Program name: Flight Tracker

Main Purpose:

This application helps users get more information about flights going in and out of Toronto Pearson Airport (randomly generated). It would also work if real data is implemented.

Tasks:

1. Shows all planes going around Canada + US
2. Shows individual plane info if clicked on in map
3. Finds all planes that fly from Toronto to another location from input

* Departure time, arriving time, flight number, company, price
* Example: <https://www.flightstats.com/v2/flight-tracker/departures/YYZ>

1. Flight status check

* Current location
* Other Information

21 destinations; 6 airlines; 13 models

Probably going to generate 1000 airplanes

Possible difficulties

* Calculating routes of airplanes (Great Circle Distance + Path)
* Zooming in on flight; image moving along with the flight
* Prices of planes should vary; ones1 week from now should be more expensive than ones 1 year from now

Input / Output Component:

* This game required lots of input, and generates even more output. Some examples include:
* The program always keeps track of the mouse position. Since this application is similar to the ones online, there are lots of buttons that can be clicked, such as the exit button, go back button, the specific planes, the search bar, and much more.
* Output is mostly shown with PyGame screen, however they must be generated by the program itself. Some include the list of search results, the big board that shows current departures and arrivals at Pearson Airport, the flight information, and so on.
* Sound output may also be required. Some examples that I can use them in are:
* Clicking buttons sound effects
* Individual Flight clicked on sound effects

Data that will be used:

[Companies]

* Air Canada (AC)
* Air Transat (TS)
* American Airlines (AA)
* Delta (DL)
* United (UA)
* WestJet (WS)

[Flight models]

* A318
* A319
* A320
* A321
* A330
* A350
* A380
* Boeing 737
* Boeing 747
* Boeing 757
* Boeing 767
* Boeing 777
* Boeing 787

[Destinations]

* Ottawa; 351 km; 1h
* Montreal; 503 km; 1h 15m
* Quebec City; 729 km; 1h 40m
* Halifax; 1266 km; 2h 5m
* Winnipeg; 1510 km; 2h 30m
* Edmonton; 2704 km; 4h 5m
* Calgary; 2711 km; 4h 10m
* Vancouver; 3359 km; 5h 5m
* Detroit; 333 km; 1h 10m
* Philadelphia; 542 km; 1h 30m
* New York (JFK); 553 km; 1h 35m
* Washington; 566 km; 1h 25m
* Boston; 693 km; 1h 40m
* Chicago; 704 km; 1h 45m
* Atlanta; 1185 km; 2h 10m
* Houston; 2095 km; 3h 25m
* Las Vegas; 3135 km; 4h 45m
* Los Angeles; 3495 km; 5h 15m
* San Francisco; 3645 km; 5h 20m