UNIVERSITY MALAYSIA TERENGGANU

FACULTY OF OCEAN ENGINEERING TECHNOLOGY & INFORMATICS

FRAMEWORK-BASED MOBILE APPLICATION DEVELOPMENT

CSM3114

Smart Travel Planner App

Report

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EXECUTIVE SUMMARY

In the era of digitalization, planning a trip should be as easy as simple taps on the screen. That's where our smart travel planner begins. The application named 'TABII' as a travel planning application based in Malaysia. It is a comprehensive tool designed to assist the users in organizing and managing their trips. The application offers a user-friendly interface and a robust set of features to facilitate travel planning.

Key Features

User authentication

The application serves a secure login system. It allows users to register and log in to access their personal travel plans. This will ensure data privacy and security.

Trip management

It allows users to view their planned trips in a list format. It also allows users to add new trip. Each trip can be tapped to view detailed information.

Places preview

To inspire users and help them discover new destinations, the application provides a preview of various places by state category. Users can explore the states in Malaysia by tapping that category.

User-friendly navigation

The application designed user-friendly navigation which includes drawer and navigation bar for easy navigation between different pages and functions.

Appealing user interface

The user interface of the application is not only functional but also visually appealing. The background images and color filters to create an engaging visual experience. Information is presented in a structured and readable manner using cards, list tiles, and other widgets.

Question and answer(QnA) feature

Our application goes beyond just trip management. The application included a QnA feature where users can view a list of common questions and answers related to travel planning. Users can also add new questions and answers, contributing to the community of travelers.

USE CASE

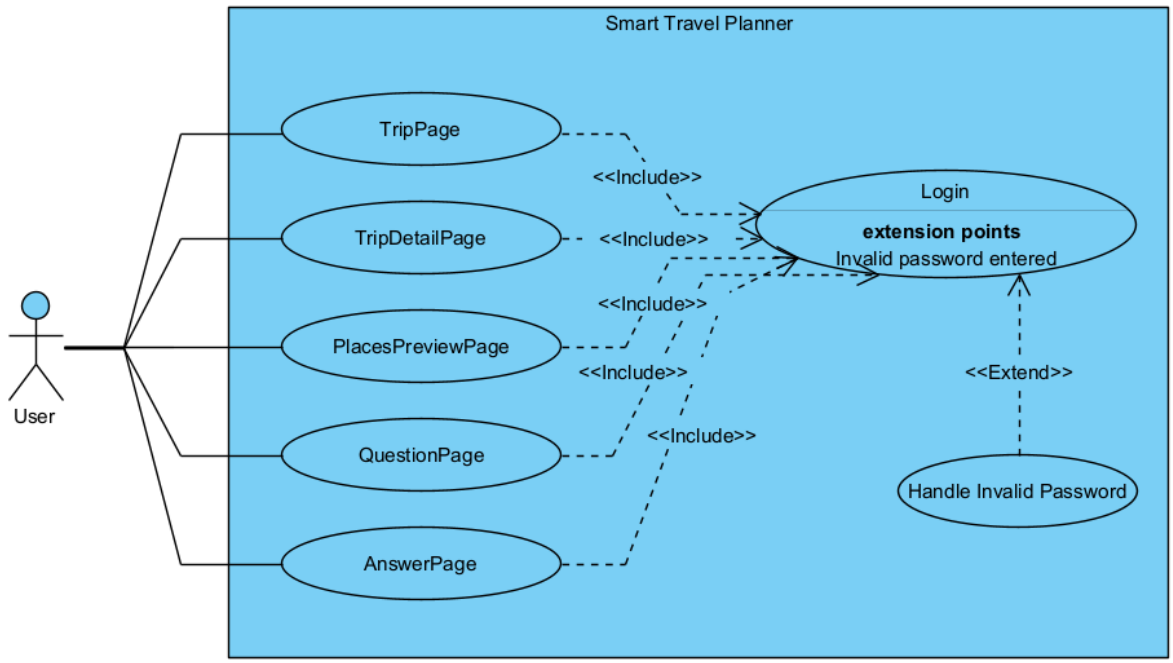

Figure 1 Use case.

COMMON STRUCTURE OF WIDGET TREE

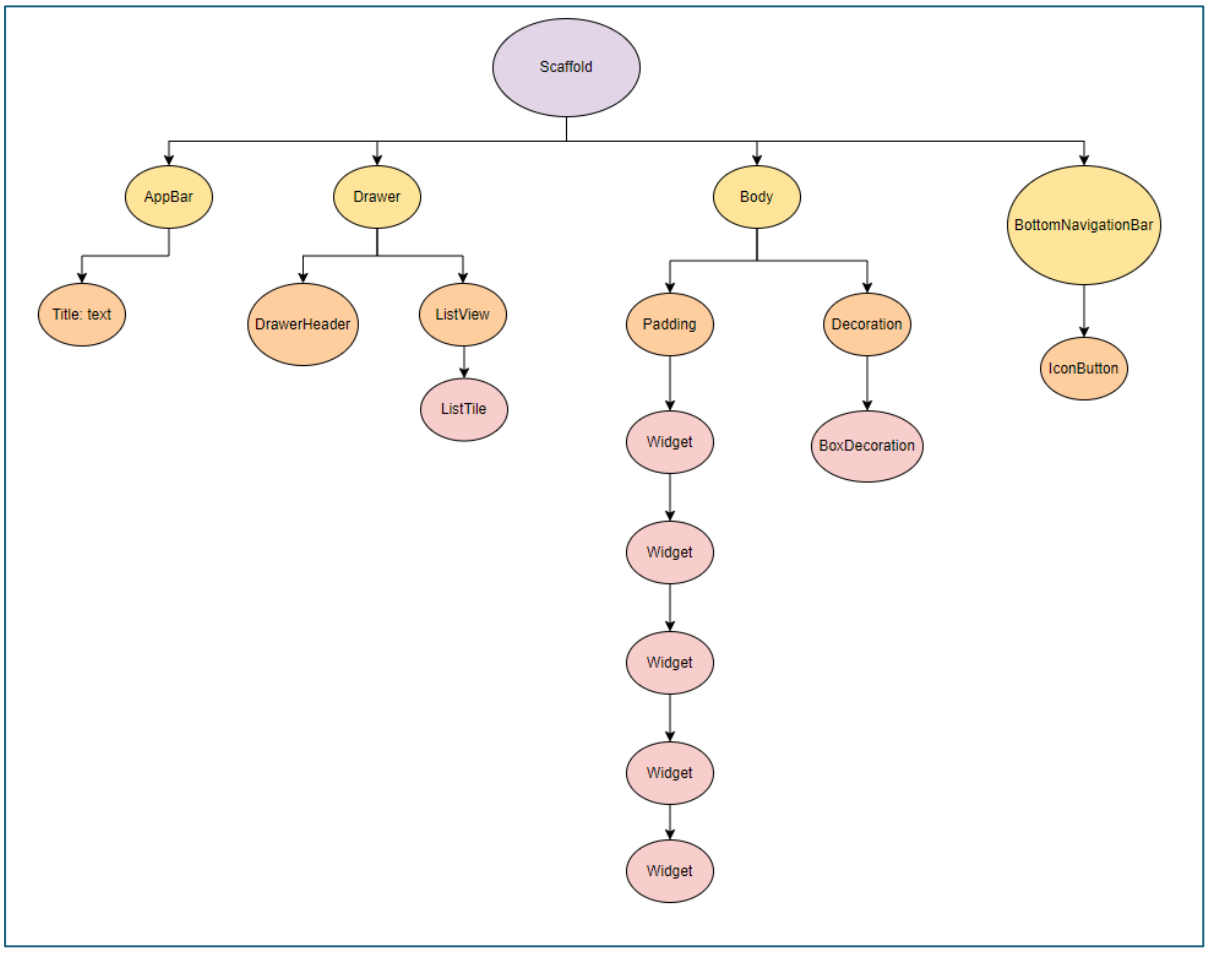

Figure 2 Tree widget

FLUTTER WIDGETS

Scaffold: Provides the basic structure for Material Design layouts, including app bars and drawers.

AppBar: Displays the top app bar with a title.

BottomAppBar: Renders the bottom app bar with navigation icons.

Drawer: Creates a drawer menu for navigation.

ListView.builder: Generates scrollable lists of items efficiently.

GridView.builder: Builds a grid of items with lazy loading.

SnackBar: Displays temporary feedback messages at the bottom of the screen.

AlertDialog: Shows a modal dialog for user interactions.

DropdownButtonFormField: Creates a dropdown menu with form field behavior.

showDateRangePicker: Displays a date range picker dialog for selecting date ranges.

Image.asset: Displays images from the app's assets.

Text: Renders text with customizable styling.

TextStyle: Defines the style for text.

ElevatedButton: Renders an elevated (raised) button.

TextButton: Displays a text button.

IconButton: Creates an icon button.

TextField: Allows user input for text fields.

ListView: Generates scrollable lists of items.

DropdownMenuItem: Represents an item in a dropdown menu.

FutureBuilder: Asynchronously builds widgets based on a Future.

Column: Organizes widgets vertically.

Row: Arranges widgets horizontally.

Padding: Adds padding around widgets.

Expanded: Expands a child widget to fill available space.

TextFormField: A complete text input form field.

Icon: Displays icons from the Material Icons library.

PageRouteBuilder: Customizes page transitions.

CircularNotchedRectangle: Shapes the bottom app bar.

MaterialPageRoute: Defines a route for page navigation.

SnackBar: Displays temporary feedback messages.

DateFormat: Formats dates and times.

TextEditingController: Controls the text input field.

Container: A box that can contain other widgets.

Uri: Represents a URI (Uniform Resource Identifier).

FLUTTER FEATURES

Material Design: Adheres to Material Design principles for consistent UI.

State Management: Utilizes StatefulWidget for managing widget state.

HTTP Requests: Uses the http package to send HTTP POST requests.

JSON Serialization/Deserialization: Utilizes dart:convert for JSON data handling.

Asynchronous Programming: Implements async/await for non-blocking operations.

Conditional Rendering: Widgets are conditionally rendered based on user input.

List: Utilizes lists to store and display data.

Date and Time Handling: Manages and formats date and time information.

Navigation: Implements page navigation using the Navigator class.

Custom Drawer: Creates a custom navigation drawer.

User Feedback: Provides feedback to the user via snack bars.

Icons: Utilizes icons for interactive elements.

Image Display: Displays images using the Image.asset widget.

Dropdown Menus: Implements dropdown menus for user selection.

Validation: Ensures valid input when saving trips.

Error Handling: Handles exceptions and displays error messages.

Page Transitions: Customizes page transition animations.

Text Styling: Applies custom text styles to enhance UI.

Responsive UI: Ensures the UI is responsive to different inputs and screen sizes.

SAMPLE OF INTERFACES

Figure 3 Home page

Figure 3 shows the sample of home page. The add button allow users to add the trip to the list. The trip can be clicked then leads users to the trip details page.

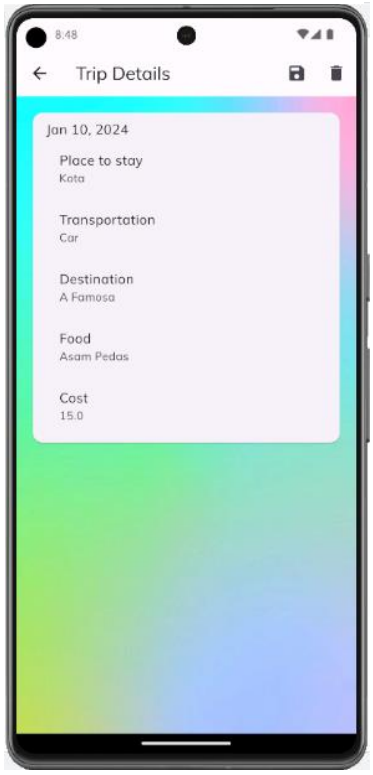

Figure 4 Trip Details page

Figure 4 shows the trip details page which display the travel itinerary. Users can add and update the details for optimize the travel plans. When users press the delete button, the trip will be deleted from trip list.

Figure 5 Places Preview page

Figure 5 shows the places preview that allow users to view the most visited places that categorized be state in Malaysia.

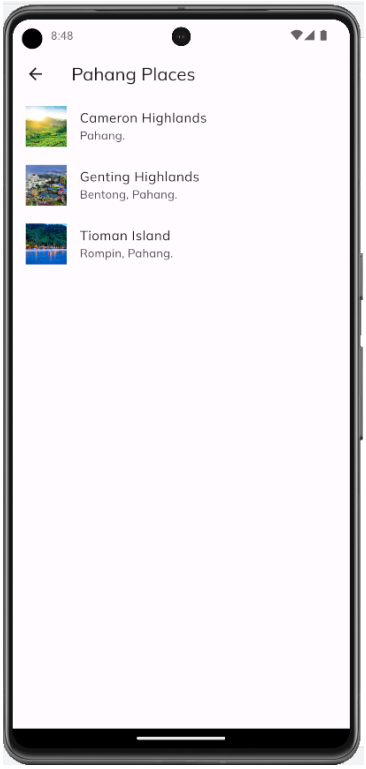

Figure 6 Detail Places Preview

Figure 6 shows the places that contains in the category of states.

Figure 7 QnA(question) page

Figure 7 shows the question list. Users can add the question by pressing the add button. Users can view answer by pressing the question that they want to answer.

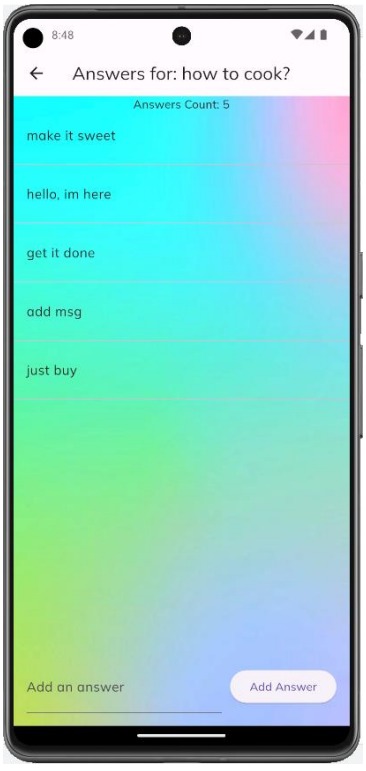

Figure 8 QnA(Answer) page

Figure 8 shows the answer list. Users can add the answer by entering text in the text field below.

CONCLUSION

In conclusion, our travel planning application, built with Flutter, is designed to offer travelers a seamless and enjoyable experience across various platforms. By adhering to best practices in user interface design and incorporating a comprehensive set of features, we have created a robust tool for trip planning and management. With the goal of simplifying the travel planning process, our application aims to empower users with the resources they need to make informed decisions and create memorable journeys. We are confident that our application will prove to be a valuable companion for travelers, enhancing their ability to plan and organize trips effectively. Whether it's exploring new destinations, managing itineraries, or discovering exciting places, our app is poised to provide a user-friendly and efficient solution for all travel enthusiasts.

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