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CS 5010

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Project 2: Functional Programming

Problem Statement

   Gogo is an air travel planner that helps people search for airfare and arrange travel plans. This application is designed to save customers time and money by providing the travel plan that best matches their needs.

   There is only one type of target audience: the traveler. Any traveler who wants to travel by air can be a potential user. Since all airfare options are supposed to be obtained directly from the individual airline companies, there is no type of user that provides airfare. (In this project, all flights/airfare options are simulated.)

   Users can enter multiple destinations and the number of days they plan to stay at each location. The application can then filter the airfare options that best match users' needs, compare them, and eventually provide a sequence of, hopefully, the cheapest airfare options. All the saved travel plans will be shared, meaning others can see and follow if they want to save even more time.

Business Requirement

noun   verb

- ❖ The app must be able to handle users' input from the keyboard.
- ❖ To search for flights, users can enter multiple destinations with a number of days to stay.
- ❖ The app should compare the prices of all the possible flights and find the cheapest option.
- ❖ Users can see the results of their searches.
- ❖ The app should be able to store the sequence of flights as travel plans.
- ❖ Users can decide whether to use the results as travel plans.
- ❖ Users should be able to view and delete travel plans.
- ❖ Users are able to rename any travel plan.
- ❖ All saved plans will be shared, meaning other users may see and interact with them.
- ❖ All kinds of results should be displayed, including the error "unavailable."

❖ All flights (airfare options) should contain basic information like flight number, departure time, arrival time, and price.

Noun

app, input, keyboard, flight, user, destination, number, day, price, option, search, sequence, travel plan, error, information, flight number, departure time, arrival time

Verb

handle, search, enter, stay, compare, store, decide, use, view, delete, rename, share, see, interact, display, contain

Classification (Briefly)

- User
  - Method: enter, use
- Search
  - Attribute: destination, number of days to stay, flight,
  - Method: search, display
- Travel Plan
  - Attribute: sequence of flight
  - Method: store, review, delete, rename
- Flight
  - Attribute: flight number, destination, departure time, arrival time, price
  - Method: compare

Challenge Question

➔ How many destinations can a user enter for travel planning?
➔ Can users search for flights from a particular airline company?
➔ Will the app update when certain flights become unavailable?
➔ Will the app always provide the cheapest options?

Dimension

1. Intent (of using the app) – The reason and goal of users using this app.

2. Engagement Level – Frequency of a user using this platform.

3. Age Group – People of different ages.

User Persona

Persona 1 – Young Traveler Eager to Meet Friends

Name: Lance

Age: 23

Occupation: Graduate Student

Intent: Look for cheap airline tickets for travel during vacation.

Engagement Level: Monthly (medium)

Background:

Lance is a young guy who loves to spend time with friends. However, after he graduated, he and his friends were far separated and lived in different places, which gave him a reason to travel by air.

Scenario:

As spring break approaches, Lance decides to reconnect with some of his old friends. He wants to use this short break efficiently and, most importantly, limit his budget. Thus, he opens *Gogo* and starts searching.

User Story:

1. As a traveler, I want to enter different destinations using the keyboard.

2. As a traveler, I want to find the cheapest flights for my trips.

3. As a traveler, I want to view my travel plan and know which flights I should get.

4. As a traveler, I want to see the app's responses, including unavailable results, so that I know what to do next.

Persona 2 – Elderly Passenger Busy Traveling on Business

Name: Glen

Age: 51

Occupation: Market Manager

Intent: Look for cheap airline tickets for travel during vacation.

Engagement Level: Weekly (high)

Background:

Glen is a hardworking manager who needs to travel to different cities quite frequently. He always takes care of the trips by himself, and it takes time.
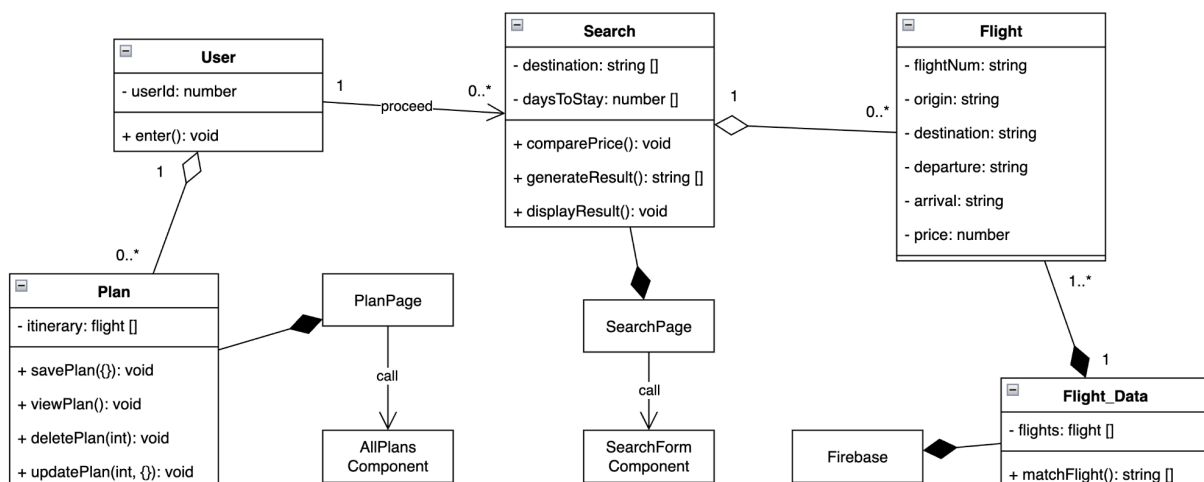
Scenario:

The company has assigned Glen to investigate the market situation in some areas to help the company grow. He needs to make arrangements for the trip as soon as possible, so he opens *Gogo* and starts searching.

User Story:

1. As a frequent traveler, I want to find flights and arrange my multiple-way trips quickly.

2. As a frequent traveler, I want to compare airfare options between different airline companies.

3. As a frequent traveler, I want to rename my travel plan to another file so that I can easily find it.

4. As a frequent traveler, I want to learn from others' trip plans to save more time.

UML Class Diagram

https://drive.google.com/file/d/1yr6KF9aNkqOSEYaEJDZppFGm2IT8HSEY/view?usp=sharing

Interface Mockup

Lance 1: As a traveler, I want to enter different destinations using the keyboard.

MacBook Pro 14" - 1

Search Flight   Saved Plan

Destination(s)   Day(s) to Stay

input   input   -

input   input   -

                                  +

Search Button

Glen 1: As a frequent traveler, I want to find flights and arrange my multiple-way trips quickly.

MacBook Pro 14" - 1

Search Flight   Saved Plan

Destination(s)   Day(s) to Stay

input   input   -

input   input   -

                                  +

Component: a search form

Search Button

Lance 2: As a traveler, I want to find the cheapest flights for my trips.

MacBook Pro 14" - 1

Search Flight	Saved Plan

Result

From San Francisco to San Diego
Flight Number:
Depart Time:
Arrival Time:
Price:

From San Diego to Atlanta
Flight Number:
Depart Time:
Arrival Time:
Price:

From Atlanta to Shanghai
Unavailable: no nonstop flight

Lance 4: As a traveler, I want to see the app's responses, including unavailable results, so that I know what to do next.

Glen 2: As a frequent traveler, I want to compare airfare options between different airline companies.

Lance 3: As a traveler, I want to view my travel plan and know which flights I should get.

MacBook Pro 14" - 1

Search Flight	Saved Plan

Saved Plan

San Francisco > San Diego > Atlanta > San Francisco

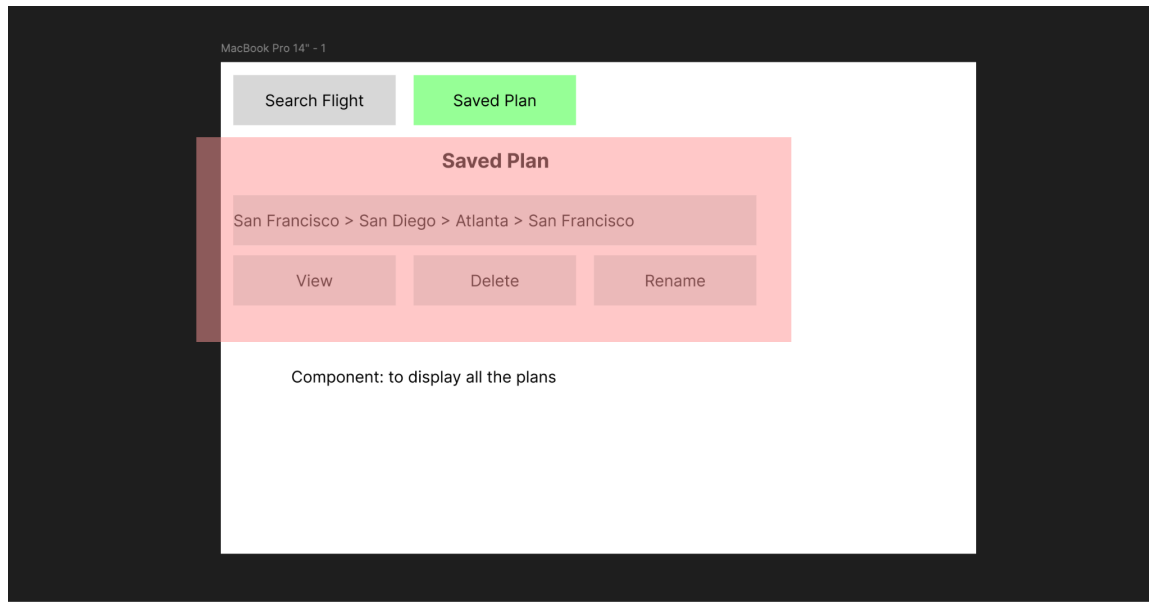| View	Delete	Rename

Glen 3: As a frequent traveler, I want to rename my travel plan to another file so that I can easily find it.

Glen 4: As a frequent traveler, I want to learn from others' trip plans to save more time.

Search Flight   Saved Plan

Saved Plan

San Francisco > San Diego > Atlanta > San Francisco

View   Delete   Rename

Component: to display all the plans

Gen AI Usage

No AI Usage for this part.