UNIVERSITI MALAYSIA TERENGGANU

CSM3114

FRAMEWORK BASED MOBILE APPLICATION DEVELOPMENT

PROJECT 2

SMART TRAVEL PLANNER APP

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EXECUTIVE SUMMARY

The Smart Travel Planner app is a feature-rich mobile solution that offers users cost estimation and intelligent itinerary planning to improve the travel experience. The app makes it simple for users to plan and arrange their travel schedules, guaranteeing a seamless and well-organized experience. Through an intuitive interface, users can enter preferences, activities, and destination details, enabling the app to create the best possible itineraries. The addition of the Estimate Cost function gives users insightful information about what to expect to pay for their travel expenses. The application facilitates fluid screen navigation and provides quick access to key features like cost estimation and itinerary creation. The Smart Travel Planner app prioritizes user convenience and effective trip planning in order to become a vital resource for travelers looking for a hassle-free and enjoyable travel experience.

USE CASE

1. **Main Use Case: User Planning a Trip**
    - Preconditions: User has installed and launched the smart travel planner app.
    - Basic Flow:

    1. User logs in or signs up.
    2. User navigates to the "Create Itinerary" section.

2. **Login: Authenticate User**
    - Preconditions: User is not logged in.
    - Basic Flow:

    1. User opens the app.
    2. User is prompted to log in.
    3. User enters valid credentials.
    4. System authenticates the user.
    5. If authentication is successful, the app navigates to the main dashboard.

3. **Signup: Create a New User Account**
    - Preconditions: User doesn’t have an account.
    - Basic Flow:

    1. User opens the app.
    2. User selects the signup option.
    3. User provides necessary information (e.g., email, password).
    4. System validates the information.
    5. If validation is successful, the system creates a new user account.
    6. User is automatically logged in, and the app navigates to the main dashboard.

4. **Register Place: Add a New Location to the App**
    - Preconditions: User is logged in.
    - Basic Flow:

1. User navigates to the "Register Place" section.
2. User inputs details about the new place (e.g., name, location, description).
3. System validates the information.
4. If validation is successful, the new place is added to the user's list of places.

5. **Create Itinerary: Plan the Trip**
   - Preconditions: User is logged in and has registered places.
   - Basic Flow:

1. User navigates to the "Create Itinerary" section.
2. User selects places from their registered list.
3. User arranges the order of places in the itinerary.
4. User sets dates and times for each itinerary item.
5. System validates the itinerary.
6. If validation is successful, the itinerary is saved.

6. **View Cost Estimation: Estimate Trip Expenses**
   - Preconditions: User is logged in and has a saved itinerary.
   - Basic Flow:

1. User navigates to the "View Cost Estimation" section.
2. User selects a saved itinerary.
3. System calculates and displays the estimated cost based on various factors (e.g., transportation, accommodation, activities).

7. **Q&A: Get Information and Assistance**
   - Preconditions: User is logged in.
   - Basic Flow:

1. User navigates to the "Q&A" section.
2. User asks a question or browses existing questions.
3. Other users or the system provides answers and information.

COMMON STRUCTURE OF TREE WIDGETS USED WHEN DESIGNING AND DEVELOPING THE APP

1. `MyApp` Class:
- Root widget of the application.
- Uses `MultiProvider` to provide the `AppUser` class using `ChangeNotifierProvider`.
- Configures routes for different screens.

2. `AppUser` Class:
- Extends `ChangeNotifier` to notify listeners when the user ID changes.
- Manages the user ID.

3. `CostEstimation` Class:
- Represents a cost estimation item with place, state, and cost information.

4. `CostEstimationCard` Class:
- Displays a card with cost estimation details using the `CostEstimation` model.

5. `ViewEstimatedCostScreen` Class:
- Displays a list of cost estimations using `ListView.builder`.

6. `CreateItineraryScreen` Class:
- Implements a form to create a new itinerary.
- Uses a list of `Itinerary` items.
- Utilizes the `ItineraryCard` and `ItineraryList` widgets to display itineraries.

7. `Itinerary` Class:
- Represents an itinerary with place, date, time, and note information.

8. `ItineraryCard` Class:
- Displays a card with itinerary details using the `Itinerary` model.

9. `ItineraryList` Class:
- Displays a list of itineraries using `ListView.builder`.

10. `AddItineraryDialog` Class:
- Represents a dialog to add a new itinerary.

11. `HomePage` Class:
- Acts as the main screen with a bottom navigation bar.
- Contains multiple screens, including `HomeScreen`, `PlaceRegistrationScreen`, `CreateItineraryScreen`, `ViewEstimatedCostScreen`, and `UserQAScreen`.

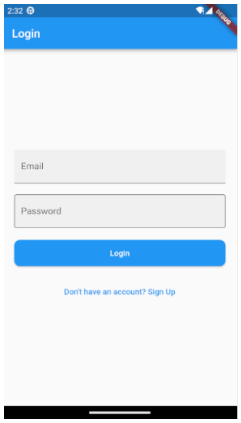
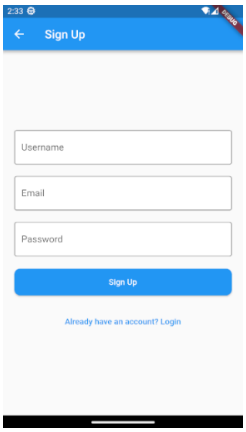
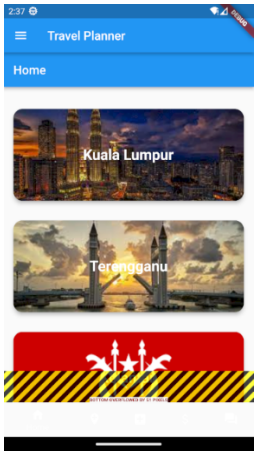
12. `HomeScreen` Class:
- Displays cards for different states.

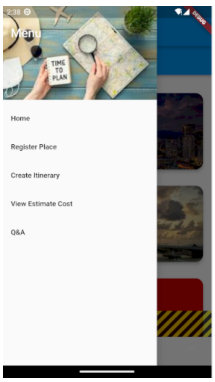
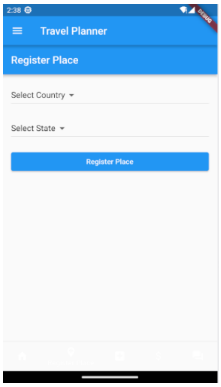
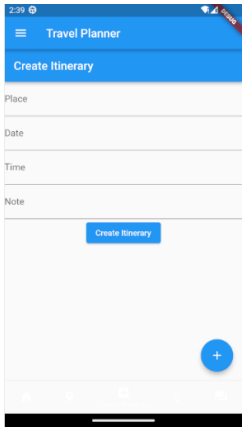
13. `StateCard` Class:
- Represents a card for a specific state.

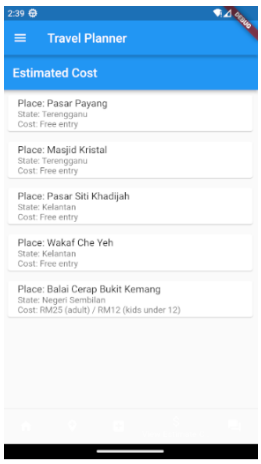
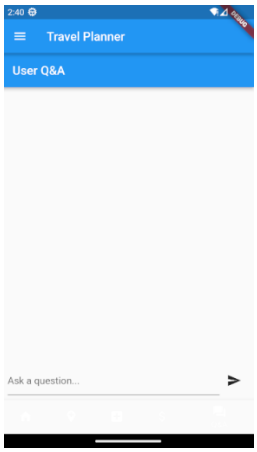
14. `LoginScreen` Class:
- Implements a login screen with email and password fields.

15. `PlaceRegistrationScreen` Class:
- Implements a form to register a place with country and state dropdowns.

SAMPLE OF INTERFACE

INTERFACE	EXPLANATION
	Users will see this interface first after opening the app and sign in if previously has signed up.
	User continue to sign up if the user has not previously signed up.
	This will be the interface for home screen of the app. User can see list of states.

	This is the navigation drawer which will facilitate user to go to another screen.
	Users can select country and state they planned to go at this interface.
	This is where user create the itinerary of their trip with details of place, time, date and notes.

	Users can view the cost of each itinerary and can plan estimated cost for the trip.
	Users can ask questions at this page.

CONCLUSION

To sum up, the Smart Travel Planner app is an advanced and user-friendly way to improve the trip planning process. The application seamlessly combines itinerary creation, cost estimation, and user engagement by utilizing the power of Firebase for reliable authentication and data storage and Flutter for a cross-platform, aesthetically pleasing interface. During the whole development process, the goal was to create an application with lots of features that prioritized user friendliness. Continuous improvement was made possible by the iterative development approach, which addressed user feedback and improved functionality. Going forward, travelers will have access to a comprehensive tool that makes planning easier, encourages community interaction, and guarantees a well-organized and memorable trip, thanks to the Smart Travel Planner app.

REFERENCES

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2. *Authenticate with Firebase using Password-Based Accounts on Flutter*. (n.d.). Firebase. https://firebase.google.com/docs/auth/flutter/password-auth
3. Code with Kavit. (2022, February 3). *Flutter login and Signup using Firebase* [Video]. YouTube. https://www.youtube.com/watch?v=IPMIcGTzxGc
4. JeronDev. (2022, December 3). *Master Flutter UI - Build a travel app from Scratch. PART 1* [Video]. YouTube. https://www.youtube.com/watch?v=FIX1eQYyzbA
5. *Explore Flutter User Profile Page with Firebase*. (n.d.). https://www.dhiwise.com/post/flutter-user-profile-page-with-firebase-a-practica-guide
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GITHUB LINK:

https://github.com/maziahmuhassanah/Smart-Travel-Planner-App

SLIDE LINK:

https://www.canva.com/design/DAF5wQKMorM/d6v3U8epFtKLEu2kD9_StQ/edit?utm_content=DAF5wQKMorM&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton