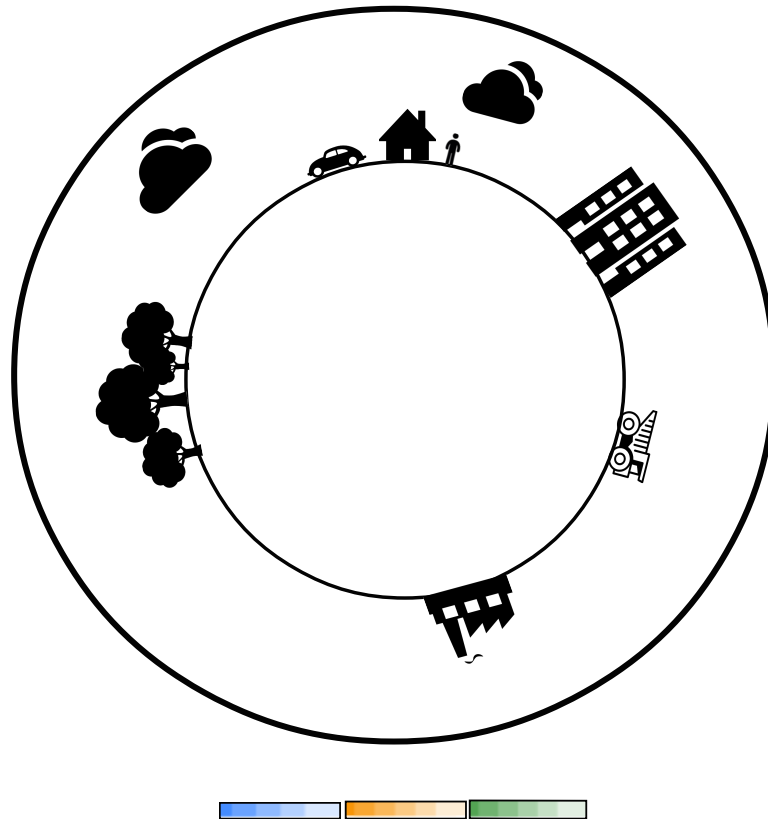


User Guide (in progress)

ExioVisuals



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Introduction

ExioVisuals is an effort to visualize complex Input-Output Analysis results from the Exio database. The visualizations are according to user input and are interactive. This short user guide explains the functionalities of the application in a tutorial-like manner. Please refer to the report and developers guide for additional information.

Homepage

On the homepage in the navigation bar five tabs are available in which each signifies a visualization type. See figure 1 below for a screenshot that shows the respective tabs.

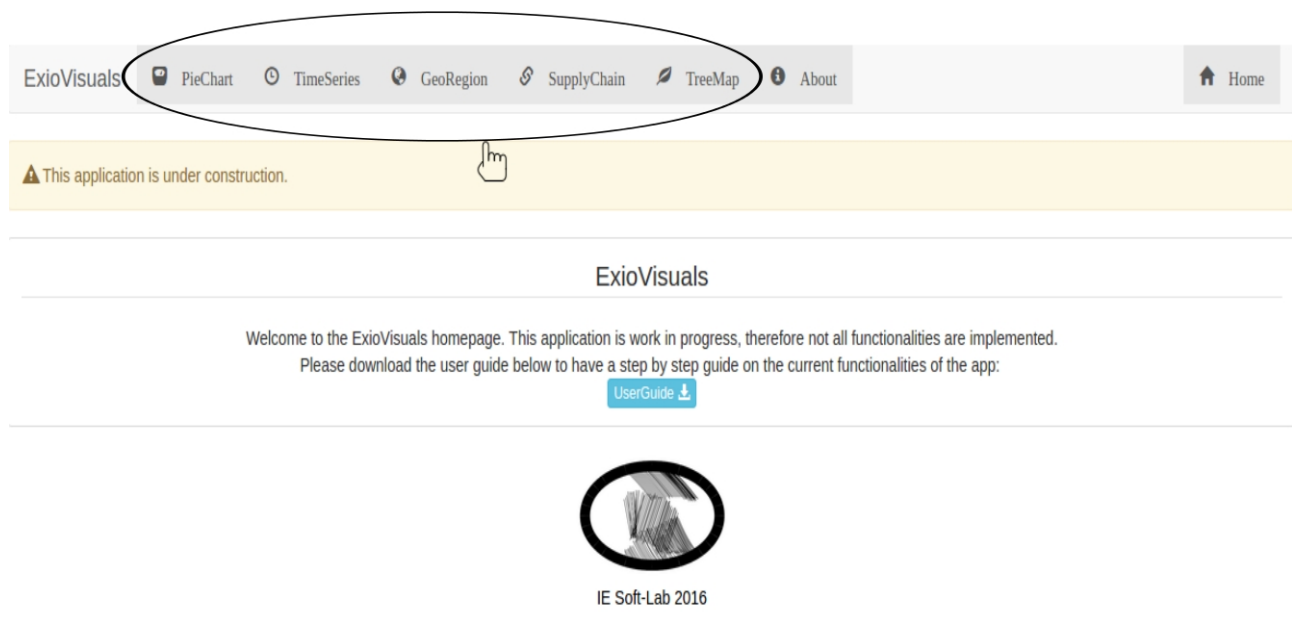


Figure 1: the homepage of ExioVisuals.

- PieChart: which is aimed at visualizing the distribution of environmental problems.
- TimeSeries (not functional yet): visualizes changes in time dimensions.
- GeoRegion (not functional yet): is developed to integrate the concept of Web mapping. Web mapping directly maps specific geographic data to region-divided world maps. This technique is commonly used in Geographical Information Systems (GIS) with the use of standardized geographic data infrastructure and plotting mechanisms.
- SupplyChain (not functional yet): focuses on flows in a Sankey Diagram manner.
- TreeMap (not functional yet): Similar to PieChart is focused on distribution analysis.

PieChart

As of now the PieChart is the only functional piece of the application, therefore a step by step example will be shown. See pages at the end of this user guide for a showcase rendering test graphs for the other visualization types. The PieChart example includes the following research question: What is the distribution of impact of electricity generation by coal generated in China, Indonesia, Japan and India in the year 2011 with respect to machinery and equipment exported by China and imported by Germany? See figure 2 for the menu visible in the PieChart tab.

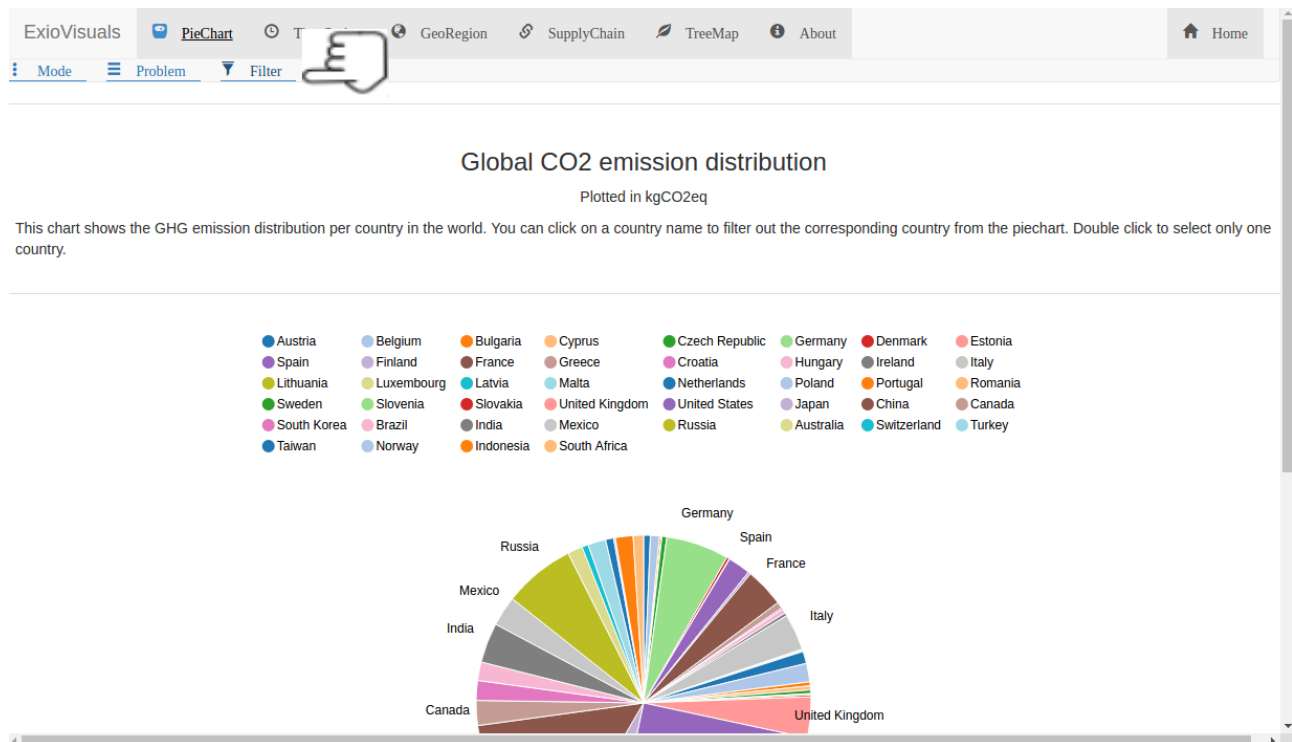


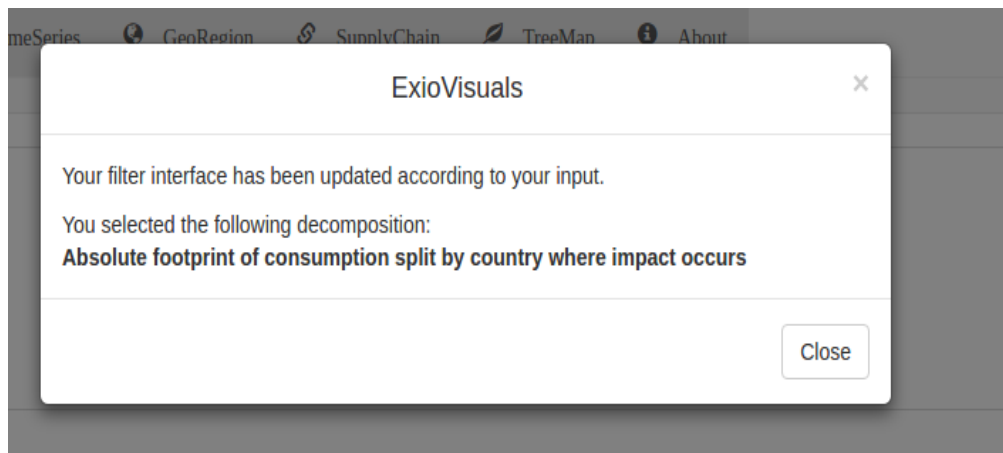
Figure 2: the PieChart menu

To answer this question the application can take the following inputs:

- **Mode (decomposition):** Explains what distribution a user may want to know. In this case it is “Absolute footprint of consumption where impact occurs” . See figure below.

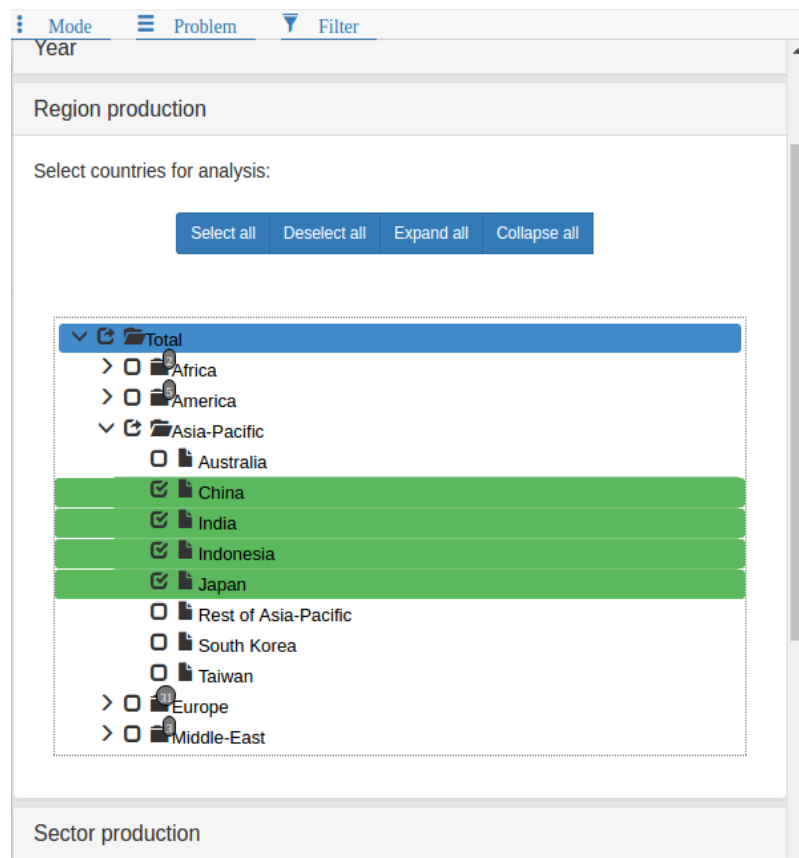
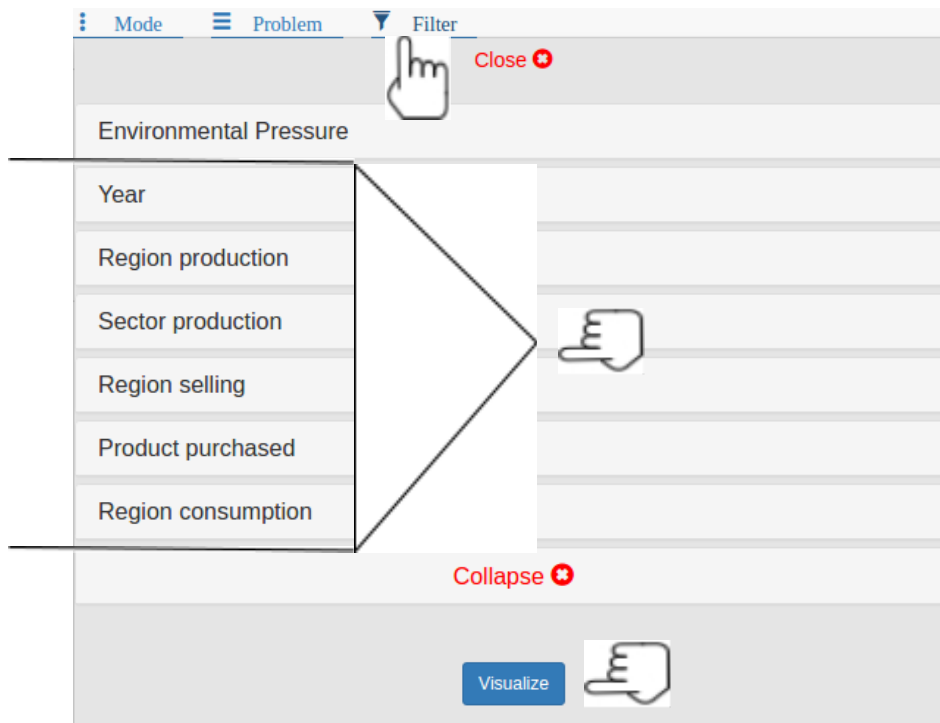
The screenshot shows the 'Decomposition' menu in the ExioVisuals application. The title is 'Decomposition' and the subtitle is 'Absolute footprint of consumption split by:'. There are seven radio button options: 'Consumed product category', 'Consuming region', 'Sector where impact occurs', 'Country where impact occurs', 'Environmental pressure', and 'Year'. A hand icon points to the 'Country where impact occurs' option. A 'Reload' button is at the bottom right. A 'Close' button with a red 'X' icon is at the top right.

Clicking on the “Reload” button inputs this data and adjusts the filter function next to it. According to our selection all user inputs in the filter function will now only be capable to take one single selection except the so called “Region of production”. After “Reload” has been pressed we see the following pop-up notification:



- **Problem** (not functional yet): This signifies the environmental problem a user may want to assess. This is also not needed in our example research questions as we do not have a specific environmental problem instead we assess them in an aggregated manner.
- **Filter:** takes inputs on what aspects the user wants to filter according to the selected “mode”. Considering our example question we can come with the following filter options:
 - Year: 2011
 - Region of production: China, India, Indonesia, Japan
 - Sector of production: Electricity by coal
 - Region selling: China
 - Product purchased: machinery and equipment
 - Region consumption: Germany

This relates to the options we can fill in the application, see figures below.



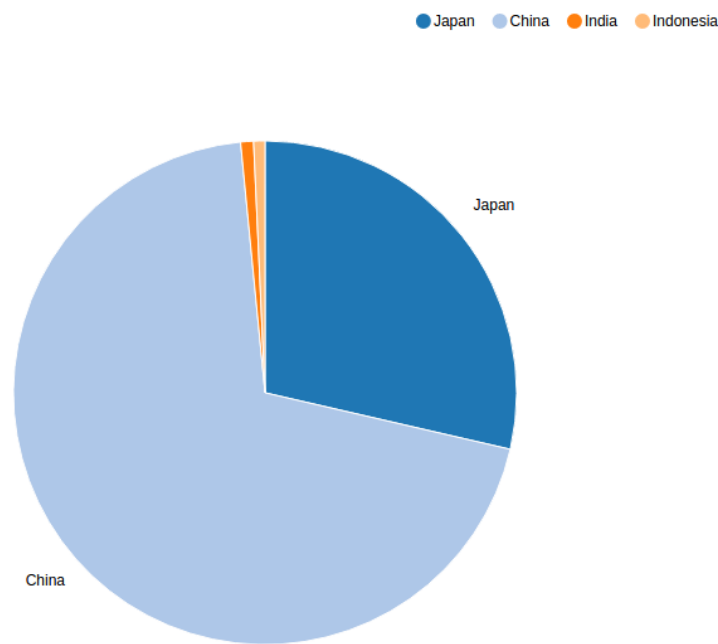
After clicking on the button “Visualize” we can generate a graph according to the input given.

PieChart results

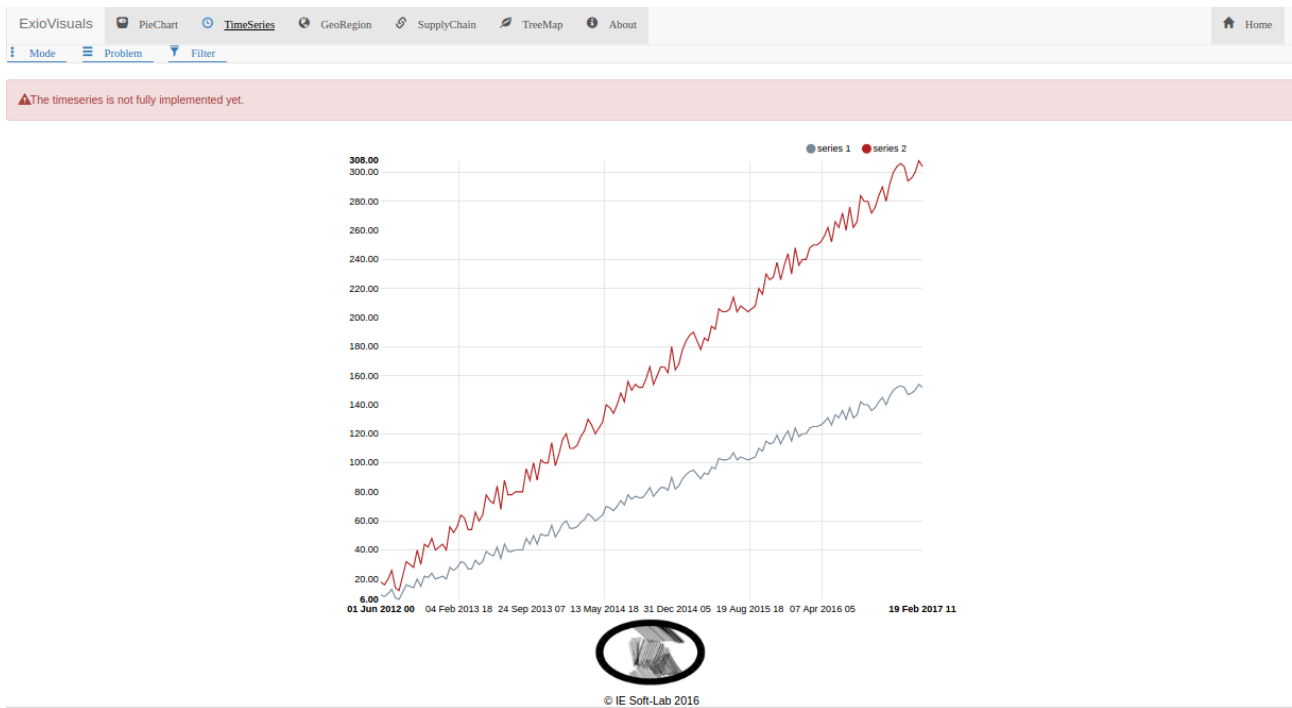
Not only a graph is generated, but also a table that shows the inputs given by the user. See figures below for the table and the piechart graph.

Absolute footprint of consumption split by country where impact occurs
Plotted in kgCO2eq

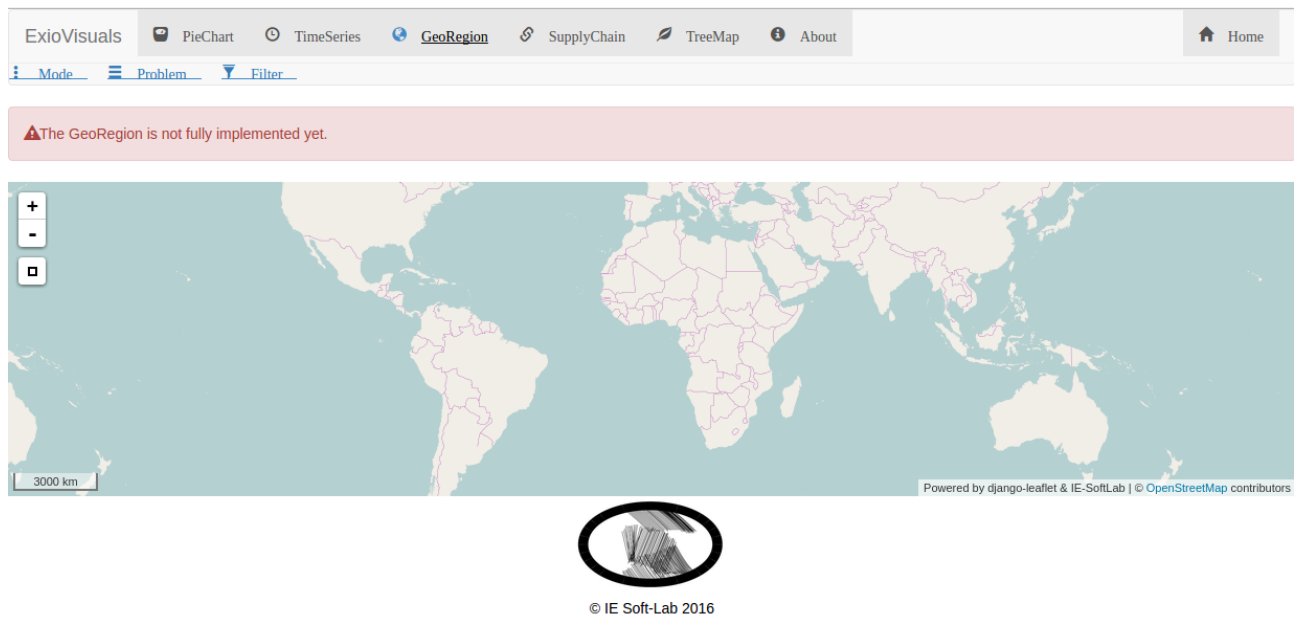
Type	Query
Select mode	Absolute footprint of consumption split by country where impact occurs
Environmental pressure	[]
Year	2011
Region of production	['Japan', 'China', 'India', 'Indonesia']
Sector of production	['Electricity by coal']
Region selling	['China']
Region of consumption	['Germany']
Sector of consumption	['Machinery and equipment n.e.c.']



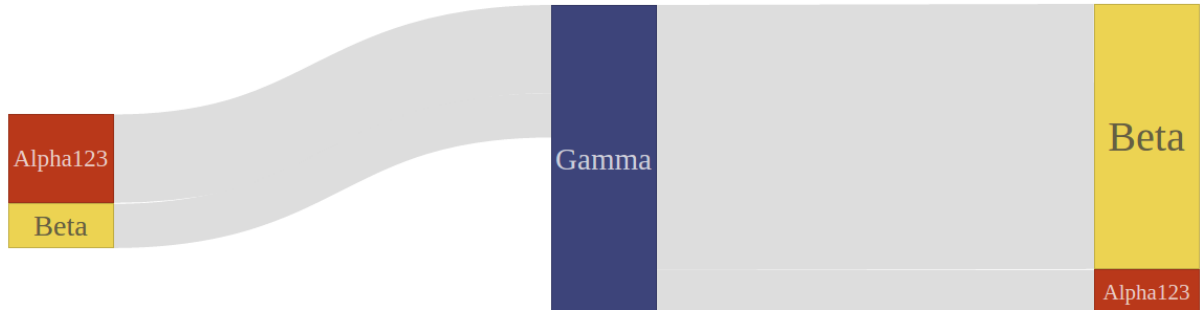
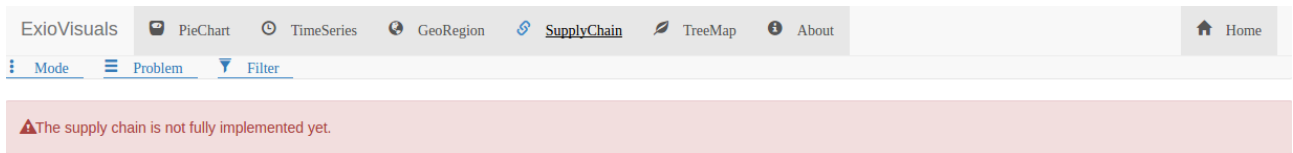
TimeSeries



GeoRegion

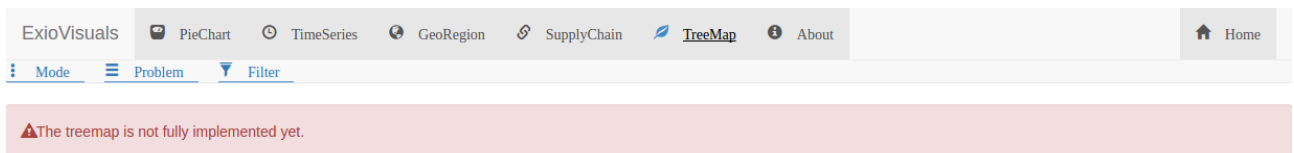


SupplyChain



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TreeMap



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