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What is this?

Zählstellen is a WebApp to quickly visualize geo-temporal data client-sided in a Browser. The data is applied by the user via Drag&Drop and doesn't leave the local environment. **Zählstellen** is especially designed for the use of daily data, to visualize the change over the course of a week or month.

At the moment maps are only provided for Austria, and the supported geometry-type is point.

Getting started

For testing **Zählstellen** head over to http://ahocevar.net/zaehlstellen/ for the running prototype, or to robertorthofer.github.io/zaehlstellen for the latest version.

If you want to contribute to the project or modify it for your own needs, feel free to download the latest version of **Zählstellen**, or fork the GitHub repository RobertOrthofer/zaehlstellen.

Input Data: Coordinates

Coordinates are point data and are accepted in the 2 following formats: CSV and geoJSON.

Coordinates as geoJSON

The geoJSON format is a standardized format explicitly created for geographic data. In this case, please make sure that the geometry-type of your data is "Point". The property-name of the match-ID can be chosen later. For more information to the geoJSON format please visit the official webpage http://geojson.org.

```
{
"type":"FeatureCollection",
        "features":[
                {
                "type":"Feature",
                "geometry":{
                        "type":"Point",
                        "coordinates":[16.0930173999721,47.0503057773741]
                },
                "properties":{
                "zaehlstelle":"b31901"
                }
        ]
}
```

Coordinates as CSV

CSV is a common table format, with the values separated by commas. These can easily be generated by the GIS-Software of your choice, either directly as CSV or as XLS, and then saved as CSV in a spreadsheet (MS Excel, Gnumeric, etc.).

The needed columns are x-coordinates, y-coordinates, and a match-ID to match the data file. When working in a GIS, it might be necessary to calculate x- and y-coordinates in advance. In this case please visit the documentation of your GIS.

Please make sure that the separator is a real comma (","), and the decimal mark is appoint ("."). It might necessary to change the default export options or change them afterwards manually.

```
sensorName,x_coord,y_coord

b31901,731824.0443,212378.5118

b11401,610255.2514,240538.9853

b32001,547499.2024,253401.9068

b05425,724181.4392,243783.2969
```

Input Data: Temporal Data

The temporal data can be any kind of integer or floating point values linked to the coordinates. These too can be of the format JSON or CSV.

Temporal data as JSON

The JSON file with temporal data has to provide an array of Objects, where each object represents a value for each point at one instant of time. This means, if there is data for 10 days, the data-JSON-file has to have 10 Objects.

Every single object then has on time-property (e.g. "day", "date", etc) and one property for each point. Please make sure that the name of the points are the very same as the names in the match-ID column of your coordinates-file. Otherwise the two files cannot be linked.

```
[{"datum":"2014-01-01","b02501":704,"b06404":3818,"b06603":2542},

{"datum":"2014-01-02","b02501":1055,"b06404":8963,"b06603":2793}]
```

Temporal data as CSV

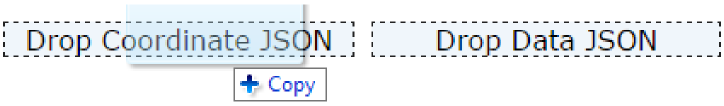
If the temporal data is provided as CSV, the header-row represents the time (days). One column represents the name of the matching point, the other columns represent the value of the point at the according time.

Please make sure that the time given in the format YYYY-MM-DD. This option can be made in the spreadsheet software.

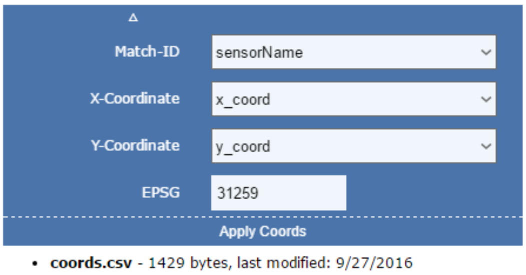
```
datum,2014-01-01,2014-01-02,2014-01-03

b02501,704,1055,1023

b06404,3818,8963,9243

b06603,2542,6297,6023
```

Applying Coordinates Data

The data is entered via Drag&Drop from your local file system. When hovering the file over the according dropping zone, the cursor changes to “copy”. After release, a menu opens.



In this menu, the Match-ID column for your temporal data file, the x-coordinates, the Y-coordinates and the EPSG-code can be selected. If you provided your coordinates as geoJSON, the x- and y-coordinates will be greyed out.



Match-ID: sensorName

X-Coordinate: x_coord

Y-Coordinate: y_coord

EPSG: 31259

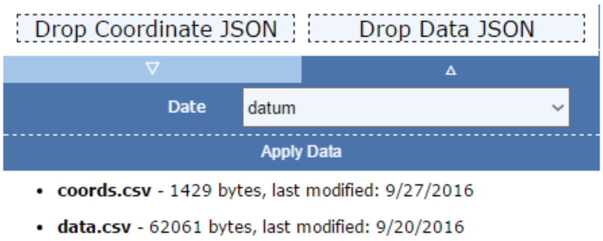
- coords.csv - 1429 bytes, last modified: 9/27/2016

The EPSG-code is a 4-5 digit number of the used spatial reference system. The default is 4326 (WGS84). If you are not sure which coordinate system you are using, please check in your GIS, or head over to epsg.io or spatialreference.org to look for the correct one.

Once you are done with your selections, hit the “Apply Coords” Button. If everything was correct, the map will zoom to the points.

Applying Temporal Data

Also the matching temporal data is loaded via Drag&Drop. The only field selectable is the date-field, it is assumed that the other columns are temporal data as instructed above.



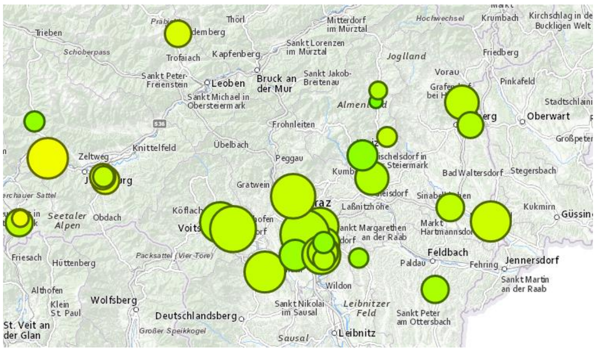
Drop Coordinate JSON | Drop Data JSON

Date: datum

Apply Data

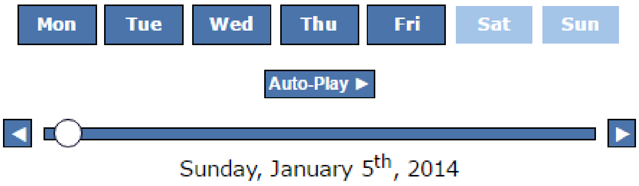
- **coords.csv** - 1429 bytes, last modified: 9/27/2016
- **data.csv** - 62061 bytes, last modified: 9/20/2016

The coordinates and the temporal data can be chosen in any order. Once both are applied, another menu opens and the points in the map get styled according to the values at the first given date.



Selecting the Time

Days of the week can be switched on and off at the day selection panel. The dark blue ones are the active days, whereas the light blue ones are currently switched off. Days can be changed via the time-slider below the panel. By pressing the "Auto-Play"-Button, the days change by 1 step each second. Once it has reached the end, it will begin again at the first given date.



Sunday, January 5th, 2014

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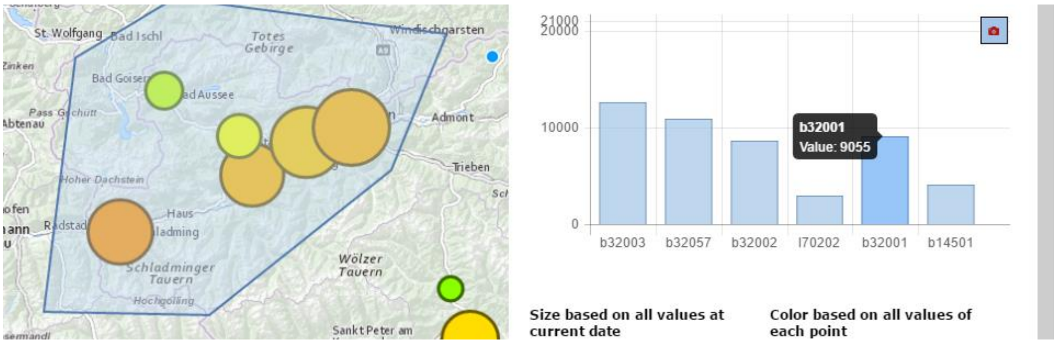
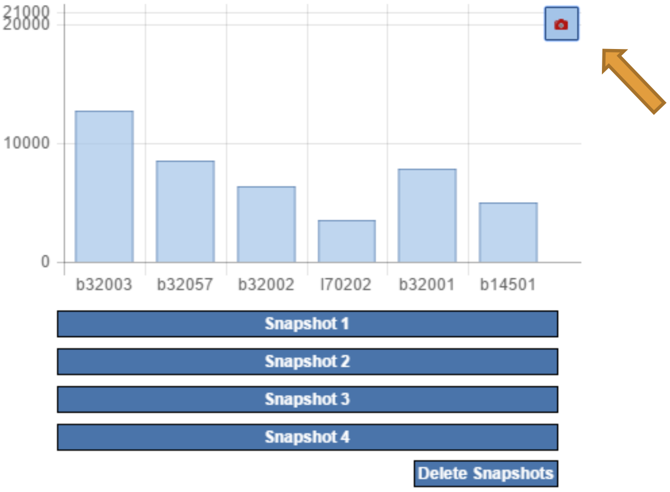
Select Points

Points can either be selected by a surrounding polygon or single point click. Please chose the according option in the menu first. When Points are selected, a chart with the data appears. By hovering the cursor over the bars, the name of the point and its exact value are displayed.



Saving Snapshots

Selections and time points can be temporarily saved with the camera-button on the top right of the Chart. These snapshots can looked at later, but are not saved outside your session.



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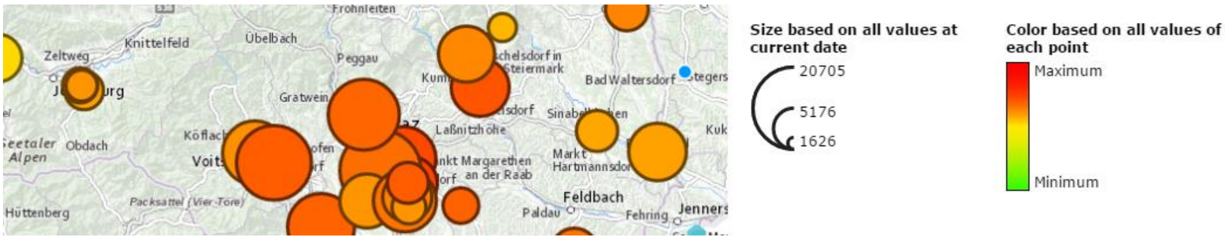
Interpreting the Visualization

In **Zählstellen** 2 Variables are displayed: The size and the color of the points.

The size is based on all values of the current date. This means the biggest circle is the point where the value at a specific moment was the highest.

The color is based on all values of each point. The closer to the maximum, the redder, the closer to the minimum, the greener.

This means, a small red circle is a point with a low absolute value compared to other points at the current time point. But its value is close to the maximum of the points possible values. So if your data represents the number of people in clubs and bars, a small red point might represent a tiny, but crowded pub.


Frohnleiten
Zeltweg
Knittelfeld
Übelbach
Peggau
Gratwein
Bad Waltersdorf
Laßnitzhöhe
Köflach
Seetaler Alpen
Obdach
Markt Hartmannsdorf
Feldbach
Paldau
Fehring
Jenners
Hüttenberg
Packsattel (Vier-Tore)
Size based on all values at current date
20705
5176
1626
Color based on all values of each point
Maximum
Minimum