Criterion B - Solution Overview

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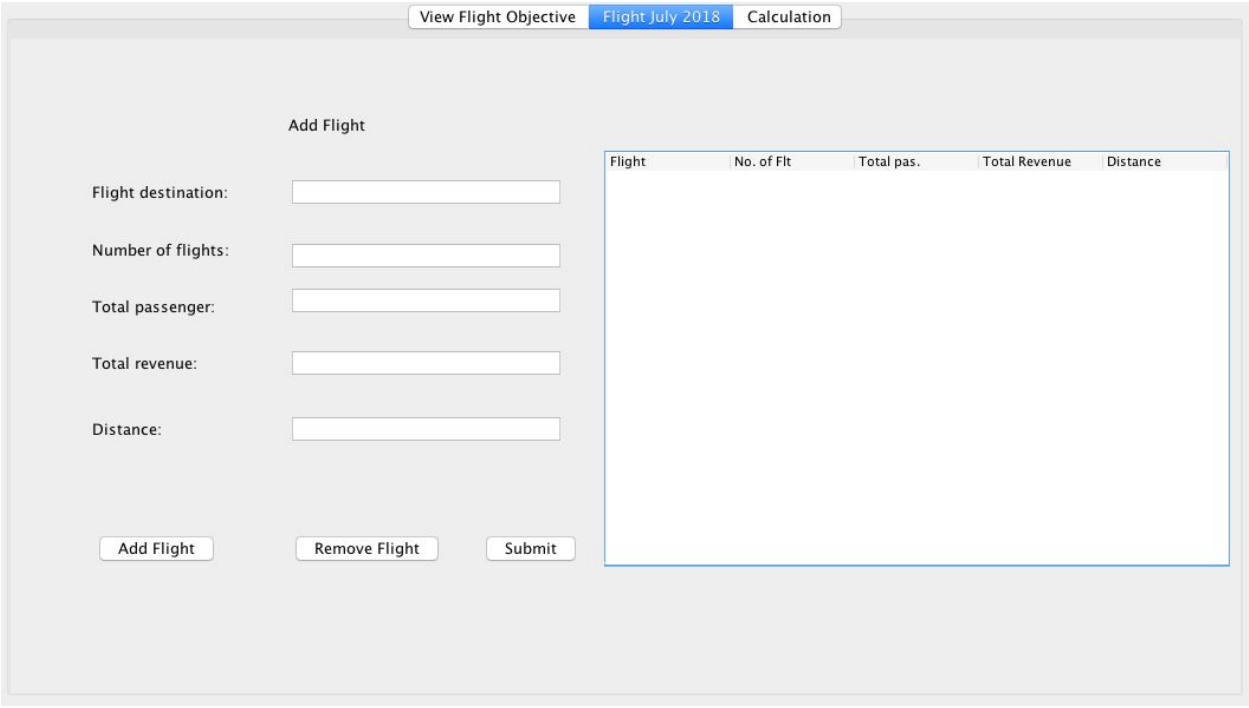
Inputs and Outputs

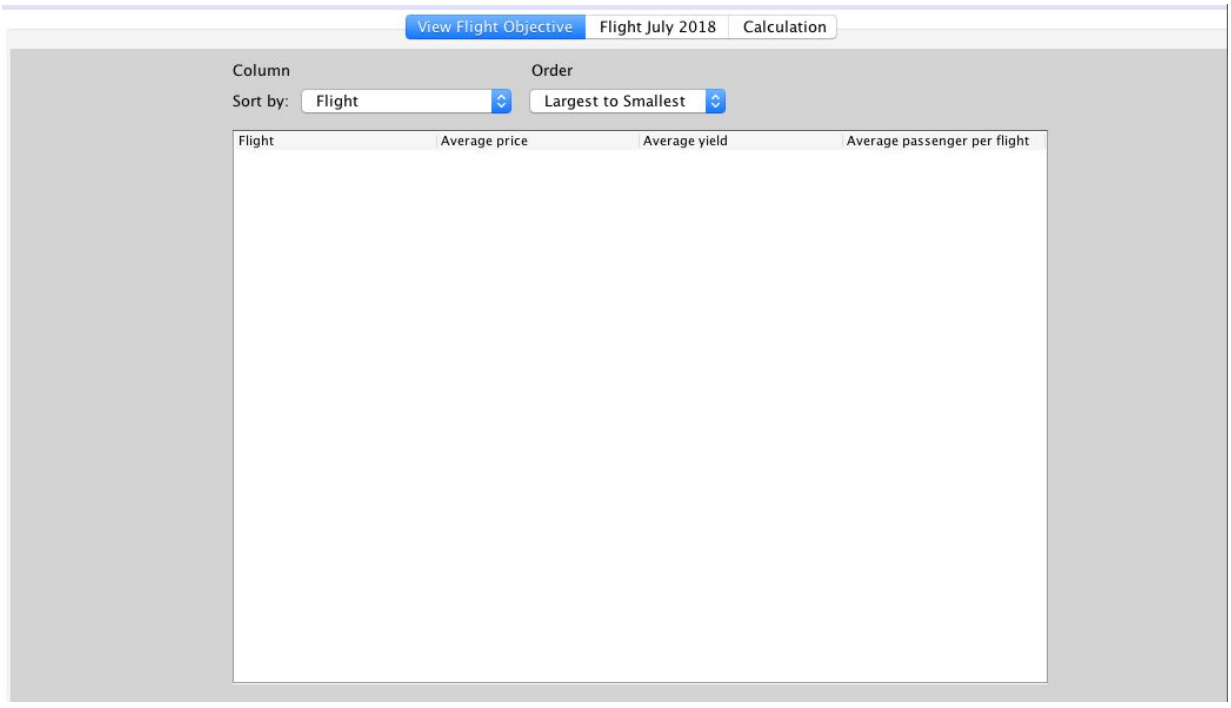
Input	Data type	Example
Flight city code	String	BKKUTH
Flight destination (city)	String	Chiang Mai
Number of flights	Integer	62
Total passenger	Integer	7,123
Total revenue	Long	14,129,234
Total distance (km)	Integer	450
Type of flight	ComboBox	Domestic
Visa required or not	Boolean	Yes
Flight destination (country)	String	Denmark

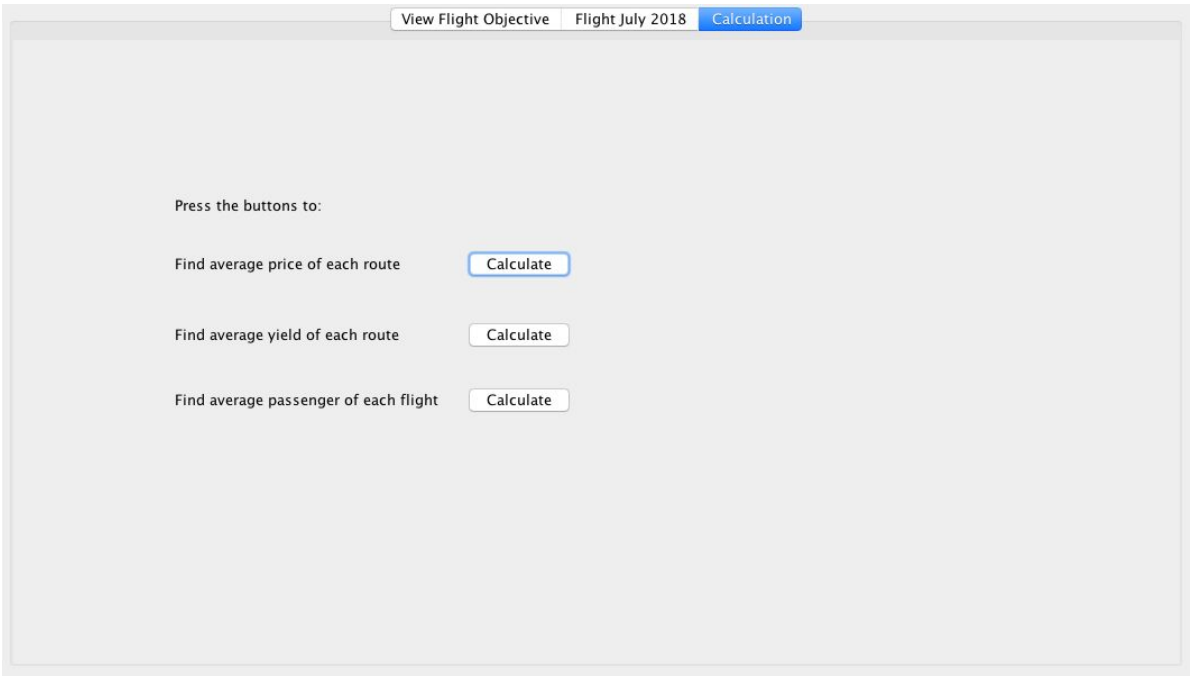
Output	Data type	Example
Flight city code	String	BKKUTH
Flight destination	String	Chiang Mai
Number of flights	Integer	62
Total passenger	Integer	7,123
Total revenue	Long	14,129,234
Total distance (km)	Integer	450
Average price	Integer	1,627
Average yield	Float	3.61
Average passenger per flight	Integer	133

Type of flight	ComboBox	Domestic
Visa required or not	Boolean	Yes
Flight destination (country)	String	Denmark

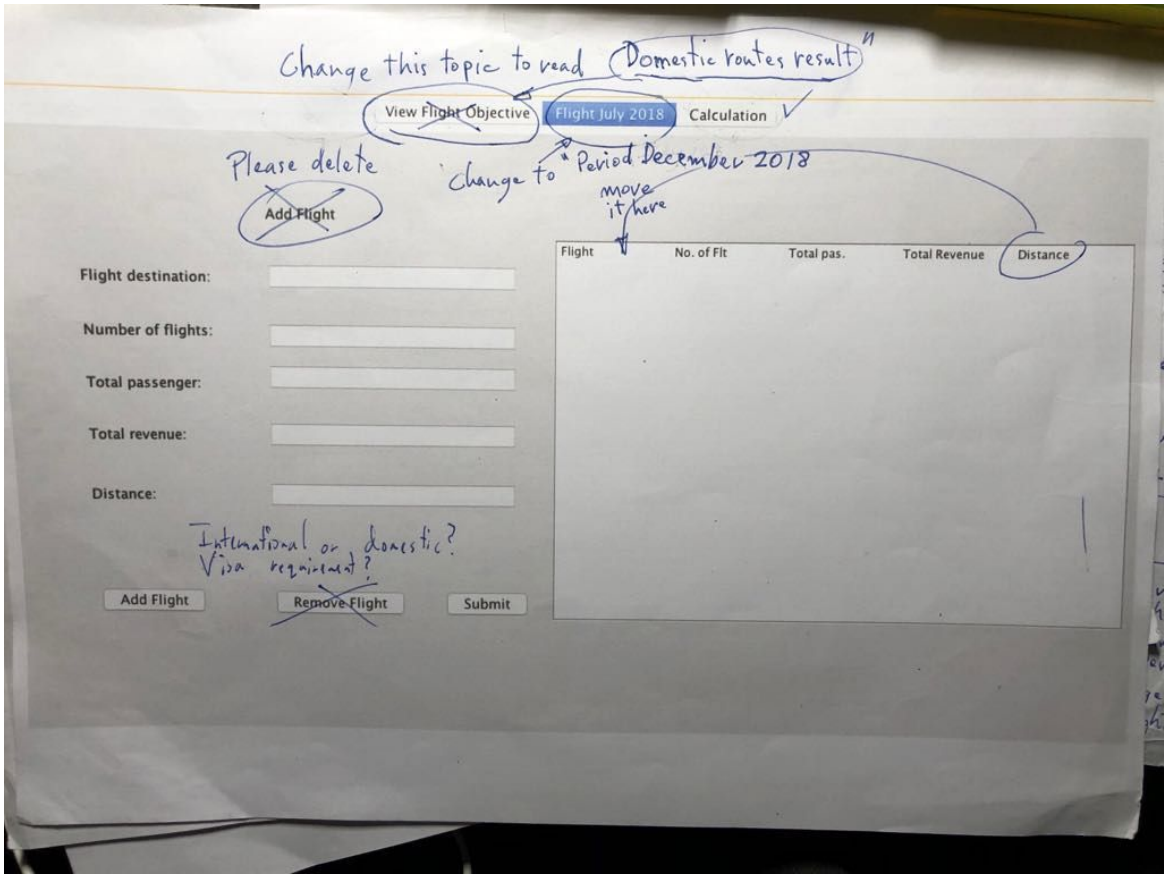
Original GUI Prototype

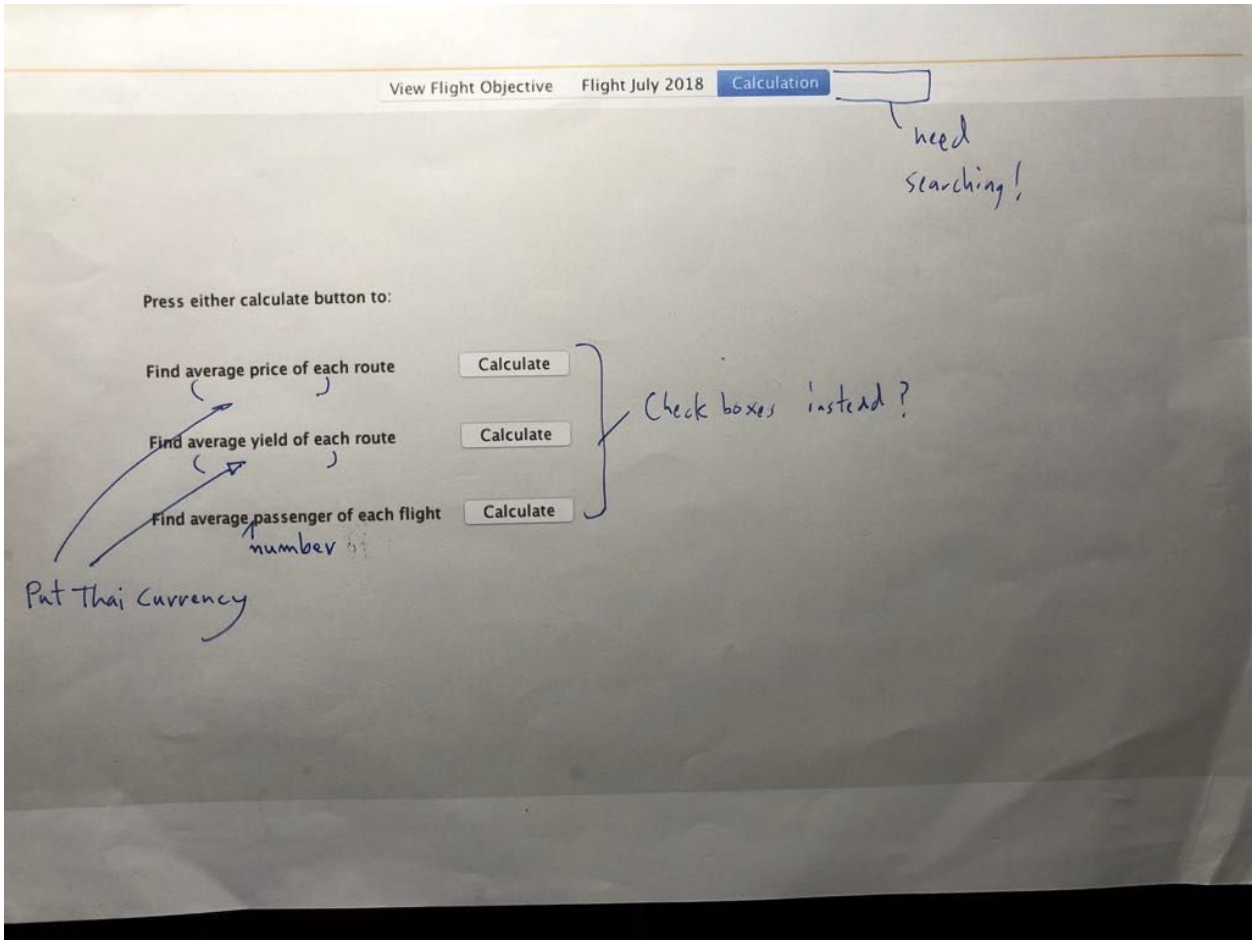


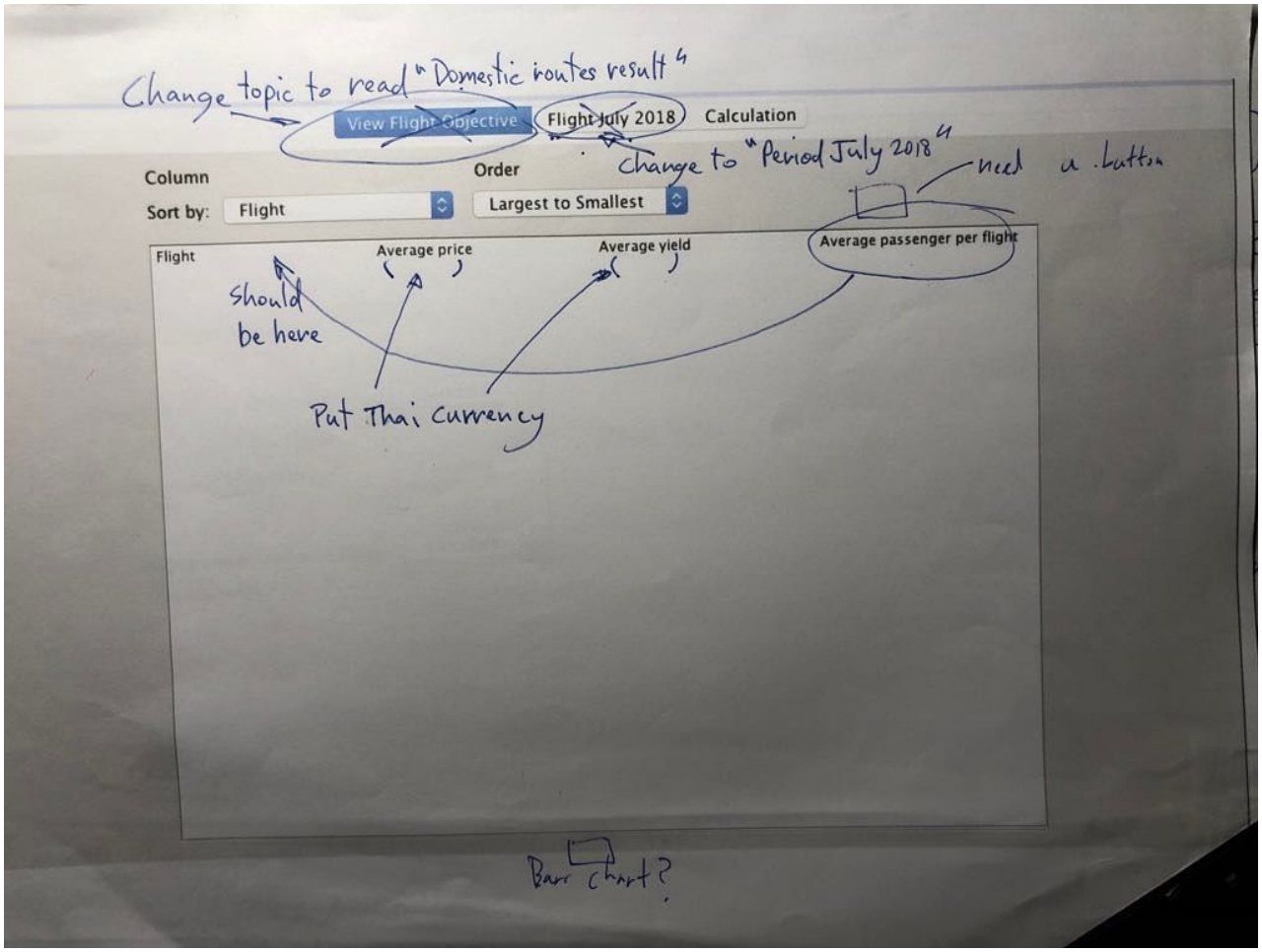




Images with corrections



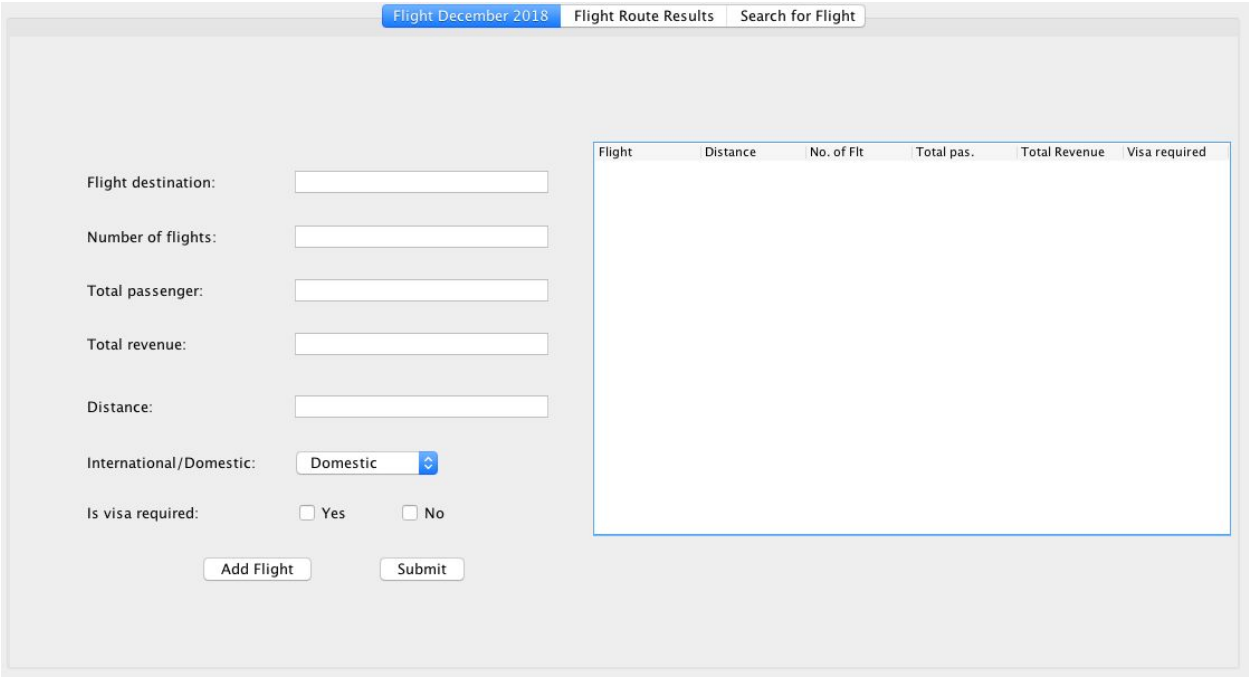

View Flight Objective
Flight July 2018
Calculation
need searching!
Press either calculate button to:
Find average price of each route
Calculate
Find average yield of each route
Calculate
Find average passenger of each flight
Calculate
Check boxes instead?
number
Put Thai Currency

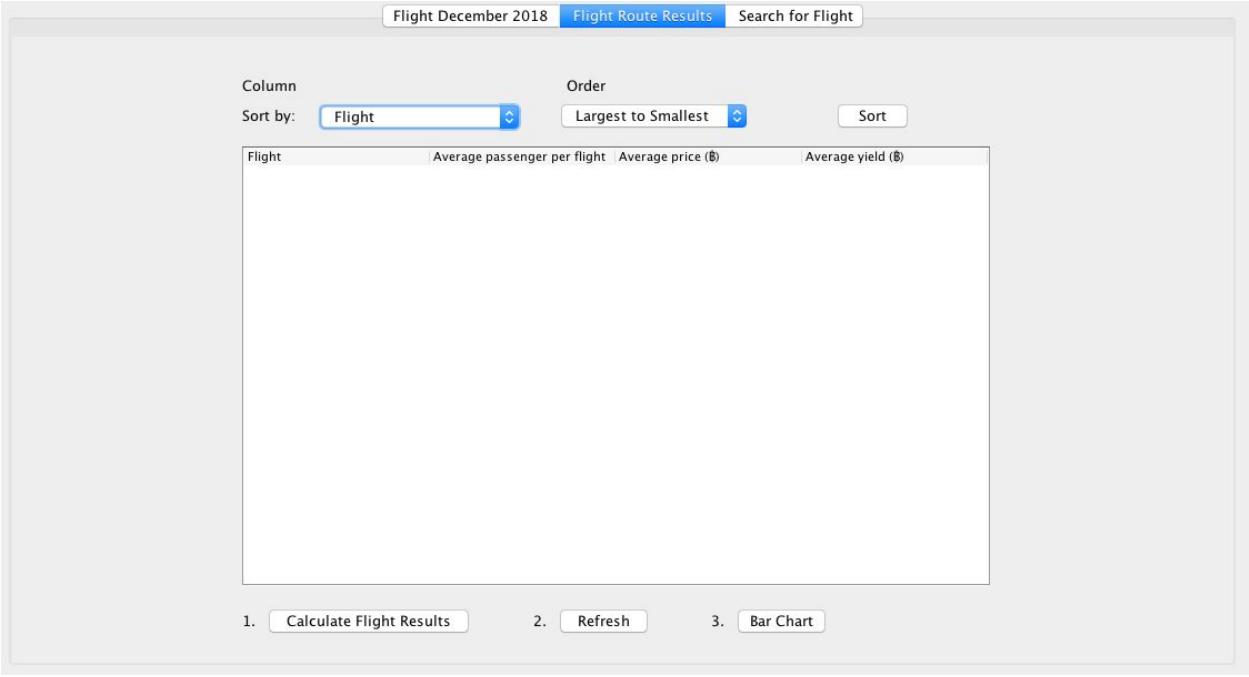


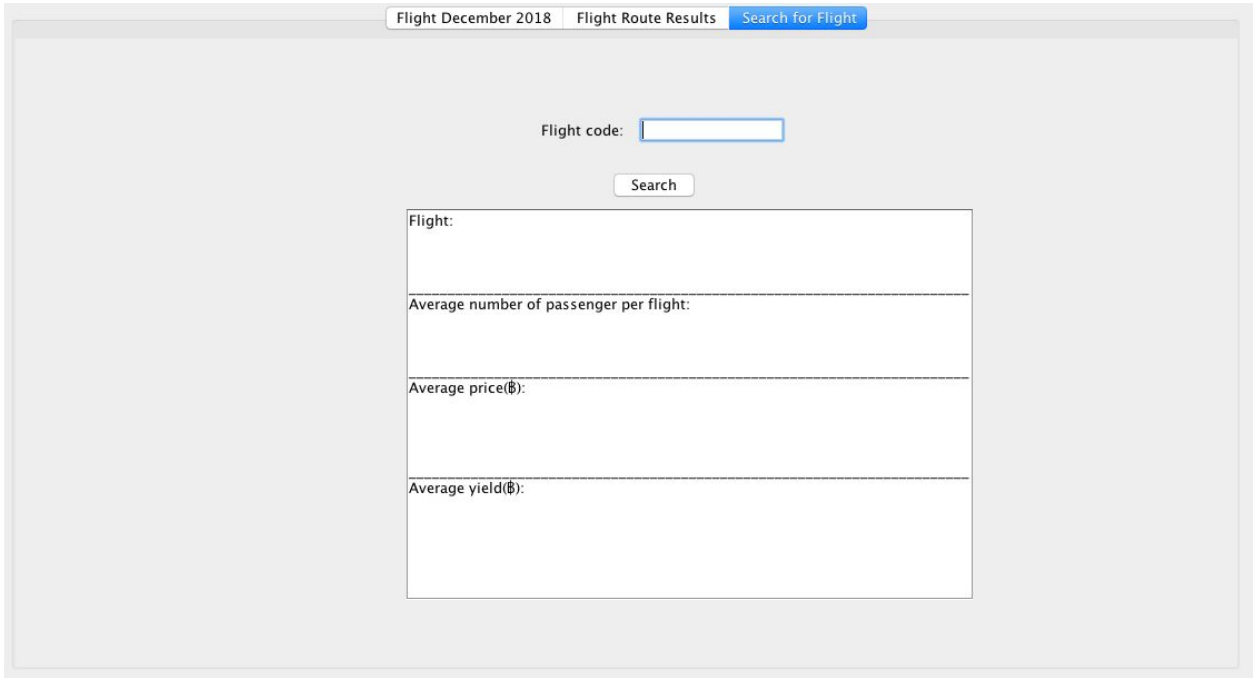
INTERVIEW 2 - PROPOSED IMPROVEMENTS (NOT INCLUDED IN THE WORD COUNT)

The labeling of the tabs has to be changed. It is also important to include the Baht sign, to specify which currency the calculated price is. A search tab is needed to be able to search through all of the flights and to find specific values of that flight. Buttons are required for creating a bar chart based on the data, and others for the table.

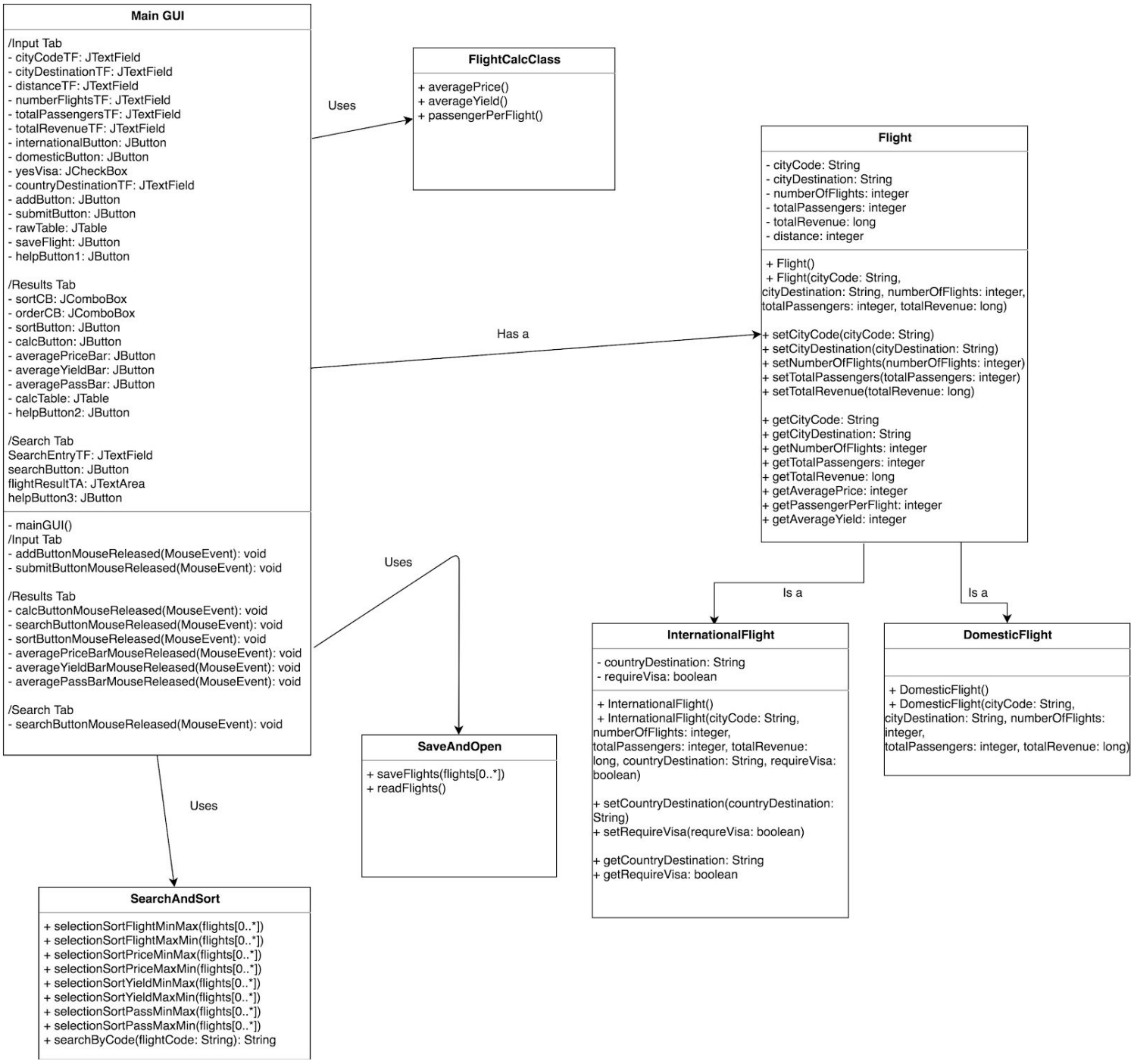
Improved GUI






Flight December 2018
Flight Route Results
Search for Flight
Flight code:
Search
Flight:
Average number of passenger per flight:
Average price(฿):
Average yield(฿):

Class diagram



Chronological Development Plan

Creating the GUI (1 week)

I. GUI after my **first interview**
    A. Creating the 1st tabbed pane for inputting flights
        1. Able to view as a table
    B. 2nd tabbed pane for flight results
        1. Viewed as a table
        2. Sorting through results
    C. 3rd tabbed pane for calculating flight results
II. Reworking my GUI after my **second interview**
    A. Adjusting 3rd tabbed pane as searching flights
    B. Calculating flights in 2nd tab

Template Classes (1 week)

I. Create **Flight class**
II. Create the inheritance classes for Flight - **International Flight** and **Domestic Flight**
    A. New attributes
        1. International Flight: country destination + if Visa required
        2. Domestic Flight: None

Adding Flight information (2 days)

I. Implement an **arraylist** of flights.
II. Allow adding flights attributes value to arraylist
    A. Flights attributes added via textfield in GUI

Sorting and Searching (1 week)

I. Create Sort and Search class
II. Construct a **selection sort** algorithm
    A. Use for loop to loop through array of flight
    B. If statement to check whether the looped through value is minimum/maximum
    C. An algorithm to swap the values
        1. Repeat for each flight attribute
            a) Apply to the raw table
            b) Apply to the calc table
                (1) If statements

III. Construct a **search** algorithm in the same class
    A. There needs to be a key
    B. Use for loop to loop through array of flight
    C. If statement when key is equal to flight code
        1. Apply to the text area

Error and exceptions (1 day)

I. **If statement** for the user inputs using showMessage

Saving and Reading file (4 days)

I. Create **Save and Read** class
    A. Read flights method
    B. Save flights method

Testing Plan

Input	**Normal**	**Border***	**Abnormal***	**Extreme***
Flight city code	String: BKKUTH	- Using lower case letters	- Not six letters	- Not inputting anything *Warning message:* - Numbers and symbols
Flight destination	String: Phuket	- Too short: 3 or fewer letters - Or too long: 20 or more letters	- Numbers and symbols	- Not inputting anything
Number of Flights	Integer: 201	- 0 flights	- Negative flights (will be part of the symbols) - 700 or more	- Not inputting anything - Symbols

			flights	- Characters and symbols
Total Passenger	Integer: 33,804	- 0 passenger	- Negative passengers (Will be part of symbols) - Too short: Fewer than 1,000 flights - Too long: More than 100,000 flights	- Not inputting anything - Characters and symbols
Total Revenue	Long: 39,753,529	- 0 revenue - Negative revenue (Will be part of symbols)	- Too short: Fewer than 1,000,000	- Not inputting anything - Characters and symbols
Total Distance (km)	Integer: 450	- 0 km	- Negative distance	- Characters and symbols - Not inputting anything
Type of Flight	ComboBox: Domestic	N/A	N/A	N/A
Visa required or not	Boolean: Yes	N/A	N/A	N/A
Country destination	String: Germany	- Too short: 3 or fewer letters - Or too long: 10 or more letters	- Numbers and symbols	- Not inputting anything

* For all inputs that are within border, abnormal, or extreme, the user is required to re-enter the flight. If the user includes more than one input that is within border, abnormal, or extreme, then the warning message will include all of their warning messages. (Part of extended writing)