USER MANUAL

Dotted Chart Visualizer

Prepared by: Pieter Patonedi, Ariane Chu, Elisabeth Buttkus, Samir Majeri

GitHub Link: https://github.com/ari-zhu/dotted-chart-visualizer

Table of Contents

1. Introduction

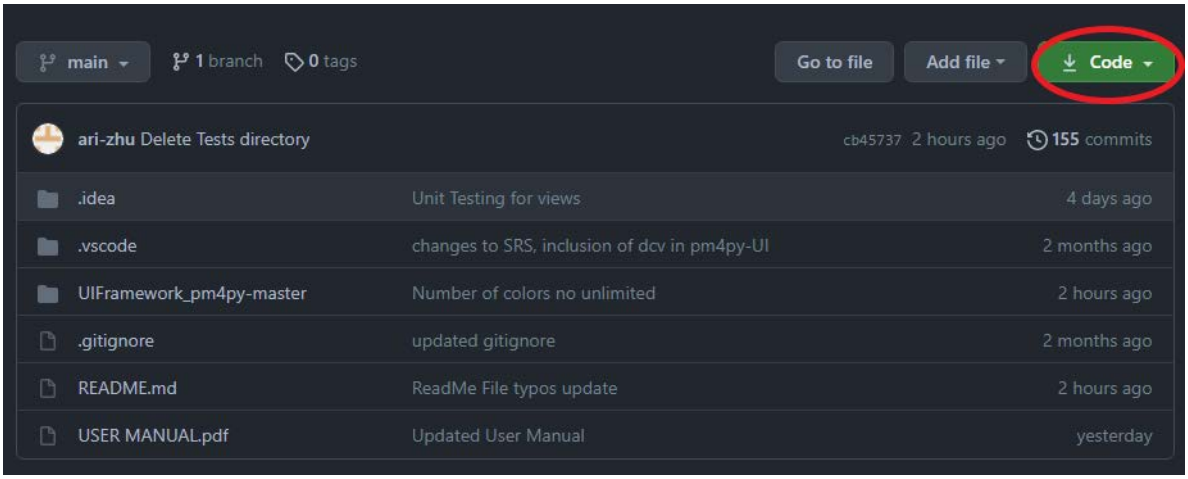
Process mining is an important practice in the fields of data science and business process management. The results can be used to solve problems or optimize performance of process driven systems and is therefore highly valued in companies and institutions. Companies aiming to identify and model process activities require a comprehensive tool that caters to this task and that allows to create an expressive and accurate model of the activities in such a system. The first step in this process is visualizing the information available which is necessary during the process discovery phase.

The Dotted Chart Visualizer for Process Mining is a Python based, interactive Django app, that is able to load an event log file (XES or CSV format) into the app, and display selected process data in the dotted chart visual style.

The user will be able to interactively modify certain aspects of the visual, like changing the range of the displayed data, select colors and switching between different attributes of the event data that the user chooses to display. A legend is also provided to indicate relevant information about the process data that is shown in the chart. Both the legend and the dotted chart visual can be downloaded as a jpg or a png file by the user. This way, an intuitive, but powerful tool for the analysis of event logs is provided, which is essential and needed in the field of Process Mining.

2. Getting Started

2.1. Cloning the Git Repository



1. Go to the Git Repository:
   https://github.com/ari-zhu/dotted-chart-visualizer
2. Click on the “Code” Button and copy the HTML or SSH link.
3. Navigate to a folder that you want to clone the app to using this command in the command prompt:
   `cd [FILE DIRECTORY]`
   (Replace the `[FILE DIRECTORY]` with the file directory)
4. Clone the Repository by entering the following command in the command prompt:
   `git clone [HTML/SSH LINK]`
   (Replace the `[HTML/SSH LINK]` with the HTML or SSH link)

2.2. Starting the Application

(The first two commands must be entered in the command prompt)

1. Install the necessary project dependencies:

   ```
   python -m pip install -r requirements.txt
   ```

2. Start the application using:
   `python manage.py runserver`
3. To start using the dotted chart visualizer, type this in your browser:
   `http://127.0.0.1:8000/`

2.3. Running the Dotted Chart Visualizer in a Docker Container

1. Dockerfile is located in the project root folder (*UIFramework_pm4py_master*).
2. Create a Docker Image by running this command in the command prompt:

   ```
   docker build --tag dcv .
   ```

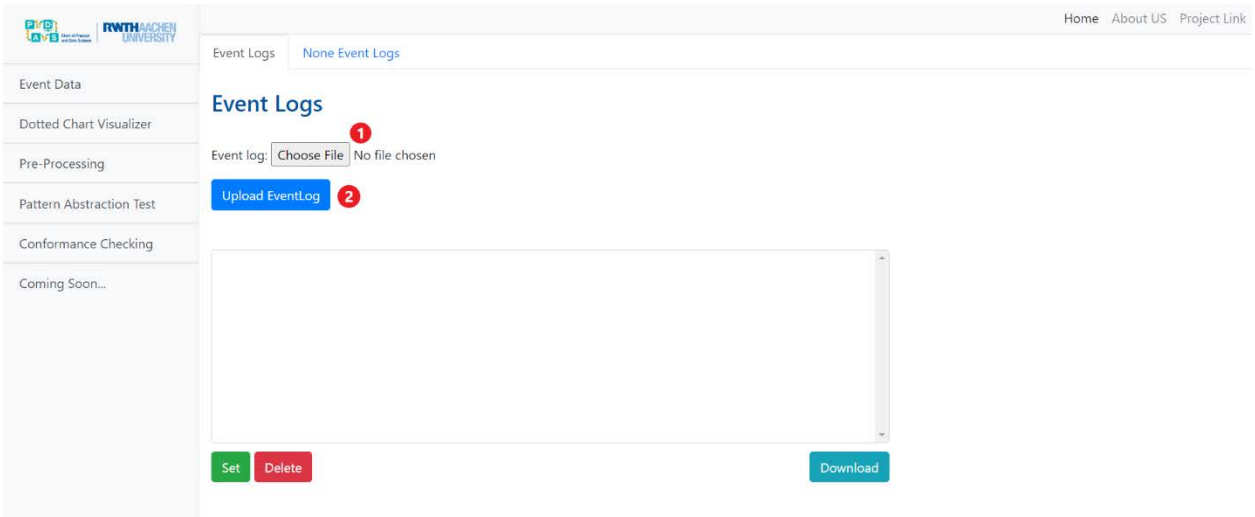
3. Start CAD in a container using:
   `docker run --publish 8000:8000 dcv`
4. Access the dotted chart visualizer in your browser by entering:
   `http://127.0.0.1:8000/`

2.4. Running the Unit Tests

To run the unit tests, run this command in the command prompt:

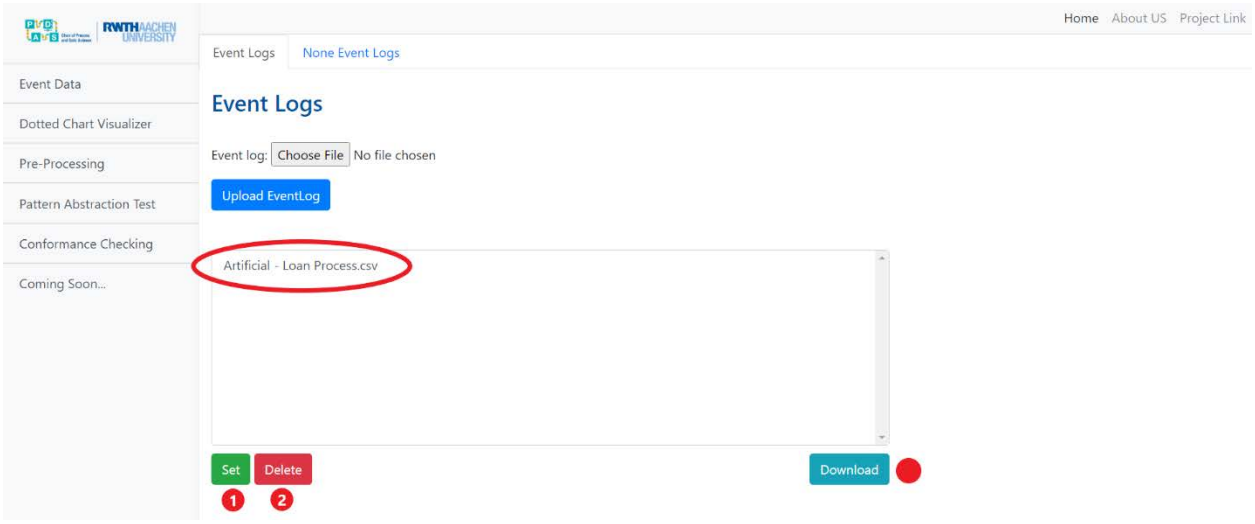
```
python manage.py test
```

2.5. Uploading a file



1. Choose File to upload *(example file name here: Artificial – Loan Process.csv)*
2. Click “Upload EventLog”

2.6. Set, Delete, and Download File



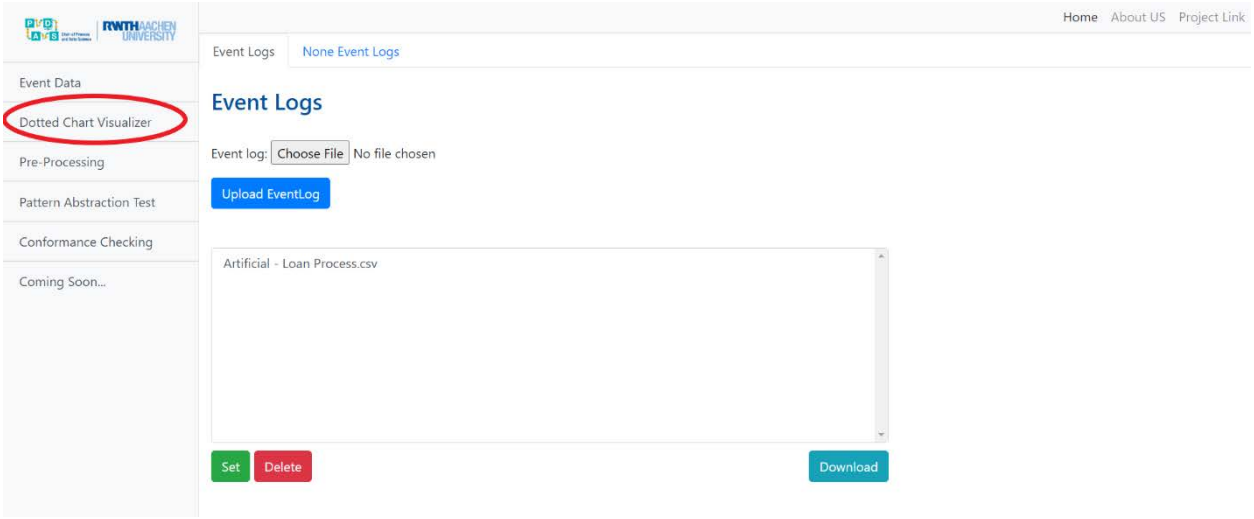
After uploading the file, click on the file you want to set as input, delete, or download

Then click on the respective buttons:

1. Click “Set” to set the file as input.
2. Click “Delete” to delete the file from the log list
3. Click “Download” to download the file to your computer

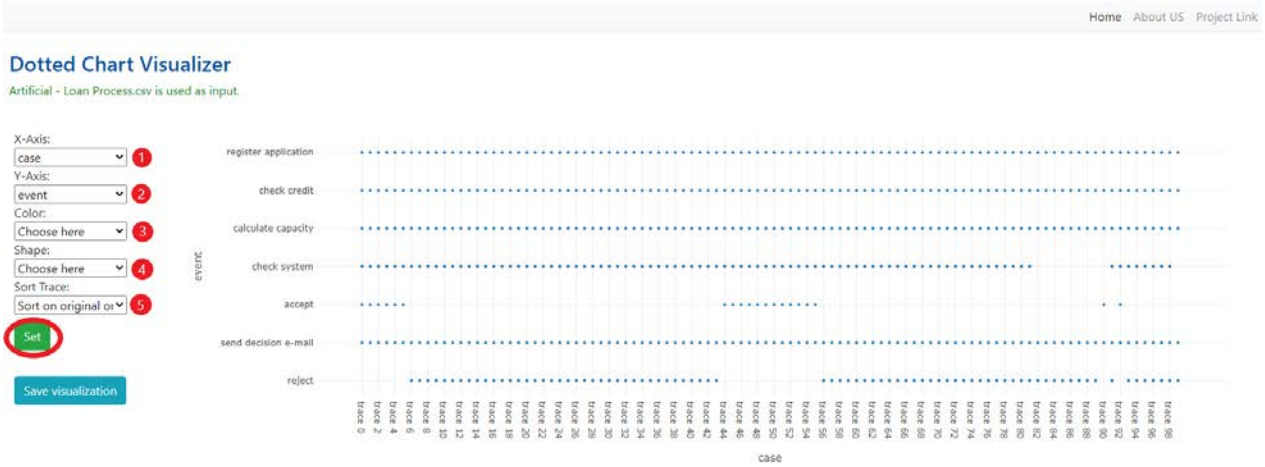
3. Dotted Chart Visualizer

3.1. Opening the Dotted Chart Visualizer



After setting the file as input, click “Dotted Chart Visualizer” to open the visualizer.

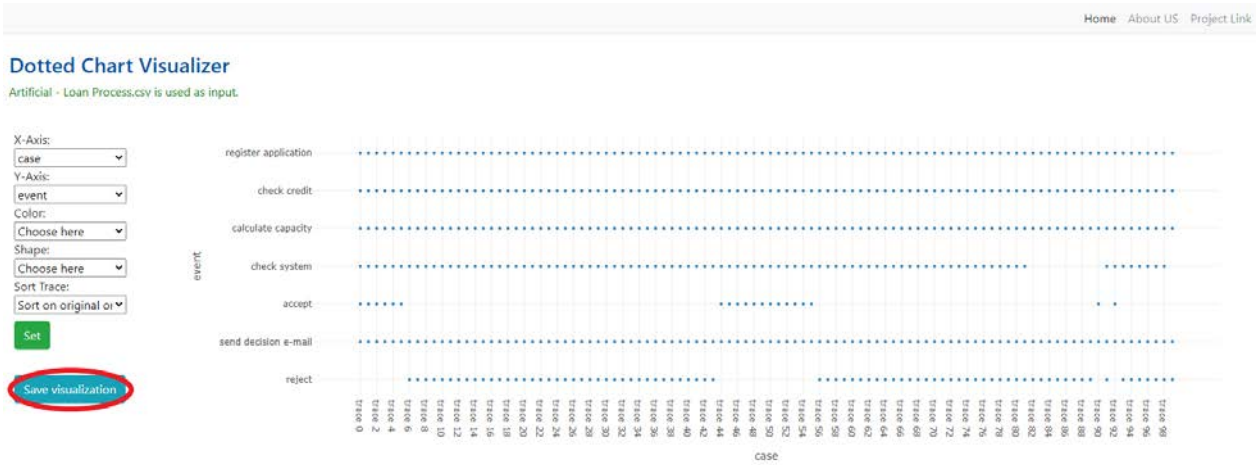
3.2. Selecting Attributes



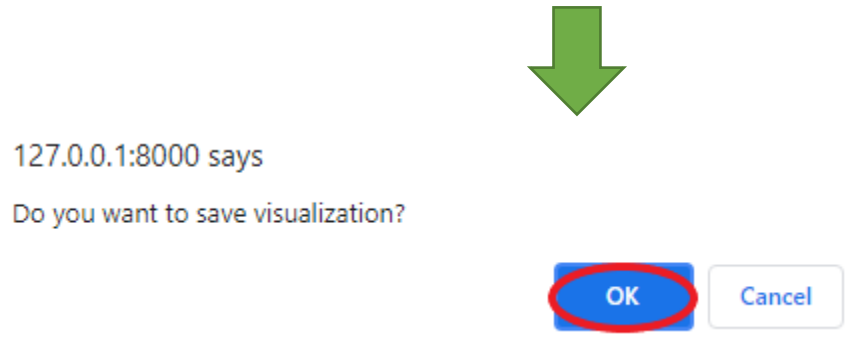
Change the attributes (X-axis, Y-axis, Colors, Shapes) and/or sort the traces

Confirm by clicking on 6 (Set)

3.3. Save Visualization



To save the visualization as a PNG file, click on “Save visualization”.

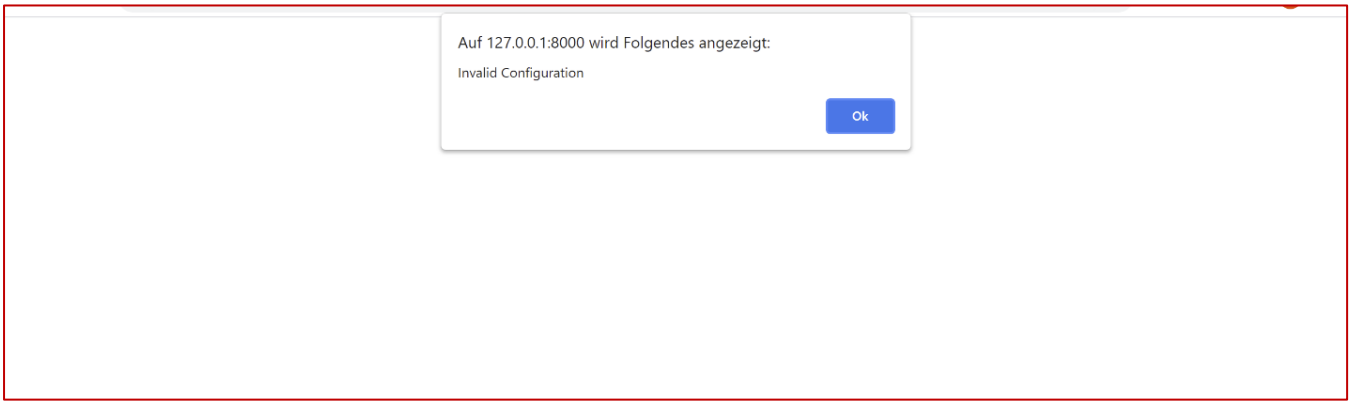


Click on “ok”

Then, select the destination folder and save.

4. Common Problems

4.1. Invalid Configuration



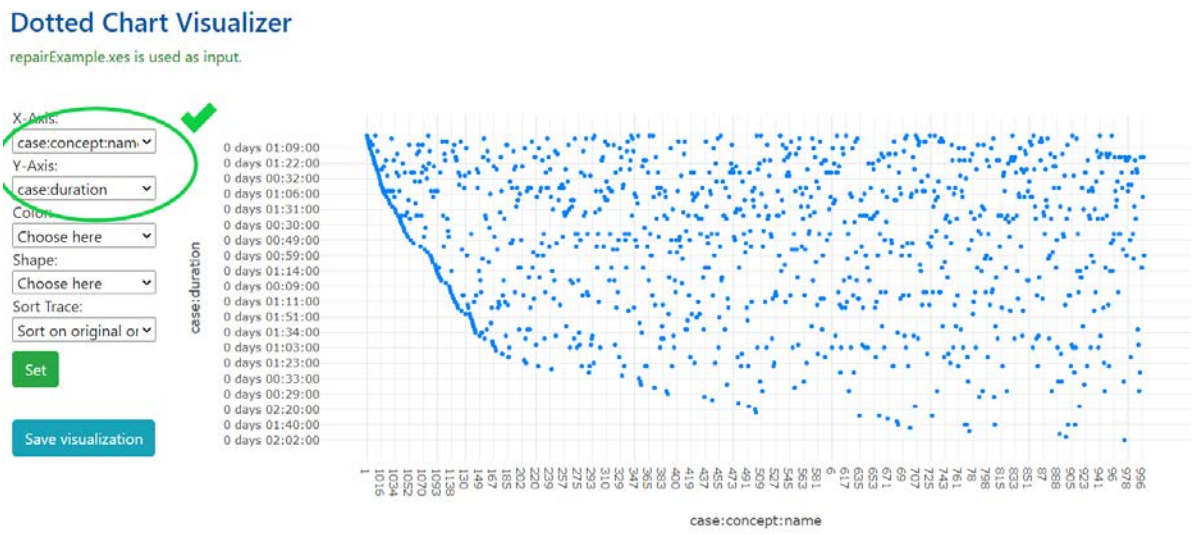
If you encounter this screen, then your settings resulted in an invalid configuration.

To continue, click “ok” to be led back to the Dotted Chart Visualizer home page. Settings are resetted to default settings (case ID and event name).

4.1.1. Example Configurations

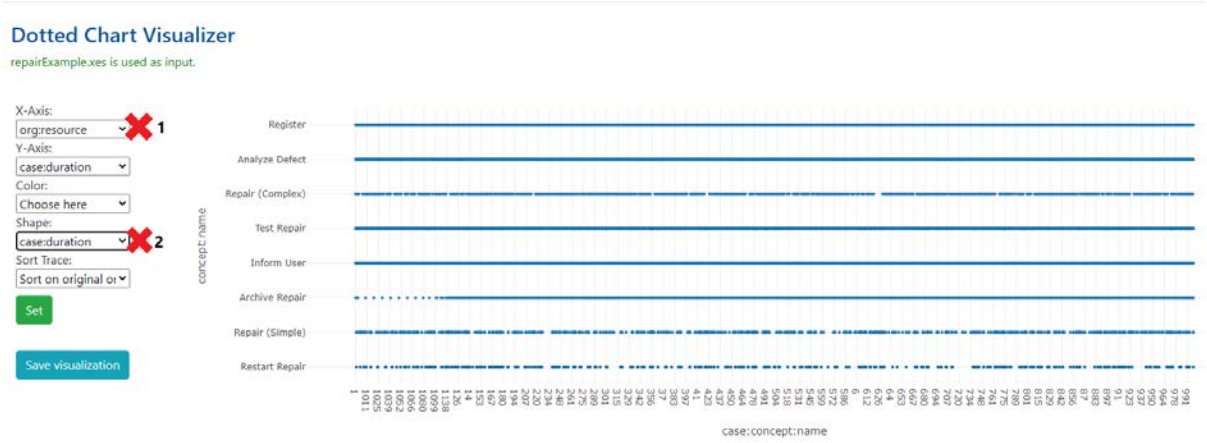
Generally, critical choices are **case:duration** and **time:timestamp.**

This is a valid configuration:

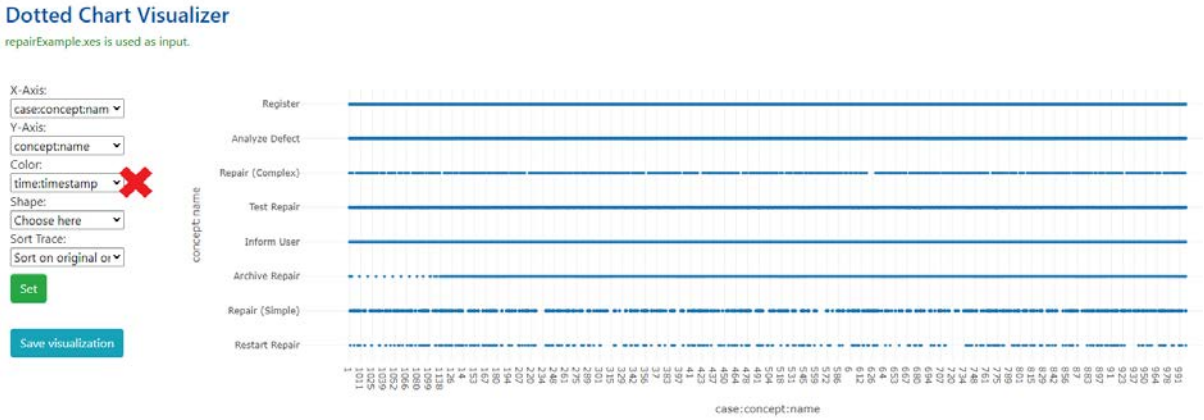


case:duration on axes only in combination with case ID

Invalid Configurations:

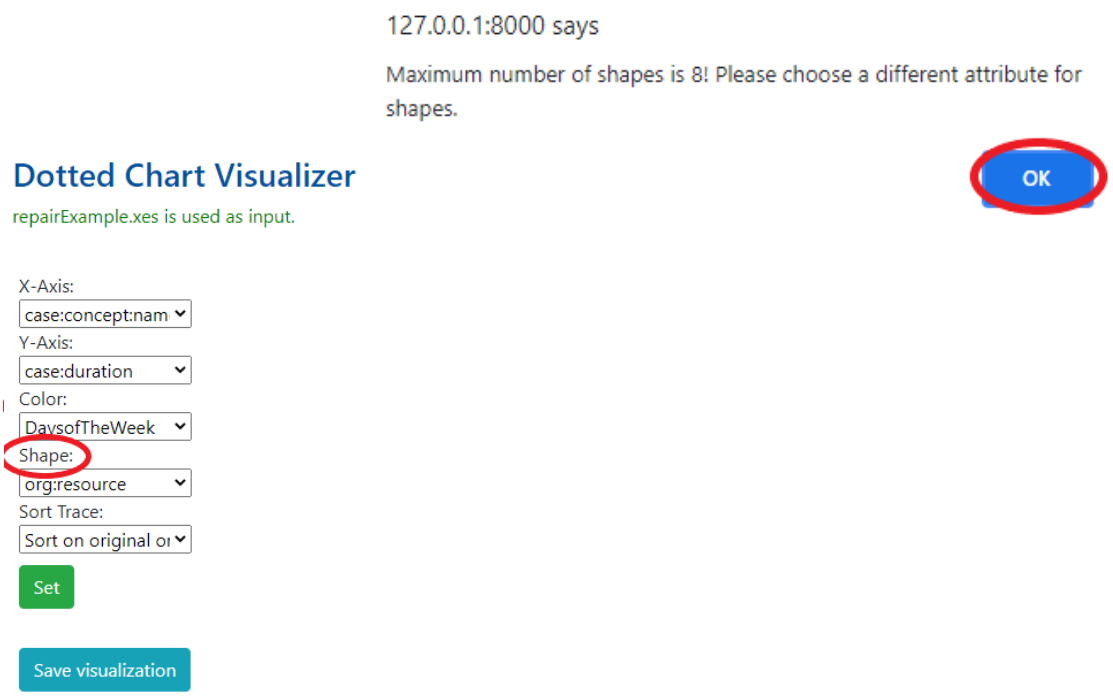


1. case:duration in combination with invalid attribute
2. case:duration selected for Color or Shape



time:timestamp selected for Color or Shape

4.2. Maximum Shapes Error



The number of shapes is **limited to 8**.
Anything beyond that will result in an error page.

Simply click “OK” and change the Shapes attributes to display the correct plot.