

UFCF7H-15-3 Mobile Applications

Documentation for Companies House Graph Explorer

Due: 28 March 2019

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Features broken down:

Minimal Features Description	Where to find the feature
The user can retrieve information about companies and directorships via the REST API from the Companies House website.	Whole app – search in particular
The user can visualize the data as (node-arc) graphs or similar 2d image. Extra marks are available for titles, labels, layout etc.	Node view
The data visualization is a moveable e.g. using touch and swipe to pan. Additional marks are available for the feel of the movement e.g. nice momentum.	Panning on node view
The user can share the image generated by the data collected from the API. Additional marks available for tweaking, editing or adding to the post before sharing.	Share button on node view
Documentation as described. Additional marks are available if you include a play/app store entry mockup.	This document! Play store

Optional Features Description	Where to find the feature
The user interface should use platform specific UI standards for navigation, visuals and interaction.	Whole app
The user can explore the history of selections they have made. E.g. as a pulldown or integrated with the diagram navigation somehow.	Recent activity
Additional Graphic Visuals: e.g. Different Shaped Sized or Coloured Arcs and Nodes communicate additional information you can find via the API.	Node colours and information
Users to interact with a node and explore further e.g. Additional Textual information: e.g. secondary info about the companies and directories as retrieved from the companies' house database as pop outs or tooltips or similar.	Basic information More details
Cross referenced Retrieval: e.g. Information retrieved is also looked up in additional databases such as postcode, mapping (Google) or personal (full contact).	Not attempted
Graph Size: The graph shows more than one level of relationships, that is companies owned by directors of the selected company, and so on like a family tree.	Explode further nodes
Graph Layout Schemes: if the graph is multilevel or there are possible crossed arcs the nodes are rearranged automatically to reduce the crossings to a minimum.	People do PhDs on this subject. Not sure how this is only 15 marks... The nodes will not be drawn overlapping each other or off the screen though.

Activity: Recent

Starting activity.

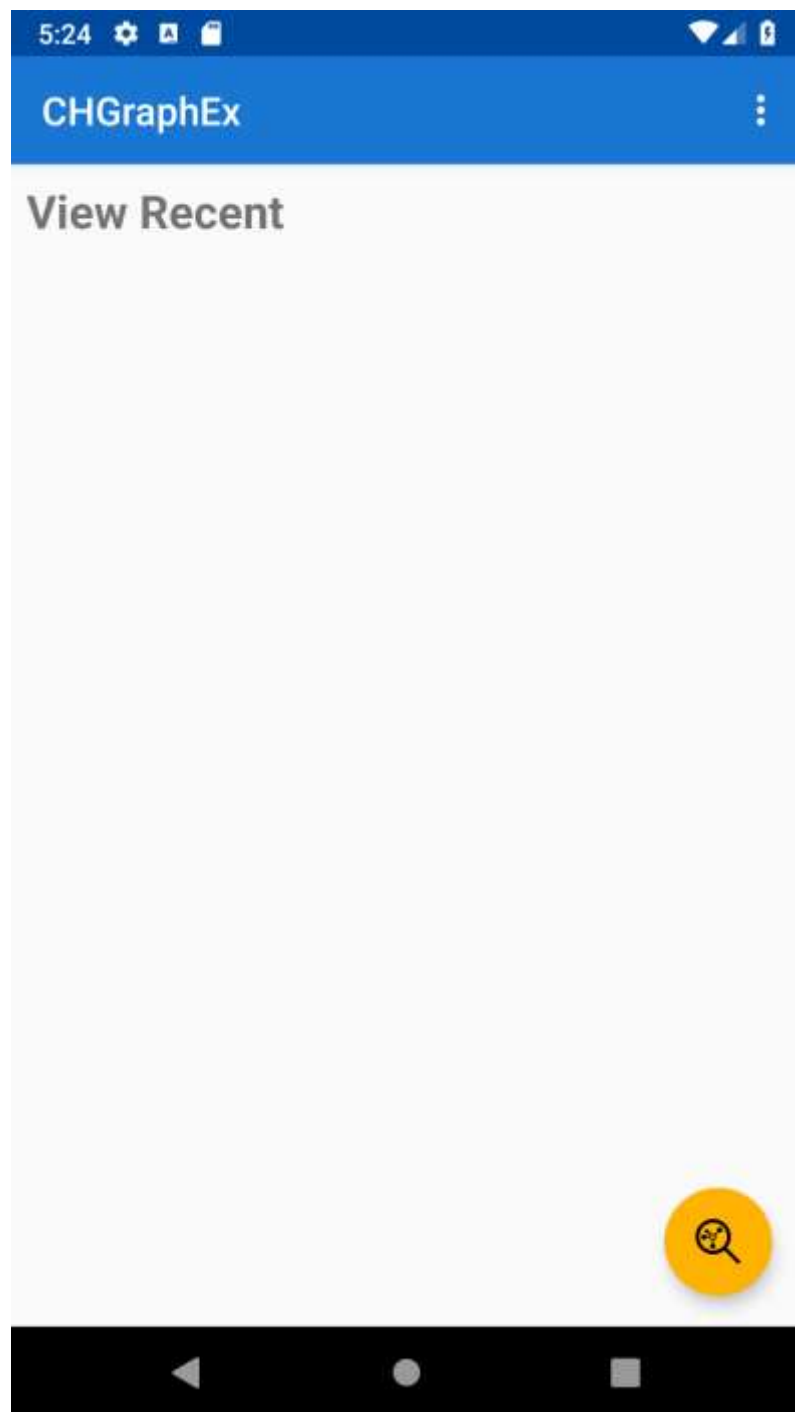
CHGraphEX → Companies House Graph Explorer

Can also be reached by user pressing history icon on [nodes activity](#) .

Pressing one of the items in the history will take the user to the [node diagram](#) for that item. The items are stored in a Room database.

Press the FAB will take the user to the [search](#).

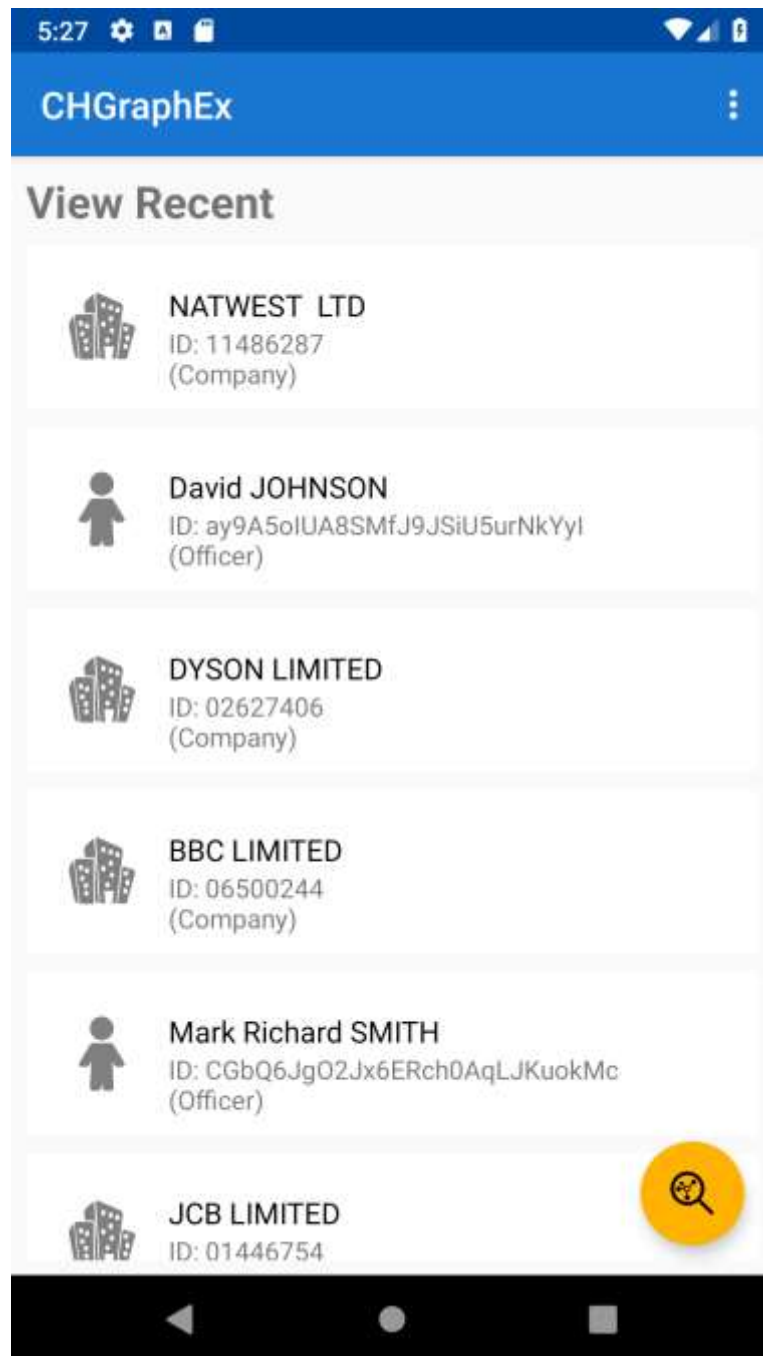
Empty history:



No searches (or history has been cleared).

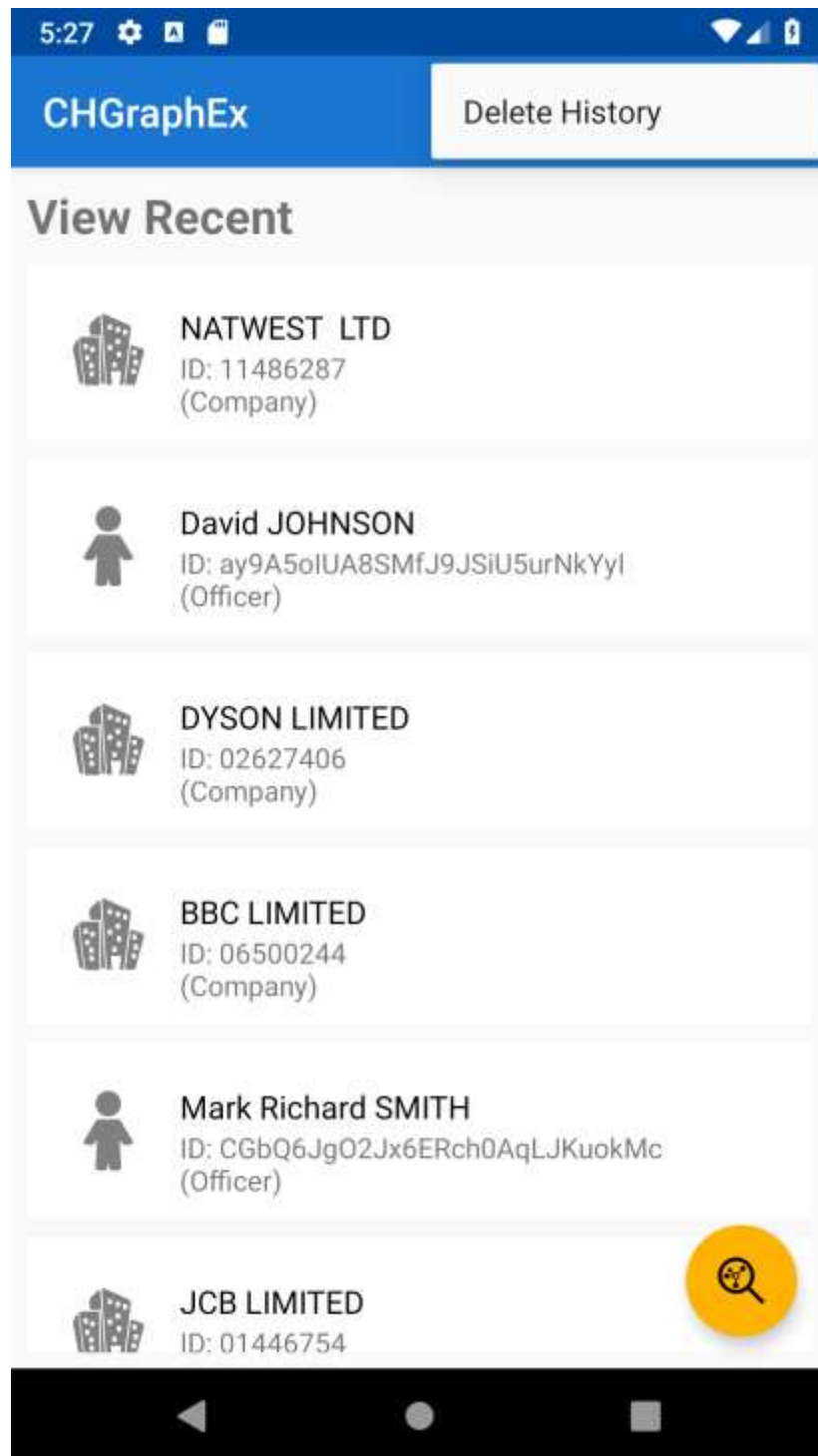
Busy history:

Shows lots of previous searches



Clear history:

Pressing the menu button (three dots) reveals the option to delete the history of searches.



Activity: Search

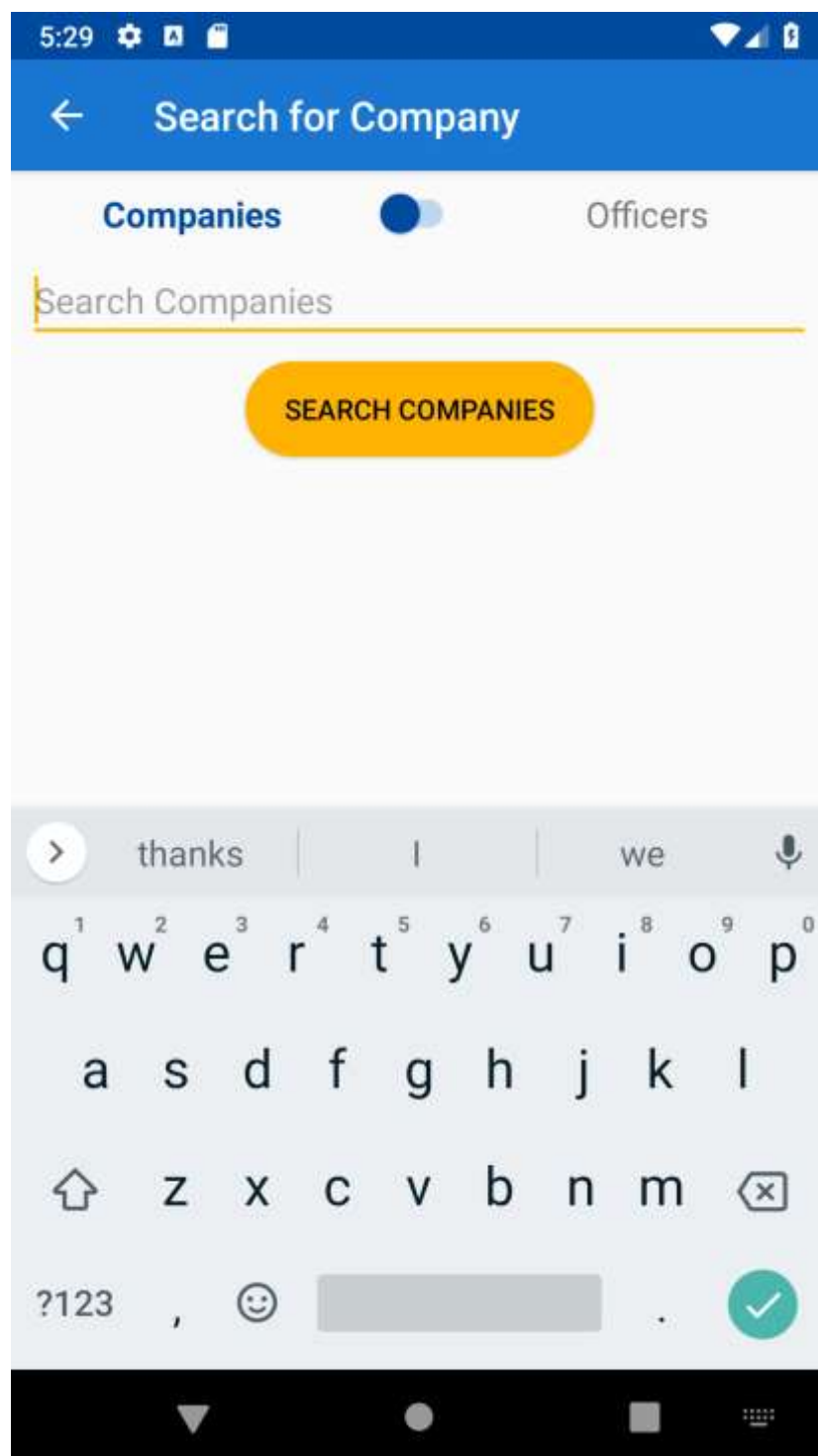
The user can search for a company or an officer.

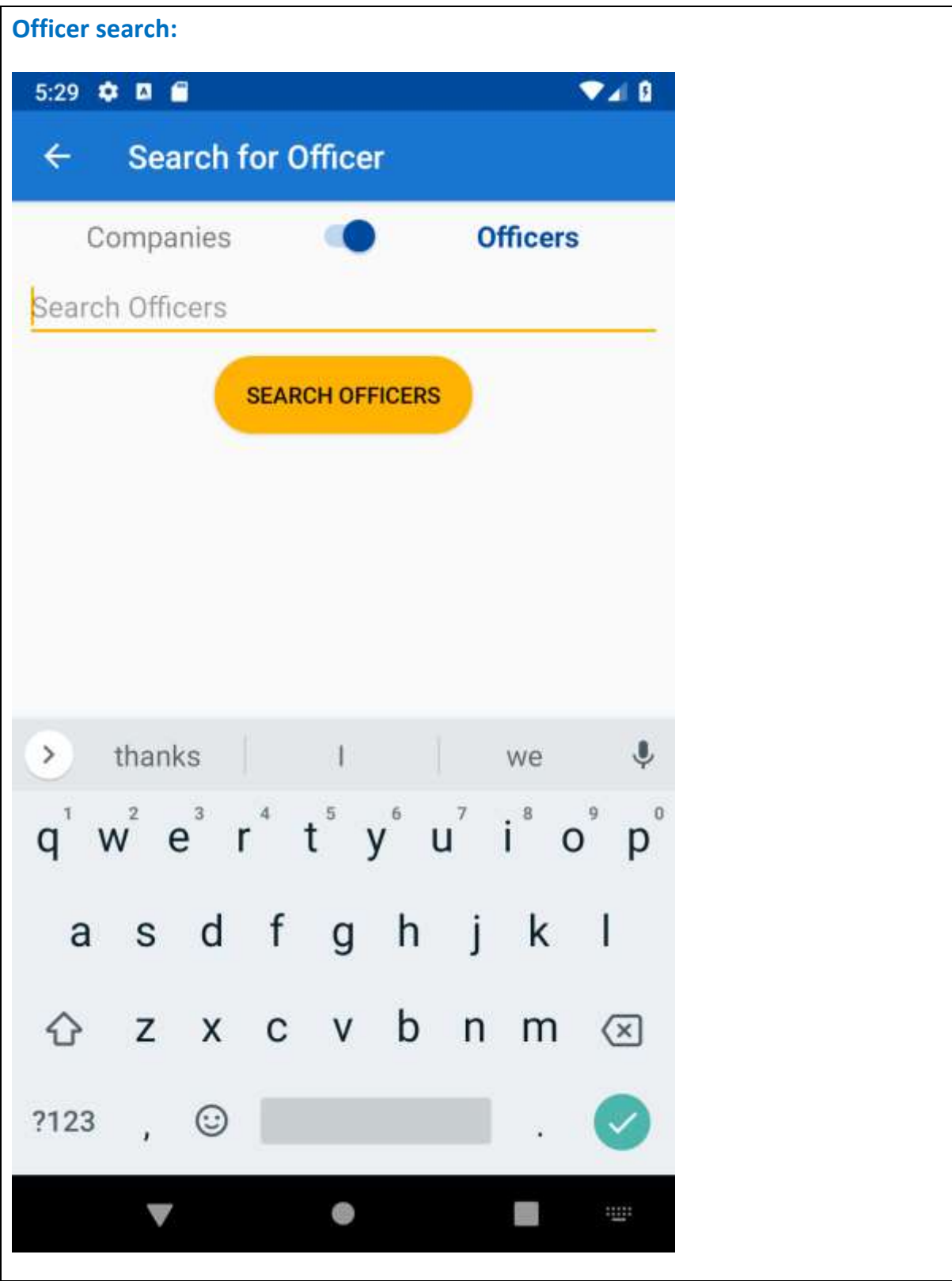
The default is company.

The user can change it by pressing the switch.

On pressing the search button, the user will be taken to the [search results](#). Thus querying the companies house API.

Company search:





Activity: Results

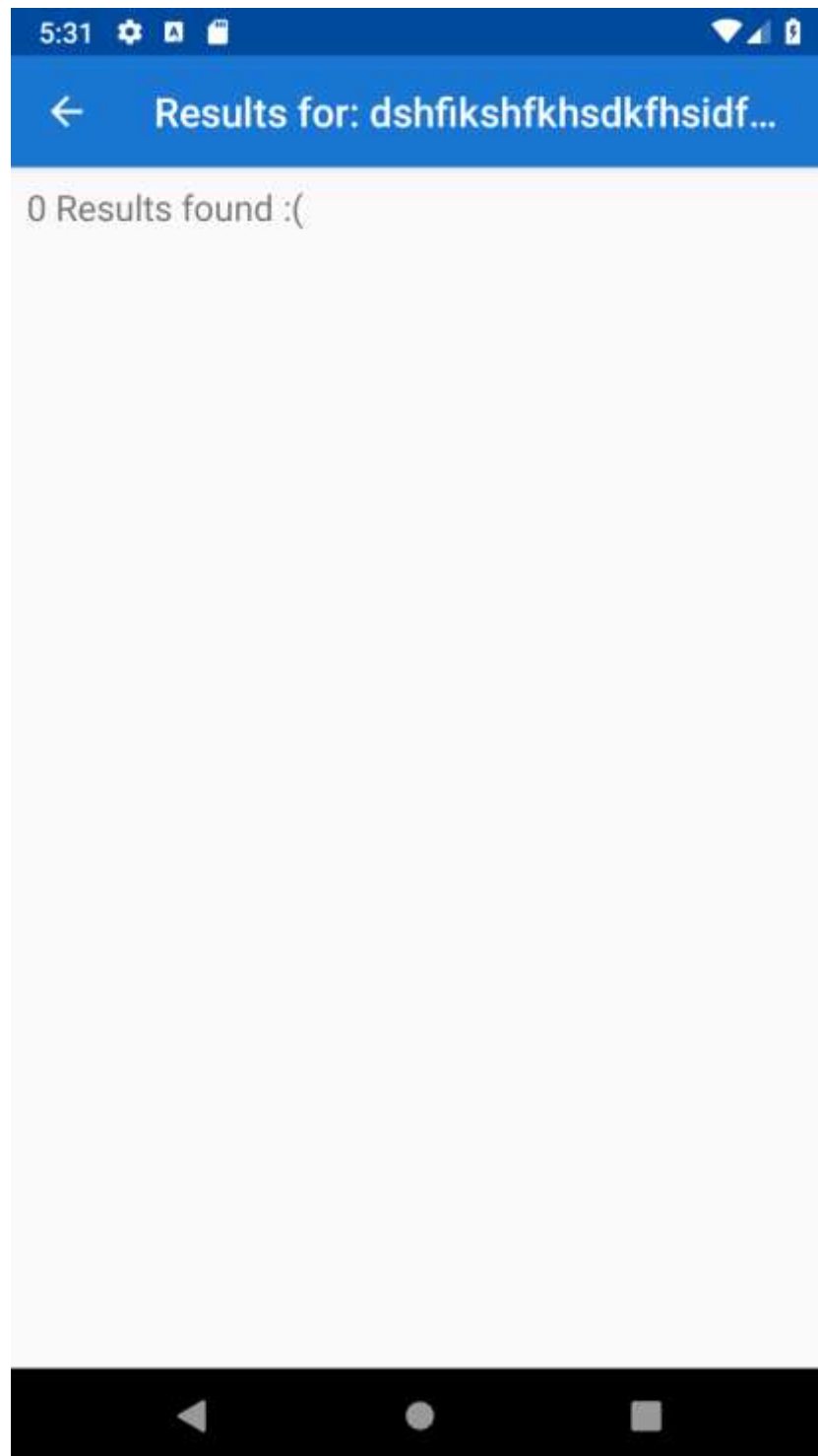
This is the search results.

These are the results from the companies house API.

Selecting an item from the list will take the user to the [node diagram](#) for the selecting item.

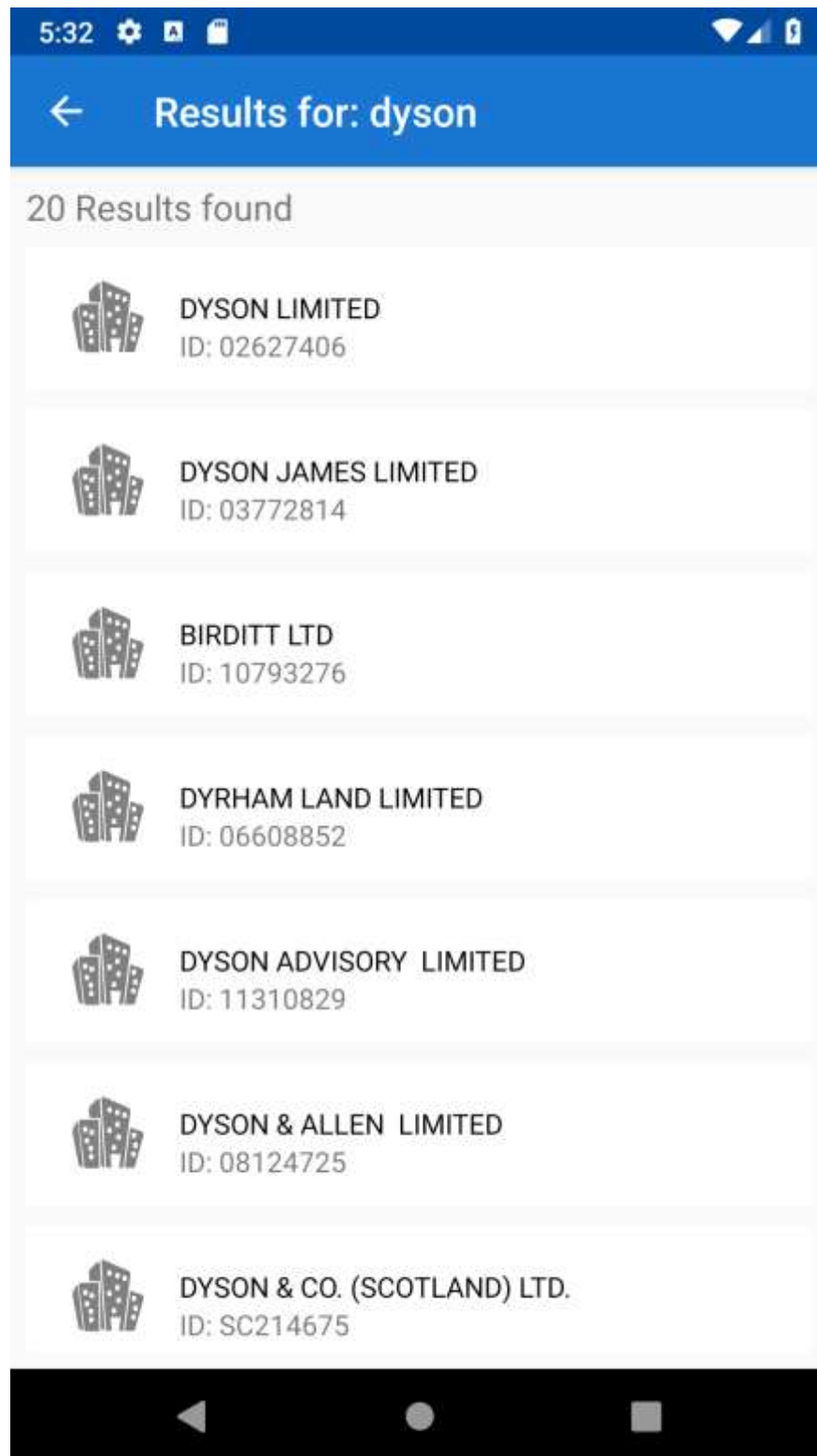
No results:

Search was for a random set of letters in the company search.



Many results:

Search is for “dyson” in the company search.



Activity: Nodes

This is the activity that displays the nodes and edges to the user.

Normal menu options:

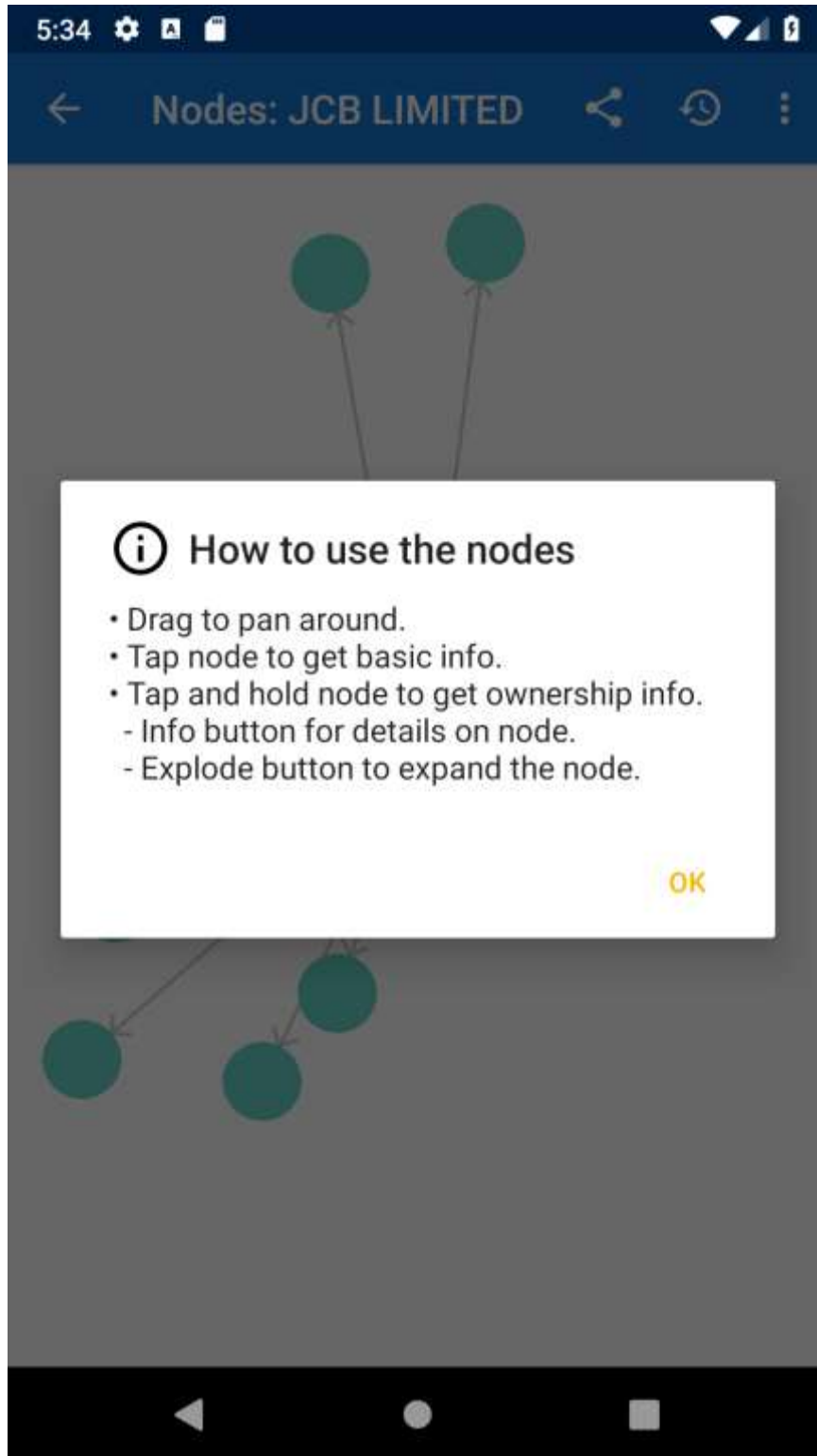
- [Share the node.](#)
- [Go to the history of searches.](#)
- Menu button ->
 - [Save the image](#) (part of old spec).
 - [How to use](#) – info on how to use.

When the user long presses a node they get the following options:

- [Info about the node.](#)
- [Explode the node.](#)

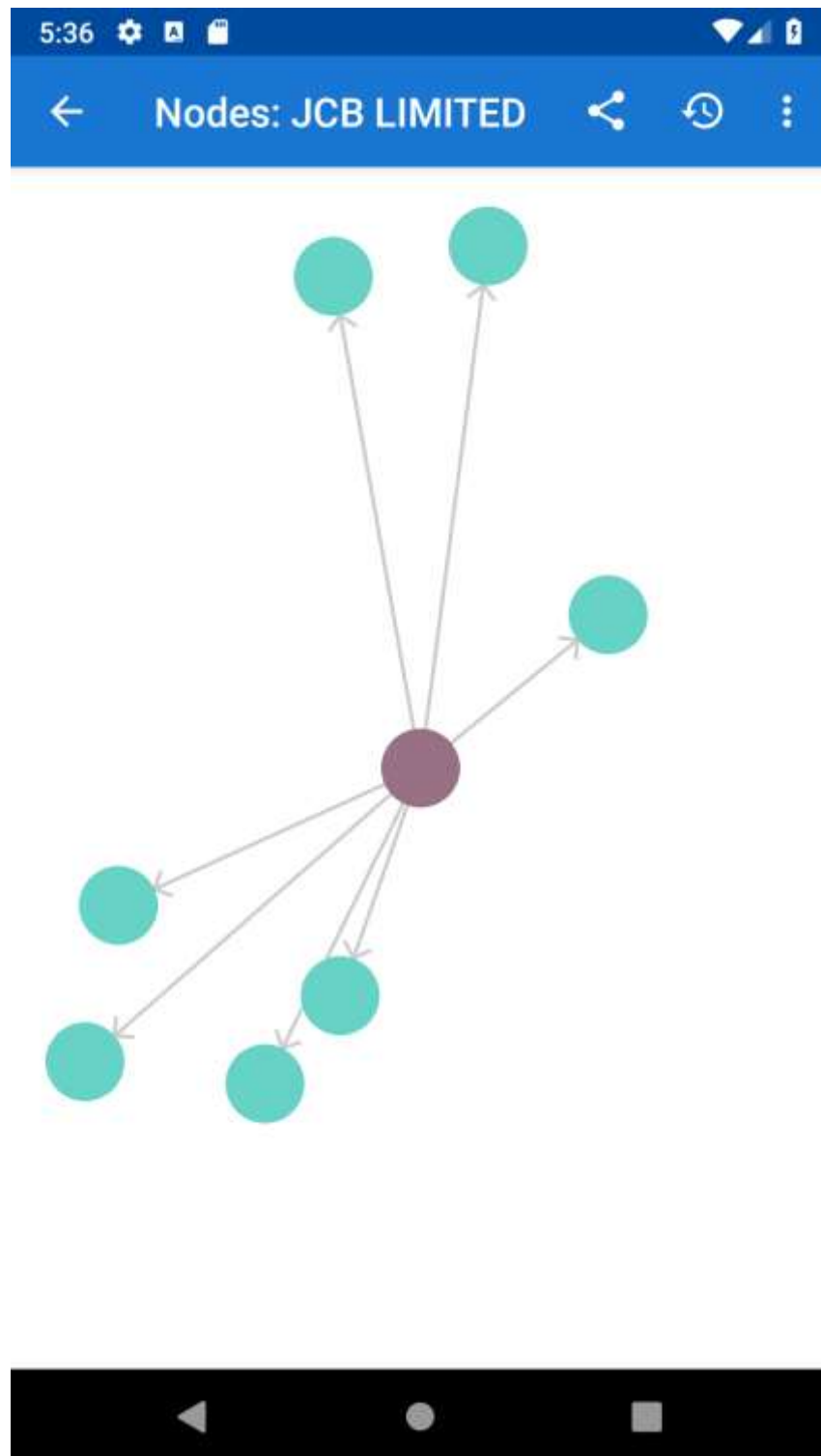
First time viewing:

On the first time viewing the nodes the user is presented with an explanation of how to interact with the nodes. This can be accessed in future by clicking on the menu button and selecting “how to use”.



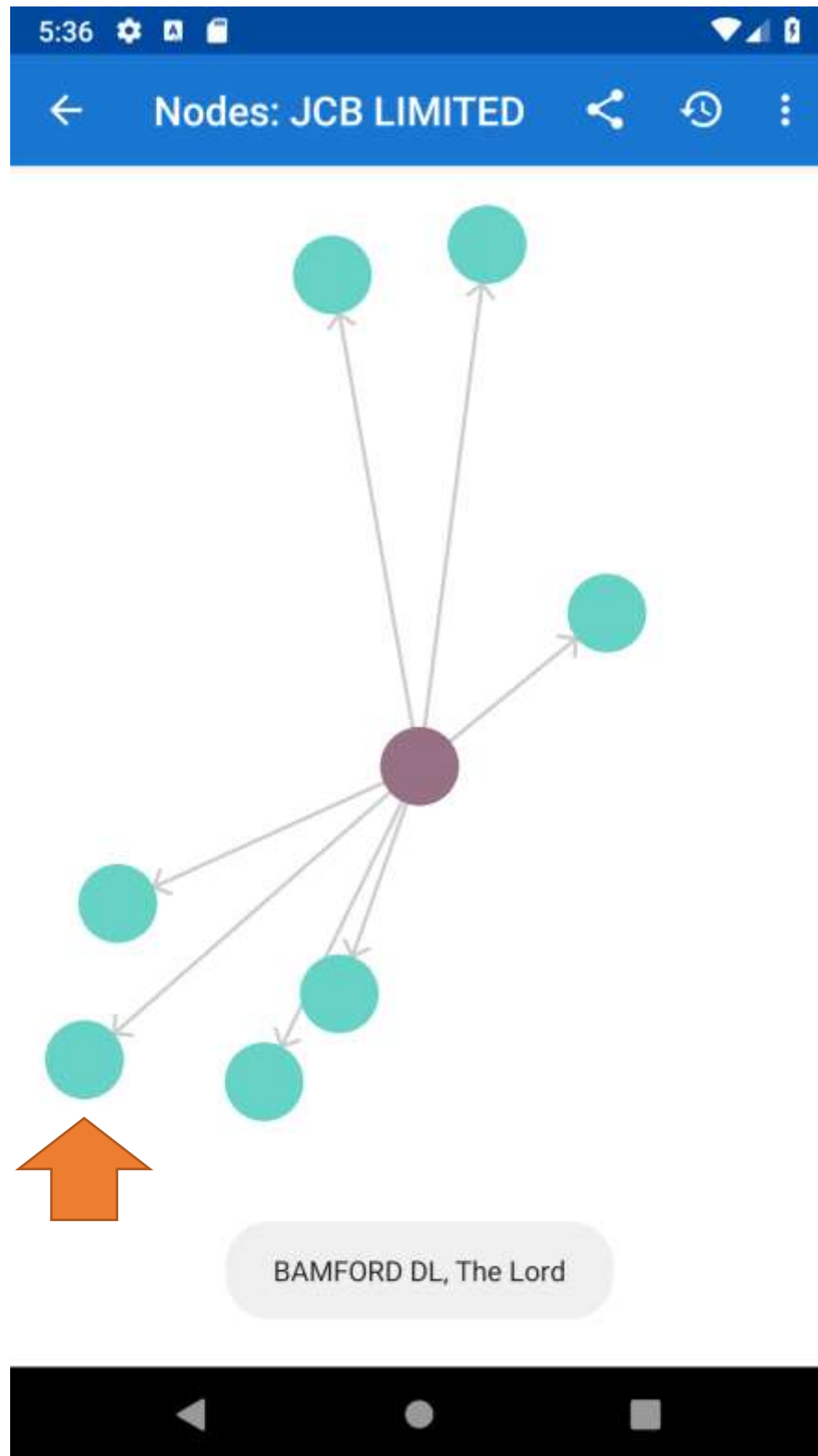
Basic nodes:

This is a simple graph being drawn on the canvas.



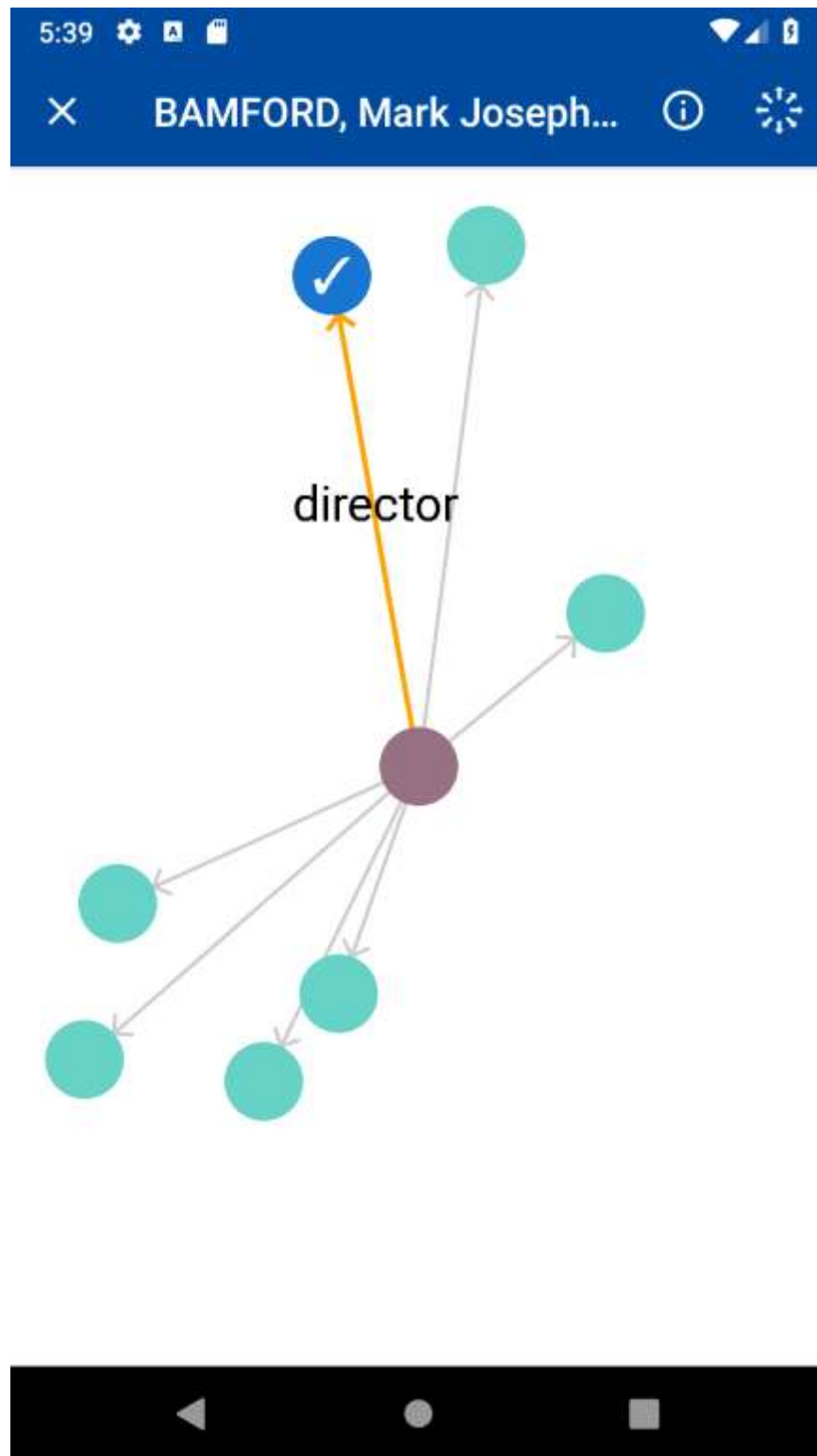
Single press on node:

The title of the node is pressed to the user when they tap on a node. For this example, the user tapped the node that is most South-West (shown to you with an arrow).



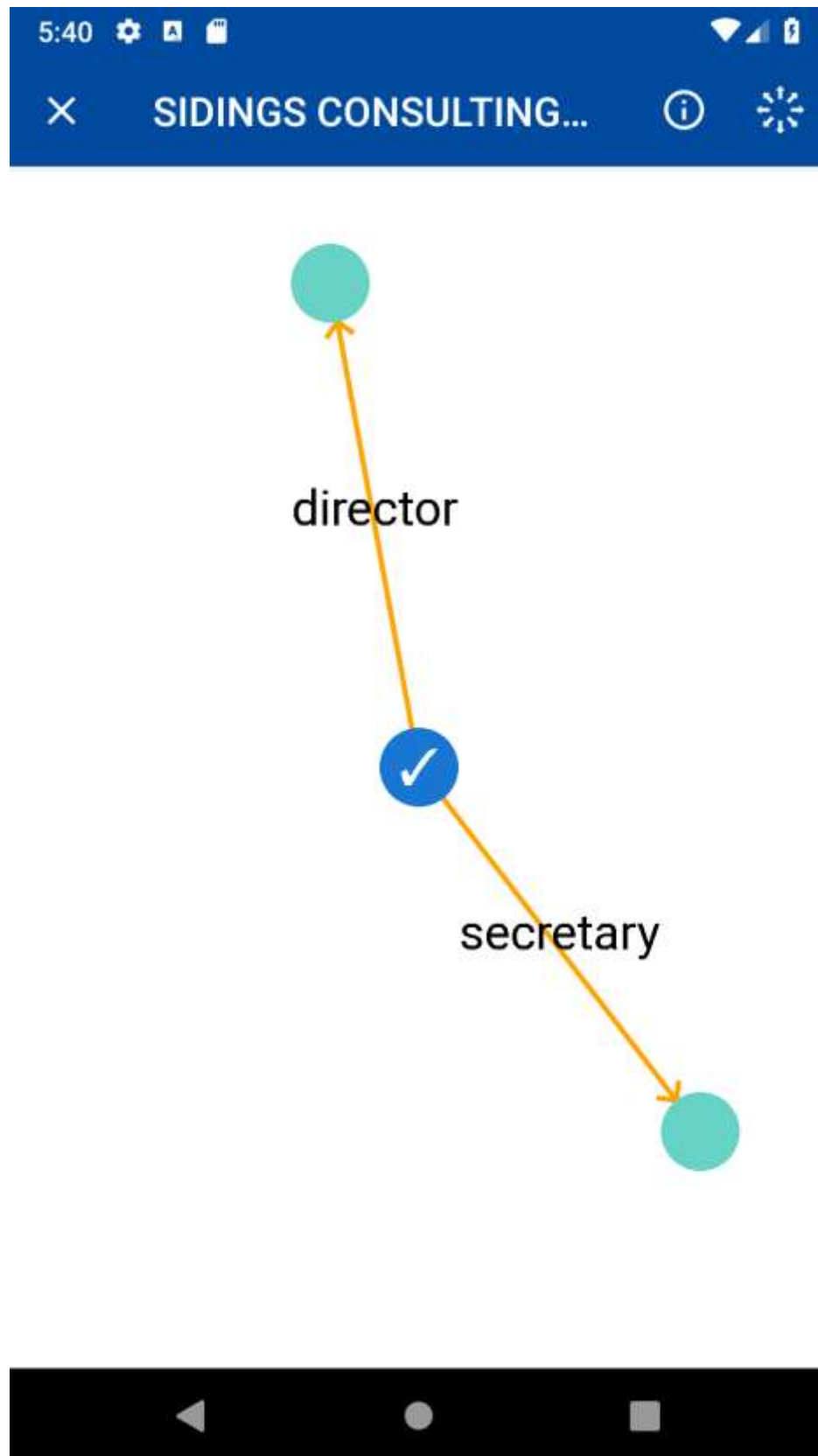
Long press on leaf node:

Here the user has long pressed on a leaf node.



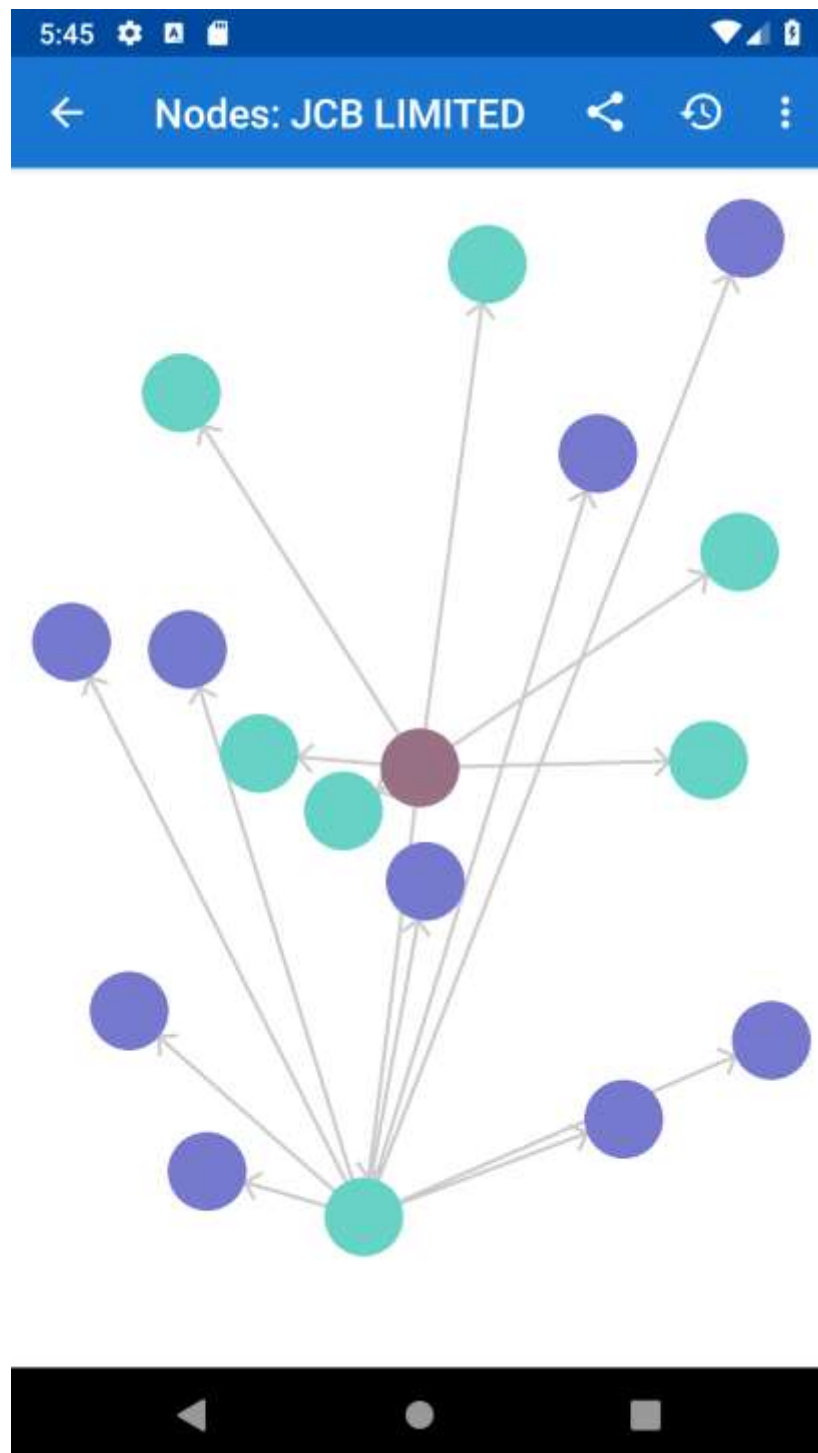
Long press on internal node (including root):

Here the user has long pressed on an internal node which in this case is the root node.



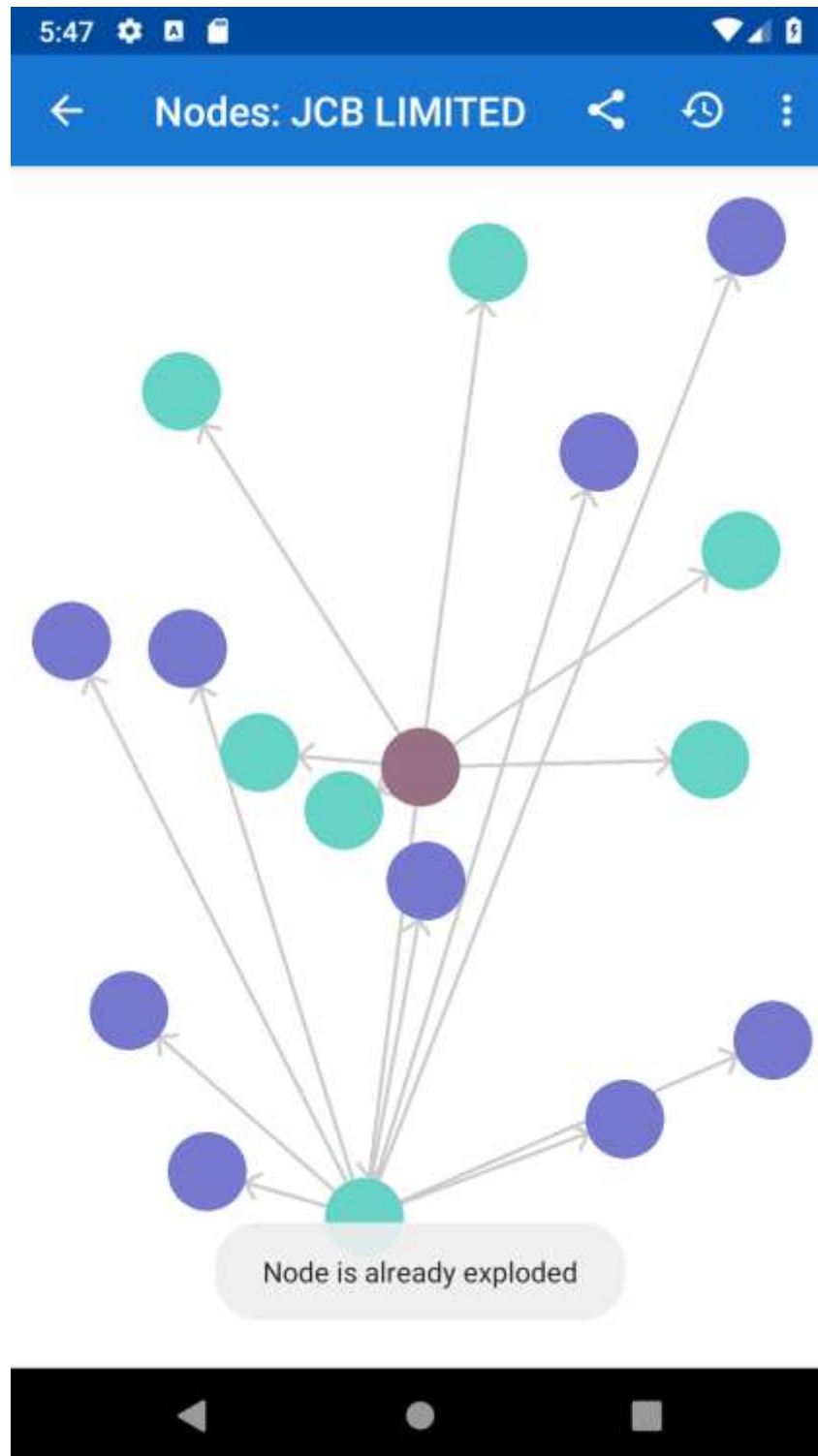
Explode node:

Here the node that is located furthest South has been exploded so other associated companies have been displayed.



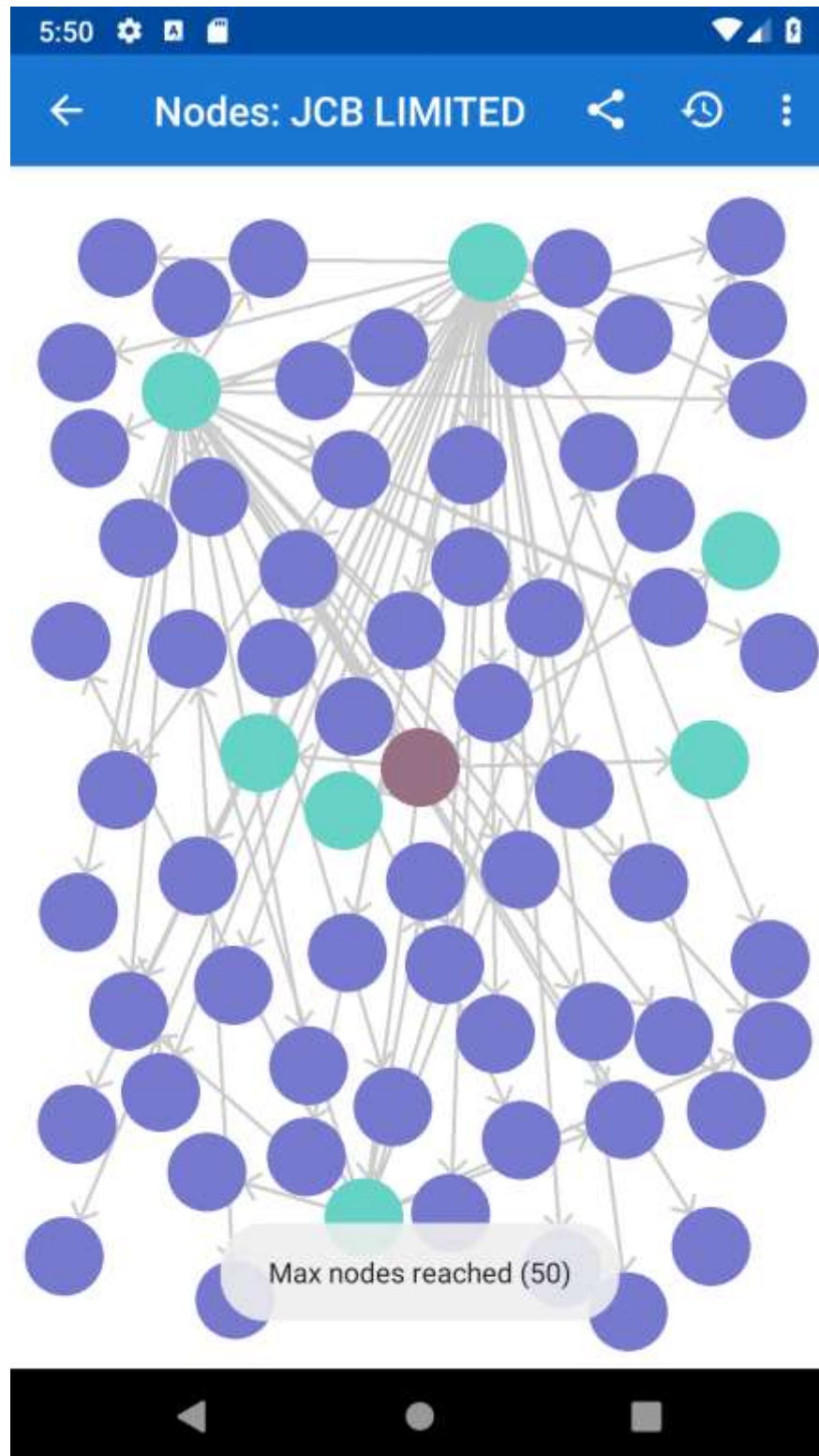
Explode already exploded node:

If the node has already been exploded, if the user attempts to explode it again the following message will be displayed to the user.



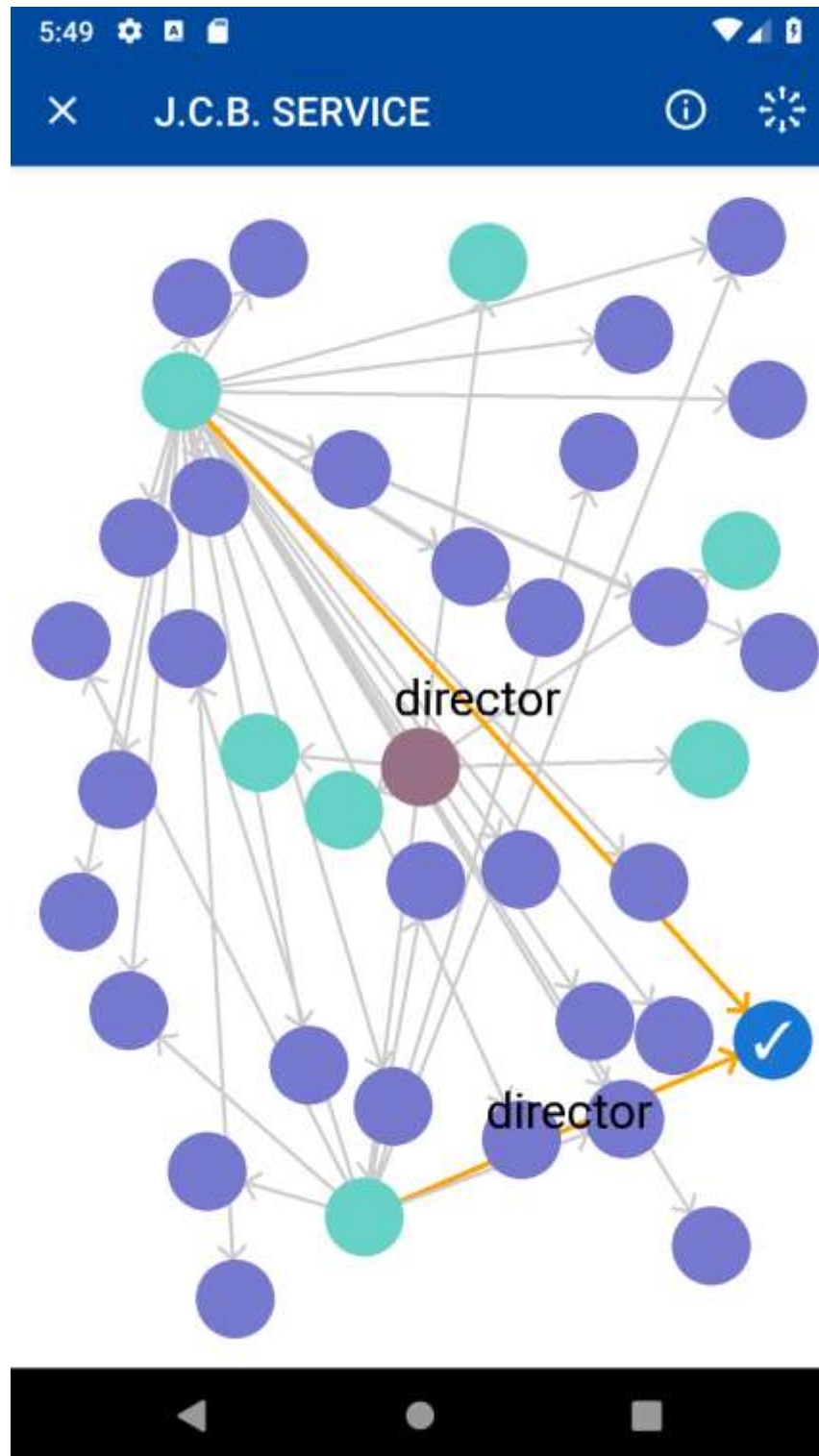
Explode too many nodes:

There is currently a max number of nodes (50). If the user tries to explode any more nodes, then the following message will be displayed to them.



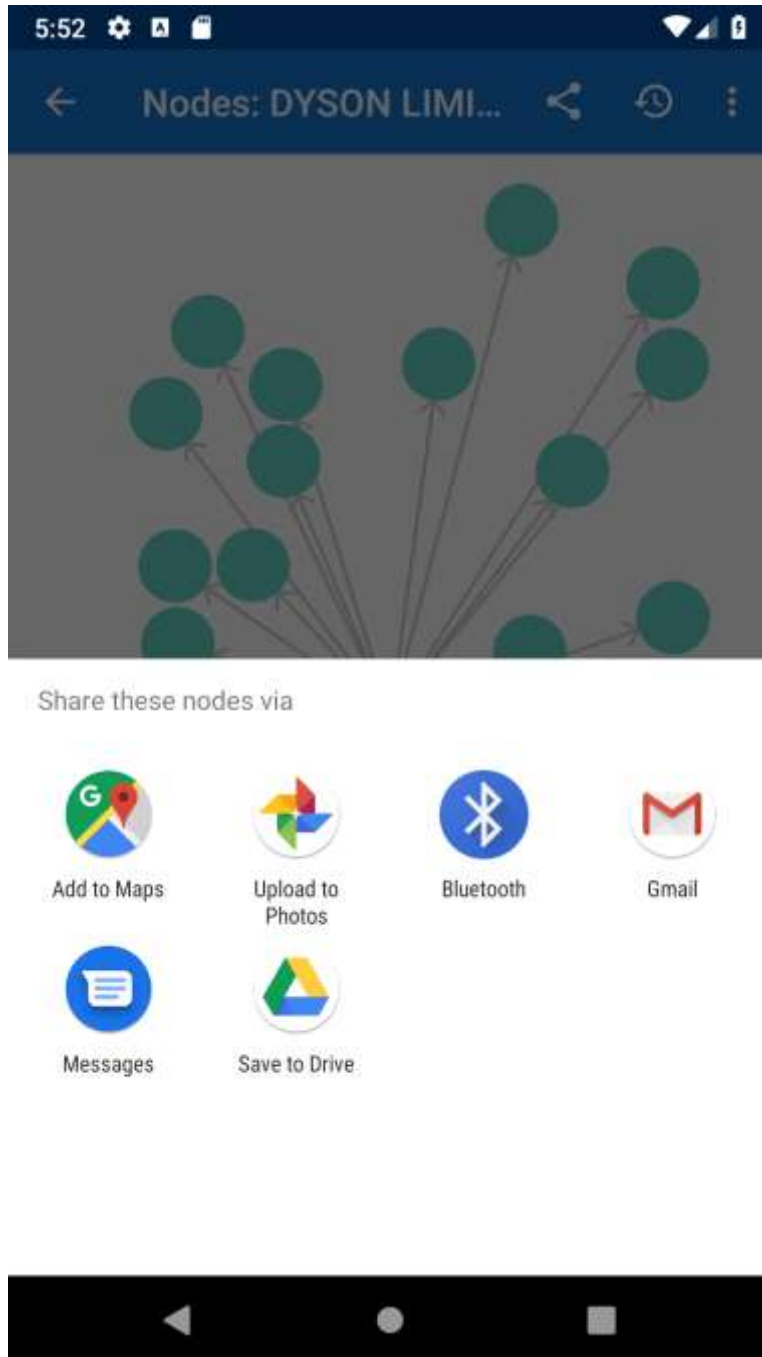
Family nodes:

If exploded nodes share common connections, then these nodes will not be duplicated and will be linked in a family node. This would not really have been possible in a force directed graph.



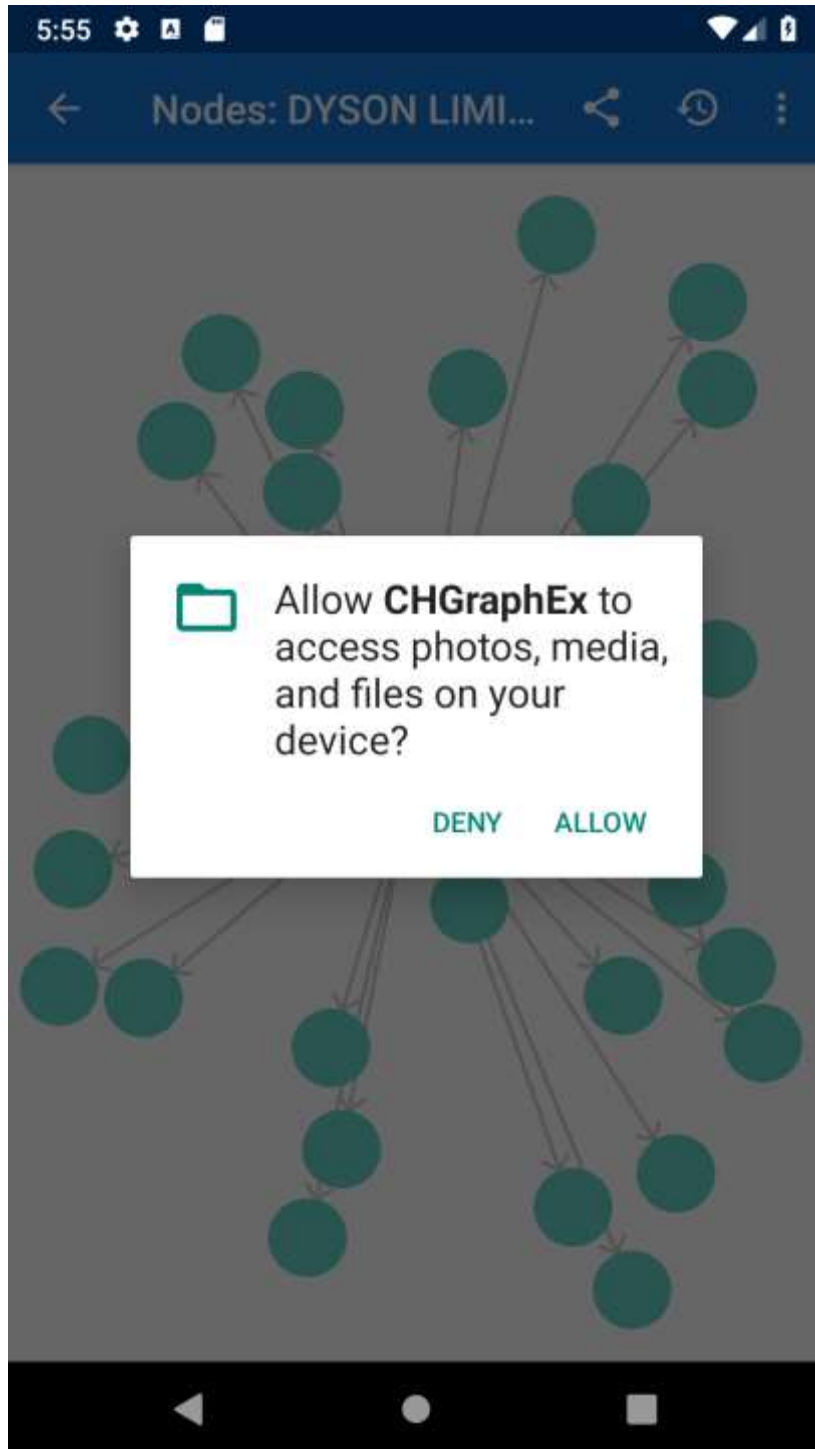
Share:

The user can share the image of the nodes by selecting the share button from the menu. For proof of sharing [see this](#).

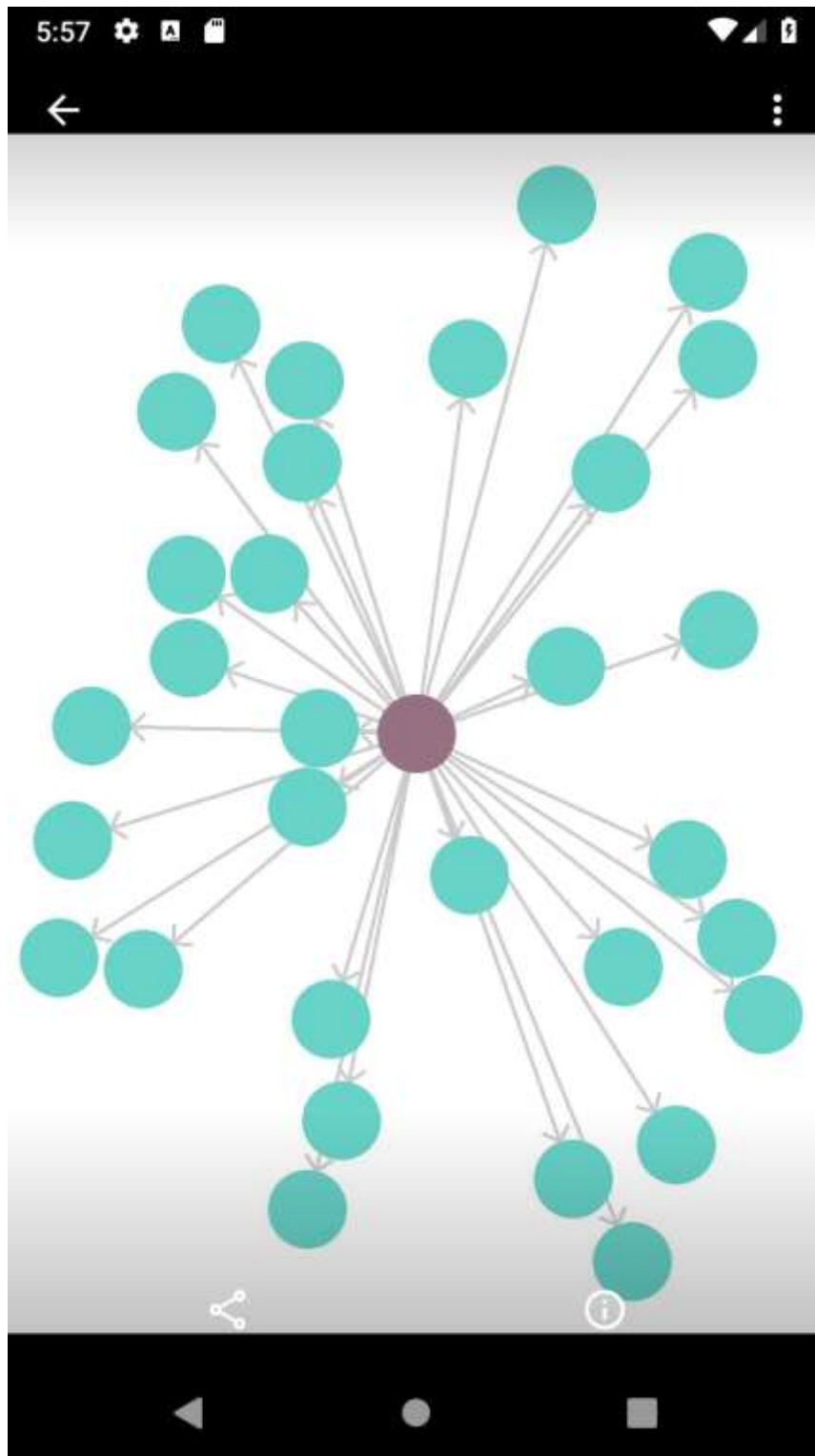


Save image:

This was part of the old specification but was kept in. The user can save the image of the nodes to the device by selecting “save image” from the menu. The app will then ask the user for permission to access the files on the device. The outcome of which determines the message to the user.



This is a screenshot of the picture in the gallery on the device (the emulator seems to have a problem with dating the files – works if you reopen the emulator, but on any real devices this problem does not occur).

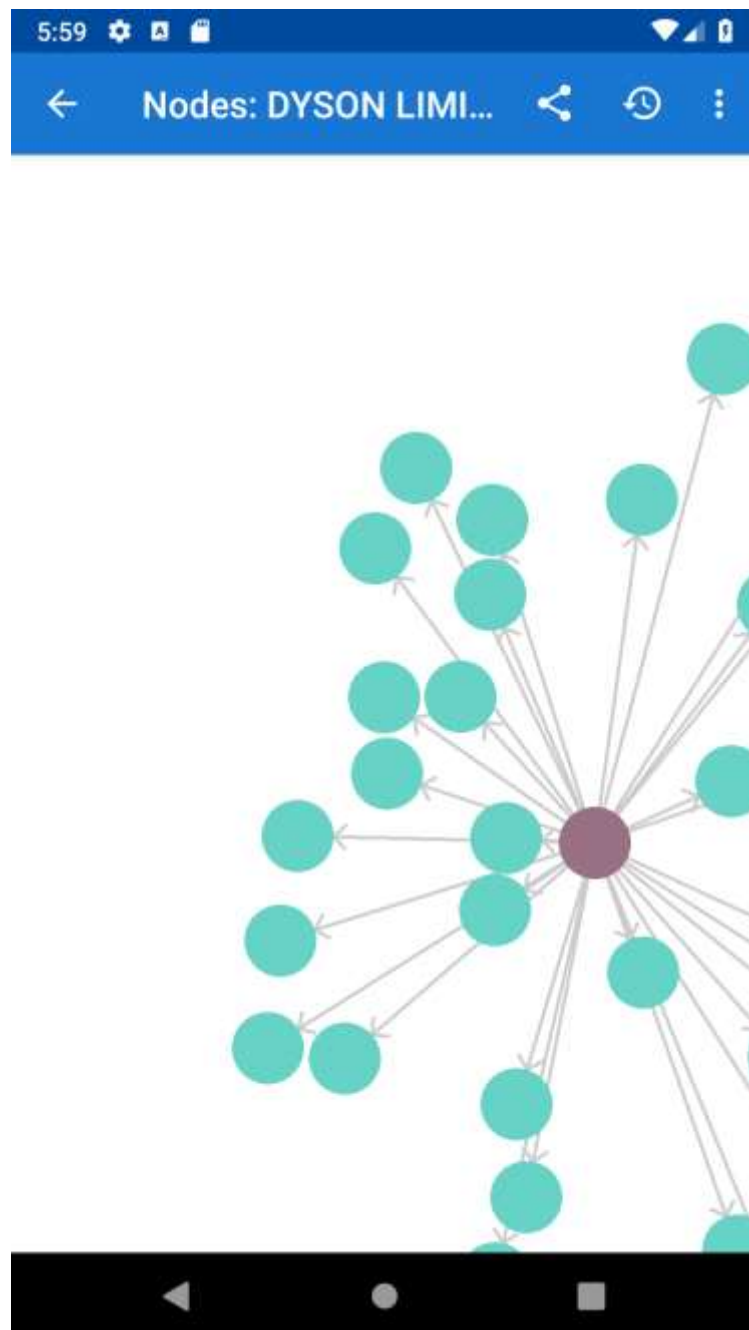


Help:

[See opening on first time](#)

Moveable:

Very difficult to show on a screenshot, but the user can move the nodes around the screen by pressing and dragging.



Activity: Info

This activity displays additional information about a node to the user.

Info about node:

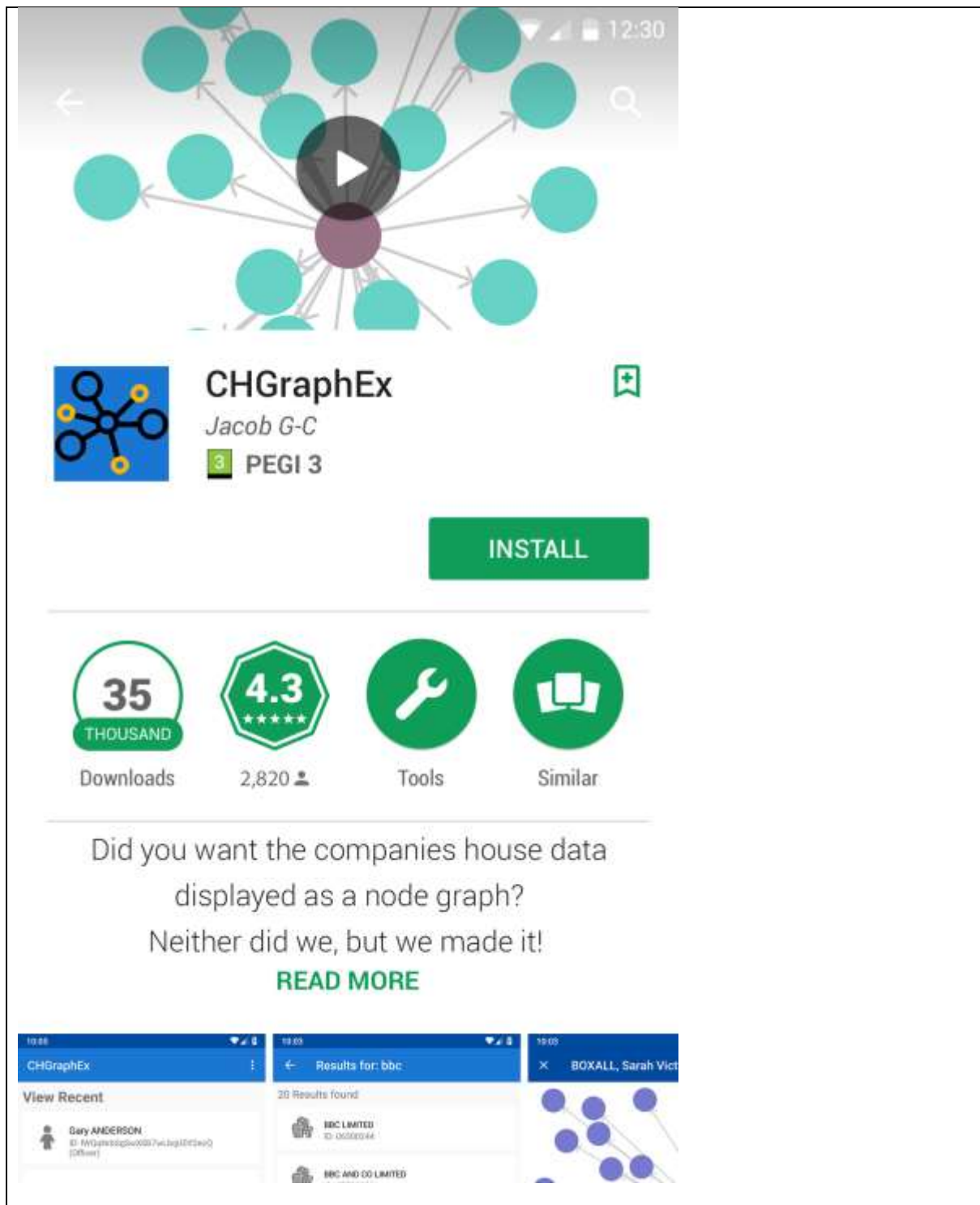
This can be performed on any node.

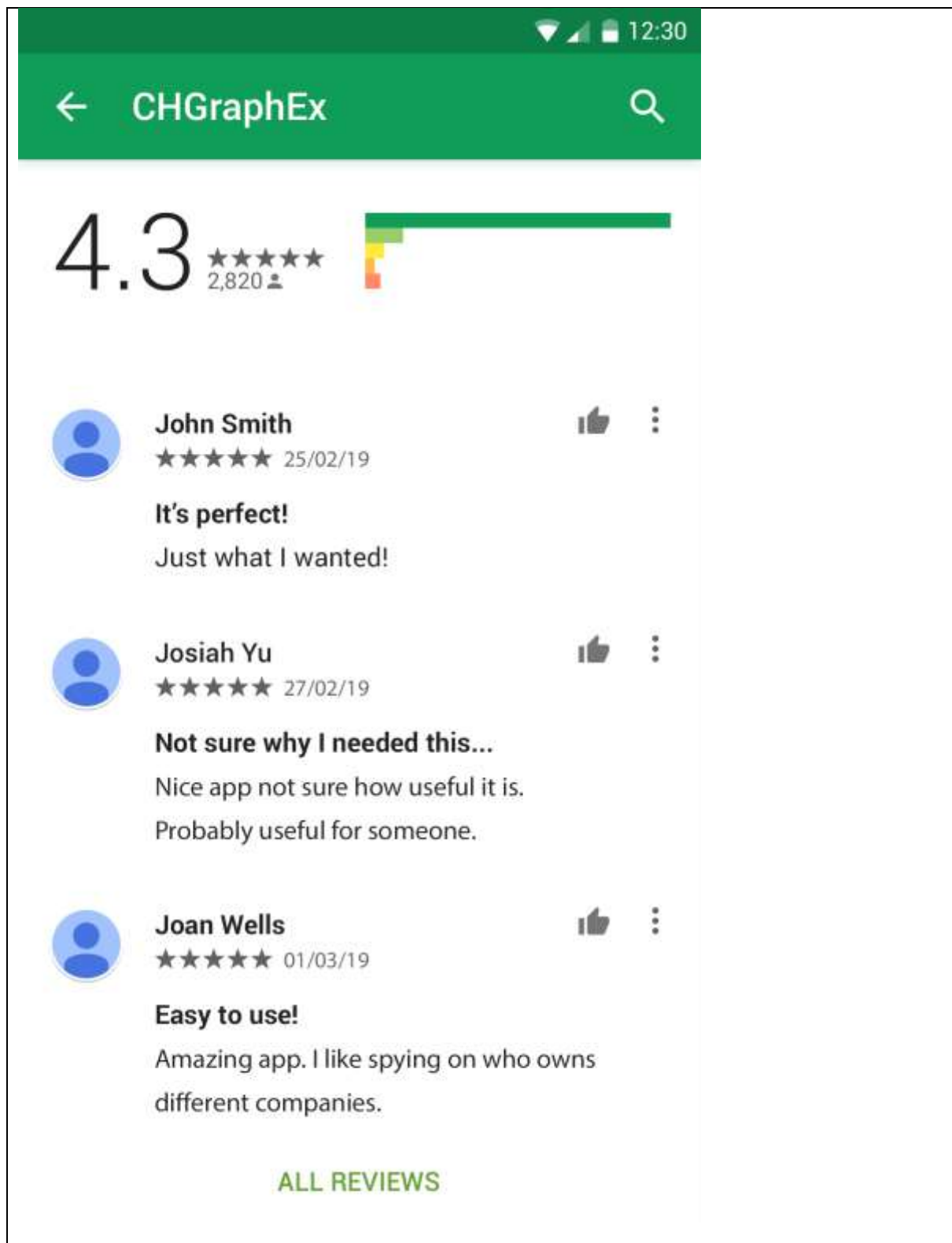
The list of connections (officers as this node is a company) are displayed as a scrollable list.



Play Store mock-up

This is a mock-up of how the application could be on the play store.





Tested devices

This is a list of all of the devices that the application was tested on and was found to have full functionality. I have even tested the application on a couple of older devices that I own.

My devices

Emulator (AVD)

- *Note all screenshots of the app come from this emulator.*

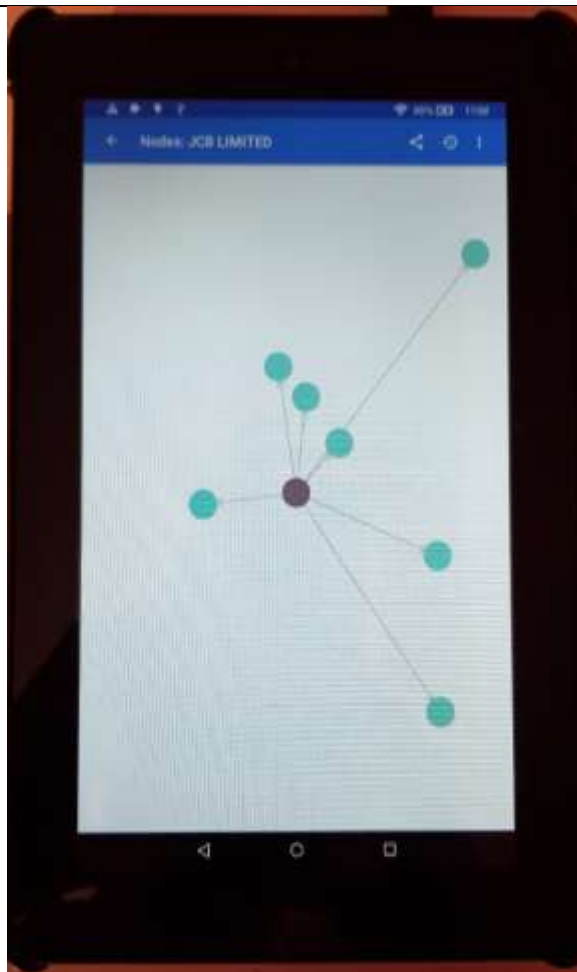
AVD

- Based on Pixel 2
- Android 9.0 x86 (API 28)
- 5.0-inch 1080x1920 pixels

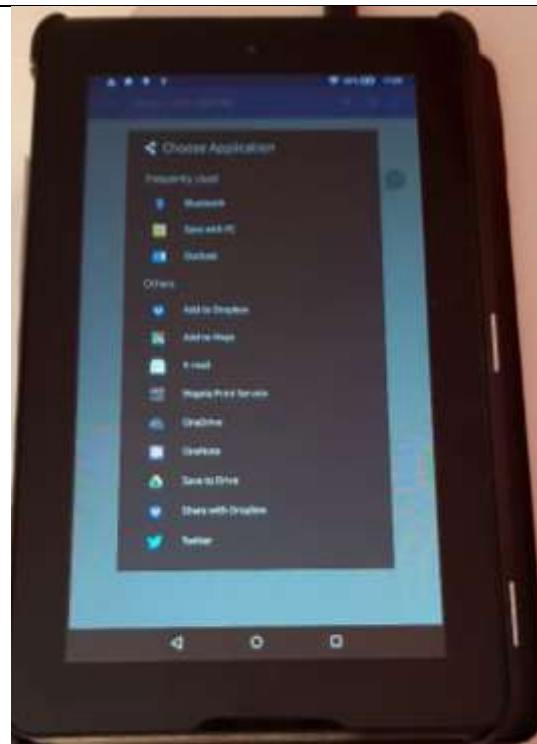
Amazon Fire 7 2015 model

Full specs - https://www.gsmarena.com/amazon_fire_7-7609.php

- Android 5.1.1 (API 22) (Fire OS 5.3.6.4)
- 7.0-inch 600x1024 pixels



The nodes working.

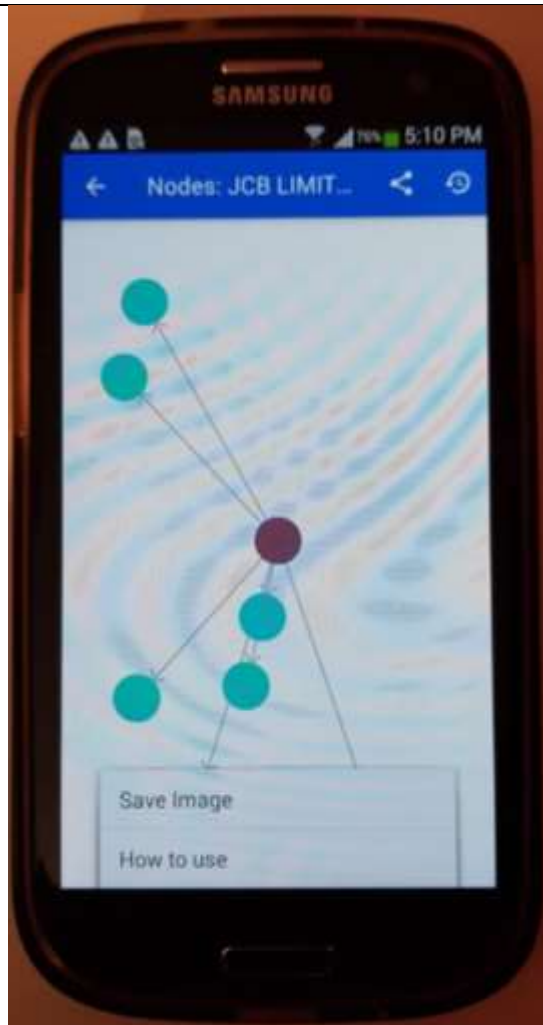


Sharing the nodes.

Samsung Galaxy S3

Full specs - https://www.gsmarena.com/samsung_i9300_galaxy_s_iii-4238.php

- Android 4.2 (API 18)
- 4.8-inch 720x1280 pixels



The menu does not appear in the action bar as the S3 has a menu button which rarely appear nowadays on android devices. The menu is still fully functional but appears at the bottom and is accessed by the physical menu button.

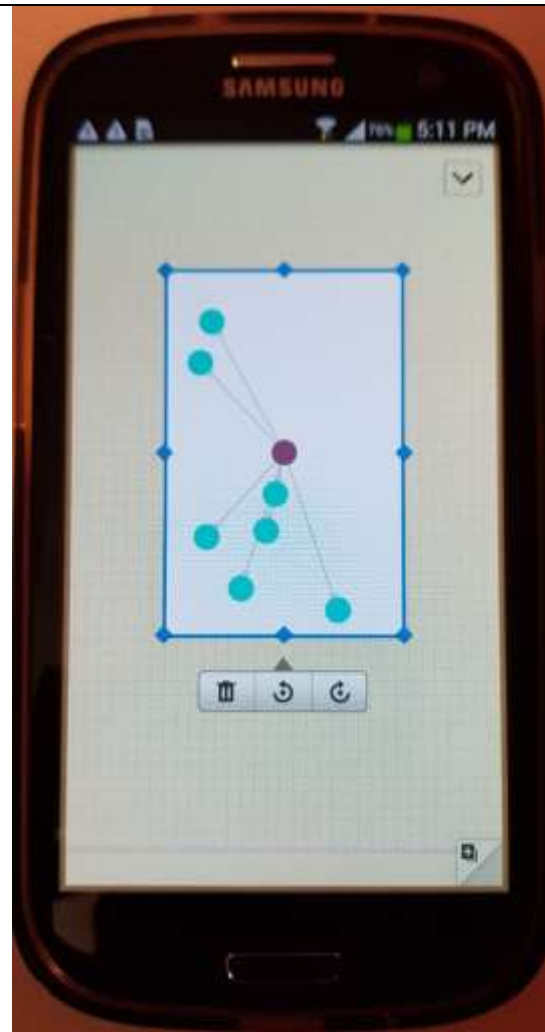
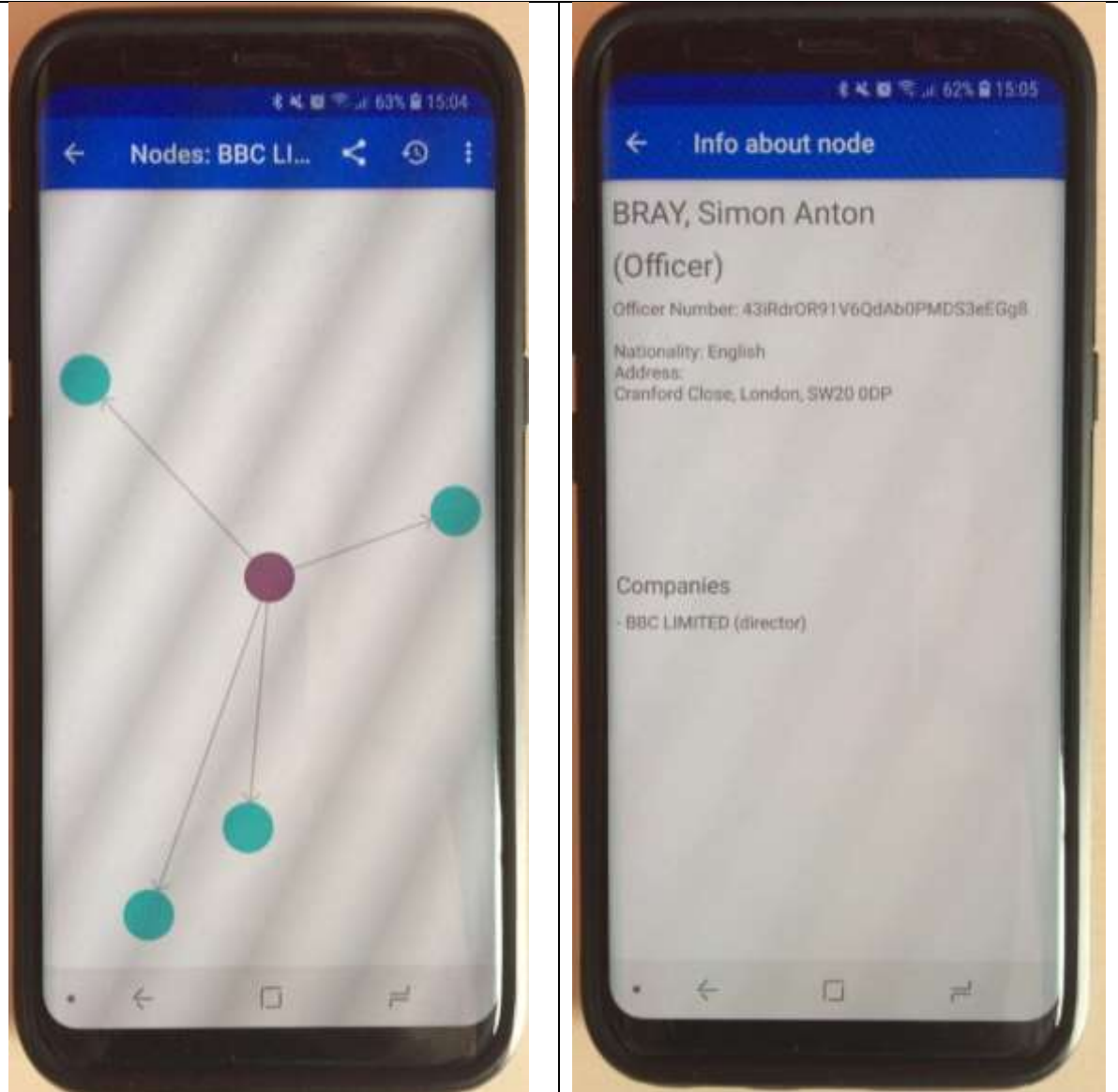


Image of the nodes being shared to once used app SMemo.

Samsung Galaxy S8

Full specs - https://www.gsmarena.com/samsung_galaxy_s8-8161.php

- Android 8.0.0 (API 26/27)
- 5.8-inch 1440x2960 pixels



Devices at UWE

2Q25

- 2Q25-06
(Others have worked as well – latest version was tested on this Mac).