



Software engineering group project

Deliverable 2 - Increment 1

	Name	ID
1	Marwan Altamimi	32489005
2	Juzheng Bai	32410964
3	Henry York	33113556
4	Jack Breslin	33055521
5	Aditya Bansal	33335052

Supervised by
Gerasim Tsonev

Project Design

Scenarios -Increment 1

Scenario 1: Ad agency Client - Brian

- Brian opens the application and presses the start button
- He selects his logs from the latest ad campaign and uploads them to the system on the upload screen
- He navigates to the bar chart and selects the number of clicks metric and chooses to view the data over weekly increments.
- The graph appears on the display
- He clicks the compare graph button and the current graph appears in a new window
- He selects the number of conversions metric and a new graph is made.
- He compares the two graphs and writes down his findings.



Scenario 2: Ad agency Client - Brian

- Brian opens up the system and is presented with the home screen
- He presses the start button and opens up the upload screen, where he uploads three CSV files - The impressions, clicks and server log
- The system shows that all the files were uploaded correctly, and now he can choose a graph from the sidebar on the screen
- He selects the histogram option, and is presented with a histogram based on the click costs metric
- He selects the quit option on the sidebar and exits the program.



Scenario 3: Software developer

- Marwan is alerted of a bug in the application by a client.
- He tries to replicate the bug in his development application.
- After locating the bug, he spends some time fixing it.
- Once he is sure it is fixed and there are no side effects, he deploys the new code to the live application and tells the client it is fixed.



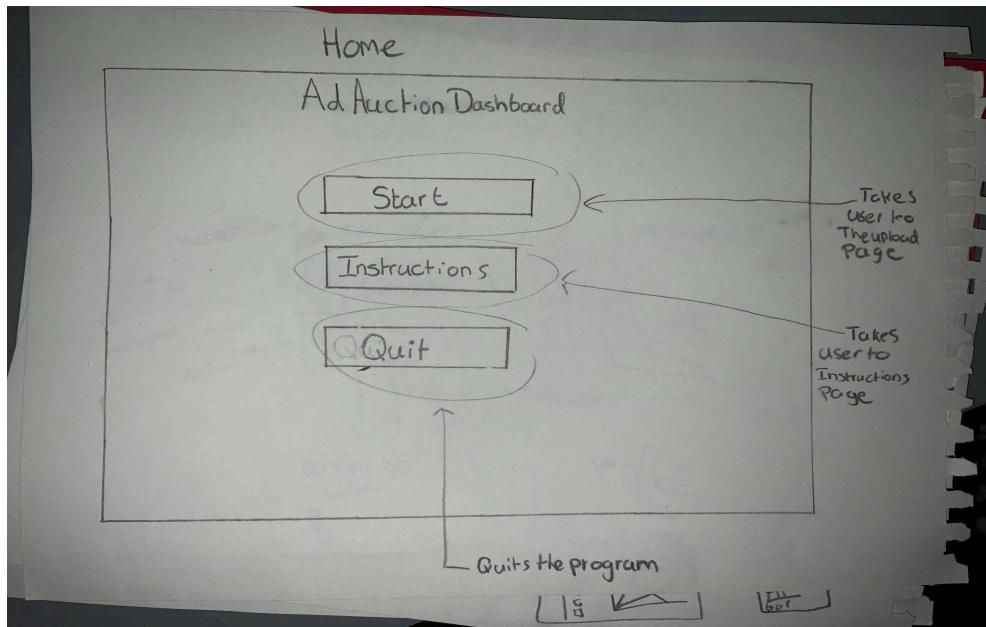
Scenario 4: Marketing Agency - Joyce

- Joyce starts the system and navigates through the home screen to the upload screen.
- She uploads three CSV files, The impressions, clicks and server log.
- An error is given, showing that the clicks and server files are in the wrong format. She realises she mixed up the upload buttons by mistake and uploads them again.
- The system now shows they are all in the correct format.
- She selects a line graph, and is brought to the line graph screen.
- From the list of metrics, she selects the number of impressions metric from the options.
- The graph then updates to show the impression metric on the graph.



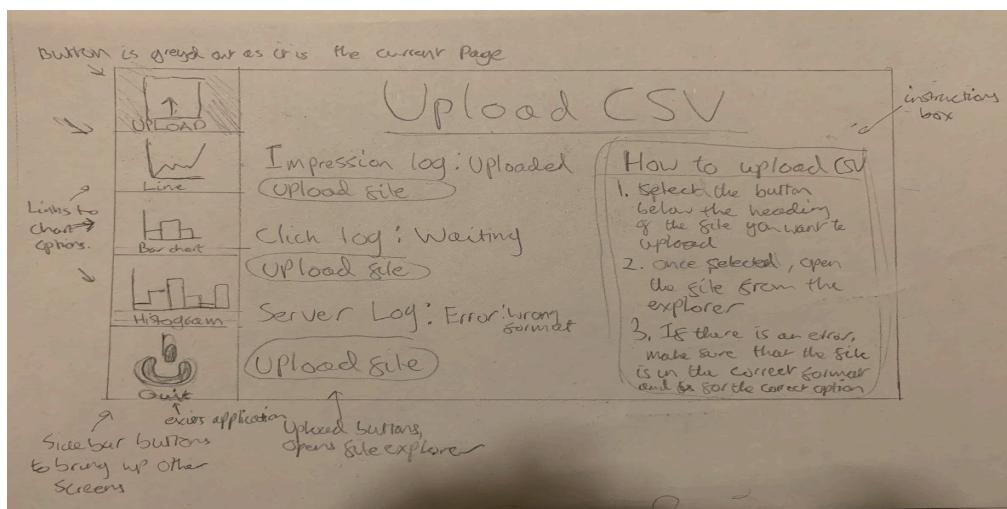
Storyboards

Figure 1 shows the home screen which appears when first launching the program. This screen has three unique buttons, the start button (which takes the user to the upload page), the instructions button (which takes the user to the instructions page) and finally the quit button (which quits the program).



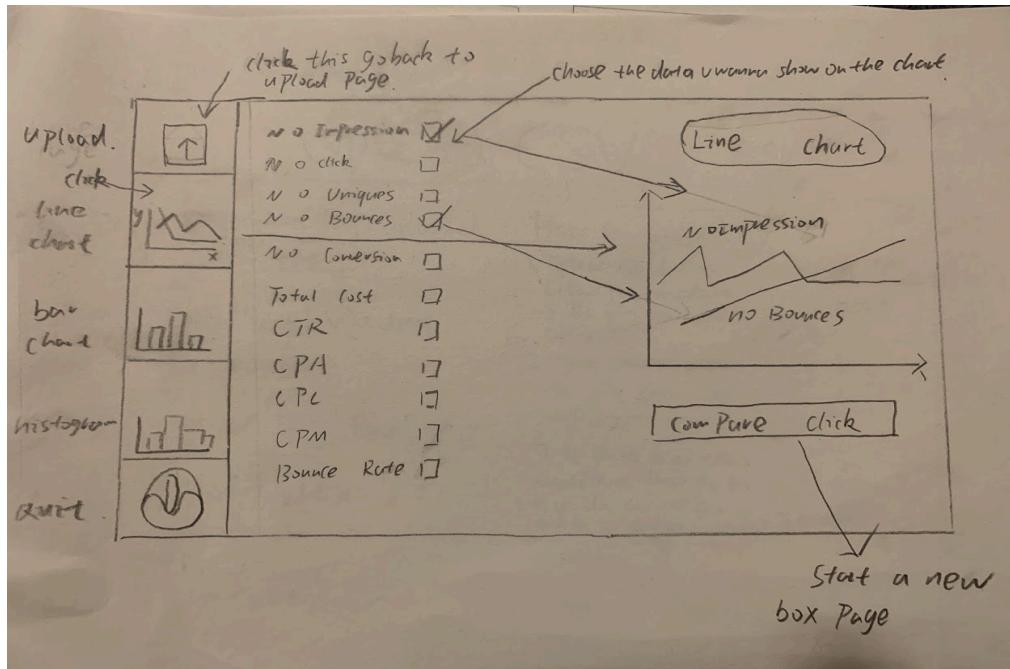
(Figure1)

Figure 2 shows the screen which we come to after clicking the start button, the upload screen. On the left side of the screen there is a sidebar menu which allows the user to switch between upload, line chart, bar chart, histogram scenes and quit the application. The upload screen allows you to upload three types of files, impression logs, click logs and server logs. After clicking any of the buttons the system file explorer opens and the file can be selected. If the selected file is in the incorrect format then an error is shown on the GUI.



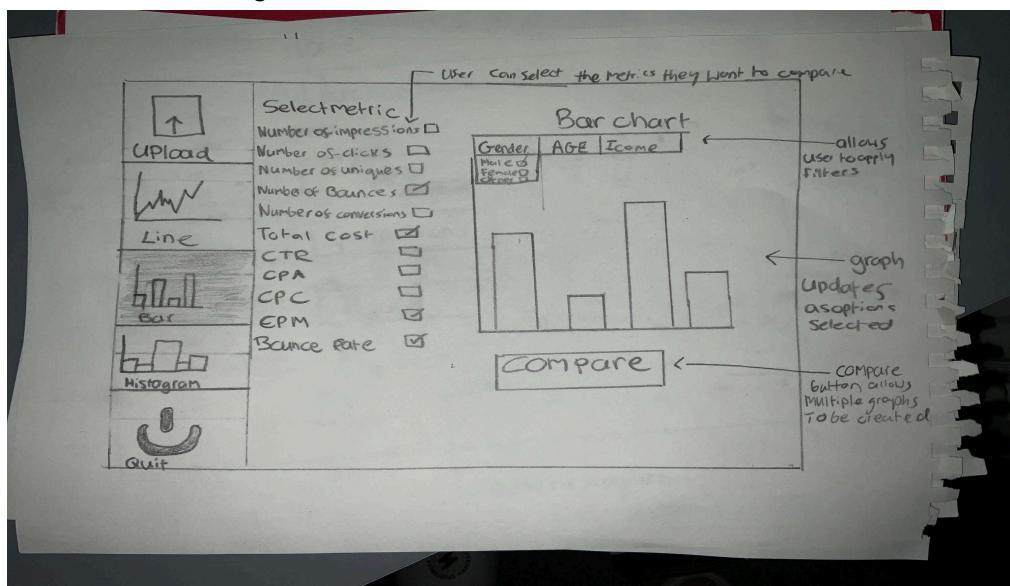
(Figure2)

Clicking the line chart in the sidebar menu brings the user to this page. The page has a list of metrics which influence the line chart on the right side of the page. There is also a button on the bottom right of the screen which opens a new window with the graph in it so another graph can be configured on this page.



(Figure3)

After clicking the bar chart in the sidebar menu, it comes to this page. This page also has a list of metrics on the left side which influence the bar chart on the right side of the page. There are a list of filters buttons above the bar chart which open filter windows, allowing the user to customise the data put into the graph. There is also a comparison button with a similar function to the one in the above diagram.



(Figure4)

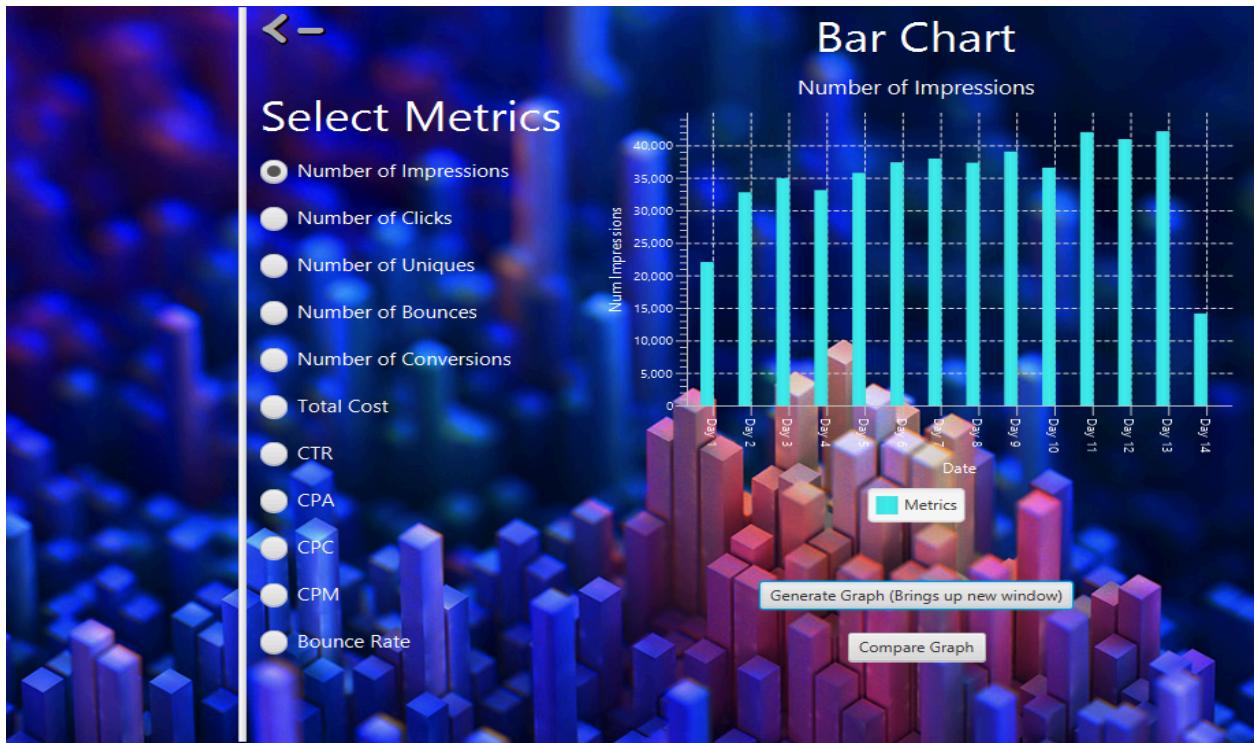
On this page, users can apply filters to the data, such as selecting a specific date, audience or context, and subsequently apply these filters to the graph. These will open in a popup window after choosing to select filters in a graph page. The button bar below the filter text can be used to navigate between the different filter options in the window.

Filters		
Date range	Audience Segments	Context
Beginning Date <input type="text"/> Day <input type="text"/> mon <input type="text"/> yr		
End date <input type="text"/> Day <input type="text"/> mon <input type="text"/> yr		
<input type="button" value="Apply"/>		

Filters		
Date range	Audience Segments	Context
<input type="radio"/> Gender <input type="radio"/> male <input type="radio"/> female	Age <input type="radio"/> 10-19 <input type="radio"/> 20-39 <input type="radio"/> 40-59 <input type="radio"/> 60-79	Income <input type="radio"/> 0\$ - 9999 <input type="radio"/> 10000 - 19999 <input type="radio"/> 20000 - 29999 <input type="radio"/> 30000 - 39999 <input type="radio"/> 40000 - 49999
<input type="button" value="Apply"/>		

Filters		
Date range	Audience Segments	Context
<input type="radio"/> Shopping <input type="radio"/> Social <input type="radio"/> News <input type="radio"/> Blogs	<input type="radio"/> Media <input type="radio"/> Hobbies <input type="radio"/> Travel	<input type="radio"/> Selects type of content <input type="radio"/> Applies filters to graph
<input type="button" value="Apply"/>		

(Figure5)



Storyboard comparisons

Main Menu



Upload window

A screenshot of a Windows application window titled "Upload CSVs". It features a large "Upload CSVs" heading and a back arrow icon on the left. On the right, there is a section titled "How to Upload CSVs" with three numbered steps. Below this, there are three log entries: "Upload Impression Log: Upload Successful" with an "Open CSV" button, "Upload Click Log: Upload Successful" with an "Open CSV" button, and "Upload Server Log: Upload Failed!" with an "Open CSV" button. At the bottom, there are two large buttons: "Bar Chart" on the left and "Line Chart" on the right, both set against a 3D bar chart background.

Upload CSVs

←

How to Upload CSVs

1. Select the button below the heading of the file you want to upload
2. Once selected, open the file from the file explorer
3. If there is an error make sure the file is in the correct format and for the correct option

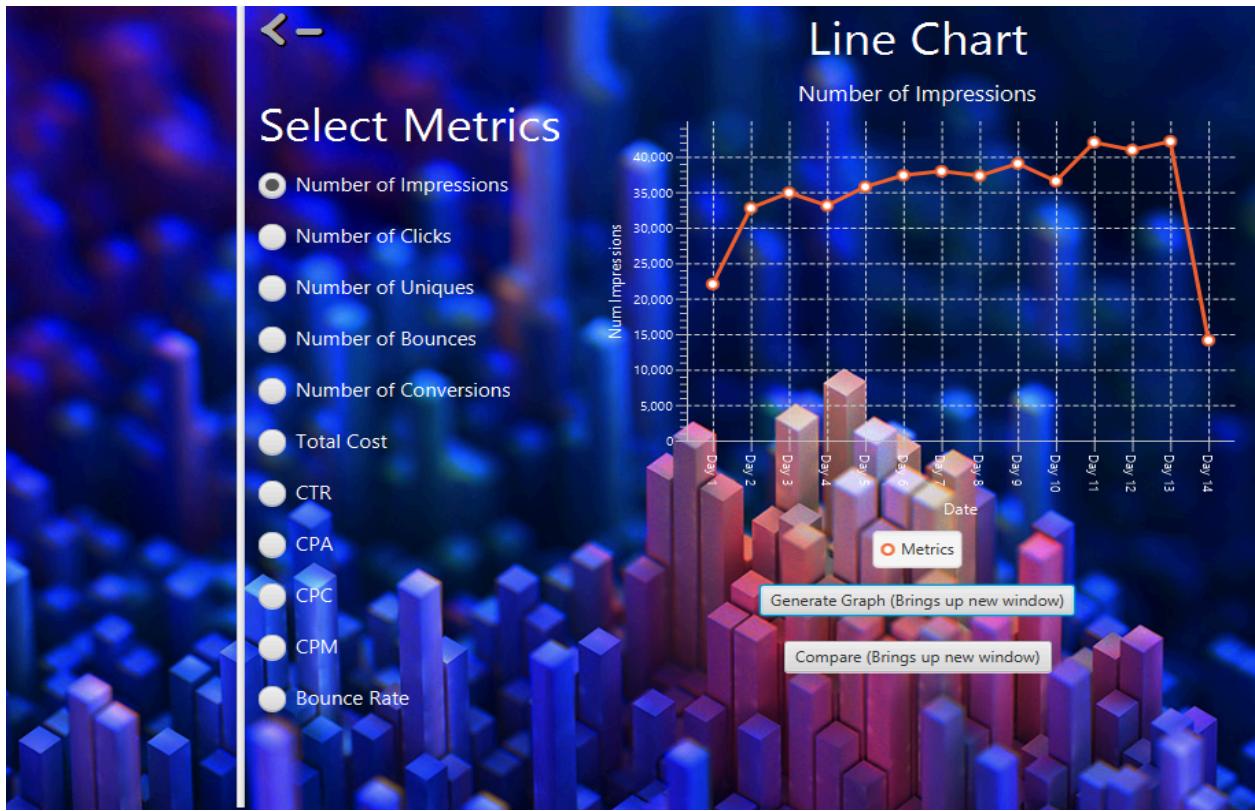
Upload Impression Log: Upload Successful
[Open CSV](#)

Upload Click Log: Upload Successful
[Open CSV](#)

Upload Server Log: Upload Failed!
[Open CSV](#)

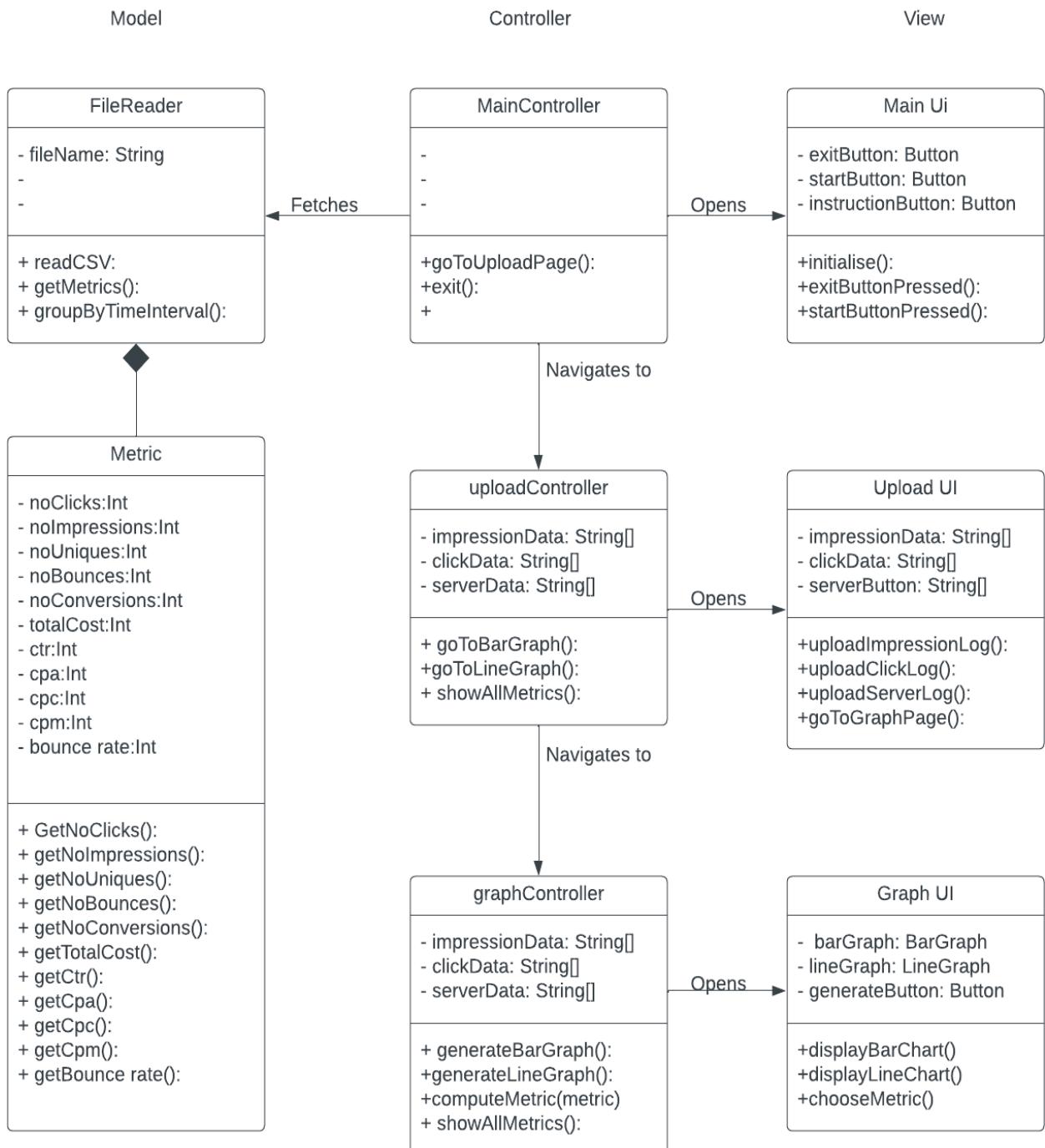
Bar Chart Line Chart

Chart windows

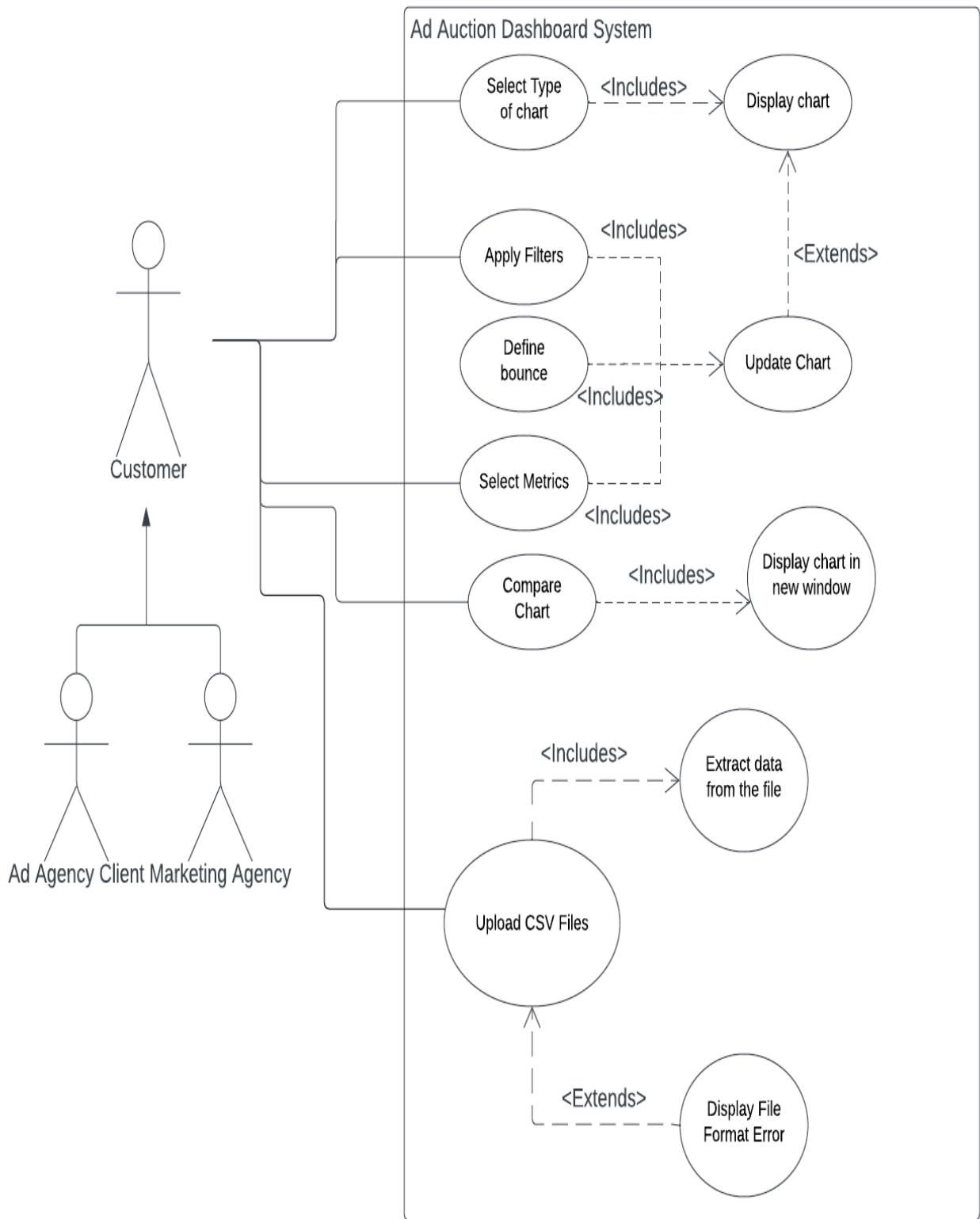


UML Diagrams

Class Diagram



Use Case Diagram



Project Testing

Testing Stages

Tests code: Green - Passed, Yellow - Ongoing, Red - Failed

Test number	Test	Expected outcome	Actual outcome
1	Does the GUI show once the system is run?	When the program is run, a window should come up displaying the main menu interface	Window shows as expected.
2	Does the button from the main page work?	When the button is clicked it will lead to the upload csv page	The button brings you to the upload page when it is pressed.
3	Do the key metrics show on the graph when it is generated?	On the chart screens the key metrics show in the available charts when the generate chart button is pressed	Key metrics are shown in the graph as expected.
4	Can the user navigate to the charts from the upload page through the bar chart and line chart buttons?	When the respective buttons are pressed, the bar chart screen and the line chart screen should display	When the bar chart button is pressed the user is taken to the bar chart screen as expected. Same with the line chart.
5	Does a different graph show when the user selects a different metric?	When the generate graph button is pressed it will show a different bar chart if a different metric is selected with the radio buttons	A different chart generates as expected for each metric option.
6	Does the system show that when uploading a wrong file type it gives an error?	The system will give an error when a wrong file type is uploaded into the graph	As expected the system will show an error when a wrong file is uploaded.
7	Is the user able to upload files with the upload buttons?	In the upload page, when the user clicks on an upload csv button it should open up the file explorer and accept a selected file.	The file explorer opens as expected, and a file is loaded into the system when it is selected.
8	Can each metric be computed in the system accordingly?	The data is able to be used to compute each needed key metric e.g number of impressions, number of clicks	The system is able to compute each metric successfully.

9	Can the csv data for each type of log be grouped by days to have data over a time interval?	The arrayList of data relating to a log file can be split into groups of arrays containing records on the same date. None are out of place	The data is split by each day, for example creating 14 data groups for a 2-week log.
10	Can you return to a previous window with the back button?	When pressing the back button the system will return you to the previous window.	The system is able to navigate back to a previous window as expected.
11	Is the uploaded data saved when changing scenes?	The uploaded data can be passed to different screens, including the bar and line chart screens	The uploaded data can be passed to the bar and line chart scenes successfully, but when the back button is pressed the files are lost. However they are able to be reuploaded if you navigate back to the upload screen

Project Planning

Time estimation per increment

Increment	XS	S	M	L	XL
1	2	3	2	1	N/A
2	N/A	1	3	2	N/A
3	2	2	3	1	1

Colour coded to match the priority of the user story, number represents the ID and the symbol represents the time estimate.

We have shortened down each user story to its main goal.

Original Increment Plan

Increment 1	Increment 2	Increment 3
3-M: ad campaign data	2-L: charts of data over different time intervals	6-M: histogram relating to the click costs of the campaign
7-S: key metric from the campaign	9-S: option to define bounce	18-M: filter audience segments by gender, age range, or income etc
4-M: key metrics of my campaign displayed in system	5-M: set the minimum number of pages or time spent for a bounce	17-S: graphs updated quickly with new data
11-XS: view the timeframe of my metrics	13-M: switch the time periods of the barcharts	19-XS: system to scale size
1-L: chart representation of the data	14-S: comparison reports comparing two graphs	20-L: could customise the application
10-XS: filter graphs in the system by date ranges	12-L: sidebar with different types of graphs	23-S: colour themes for people with colorblindness
8-S: filter graphs in the system by ad context	21-M: overlay two graphs on the system	22-M apply multiple audience segments filters at once
15-S: code efficient in reading large data		24-XS: charts to be stylised.
16-S: display error messages for incompatible files or irrelevant data		25-XL: tool to save the graphs as an image

Revised Increment Plan

We decided that due to the amount of work we had originally planned for increment 1 and after reevaluating our time estimates to move a few user stories to increment 2, as we had realised that our first increment was larger than we anticipated and already provided a good amount of value to the customer. These user stories were related to the filter buttons which can be safely left out of the first increment. This should make our workload more balanced and manageable in our given timeframe.

Value to customer in first increment - Now that the first increment has been completed, the customer can now open the system and interact with the system GUI. They can move from the main menu to the upload page, and upload their ad campaign data through each type of csv file - The impression log, the click log and the server log. They are also able to view graphs in the system, and generate a graph for each key metric through the GUI. The two graphs available are a barchart and a line chart. The customer can use these graphs to view and analyse the key metrics over a day time interval.

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16-S: display error messages for incompatible files or irrelevant data	13-M: switch the time periods of the barcharts	22-M apply multiple audience segments filters at once
	14-S: comparison reports comparing two graphs	24-XS: charts to be stylised.
	21-M: overlay two graphs on the system	25-M: tool to save the graphs as an image

Sprint backlog For Increment 1

Following the feedback from our previous hand-in, we added to our sprint backlog two columns - An ID column to specify which user stories the tasks are related to, and another actual hour column which we filled once we completed the task, recording how long it actually took to complete the task compared to our estimate.

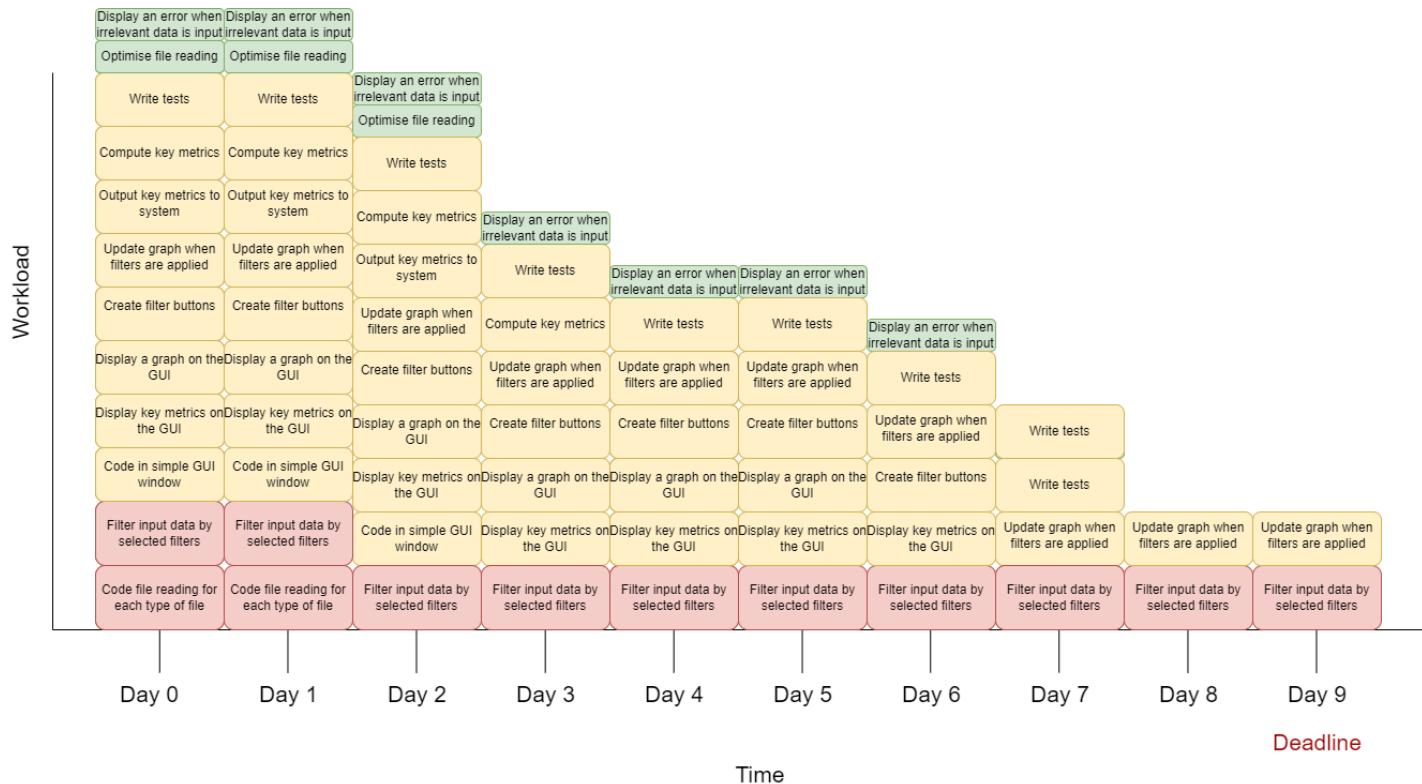
ID User stories	Task	Member doing task	Hour Estimate	Actual Hours
3	Code file reading for each type of file (e.g Click log, Impression Log, Server log)	Marwan	4	2
10,8	Filter input data by the selected filters	Jack	4	#
7	Compute key metrics	Marwan	3	3
1	Display a graph on the GUI	Juzheng Bai	3	5
4	Output key metrics to the system	Henry	2	3
10,8	Update the graph when filters are applied	Aditya	2	#
All	Write tests	Aditya	2	2
4,1	Code in simple GUI window	Henry	2	3
10,8	Create filter buttons	Henry	2	1
4	Display key metrics on the GUI	Juzheng Bai	2	3
3	Make the system display an error when irrelevant data is input	Marwan	1	1
3	Optimise file reading	Jack	1	1

Sprint backlog for increment 2

ID User stories	Task	Member doing task	Hour Estimate	Actual Hours
2	Charts of data over different time intervals	Aditya	4	#
8	Filter input data by the selected audience filters	Marwan	4	#
10	Filter data by date ranges	Juzheng Bai	3	#
All	Write JUnit tests	Aditya	2	#
14, 21	Allow graph to appear in new window for comparison	Henry	2	#
13	Buttons to switch between different time intervals	Juzheng Bai	2	#
13	Compute metrics over different time periods	Henry	2	#
8,10	Update the graph when filters are applied	Jack	2	#
14, 21	Optimise generating multiple graphs	Marwan	2	#
8,10	Optimising filters being applied	Jack	1	#
5	Minimum number of pages or time spent for a bounce can be set	Henry	1	#
9	Bounces can be defined by number of pages or time spent on the system	Henry	1	#
12	Add sidebar which allows the user to Navigate between graph types	Jack	1	#
12	Save file data between all scenes	Marwan	1	#

Burn Down Chart

Current Burndown Chart



Increment 2

