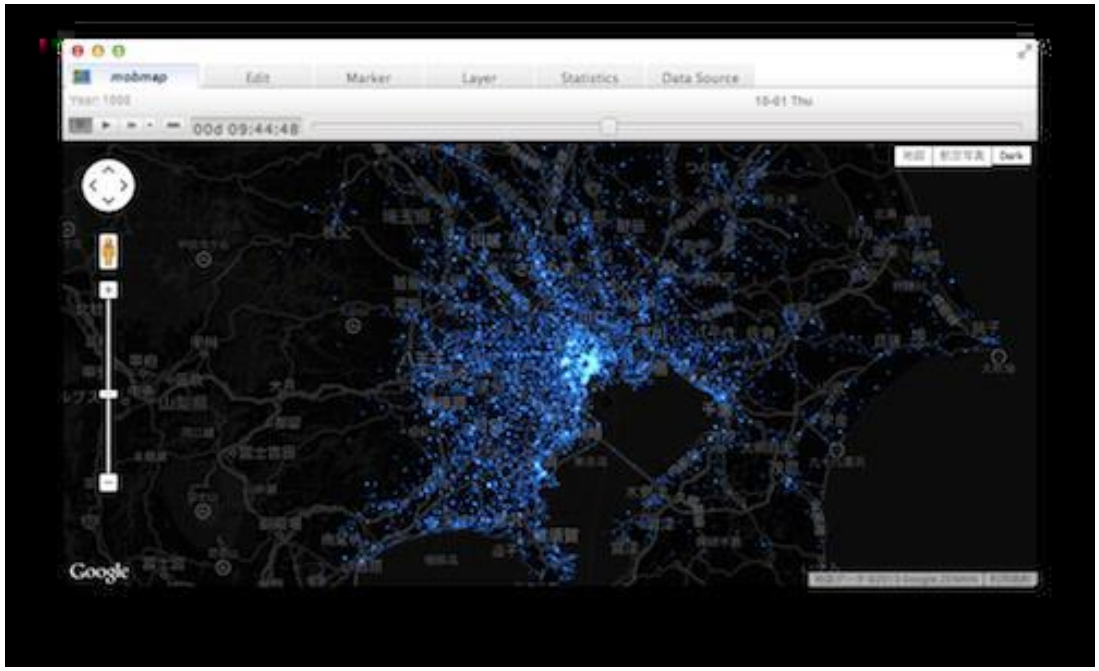
Mobmap : Visualization Tool

CSiS Center for Spatial Information Science
The University of Tokyo

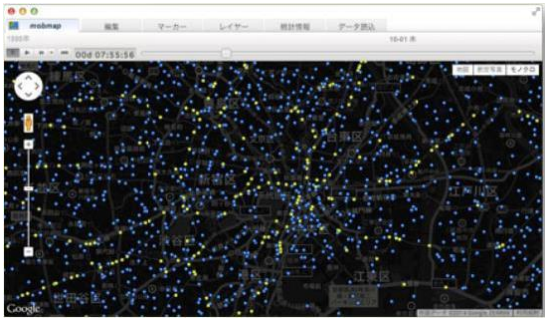
Data Visualization Tool

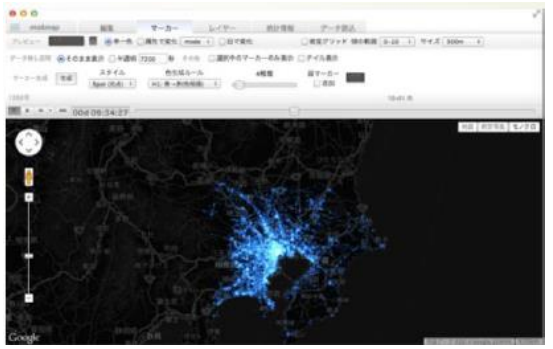
- Mobmap for Chrome
  - It is a software for Movement Data Visualization developed by Ueyama-san, Shibasaki-Lab.
  - Allow convenient to visualize moving data such as GPS data.
  - Support CSV only

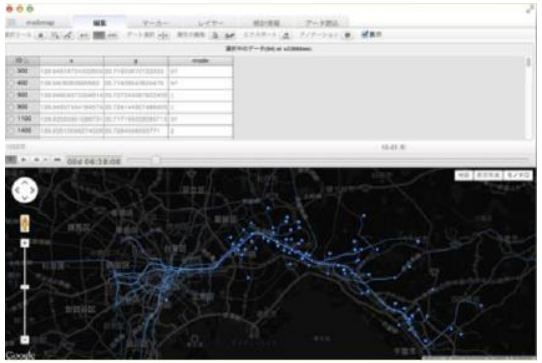


Mobmap for Chrome

- Key Functions
  - Color Labeling: Ex. Different color according to transportation mode.
  - Light Marker: Ex. Represent population density.
  - Data Filter: Ex. Extracting people who used only a certain railway line.

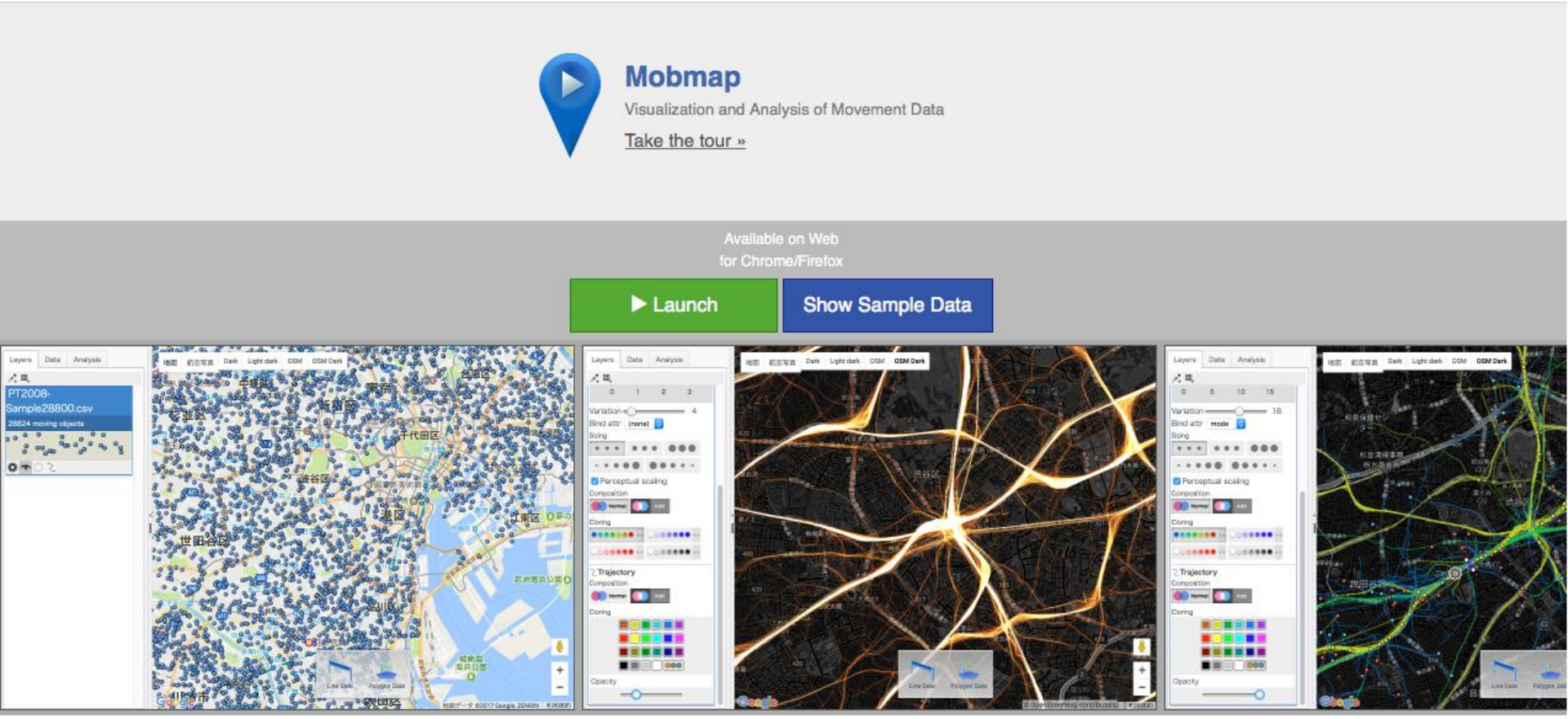






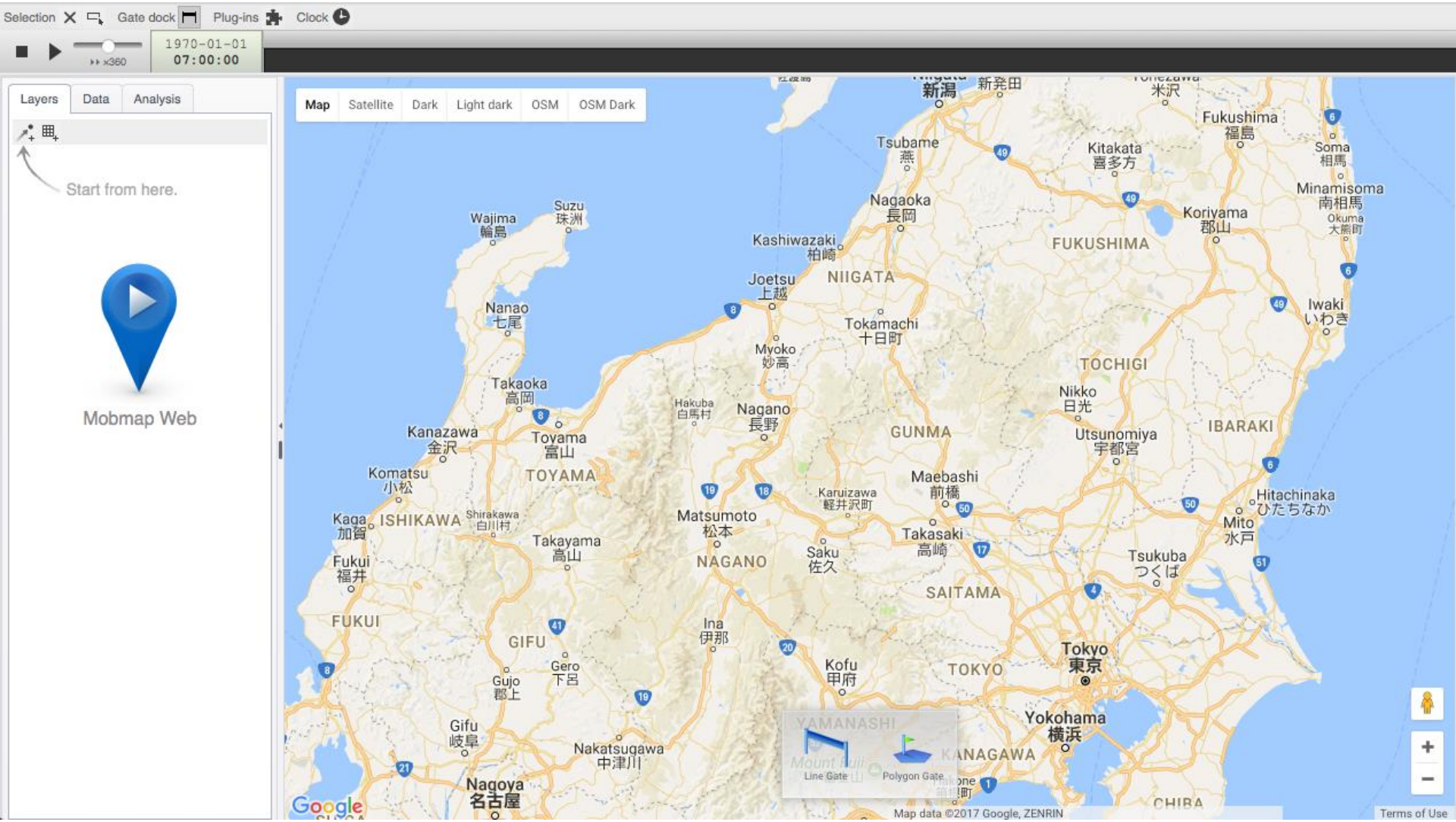
Mobmap: Installation

Access => http://shiba.iis.u-tokyo.ac.jp/member/ueyama/mm/



https://www.slideshare.net/hiroakisengoku/mobmap-handson-foss4g-seoul-2015

Mobmap: Launch App

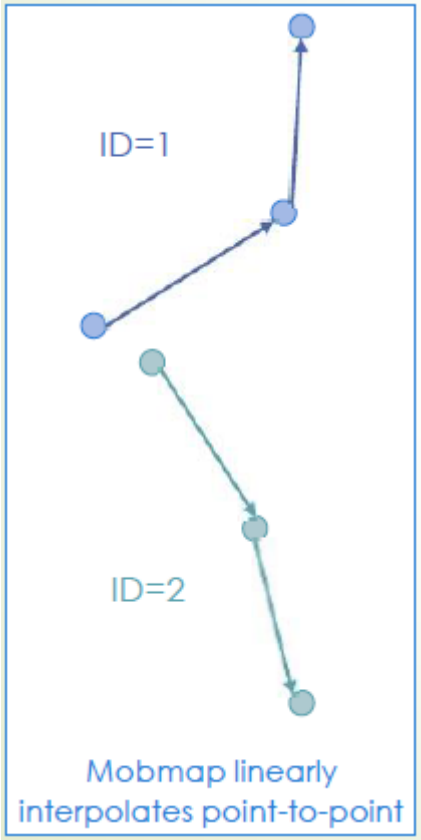


Requirement for Input File(csv)

- Input CSV file must have
  - Object ID : Positive Integer value
  - Time : “hh:mm:ss” or “YYYY-MM-DD hh:mm:ss” format need to be sort in time order
  - Latitude : Real Number(decimal degree) in WGS84
  - Longitude : Real decimal degree) in WGS84

- Columns don’t have to be fixed with the following order
- Additional columns are acceptable, e.g. transportation
- Header line can exclude at loading data

Requirement for Input File(csv)



Mobmap linearly interpolates point-to-point

CSV sample

ID,	time,	lat,	lon
1,	2013-12-01 10:00:00,	35.655,	139.676
2,	2013-12-01 10:00:00,	35.652,	139.671
1,	2013-12-01 10:10:00,	35.692,	139.689
2,	2013-12-01 10:10:00,	35.632,	139.678
1,	2013-12-01 10:20:00,	35.722,	139.692
2,	2013-12-01 10:20:00,	35.613,	139.669

header

Additional columns…

11

Sort in Time order

Download Sample CSV Data

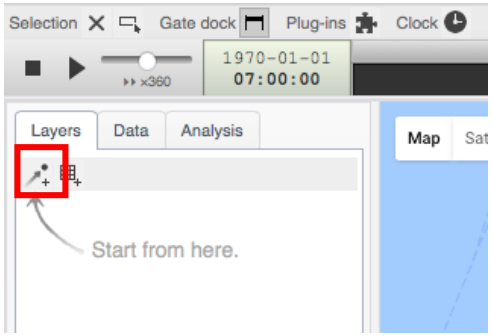
- Access “Mobmap Sample Data”

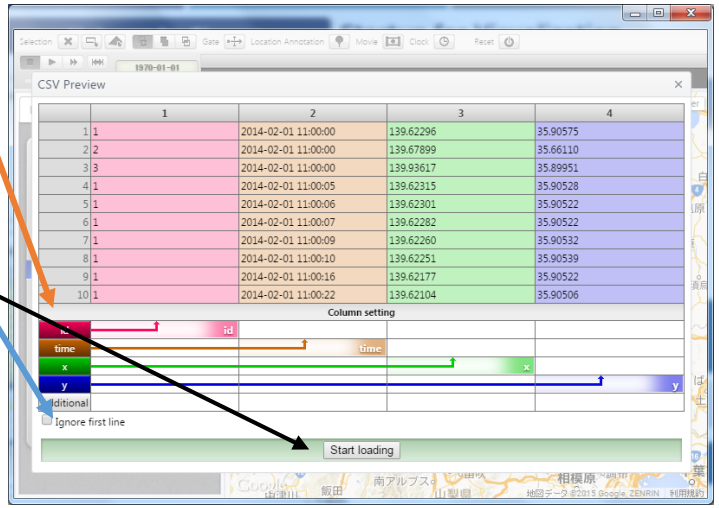
Filename: MMSampleDataMod.csv

```
ID, Time, longitude, latitude, occupation
1,2014-02-01 11:00:00,139.62296,35.90575,1
2,2014-02-01 11:00:00,139.67899,35.66110,2
3,2014-02-01 11:00:00,139.93617,35.89951,3
1,2014-02-01 11:00:05,139.62315,35.90528,1
1,2014-02-01 11:00:06,139.62301,35.90522,1
1,2014-02-01 11:00:07,139.62282,35.90522,1
1,2014-02-01 11:00:09,139.62260,35.90532,1
```

Start Visualize CSV Data

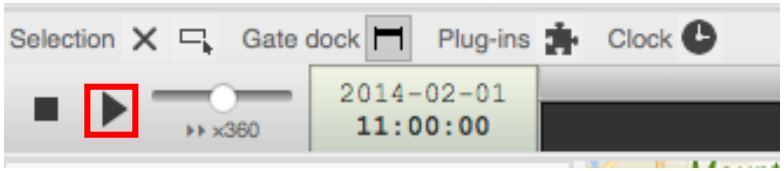
- Click “Moving Objects from Local CSV File”
- Select downloaded “MMSampleData.csv”
- Check whether selected columns correspond to the column definition. If not, you can change column selection
  - When data include a header line, you can exclude it from data loading by checking here
- Click “Start loading” to load CSV data





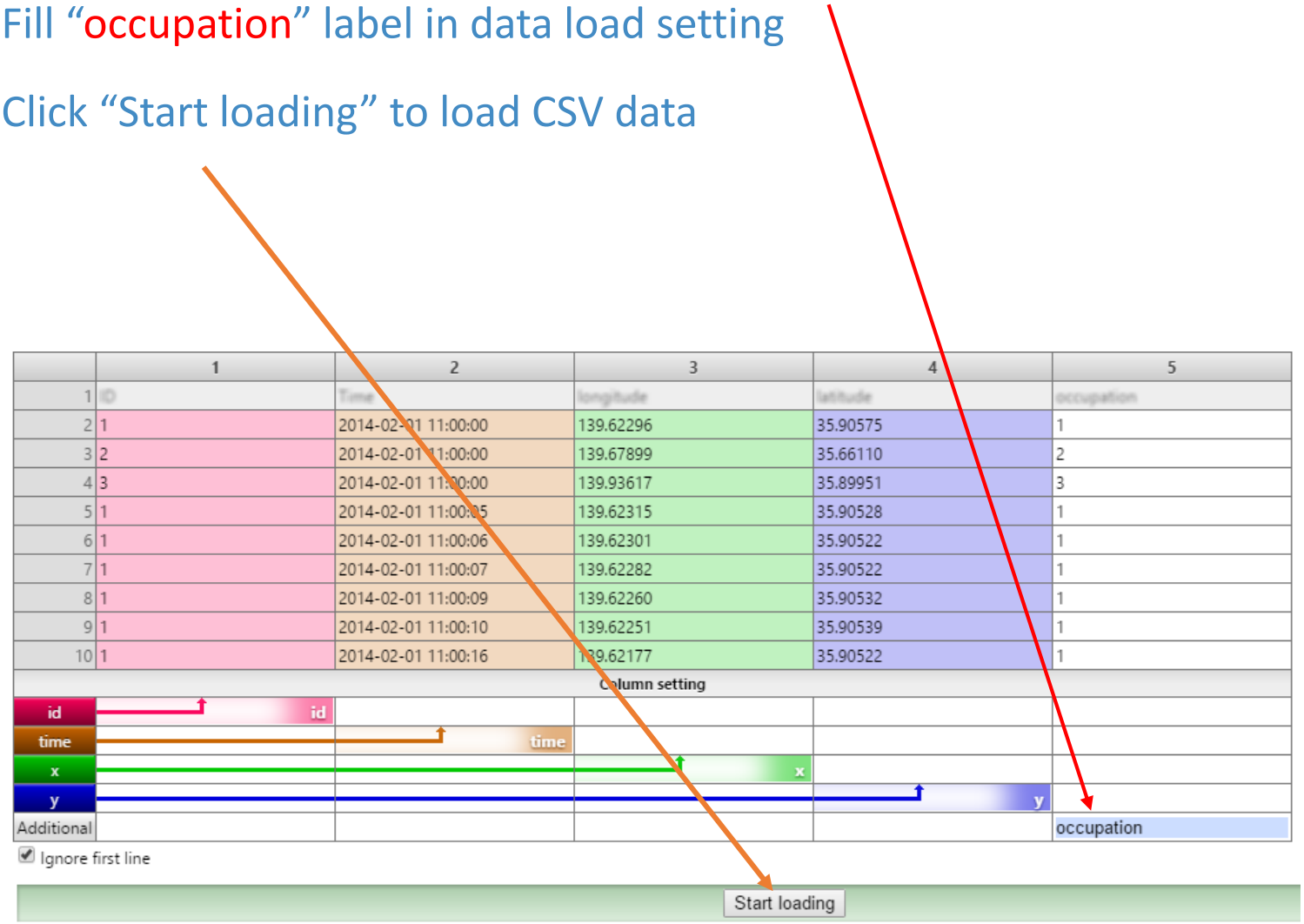
Start Visualize CSV Data

- In Map view, you can control map as same as google maps.
  - Including several map type
  - Google map, Aerial map, Dark map, OSM
- Press Play button to start visualizing movement.
  - You can change play speed with slide bar under play button



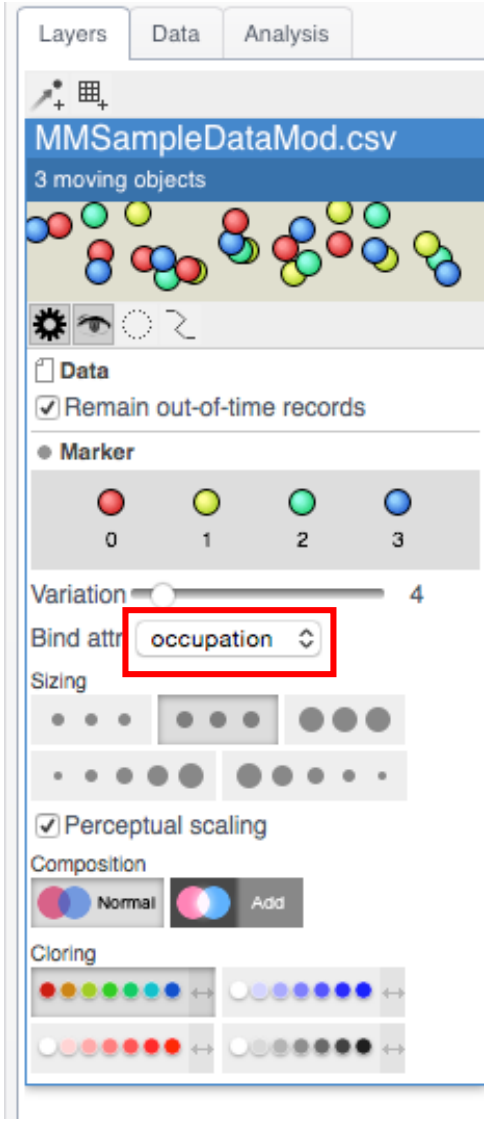
Color Labeling

- Fill “occupation” label in data load setting
- Click “Start loading” to load CSV data



Color Labeling

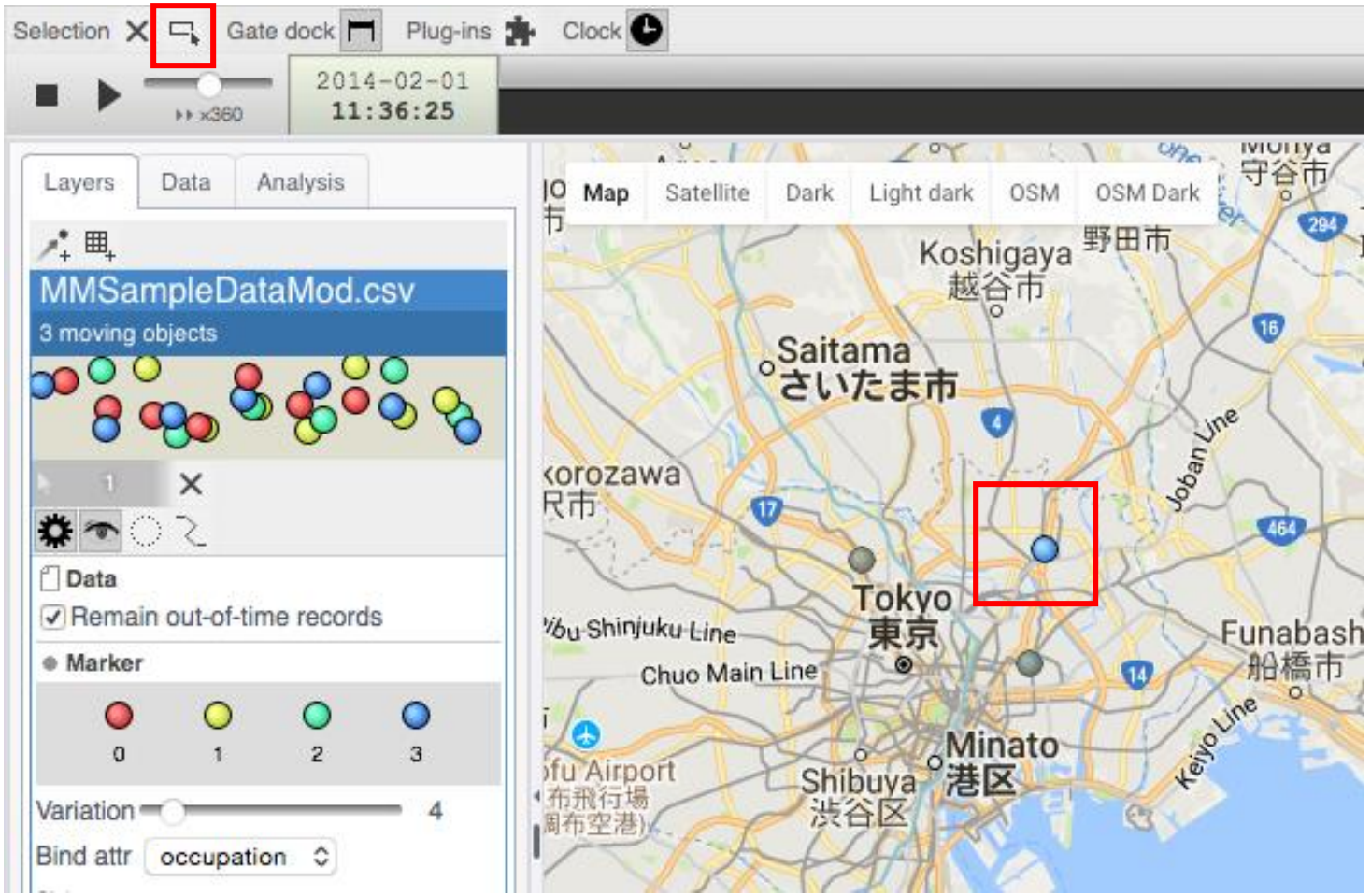
- Click “Marker” tab.
- Check “By attribute” to change color with attribute.
- Select attribute “occupation”.
- Marker color changes in accordance with the specified attribute value.



Filter Data

- Rectangle Selection

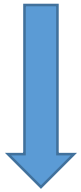
Drag the polygon to select objects



Download Sample CSV Data #2

- Access “Taxi Sample Data”

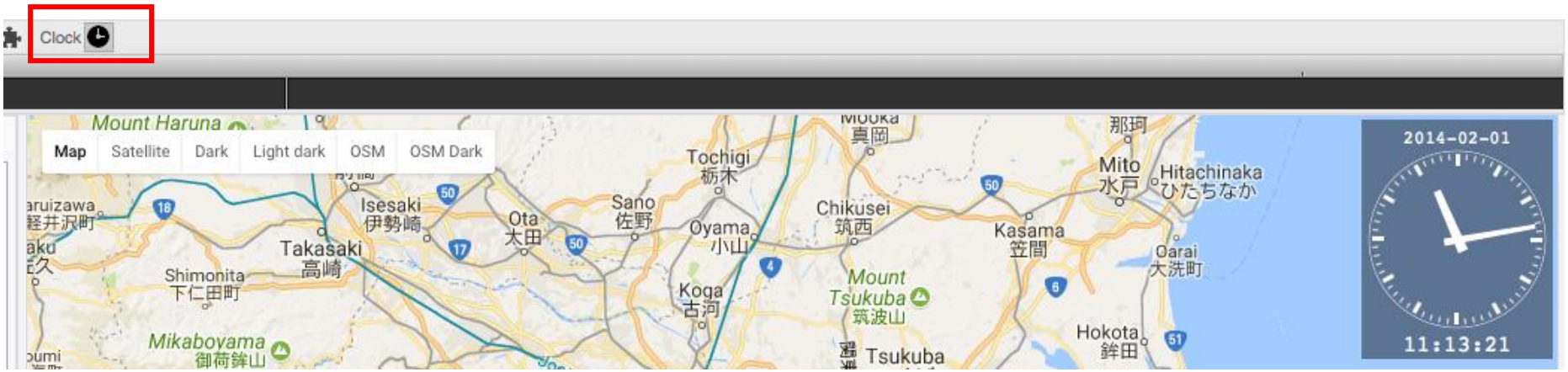
Filename: taxi_sample.csv



```
id,time,lat,lon
10011311,2013-12-15 0:16:00,13.81380,100.71877
10011311,2013-12-15 0:27:00,13.77372,100.73895
10011311,2013-12-15 7:28:00,13.84845,100.72113
10011311,2013-12-15 7:29:00,13.84282,100.72067
10011311,2013-12-15 7:42:00,13.83428,100.69783
10011311,2013-12-15 7:52:00,13.86047,100.72220
10011311,2013-12-15 7:58:00,13.85935,100.69582
10011311,2013-12-15 8:31:00,13.75467,100.52783
10011311,2013-12-15 8:42:00,13.76397,100.53787
```

Show Clock

- On the top menu Click “clock button”.



Done.