HistoFlight - Proposal

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1 Summary

Purchasing flights can be a hassle, but to find the right time to purchase those tickets is even more challenging.

The application will focus on the idea of providing extensive information on flights. Our goal is to create a place where users can search, comment, and find historical prices for any flight of any given day so they can know whether they are getting the best price. With the data coming from Google Flights, we can implement a timeline of ticket prices to provide an in-depth interpretation of when the price will rise and fall. Users will also be given the opportunity to leave reviews and comments under each flight. Finally, users can utilize these data to personalize their plan and budget to ensure they will get their money's worth.

2 Description

Our application will provide all the direct flights between most major cities and provide all the details. Unlike existing platforms like google flight, which only provide flight details and price graph for the minimum price on each day, our application will provide the price graph for each individual flight. This provides users more detailed information because they might only be interested in a specific flight due to time constraints.

With the price history graph, users will be able to make a better decision on whether this is a suitable time to purchase the flight ticket. Thus, using the data and price tendency to plan ahead.

3 Usefulness

Our application will allow users to learn historical flight information, which they can utilize to compare prices, check price trends, decide best purchase time, or even plan their travels based on seasonal price trends. This will reduce their time looking across websites for historical price information, and provide a better picture of how to book trips according to price changes.

Our inspiration is drawn from GoogleFlight.com, where historical data can be viewed. The novelty of our design includes personalized recommendations mentioned above; and comparison across routes/airlines/flights. Currently, the website only shows the price history for economy class. We want to expand this functionality for each class of the flight.

4 Realness

Our data, derived from Google Flight, includes ticket prices and flight data for direct flights starting with the several large cities like New York, Chicago, and Los Angeles. The main thing we want to compare is the fluctuation of ticket prices for Economy Class, Business Class and First Class over a period of time, so ticket prices are the most important data we need to get. On top of this, we will add some basic information about flights, similar to flight duration, airline information, carbon dioxide emissions, etc.

5 Functionality

5.1 Data in database

Our data is from Google Flight. There is a table where historical flight information is stored: the attributes include flight number, departure/arrival cities, date, price, purchase date, departure/arrival times and comments.

5.2 Basic functionality

Our application will allow users to track the historical prices of all major flights between big cities. The users will be able to check the historical trend for particular routes, airlines and flights. They can compare current prices with historical prices to learn how prices vary across time and decide if the current price is a good price to pay for.

CRUD: Users can post/read/update/delete comments on the flight to indicate whether this time of flight is good, bad, delayed etc... Users can insert information on what price they bought their tickets. Will not be able to insert into DB without Admin approval.

5.3 Complex functionality

The users will also be able to compare current prices across airlines and flights. We will also calculate the average price for airlines, routes and flights to notify users when they look up a certain flight.

5.4 Creative component

They can also check historical prices for each route or airline, which they can utilize to determine their travel plan. We will also provide a recommendation system that includes functions like: best season/month for visiting any city; best time in a day to take a flight; or accessibility (with plane) for a certain destination. All the recommendations will be based on historical price information. We plan to use basic statistical measures such as mean/max/min prices, price quantiles; average flights per hour etc. with visualizations such as histograms, bar charts and time series charts to incorporate essential information for the users.

6 UI mockup

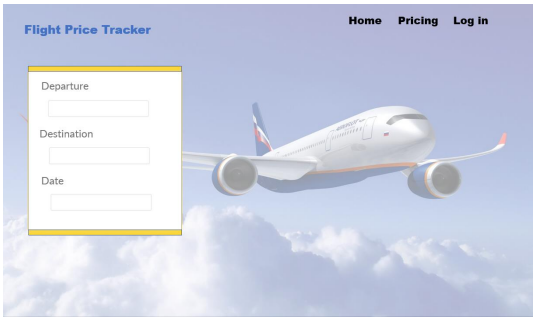

Figure 1: Interface 1

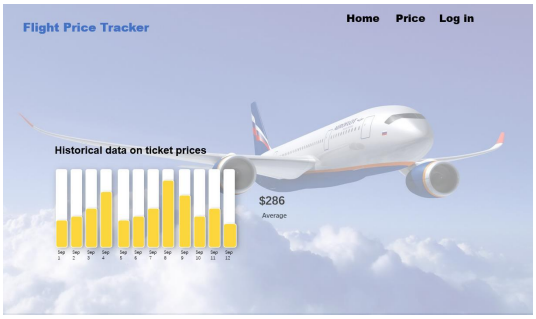

Figure 2: Interface 2

7 Project work distribution

Each individual person would be responsible for scraping a couple of lines of data each day until DB information is sufficient.

Yilun: In charge of UI part/Front end.

Chengyan: In charge of Data Crawling and Full-Stack. For full-stack development, he will be assisting with both front-end and back-end work when necessary.

Henry: In charge of Back-end and API endpoints. Will split back-end work with Weikun.

Weikun: In charge of Backend and will split back-end work with Henry.