CSU11013 Programming Project 2025 Report

Group 2

Individual Contributions Summary

Name	Student ID	Contribution Summary
Yu Xue Chen	23373711	The Filter of the flight method for arrival and origin city search. The arrival and origin city screen UI. The displaying of the flights in plane tickets format.
Ho Hon Ma	24380273	CSV Parsing, Queries, Bar Chart, Flight Info Display, Data Visualization, Reading Data, Mousepress, MouseScroll, Merging Flight Class, Aesthetics, Comments for all code
Saanvi Boggaram	24380506	Data Visualization, Charts
Yan Wa Lee	24382959	Creating main screen (MainScreen, Screen and Widget class), scrolling function, merging and debugging, visuals
Yao Han	23376670	Flight data sorting (date/city), dynamic labels, state tracking, and UX-focused reset logic.
Dana Barri	24381806	Chatted with Professor individually

System Design

1. Data Input and Parsing

- Raw flight data is read line-by-line from a CSV or file input.
- Each line is parsed into a Flight object and stored in an ArrayList<Flight>.

2. Screens and Navigation

- UI is managed through multiple custom Screen objects:
 - o MainScreen: Entry point for user interaction.
 - Different functional buttons
- Buttons and widgets use the Widget class, handling interaction and appearance.

3. Data Filtering and Display

- Flights are filtered by user selection (e.g., by city, date, or cancellation status).
- Matching flights are displayed in scrollable lists or bar charts.

4. Visualization Logic

- Bar charts represent totals.
- Mouse clicks on bars/buttons trigger filtering and screen transitions.

5. User Interaction

- Mouse events (mousePressed & mouseWheel) manage navigation, scrolling, and selection.
- Button change colour feature when mouse is hovering over them.
- Sorting functions allow date based order organization.

Core Features

1. Flights by Date Range:

- Flights are sorted by Date in default
- When the user selects the Monthly flights Button on Main Screen, a bar chart will be shown.
- The Bar chart will illustrate the number of flights each day of the month.
- When a bar on the bar chart is clicked, the corresponding flights info will be displayed.
- Scrolling is implemented.

2. Flights by Origin Airport:

- User can type in an origin city's name to get all the flight details displayed in a flight ticket visualisation
- Colour of the tickets is
 - o Blue, if it is on time
 - o Red, if it is cancelled
 - o Orange, if it is delayed
- User can sort flights with Ascend/Descends Date or Ascends/Descends alphabetic order of City Name.
- Search Box allows User I/O Interactions
- The scrolling function is implemented

3. Flights by Arrive Airport:

- Similar features as Origin City

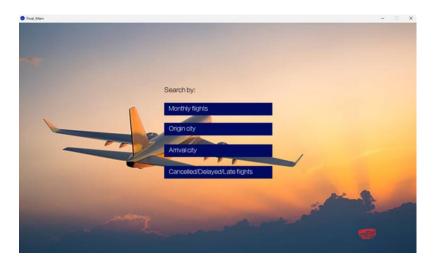
4. Flights by Cancelled/Delayed/Late Flight:

- When user selected cancelled flight Button on Main Screen, a bar chart will be shown
- Bar Chart illustrates the Number of Cancelled/Delayed/Late flights
- When a bar is clicked, corresponding flights Info will be displayed inside the container
- Flights are sorted by Date in default
- Scrolling function is implemented

User Interface & Interaction

Home Screen:

- Users interact with clickable buttons that brings user to different screens



Monthly Flights Screen:

- Bar Chart is displayed when "Monthly Flights" is pressed showing the number of flights on different day
- Bar will change to yellow when clicked

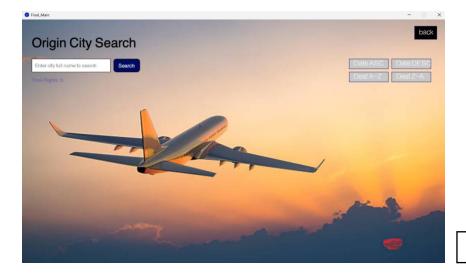


- When specific bar is clicked, show flights info of that day with scrolling implemented

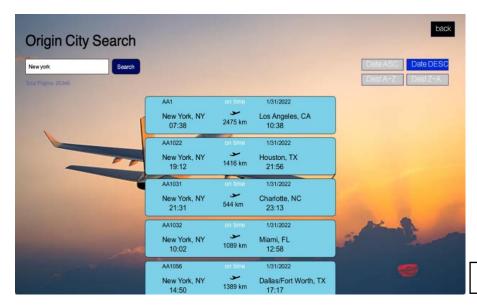


Origin City Screen:

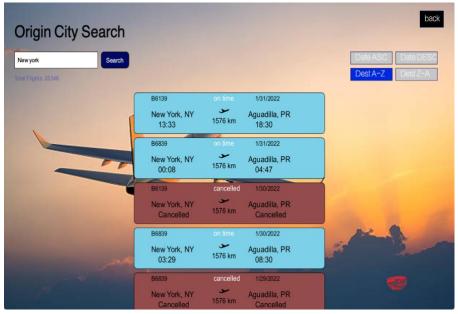
- When Origin City is pressed, buttons and search box will be displayed



city-based



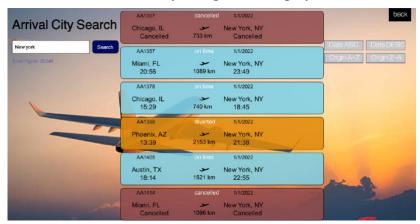
Date descending order



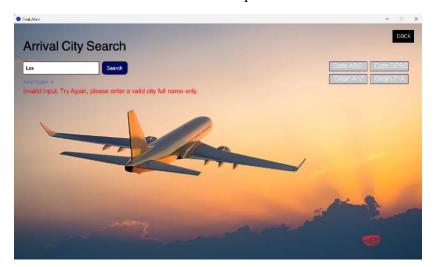
Destination char order

Arrival City Screen:

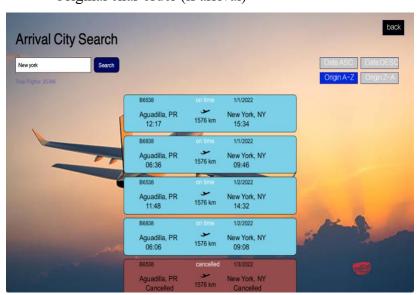
- Cancelled or Delayed flights are displayed with different colours



- Error will be shown when input is invalid

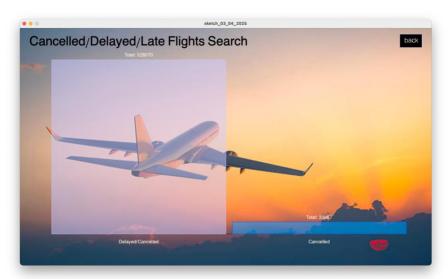


- Original char order (if arrival)



Cancelled / Delayed / Late Flights Screen:

- When the cancelled/delayed/late button is pressed, show bar chart for Delayed and Cancelled flights



- When a bar is clicked, details of it will be displayed with scrolling implemented

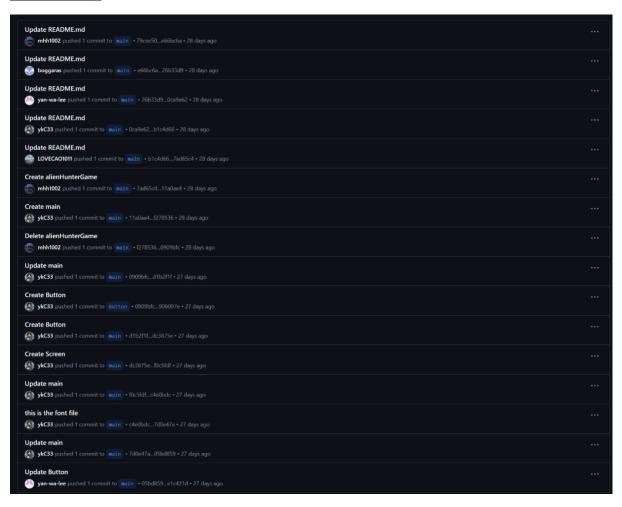


Week	Tasks	What we have done	Individual Work
8	Demonstrate	Meetup:	Yu Xue Chen:
	reading of data	- Discussed about	- Main file and initial
	from file and	what features we	code to print(console)
	give outline of	will include in our	W W W
	main program,	project.	Ho Hon Ma:
	including major classes, sketch of	Sat up group abot	Code to read CSVDataPoint class
	screens.	- Set up group chat	created
	screens.	- Practised GitHub	- Print flights Info(text)
		with alien game	Time ingine into (tens)
			Saanvi Boggaram:
		- Set up GitHub	- Planning of the Screen
		Repository	_
			Yan Wa Lee:
		- Split Tasks	- Planning of the Screen
			Yao Han:
			- Display new screen
			with two widgets
			- Merging DataPoint
			class with screen
9	Graph and	Meetup:	Yu Xue Chen:
	textual output of	- Plan and Design	- Merging previous
	data		weeks' code
		- Split tasks in	- Starting
		details	Origin&Arrival
			Seraching
			Ho Hon Ma:
			- Bar chart visualization
			for sorted flights info
			- Display specific flights
			info on screen
			Saanvi Boggaram:
			- Bar chart for monthly
			flights.
			Yan Wa Lee:
			- Main Screen: Widget,
			Screen class,
			mouseWheel and mousePressed method
			mouser ressed method
			Yao Han:
			- 2 new Date Sorting
			Buttons

			- Starting Ascending/Descending buttons
10	Apply user queries to data set and present results on screen	Online Meeting: - Split tasks - Discussed issues raised - Merged code from previous weeks	Yu Xue Chen: - Finishing origin and arrival screen UI - Printing filtered flight on the screen in lines. Ho Hon Ma: - Merging display info and bar chart to the other classes(widget, screen, main, etc) Saanvi Boggaram: - Merging the bar chart with Monthly date range with other
			classes - Yan Wa Lee: - Debugging after merging and improving visuals (alignments, text colour)
			Yao Han: - Finishing 2 new buttons for sorting by Ascending/Descending alphabetic order
11	Select different options and change screens	 Merged all separated components together Aesthetic Design and Decisions(colours, shapes) 	Yu Xue Chen: - Display flights info in ticket format Ho Hon Ma: - Merging and Polishing all the code - Optimising all code especially readData and FilterFlights - Helping my teammates to debug

			 Improving the user interface design of the program. Add comments for all code 	
			Yao Han:	
			- Polishing and Finishing the 4 sorting buttons	
			Yan Wa Lee: - Adding background image - Improving visuals (stroke, text and widget positions)	
			Saanvi Boggaram:	
			Help merging the bar chart with all the codesPolishing the codes.	
12	Demonstration	Group Demonstration	Group Demonstration	

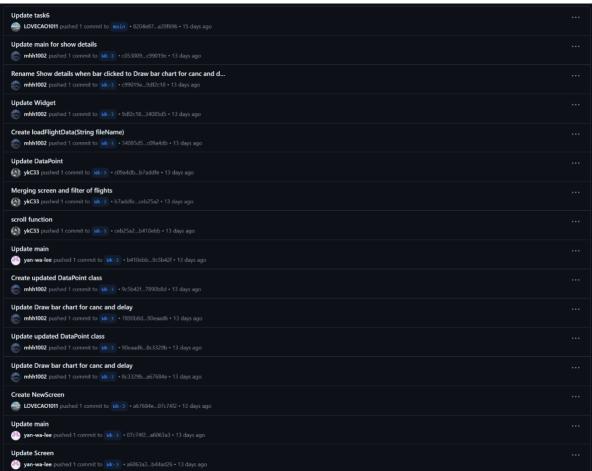
Git History

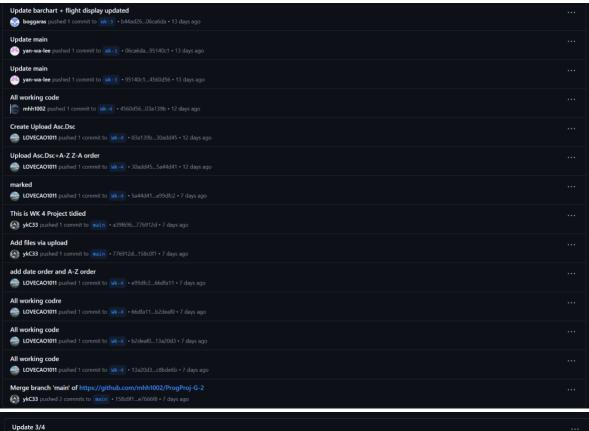


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Rename class Flight (data to void readData DVECAO1011 pushed 1 commit to main • 375cbc9768a93e • 27 days ago	
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Update main by Yu Xue Chen (A) ykc33 pushed 1 commit to xx-2 6524f57fcc5b7a + 20 days ago	
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Create mainScreen yan-wa-lee pushed 1 commit to WK-2 • 19124b4fac3719 • 20 days ago	
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Create fixed Version of displayFlights when bars clicked Make minh1002 pushed 1 commit to Monthly-flight-barchart + 965065e386620b + 6 days ago	
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