# Software Engineering Group 3

## Increment 3

Advertising Auction Dashboard


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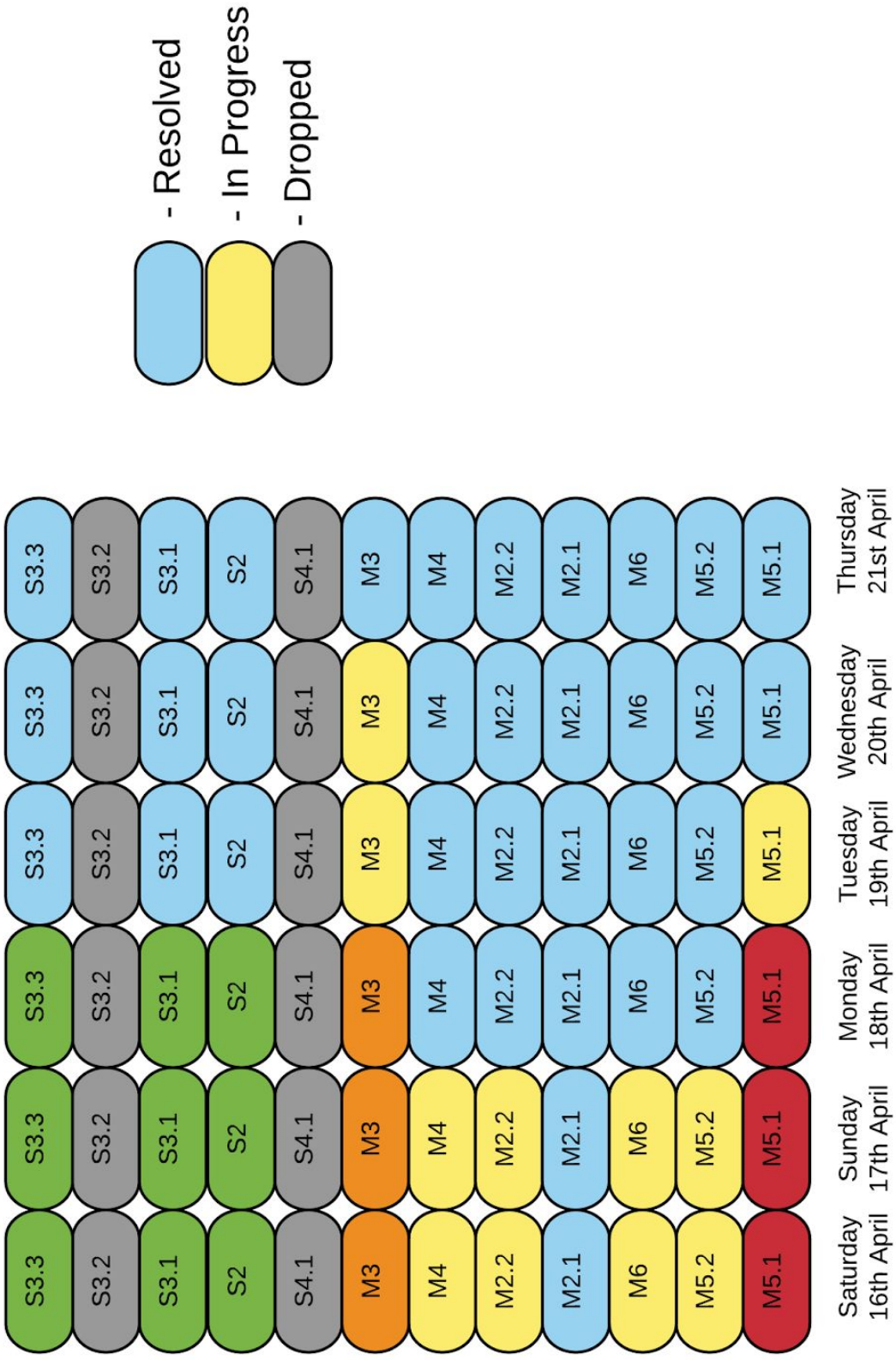
# Sprint Backlog

In order not to run out of time and have the time to polish the product, we decided to follow the feedback we were given and create our own burndown chart. This way we were able to better observe the size and difficulty of the tasks for this increment. We also included in here the sprint backlog so that the burndown chart can be easily understood.

| Task | Priority | Points | |
|---|---|---|---|
| Implement histogram of click costs. | Major | 5 | M5.1 |
| Create Unit/Regression tests. | | 5 | M5.2 |
| Refine ability to overlay graphs with different metrics. | | 6 | M6 |
| Create data for multiple campaigns. | | 2 | M2.1 |
| Load multiple campaigns. | | 2 | M2.2 |
| Compare graphs from different campaigns. | | 4 | M4 |
| Implement features such as increased font size and other colour schemes. | | 3 | M3 |
| Add a save as image option. | Minor | 2 | S2 |
| Add more types of graphs. | | 4 | S4.1 |
| Print from File tab. | | 3 | S3.1 |
| Add a save as PDF option. | | 3 | S3.2 |
| Add content to help section. | | 3 | S3.3 |

# Burndown chart



# Scenarios

In order to make sure that each of the tasks we planned for this increment are working properly we wrote a few scenarios and later on we proceeded to test each step mentioned in the scenarios. This way, the scenarios were both useful in order to keep in mind how an average user would interact with the system and to test the functionality.

## Scenario 1

1. Emily has recently commissioned a marketing agency to advertise her art books online. She has now received a tool that analyses the success of the campaign.
2. She opens the tool and uploads the files given to her by the advertising platform. She starts by filtering by gender and age and context.
3. She sees that she can choose different metrics such as conversions. She tries out different combinations.
4. On the left there is a field that lets her choose the type of bounce. She chooses the bounce by number of pages.
5. She types in 'five' but nothing appears in the field.
6. She then tries to write in 'five' as a number which does appear in the field.

## Scenario 2

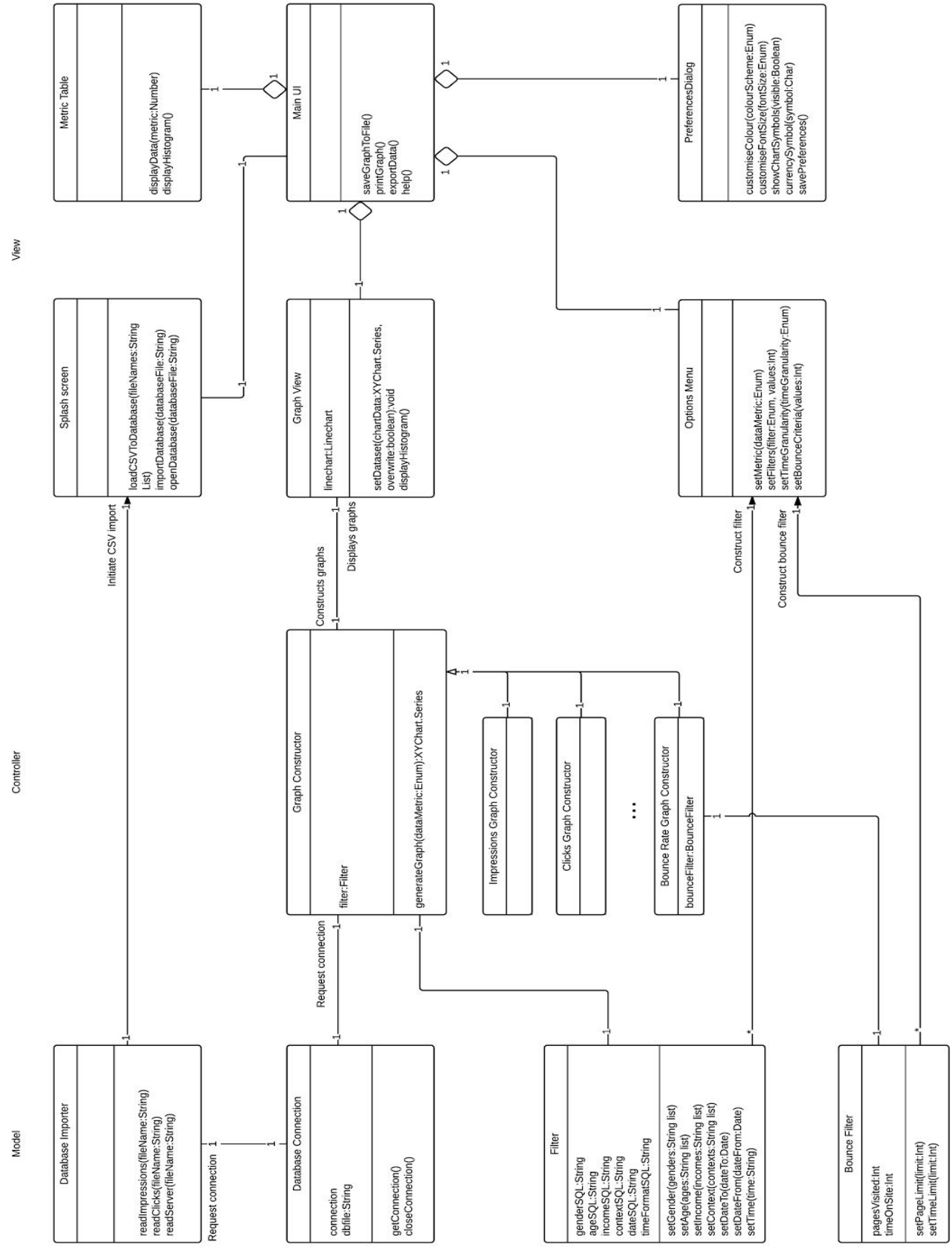
1. Lewis works as the head of advertising at the online marketing agency. A new client has requested to see a sample of the tool in action before committing to a commision.
2. Although he has been working with the tool for a few weeks now there were a few recent updates to it.
3. He opens the tool and reuses some old data he has saved already.
4. He starts using the tool by applying different filters and changing the key metrics.
5. He decides to save the campaign before starting to take screenshots of different types of graphs.
6. Under the file tab he sees that there is a new option to save as image. He is really happy about that as now the quality of the graph images is going to be higher and it will be much easier to send the results to the client.

## Scenario 3

1. Dory has already commissioned an online advertising company twice. Although the first time the campaign was pretty successful, this time she is afraid the adverts aren't attracting as many clients.
2. She previously used a tool that was given to her by the marketing company which analyses the data given by the advert platform. This time she would like to compare both campaign to see where might she have gone wrong.
3. She opens the tool and uploads the first campaign. She then goes to the Field tab which says "Manage campaigns". She proceeds to add the newest campaign.
4. A window explorer opens and she adds the data. Now both campaigns are in and she can analyse the differences between them.

# UML Diagram

In order to illustrate the connections between each class we have create a UML diagram which has been useful when partitioning the work between each group member.



# User Story Acceptance Testing

| User story | Acceptance criteria | Task that satisfies acceptance criteria |
|---|---|---|
| As a member of a marketing agency, I want the tool to be compatible with the data given to us by the advert network, so that the longevity of the product is increased. | ● User can load CSV files into the program<br>● Program can parse the CSV files and construct some internal representation of the data | ● Read the CSV files into the program |
| As a the head of the marketing agency, I want to be able to view key metrics of the campaign, so that both I and the client can see how successful the ad campaign is. | ● On loading of a campaign, there are options to display graphs of key metrics<br>● On loading of a campaign, key metrics are displayed numerically on the UI | ● Calculate a graph of key metrics<br>● Calculate a graph of impressions against time<br>● Calculate a graph of clicks against time<br>● Calculate a graph of uniques against time<br>● Calculate a graph of bounces against time<br>● Calculate a graph of conversions against time<br>● Calculate a graph of total cost against time<br>● Calculate a graph of CTR against time<br>● Calculate a graph of CPA against time<br>● Calculate a graph of CPC against time<br>● Calculate a graph of CPM against time<br>● Display key metrics numerically on the GUI |
| As an employee in a small business, I want to filter by demographics and other factors, so that we can tailor future campaigns towards these users. | ● The user can select a set of filters to apply to the data<br>● On selection, only data that satisfies the filter will be used to construct the graphs | ● Ability to filter by context<br>● Filter a graph by date range<br>● Filter graph by audience demographics |
| As an employee who needs to present monthly reports to the owner of the company, I want the tool to save the graphs to an image or PDF file, then print from the application itself, so that the chart is nicely formatted and printed without any further work | ● The user can save the current graph as an image file<br>● The user can save the current graph as a PDF file<br>● The user can create a printing job within the application, which will print the current graph on the page | ● Implement 'save graph to image/PDF'<br>● Implement built-in graph printing functionality |
| As a disabled user, I want accessibility features such as colour blind mode or increased font size, so that I can use it just as well as my well abled counterparts. | ● There is an option to change the colour scheme used by the program<br>● There is an option to change the font size used by the program | ● Allow the colours/text to be customised |
| As an employee in the advertising agency, I want to be able to compare the data of two or more separate campaigns, so that to compare the relative success of different campaigns we have made for a client. | ● When the user has imported a campaign, and is displaying some data on a graph, they are able to import further campaigns to display alongside the already open one | ● Ability to compare more than one campaign<br>● Allow multiple graphs to be overlayed |

| | | |
|---|---|---|
| As a client of the marketing agency, I want to see the data presented as a visual representation against time, so that I can understand how well the campaign went at a glance | ● The program must be GUI-based<br>● The user can display the data on a chart of some kind<br>● The application must be usable with minimal specialist training | ● Create the main GUI window<br>● Display a graph on a GUI window<br>● Create the GUI filter menu |
| As a client of the advertising agency I want to see a visual representation of the click costs so see the distribution of cost over time. | ● The user can show some chart that describes the distribution of click costs | ● Display a histogram of click costs on the GUI |
| As the head of advertising at a small company, I want the tool to be responsive even if I input months of advertising data, so that I don't spend precious time waiting for the results. | ● The graph must be generated and displayed in under a few seconds<br>● The program must not lock up while the graph is loading | ● Add the read-in data to a database |
| As the head of advertising for a company, I want to be able to control the time scale of the graphs shown, so that I can focus on specific data between two points in time. | ● The user can select the time to start showing data from<br>● The user can select the time to show data up to<br>● The graph x-axis will be bounded by these times | ● Filter a graph by date range |
| As a website developer, I want to be able to define the criteria for the bounce rate provided, so that I can monitor how engaging the website is. | ● The user can choose to define bounces by time on site or by pages visited<br>● The user can set the time on site that will constitute a bounce<br>● The user can set the number of pages visited until the interaction is not considered a bounce | ● Include options to set the bounce rate criteria |

# Scenario testing

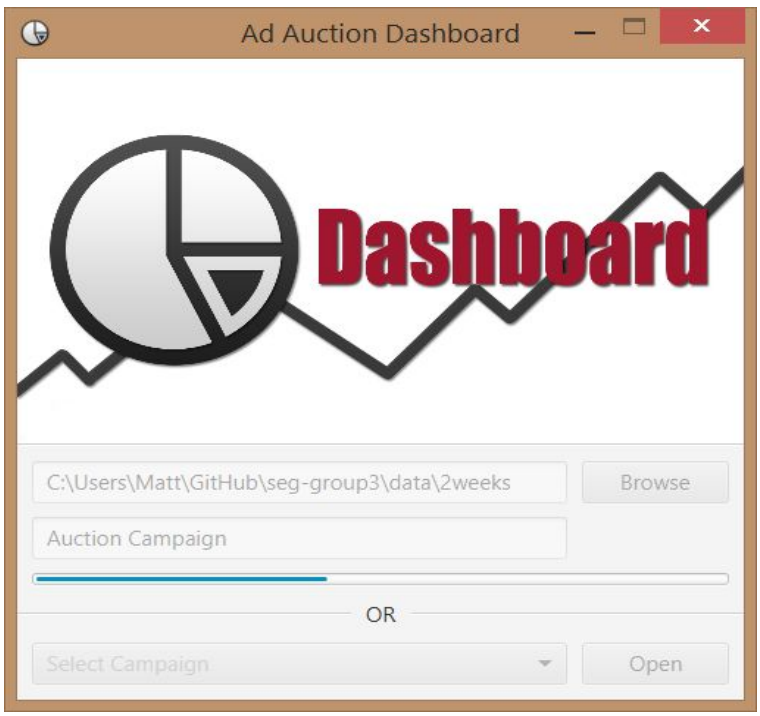
In order to make sure each new functionality added to the tool is working properly we went through multiple scenarios and tested it. This way we were able to change unintuitive choices which could have confused the user. Also, this way we did validation testing which was necessary in order to create a well designed tool. An example of this is the implementation of the bounce criteria, to prevent the user typing the wrong input in the 'Number of pages' field we have constrained the input to positive integers only.

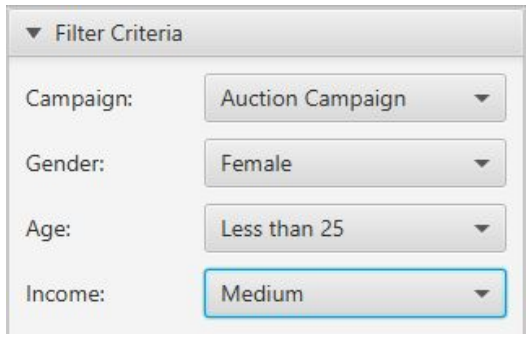
## Scenario 1

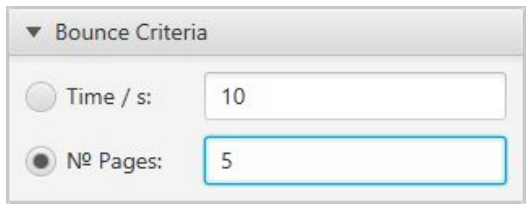
1. Emily has recently commissioned a marketing agency to advertise her art books online. She has now received a tool that analyses the success of the campaign.
2. She opens the tool and uploads the files given to her by the advertising platform. She starts by filtering by gender and age and context.
3. She sees that she can choose different metrics such as conversions. She tries out different combinations.
4. On the left there is a field that lets her choose the type of bounce. She chooses the bounce by number of pages.
5. She types in 'five' but nothing appears in the field.
6. She then tries to write in 'five' as a number which does appear in the field.

### Steps

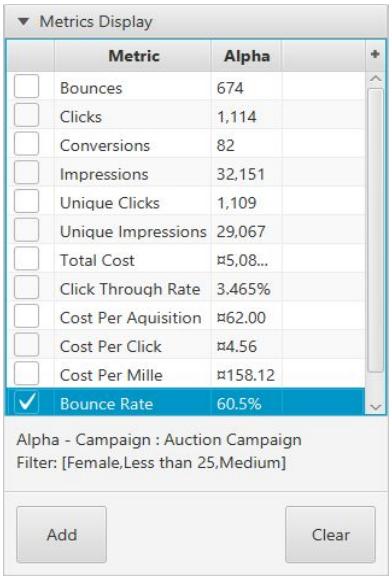
1. Emily selects the files, names the campaign and clicks on 'Import', bringing up a loading bar.
2. She filters the data.
3. The bounce rate is set on number of pages. As she tries to enter in the word five she sees no change in the field so she types in the number five.

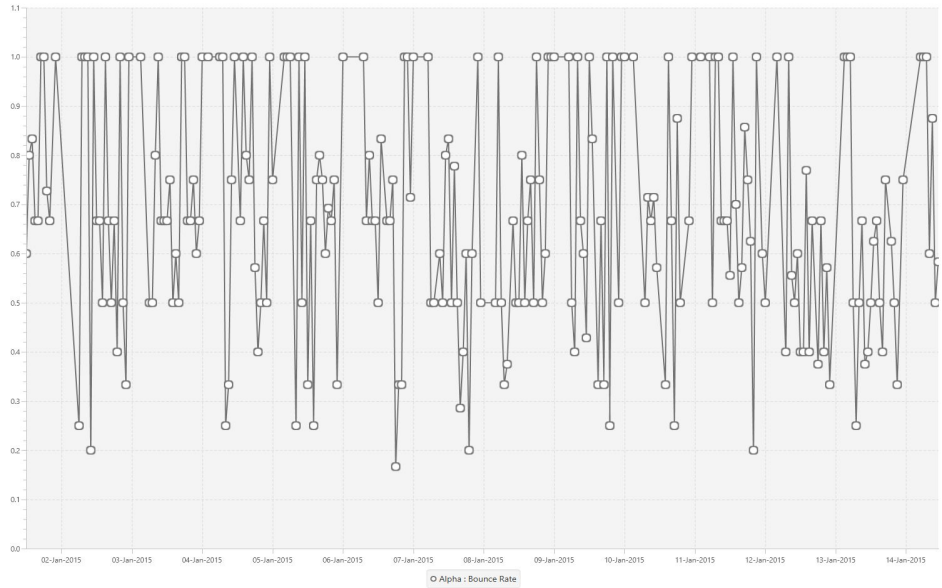



4. She then chooses to look at the bounce rate.
5. She clicks Add and the graph is generated.



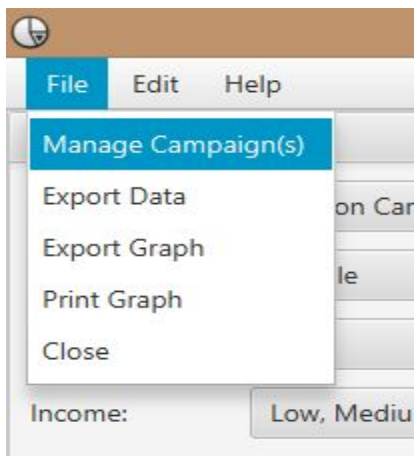



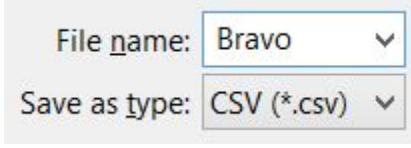
## Scenario 2

1. Lewis works as the head of advertising at the online marketing agency. A new client has requested to see a sample of the tool in action before committing to a commision.
2. Although he has been working with the tool for a few weeks now there were a few updates.
3. He opens the tool and reuses some old data he has saved already.
4. He starts using the tool by applying different filters and changing the key metrics.He decides to save the campaign before starting to take screenshots of different types of graphs.
5. Under file he notices an option to save as an image. He is really happy about that as now the quality of the graph images is going to be higher and it will be much easier to send the results to the client.

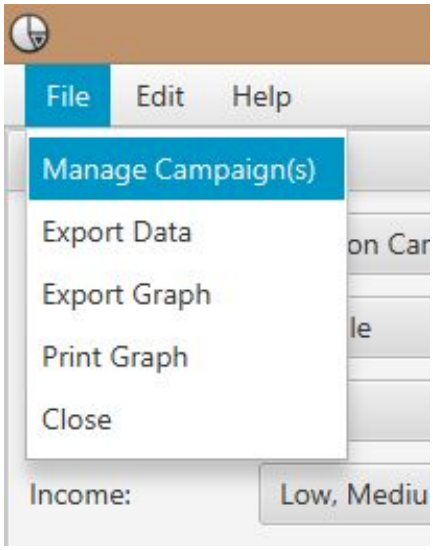
## Steps

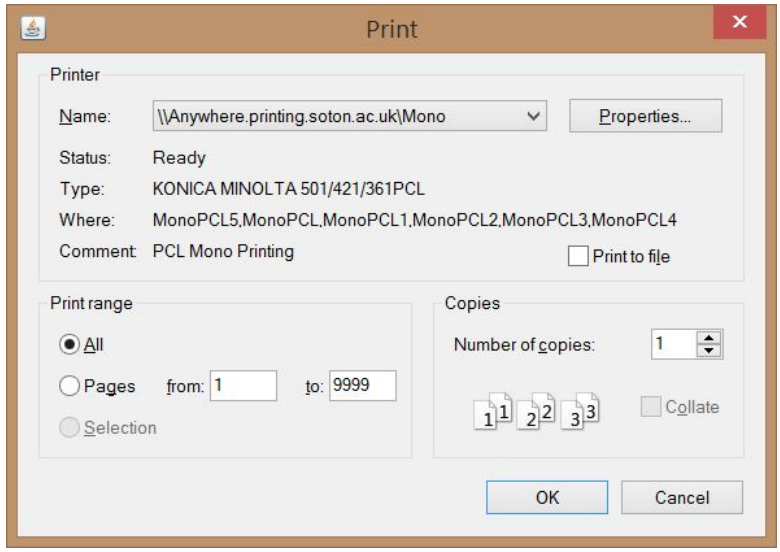
1. Lewis loads in some old test data he has created.
2. He then tries out some filters and sets the metric to Impressions.
3. He sees there's an Export Graph field under the File tab.
4. He selects the field and an explorer opens. He then names the graph and saves the image as PNG.

5. He decides to save a few hard copies too so he heads to the File tab and clicks on ‘Print Graph’.
6. This opens the print window. After selecting ‘OK’ the graph is printed.



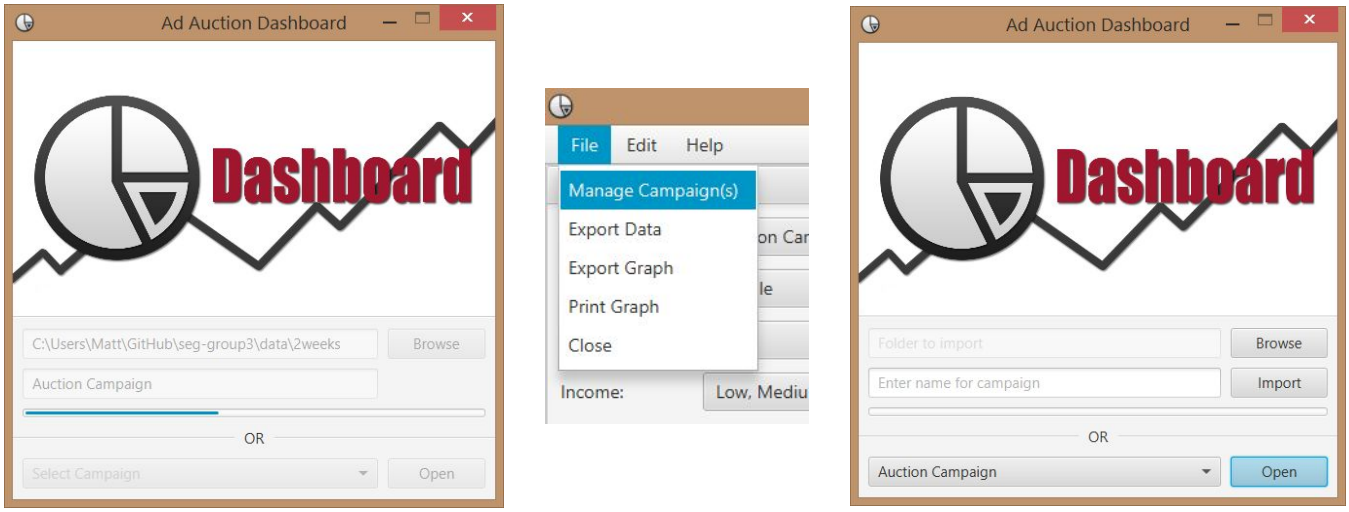




## Scenario 3

1. Dory has already commissioned an online advertising company twice. Although the first time the campaign was pretty successful, this time she is afraid the adverts aren’t attracting as many clients.
2. She previously used a tool that was given to her by the marketing company which analyses the data given by the advert platform. This time she would like to compare both campaign to see where might she have gone wrong.
3. She opens the tool and uploads the first campaign. She then goes to the Field tab which says “Manage campaigns”. She proceeds to add the newest campaign.
4. A window explorer opens and she adds the data. Now both campaigns are in and she can analyse the differences between them.

### Steps

1. Dory imports the old data in first.
2. After importing the application opens and she opens the File tab. Clicking on ‘Manage campaign(s).
3. This brings up again the splash screen and she adds the new data.




4. She applies a few filters and after selecting bounce a graph's displayed showing both campaigns.