USER GUIDE FOR SHINYAPP

Group 7

# Contents

1

Visualise Data and Keywords

- By changing the slider bar from a left minimum frequency of 3 to a right maximum frequency of 100, the word cloud graph will display the keyword accordingly to the frequency setting.
- The upper data table display mc3_nodes tibble data frame as an interactive table on the shinyapp.
- The lower data table display mc3_edges tibble data frame as an interactive table on the shinyapp.
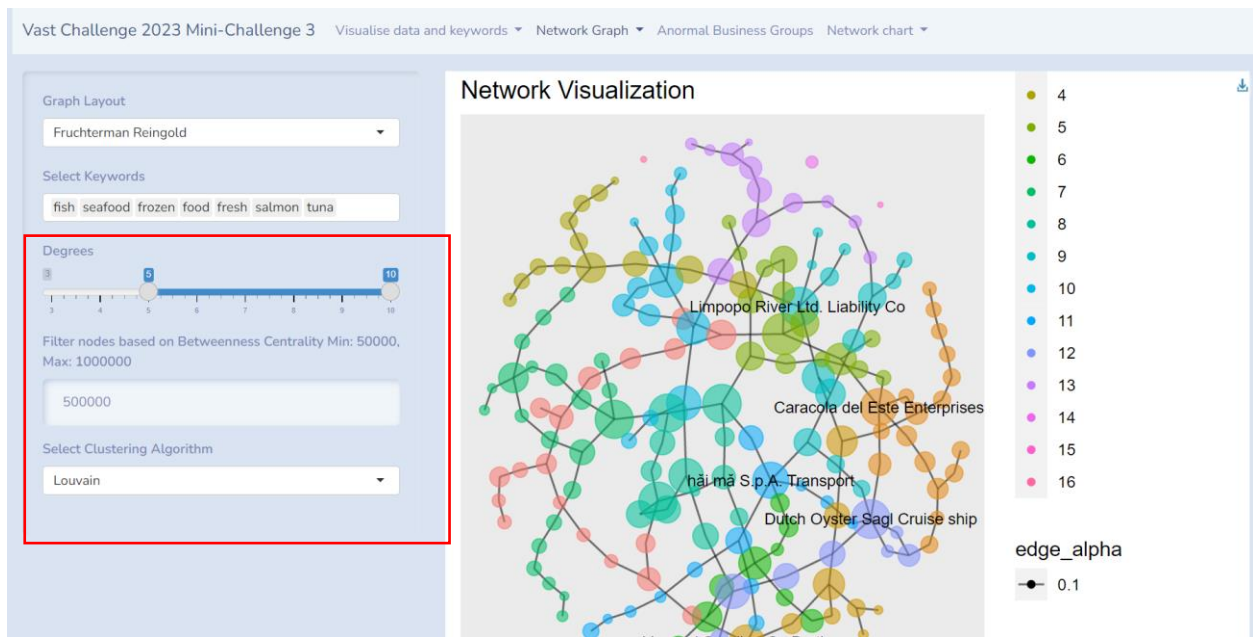
Network Graph
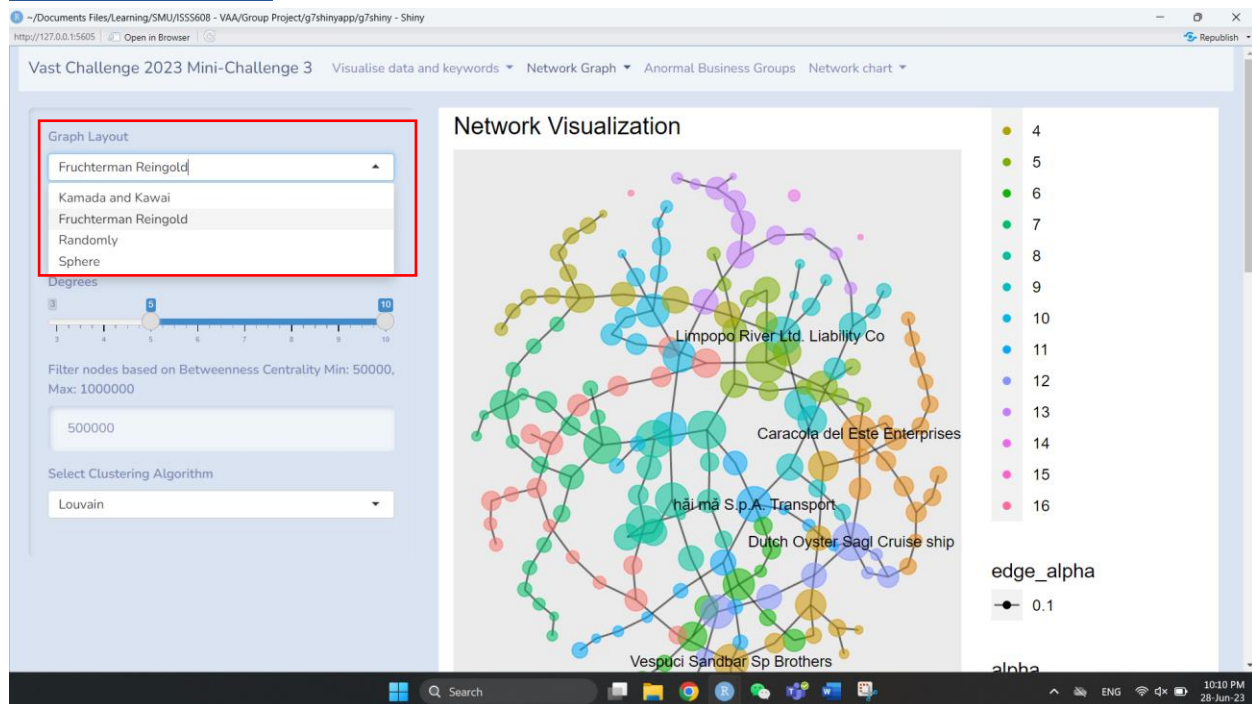
- Graph Layout drop-down list enables the function to display the network graph with 4 types of ggraph's layouts "Kamada and Kawai", "Fruchterman Reingold", "Randomly", and "Sphere".
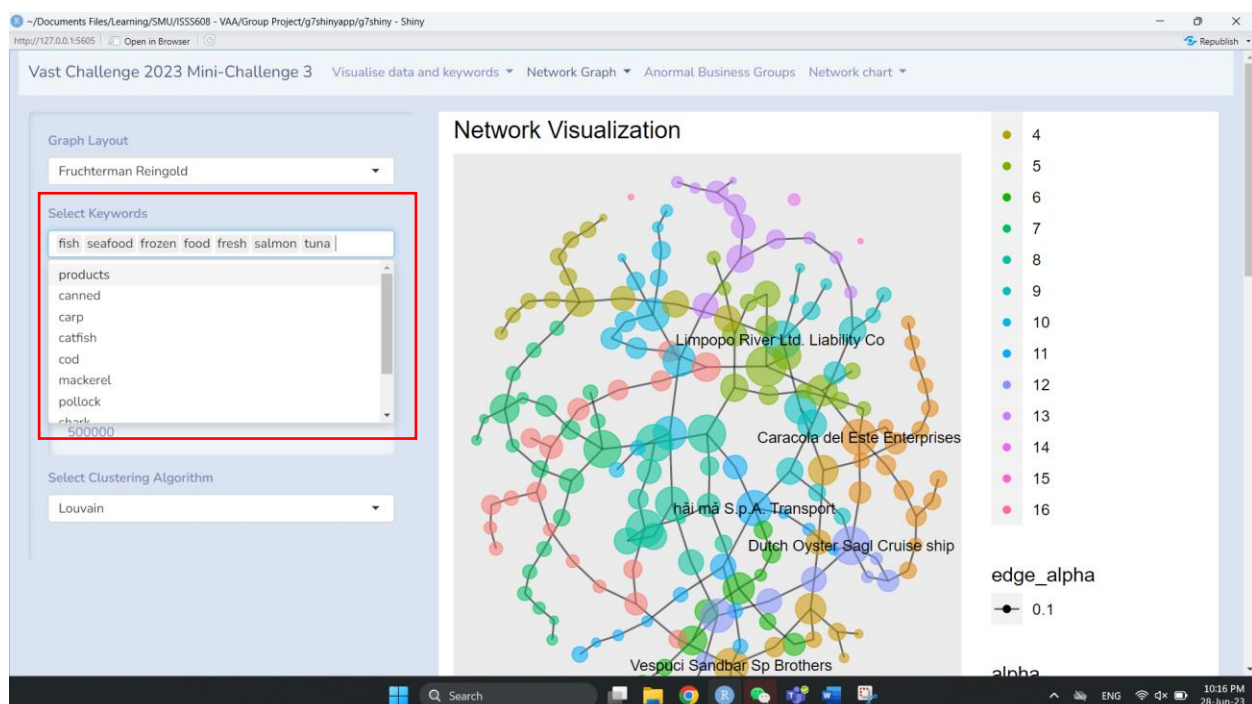
The multiple-selector filter enables the function to include/exclude nodes with specific keywords in the company's product services.

- The Degrees slider bar has the functionality to display nodes with the number of links to other nodes according to the range selected.
- Betweenness Centrality filter is able to filter the nodes based on the presets range.
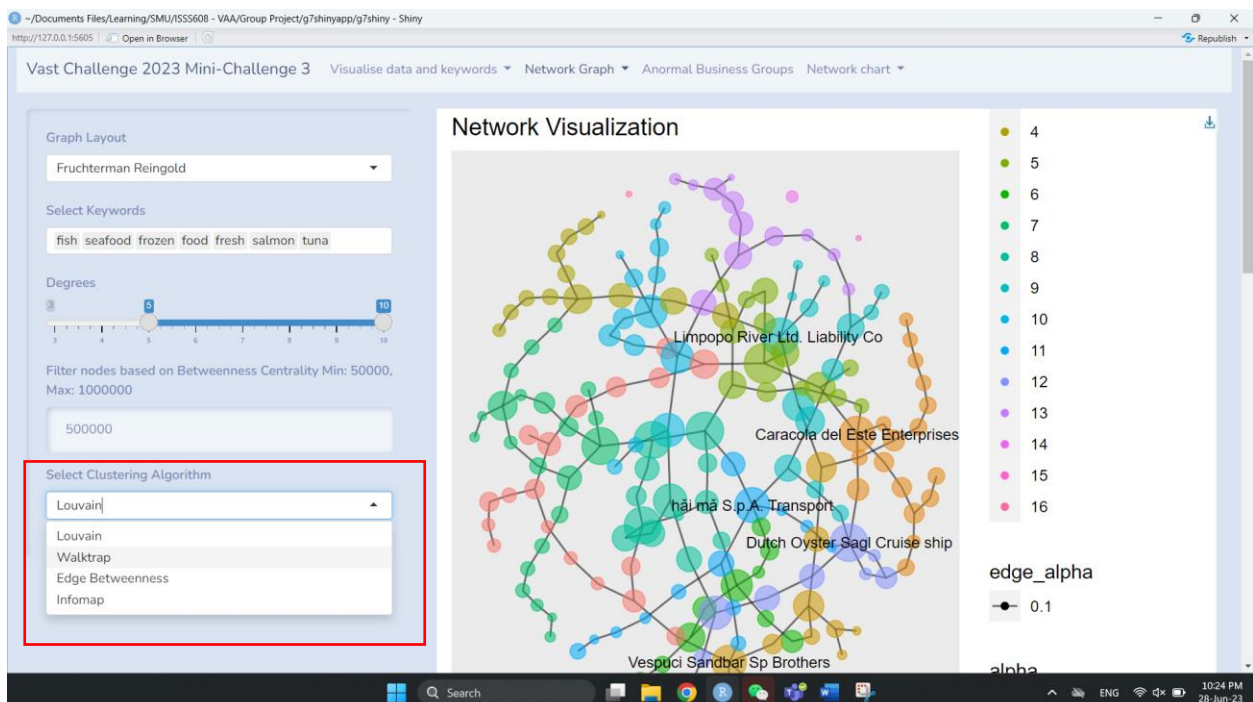
- Clustering Algorithm selector enables the function to select which clustering algorithm we want to classify the nodes to be in different communities.


| Community No.,from 1 to 23 |
| 1 |

Show 10 ∨ entries   Search:

id		country	type	revenue_omu	product_services
1	8 SE Marine life	Oceanus	Company	22166.6728	Gloves and niche products
17	Brown Inc	ZH	Company	615666.6728	Outsourcing solutions for the manufacturing and service needs of public and private organizations
41	Mar de Estrellas Inc Forwading	Puerto Sol	Company	6868.5588	Leather shoes, rubber sports shoes, pumps, plastic footwear, casual and work shoes, sandals and flip flops, boots and other protective footwear
42	Mar de la Felicidad SE	Marebak	Company		Processed meat as well as fresh and processed vegetables
43	Mar de la Luz Surfboard	Ariuzima	Company	64375.66	Catching, processing and marketing fish and other marine products
44	Mar del Este OAO	Zawalinda	Company	33526.7005	Well and brine operations, beneficiation process, and preparation of plants primarily for crushing, grinding, washing, and concentrating nonmetallic minerals; Mechanical such as grinding, washing, magnetic separation, and centrifugal separation
48	Nagaland Sea Catch GmbH	Marebak	Company	104374.8515	General merchandise and other related consumer products
61	Robinson PLC	ZH	Beneficial Owner		character(0)
68	Spanish Mackerel Corp	Oceanus	Company	27266.6728	Footwear

- From which clustering algorithm we have chosen from the clustering filter, the nodes are able to cluster into different community groups, the above datatable shows the node's id, country, type, revenue_omu and product services information by community groups.
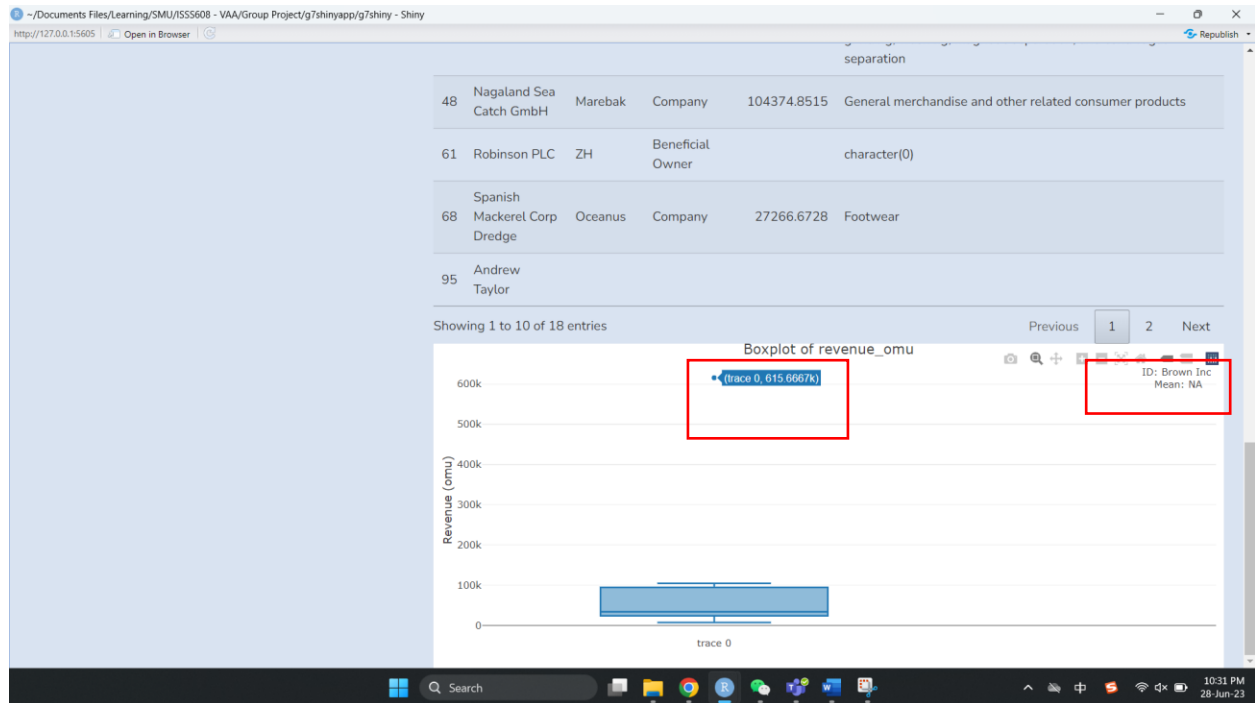
The above Boxplot shows that if any outliers for revenue_omu within the community group, it automatically updates when a different community group is been selected.

Anormal Business Groups
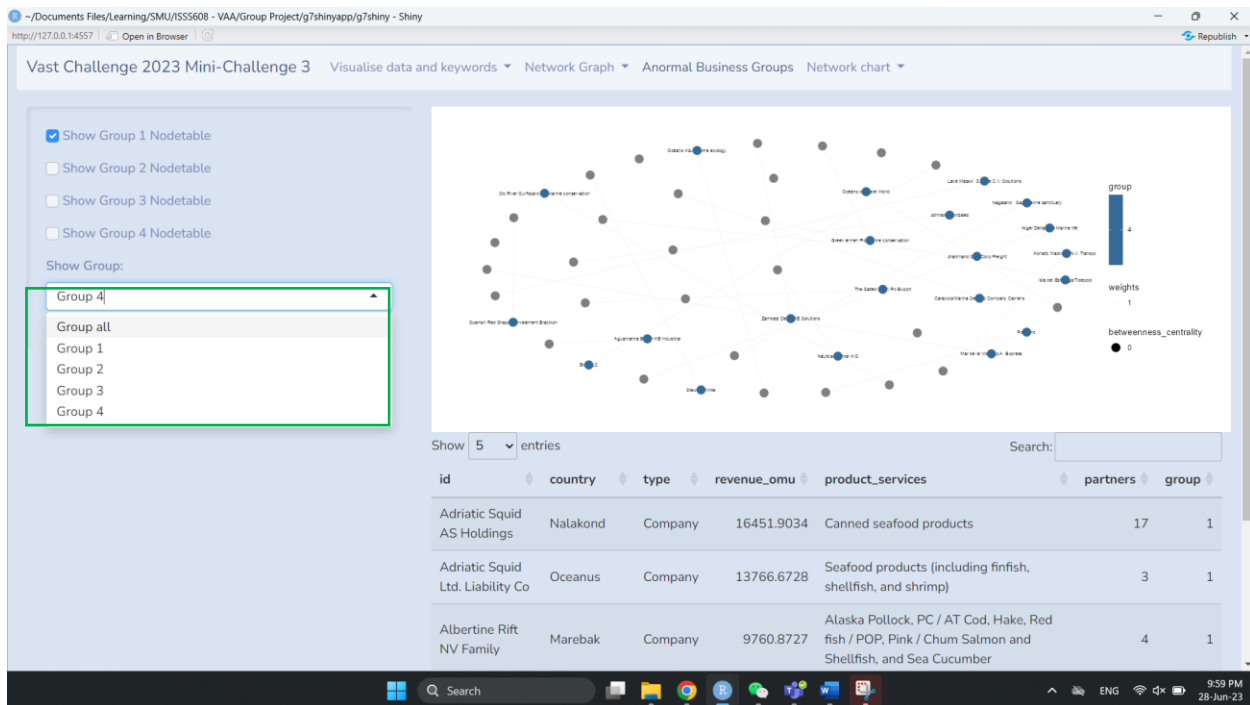
Analysing company type:

This session allows you to explore network graph of company type. we define Group 1 as No. of partners > 50% and revenue <= 80%,

Group 2 as No. of partners > 50% and revenue > 80%,

Group 3 as No. of partners <= 50% and revenue <= 80%,

Group 4 as No. of partners <= 50% and revenue > 80%.

The red part allows you to see details of nodes information of different groups. Datatable containing nodes information will appear below the network graph.

The green part allows you to select different groups or all the nodes. In the picture above, Group 4 is selected and the network graph of Group 4 will appear on the right.

## Network chart (filtered network chart)
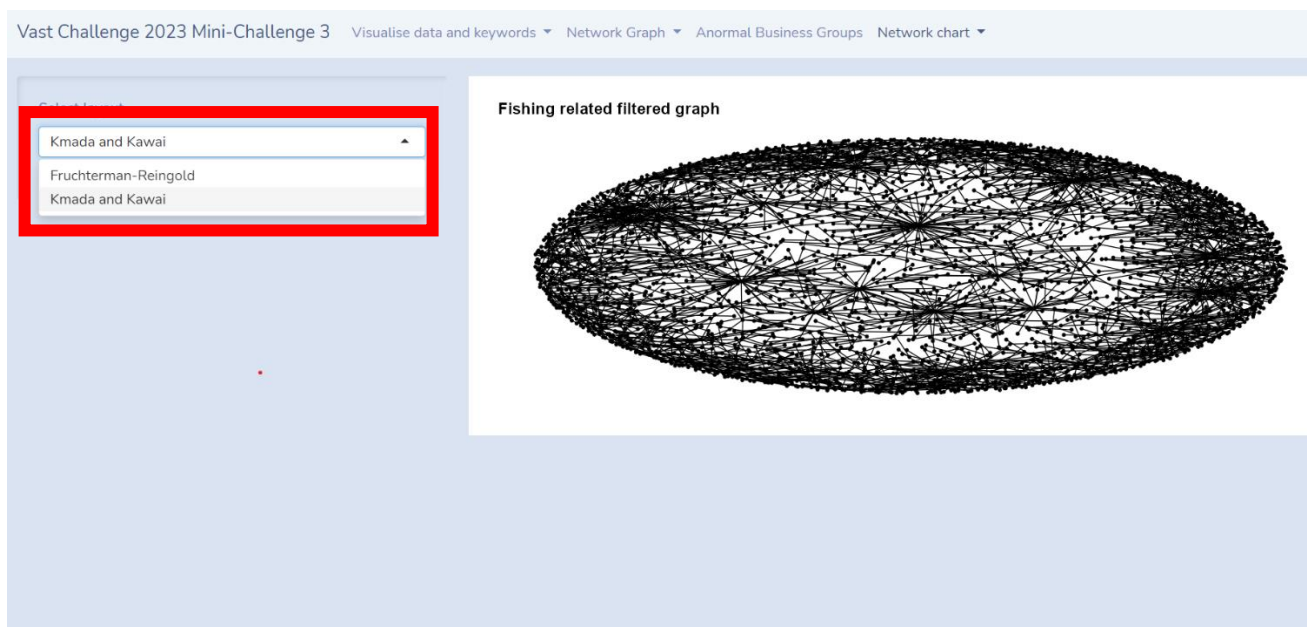
## Network chart (filtered community detection chart)

In this user interface, users can visualize the MC3 chart after the nodes that are non-relevant to fishing related are being filtered out. The users can choose which layout they wish to see this visualization in.
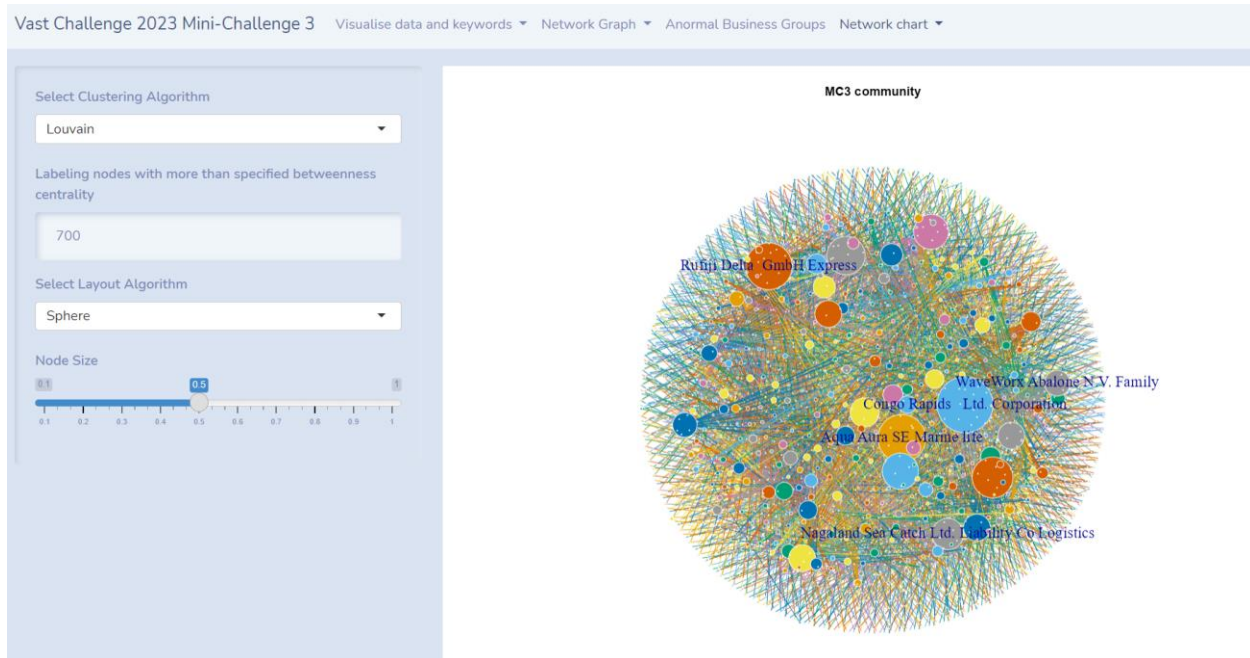
This interface is for visualizing the communities that are detected from the previous filtered interface. The above shows the default visualization that users will see when they enter the page.
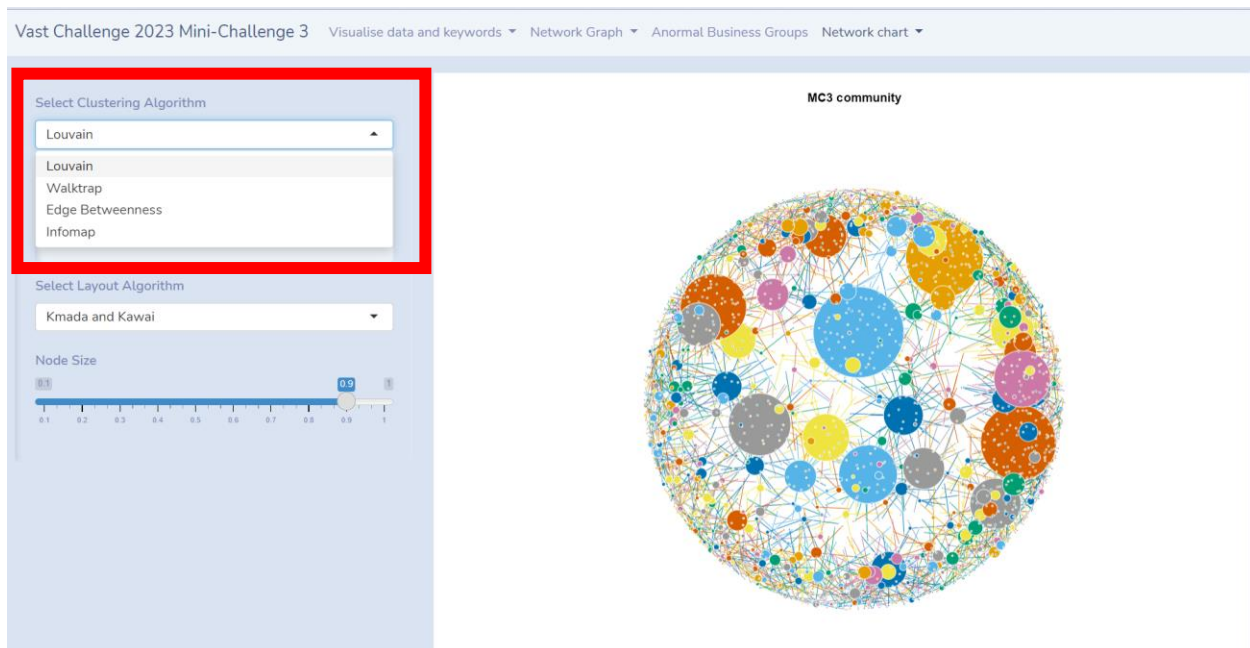
In the first component of the sidebar, the users can toggle between various clustering algorithms, the default one selected is Louvain.
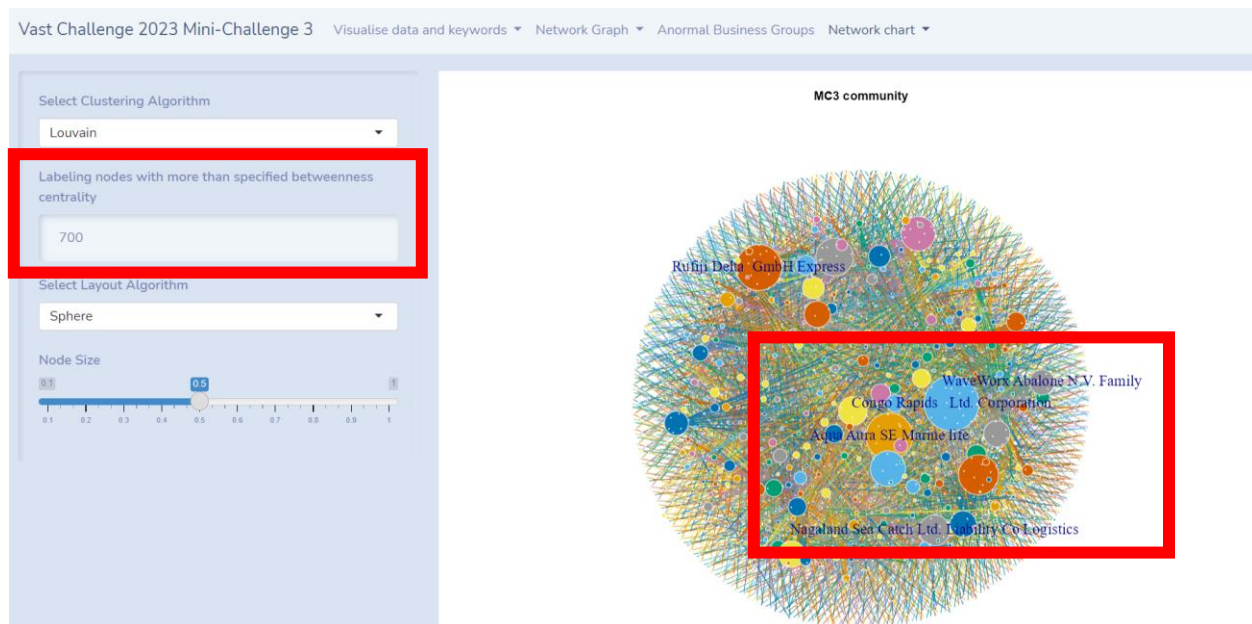

In this component, users can enter the nodes that wish to see that exceeds certain centrality. The default here is set to 700. Only nodes that exceed this number of betweenness centrality will have their label displayed over the chart on the right.
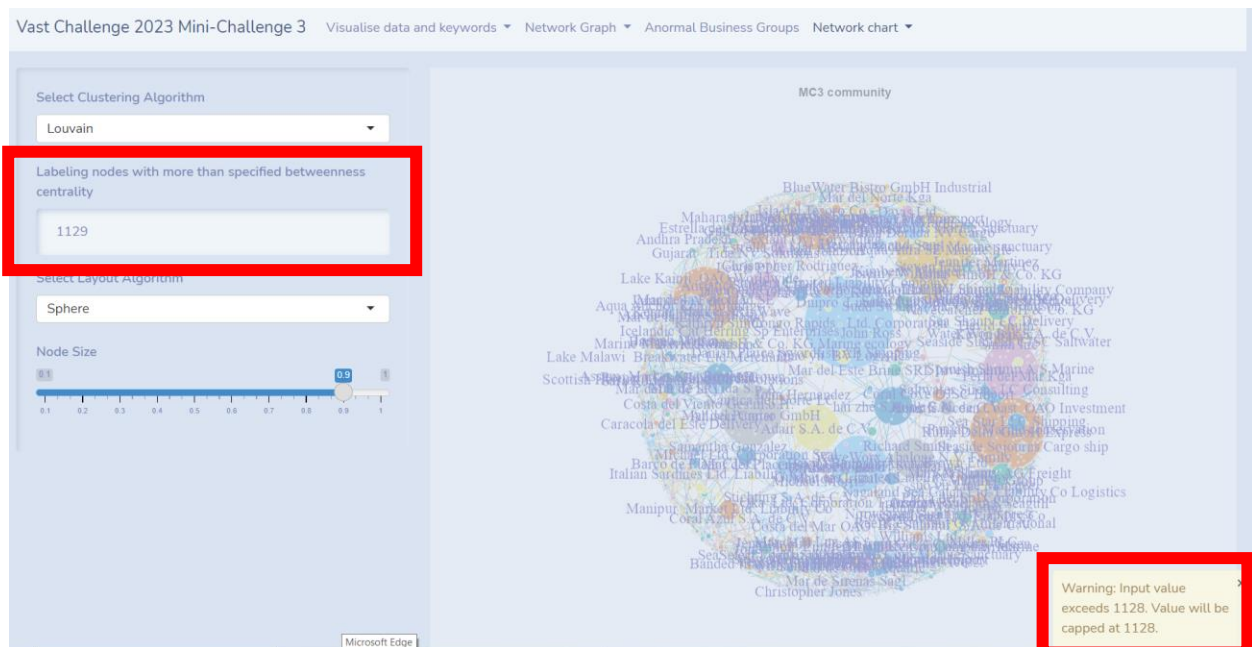
Users should take note that 1128 is the maximum betweenness centrality that we found according to our analysis on the nodes for the assignment. Therefore, a notification for the user will appear on the bottom right of the chart if user enters a number greater than 1128. Clicking the up or down button will bring the number automatically down to 1128. No display of labels will be shown if numbers exceed 1128 are entered. The number entered should also be bigger than 0 to avoid errors in the rendering process.
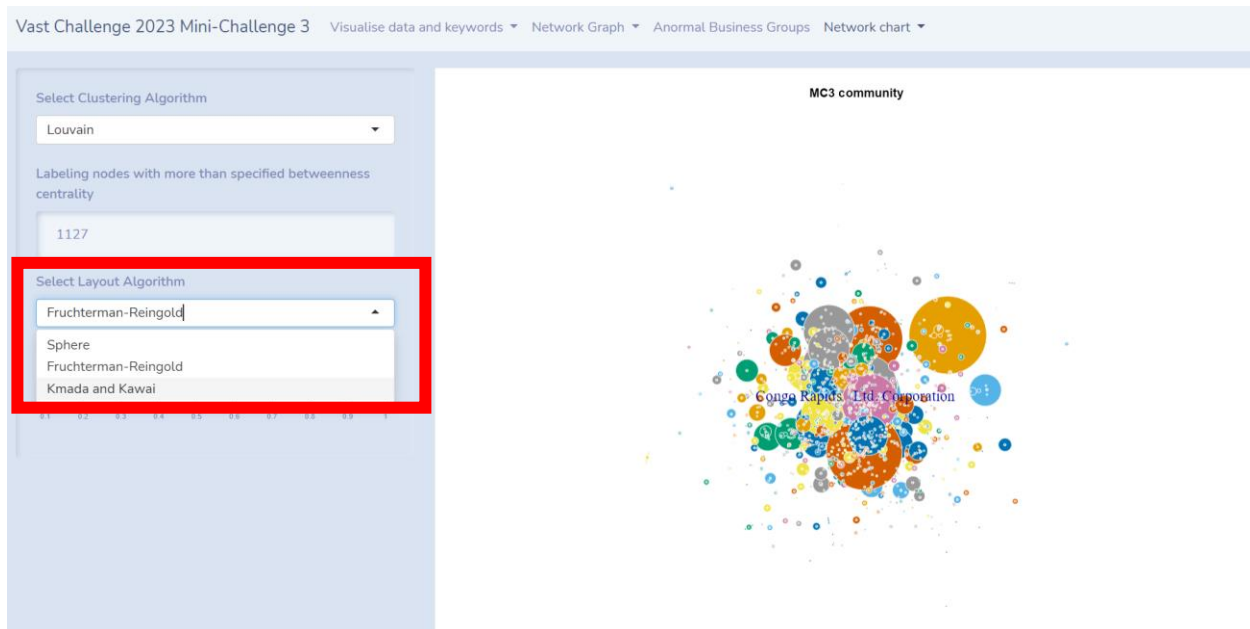
In this gadget, users can choose the layout of the chart, by default it is set to sphere, users can see which is the best one fitting their need. The above chart shows the FR layout.
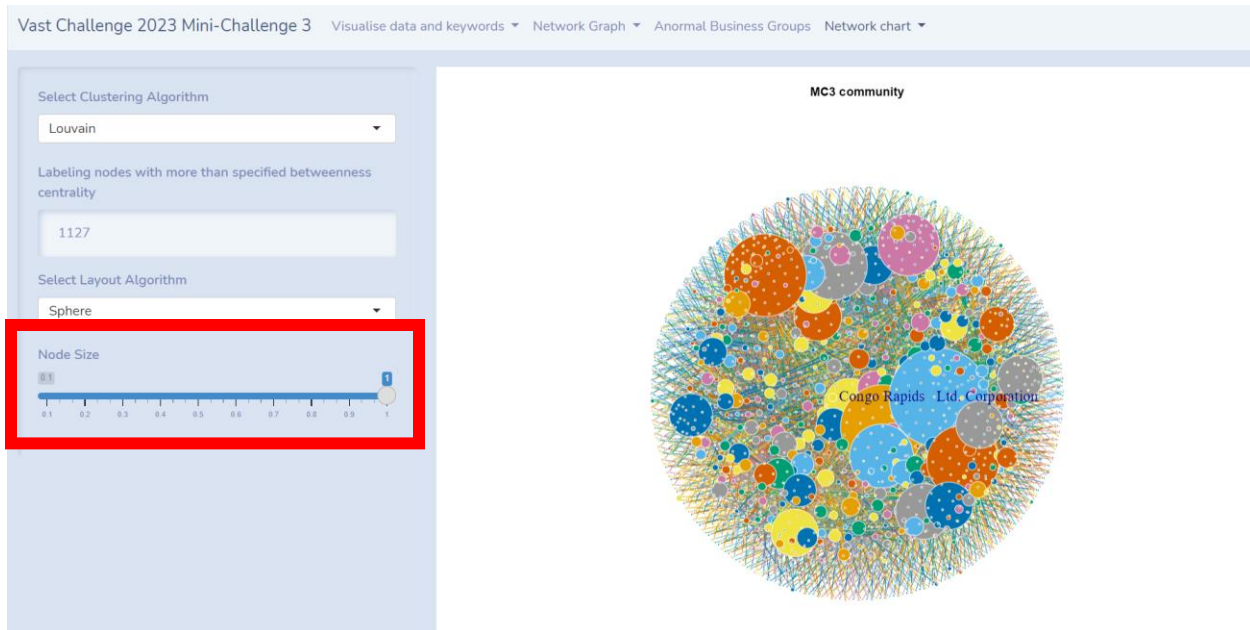
The last slide bar allows users to adjust the size of the nodes displayed on the right. The above chart shows when the node size is increased to 1. The slider ranges between 0.5 and 1 and users are free to explore size between this range.