COMP2211

INCREMENT 2

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Design choices

To start with, we started the improvement of application utilizing Java 8. The application compiles, works and gives a usable and important graphical client interface that appears a chart of the information over time for the diverse measurements. We moreover permit for CSV input containing the records given, creating all the key measurements we set out to show. Moreover, we as a group decided to remove requirement number 17, which was "Display a histogram of the click costs (showing the distribution of costs) per thousand impressions". All of our assignments for increment 2 were completed.

For the project we have chosen to utilize JavaFx for the UI of the application as most of the group members are familiar with these innovations and this way everyone can effectively make a commitment. However, we have chosen to extend the technologies that we are using:

Maven – reliance manager

- The venture can be effectively ported on each machine

- Loads all required conditions for compiling and working on the application

JavaFX – oversees the Client Interface.

- Allows applying way better styles utilizing Cascading Fashion Sheets (CSS).

- Encourages the utilization of Model-View-Controller (MVC) Plan Pattern.

- Manage concurrency in a much better way so that the application remains responsive whereas doing resource-consuming errands within the background.

Junit - writing unit tests

- The team checks the correctness of new the new features and their implementation

- prevent any bugs.

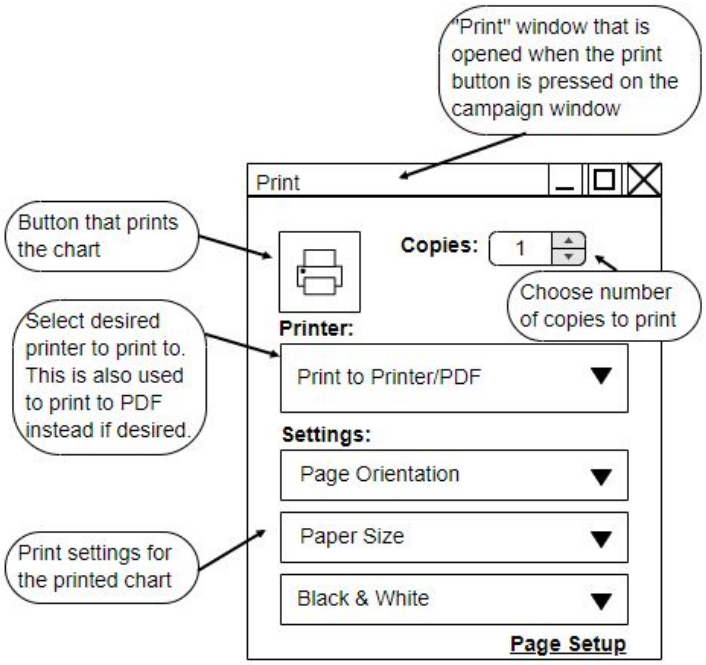
ControlsFX- to add the MultiComboBox.

AWT- to visualise the window.

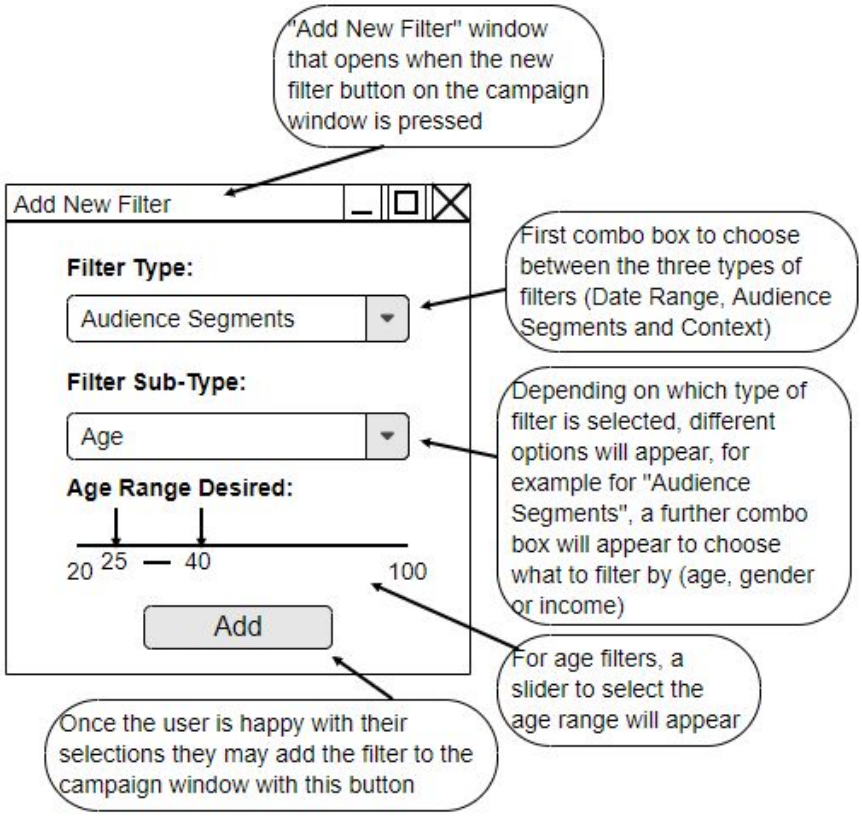
It is imperative to note that these unused innovations bring esteem to the application and thus to the client. Besides, it allows the improvement group to preserve the application less demanding as well as

effectively present modern highlights. Moreover, we used SQL queries to combine the tables. We have prioritized actualizing channels which permit the client to decipher the information way better and more effectively. Another thing that we settled from the past Increase was the show of the data. It is presently in a more human-readable account so that the client can effortlessly get it. We have presented dull mode for the charting as a few individuals might find simpler to work this way. It makes a difference because it diminished the strain on the eyes.

The Design artifact that we updated in this increment is the UML Class Diagram, as shown above. The UML Use Case diagram that was created initially has not been changed. Classes AddFilterDialogController, HistogramController, and SetBounceDefinitionDialogController have been added to the Controller. The MainModel class, as well as SQL, GraphPoint and BounceDefinition classes have been added to the Model. The AddFilterDialogController class is responsible for identifying metrics and filtering data according to that. It also has the confirmPressed method, so that when the confirm button is clicked all the selected checkboxes and dates are extracted. The SetBounceDefinitionDialogController class allows the user to input a customized bounce value. The GraphPoint class sets up the graph, the SQL class establishes a connection with the database and performs queries. The SetBounceDefinitionDialogController class allows the user to determine the maximum time spent before leaving a page, and the HistogramController class sets up the Costs per



click histogram



How we responded to feedback

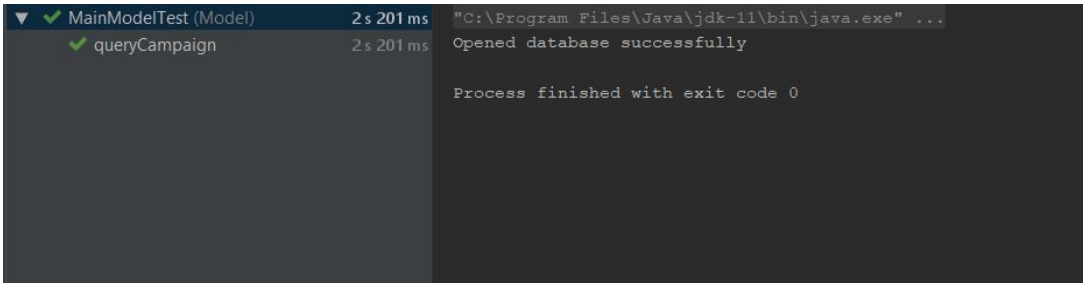
Feedback	How we responded
Disable buttons to guide users away from errors.	On our home screen when you load up the application the 3 files have red rings around them to indicate that no file has been loaded. These then change to a green ring when you do then load the correct file. Finally we also responded by greying out the load button until all 3 files are loaded in, in order to guide users away from loading the incorrect amount of files.
Testing didn't check that calculated values were correct. In the future, create a small custom file with known calculated metrics to verify against.	In this increment along with our boundary tests we also did some unit tests in order to check our values are 100% correct. Using the feedback we did these tests on a smaller file where all the expected outcomes could be manually generated to check there are no errors in our filters when applying them to the main dataset.
Add an ideal burndown line to know when you are behind or ahead of schedule.	We added this ideal line to our burndown chart this increment as well in order to show how progress was made over the course of the weeks this increment was set.
Modify your burndown chart so that it reflects time in the y-axis.	We have implemented this feedback by editing the sizes of each cell to reflect the time we expect it to take. For example a large task is 3 times the height of a small one..

Testing

For this increment, we made a number of improvements to our testing procedure compared to the last increment.

First of all, we devised a very simple set of test data to work with. This allowed us to calculate all the expected metrics by hand and produce **unit tests** that we could run during the development of our program. These unit tests were used for testing the based metrics, metrics over time and filters. **Filters were the primary use of this testing**. Testing every set of possible filter combinations would take too long, so a few sets of filters were chosen.

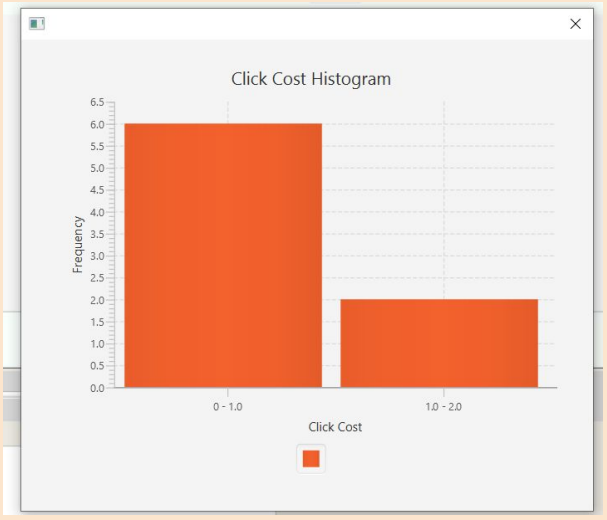
Because of time constraints, we did not create unit tests for every point of every possible graph. We tested a number of points for certains graphs which we deemed to be sufficient. Overall, the use of unit tests was a nice way to make changes and alterations to our code and test them immediately. **Our unit tests are in the same zip file as our source code**. We did not solely rely on unit tests however.

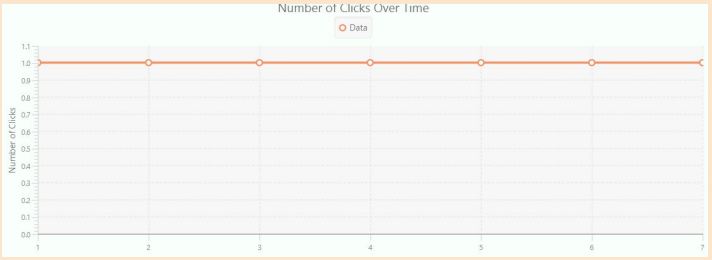
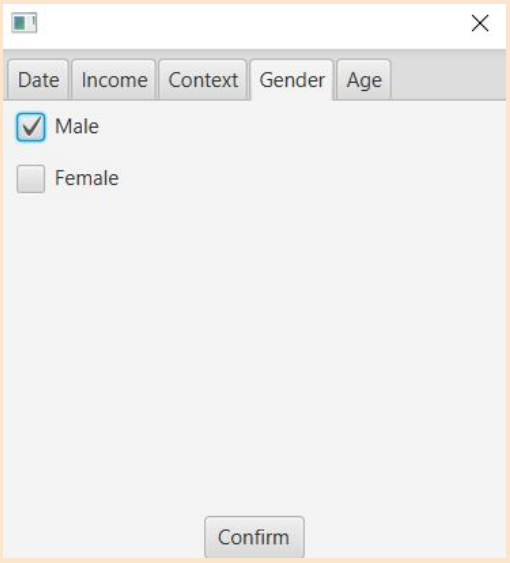
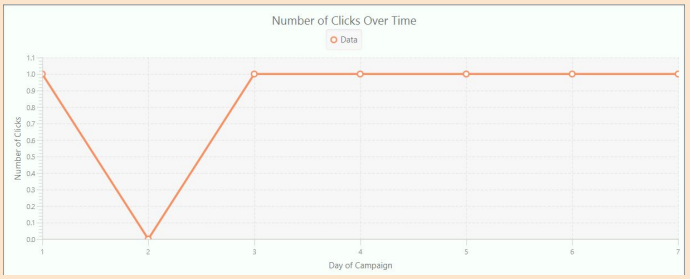
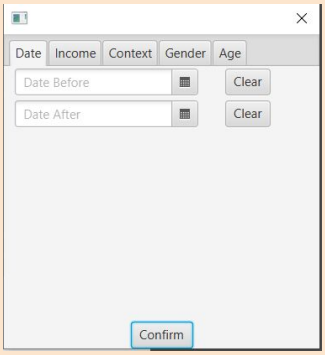


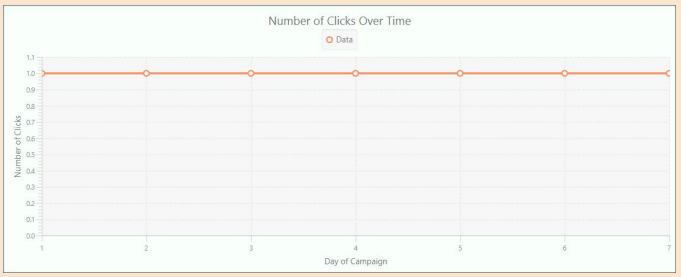
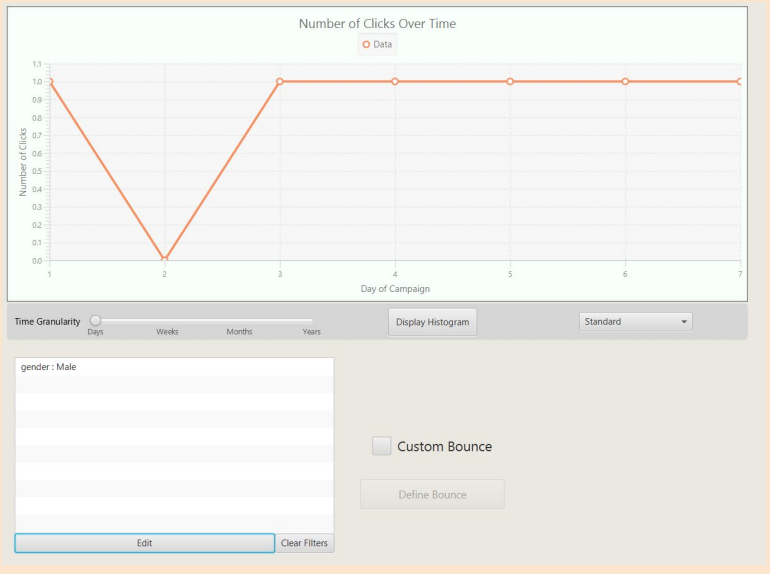
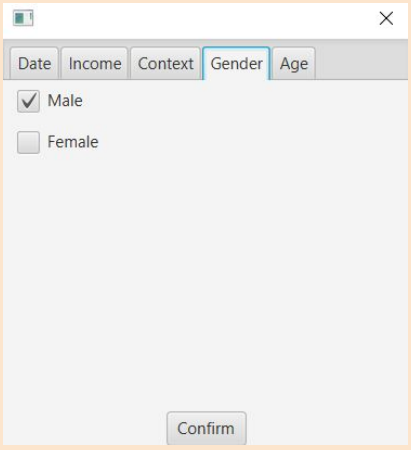
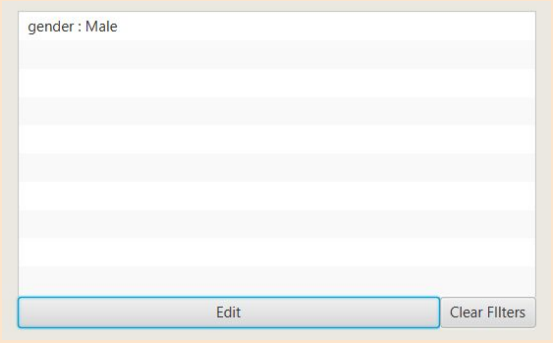
For more visual based additions to our program, we used standard manual tests which are shown below

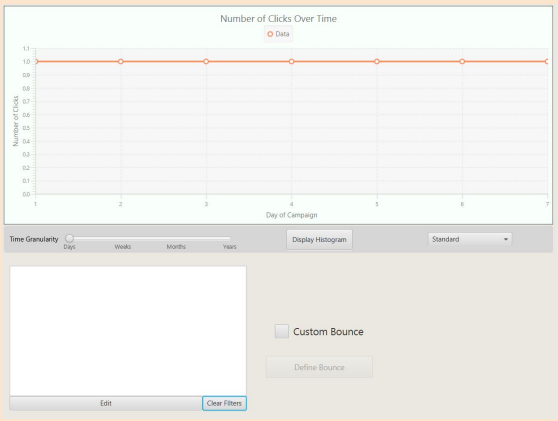
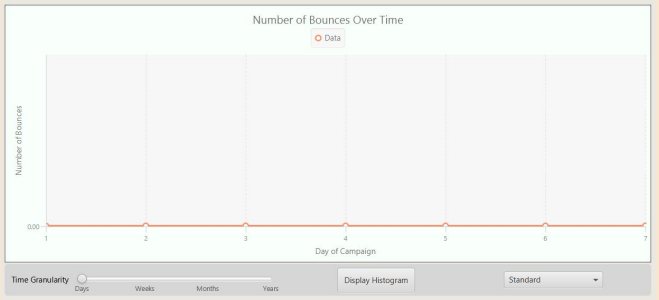
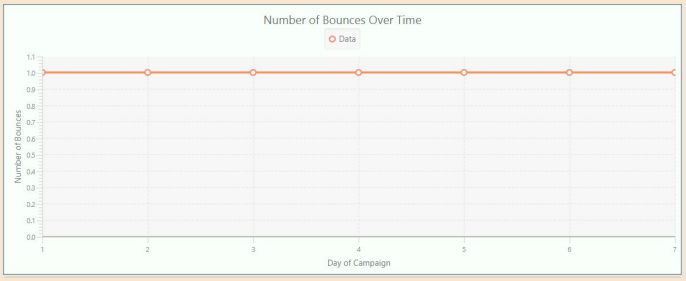
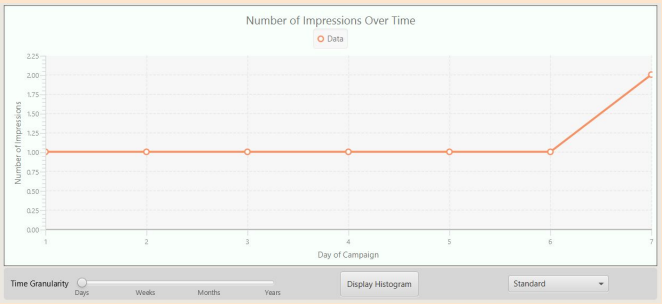
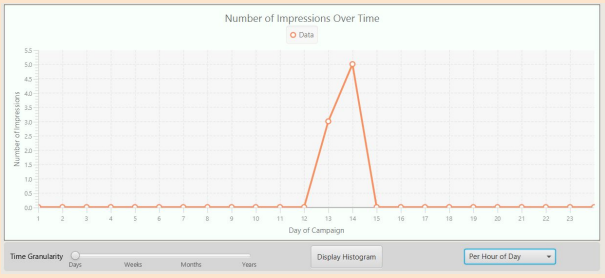
Test Number	Related User Stories	Test Criteria	Test type	Result
1.1	16	-**Sales Manager** can create a new campaign tab -**Sales Manager** can select the “open histogram” button to open the histogram pop up	Valid	Success
1.2	16	-**Sales Manager** can create a new campaign tab -**Sales Manager** can select the “open histogram” button to open the histogram pop up -The histogram presents correct information	Valid	Success
2.1	18,19,20	-**Campaign Manager** can create a new campaign tab -**Campaign Manager** can select “add” in the filters section of the screen to open the add filter box -**Campaign Manager** can select the tab of the filter they want to add -Wanted values for that filter can be selected -Select can be pressed -The graph should visually change to reflect the new filter	Valid	Success
2.2	18,19,20	-**Campaign Manager** can create a new campaign tab -**Campaign Manager** can select “add” in the filters section of the screen to open the add filter box -**Campaign Manager** can select the tab of the filter they want to add	Erroneous	Success

		-No values can be selected -Select can be pressed -The list of filters is unchanged		
2.3	18,19,20	-**Campaign Manager** can create a new campaign tab -**Campaign Manager** can select “add” in the filters section of the screen to open the add filter box -**Campaign Manager** can select the tab of the filter they want to add -Filters already applied will be already ticked	Valid	Success
2.4	18,19,20	-**Campaign Manager** can create a new campaign tab -**Campaign Manager** can select clear filters -All filters are removed and the graph reverted to it original state	Valid	Success
3.1	22	-**Campaign Manager** can create a new campaign tab -**Campaign Manager** can select “custom bounce” -**Campaign Manager** can select “define bounce” -Bounce definition box opens -**Campaign Manager** can select relevant values for the bounce -Select can be pressed -The new bounce is applied	Valid	Success
4.1	25	-**Campaign Manager** can create a new campaign tab -**Campaign Manager** can select the type of graph to display using the relevant drop down box -The graph will visually change to reflect the user choice	Valid	Success
5.1	26,27	-**Head of Communication** can select “save/print” -A print dialog will be displayed -**Head of Communication** can select a printer, or select to print to PDF -When “print” is selected, all chosen options will be applied and the current graph will be printed	Valid	Success
6.1		-**User** can NOT add or remove filters, define a bounce, select a table, set time granularity or show a histogram if no campaign is selected (IE the default tab is selected)	Erroneous	Success

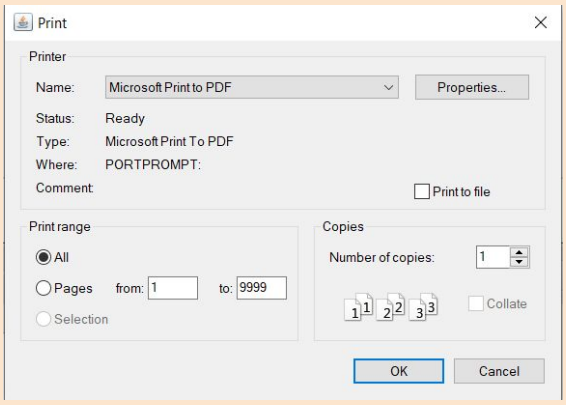
Test Number	Screenshots/Results	Description
1.1		The Histogram pop up appears when the open histogram button is selected. The histogram for the testing data is shown on the left.

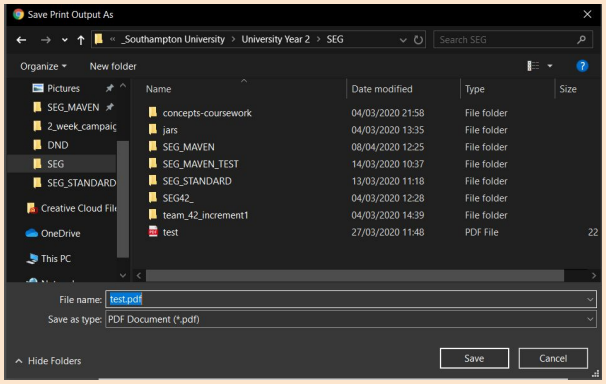
1.2	Date,ID,Click Cost 2017-01-01 12:30:00,1,0.0 2017-01-02 12:30:00,2,0.0 2017-01-03 12:30:00,3,0.0 2017-01-04 13:30:00,4,0.0 2017-01-05 13:30:00,5,0.0 2017-01-06 13:30:00,6,1.0 2017-01-07 13:30:00,7,1.0	The histogram is showing correct data as our test data for the click log only contains 2 clicks with a click cost of 1 and the rest are 0 (since the rest are cost per impression).
2.1	  	As shown in the pictures, our test data indicates each day there is one click. The filters box is then opened. For this example I set the filters to only show clicks from male participants. The graph then updates to correctly reflect the filtered data (as all the clicks were done by men except the second day).
2.2		Using the same click cost graph as before, you can see that if I press confirm when nothing is selected, the graph remains unchanged.

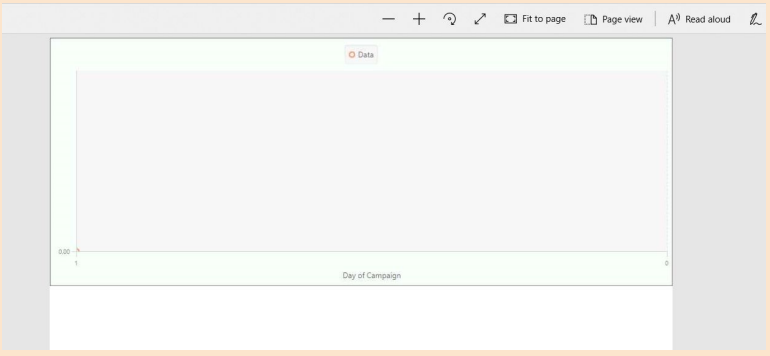
		
2.3	 	As shown in the first image, I have the “Male” filter applied. When I select the edit filters button and go to the gender tab, the male checkbox is already selected.
2.4		Initially, the graph filter is set to only show “Male” values. After selecting “clear filters” this filter is removed and the graph reverts to its original state.

		
3.1	 	Since the default bounce definition is anybody who leaves within 30 seconds, there are no bounces as this is shown in the top screenshot. The bounce definition is then set to be anyone who leaves within 99999 seconds instead. This applies to everyone in the test data as they all stick around the same amount of time. Because of this, everyone who clicks is also a bounce. Once this new definition is set, the graph changes to the bottom screenshot.
4.1	 	The graph changes when the type of graph drop down box is changed. The number of values on the X axis represents the type of graph (24 for hours per day, 7 for days per week).

5.1





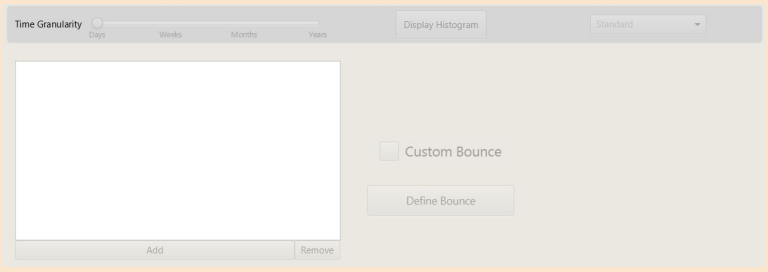


A print dialog successfully pops up when “print/save” is selected as shown by the first screenshot.

When print to PDF is selected, a file chooser will pop up to allow the user to select where the PDF should be saved.

When the PDF is opened it displays the graph that was currently visible to the user.

6.1



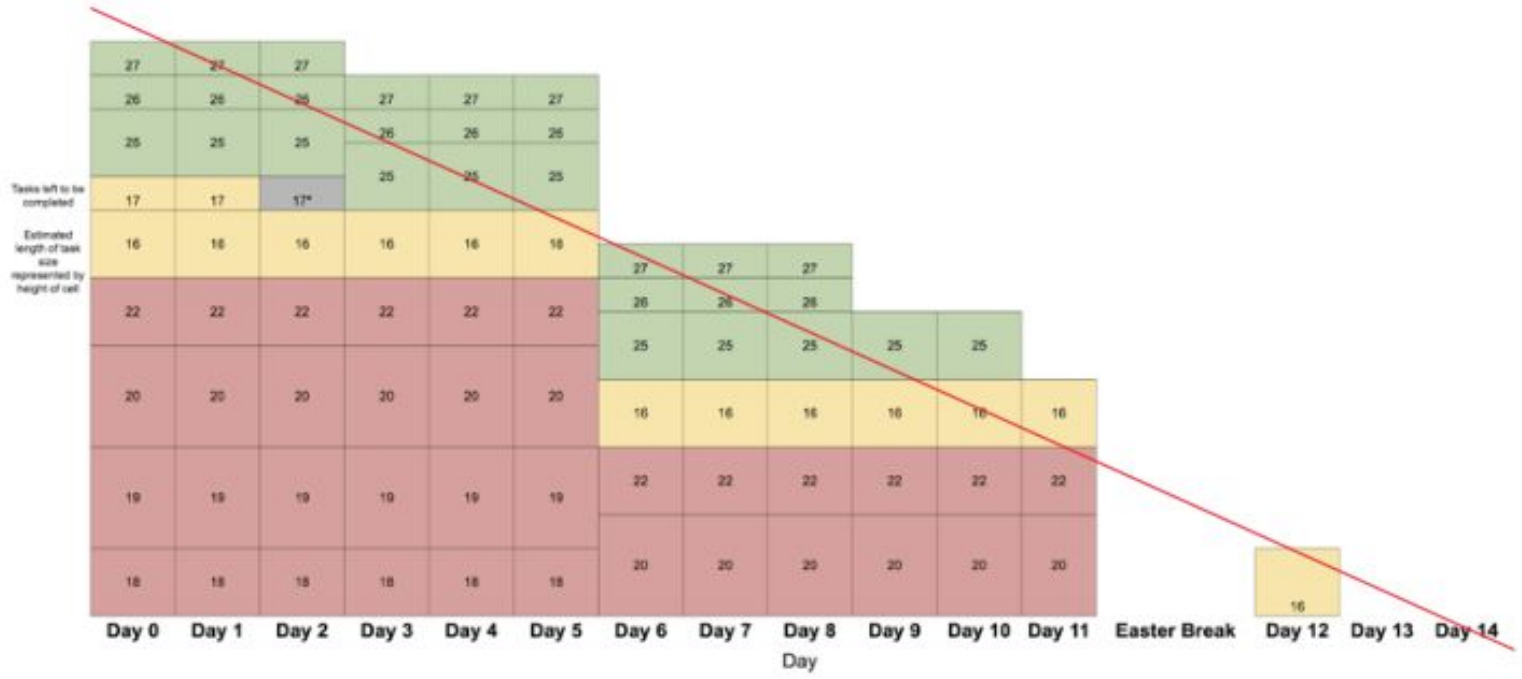
When the default tab is selected, all the described features buttons are disabled as shown in the screenshot.

Planning

USER STORIES RELATED TO THIS INCREMENT (For reference purposes only)

16 - Display a histogram of the click costs	As a Sales Manager of a small business I want to be able to view some data in a histogram format so that I can more easily evaluate the data using a visual representation.
17 - Display a histogram of the click costs (showing the distribution of costs) per thousand impressions	As a Sales Manager of a small business I want to be able to view click costs per thousand impressions so that I can more easily evaluate whether the cost incurred through a campaign is suitable compared with its number of impressions.
18 - Filter the metrics and charts by date range	As a Campaign Manager of a small business I want to be able to filter the metrics and charts by date range so that I can easily locate data about different periods of time.
19 - Filter the metrics and charts by audience segments	As a Campaign Manager of a small business I want to be able to filter the metrics and charts by audience segments so that I can see how different groups of people reacted to our advertisement campaign.
20 - Filter the metrics and charts by context	As a Campaign Manager of a small business I want to be able to filter the metrics and charts by context so that I can get specific information about the success of an advertising campaign.
22 - Define how a bounce is registered	As a Campaign Manager I want to be able to define how a bounce is registered so that I can determine the number of bounces based on what I deem to be a bounce.
25 - Display performance metrics per time of day or per day of week	As a Campaign Manager of the Client I want to be able to display performance metrics on a chart per time of day or per day of week to visualise the effectiveness of a campaign at different times.
26 - Save summary charts to an image or pdf file	As a Head of Communication of the Marketing Agency I want to be able to save summary charts to a file so that I can keep it for records and distribute them to interested parties.
27 - Print summary charts	As a Head of Communication of the Marketing Agency I want to be able to print summary charts so that I can keep hard copy records and for presentation purposes.

Increment 2 Complete Burndown chart



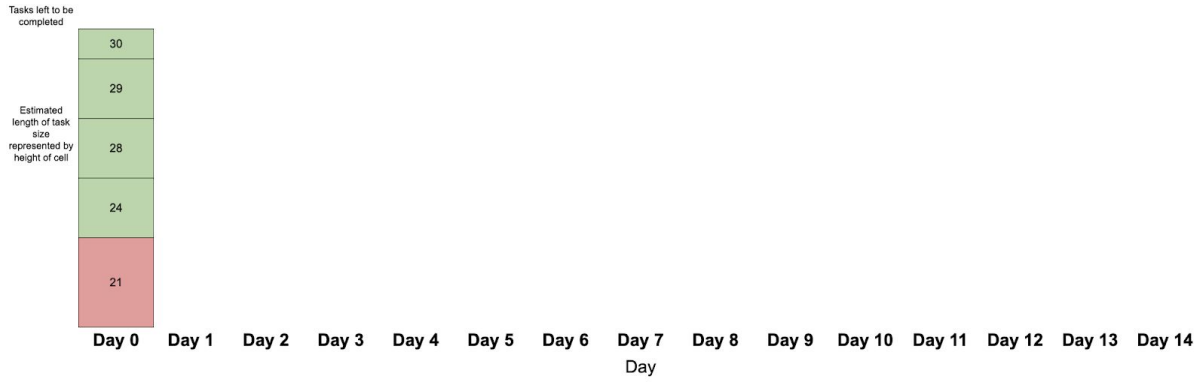
Copy of User Stories for the Next Increment

21 - Directly compare metrics or charts with different filters applied to them	As a Campaign Manager I want to be able to compare numerous metrics and charts side by side with different filters applied so that I can compare different data to discover trends and contrasts.
24 - Load and compare data from multiple campaigns	As a Head of Communication of the Marketing Agency I want to be able to load data from multiple campaigns so that I can compare the effectiveness and success of different advertising campaigns that my agency has made.
28 - Customise the appearance of the application	As a Head of Communication of the Marketing Agency I want to be able to customise the appearance of the application so that I can use the application despite mine or my client(s) visual impairments.
29 - Ability of the system to identify outlier values	As a Campaign Manager of the Client I want to be able to see outlier values on charts so that I can easily identify data points that may skew the plots.
30 - A main GUI Interface with clear instructions on how to use it	As a Campaign Manager of the Client I want to use a GUI interface that is easy to use, and has clear instructions that explain how to utilise all of its features so that it takes me and my peers minimal time to learn how to use them.

Sprint Backlog for Increment 3

Related User Story	Summary of Task	Estimated Task Size
User Story 21	Directly compare metrics or charts with different filters applied to them.	Large
User Story 24	Load and compare data from multiple campaigns	Medium
User Story 28	Customise the appearance of the application	Medium
User Story 29	Ability of the system to identify outlier values.	Medium
User Story 30	A main GUI Interface with clear instructions on how to use it	Small

Day zero burndown chart for Increment 3

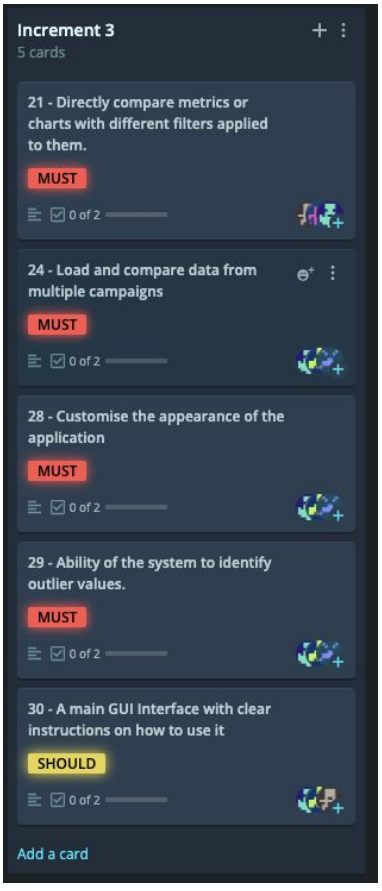


Increment 3 initial task breakdown

We have begun planning our distribution of tasks for the final increment, increment 3. This increment will look to polish all the sections that we have been working on and add some final functionality to enhance the user experience and the potential they can achieve with the application.

The front-end team will focus on adding interface features to be able to compare numerous campaigns as well as extra functionality to customise the appearance of the application. Finally they will create an instructions page to help users.

The front-end team as before consists of Palak and Dylan who will use pair programming to develop the program. We chose to keep this the same as the pairs are used to working together by this point.



The back-end team will focus on making the processes running behind these interfaces correct and efficient.

The back-end team consists of James and Vasilena who will also use pair programming.

Finally William acts as a connection between the 2 teams, being able to work and help on both when needed.