UNIVERSITI MALAYSIA TERENGGANU

FACULTY OF OCEAN ENGINEERING TECHNOLOGY & INFORMATICS

CSM3114

FRAMEWORK-BASED MOBILE APPLICATION DEVELOPMENT

FINAL REPORT (ASSIGNMENT 2)

HOTEL MANAGEMENT APPLICATION (NESTSTAY)

PREPARED BY:

NURSYAFIAH BINTI ZAHARI (S63265)

PREPARED FOR:

DR MOHAMAD NOR HASSAN

[*Bachelor of Computer Science (Mobile Computing) with Hons.*]

SEMESTER 1 2023/2024

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1.0 Executive Summary

Neststay, an advanced hotel management application, is redefining user experience in the hospitality industry. Designed specifically for users, Neststay seamlessly integrates essential features to streamline the hotel management process. Users can easily navigate through login features, room additions, booking processes, confirmation mechanisms, and convenient booking reviews.

The application's intuitive login system ensures a secure and personalized experience for each user, preparing them for a customized journey within the app. Neststay's innovative room addition feature allows hotel managers to easily expand and update their room inventory, ensuring real-time accuracy for potential guests.

The heart of Neststay lies in its user-friendly booking system. Guests can easily navigate through available rooms, select desired dates, and receive instant confirmation, making the reservation process a breeze. With the power of Neststay, hotels can efficiently manage bookings, ensuring a smooth and efficient experience for both guests and administrators.

Upon successful booking, Neststay goes one step further and provides users with comprehensive booking confirmation. This feature ensures clarity and transparency, leaving no room for uncertainty for guests. Neststay's commitment to user satisfaction extends to the post-booking stage, where users can easily view their reservations and access important information with just a few taps.

Overall, Neststay is an example of innovation in the hotel management industry. The Neststay solution is the go-to solution for modern hotel administrators and guests alike, thanks to its user centric design and features such as booking streamlined, real-time room updates and transparent confirmation processes. With Neststay, you will embrace the future of hotel management where efficiency and excellence meet.

2.0 Use Case

The interactions between the system and its actors are depicted in these diagrams. Implement diagrams show what the system does and how the actors use it, but they do not show how the system works within.

Figure 2.0 depicts the use case diagram for Hotel Management Application. This application has three main use cases, including login, view room and manage booking. Customer as a actor that interacts with this application. The extended relationship for the login use case allows old customers to proceed directly to the login process without the need to sign up again for the application. The included relationship for the manage booking use case implies that customers need to add or choose a room before proceeding to the booking process.

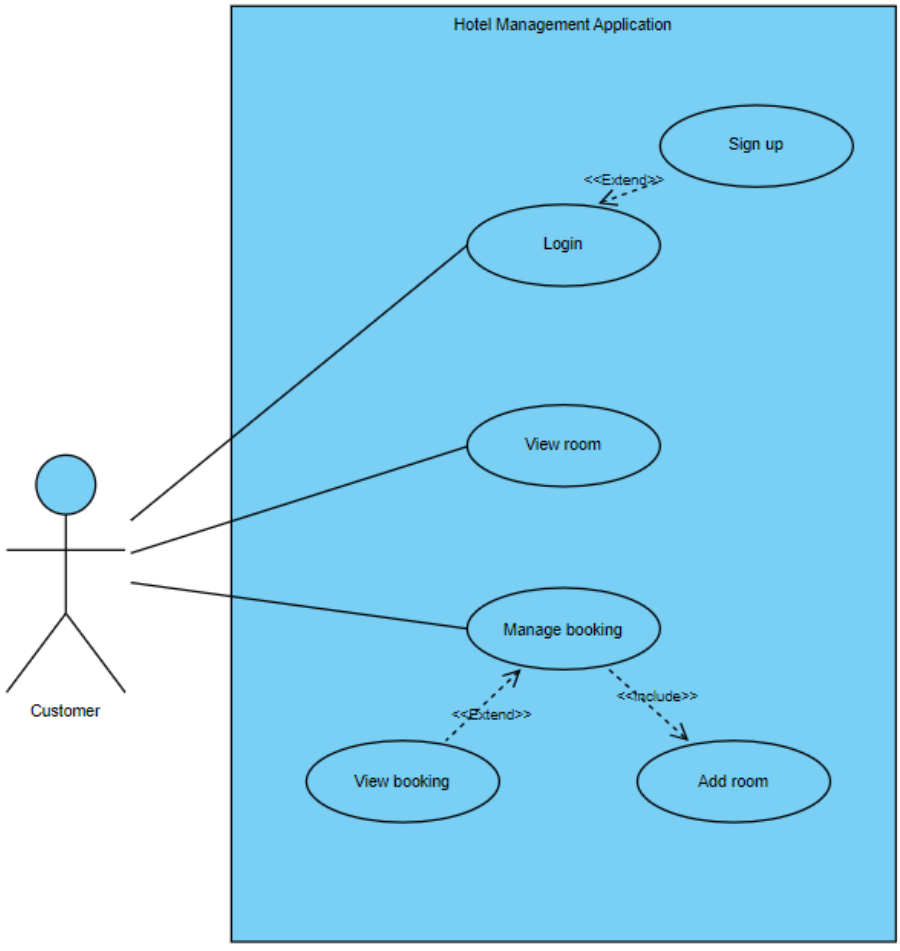

Figure 2.0 *Use Case for Hotel Management Application*

3.0 Structure of Tree Widgets

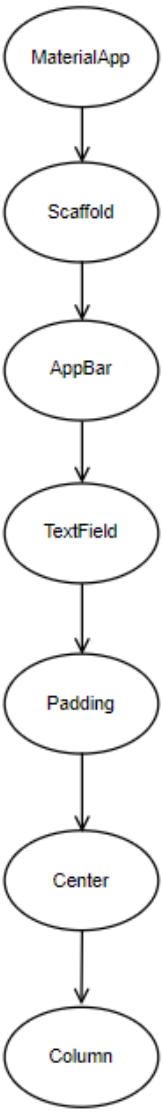

Figure 1 *Common structure of tree widgets*

1. **MaterialApp:**
   - The MaterialApp widget is the top-level widget that holds the structure and theme of a Material Design application.
2. **Scaffold:**
   - Scaffold is a basic skeletal structure that provides a framework to implement the visual structure of a typical Material Design app. It includes elements like AppBar, Drawer, BottomNavigationBar, FloatingActionButton, etc.
3. **AppBar:**
   - AppBar is a Material Design widget that typically appears at the top of the screen. It contains an optional leading widget, a title, and optional actions/widgets on the right side.
4. **TextField:**
   - The TextField widget is used to take user input as text. It provides a space for users to type in information.
5. **Padding:**
   - The Padding widget is used to create padding around another widget. It adds space around the child widget, providing visual separation.
6. **Cente**r:
   - The Center widget centers its child within itself, both horizontally and vertically.
7. **Column:**
   - The Column widget is a flex widget that arranges its children in a vertical array. It allows you to create a column of widgets stacked on top of each other.

These widgets are fundamental building blocks in Flutter, and they are often used in combination to create complex and responsive user interfaces.

4.0 Flutter Widget and Features

1) Login:
   - Widget: “MyAppState”
   - Flow:
     - Displayed upon app launch.
     - Allows users to log in with existing credentials.
     - Includes an option to access the sign-up page for new users.

2) Sign Up:
   - Widget: “SignUpPage”
   - Flow:
     - Accessed from the login page.
     - Enables users to register by providing a username and password.
     - Data submitted through the form is stored in Firebase.
     - Upon successful registration, a Snackbar pops up for confirmation.

3) Main Dashboard:
   - Widget: “MyAppState”
   - Flow:
     - After login or sign-up, users are directed to the main dashboard.
     - Displays the Neststay logo and a welcoming message.
     - Provides buttons for login and sign-up.

4) Add Rooms:
   - Widget: “AddRoomsWidget” (hypothetical)
   - Flow:
     - Allows hotel staff to add new rooms to the system.
     - Captures room details like room number, type, and availability.
     - Data is stored in Firebase.

5) Booking:
   - Widget: “BookingWidget”
   - Flow:
   - Users can navigate to the booking section from the main dashboard.
   - Displays available rooms for booking.
   - Users select the desired room and provide booking details.

6) Booking Confirmation:
   - Widget: “BookingConfirmationWidget”
   - Flow:
   - After selecting a room and providing details, users receive a confirmation screen.
   - Includes booking details, total cost, and a confirmation message.

7) View Booking:
   - Widget: “ViewBookingWidget”
   - Flow:
   - Users can view their current and past bookings.
   - Details such as room number, check-in/out dates, and status are displayed.
   - Information is fetched from Firebase.

These features collectively create a comprehensive hotel management application, providing a seamless experience for both users and hotel staff. The app incorporates user authentication, room management, booking processes, and a convenient view of booking history.

5.0 Sample of Interface

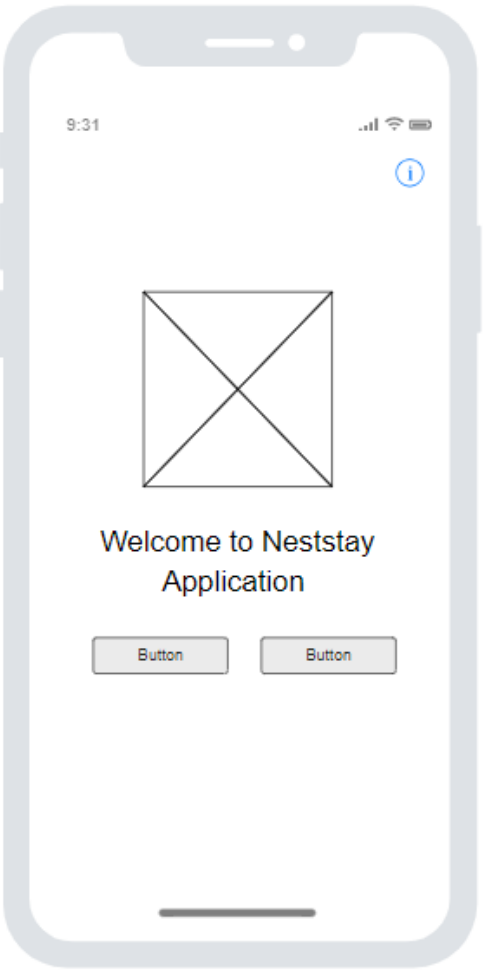

Figure 5.1.1 MyAppState widget

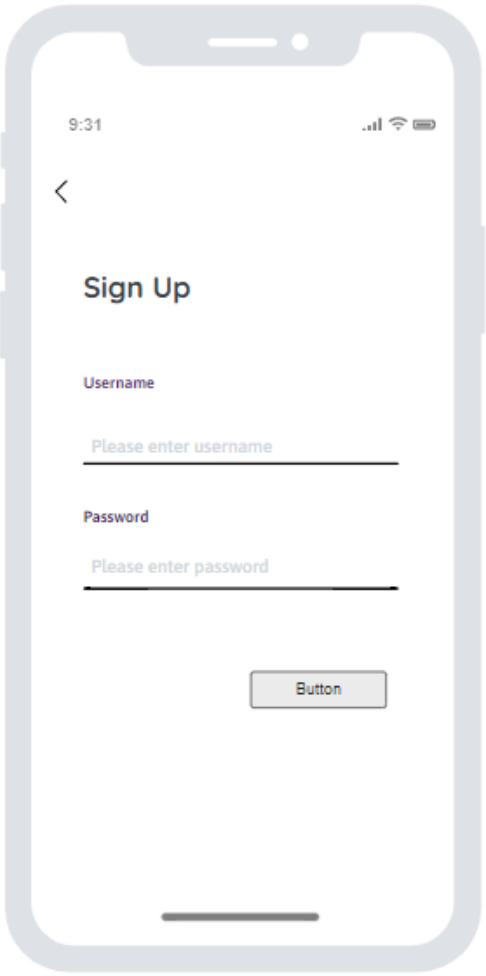

Figure 5.1.2 Sign-up widget allows new customers to register in the application.

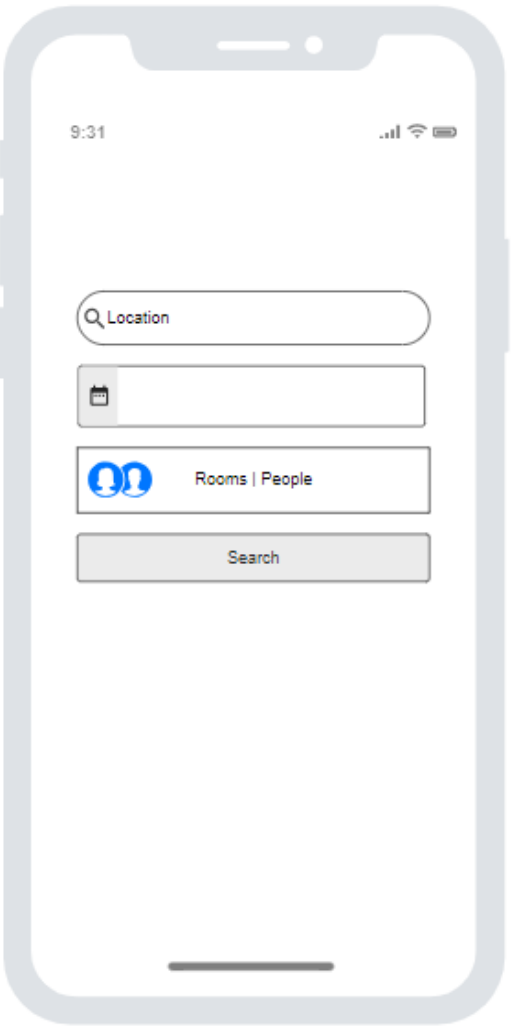

Figure 5.1.3 Booking widget is for book hotel room.

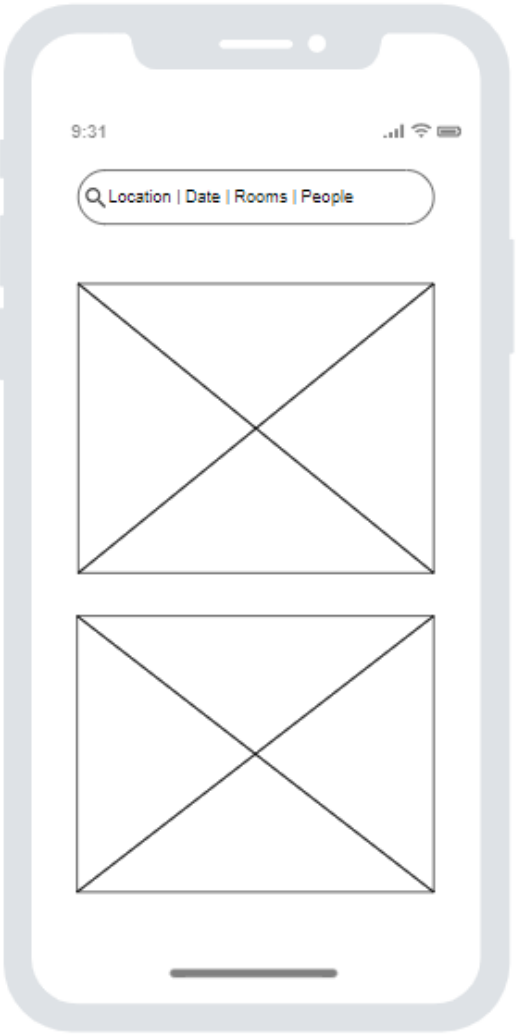

Figure 5.1.4 This widget show the availability of room based on location that user enter.

6.0 Conclusion

Developing the Neststay hotel management application was an enriching experience that deepened my expertise in Flutter and Firebase integration. This project provided me with a hands-on opportunity to improve my skills in creating user-friendly interfaces, ensuring robust data security measures, and implementing thorough testing protocols.

During this process, I learned the art of problem-solving in application development and ensuring that all features are tailored to the end user's needs. This hands-on experience greatly contributed to my growth as an app developer and gave me valuable insights and skills to meet future project challenges.

7.0 References

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