Version 5.x
User Guide

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1. Background

Globally, organisations are increasingly competing on the basis of service, and "the Customer Experience", while simultaneously needing to continually reduce operational costs to remain commercially viable. In many organisations, people (staff) comprise the most-costly line-item. Accordingly, Customer Service is increasingly being automated through technology with many companies having a goal of "zero-touch"; that is, where there is no human interaction with the Customer at all.

Organisations therefore attempt to provide customer-information through the following media, in the order below:

- Organisational websites
- FAQs (Frequently Asked Questions)
- IVR (Interactive Voice Response) telephone systems

This approach is failing across the board with many larger organisations reporting telephone queues at their Contact Centres of an hour or more after customers have failed to find the information they need on the organisational website or in the FAQs listed, which can run to literally hundreds of pages.
Many organisational websites contain a "search" function, but most of these search functions fail to provide the information required in any useable or readily-understandable format. Most will direct customers to a web-page, or series of pages, which are difficult for many customers to correctly interpret.

2. The SimSage™ Approach

SimSage has taken a different approach to the majority of the market supplying AI bots and/or Search solutions; one that is proving highly-effective. SimSage provides an integrated AI bot and search solution that not only provides a verified answer to customer queries from a managed "knowledge base", but also provides additional relevant information from chosen, specific information repositories.

On deployment in any organisational environment, SimSage is specifically "tuned" to that industry's/organisation's environment to ensure that query results and highly-relevant, and accuracy/relevancy thresholds can be set by the organisation.

Where information is not immediately available in the knowledge-base, queries are directed to a subject-matter expert (this may be a Contact Centre operator, or another chosen representative), who can engage in a "chat" with the customer, and/or update the knowledge-base in real-time.

This means rapid expansion of organisational knowledge-bases, ensuring consistency, relevancy and timeliness of information provided to customers, and reducing risk from providing inaccurate information. It also means less information carried in the heads of employees, and faster on-boarding of new staff.

SimSage can be deployed on a Public Cloud, a Private Cloud, or on servers racked behind an organisation's firewall. It can operate with multiple knowledge-bases (useful when organisations have multiple services or they are based in multiple geographical locations with different operating parameters).

3. About this User Guide

The primary intention of this guide is to help System Administrators, Information Owners understand the key components that make up SimSage, and in doing so be armed with the information required to install the solution within your desired location.

The first section of the User Guide is intended to be informative and help you gain an understanding of:-

- The components of the SimSage
- How functions of the roles and the relationship they have with regards knowledgebase(s)

The second section is intended to help step you through the following initial set-up tasks:-

- Establish a knowledgebase
- Establish the users and roles required to administer and manage your knowledgebase(s)
- Understand how to test that your knowledgebase is working as expected.

The third section will then guide you through the process of setting up a bot interface for the SimSage platform. This includes:-

- Downloading the bot-interface and hosting it on a local web-server.
- Downloading the search-interface and host it on a local web-server.
- Querying the established knowledgebase(s) using these interfaces.

4. SimSage – An introduction to the components

SimSage is comprised of Customer facing elements and Back-Office Administration Functions to assist in managing the experience you provide your customers.

4.1. Components of SimSage

From a Customer Facing perspective you have the AI Bot and the Semantic Search Engine. These components can be presented separately, or combined together to provide a powerful service that provides the best of both worlds.

Component	Description
Search	● The Semantic Search Engine within SimSage utilises a natural language processing approach which is proprietary, and as such the core engine's ability to "understand" the context of the search query being asked is extremely effective
AI Bot	● SimSage ™ has developed a highly-effective AI bot that allows questions to be posed in "natural language" (i.e. Understanding that different people ask the same question in different ways. (E.g.: "Who is the Prime Minister of the United Kingdom?" vs. "Who is the PM of England?"). ● The AI Bot is not just a hard-coded Q&A programme as many other bots are that claim to use advanced AI technologies. SimSage ™ processes queries against a proprietary "SimSage Mind™", taking a different approach to mainstream technologies, breaking down sentences into their component linguistic parts and comparing them with information within the SimSage Mind™, and delivering a very high-success rate in terms of responses to queries posed.
Integrated Search and AI Bot	● SimSage ™ has integrated the AI bot and Search functions, such that very specific answers can be provided by the bot to queries posed, and supported by "other relevant information" that is exposed by SimSage ™ Search.

4.2. Functions and Roles

The Back-Office Administration functions provide your company with the ability to define specialised knowledgebases which contain known answers to commonly known (and machine learned) questions, combined with a fully indexed Semantic Search repository of any document store you have defined.

In addition to this the Managers of these knowledgebases are provided with the ability to manage not only the information stored but also the internal users who support your customers when new questions are asked that the AI Bot has not encountered previously.

Within SimSage there are several different kinds of roles for accessing the Back-Office Administrator functions. These roles are:

Role name	Description
Admin	This is the System Administrator for the SimSage environment that has been created. Sometimes referred to as the Super User. It can perform all functions.
Manager	The Manager is the Information Owner of an Organisation. They administer all the Knowledgebases created as well as the Operators that are responsible for assisting new customer queries.
Operator	This role can sign in-to the operator / help desk interface which answers customer queries. Operators can only belong to one Organisation.
Crawler	This role is a "System" role which is used to "crawl" websites and/or document stores and build the KnowledgeBase repository used by the SimSage Semantic Search Engine.

Another way to visualise what each role can do is the following table.

	Admin	Manager	Operator
Add Organisations	√	×	×
Add Knowledgebases	√	√	×
Add Managers	√	√	×
Add Operators	√	√	×
Set-up Crawlers	√	√	×

5. Establishing Knowledgebases and Roles

This next section of the User Guide is intended to help new Users with the tasks of establishing a Knowdgebase and all the dependencies for the first time.

As we have continued to learn through the ongoing development process of our Product we have become conscious that we are sometimes too close to what is required to set-up the system that we forget where we first started out.
Now we don't profess to have everything as well set-out as we would like today, and we know we may miss things as we continue to improve this document (including putting it online and having it available via our Semantic Search Engine !
So if you find something we could improve on – please let us know !

In this section we look at:-

- Establishing a knowledgebase
- Establishing the users required to manage your knowledgebase(s)
- Loading information into your knowledgebase, and
- Testing that knowledgebase is working as you expect.

Although already created, we will also include adding an Organisation as well from a completeness perspective.

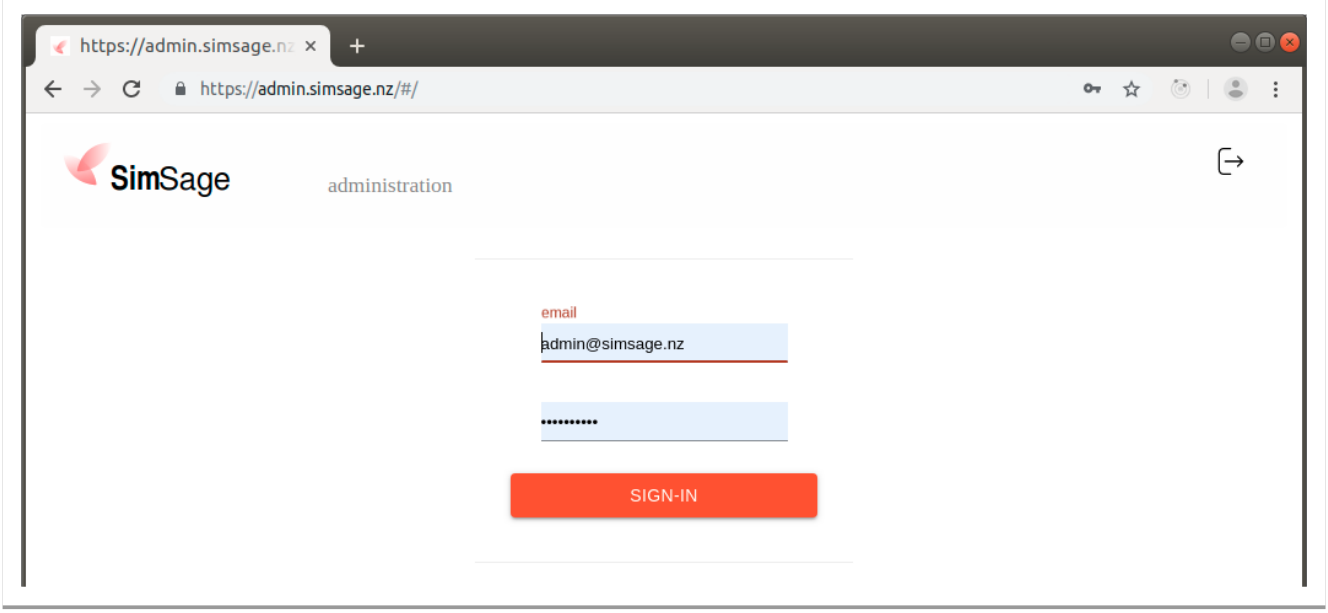
Note:-
It is important to note that as part of the initial create process for your environment we will have already established
1 Samples Organisation
1 Administrator
1 Knowledgebase, and
1 Manager and 1 Operator for the Knowledgebase created.

In addition to this we will have run the crawler function against your website and added that information into the Sample Knowledebase, including the addition of some sample questions into the AI Bot Mind.

The details of these will have been provided to the nominated contact along with the URL and Administrator credentials.

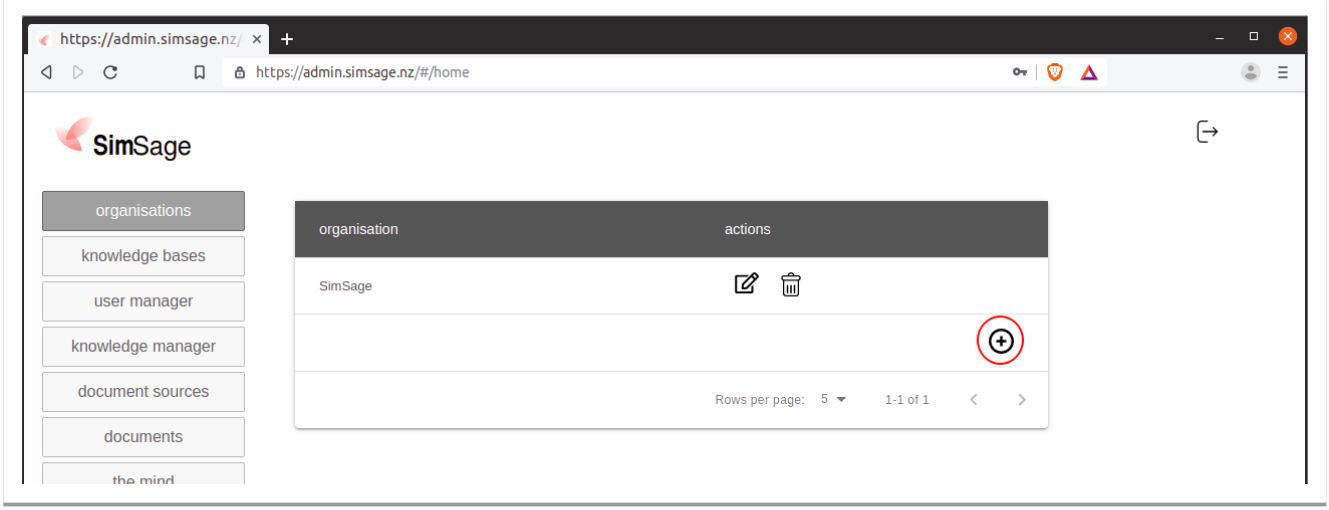
5.1. Establishing an Organisation

We first start by signing into SimSage.
With the URL and credentials provided you will be taken directly to a sign-in page like the one shown below.



Once signed-in we arrive at the Organisation's tab.
Knowledgebases belong within an Organisation. Although we have provided a Sample Organisation as part of the create process, we will take you through the create Organisation step for completeness.

Create a new organisation by clicking the
⊕ plus icon.



This will then present the following screen Pop.
At this point all you are required to do is name your organisation. Please note that you can always change the name of this at a later date, so you are not locked in to the initial name you give it.

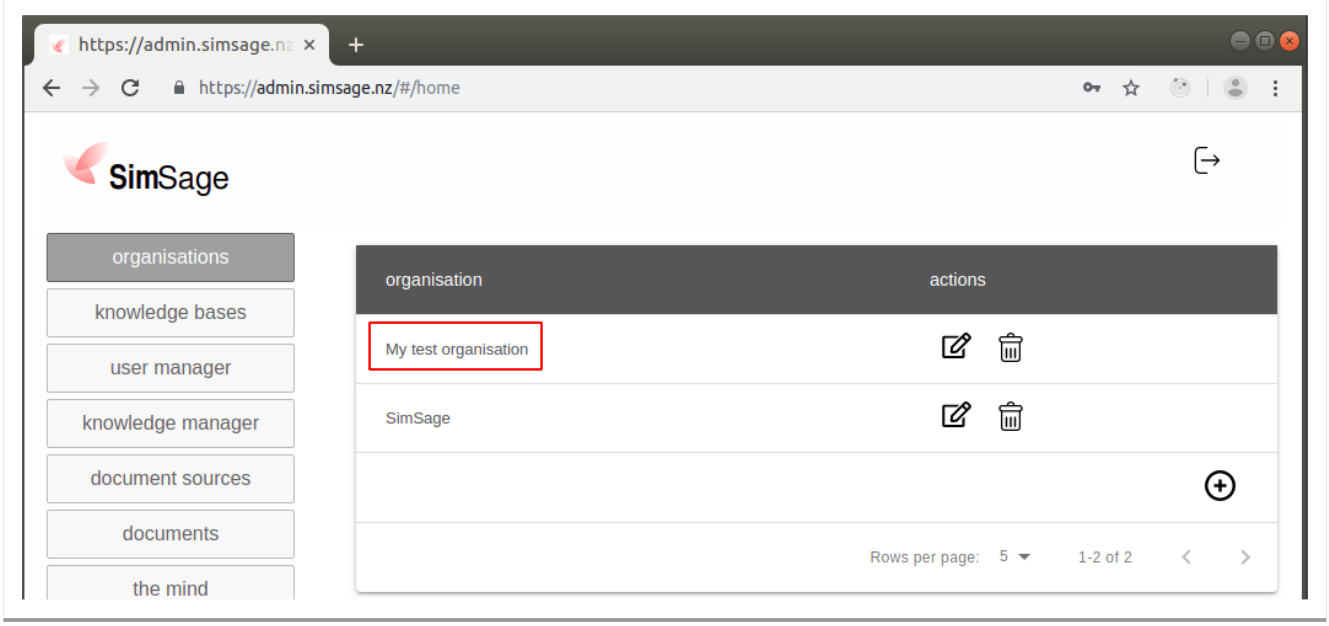
We have named the one above “My test organisation”.

If you are a Service Provider we suggest you create a unique organisation for each and every customer that you have.

An organisation can have as many knowledge bases as you/they want. For example, a Council may have separate knowledge bases for Building Consents, Dog Licensing, Parking and Parks & Recreation, etc.

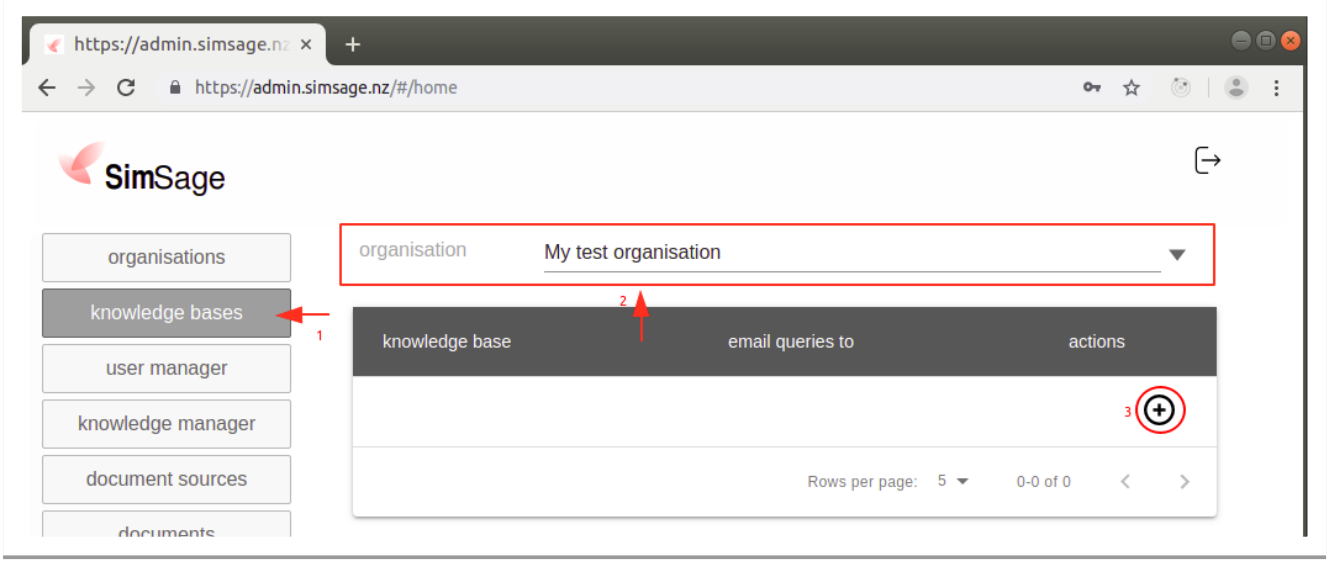
Once you have named the organisation - Click the SAVE Save button.

This will close the dialog box and show you the newly created organisation (all sorted alphabetically by name).



5.2. Establishing a knowledge base

Click on the knowledge bases knowledge bases button and select our newly created organisation



from the drop-down box at the top of the screen.

Click its ⊕ plus button to add a new knowledge base.

The *knowledge base name* should be descriptive if possible (e.g. web site, or tourism). We have named our knowledge base "web site" in this example. The *email questions to* field takes a single

email address. This email address will be mailed questions that fall through the gaps as a last resort where there is no available answer in the knowledge base and no “operator” available.

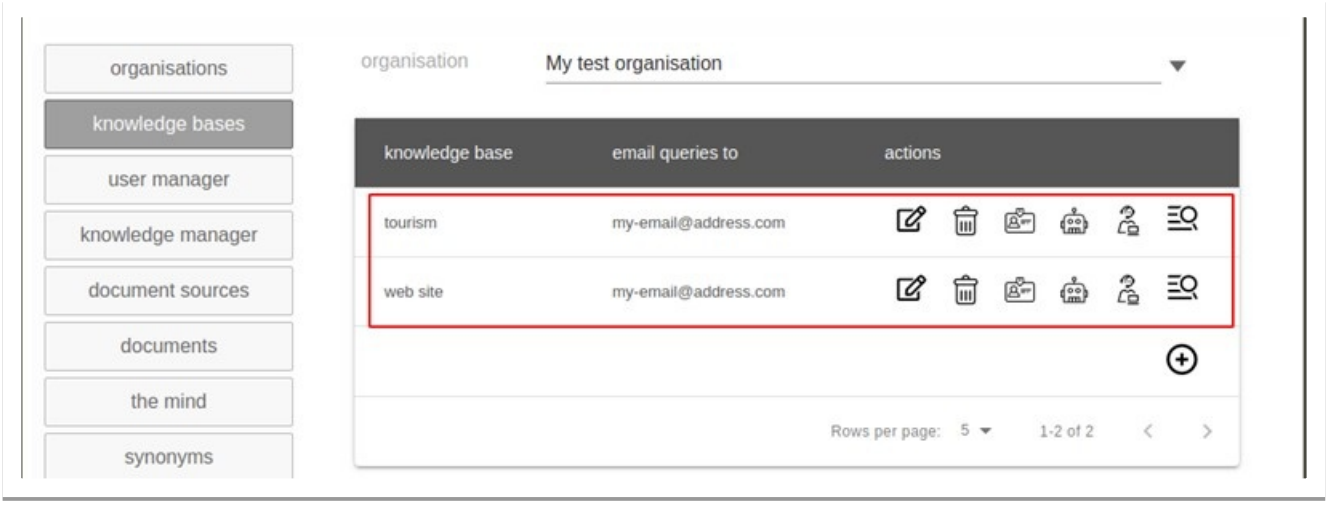
Click the SAVE save button to close this dialog box.

SimSage’s bots will first look in their knowledge bases for an answer. If no answer can be found, SimSage will then perform a semantic search for any information in file-shares or websites. If that too fails, SimSage will ask the user for their email address. SimSage will then redirect any queries the user might have to the email address specified here.

We will add one more knowledge base called “tourism”.

Once you have completed that - Click the SAVE save button to close this dialog box.

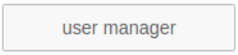
The knowledge-bases for “My test organisation” should now look something like this.


organisations
knowledge bases
user manager
knowledge manager
document sources
documents
the mind
synonyms
organisation
My test organisation
knowledge base
email queries to
actions
tourism
my-email@address.com
web site
my-email@address.com
Rows per page: 5
1-2 of 2

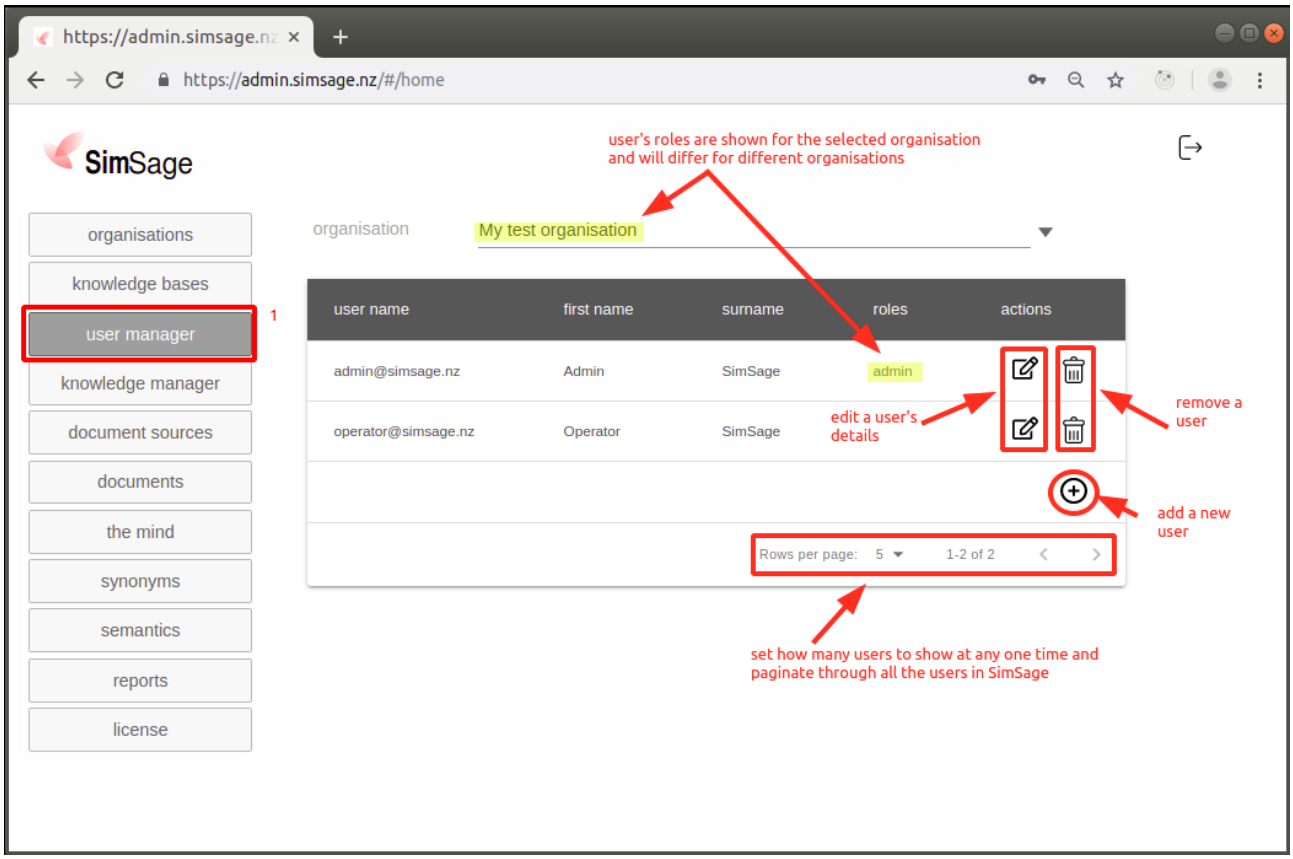
5.3. Establishing Users

SimSage provides several different kinds of roles for accessing the platform. These roles are:

Role name	Description
Admin	This is the System Administrator for the SimSage environment that has been created.
Manager	The Manager is the Information Owner of an Organisation. They administer all the Knowledgebases created as well as the Operators that are responsible for assisting new customer queries.
Operator	This role can sign in-to the operator / help desk interface which answers customer queries. Operators can only belong to one Organisation.

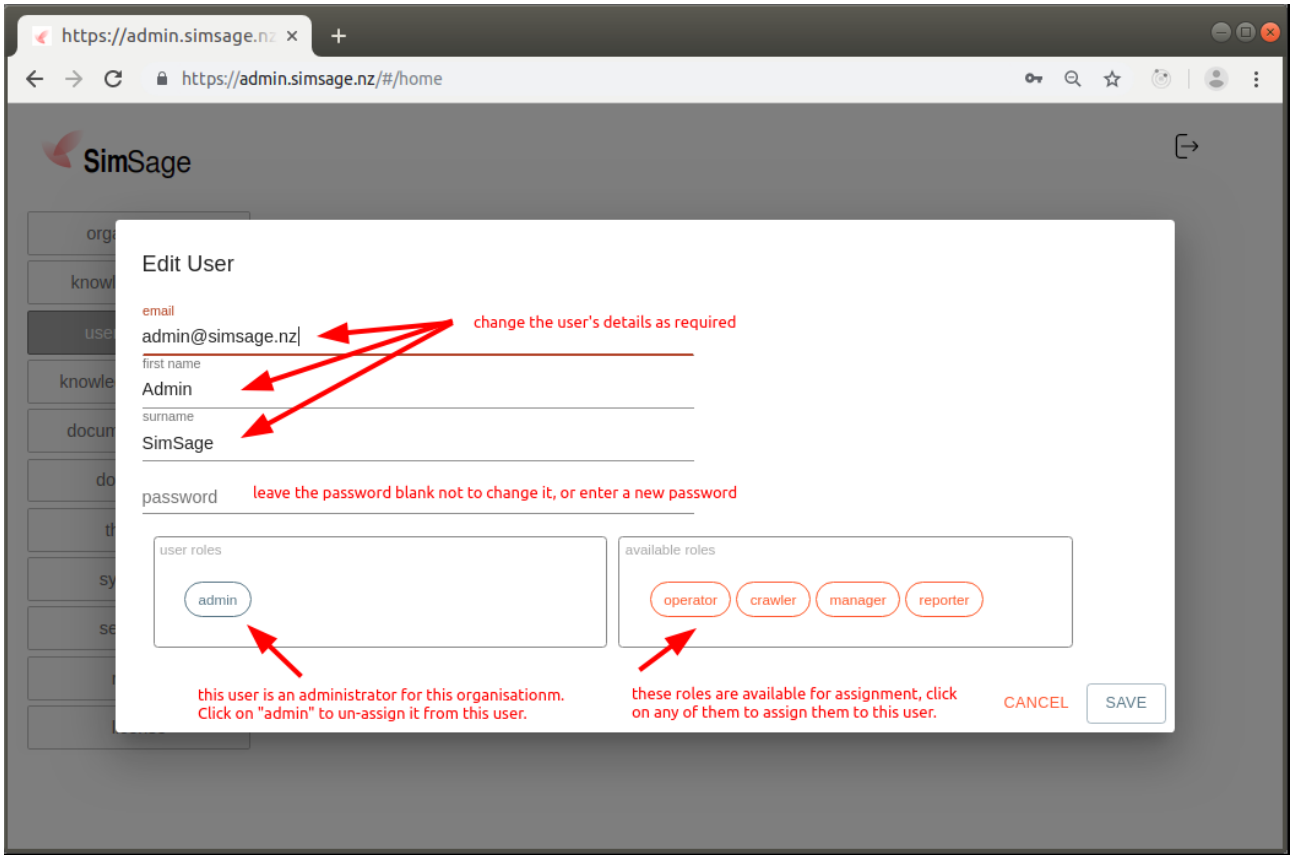
Click on 

the user manager button in the administrative interface.
This interface will always show all users ordered alphabetically with their roles for the selected organisation only. Change organisation to see what roles a user has in that organisation.



The screenshot above shows that admin@simsage.nz has the "admin" role in My test organisation. It also shows another user operator@simsage.nz that holds no roles in this organisation.

We will be adding a Manager and Operator for each Organisation and knowledgebase.



This screenshot shows the admin@simsage.nz being edited.

To Add a person as a Manager.
Using the above screen as a reference

Click the ⊕ icon to add new users.

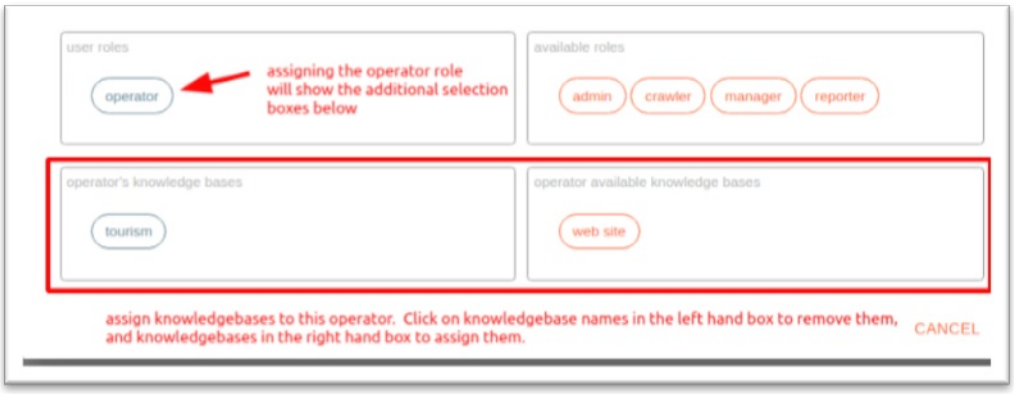
Create an email address This is what the Manager will log on with
Give the user a first name and surname
Assign a password
Roles *The available roles are to the right and the assigned roles to the left at the bottom of the dialog. Clicking any of these "button" roles moves them to the desired assigned / not assigned positions.*
Assign the Manager role for this person.
Select Save and you are all Done.

To Add a person as an Operator

Same as the Manager above – but simply select the operator role.

THEN – you need to assign it to a knowledge base

The operator role is a very special role. Selecting it brings up available knowledge bases as shown below.



Note: *You cannot save an operator role without it having been assigned a knowledge base first. This connects an operator to knowledge bases they can help with once signed in through the helpdesk interface.*

From the list of knowledgebases available – select the one(s) you want this Operator to be available for.

PS. If you also want the Manager to have Operator privileges as well

Edit the Manager. Add the Operator Role, Then Add the Knowledgebase you wish to add.
Save – and done.

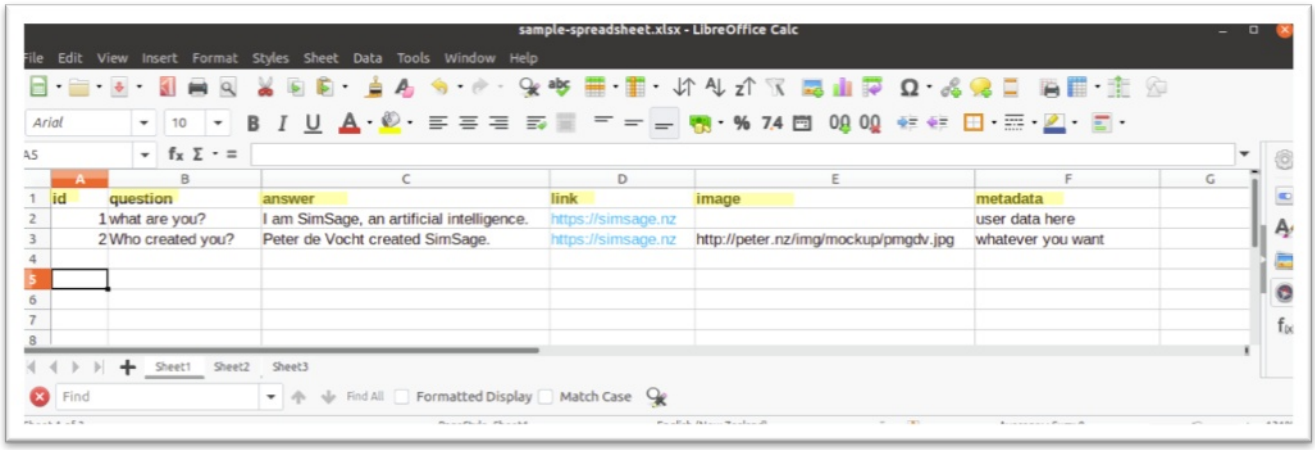
5.4. Populating your Knowledge base

As mentioned earlier – the Knowledgebase will already have sample data added to it.
So you are not starting from scratch.

You can download a sample spreadsheet from our website.
https://simsage.nz/assets/sample-spreadsheet.xlsx

Note: *Spreadsheets must be populated in a precise manner or they will not work properly.*
They have an exact header which must be copied.
They have a fixed number of columns which must not be changed.

This spreadsheet has two sheets. The name of each sheet is not important.
The first sheet is a set of Questions and Answers shown below.



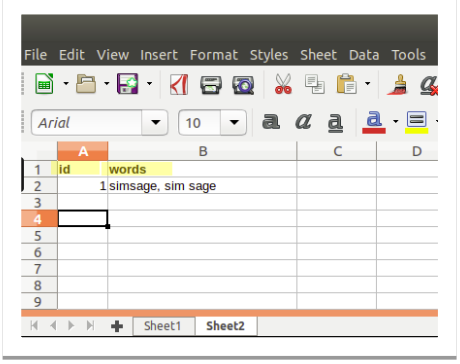
All these items need to have unique ids.
The ids are text based and don't have to be numbers as shown.
The ids are the primary keys for this data,

Note: *if you upload items and use existing ids – the data stored in the knowledgebase will be changed.*
Golden rule – keep a master spreadsheet so you know what the last id you assigned is.

Spreadsheet format for Question and Answers

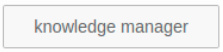
Column name	Description
id	A unique id for a question / answer pair.
question	An expression that defines one or more related questions that relate to an answer.
answer	The answer to the question. A literal piece of text that is used to respond with when the question matches.
link	An optional link location referencing something external related to the question / answer pair. Links are optional and can be left blank.
metadata	Optional metadata returned for your convenience. The column must exist; however, its contents is optional.

The second sheet shown below contains synonyms.

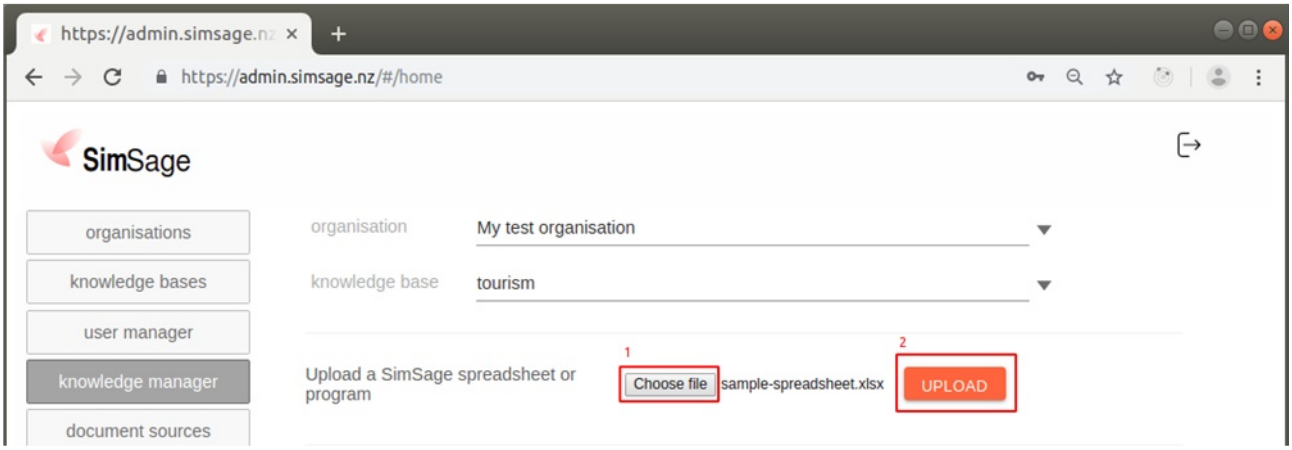


Spreadsheet format for Synonyms

Column name	Description
id	A unique id for this synonym set.
words	A comma separated list of words (must have at least two words) that form the synonyms.

Prepare a spreadsheet like the one shown and proceed to upload it. Select the 

knowledge manager button and select the tourism knowledge base from the drop-down box. You should see the following screen.

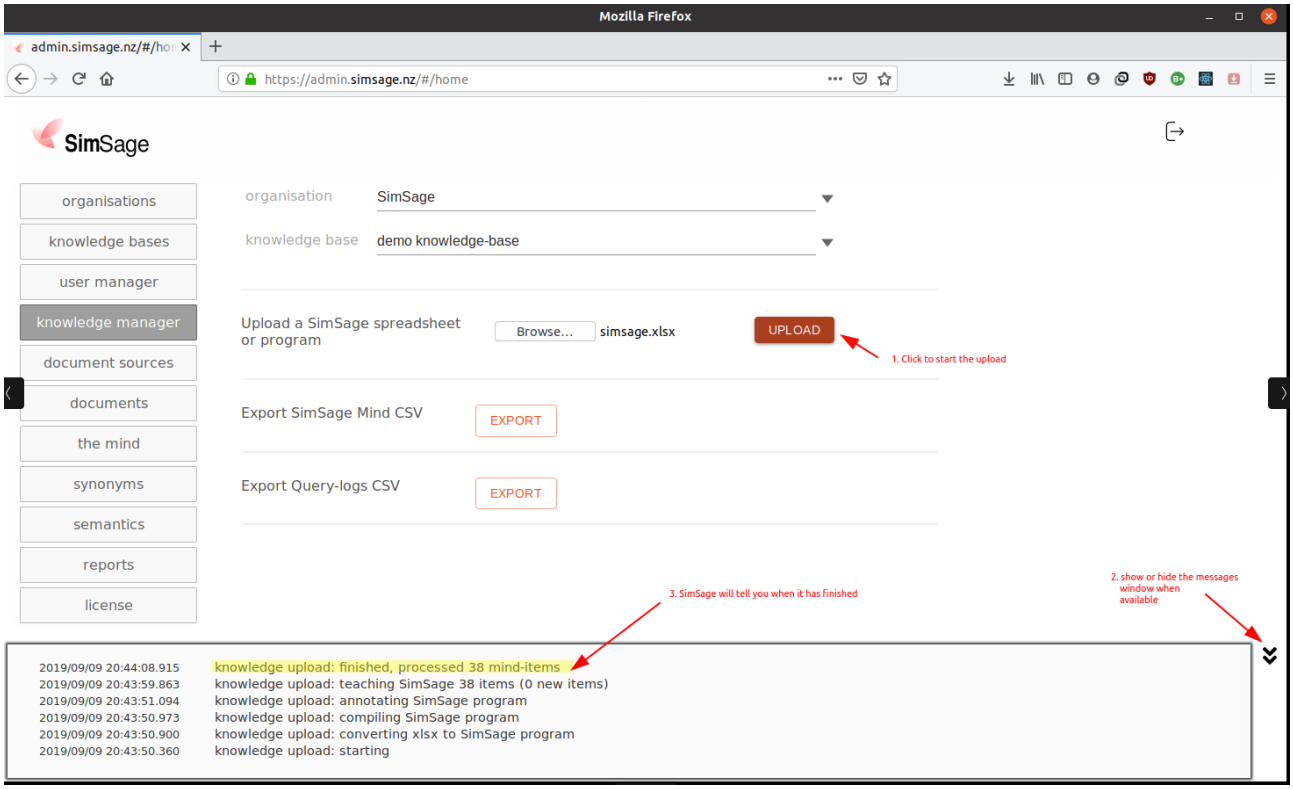


Click “upload file” of the “Upload SimSage spreadsheet or program”. A file dialog will pop-up. Select the spreadsheet you have created.

Once you have selected the spreadsheet, the

upload button will turn a reddish orange. Click this button next.

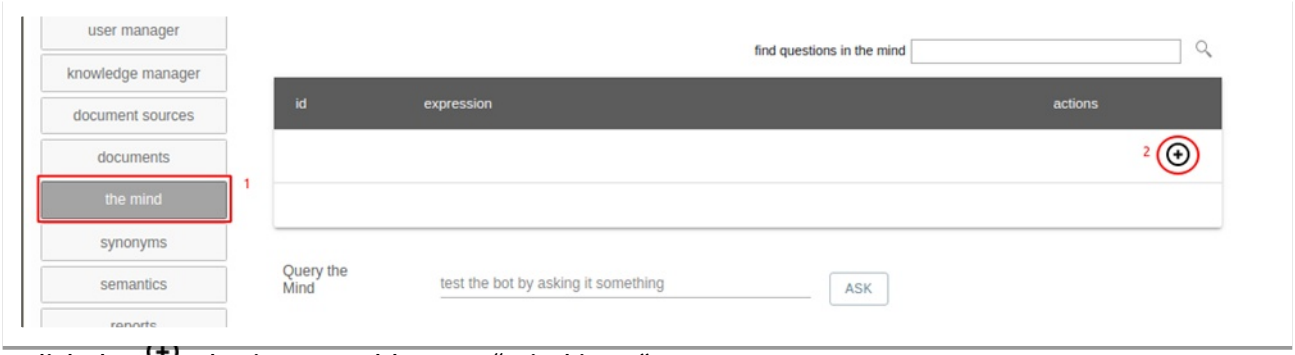
This starts an asynchronous teaching process on the server. A yellow band at the bottom of the screen will keep you notified of its progress.



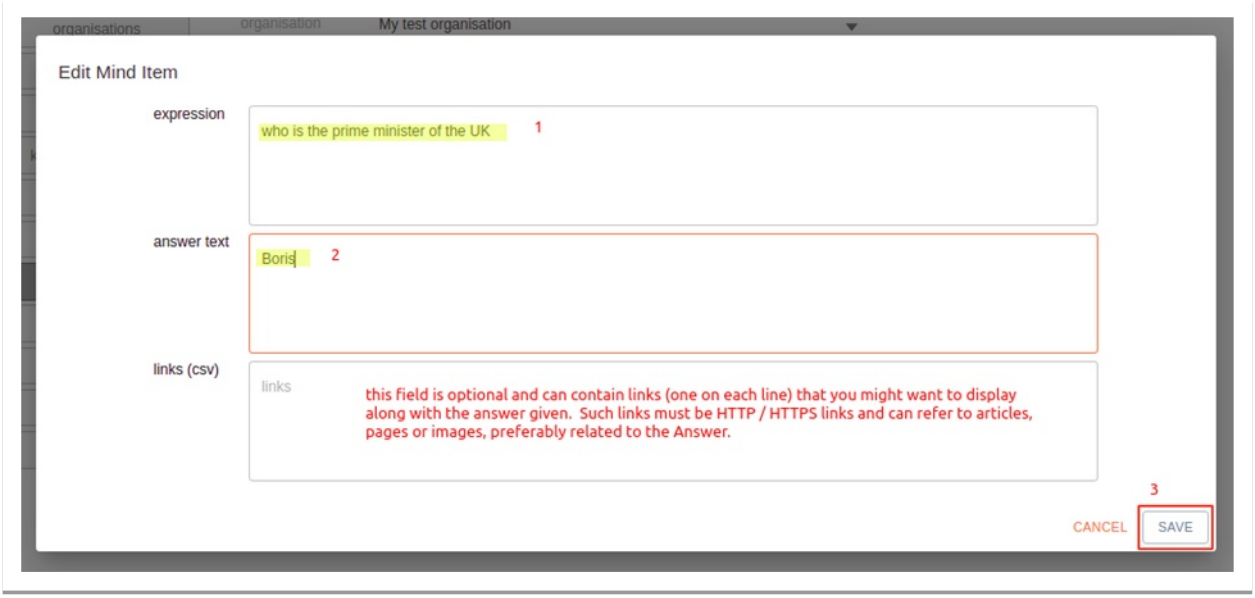
Manually teaching SimSage

Click

the mind button. This takes us to a section of the administrative interface where we can query the mind and teach new mind items as well as test queries.



Click the ⊕ plus icon to add a new “mind item”.



The expression has a format the same as the spreadsheet. It can be as simple as a single question (we are teaching it "who is the prime minister of the UK").

The *answer text* of the dialog box is what will be shown as the answer if this question is asked. Our simple answer is "Boris" (correct at the time of writing this document !).
Note: *The answer can contain multi-line answers and carriage return characters. However, keep in mind that most "bot interfaces" don't have a whole lot of room to display a lot of text.*

Click the SAVE save button to close this dialog and teach SimSage this new fact. Once SimSage has finished processing this item the screen will return as it was previously.

Note:- We know that the answer above will also relate to the following questions automatically – such is the natural language processing of the SimSage MIND.

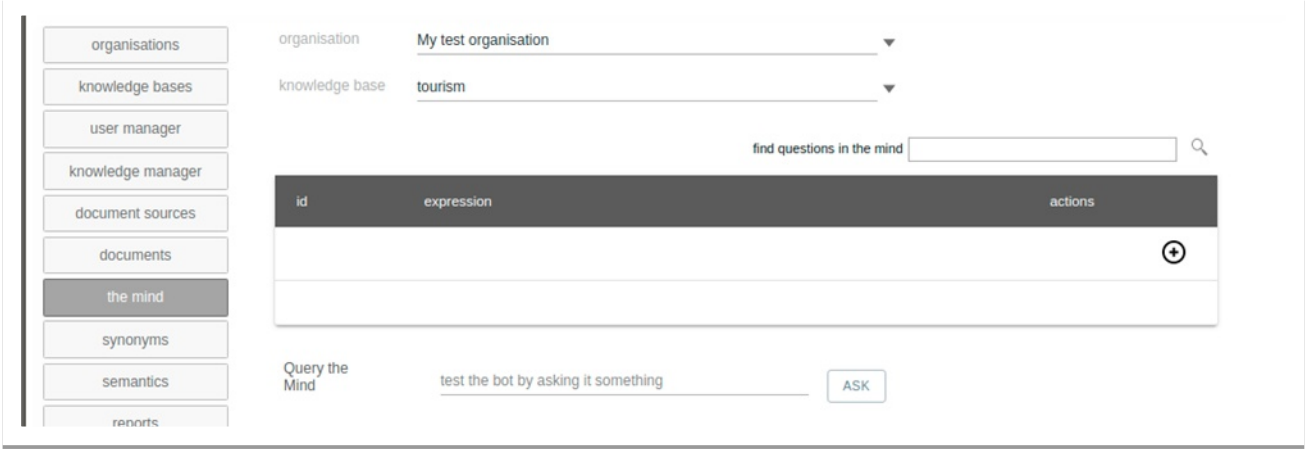
who is the pm of the UK
who is the pm of Great Britain
who is the pm of Britain
who is the pm of England
who is the prime minister of Great Britain
who is the prime minister of Britain
who is the prime minister of England

you'll see shortly where you can test the MIND for yourself.

5.5. Testing your Knowledge base

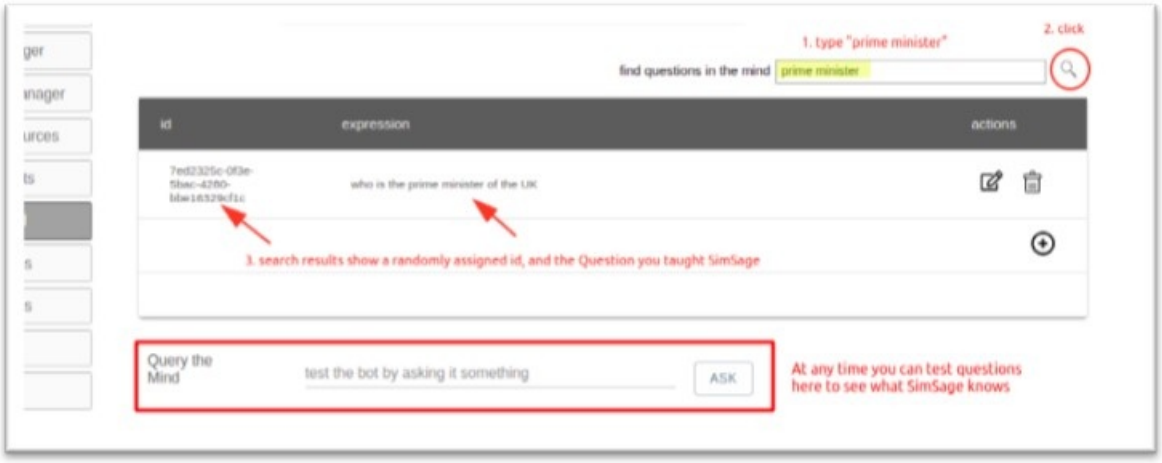
When you have loaded questions and answers into SimSage you can then check the system via the Admin interface you have been using.

Select the mind option



SimSage can be taught thousands of items, showing them, all makes little sense. You can however search for items taught by using the *find questions in the mind* filter box.

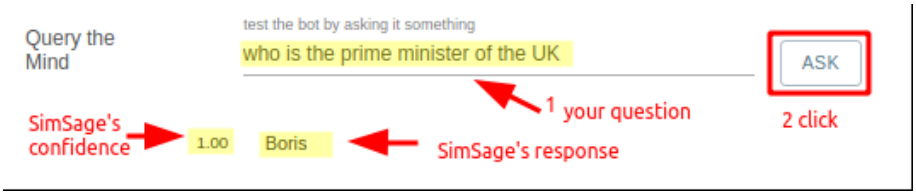
Type “prime minister” in this box and press enter (or click the magnification glass).



This shows the item we just taught SimSage. The id of this item is a randomly generated GUID. We can remove it by clicking the trash icon or edit and view / change it by clicking the pencil item.

Testing SimSage Question and Answer

Let's test SimSage. Type "who is the prime minister of the UK" in the "Query the Mind" text box and click the ASK ask button.



The answer shown is "Boris". The 1.00 is the confidence / probability SimSage has of this answer being correct. A value of 1.00 means 100%. A value of 0.91 means 91%.

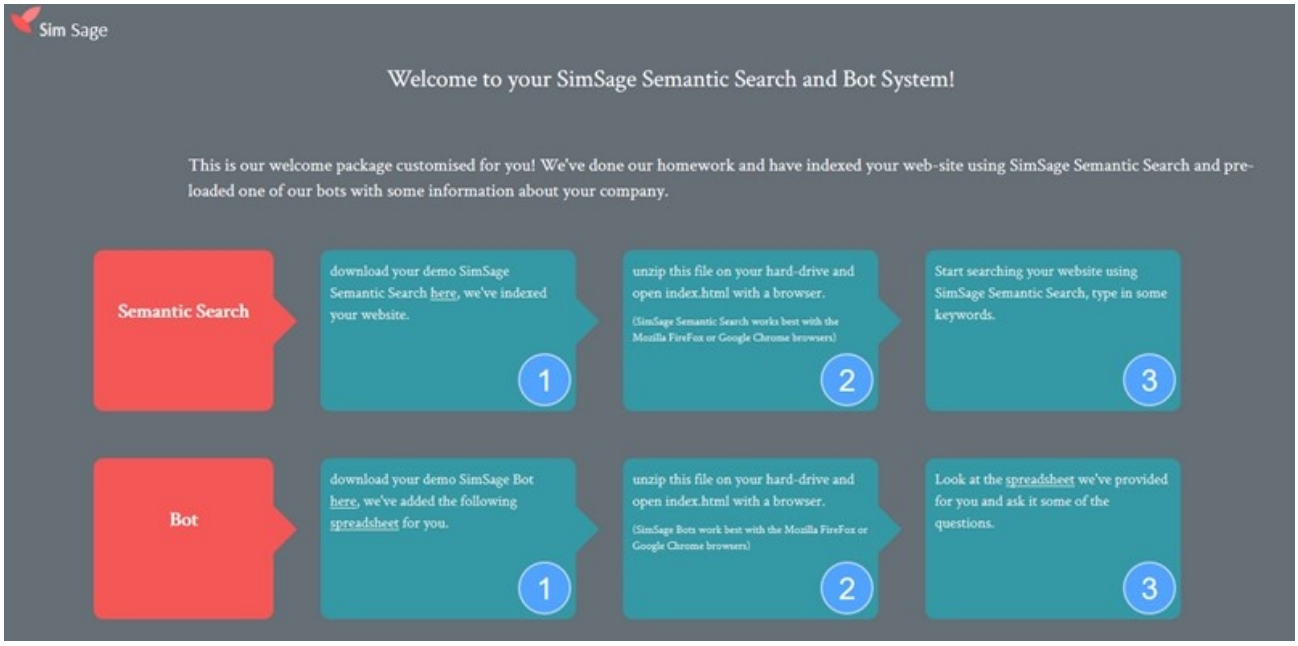
Play around and try a few variations. See what works and what doesn't. We know that the following combinations will work for the item taught above.

who is the pm of the UK
who is the pm of Great Britain
who is the pm of Britain
who is the pm of England
who is the prime minister of Great Britain
who is the prime minister of Britain
who is the prime minister of England

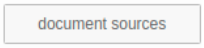
6. Setting up the Semantic Search and AI Bot Interfaces

As part of the initial set-up your nominated contact would have received a website link of our "Welcome Pack" which helps guide you through part of the next two sections of this guide.

This welcome pack takes you through the process of downloading the Semantic Search and Bot interfaces.
Coupled with this is that we have already indexed your website and prepopulated the Mind with some questions as a starter.



6.1. Semantic Search

SimSage semantic search works across file-shares and websites. Click the 

to see what is already setup for you. Within this section you can set up / modify a crawler.
A SimSage crawler is part of the platform that can integrate with an external information silo, such as a Microsoft file-share or a website.

SimSage provides a powerful semantic-search engine as an additional feature for accessing information.

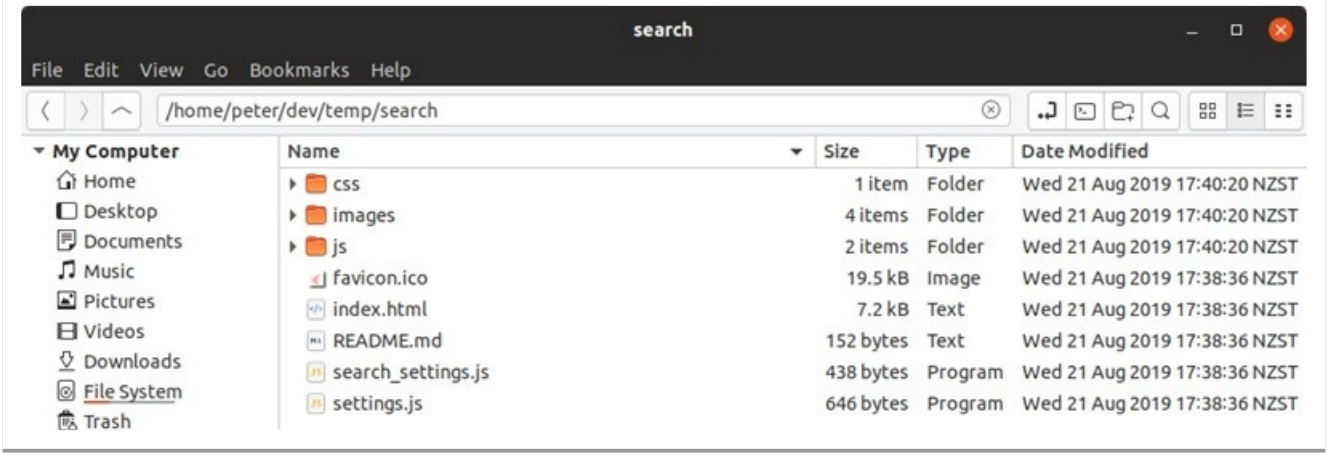
Note: *Details around setup of the Crawler are found in section 6.3 Document Sources.*

We now have a SimSage knowledge base loaded with a few questions and semantic search information preloaded.
The admin interface is part of the SimSage platform. However, Bot and Search interfaces are for you to set up.
By following the steps in the Welcome Pack Website you will be able to download the Search and Bot Interfaces.

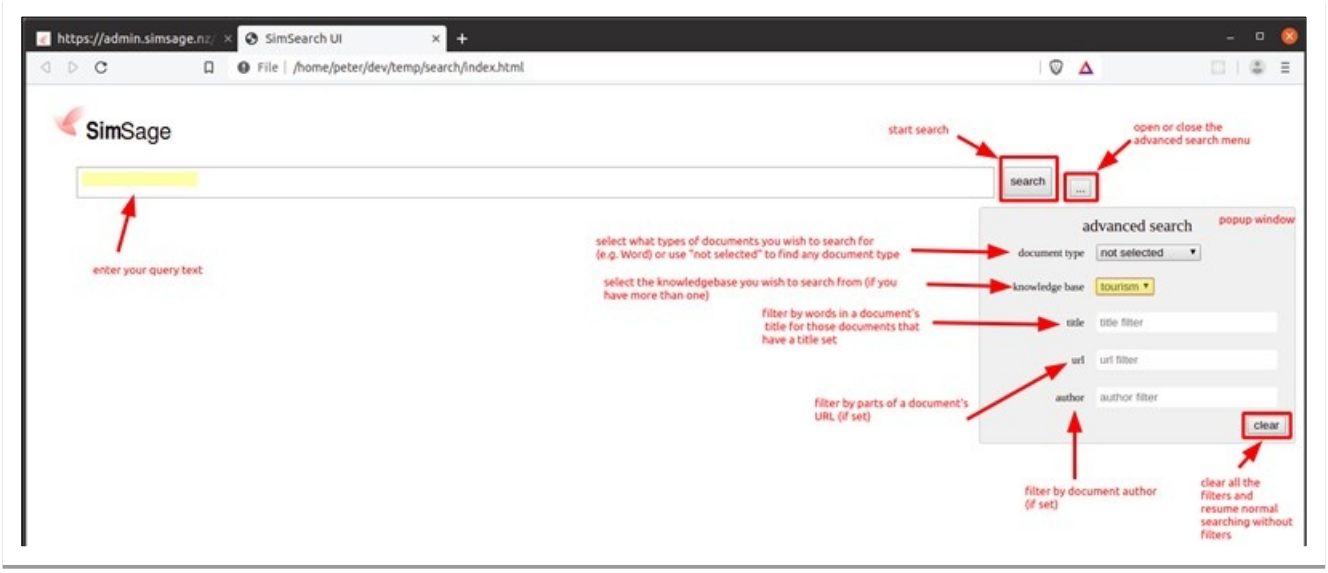
You can also find the source code for these items on our GitHub page at
https://github.com/simsage-nz

Click the download SimSage Semantic Search as shown in Step 1 above.
This will download the HTML to your browser. The experience of this download varies between browsers. Chrome shows the downloaded file at the bottom of the page like so.

Unzip the file and inspect its contents.



Double click the index.html file to open it in your favourite browser and query SimSage. Note that you will need an actual web-server (e.g. node's http-server) to use the search interface.

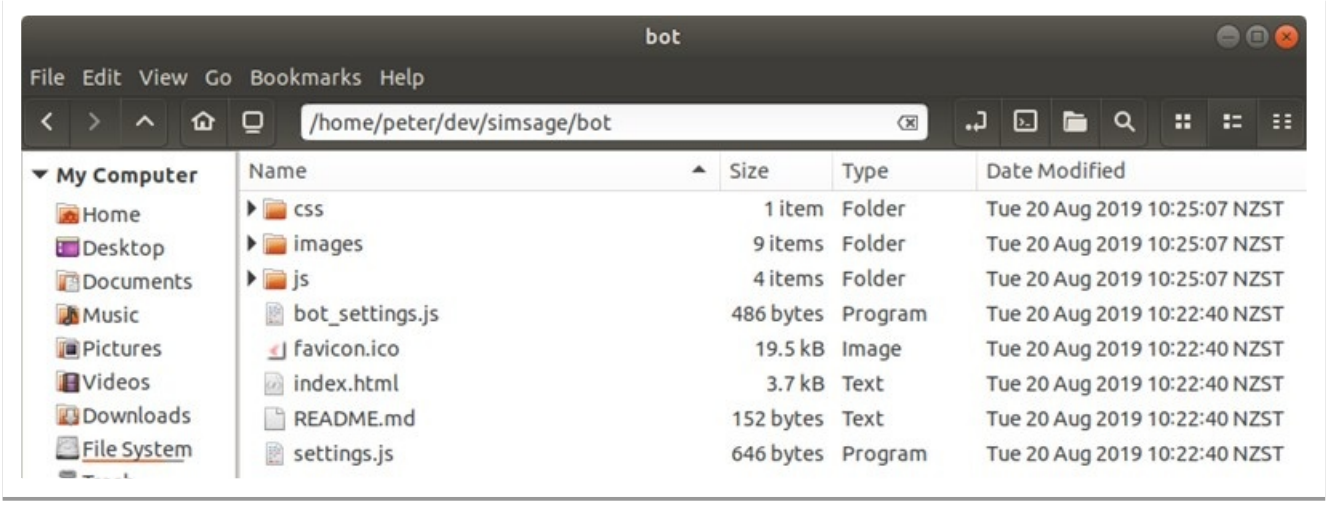


6.2. Bot interface

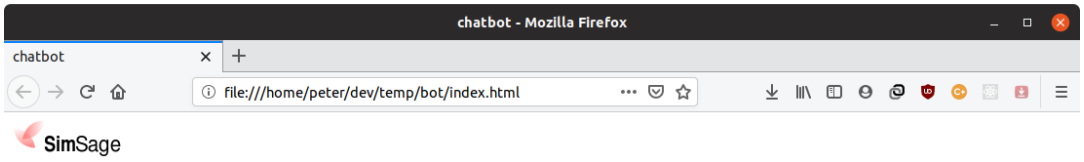
By following the steps in the Welcome Pack Website you will be able to download the Search and Bot Interfaces.

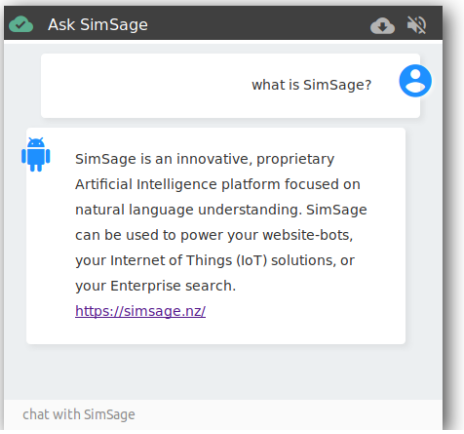
Click the download SimSage Bot as shown in Step 1 above.
This will download the HTML to your browser. The experience of this download varies between browsers. Chrome shows the downloaded file at the bottom of the page like so.

Unzip the file and inspect its contents.



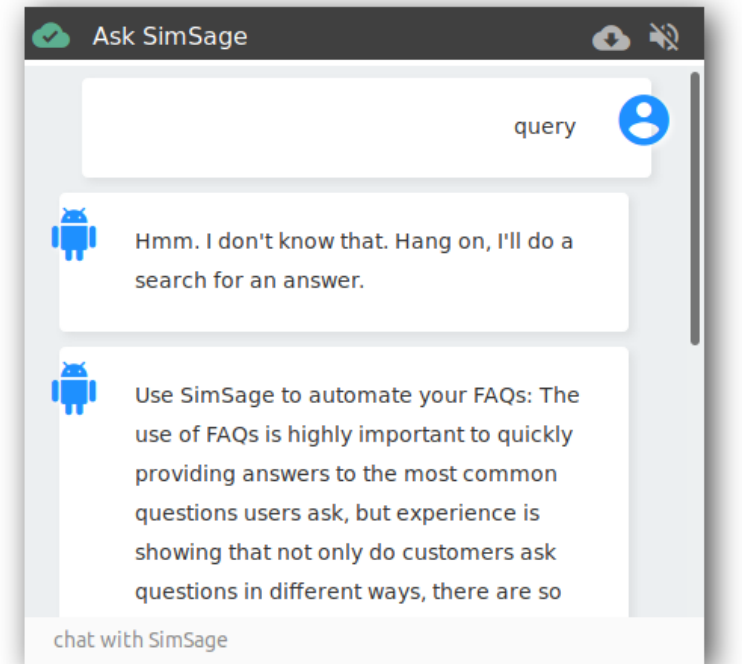
Double click the index.html file to open it in your favourite browser and query SimSage.





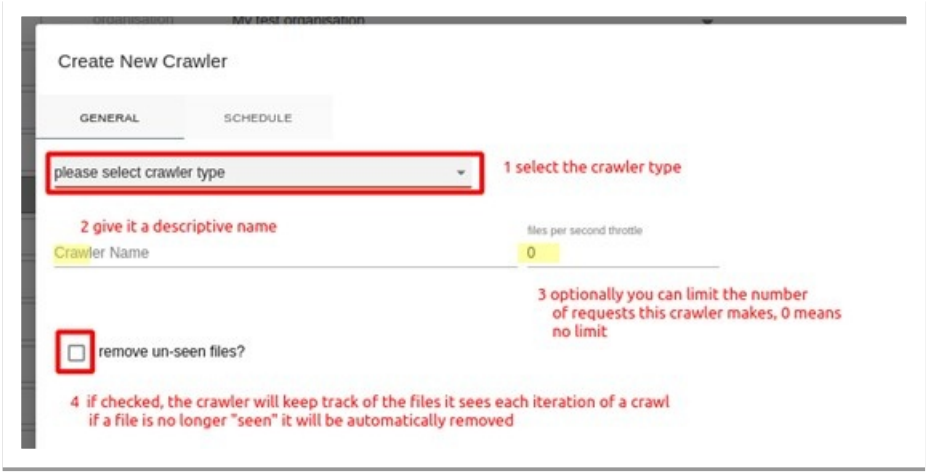
If you ask the Bot a question that it does not know it will execute the Semantic Search Engine to see if it finds an answer in the knowledgebase.

See the example below where “query” was the question asked.



6.3. Document Sources

With Document Sources click the ⊕ plus icon to add a new crawler for the *tourism* knowledge base of *My test organisation*.



Start by selecting the crawler type.
Click the “please select crawler type” drop down box and select “web crawler”.
The current release has two options - “file crawler” or “web crawler”.
Note: *Please contact SimSage if you are interested in other integration points for your customers.*

Once selected a a third tab is added to this dialog for specific details regarding the selected crawler.

The remove unseen files checkbox is for removing content that is no longer present. This facilitates a comparison of files previously seen by SimSage but no longer visible in subsequent crawls through data. Leave this box unchecked.

Click the web-crawler tab to proceed.

The only mandatory field here is the “http/s base name list”. We can supply a series of http / https addresses to crawl, each one on a new line.

File extensions to include / exclude:-

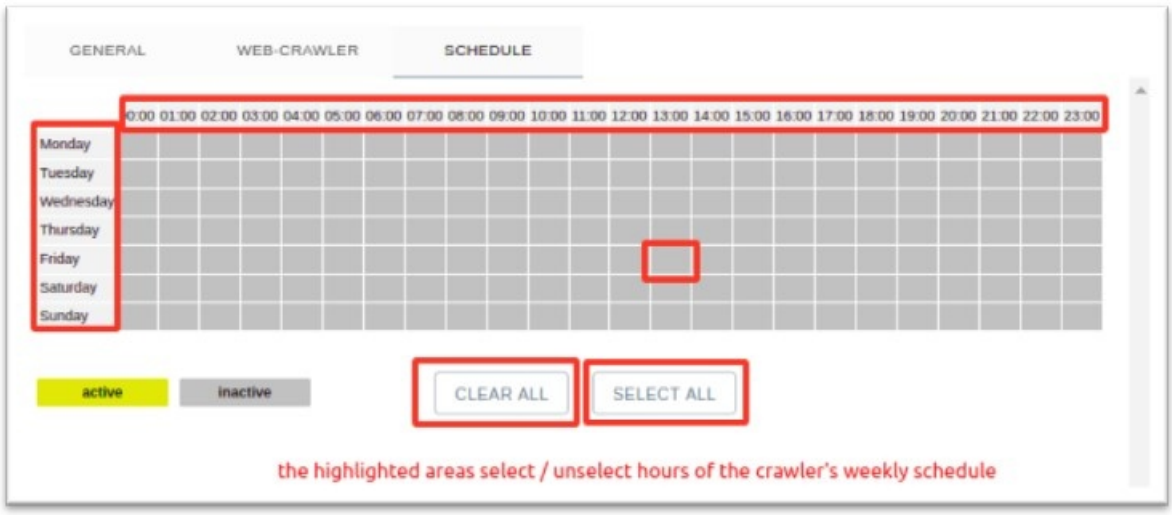
- are comma separated file extensions (minus the “.”)
- We recommend excluding spreadsheets as they rarely hold any meaningful data for querying.

CSS/html root fragments to include / exclude:-

- are for filtering parts of the web pages visited.
- Most web pages include menus and footers.
- We do not want to crawl this information as it muddles / muddies search indexes. Investigate the websites you are crawling and see if you can figure out what elements you can do without or want to include only.
- Again, supply values for either include or exclude but not both.

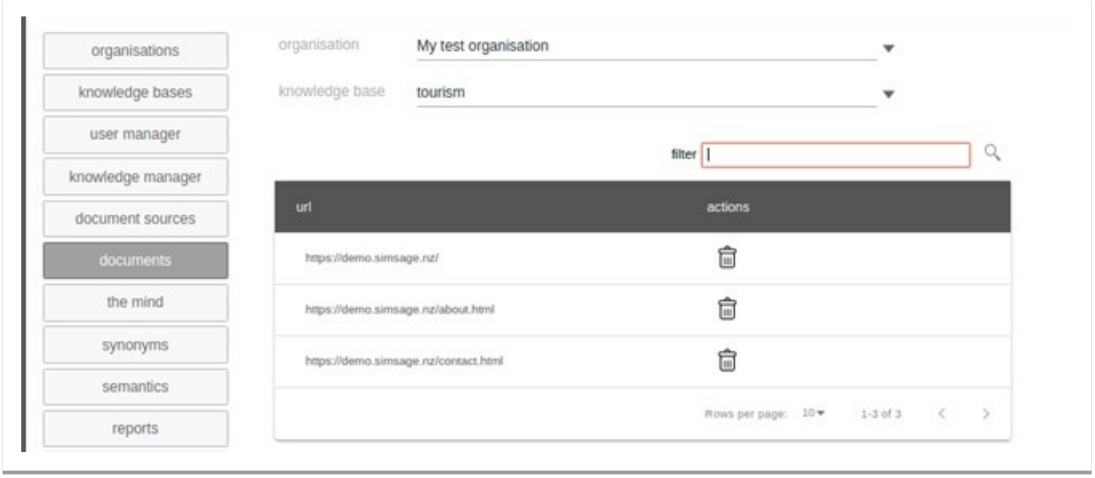
Schedule tab.

- The schedule tab pertains to the weekly crawling schedule.
- Here you can limit the times when the crawler looks at external sources.
- It could be that your customers have times when they don't want you looking at their data (backup regimes etc.)



Click the SAVE save button to start your crawler.

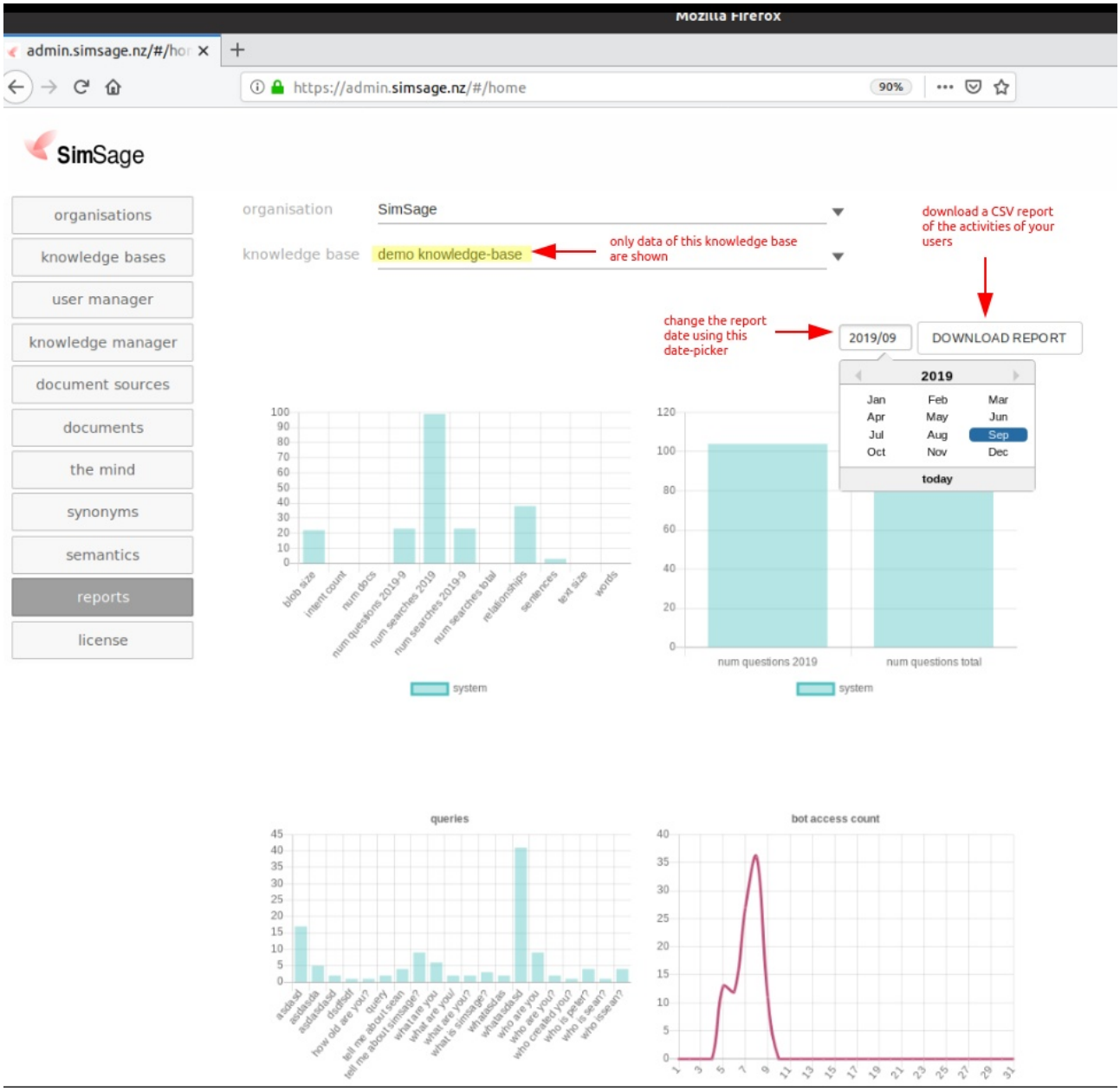
Wait a few minutes and click the documents documents button. You should start seeing the results of the crawler fetching information



7. SimSage reporting

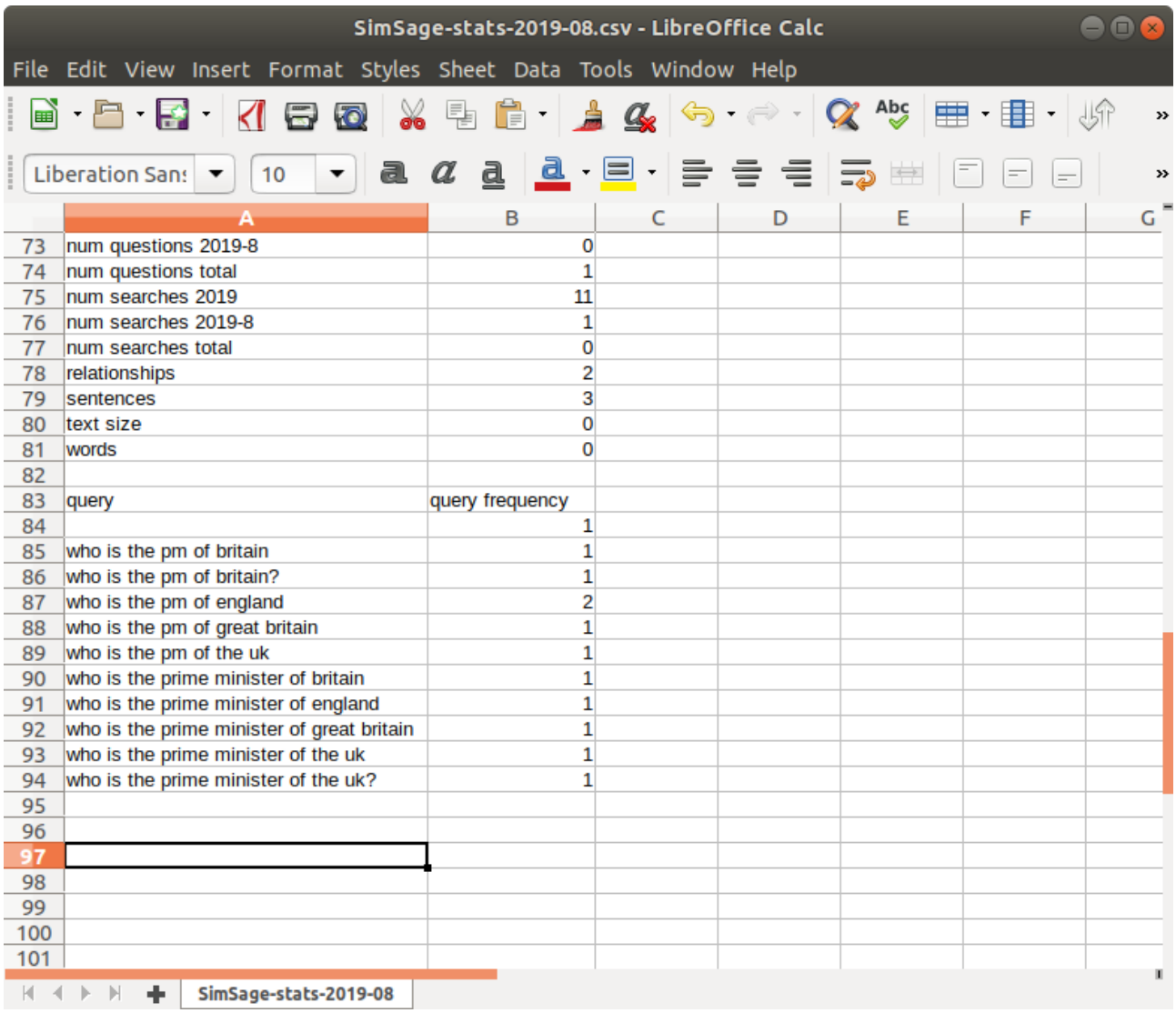
Click the reports reports button in the administrative interface to view the reports section. The reports section enables administrative users and manager to view SimSage system utilization and questions as well as performance.

Utilization is displayed as the number of unique users per month. The top 20 questions can be viewed (top 20 by frequency). Performance of your question and answers can be downloaded by month.



Click the DOWNLOAD REPORT download report button or select the date picker next to it to download or change dates and view activity for the selected period.

SimSage reports are exported as text CSV files and can be opened with Excel or similar software tools for viewing and further analysis.



	A	B	C	D	E	F	G
73	num questions 2019-8	0					
74	num questions total	1					
75	num searches 2019	11					
76	num searches 2019-8	1					
77	num searches total	0					
78	relationships	2					
79	sentences	3					
80	text size	0					
81	words	0					
82							
83	query	query frequency					
84		1					
85	who is the pm of britain	1					
86	who is the pm of britain?	1					
87	who is the pm of england	2					
88	who is the pm of great britain	1					
89	who is the pm of the uk	1					
90	who is the prime minister of britain	1					
91	who is the prime minister of england	1					
92	who is the prime minister of great britain	1					
93	who is the prime minister of the uk	1					
94	who is the prime minister of the uk?	1					
95							
96							
97							
98							
99							
100							
101							