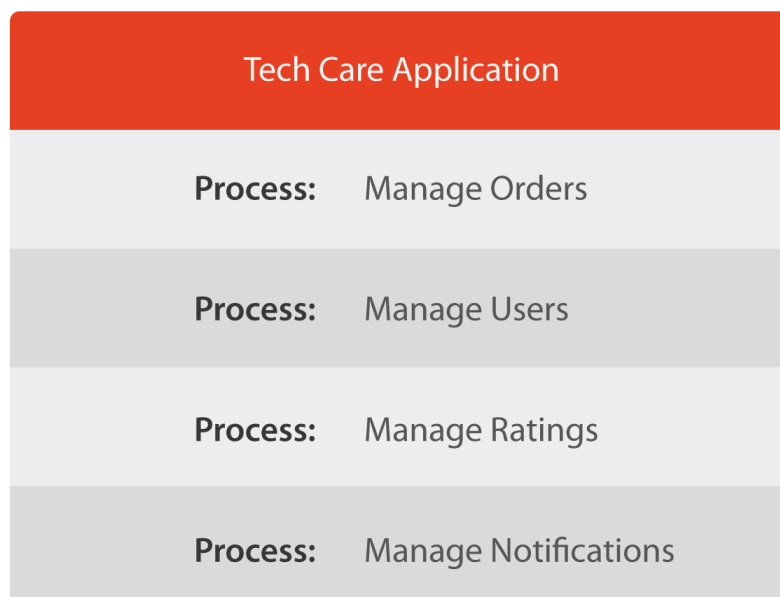


Figure 4: Level 1 Data Flow Diagram

The **Level 2** DFD provides a more detailed view of the manage order process. It shows the sub-processes involved, such as retrieving orders, order details updating orders and the services offered.

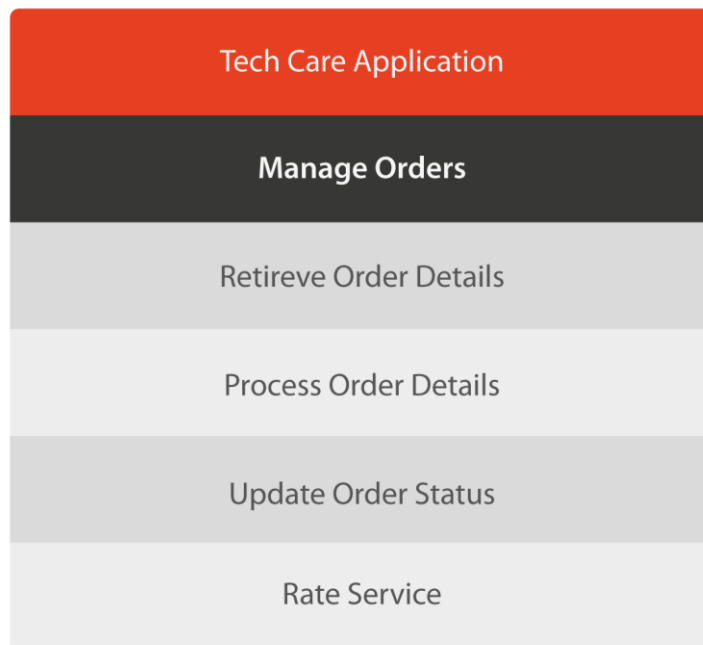


Figure 4: Level 1 Data Flow Diagram

Use Case Diagram

A use case diagram is used to illustrate the interactions between the system and its users. The following use case diagram was created for the current system:

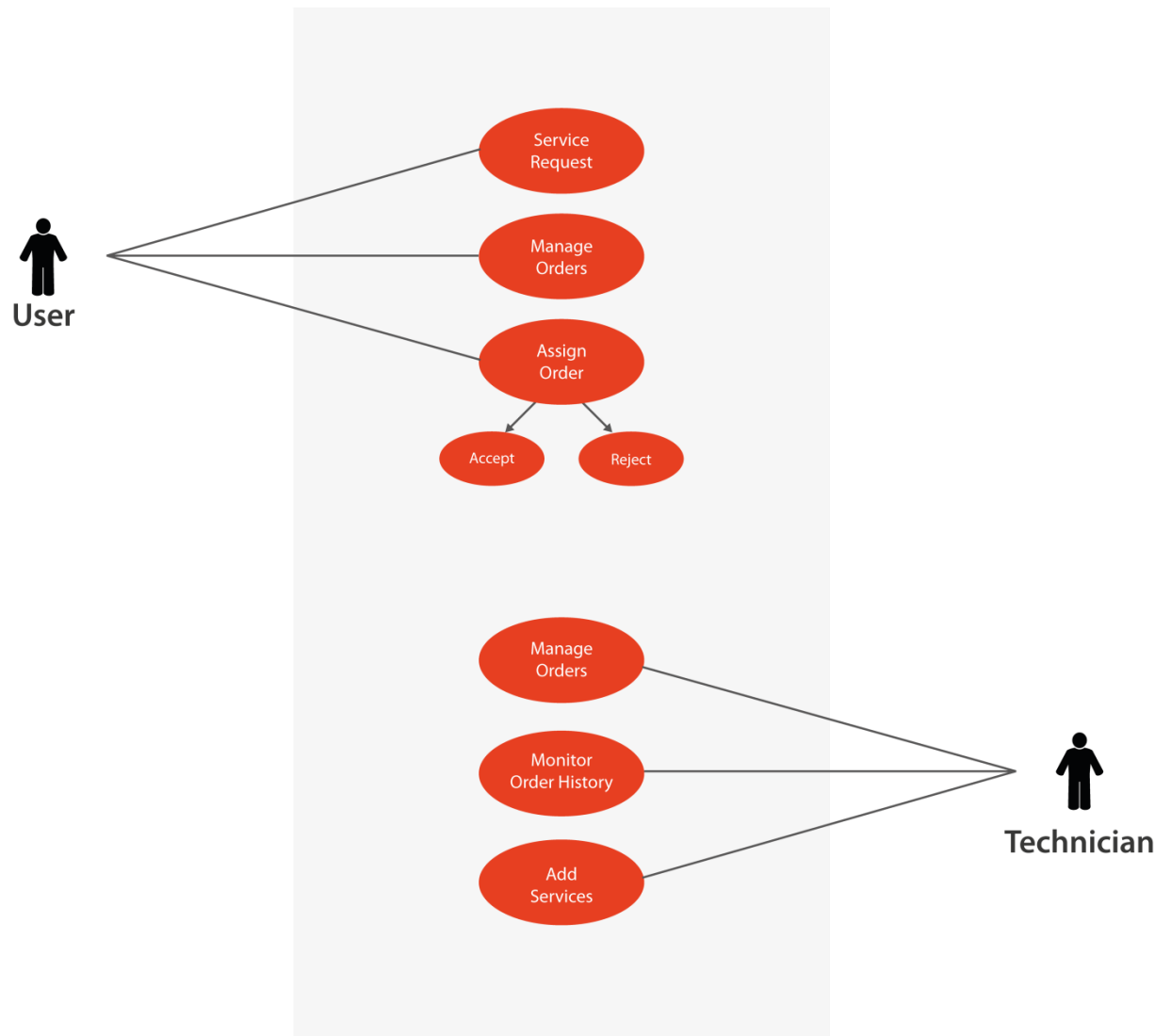


Figure 5: Use Case Diagram

The use case diagram shows the main actors in the system, which is the users and the hospital staff in this case it is only a technician.

4.2 System requirements

This includes the functional and non-functional requirements.

4.2.1 Functional requirements

The functional requirements focus on the specific features and functionalities required by the system

They include:

1. Promote sustainable repair practices.
2. Streamline repair request submissions.
3. Connect users with skilled technicians.

4.2.2 Non-functional requirements

Non-functional requirements focus on the system's performance, usability, and security.

1. The system must be user-friendly and easy to navigate.
2. The system must be secure and protect user data.

CHAPTER 5: SYSTEM DESIGN

5.1 Architectural design

In its architectural design, Tech Care envisions a robust and scalable platform tailored to meet the diverse needs of its users and technicians. Embracing a micro services architecture, Tech Care breaks down its functionalities into discrete services, each tasked with handling specific aspects of the repair service ecosystem. Through services like User Management, Technician Management, Order Management, Notification, and Rating and Review, Tech Care streamlines user experiences and technician workflows, ensuring seamless interactions and efficient service delivery.

The following components make up the system architecture:

a) Presentation layer

The mobile-based user interface will be the presentation layer that users will interact with to book, modify and rate the technicians. The user interface is user- friendly, intuitive, and responsive.

b) Application layer

The application layer will handle the business logic of the system. This includes managing bookings, technician schedules, and user data.

c) Database layer

The database server will store and manage the data required by the system. This includes user information, booking details and technician schedules.

5.2 Database design

i. User

Stores information about users such as:

Name, e-mail, role, phone number and password.

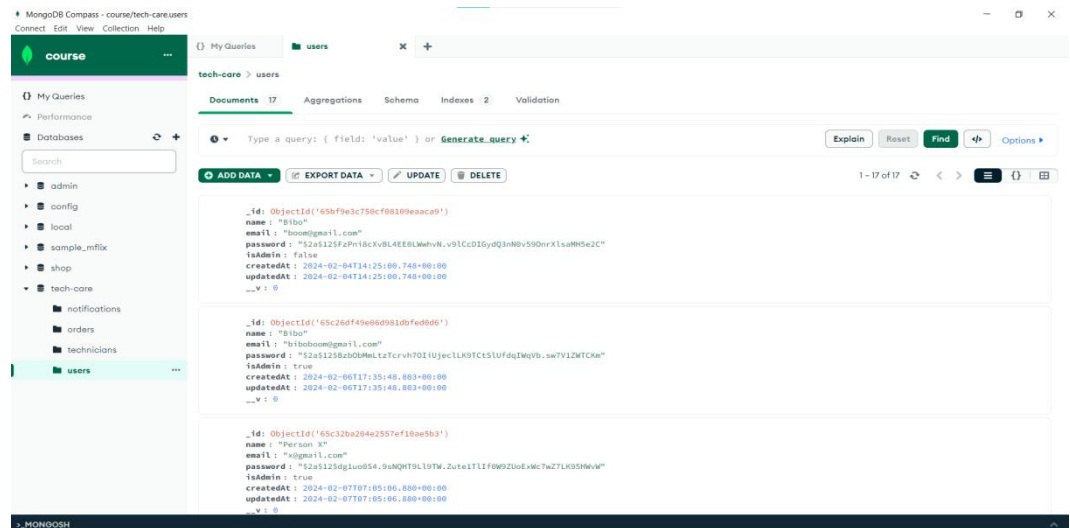


Figure 6: User Information

ii. Technician

Stores information about technicians such as:

Name, e-mail, role, phone number and password.

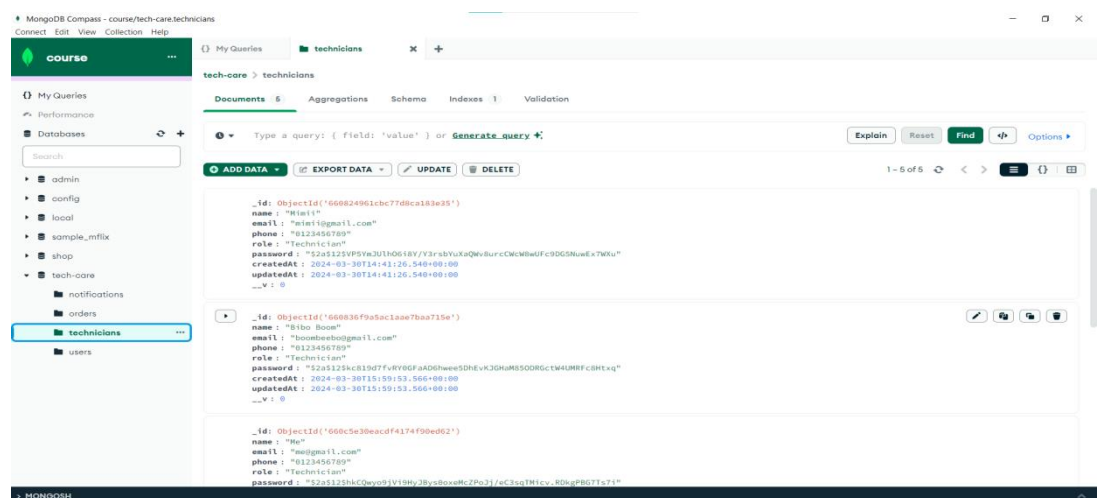


Figure 7: Technician Information

iii. Orders

Stores the following information:

Device type, brand, model, issue description, and delivery options.

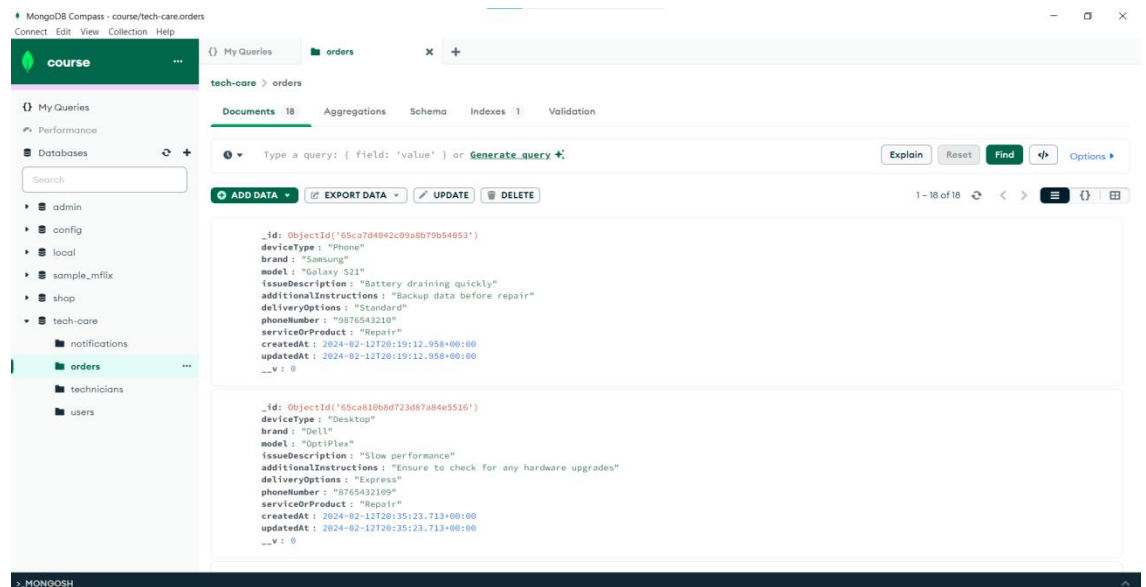


Figure 8: Order Details

5.3 User interface design

The user interface is clean and modern design with intuitive navigation to help users easily make their bookings.

Main components of the user interface

i. Welcome Sreen

The welcome screen will include two buttons, Login & Sign up.

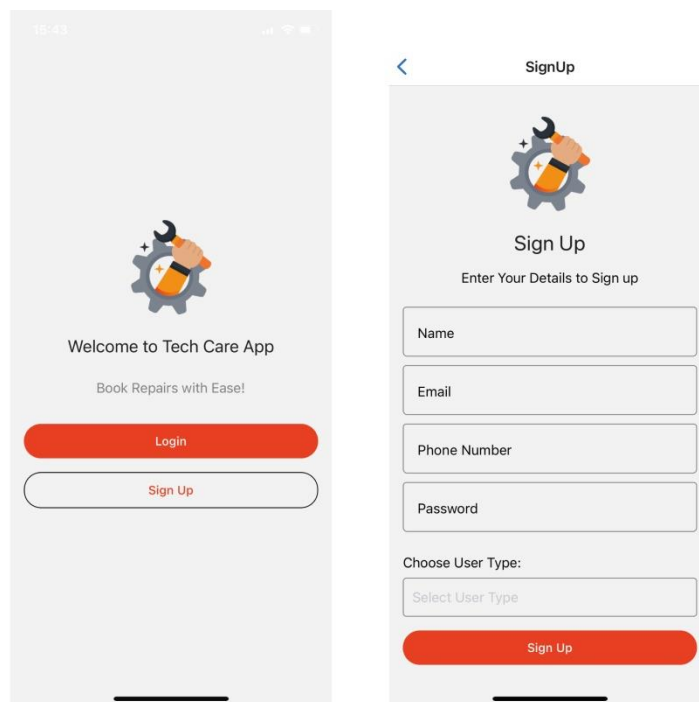


Figure 9: Welcome Screen

ii. Technician Dashboard

The technician dashboard will include information about the user orders. This includes the User’s Information

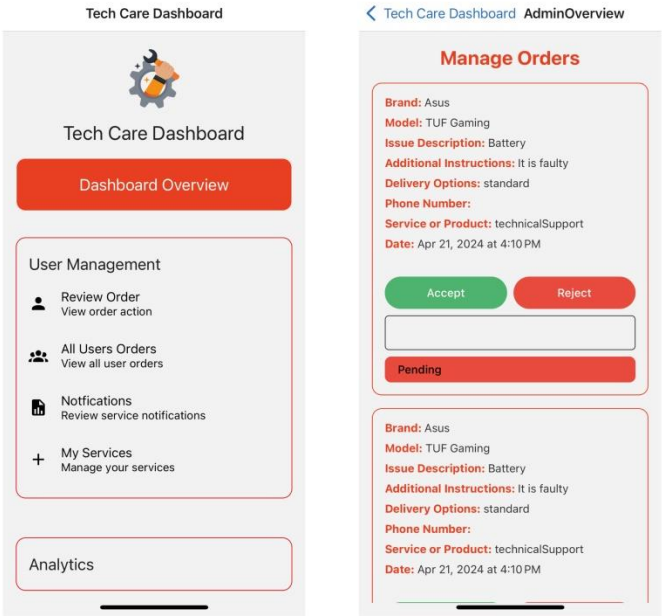


Figure 10: Technician's Dashboard

iii. Notification Tab

This will allow users to check whether their order was accepted or rejected.

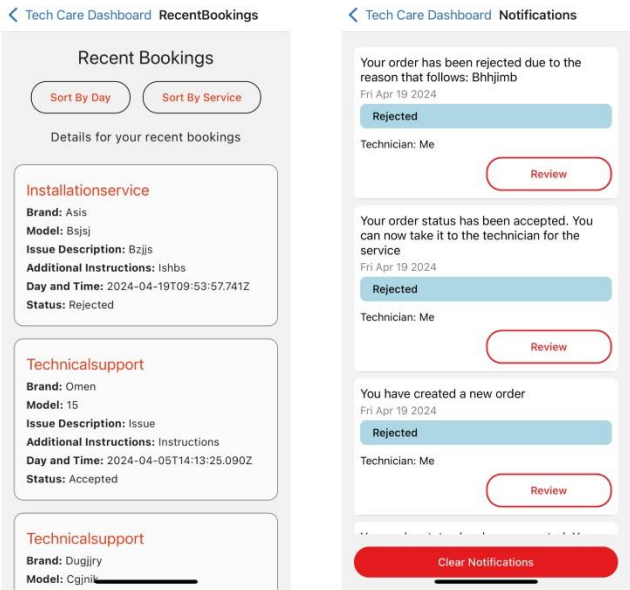
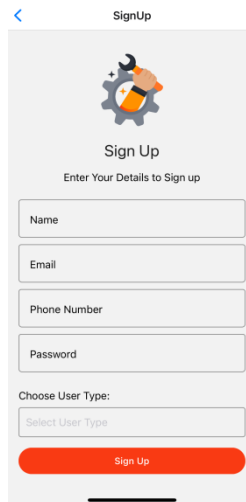


Figure 11: Notifications

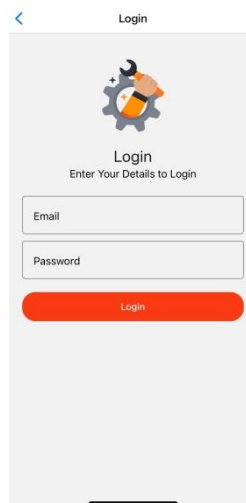
iv. Login and Sign Up

This will allow users to either login or sign up depending on whether the user or technician has an account or not.



The image shows a mobile app screen for signing up. At the top, there is a blue back arrow and the text "SignUp". Below this is a logo consisting of a gear with a wrench and a screwdriver. The title "Sign Up" is centered, followed by the instruction "Enter Your Details to Sign up". There are four input fields: "Name", "Email", "Phone Number", and "Password". Below these is a section titled "Choose User Type:" with a dropdown menu labeled "Select User Type". At the bottom is a red button with the text "Sign Up".

Figure 12: Sign Up Page



The image shows a mobile app screen for logging in. At the top, there is a blue back arrow and the text "Login". Below this is the same logo as in Figure 12. The title "Login" is centered, followed by the instruction "Enter Your Details to Login". There are two input fields: "Email" and "Password". At the bottom is a red button with the text "Login".

Figure 13: Login Page

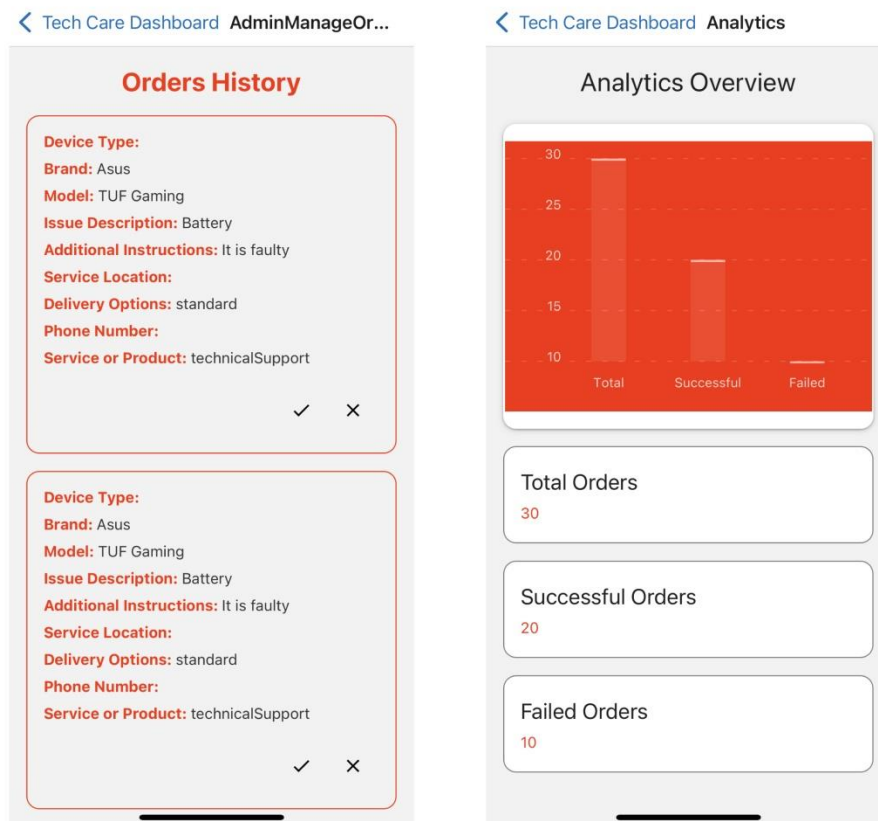


Figure 14: Order History and Analytics

CHAPTER 6: IMPLEMENTATION AND TESTING

6.1 Development environment

Here are some of the development environment options that I used for the proposed booking system:

i. **Front-end development**

The React Native Framework.

ii. **Back-end development**

I used NodeJS on the server-side along MongoDB.

Postman software came in handy to test the database before linking it to my mobile app.

iii. **Database management**

For the database management, I used MongoDB to manage my non-relational databases to store and retrieve data.

iv. **Integrated development environment (IDE)**

I used Visual Studio Code for code editing, debugging, and testing. The other IDE that came in handy was Android Studio since I used its simulator to check the application in development.

6.2 System components

i. User interface

The user interface component is responsible for displaying information and allowing users to interact with the system. It includes mobile screens, forms, buttons, and other graphical elements that users can use to operate the application.

ii. Application server

The application server component is responsible for managing the business logic of the system. It receives requests from the user interface, processes them, and sends responses back.

iii. Database server

The database server component is responsible for storing and retrieving data used by the system.

6.3 Test Plan (test data, test cases, test results)

i. Test Data

The test data included a range of different scenarios, including valid and invalid inputs, edge cases, and boundary conditions. This was to ensure that the system can handle a variety of different scenarios and inputs.

ii. Test Cases

The test cases was based on the functional and non-functional requirements of the system. Each test case included a description of the test scenario, the expected results from the test.

iii. User Acceptance Testing

The user acceptance testing phase was to focus on testing the system with actual users to ensure that it meets their needs and expectations.

CHAPTER 7: CONCLUSION

7.1 Achievements and Lesson Learned

a) Achievements

1. Successful completion of the project within the defined timeline.
2. Development of a user-friendly and efficient working system that meets all the functional and non-functional requirements.
3. Integration of various components of the system, including the user interface, application server and database server.

b) Lessons Learned

1. Proper planning and organization are critical for the success of any software development project.
2. Adequate testing and quality assurance procedures are necessary to ensure the reliability and efficiency of the system.
3. Constant monitoring and evaluation of project progress are crucial for identifying and addressing issues and risks.

7.2 Conclusions

In conclusion, the development of the repair booking system using the Tech Care mobile app has proven to be an effective solution to address the problems associated with traditional repair booking systems. The new system provides a user-friendly interface for users to make bookings with their technician's providers, improving the overall user experience.

Through the analysis of the existing system and the design and implementation of the new system, we have identified several strengths and weaknesses of the current approach to booking. The new system addresses these weaknesses by providing a more efficient and reliable system that is accessible to users from anywhere, anytime.

Overall, the development of the booking system using the Tech Care mobile app has demonstrated the potential of technology to improve the technicians system and enhance user care. Further research and development in this area could lead to even more innovative solutions to address the challenges faced by the technicians industry.

7.3 Recommendations

Additional features such as live tracking and user feedback systems should be added to further enhance the system's capabilities.

The system should be designed to be compatible with various mobile devices to improve accessibility for users.

Regular updates and maintenance of the system should be conducted to ensure that it remains up-to-date with the latest technologies and meets the evolving needs of the technicians industry.

REFERENCES

Johnson, C. (2017). The benefits and challenges of implementing an online technicians platform. *Journal of Technicians Information Management*, 31(2), 45-52.

Smith, A. (2020). Enhancing Customer Experience through Mobile Technician Platforms. *International Journal of Mobile Service Innovation*, 14(3), 78-91.

Garcia, L. M. (2019). A Study on the Impact of Digitalization on Technician Services: Tech Care Case Analysis. *Journal of Service Management*, 25(4), 112-125.

Patel, R. (2018). Exploring the Role of Technology in Technician Management: Insights from Tech Care. *Journal of Technology Management*, 12(1), 33-47.

APPENDIX

Tech Care User manual

i. Sign Up and Login

To access the Tech Care mobile app, you must first sign up for an account. Click on the “**Sign Up**” button on the sign up page and fill in the required information, including your username, email address, and password while for the technician is the same but has an additional field of specifying the specialization of the technician. Once you have signed up, you can log in to the app by entering your email and password and reference number in place of email for the technician.

ii. Booking

To make a booking with a technician, click on the “Book Now” tab on the home page dashboard. You can also provide additional information such as the product details and issue. The section has a few fields for the user to fill. Once done you click on the “**Place Order**” button.

iii. Notifications

To view your bookings, click on the “Notifications” tab in the home page. You will see a list of all your scheduled bookings if the status is **pending**, **accepted** or **rejected**.

iv. Technician’s Dashboard

The technician get bookings of the users in the Booking Details tab where they can either **accept** or **reject** it.