**Introduction to Programming Coursework 2**

* Seat Booker
  + Available Seats
    - The program will first read in the file and uses and try and catch to see if it is valid. If the try and catch fails then it will repeat but ask the user to press enter first before trying to load it again. This is so that the user has an opportunity to add the file before it tries again so that it does not run repeatedly.
    - Then creates an ArrayList. This is used over a fixed array because it will work regardless of the number of seats in the file which improves the robustness of the program. If more seats are added, then it will still work as intended.
    - Each line of the file is split and then assigned to different variables which are used to create a seat object.
    - The object is then added to the ArrayList and the process is repeated until all lines have been exhausted.
    - The file is then closed
  + View Reservation
    - Prints out each line of the ArrayList in a neat format for the size of the ArrayList. Also prints a header for clarity.
  + Reserve Seat
    - Gets all options from the user so that it knows what they want and what to look for when searching the ArrayList of seats. Checks that the option is valid and if not then it will ask again.
    - Uses a for loop and a counter to go through each object and check if its values match what the user has entered. For every match it adds to the counter.
    - If an object has 4 in the counter, then its index is added to an ArrayList.
    - If an object has 3 out of 4 in the counter then it is added to an ArrayList.
    - The program will present the user with the ideal seats if any are available .but if not then it will present to close fit seats.
    - Gets input from user to select option.
    - Gets input from user to enter eMail address.
    - Books seat.
  + Cancel Seat
    - Gets input from user on what seat to cancel.
    - If that seat is in an object it cancels it.
  + Save and Exit
    - When the user enters q while loop for the menu will end and the program will save and finish.
* Seat
  + Seat Number
    - The number of the seat.
  + Seat Class
    - If it is 1ST or STD.
  + Window
    - If it has a window or not.
  + Aisle
    - Is it on an Aisle.
  + Table
    - Does it have a table.
  + Price
    - What is the price.
  + Order Seat
    - Takes in what the user entered for email and assigns it to the object.

Chart, treemap chart

Description automatically generated