

**SingTrade Compass**  
**(Singapore Trade: Partners through the Pandemic)**  
**App User Guide**

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## 1. Home Page

This is the landing page when user first launches the application. The homepage displays the app name on the top left corner “SingTrade Compass”. On the main panel, there is title panel that shows the topic of the project “Singapore Trade: Partners through the Pandemic”. Following the title are a few key highlights from the app and a general gif representing country flags (royalty free).

The blue arrow in the figure 1 pointing to the navigation panel represents the tab items built in this application, which are explained in subsequent sections.

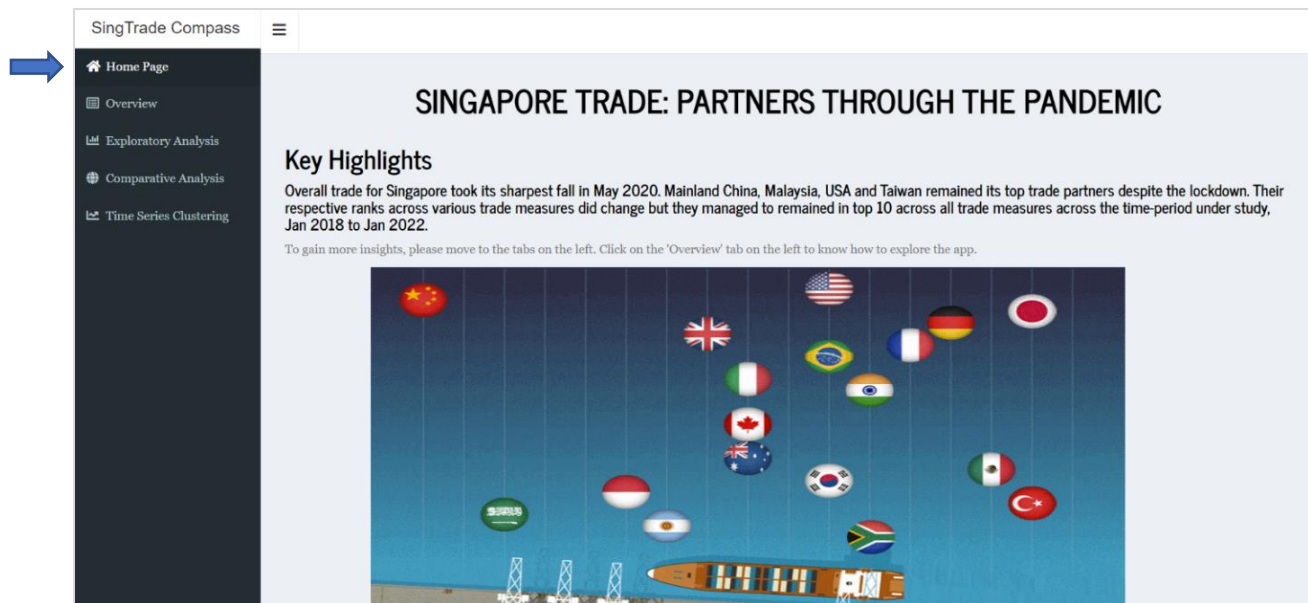


Figure 1: App Home Page

## 2. Overview Tab

On this page, there are two tab-panels giving an overview of the application and a summary of the dataset used.

### 2.1 App Overview Tab

The “App Overview” tab provides a short description of the application contents and motivation for building the application. The plot on the on the right half of the main panel is interactive and shows the total trade volume for Singapore over the months from January 2018 to January 2022. The time-period corresponds to pre, during and post-Coronavirus period, carefully chosen to fulfill the purpose of this application.

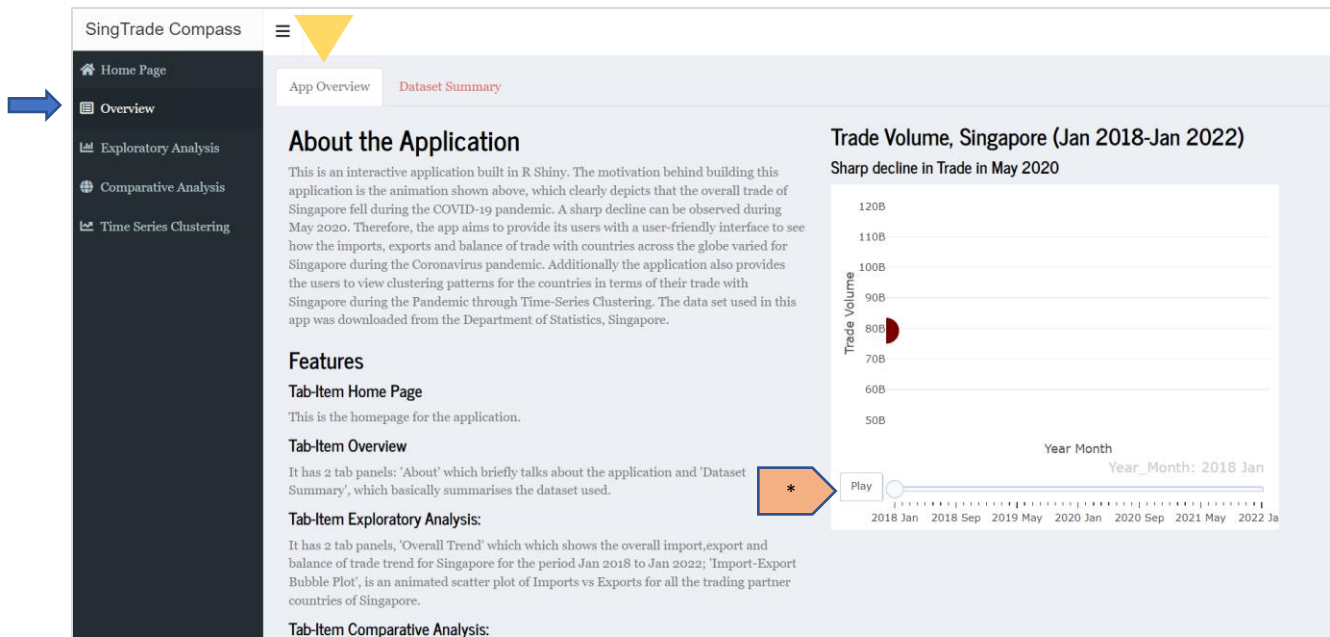


Figure 2: Overview Tab - App Overview

\*Click the “Play” button to see how the total trade volume in Singapore has changed from 2018 Jan to 2022 Jan.

## 2.2 Data Summary Tab

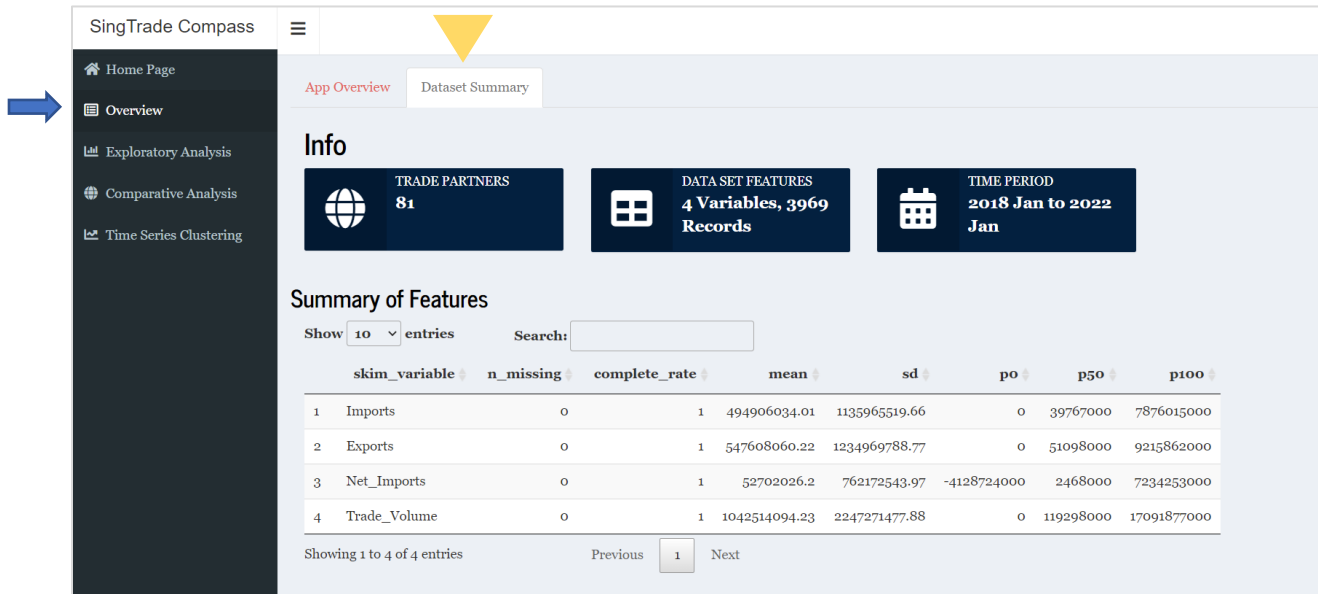


Figure 3: Overview Tab- Data Summary

Dataset Summary tab shows the dataset information and the statistics of the variables of interest.

### 3. Exploratory Analysis

Under the Exploratory Analysis tab, 2 plots are provided separated by 2 sub-tabs in the page to facilitate exploratory analysis for the users.

#### 3.1 Overall Import Export Tab



Figure 4: Exploratory Analysis- Overall Import Export

In the “Overall Import Export” tab, a column plot on the Total Merchandise Import and Export Trade values ranging from Jan 2018 to Jan 2022 is shown. The Imports column chart is shown in maroon while Exports are in sea green. The line plot represents the trade balance.

\*Slide the filter on the 2 ends of the date filter to specify the range of dates to be observed

### 3.2 Bubble Plot Tab

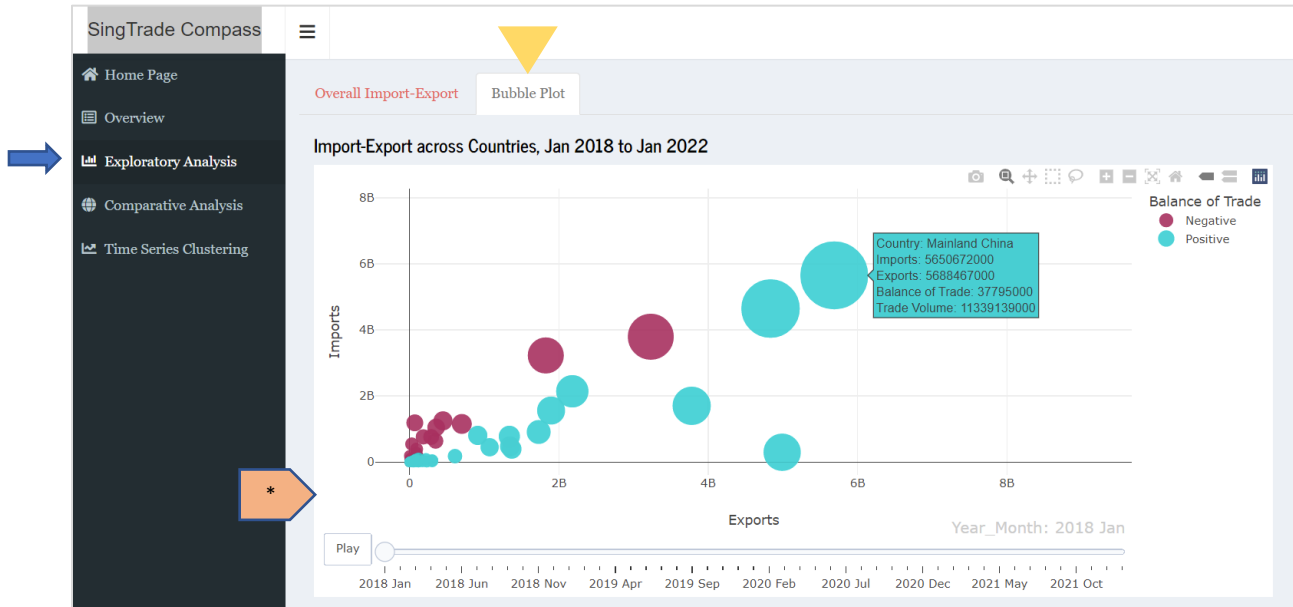


Figure 5: Exploratory Analysis Tab- Bubble Plot

The bubble plot is an animated interactive plot to show the Imports and Exports values from Apr 2018 to Jan 2022 for different countries.

1. The \*"Play" button needs to be clicked on to run the animation showing the change in Imports and Exports throughout the Year Month period for all the countries.
2. Slider can be manually moved to choose a specific Year Month.
3. Hovering the mouse over each bubble in the plot gives more information like Country name, Imports and Exports value, Balance of Trade and Trade Volume.

## 4. Comparative Analysis

In this section of the application, users can compare the trade measure of interest between different countries.

### 4.1 Top-Partners

This tab enables users to view the top 10 trade partners of Singapore based on selected time-interval and trade measure.

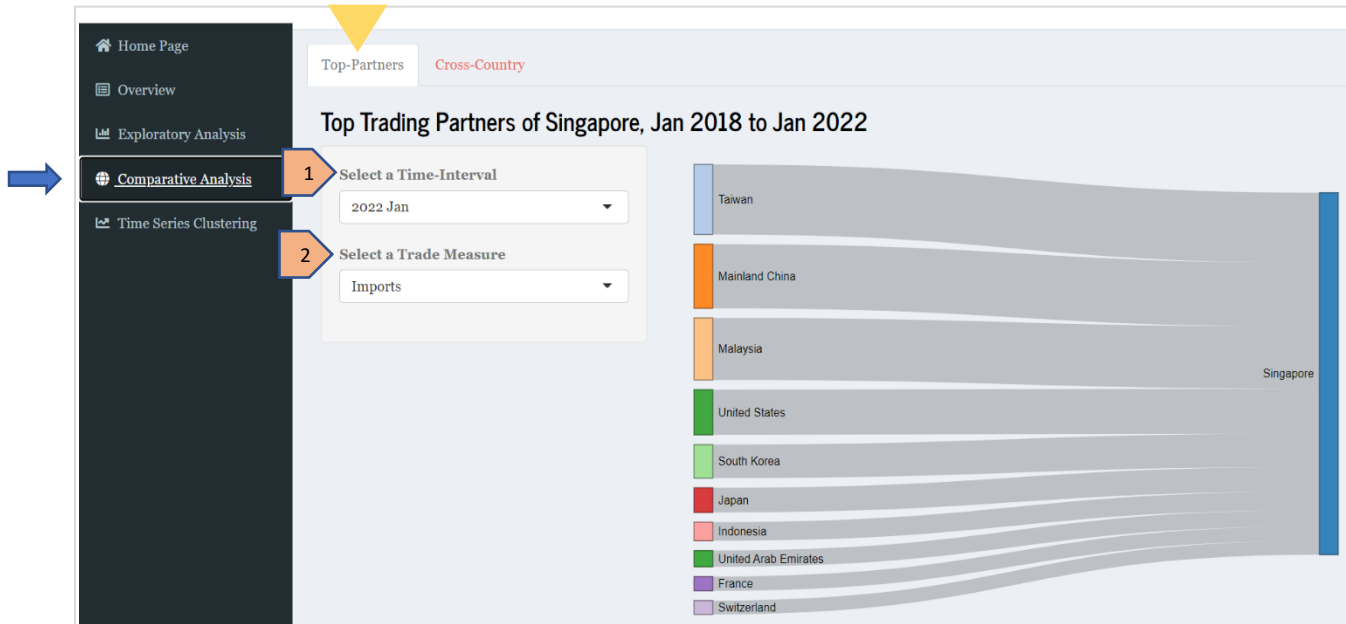


Figure 6: Comparative Analysis Tab- Top Partners

Steps:

1. Select the year month of interest.
2. Select a Trade Measure.

## 4.2 Country-Cross Tab

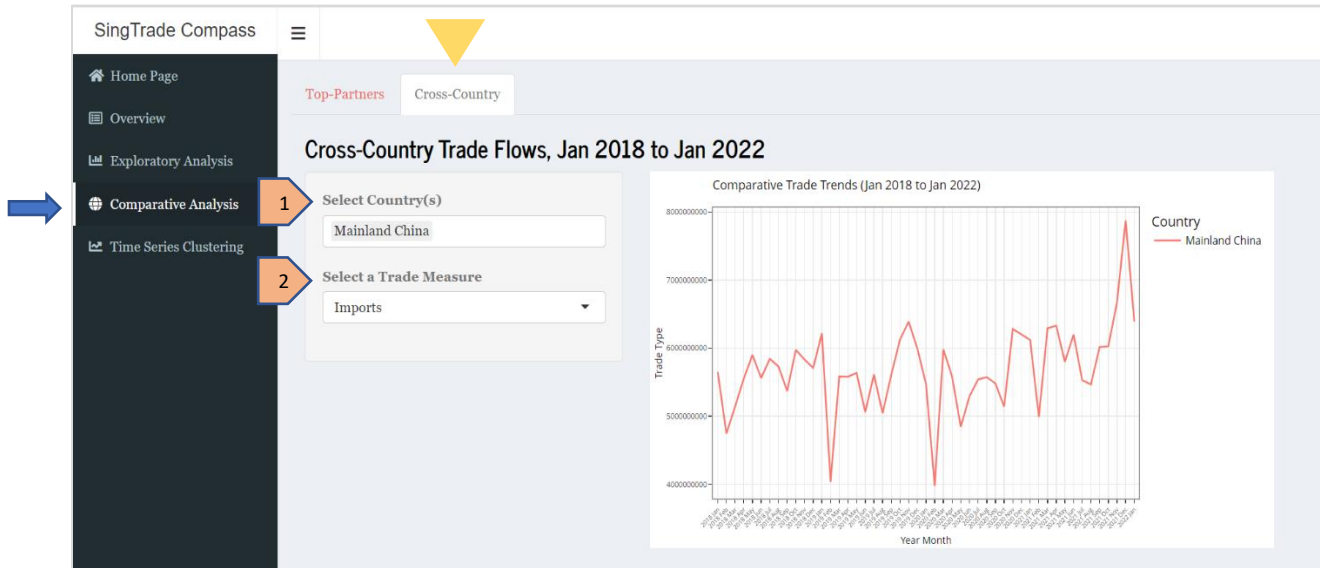


Figure 7: Comparative Analysis Tab- Cross Country

The Cross-Country tab is for user to compare the time series trend between countries for the different metrics selected.

1. Select Country/Countries from the drop-down list
2. Select the trade measure of interest from the drop-down list.



## 5. Time Series Clustering

On this page, time series clustering can be done for Imports and Exports. This feature is to allow users to see which countries have a similar time series trend based on the date range of interest.

### 5.1. Time Series Clustering Parameters

SingTrade Compass

Home Page

Overview

Exploratory Analysis

Comparative Analysis

Time Series Clustering

Select a Trade Measure

Imports

Select the Time Interval

2018 Jan 2022 Jan

Select Countries:

Denmark Germany

Luxembourg Ireland

United Kingdom Greece Spain

Finland Italy

Select the number of Clusters:

2

Select the Clustering Method

Hierarchical

Hierarchical Control Method:

complete

Apply Changes

Figure 8: Clustering Option Parameters

1. Choose Trade Type. Options are Imports and Exports.
2. Use the slider to select the Date Range of interest.
3. Select Countries to do clustering for. There must be a minimum of 5 countries chosen for “Apply Changes” button to be enabled.
4. Key in number of clusters required.
5. Choose Clustering Method.
6. If Hierarchical clustering method is chosen, another option to choose Hierarchical Control Method selection input will show. Select the hierarchical control method.
7. Click “Apply Changes” button to run clustering.

## 5.2 Time Series Clustering Results

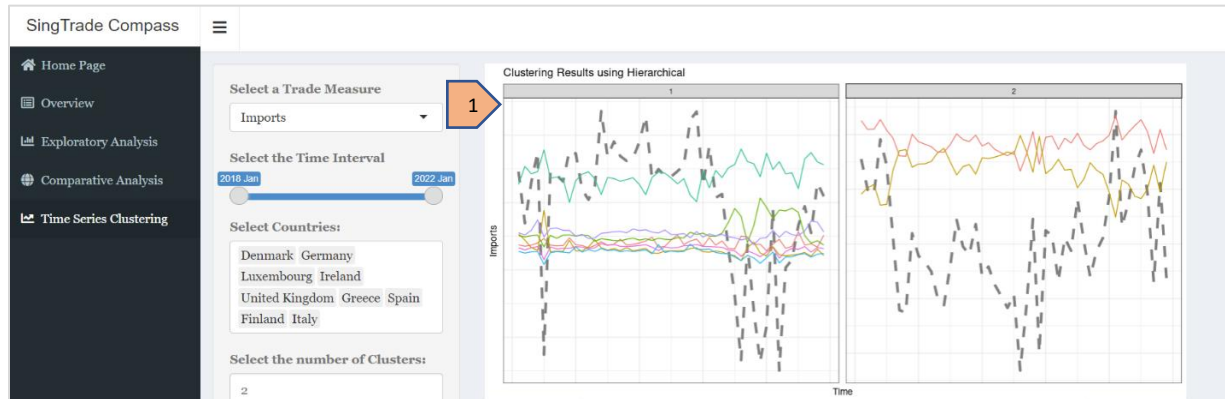


Figure 9: Time-Series Clustering Tab- Results

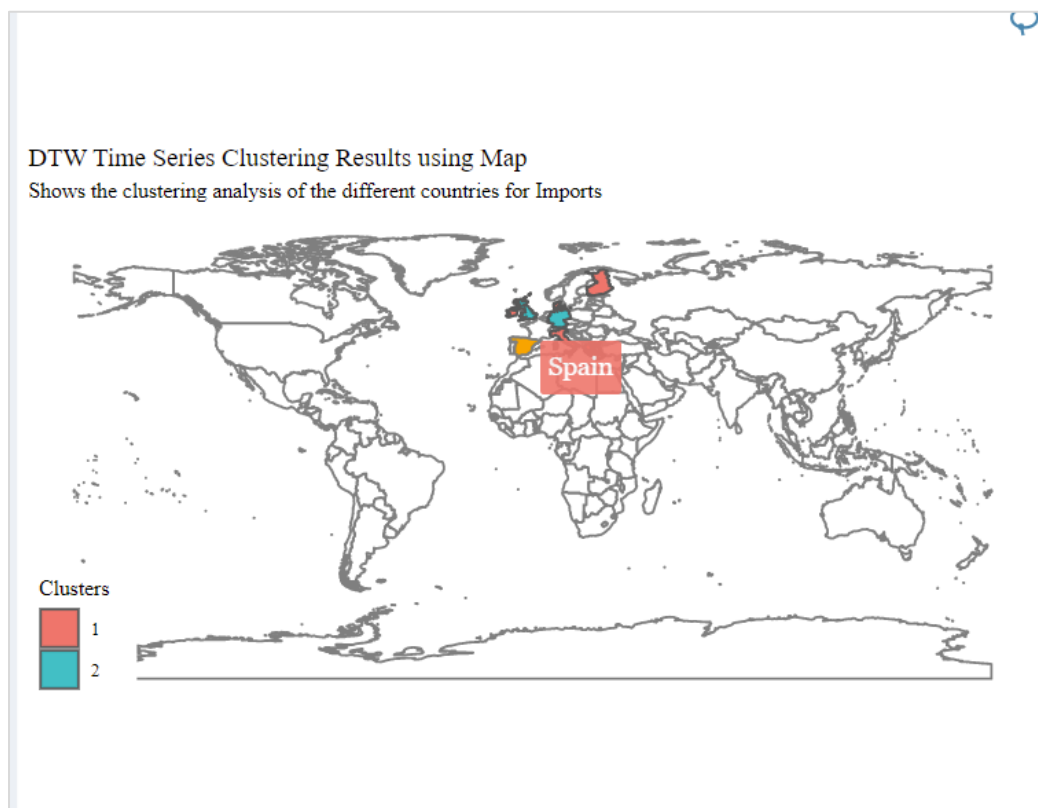


Figure 10: Time-Series Clustering Results Map

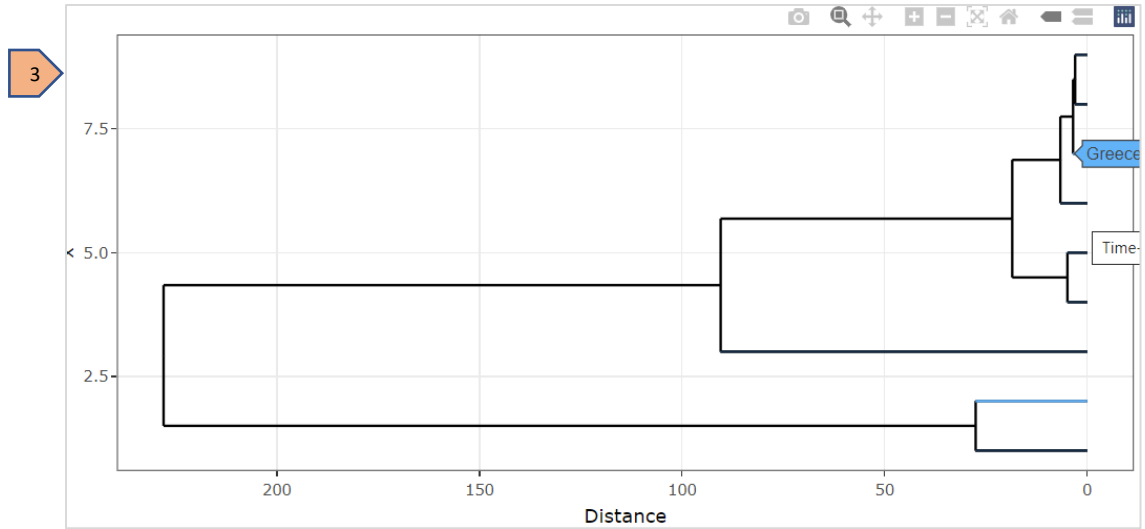


Figure 11: Hierarchical Clustering

1. Time series trend for each cluster
2. World map highlighting which countries belong to which cluster group. Hovering the mouse over the world map will show the country names and the tooltip box color corresponds to the cluster group color.
3. For hierarchical clustering, a dendrogram will be shown below the world map.