Siren
Powering investigations

# EASY START GUIDE
# IMPLEMENTER

Version 15.2

# Table of contents

# About this tutorial

You can use Siren Platform in different kinds of scenarios, varying the way you import data depending on the data type.

This tutorial helps you to get started with the Siren Platform version 15.2 or later. It helps you to install Siren Investigate as an empty platform, import demo data, and start exploring and analyzing the data. It focuses on using static data, which we import from Excel or CSV files. Static data, which does not change or changes only a few times a day, is commonly used in Business Intelligence (BI) or broader knowledge discovery scenarios.

## Using streamed data or data from other databases

For use cases that involve streaming data, such as in **cybersecurity**, **operational intelligence**, **log management,** or **IoT**, data streams can be loaded by external applications that write directly to the underlying Elasticsearch cluster. Examples of external tools for these scenarios are Logstash, Beats, Fluentd, or Streamset. It is also easy to write data to Elasticsearch directly by using the APIs.

This can happen directly, with no data copy, or by using the built-in, UI-assisted, *reflection* process, where data is copied and periodically refreshed. Refer to our documentation to understand how to use data streams.

# Objectives and outcomes

This tutorial covers the following tasks:

1. Installing Siren Platform.
2. Importing CSV files.
3. Creating an entity table.
4. Creating a dashboard both automatically and manually.
5. Adding interactive visual filters and textual search to the dashboard.
6. Creating an associative data model.
7. Creating a relational navigator visualization to navigate dashboard-to-dashboard.
8. Using Graph Browser and Link Analysis including test exercises.

The tutorial also includes an Advanced features section that contains additional important topics.

By the end of the first part of this tutorial, you will be able to use Siren Platform to search and investigate data about companies, investments, and investors. You will learn how to apply basic search and analysis functions to the data.

If you go on to complete the exercises in the Advanced features section, you will discover how to import and investigate data using some of our advanced features and configurations.

Check out our What is Investigative Intelligence video for insight into what's possible.

# Installing Siren Platform - Easy Start

Confirm you meet the following system requirements:

| Operating system | Supported browsers | RAM |
|---|---|---|
| Windows* | Google Chrome<br>Mozilla Firefox | 8G |
| macOS | | |
| Linux | | |
| *Windows machines need an improved ZIP manager such as 7-zip or WinRAR because the standard Windows ZIP support cannot handle the distribution's large number of files. | | |

## Installing and launching Siren Investigate

To download Siren Investigate, complete the following steps:

1. Go to http://www.siren.io/downloads and download **Siren Platform Easy start**.
2. Save the compressed file to a local folder named **siren-platform**.
3. Go to www.siren.io/trial and request a community or trial license.

### Installing on a Windows machine

1. Extract the compressed file. It contains two folders:
    - **elasticsearch**: Contains the self-contained, single-node Siren Enhanced Elasticsearch cluster.
    - **siren-investigate**: Contains the Siren frontend application accessed through a Web browser.
2. Double-click **start.bat** and wait for both Elasticsearch and Siren Investigate to load.
3. When the installation is complete, in a browser open **http://localhost:5606.**

NOTE Do not close either the Elasticsearch or Siren Investigate command windows until you are finished working with Siren Investigate.

IMPORTANT The first time you run the installation, the Investigate window may appear to be stuck. This is the optimization phase. It continues writing log messages after a few minutes.

### Relaunching on Windows

To relaunch Investigate, repeat steps 2 and 3 of the above procedure.

## Installing on a Mac or Linux machine

NOTE **Mac users**: If you are running Catalina version 10.15 or later, do not extract the downloaded ZIP file yet. You must first remove an extended file attribute (xattr) before you extract the downloaded ZIP file.

NOTE **Linux users:** Extract the downloaded file and go to step 6.

1. Rename the downloaded ZIP file **siren-platform-*-darwin-x86_64.zip**.
2. Download Amazon Corretto 17 for macOS from https://docs.aws.amazon.com/corretto/latest/corretto-17-ug/downloads-list.html
3. Open a **Terminal** window at the **siren-platform** location. For example, right-click the **siren-platform** folder and select **New Terminal at folder**.
4. Execute the following command:

   xattr -d com.apple.quarantine siren-platform-*-darwin-x86_64.zip
5. From **siren-platform**, extract **siren-platform-*-darwin-x86_64.zip**

   The extracted folder contains two folders:
   - **elasticsearch**: Contains the self-contained, single-node Siren Enhanced Elasticsearch cluster.
   - **siren-investigate**: Contains the Siren frontend application accessed through a Web browser.
6. Open the **elasticsearch** folder.
7. Open a **Terminal** window at the **bin** folder and execute the following command: `./investigate`

8. When the log prints

   ```
   [console] Template [template:kibi-html-angular] successfully loaded
   ```

   in a browser, go to **http://localhost:5606**.

NOTE **Do not** close either the Elasticsearch or Siren Investigate Terminal windows until you are finished working with Siren Investigate.

## Relaunching on a Mac or Linux

To relaunch, repeat steps 3 and 4 of the above procedure.

# Welcome to Siren Investigate

Siren Investigate opens to Siren Search by default. When you have data uploaded to Siren Investigate you can immediately perform a search by a search term.

To expand the navigation menu and display the range of apps, click the sidebar on the left side of the screen.

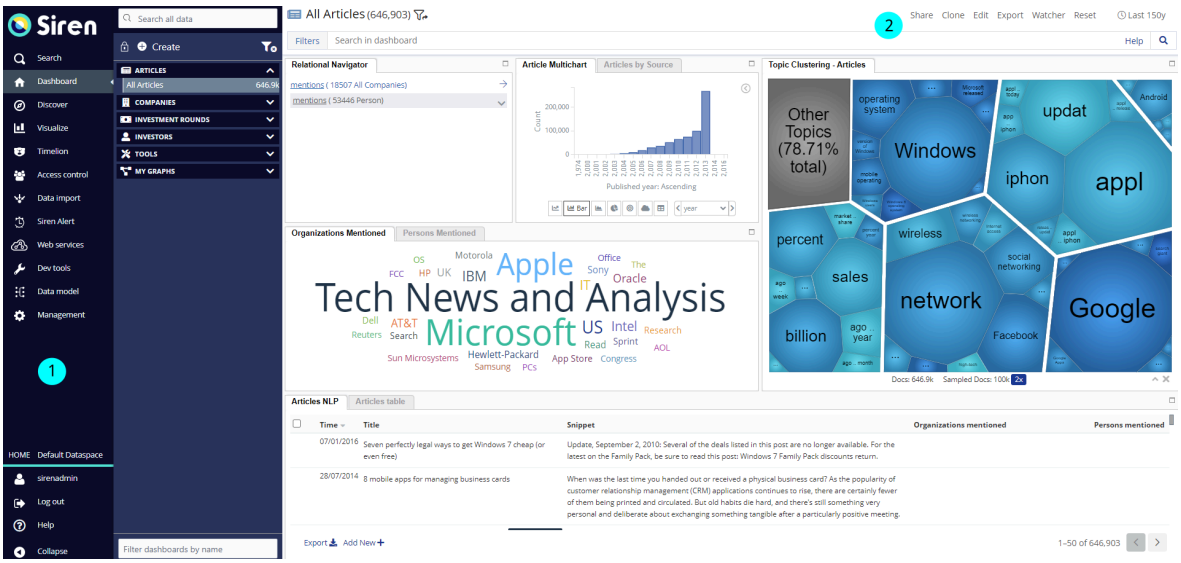



**Figure 1: Siren Investigate open on a dashboard**

| Callout | Description |
|---|---|
| 1 | App menu |
| 2 | Option menu |

# Importing data into Siren Platform

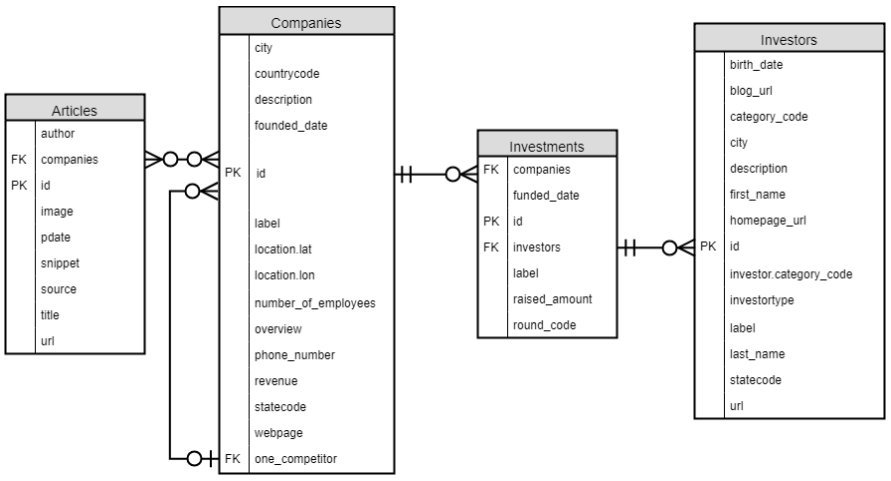
(Average completion time: 10 mins)

In this tutorial we use sample data from a TechCrunch data source that was collected some years ago and a sample of technical articles from the web.

## Downloading the data

1. Download the sample data file.
2. Extract the compressed folder that contains the following files:
    - **companies.csv**: A list of companies that includes geo-locations and descriptions.
    - **investments.csv**: An associative table that connects companies to investors with amounts, investments dates, and round code: seed round or round A.
    - **investors.csv**: A list of investors.
    - **articles_nlp.csv**: A collection of technical articles. Most of the articles mention one or more companies. To extract these mentions, follow the advanced NLP section of this tutorial.
    - **additional_companies.csv:** A list of companies to use with the advanced feature Importing and transformation.

The main files are relationally connected. The following entity-relationship diagram shows the connections between the tables. There are also other relationships in the data, for example, city and state names, URLs, and email addresses.



# Importing your first table of demo data

(Average completion time: 5 mins)

For your first sample dataset, import **companies.csv.**

1. Go to the **Data model** app and click **Create an entity table**.
2. Click **Quick import from a spreadsheet.**
3. Upload **companies.csv**.
4. Click **Add fields**.
5. In **Table name**, enter **companies**.

## Defining field data types

Most of the data types that are listed in the **Type** dropdown menu, such as Integer and Date, are easy to understand. However, the following options require explanation:

**Text**
Use this option for long texts, such as emails and messages. When you choose **Text**, the backend system splits the content into individual words and calculates statistics on those words. This allows you to have word clouds and the best level of searchability.

**Keywords**
Use this option for unbreakable strings. For example, 'New York' and 'Los Angeles' are cities that must be marked as Keyword to avoid the individual words being treated as single-word search terms, which would then lead to wrong results later.

**Advanced Mapping**
The **Advanced Mapping** switch gives advanced users the option to add a JSON object to
define the mapping in Elasticsearch format. For example, selecting **Date** and switching on
**Advanced Mapping** allows you to define a specific format for the date field, such as
{"format":"yyyy-MM-dd HH:mm"}.

Set the data types for the following fields:

1. Scroll to **description** and from **Type**, select **Text (allow word cloud)**.
2. For **founded_date**, set the type to **Date**.
3. For **Geopoint**, set the type to **Geo Point**.
4. For **overview**, set the type to **Text (allows word cloud)**.
3. Click **Next**.
4. On the **Transform data** screen, click **Next**. You don't need to do any data transformation now.
5. On the **Load data** screen, click **Start loading**.

When the import is complete, the details of the new entity table are displayed.

TIP If you already have data in Elasticsearch, you can make it visible in Siren by creating an entity table from an existing index pattern. For more information, refer to the documentation.

## Setting the properties of the entity table

1. Go to the **Data model** app and click the **Info** tab.
2. In **Icon**, select an icon to represent companies, such as a building like **fal fa-building**.
3. In **Color**, choose a color for the icon.
4. From **Default label**, select **Document Field** then **label**.
5. In **Time filter**, click **Enable the Time filter based on the following field:** and select **founded_date**.
6. From the options menu in the upper-right corner, click **Save**.

# Terminology

- **Record:** In this case, we have created one record for each row in the CSV file. Records contain fields. Fields contain values.
- **Entity table:** A collection of records that contain information about the same type of entity, such as the companies table. An entity table refers to one or more underlying indices. The term index is used by Elasticsearch, Siren's backend system. Entity tables are the core 'searchable objects' in the Siren Platform. This means that they can be searched, drilled down, and become the basis of analytical visualizations.

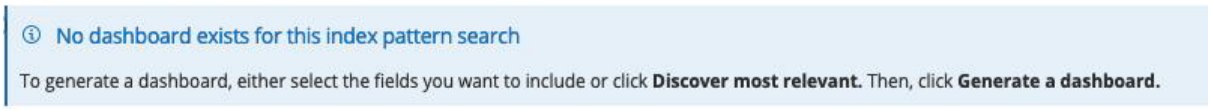
- **Index pattern:** Entity tables composed of more than one indices are called an index pattern. For example, entering logs_* as the index pattern will create an entity table that displays records coming from all the Elasticsearch indices that have a name starting with **logs_** (for example, **logs_2021_10_1, logs_2021_10_2**).
- **Searches:** Typically, searches are a subset of an entity table. For example, if you wanted to sort your list of companies by those based in France, you can create a search for French companies, which would then appear as a subset of the *companies* entity table.

# Creating dashboards automatically

The Siren Investigate dashboards display a set of visualizations in a customizable grid layout. Each visualization is normally linked to a search, such as companies or investments. You can organize dashboards into dashboard groups, shared, and customized.

You can create dashboards both manually and automatically. To manually create a dashboard, you need to create and add each visualization to your dashboard. Alternatively, the dashboard generator can automatically create the visualizations. This is a good way to get started on a new dataset.

After you create an Index Pattern Search, the following message appears:




## Auto-generating a dashboard

(Average completion time: 5 mins)

You can access the auto-generate dashboard feature through:

- The **Data** tab of the **Data model** app.
- The **Discover** app.

Generate a dashboard for the companies data as follows:

1. In the **Data model** app, click the **Data** tab to view the records in the entity table. To the left there is a list of **Available Fields.**
2. Click **Discover most relevant fields**. The system identifies the fields that are most relevant for generating the dashboard.
3. Accept the default fields and click **Select.** The selected fields are listed on the left.
4. Click **Generate a dashboard**.
5. In the **Generate a prepopulated dashboard** window, in **Title**, enter Companies and click **Generate**.
6. In the **Generate a prepopulated dashboard - Report** screen, click **Create the dashboard**.

The **Generate a prepopulated dashboard - Report** screen contains the following elements, however, we do not need to adjust them now.
① - Checkboxes that allow you to individually select which of the auto-generated visualizations to use in the new dashboard.
② - Dropdown menus, where you can select the best type of visualization (Chart Type) for each field.
③ - Text boxes that allow you to personalize the name of each visualization (Vis Name).

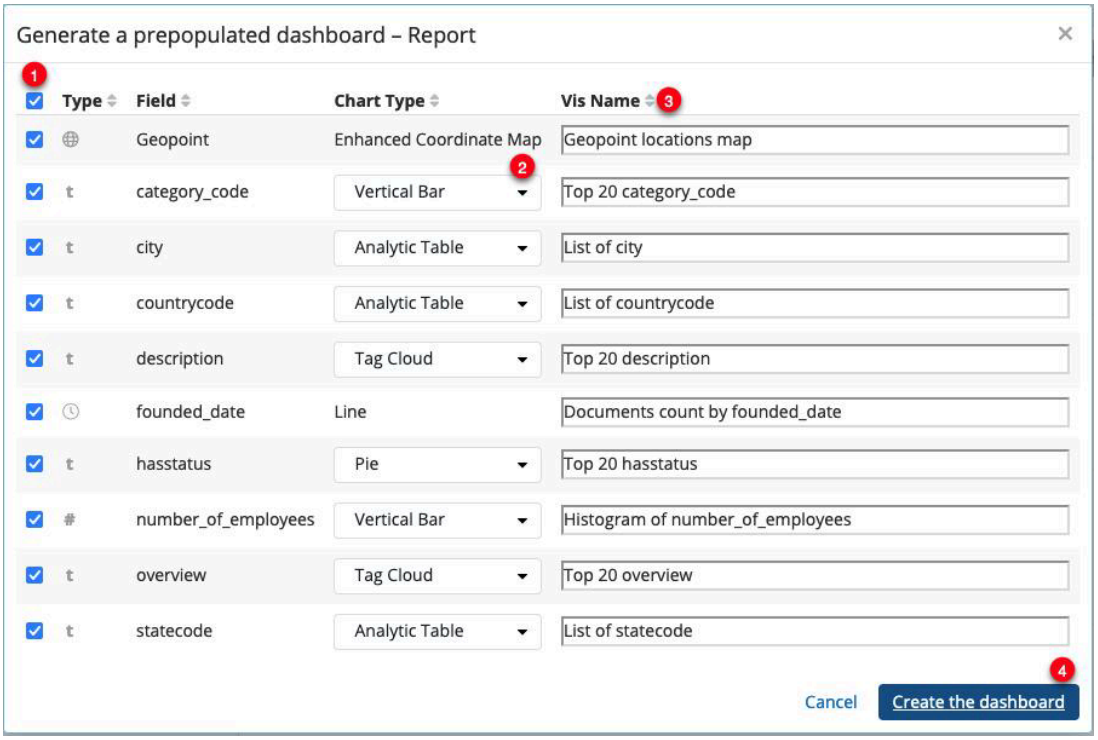



**Figure 4: Generate a prepopulated dashboard**

The new **Companies** dashboard is now generated with different types of visualizations including an enhanced coordinate map, vertical bar charts, a pie chart, a line chart, analytic tables, word clouds, and a record table. For more information about visualizations, refer to the Siren Platform documentation.

TIP If you don't specify a new dashboard name, it defaults to the name of the index pattern search. To edit the dashboard name, in the dashboard menu, right-click the dashboard and select **Rename**.

# Editing dashboards

(Average completion time: 5 mins)

You can organize the visualizations on the dashboard. You can resize, move, and stack the visualizations in tabs.

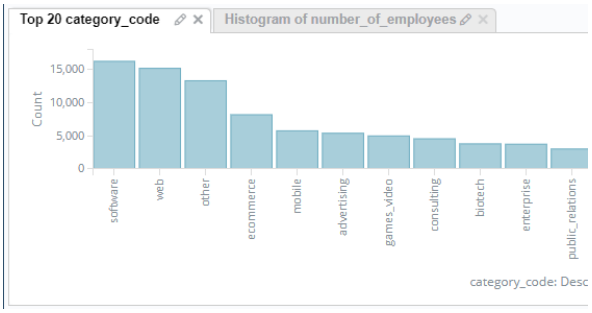



**Figure 5: Visualizations layered in tabs**

1. From the option menu, click **Edit.**
2. Drag the visualizations to different locations on the dashboard or stack the visualizations.
3. Resize visualizations that contain graphs and charts to see the visualization.
4. Click **Save** > **Save dashboard**.

# Using the dashboard

Explore this dashboard and interact with the visualizations to take a closer look at the data.

## Creating filters

(Average completion time: 5 mins)

You can create filters for dashboards by either using the **Add a filter** button or by selecting categories in the visualizations. Create filters by interacting with the visualizations as follows:

1. In the **Top 20 hasstatus** pie chart, click the funded status segment to filter the dashboard on that category. A filter appears at the top of the dashboard and the number of records in the dashboard is reduced.

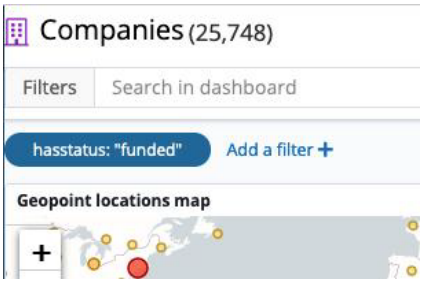



**Figure 6: Filter indicated on dashboard**

2. On histogram visualizations, you can create multiple types of filters. On the **Top 20 category_code** bar chart, press and hold **Ctrl/Cmd,** and click the **software** and **web** category codes bars.
3. Click **Apply Now** ① to apply a filter with an OR condition.

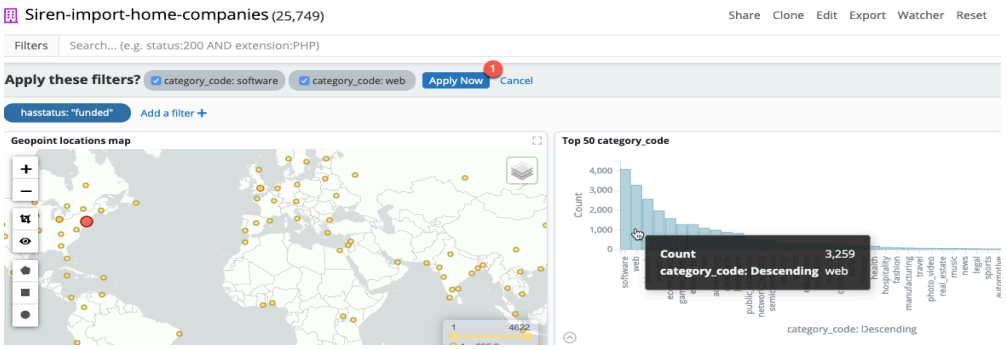



**Figure 7: Creating multiple filters**

# Performing a text search

You can use the dashboard search bar to perform a free text search. Before you perform the text search remove all the current filters, hover over each filter and click the remove icon (trash).

TIP Rearrange the visualizations to bring the text-specific ones to the top.

1. In the dashboard search bar, enter **cloud**. The dashboard updates all of the visualizations to reflect the search results.

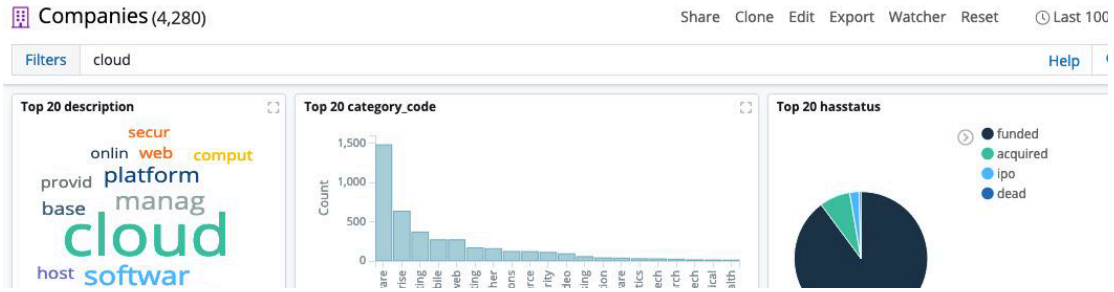



**Figure 8: Search for "cloud "**

2. Perform an advanced search by using the Lucene query syntax.
    - To search for a value in a specific field, prefix the value with the name of the field. For example, enter **category_code:software** to find all records that have software as the category code.
    - Use the Boolean operators AND, OR, and NOT for complex queries. For example, enter **category_code:software OR category_code:web** to get all of the results with either the software or web category code.
    - You can also use the **fuzzy operator** '~' to search for terms that are similar to, but not exactly matching the search terms. For example, type **OR commerce~** to get the results of all mentions of ecommerce, commercial, and so on.

TIP
- To reset the search bar to the previous entry - cloud, click **Reset** in the Options menu in the upper right of the screen.
- To reset the dashboard, and all dashboards at once, to its previous saved state, click the **Reset all filters** button in the Dashboard sidebar.

# Creating dashboards manually

Import another table and manually create the dashboard.

## Creating the investments entity table

(Average completion time: 5 mins)

Create a new entity table to use to create a new dashboard. Import the spreadsheet, define the data type, and set the properties of the entity table like you did in the first import.

1. Go to the **Data model** app and from **Entity tables,** click the Add/Create button.
2. Import **investments.csv** and name the entity table **investments**.
3. Under **Field**, scroll to **funded_date** and set the type to **Date**.
4. For **raised_amount**, set the type to **Long.** This allows an integer over 32 bits for large investments.
5. In the lower-right corner, click **Next**.
6. On the **Transform data** screen, click **Next.**
7. On the **Load data** screen, click **Start loading.**
8. Go to the **Info** tab.
9. Select an icon to represent currency, such as **fal fa-money-bill-alt** and select a color.
10. In **Default label**, select **Document Field** and **raised_amount**.
11. In **Time filter**, click **Enable the Time filter based on the following field:** and select **funded_date**.
12. In the upper-right corner, click **Save**.

# Creating the dashboard manually

(Average completion time: 7 mins)

NOTE This is an optional task, you can use the auto-generate option and skip to Importing the investors table.

Create a dashboard manually for **investments** as follows:

1. Go to the **Dashboard** app.
2. Click **Create > Dashboard**.
3. Name the dashboard **Investments** and click **Create**.

At this point, you have created a dashboard, but it does not contain any visualizations and it is not linked to an entity table.

## Creating visualizations

(Average completion time: 15 mins)

Add visualizations in the following order:

1. Vertical bar chart
2. Record table
3. Analytic table

Later, you will add the visualizations directly from the current dashboard. You can also add them by using the **Visualize** app.

### Vertical Bar Chart

1. In the upper-right corner, click **Edit** > **Add** > **Add a new visualization**.
2. From the **Charts**, select **Vertical Bar**.
3. On the **Select an entity table or search** screen, select the **investments** entity table.
4. In the **buckets** pane, click **Add buckets** and select **X-Axis** ①.

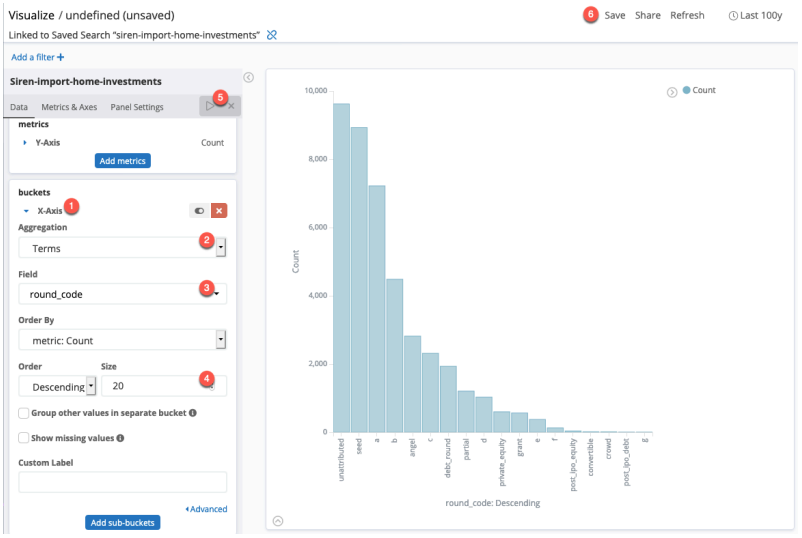



**Figure 9: Adding buckets**

5. From **Aggregation**, select **Terms** ②.
6. From **Field**, select **round_code** ③
7. In **Size**, set the value to **20** ④.
8. Click the **Apply changes** button ⑤ to see a preview of your chart.
9. From the options menu, click **Save** ⑥.
10. On the **Save** panel, name the visualization **Investment number by round code** and click **Save to dashboard**.
11. You are redirected to the **Investments** dashboard in edit mode, where you can resize or reorder the visualizations. Click **Save** > **Save dashboard**.

### Record table

1. From the dashboard, click **Edit** > **Add** > **Add a new visualization**.
2. Select **Record Table**.
3. On the **Select an entity table or search** screen, select **investments.**
4. The default values are adequate, so click the **Apply changes** button.
5. Click **Save...**, name the visualization **Record table** and click **Save to dashboard**.
6. You are redirected to the **Investments** dashboard in edit mode, click **Save** > **Save dashboard.**

TIP In a record table, you can remove the columns that you do not need by clicking X beside the column name. To move columns, use the << >> buttons.

### Analytic table

The analytic table visualization is similar in appearance to the record table. The difference is that you can view individual records with a record table, while you can make summaries with an analytic table.

1. From the dashboard, click **Edit** > **Add** > **Add a new visualization**.
2. In **Textual**, select **Analytic Table.**
3. On the **Select an entity table** or search screen, select **investments.**
4. In the **buckets** pane, select **Split Rows**.
5. From **Aggregation**, select **Terms**.
6. From **Field**, select **raised_currency_code**.
7. From **Order By**, select **metric: Count**.
8. In **Size**, set the value to **10**.
9. Click the **Apply changes** button.
10. From the options menu click **Save..**, name the visualization **Analytic table**, and click **Save to dashboard**.
11. In the dashboard screen, click **Save** > **Save dashboard**.

## Setting the dashboard data model

(Average completion time: 3 mins)

Before going any further, you must specify a type of data model for the dashboards.

Investigate has three dashboard options:

- **Dashboard does not represent an entity table**: Use when the dashboard's main function is to provide summary information and it does not need to be linked to an entity table. These dashboards do not display a record count or an icon.
- **Dashboard represents an entity table:** Use when the dashboard represents a single specific entity table, enabling the following:
    - The dashboard displays the count and an icon associated with the entity table.
    - Components like the relational navigator work and can be used on the dashboard.
    - You can add the content of the dashboard to a Graph Browser for link analysis.
- **Dashboard 360 with filter strategy**: Uses a dashboard-specific data model, which enables a single dashboard to contain visualizations that are based on different entity tables and perform coherent filtering across all of them. This type of dashboard depends on Siren's relational capabilities and the creation of a data model. This is covered later in the tutorial.

You have created a dashboard with visualizations linked to the **investments** entity table. Next, specify that this dashboard is dedicated to the **investments** entity table.

1. On the **Investments** dashboard, from the options menu click **Edit** > **Data Model**.
2. Select **Dashboard represents an entity table** and select **investments** from the dropdown list.
3. Click **Save** > **Save dashboard**.

## Importing the investors table

(Average completion time: 5 mins)

Go to the **Data model** app, use the same procedure that you used previously to import **investors.csv** and name the entity table **investors**.

1. From the lower-right corner, click **Next** to accept the default field mappings.
2. On the **Transform data** screen, click **Next**.
3. On the **Load data** screen, click **Start loading.**
4. On the **Info** tab, select an icon to represent investors, such as **fal fa-user-chart,** and select a color.
5. In **Default label**, select **Document Field** and **label**.
6. In **Time filter**, click **Disable the Time filter in dashboards** because this is not a time-based entity table.
7. From the options menu, click **Save**.

The **Entity tables** section of the **Data model** app now contains three entity tables: **companies, investments**, and **investors**.

IMPORTANT Do not create a dashboard for investors until you define the relations in the data model.

# Relations in the data model

The power of Siren Platform is in its associative data model; defining how your entity tables are interconnected by their relations. It enhances the navigation across related dashboards and drives the link analysis feature, the Graph Browser.

In Siren Platform, a relation is a labeled link between entity types. You can think of an index pattern search as an entity type, which means that two index pattern searches can be connected by a relation in the data model.

You create these relations in the UI. In the example below, the Investments table is connected to the Companies table as follows:


**Figure 10: "Secured by" relation: Investments are secured by companies**

When you define a relation, typically you must specify both a direct and indirect passive relation. For example, the companies *secured* the investments and the investments were *secured by* the companies

To view the data model graph:

1. Go to the **Data model** app, select the **companies** entity table and go to the **Data model graph** tab.
2. Click the **Toggle entity highlight** button (lightbulb) to show all entity tables clearly. You can see that the indexes are not connected.

# Creating relations between entities

Define the relationship between the indexes and create a relational data model.

## Creating relations manually

(Average completion time: 5 mins)

Create relations to connect the entity tables. Use the **investments** saved search to specify which fields of other searches relate to it. Connect the **investments.companies** field with the **companies.id** field; a unique value in the companies data, based on the relational model of the data.

Create the relation between investments and companies as follows:

1. In the **Data Model** app, click the **investments** entity table.
2. Go to the **Relations** tab and click **Create a relation**.
3. In the **From** section, from **Field**, select **companies**.
4. In **Direct,** enter **secured by** and in **Inverse,** enter **secured**.
5. In the **To** section, in **Search**, select **companies** and from **Field**, select **id**.
6. Click **Save relation**.

Create the relation to the investor as follows:

1. Click **Create a relation**.
2. In the **From** section, from **Field,** select **investors**.
3. In **Direct,** enter **made by**, in **Inverse**, enter **made**.
4. In the **To** section, in **Search**, select **investors** and from **Field**, select **id**.
5. Click **Save relation**.

# Visualizing the data model as a graph

(Average completion time: 1 min)

To see all the relations in the data model at a glance, return to the **Data model graph** tab.
From this screen, you can interact with the graph:

- Drag the icons to rearrange them.
- Change the direction of the relation labels by clicking the **Toggle relation direction** button.
- Change the layout.

## Creating a self-relation

(Average completion time: 2 mins)

A self-relation is a relation between two entities of the same type, for example, a person who is *friends with* other people or companies that are *competitors of* other companies. These are defined in the same way as entities of different types.

In our sample data, the company records have a field called **one_competitor** that lists the ID of the main competitor of a company. Create a self-relation from **companies.id** to **companies.one_competitor** as follows:

1. Go to the **Data model graph** tab, double-click the **companies** icon to switch to the **companies** entity table.
2. Click the **Relations** tab and click **Create a relation**.

   **Note:** The relation between companies and investments is already listed because we specified this relation through the investments entity table.
3. In the **From** section, from **Field**, select **id**.
4. Enter **competitor** for both relations.
5. In the **To** section, in **Search**, select **companies** and **one_competitor**.
6. Click **Save relation**.

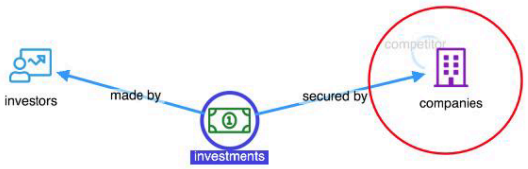



**Figure 11: Investment node with relations to an investor and a company**

# Dashboard-to-dashboard associative navigation

The **Relational Navigator** is a special visualization that automatically shows links to connected records in other dashboards. By clicking on these buttons you perform an *associative* navigation, going from one set of records to another set of connected records.

For these buttons to appear in a dashboard, you must add a **Relational Navigator** visualization, the same way you add all visualizations to dashboards.

NOTE You can create a single Relational Navigator visualization and reuse the same visualization across all dashboards. When it is added to a dashboard, it shows buttons that connect with other dashboards that are relationally connected.

The dashboard generation wizard adds this visualization only if you have defined the relations between the data. Otherwise, you can add it manually.

## Creating a dashboard for investors

Since we have already defined the relations for investors, we can use the wizard to create a dashboard for it as follows:

- Go to the **Data model** app and select the **investors** entity table.
- Follow the steps to auto-generate the dashboard, name the dashboard **investors** and click **Generate** > **Create the dashboard**.

One of the visualizations on the **Investors** dashboard is the relational navigator visualization, called **Related dashboards**. This visualization has a link to the

**Investments** dashboard. You can use this link to find all of the investments that were made by the investors on the current dashboard.

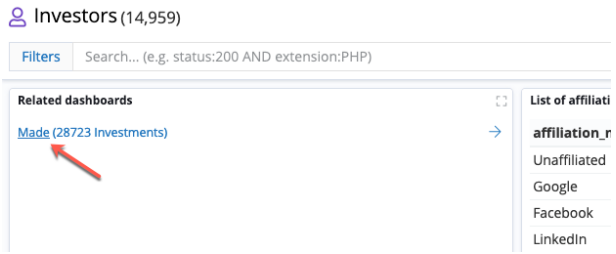



**Figure 12: Relational link to the investments made**

- Filtering the records on the dashboard automatically shows a filtered count on the relational navigator link. For example, if you click the 'person' section of the **Top 30 investortype** pie chart. The record count on the dashboard and the count of investments are reduced as a result.
- Click **Made (28723 investments)** to go to the **Investments** dashboard. Due to the relational filter that is set, you see only investments that are associated with investors of type 'people'.

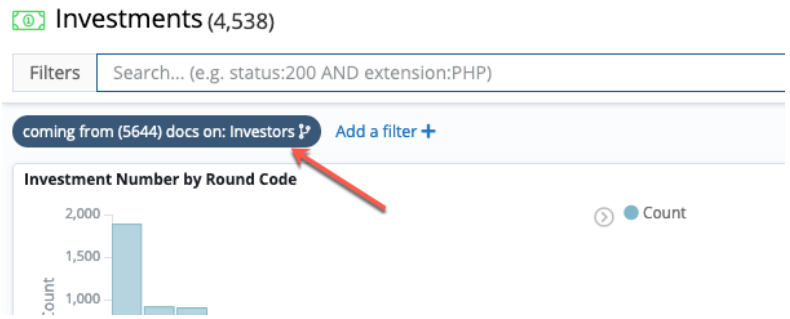



**Figure 13: Investments dashboard now filtered by the investors**

# Adding the Relational Navigator to the other dashboards

Add the **Relational Navigator** to the **companies** and **investments** dashboards to find more connected records. For each dashboard, do the following:

1. Go to the **Dashboard** app and select the dashboard.
2. Click **Edit** > **Add**.
3. Search **Related dashboards** and click to add.
4. Click **Save** > **Save dashboard**.

TIP When you are adding visualizations to dashboards, it is easy to also save filters by mistake. Either remove the filters when you are saving a dashboard or select **Don't overwrite currently saved filter and text query** in the **Save** panel.

# Recap: Where are we now?

If you successfully completed all of the previous steps in this tutorial, your data model should look similar to this:

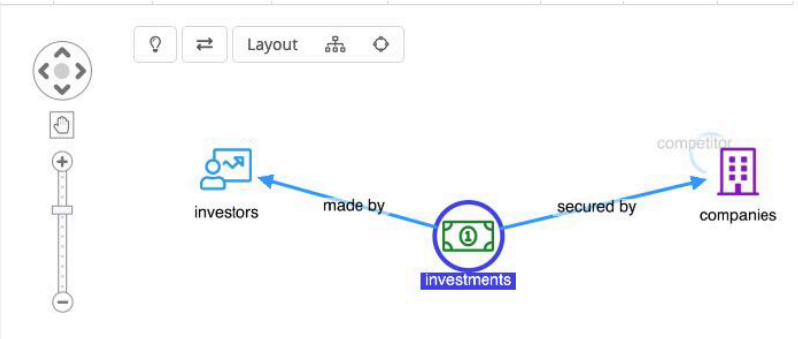



**Figure 14: Data model**

You should have three dashboards: companies ①, investors ② and investments ③. The number shown after each dashboard name represents the number of documents in the relative entity table. Each dashboard should contain a relational navigator visualization, called **Related dashboards** ④. You can rearrange the visualizations to bring **Related dashboard** to the top.

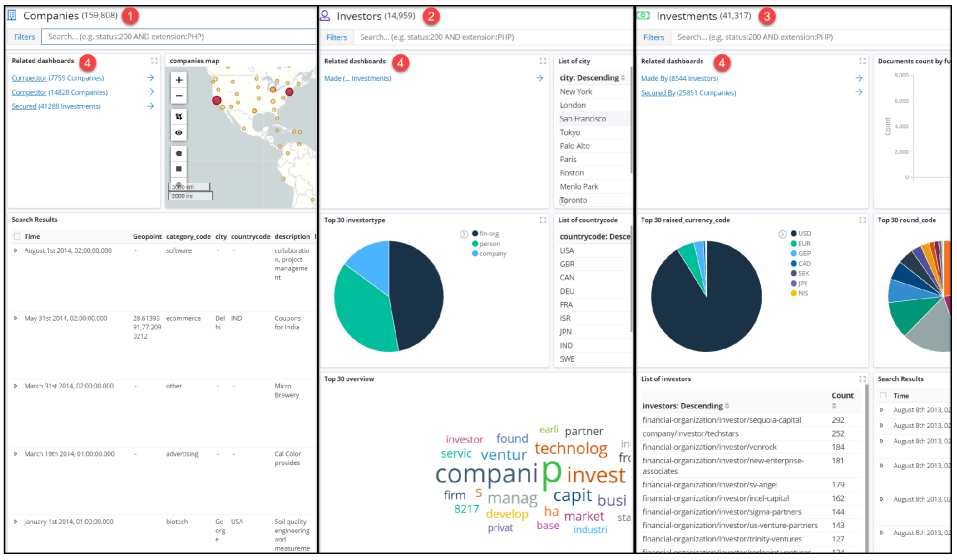



**Figure 15: Relational navigator visualization on each dashboard**

If everything looks correct, you can explore the data by completing exercises on each dashboard and visualizing the results in the **Graph Browser**.

# Exercise: Investigating investments

Analyze the data to answer the four questions in this exercise. In the tasks you:

1. Answer a basic question by using the **Investors** dashboard.
2. Answer a question that involves a relational navigation from **Investors** to **Investments**.
3. Navigate further to the **Companies** dashboard.
4. Use a link analysis to explore the results together as a single picture.

NOTE At any time, you can click **Reset** to restore the dashboard to its saved state or **Reset all** to restore the state of all dashboards.

## Part 1: Filtering a dashboard

### Question: How many investors are from Germany?

#### Basic solution

1. On the **Investors** dashboard, click **Filters** ① > **Add a filter** ②.
2. Select **countrycode, is** and **DEU** (the ISO code for Germany) ③.
3. Click **Save** ④.

The dashboard filters to show records of investors from Germany only and the number of records, shown in parentheses next to the dashboard name, is updated.

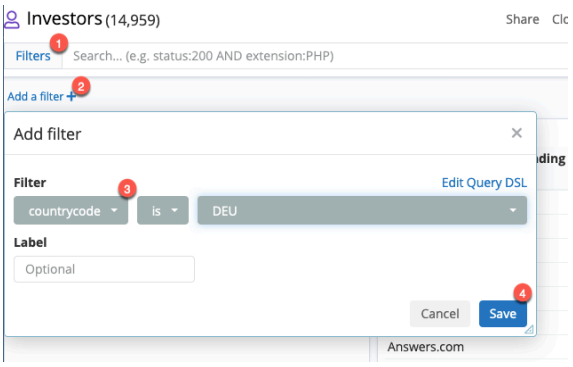



**Figure 15: Filter selections**

## Alternative solution

You can also answer this question by adding a **Region Map** visualization. A **Region Map** is a clickable map that allows users to create filters in the dashboard in an interactive fashion. Unlike the **Enhanced Coordinate Map** visualization that works using geopoints (latitudes and longitudes stored in the records), the Region Map works by matching field values, such as **countrycode:deu**, with shapes and their names.

To add a region map visualization, do the following:

1. Click **Edit** > **Add** > **Add a visualization**.
2. From the map category, select **Region Map**.
3. In the **Select an entity table or search** window, select **investors**.
4. In the **Visualize** window, in **Select buckets type**, click **shape field**.
5. From **Field**, select **countrycode**.
6. You want to see data from more than five countries, so set **Size** to a value of **35**.
7. Go to the **Options** tab.

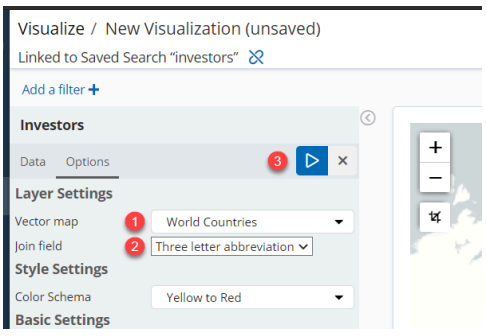



**Figure 16: Options tab**

8. From **Vector map**, select **World Countries** ①.
9. From **Join field**, select **Three letter abbreviation** ②.
10. Click the **Apply changes** button ③.

11. Click **Save...**, name the visualization **Investors region map**, and click **Save to dashboard**.
12. Move the region map into the position you want and save the dashboard.
13. To create a filter for investors from Germany (DEU), click Germany on the map. The dashboard count changes accordingly.

**Answer**: 212

## Part 2: Investigate the relation of data between two entity tables

**Question: How much money did German investors invest between 2010 and 2012?**

### Solution

Now that you have only German investors in the dashboard, you can use the relational navigator to go to the **Investments** dashboard. The visualization already displays the number of target records: Out of all investments, 575 were made by German investors.

1. In the relational navigator visualization, click **Made (575 Investments)**. A relational filter is automatically created on the **Investments** dashboard.
2. To change the time span, from the options menu, click **Last 100y**.
3. In the **Time Range** window, click **Absolute** and enter the time span from **2010-01-01 00:00:00.000** to **2012-01-01 00:00:00.000**.
4. Click **Apply**.
5. To sum the value of the investments, click **Edit** > **Add** > **Add a visualization** and select **Metric**.
6. From the **Select an entity table or search** menu, select **Investments**.
7. In the **metrics** pane, expand **Metric** ③.

8. From **Aggregation**, select **Sum** ④ and from **Field**, select **raised_amount** ⑤.
9. Click the **Apply changes** button ⑥.
10. Click **Save...** and save the visualization as **Total Investment Amount ($)**.
11. Move the new visualization into position and save the **Investments** dashboard.

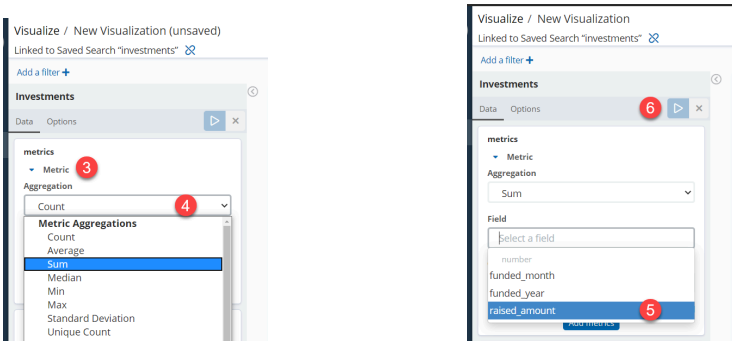



**Figure 17: Metric visualization settings**

**Answer:** German stockholders invested $ 670,301,000 between 2010 and 2012.

## Part 3: Digging deeper with relational navigation

### Question: Of these investments, how much was secured by American companies?

#### Solution

1. Open the **Companies** dashboard. The number of records (159,782) is shown next to the dashboard name.
2. In the **List of countrycode** visualization, click the **Filter for value** (magnifying glass) button next to **USA** to create a filter for American companies.

   In the Related dashboards visualization, secured (34 Investments) shows

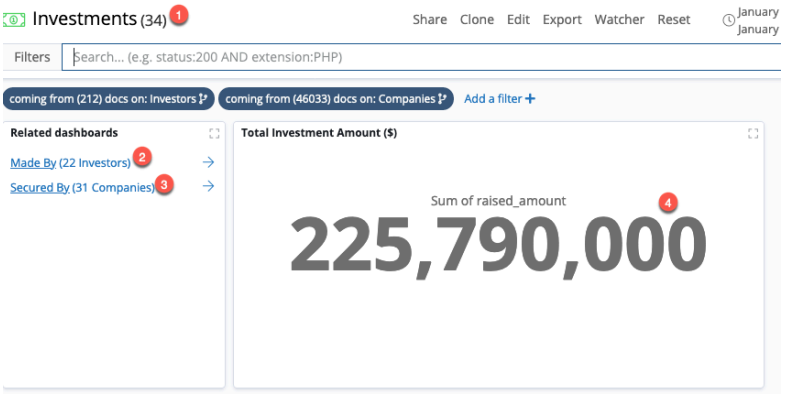
the amount of investments that match. Notice that, from our previous exercise, the Investments dashboard is already filtered for investments by German investors only.

3. Click **secured (34 Investments)** to reveal the investments on the **Investments** dashboard.

The filters on Investments dashboard has two relational filters:

- **coming from (212) docs on Investors** for investments from German investors.
- **coming from (46,017) docs on: Companies** for investments secured by American companies.

The **Total Investment Amount ($)** visualization shows the sum of the 34 investments made by 22 German investors to 31 American companies ③.




**Answer**: $225,790,000

## Part 4: Exploring results with the link analysis in the Graph Browser

Now that you have solved all of the questions, use the link analysis feature in the Graph Browser visualization to explore the results. Explore how the companies, investments, and investors that we found in our investigation are linked together and if there are some interesting common connections.

Before doing so, apply the relational filter on the **Investments** dashboard to focus our research around German Investments, Investors, and American Companies:

1. On the **Investments** dashboard, click **secured by (31 Companies)** and take a moment to see who these companies are.
2. When you are ready, return to the **Investments** dashboard and click **made by (22 Investors)** and explore the investors.

If everything is done correctly, your filtered dashboards should now display:

- Investors 22 (German stockholders who invested in American Companies).
- Companies 31 (all of them American).
- Investments 34 (made by German investors and secured by the 30 American companies).

CAUTION If your dashboards don't have the correct filters applied and a large number of nodes are added, you might experience problems with system performance.

In this section of the tutorial, we'll get to see graphs like these:

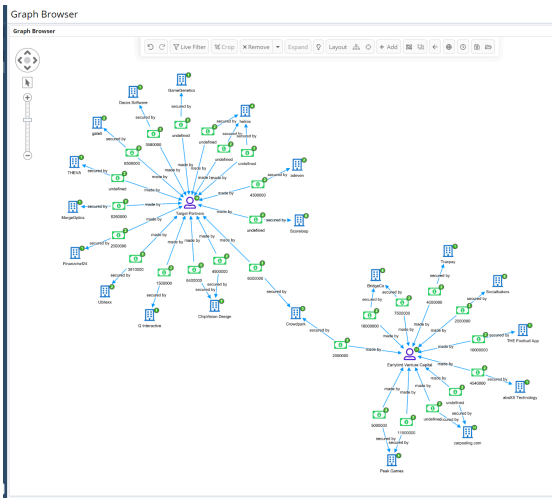



**Figure 17: Graph Browser example graph**

## Narrow your investigation on the Graph Browser

1. In the dashboard menu, expand **GRAPH DASHBOARD**, and click **Graph Browser**.
2. Drag the **Companies**, **Investments,** and **Investors** dashboards one-by-one into the Graph Browser.
3. From the **Layout** section of the toolbar, click **Standard** to rearrange the nodes.

   Observe that two German stockholders invested in a company named Crowdpark. Explore this network further.

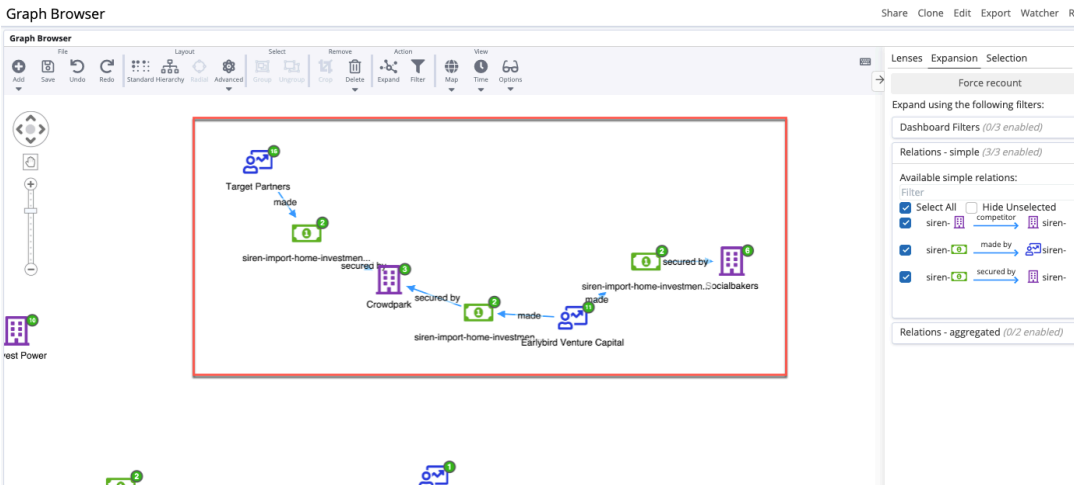



**Figure 18: Crowdpark cluster**

4. Set the cursor to selection mode and draw a rectangle around the network to highlight it.

   **Note:** To change the cursor mode, from the left side of the Graph Browser, click the cursor button.
5. From the toolbar, click **Crop**. This removes everything else from the Graph Browser.
6. Before expanding this network, save this initial state. From the toolbar, click **Save** and give the graph a suitable name, such as “Shared investment”.

## Investigating the network

Now that you have saved your initial network, you can start asking more interesting questions. Before you proceed, take a moment to consider the links that might be interesting to explore.

We selected this network because the two German investors share an American company in their investment campaign. It would be interesting to discover if:

- They have more common investments.
- They invested in CrowdPark in the same time period.

### Question: Do the two German investors share additional companies in their funding campaign?

1. While in selection mode, hold the **Ctrl**/⌘ key on the keyboard and click each of the two investor nodes.
2. When both nodes are selected, right-click one of them and select **Expand by relation**.
3. Select the **made (27) *investments*** check box and click **Expand**.
4. Investigate whether one of the new investments that appeared is paid to a new common company. To do this, right-click any one of the investment nodes click **Select** > **Select - By Entity Type**.
5. In the pop-up window, select the **Investments** check box and click **Ok**.
6. All of the investment nodes should be selected. Right-click one of the nodes and select **Expand by relation**.
7. In the pop-up window, select the **secured by (27) *companies*** check box and click **Expand**.

As you can see in the graph, the only common connection between the two German investors from 2010 to 2012 is CrowdPark.

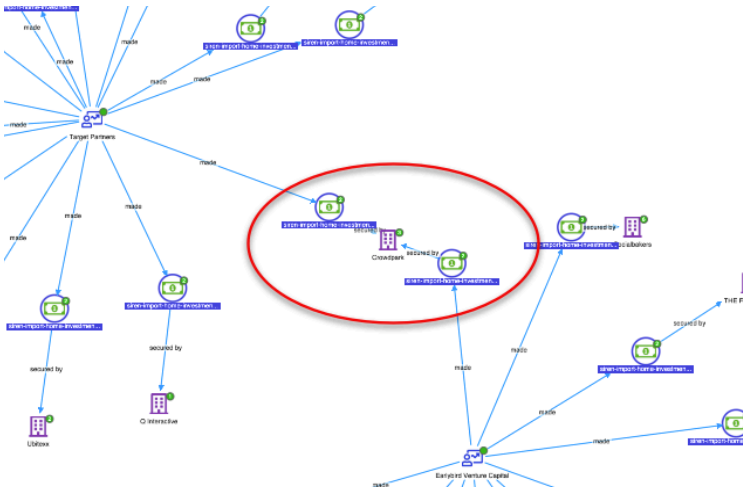


**Figure 19: Crowdpark node with the two investors**

**Answer**: No, the two German investors do not share additional companies in their funding campaign.

NOTE If you notice that the labels of the entities are not displayed correctly, ensure that you completed all of the steps when creating the relations.

### Question: Did the two German investors fund CrowdPark in the same time period?

1. Remove the nodes and return the graph to its saved state- click **Delete** > **Delete All**.
2. Click **Add** > **Open saved graph** > **Shared investments**.
3. In the **Open saved graph** window, click **Replace the current graph with the saved graph** and click **Add nodes**.
4. Activate the timeline mode functionality of the graph- from the toolbar, click **Time**.
5. In timeline mode, hold the **Shift** key and select the relevant nodes; the company Crowdpark and the two investment nodes. This allows you to explore the temporal dynamics of the selected nodes.

As you can see in the following screenshot, Crowdpark was founded in the second quarter of 2009, while the two investments were made approximately one year apart.

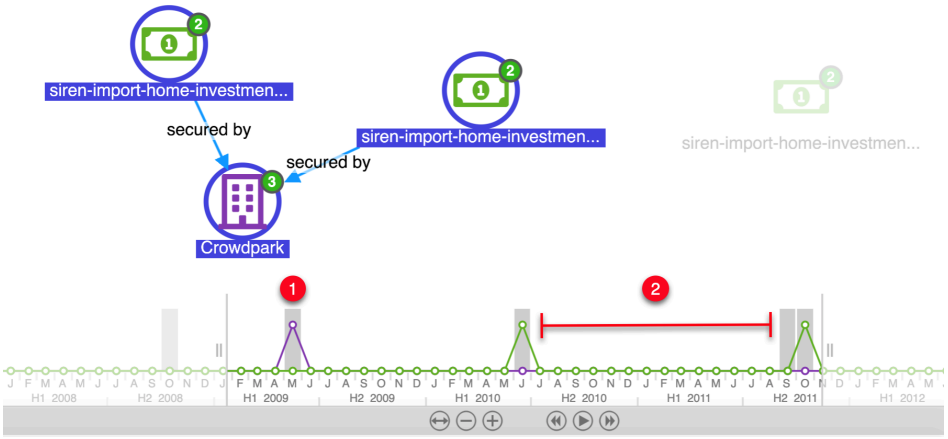



**Figure 20: Crowdpark and investors selected with timeline**

**Answer**: No, the two German investors did not fund CrowdPark in the same time period?

To learn more about the graph, see the next chapter.

# The Graph Browser: Link analysis

## Embedding the Graph Browser in dashboards

Link analysis is one of the key features of Siren Investigate, it can be performed in the Graph Browser visualization.

In the previous exercise, you used a pre-configured dashboard with a **Graph Browser** component, however, you can add the Graph Browser to a dashboard as a visualization by clicking **Edit** > **Add** > **Add a visualization** and selecting **Graph Browser**.

# Using the Graph Browser

You can add data to the Graph Browser by dragging filtered or unfiltered data from dashboards. Data is represented as nodes.

You can add related nodes by clicking **Add nodes** on the toolbar and selecting **Expand by relation**. Reorganize the nodes using the **Layout** options.

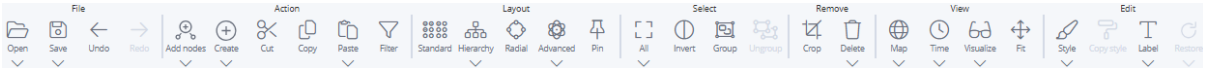



**Figure 20: Graph Browser toolbar**

The Graph Browser also offers some advanced features to help with link analysis. The right-most sidebar contains the following tabs by default:

- **Styles** - Create lenses to alter the way the graph looks. For example, create conditional formatting for labels, colors, sizes, or change visibility. For more information about lenses, see the Siren Platform documentation or follow the steps to create a lens in the Configuring the Graph Browser section of this tutorial.
- **Relations** - Controls the way the graph expands, either when you click the expand button or when you double-click on nodes. Here, you can set filters by using Dashboard Filters or choose the data model relation to consider when expanding. For more information, see the Siren Platform documentation.
- **Limits** - Applies the filters from a specific dashboard to the graph. This restricts the nodes that are produced from adding relations to a subset of those that are allowed by the current filters on a dashboard. For example,

select the Articles dashboard to count only the number of links to articles in your dataset. If you have filtered the Articles dashboard, then the filters are applied to the count.

- **Cards**- You can apply special views on the currently-selected nodes.
- **Selection** - See details about the current selection and search within the selection. This feature is located in the bottom bar.

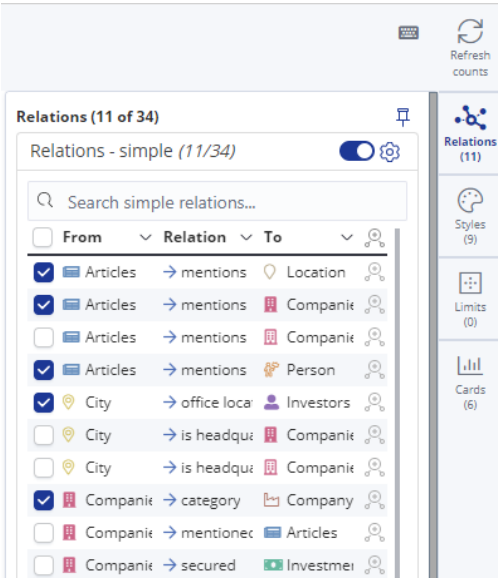



**Figure 21: Side panel**

By default, the **Cards** tab is not displayed, you can add it by completing the following steps:

1. In the **Graph Browser**, in the upper-right corner, click **Edit**.
2. Click the pencil icon to open the **Edit visualization** menu.

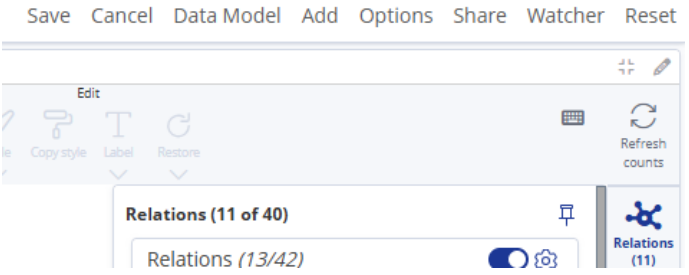



**Figure 22: Editing the Graph Browser**

3. Click the **Scripts** tab and, from the **Cards** section, click **Add Card Script** and select **Histogram Card - default implementation** from the dropdown menu.
4. Click **Apply changes** and **Save**. You might need to refresh the page for the changes to appear.

For more information about using the **Cards** tab, see the Siren Platform documentation.

# Advanced features

This section of the tutorial teaches you how to use some of the more advanced features in Siren Platform.

- Creating entity identifiers (EIDs)
- Creating a 360 dashboard
- Importing and transforming data
- Configuring the Graph Browser
- Natural language processing (NLP)
- Creating a Topic Explorer visualization
- Deleting data and changing a table schema

# Creating entity identifiers (EIDs)

Siren expands its analysis capabilities by introducing entity identifiers (EIDs). EIDs are used when entities exist (such as IP addresses, MD5s, or things that are identified simply by strings like City) that are present only as values in certain fields - in one or more tables - and do not have a dedicated table.

EIDs on the graph look like any other node, for example, an IP connecting two log records. They can also be used as 'intermediate concepts' when navigating dashboards.

To create an EID, complete the following steps:

1. Go to the **Data model** app and click the **Configure an Entity Identifier** (plus) button.
2. In **Entity identifier name**, enter **city**, choose a suitable icon and color, and click **Create**.
3. Click the **Relations** tab.
4. Create two relations; one with companies and one with investors, since both of them contain the city field. To manually create a relation, click **Create a relation.**
5. In **Direct,** enter **office location** and in **Inverse**, enter **has office**.
6. In **To,** select **companies** and **city**.
7. Click **Save relation**.
8. Repeat steps 4 to 7 for investors. In Labels, enter **headquarter for** and **headquartered in**.

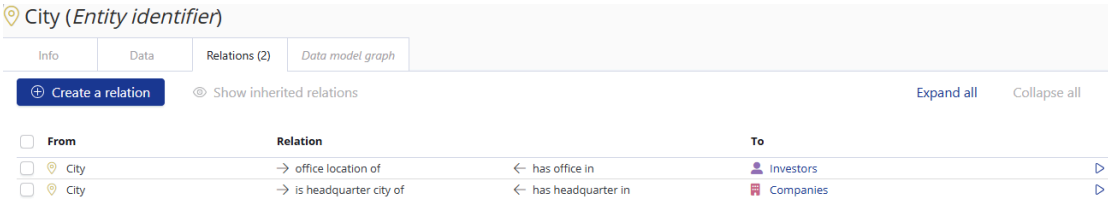



**Figure 23: Relations**

To see the EID added as a part of the data model, click the **Data model graph** tab.

# Creating a 360 dashboard

The Dashboard 360 feature allows a single dashboard to contain visualizations that are based on different searches, and allows you to perform coherent filtering across all of them. Dashboard 360 uses the relational data model to enhance data analysis capabilities in the Siren Platform.

To create a 360 dashboard, first create a dashboard with two visualizations from different entity tables as follows:

1. Create a new dashboard called “All Companies”.
2. Click **Add** > **Add a new visualization**.
3. Select **Record Table** and associate the record table with the **companies** entity table.
4. Click the **Apply changes** button and click **Save…**.
5. Name the visualization “Table” and click **Save to dashboard**.
6. Click **Add** > **Add a new visualization**.
7. Select **Vertical Bar Chart** and associate it with the **investments** entity table.
8. In the **buckets** table window, click **X-Axis**.
9. From **Aggregation**, select **Histogram** and from **Field**, select **funded_year** with the **Interval** set to 1.
10. Click the **Apply changes button** and click **Save…**.
11. Name the visualization “Histogram of funded_year” and click **Save to dashboard**.

## Configuring the Dashboard 360

Because two entity tables are involved, we must use a Dashboard 360 as follows:

1. In the upper-right corner, click **Edit** > **Data Model** and select **Dashboard 360 with filter strategy**: **Left filter join**.
2. In the dialog box, select **companies** as the main search and click **Done**. The Mapping visualization to searches panel shows the list of Dashboard 360-compatible visualizations and whether or not they are assigned to a search node. The warning symbol indicates that neither of the visualizations created earlier are assigned yet.
3. To assign a visualization, click the **companies** node to select it, then click the + button beside the required visualization (Table).

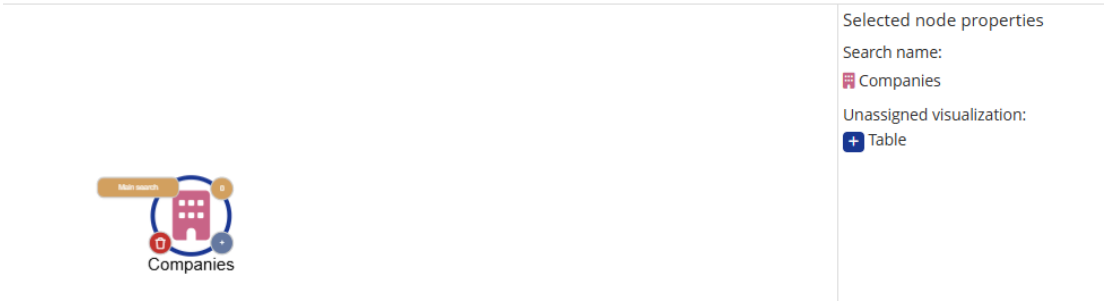



**Figure 24: Main search node selected**

4. You can now build the dashboard data model by defining how this search is to be relationally connected with other searches (that is, which path in the relational data model to take). To do this, click ⊕ located on the lower right of the main search node. This opens the **Select the path to destination window** that lists all the possible relations that come from the chosen search, as well as all possible searches that can be reached through those relations.
5. In the **To** section, select **investments**, and click **Save**.

6. Select the **investments** node and from **Unassigned visualization:**, assign **Histogram of funded_year**.

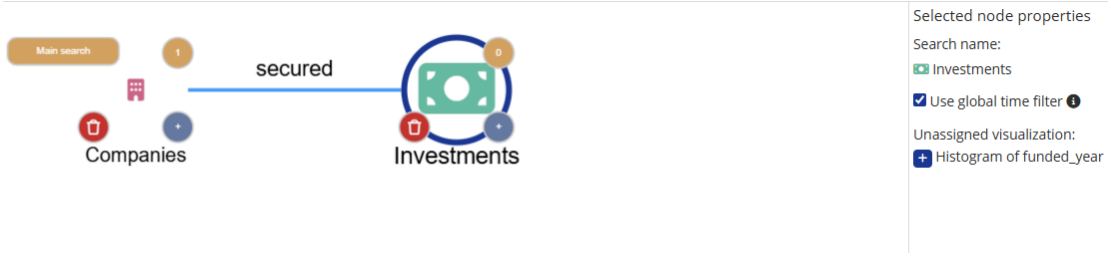



**Figure 25: Investments node selected**

7. Save the dashboard.

The following screenshot shows how the dashboard looks with the visualizations assigned.

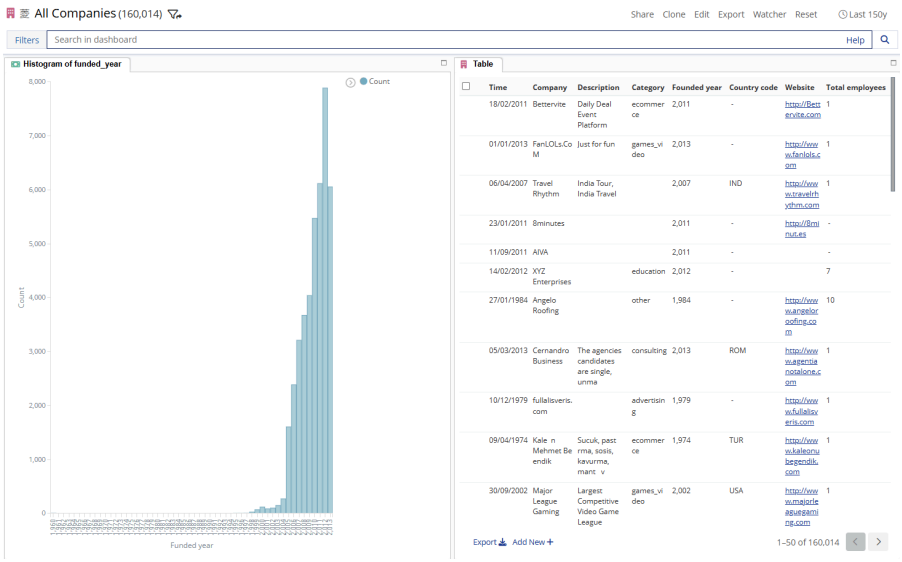



**Figure 26: 360 dashboard**

NOTE Your visualizations might be stacked as tabs. You can drag the visualizations to rearrange the layout.

## Filtering with Dashboard 360

The benefit of Dashboard 360 is that you can perform coherent filtering across the dashboard's visualizations. For example, you want to see the pattern of yearly funding across a particular industry segment to investigate when funding for social media took off. To do this, filter the **Record Table** visualization on the category code **social**.

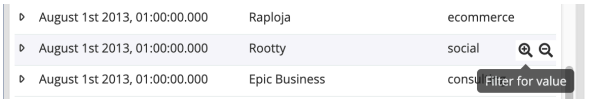



**Figure 27: Filtering from the record table**

The record table now lists all of the companies in the social category. More importantly, the histogram visualization displays the yearly funding trend; it shows a huge increase in the number of investments between 2012 and 2013.

You can also filter by clicking on the segments in the **Histogram of Funded Year** visualization; this will coherently filter the results in the Record Table.

# Importing and transforming data

Typically, during investigation processes, investigators do not need or want to create an entity table. Instead, it is more common to add data to an existing source, possibly adapting the original data format to the target structure. In Siren, you can transform that data before you add it to an existing entity table.

Before you transform data, upload records from another CSV file as follows:

1. From the **Data model** app, click the **Add/Create** button ①.
2. Click **Add data** > **Upload**.

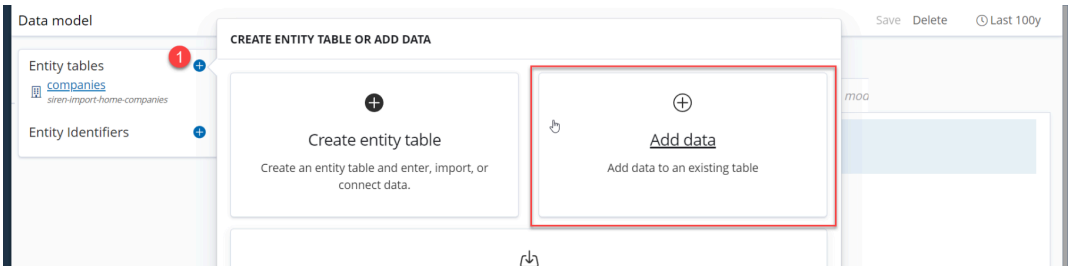



**Figure 28: Add data**

3. Upload **additional_companies.csv** from the sample data and click **Next**.
4. From **Target table** ⑤, select the **companies** entity table.

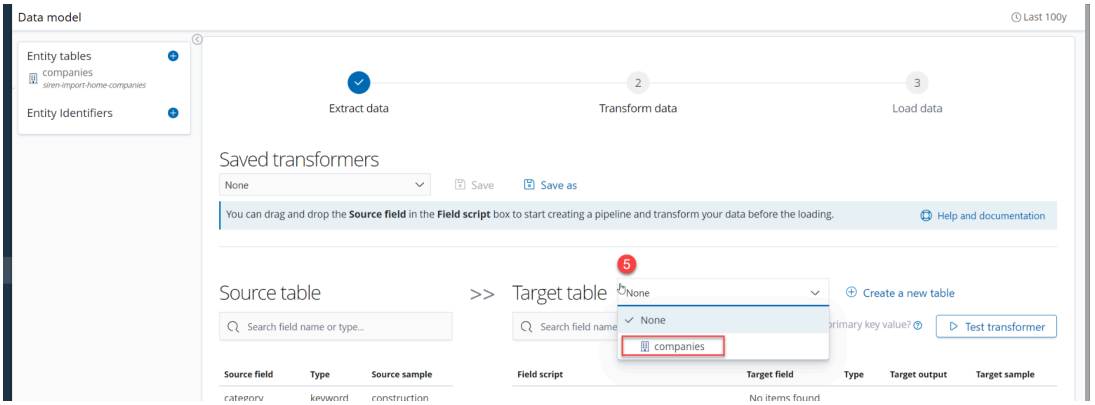



**Figure 29: Target table**

## Transforming your data

In the **Transform data** stage you can modify data before it is ingested. In this example, you are going to import some columns and merge them into the existing **companies** entity table. Before you proceed, have a closer look at the data transformation page after the last step.

You can drag the **Source field** ① into **Field script** ③ of the **Target field** ④. Knowing the content of **Source sample** ② and **Target sample** ⑥ makes it easy to merge the new CSV columns with the existing fields. More importantly, you can test the transform ⑦ before the import and preview the result in the **Target output** ⑤ column.

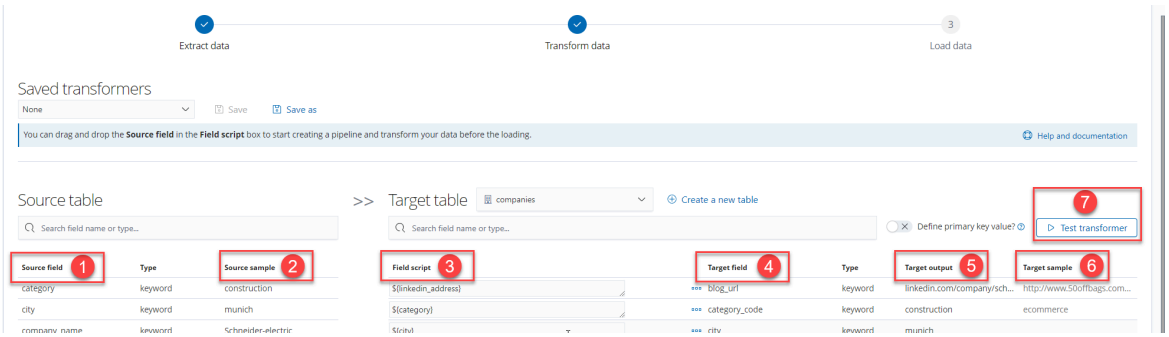



**Figure 30: Transforming data**

## Transforming fully compatible data

1. From the **Source field** section, drag **category** ① into **Field script** ② next to the **category_code** Target field.
2. Click **Test Transformer** ③.

NOTE At this time, you don't need to apply any transform because the original content of **Source field** - **category** is fully compatible with the **category_code** target field.

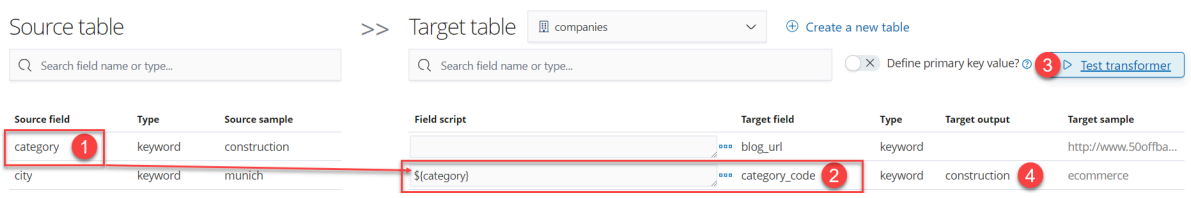



**Figure 31: Category field**

3. Repeat step 1 for each of the following compatible fields:
    - **linkedin_address** to **blog_url**
    - **city** to **city**
    - **fundeddate** to **founded_date**
    - **website** to **url**
    - **label** to **label**

## Transforming indirectly compatible data

The target entity table **companies** has a Geopoint but the new CSV has two separate fields to denote location; latitude and longitude. The transformer makes this operation extremely simple:

1. Drag the **lon** field into the **Field script** of the **Geopoint Target field**.
2. Edit the **Geopoint** field to accept the lat field also. In this case, add square brackets and the comma plus the space in the middle: [${lon}, ${lat}].

   For information about formatting fields, refer to [Elasticsearch documentation](#).
3. Click **Test transformer** to check the result preview in the **Target output.**

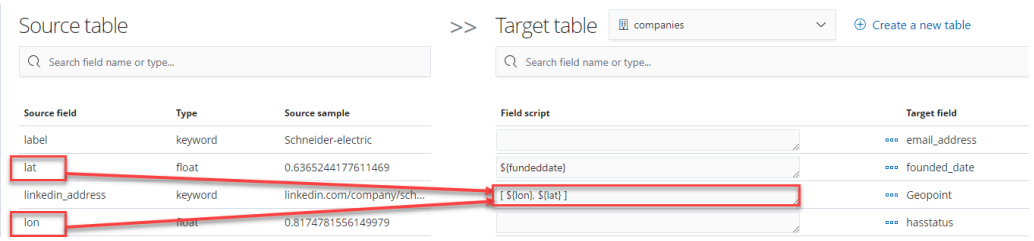



**Figure 32: Transforming indirectly compatible data: lat and lon to geopoint**

Sometimes, you need to combine values to match the target data format. This can be done with the concatenation operator **+** in **Field script**. For help with field scripts, refer to the documentation.

1. From **Source field,** drag **label** to the **Field script** of **id** ①.

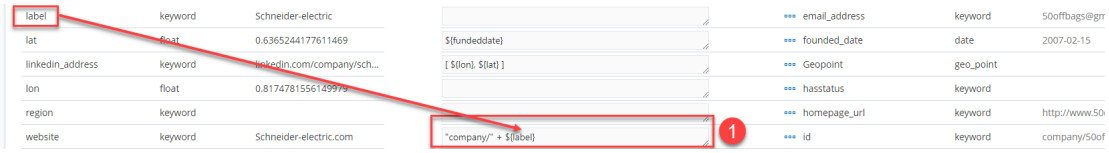



**Figure 33: Lon to id**

2. In **Field script**, enter the string **"company/"** followed by the **+** operator sign then **${label}**.

   **NOTE:** Ensure that your keyboard uses straight quotation marks. Curly quotation marks are not supported in this field and result in an error.
3. Click **Test transformer** and confirm that the **Target output** is similar to the **Source sample**.
4. Compare what you have done with the following screenshot to make sure you did not forget any fields and made all the necessary transformations.
5. In the lower-right corner, click **Transform data**. Some of the fields of the CSV were excluded to show that you can decide what to load and where.
6. Click **Start loading** to import the new CSV. In a production environment, any errors are listed here.

When the data is imported, you get a confirmation message. You can also check if the data imported correctly in the **Data** tab.

① Number of records before the import

② Number of records after the import

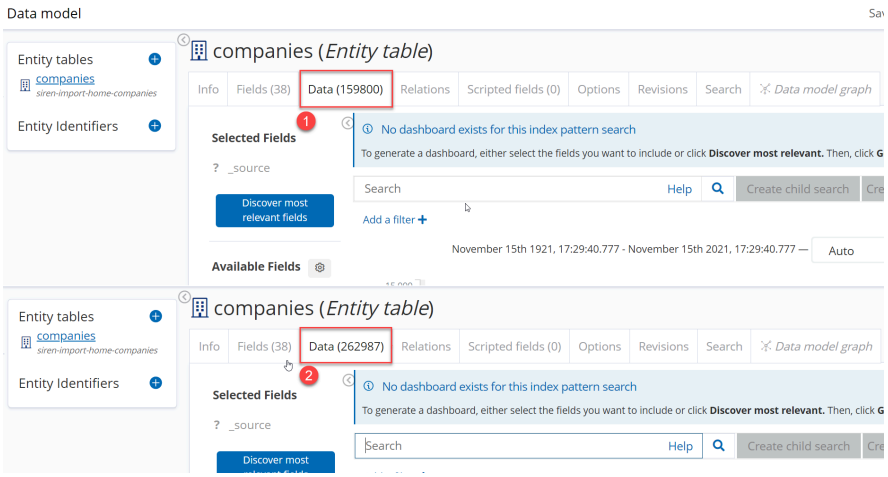



**Figure 33: Check Data tab to see the increased count**

# Configuring the Graph Browser

You can modify a graph in a number of ways by using the features in the Graph Browser.

## Fixing labels with graph lenses

You can set graph node labels in the data model and then in the graph by using the lens feature. Always set them in the data model first. You can then override them in the graph with a lens that is useful for specific analysis. For example, you might want to see the article's title first but change your mind and want to see the article's author as a label instead.

To create and activate a lens, complete the following steps:

1. Go to the **Dashboard** app.
2. In the sidebar, expand **Tools** and click **Graph Browser** or open a graph.
3. From the right-most side panel, click **Styles**.
4. From **Create lens**, select **Label from expression** ②.
5. In **Lens name**, enter **Company labels** ①.
6. From **Entity Type**, select **companies** ②.
7. For **Expression**, click **+** and select **label**. It populates automatically with payload["label"].
8. Click **Save lens**.

# Natural Language Processing (NLP)

(Average completion time: 40 mins)

The Siren Platform Easy Start version comes with the Siren Platform NLP plugin pre-installed. This adds an NLP pipeline processor to enrich documents that are being ingested in Elasticsearch, by a CSV file import or by another method, with entity annotations[1].

In this exercise, you use it to enrich another CSV file in our demo dataset, **articles_nlp.csv**, which contains tech articles that are harvested from the Web.

The pipeline processor takes a text field and produces annotations for Named Entities (Organization, Person, Location), which are then useful to connect to data that we already have. For example, connecting articles to companies or investors.

To do this, you activate a transformation pipeline with the NLP processor, while importing data into the **articles** index.

**Before you begin**

If you are using a slow machine, go to **Management** > **Advanced Settings** and edit the value for **ingest-xlsx:bulk_package_size** field to 20 and click **Save**.

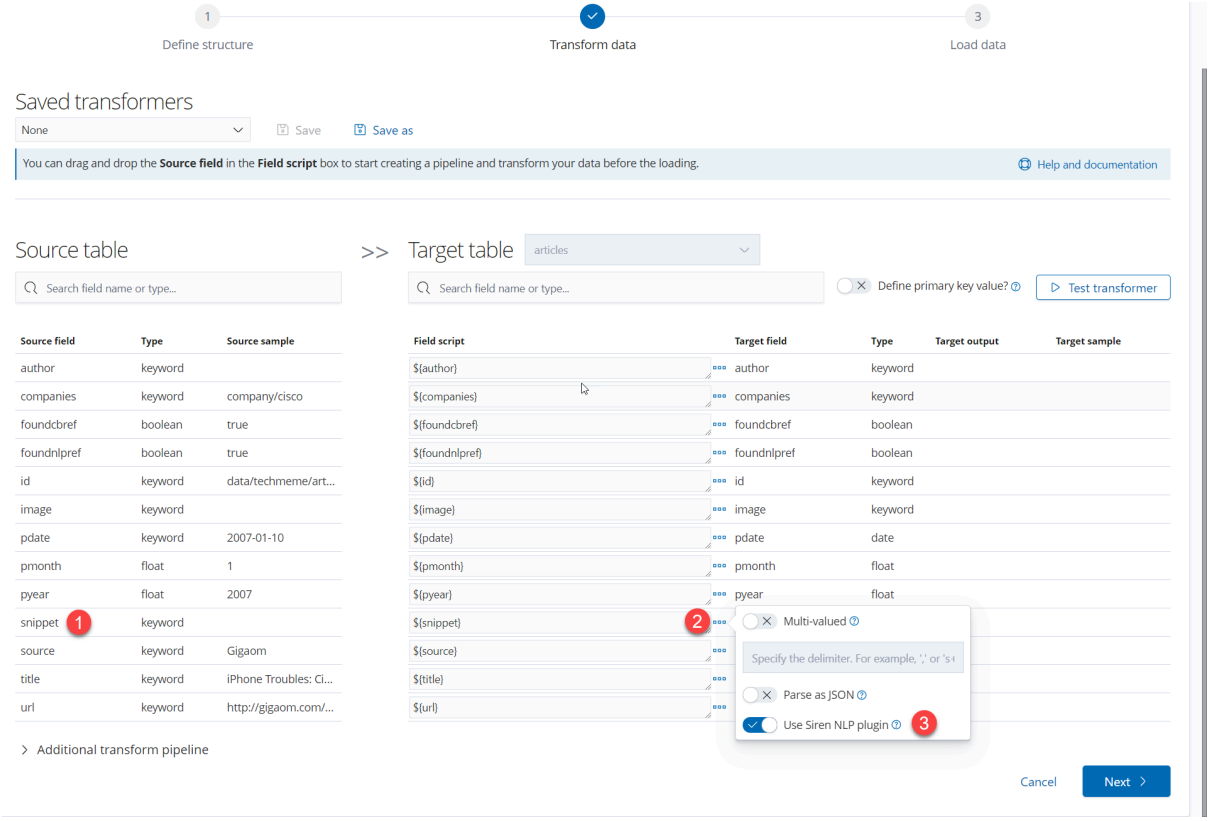
**Procedure**

1. Start importing the **articles_nlp.csv** file that is provided with the sample data. (Check the Importing data section if you need to refresh your memory.)
2. In the **Table name** field, type articles.
3. Scroll down to the mapping definitions and set the **pdate** field as **Date** in the type column.
4. For the **snippet** field, select **Text (allow word cloud)** as the type.

NOTE This step is mandatory to allow the NLP processor to work.

[1] It is always possible in Siren Platform to use any other NLP engine as part of ETL, but Siren NLP is made available via the Elasticsearch pipeline processor, which makes it easy to activate and requires no external server or process.

5. Click **Next**.
6. On the **Transform data** screen, find the snippet field (1), click the ellipsis (2), and activate **Use Siren NLP plugin** (3).

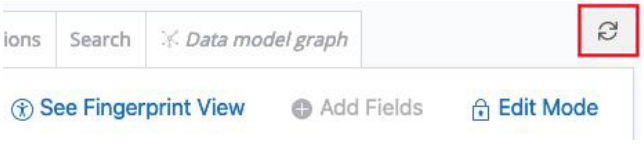



The **nlp-pipeline** is now configured to perform the following tasks:

- Extract annotations by using various processors from the **snippet** field of the **articles** index.
- Write the annotations to the field **siren.nlp**.
- Extract the following items using regex or simple rules: Telephone, USTelephone, Email, IPv4, IPv6, MacAddress, Url, SortCode, HashTag.
- Extract Organization, Location, and Person Named Entities by using OpenNLP NER models.

7. Click **Next** and **Start loading.**

8. When the import process is complete, click the **Fields** tab and click the **Refresh field list** button. This allows Siren to discover the newly-found entities.

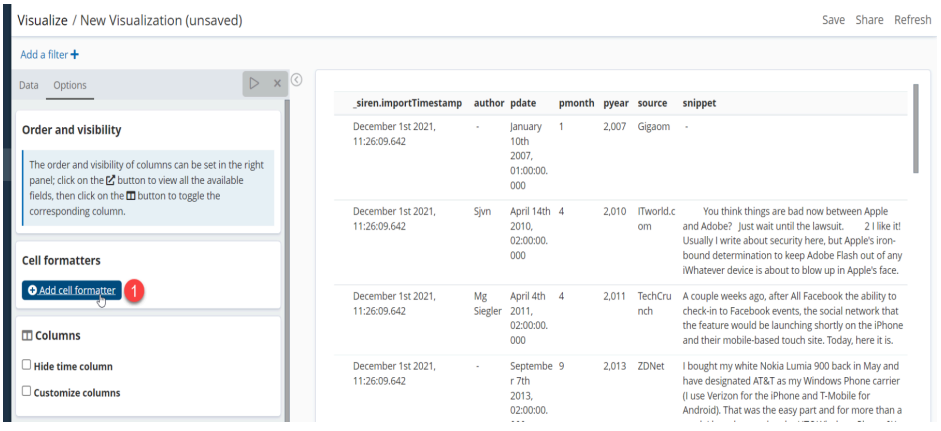



9. Next, auto generate a dashboard and name it *Articles.*

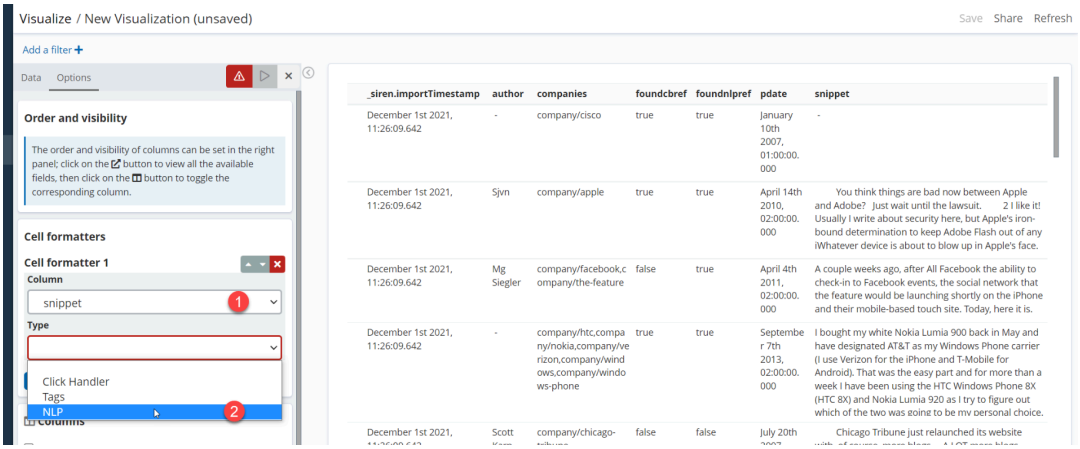
## Creating an NLP-based Record Table

Create a special Record Table for tagging entities that were discovered by the NLP process in the processed text field (snippet).

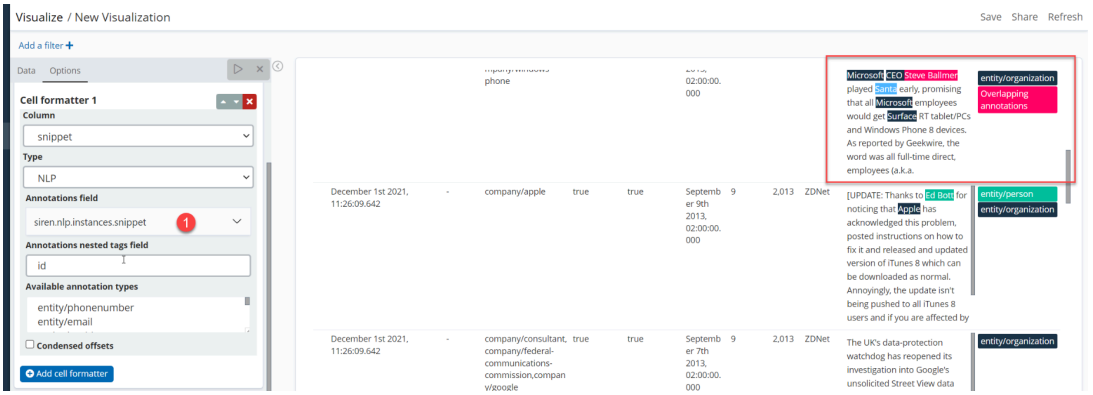
1. In the **Articles** dashboard, in the upper-right corner, click **Edit**.
2. Click **Add** > **Add a new visualization,**
3. Select **Record Table** and select the **Articles** entity table.
4. In the **Cell formatters** pane, click **Add cell formatter** ①.




5. From **Column** ①, select **snippet.** From **Type,** select **NLP** ②.




6. From **Annotations field**, select **siren.nlp.instances.snippet**, which contains the annotated offsets needed for formatting the text.
7. Click the **Apply changes** button.




8. Click **Save...**, name the visualization Record Table NLP, and click **Save to dashboard**.
9. In the upper-right corner, click **Save** > **Save dashboard.**

## Connecting extracted entities in the data model

Define the relationship between the **articles** index, entities, and the rest of the indices in our data model. To create relations manually, complete the following steps:

1. Go to the **Data model** app.
2. Click the **Relations** tab and click **Add relation**.
3. Under Source Entity **articles**, from **Field,** select **companies**.
4. From **Target Entity**, select **companies** and from **Field** select **id**.
5. Add the labels **mentions** and **mentioned in**.
6. Click **Save**.

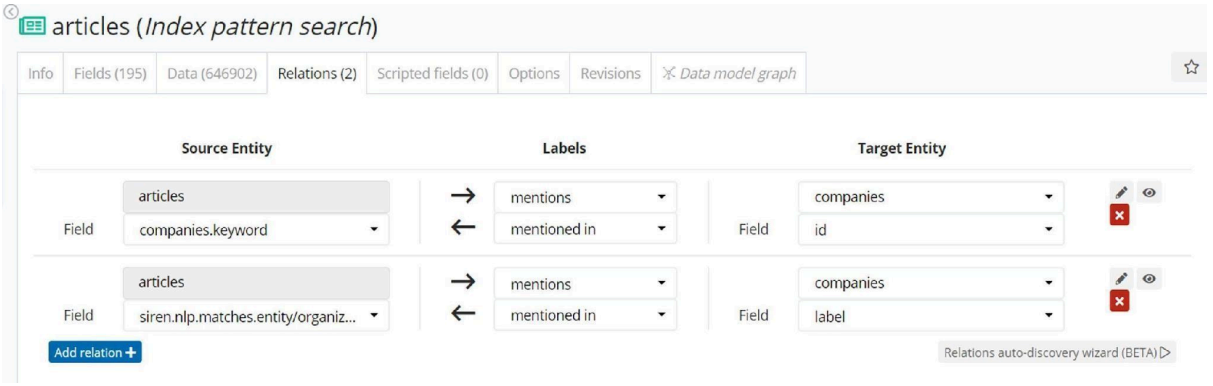
## Example usage of NLP Data in Siren Investigate

Data annotated by using the NLP plugin can be very useful for finding interesting relationships between fields in an index and the annotated text. In this example, you try to find the mentions of companies as a part of the articles snippet.

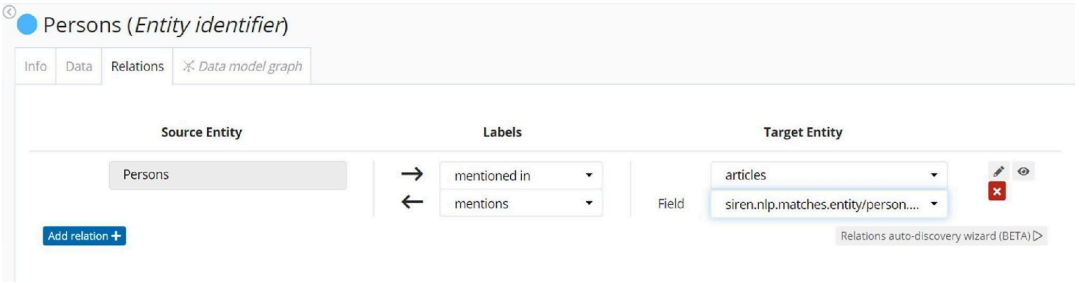
In the **Data model** app, click the **Data** tab. In the list of **Available fields**, you can see that a new set of fields starting with **siren.nlp** have been created by the NLP plugin during the import. These fields contain annotations for fields processed by Siren NLP (in this case the **snippet** field), such as organization, person, and location.

From the Data model page for the articles index, complete the following steps:

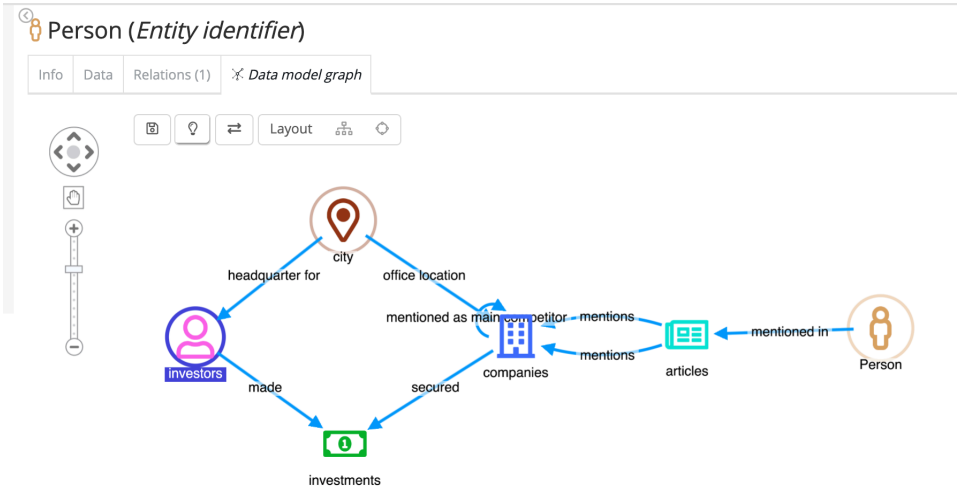
1. On the **Relations** tab, create a relation between Articles **siren.nlp.matches.entity/organization.keyword** and Companies **label**.




2. Given that we don't have an index for "Persons", [create an Entity Identifier (EID)](#) and add a relation from it **siren.nlp.matches.entity/person.keyword.**




The data model graph should look like this:

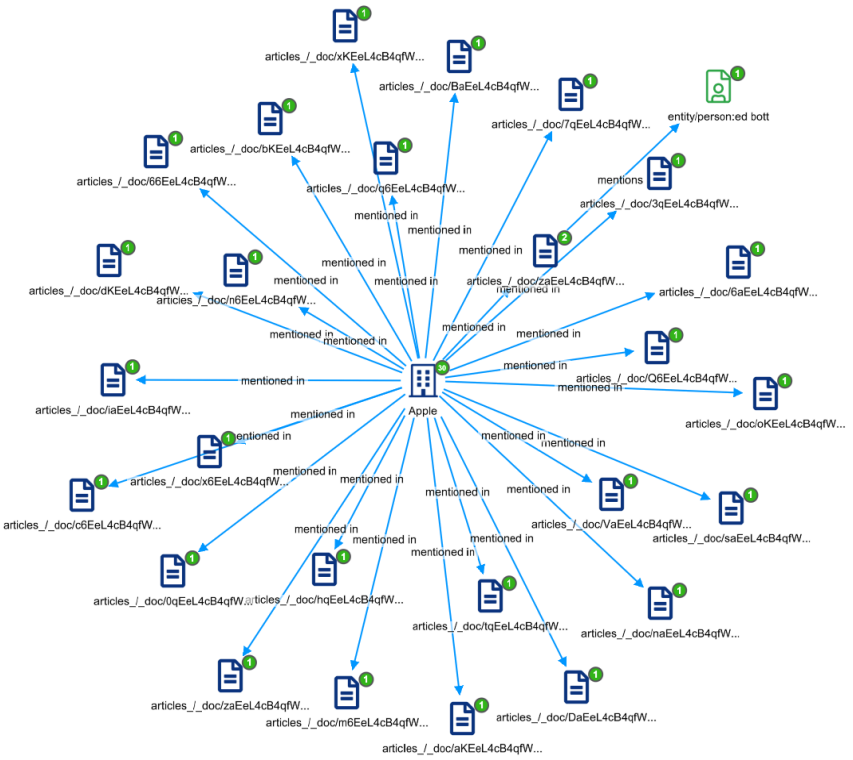



3. Go to the **Companies** dashboard and search for Apple ①.

**Note:** You may need to remove filters from previous exercises.

4. To filter the dashboard for the company with the label name Apple, in the **label** column of the **Search Results** visualization, click the **Filter for value** button next to an instance of Apple.
5. Go to the **Graph Browser** and drag the **Companies** dashboard there.
6. Click the Apple node, right-click, and select **Expand by relation**.
7. Select **mentioned in (26) *articles*** and click **Expand**. All the articles that mention this company are displayed.
8. Select all nodes on the graph, right-click, and select **Expand by relation**.
9. Select **mentions (1) *Persons*** and **mentions (26) *companies*** and click **Expand.**

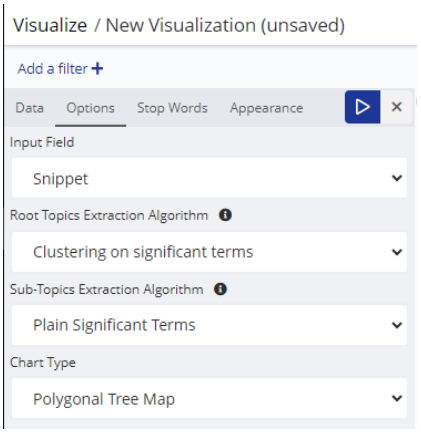
You now have an interesting graph that shows articles mentioning Apple and also mentions some **other companies.** The graph also shows mentions of **persons** who are named in articles that talk about Apple.

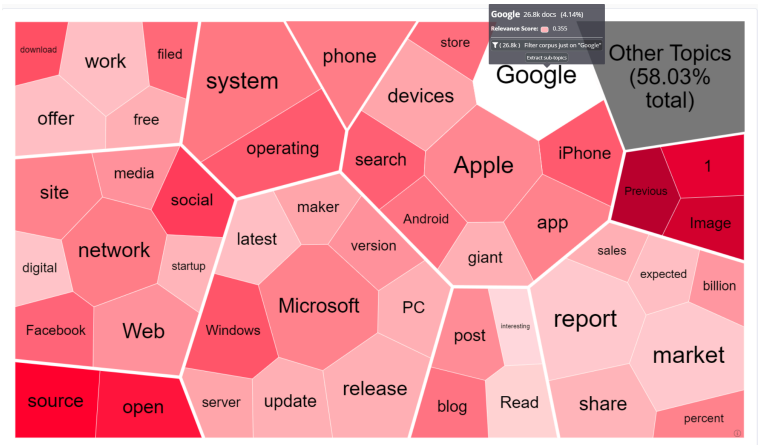


# Creating a Topic Explorer visualization

You can use the Topic Clustering visualization to better explore textual content, for example, understanding what topics are discussed in the articles.

1. Open the **Articles** dashboard.
2. From the options menu, click **Edit** > **Add** > **Add a new visualization**
3. Select **Topic Clustering** and select **articles.**
4. In **Input Field**, select **Snippet**. The snippet field contains the actual text of the articles.
5. Click the **Apply changes** (play) button.
6. Click **Save...**, name the visualization Topic Explorer and click **Save visualization**.



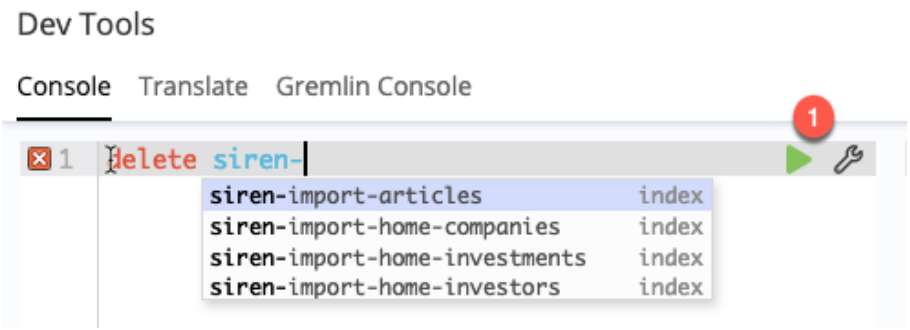



# Deleting data and changing a table schema

Deleting data in Siren Platform is intentionally difficult due to the damage that it could cause in environments where the data is in very large streams, such as in large Elasticsearch installations.

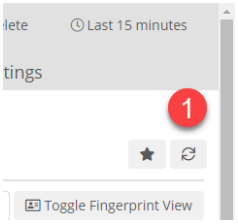
The following procedure describes how to delete data. You do not need to complete this for this tutorial.

1. Go to the **Dev tools** app.
2. In the **Console**, in the editor pane, type delete and the name of the index, for example, `.siren`
3. Click the play button ①. You see the acknowledgment in the response pane.




IMPORTANT If you delete the index and the **companies** dashboard still exists, the dashboard will display errors. You can either reinstate the companies index by uploading the data again or delete the dashboard

If the data structure has changed, for example, if there are more fields or fields of a different type, you must click refresh to refresh the 'Index Pattern Search' field list ①.



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