**Airport Flight Arrival Enquiry Software**

**Aims**

The aim of my program is for users to be able to get real time flight information and for them to be able to see the expected arrival times as well the estimated arrival times.And for the different Airlines to be displayed as well as the Delays.

| Test NO. | Description | Test Data | ExpectedOutcome | Actual Outcome | Further Action |
| --- | --- | --- | --- | --- | --- |
| 1 | Loop on Main Menu | Wrong Number | Invalid Option | Invalid Option | NA |
| 2 | Option 2 Exit | 2 | Exiting the program-Break | Exiting the program | Add a Break to code so program ends |
| 3 | Invalid Submenu Choice | Wrong Number | Invalid Option | Invalid Option | NA |
| 4 | Delays Calculation | NA | Correct Values | Correct Values | NA |
| 5 | Submenu Display (Flights 1-2) | Option 1 on submenu | Displays information for flights 1 and 2 | displayed information for flights 1 and 2 | NA |
| 6. | Submenu Display (Flights 3-5) | Option 2 on submenu | displays information for flights 3, 4, and 5 | Displayed information for flights 3, 4, and 5 | NA |
| 7 | Display Airlines | Option 5 on Submenu | Reads Airlines on Fly.txt | Did not read airlines | Rename the read name to fly.txt |

**Design**

**Use case 1**:Check Flight Arrival Status

**Actor**:User

**Preconditions:** the program is running,and flight information is available

**Primary Flow**

1. User selects option 1 from the main menu.
2. Users can then choose from 6 options.

**Alternative Flow**

1. If the user provides invalid input, the system prompts the user to enter a valid option.

**Use Case 2**:Exit

**Actor**:User

Preconditions:The system is running

**Primary Flow**:

1. The User selects option 2 from the main menu
2. The system displays an exit message and terminates the program

**Use Case 3**:Display Flights 1-2

**Actor**: Passenger or Airport Staff

**Preconditions**: The system is running, and flight information is available.

**Primary Flow**:

1. User selects option 1 from the main menu.
2. User selects sub-menu option 1.
3. The system displays details for flight 1 and flight 2, including their Distance,Speed, Scheduled Arrival Time, Estimated Arrival Time and Delays

**Alternative Flow**

1. If the user provides invalid input, the system prompts the user to enter a valid option.

**Use Case 4**: Display Flights 3-5

**Actor**: Passenger or Airport Staff

**Preconditions**: The system is running, and flight information is available.

**Primary Flow**:

1. User selects option 1 from the main menu.
2. User selects sub-menu option 2.
3. The system displays details for flight 3, flight 4, and flight 5, including their Distance,Speed, Scheduled Arrival Time, Estimated Arrival Time and Delays.

**Use Case 5**: Display All Scheduled Flights

**Actor**: Passenger or Airport Staff

**Preconditions**: The system is running, and flight information is available.

**Primary Flow**:

1. User selects option 1 from the main menu.
2. User selects sub-menu option 3.
3. The system displays details for all scheduled flights, including their flight number, origin, and scheduled arrival time.

**Use Case 6**: Display Estimated Arrival Times

**Actor**: Passenger or Airport Staff

**Preconditions**: The system is running, and flight information is available.

**Primary Flow**:

1. User selects option 1 from the main menu.
2. User selects sub-menu option 4.
3. The system displays the estimated arrival times for all flights, based on their current distance and speed.

**Use Case 7**: Display Airlines

**Actor**: Passenger or Airport Staff

**Preconditions**: The system is running, and flight information is available.

**Primary Flow**:

1. User selects option 1 from the main menu.
2. User selects sub-menu option 5.
3. The system reads airline information from a file ("Fly.txt") and displays it.

**Use Case 8**: Display Delays

**Actor**: Passenger or Airport Staff

**Preconditions**: The system is running, and flight information is available.

**Primary Flow**:

1. User selects option 1 from the main menu.
2. User selects sub-menu option 6.
3. The system calculates and displays the delays for each flight, comparing the scheduled arrival time with the estimated arrival time.

**Use Case 9**: Invalid Choice Handling

**Actor**: System

**Preconditions**: The system is running, and the user is interacting with the menu.

**Primary Flow**:

If the user provides invalid input in any step, the system prompts the user to enter a valid option.

**Use Case 10**: Exit Program

**Actor**: User

**Preconditions**: The system is running.

**Primary Flow**:

1. User selects option 2 from the main menu.
2. The system displays an exit message and terminates the program.

**Critique**

What went well in my program is my use of the Flight Class as i able to incorporate all the needs of a flight such as the Flight number, Flight origin, Aircraft number, Airline name, Airline code, Current distance from the airport, Current flight speed, Timetabled arrival time and was able to successfully create objects the different flights that i had however one thing i could have improved on in this specific aspect was moving the the list of planes to another file and have my program read from that file.

In regards to user interaction what worked well was the interactive menu which was simple and easy for users to be able to navigate this worked alongside my user of loops as if the user had selected a option that wasn't there a invalid option would come up as well the menu again so that they could select a option that was there.

Improvements that could be made is the limited extensibility as the program only works with a fixed number of five flights so adding a option of more flights or for users to be able user remove flights in the future would be a good option.Another part that can improved is the File handling as my external file Fly.txt contains more than one line then my program would not read those lines as print(f.readline()) only prints the first line.