

# *o2-chart-lib* Chart Library for Angular5 by TypeScript2

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build passing

*o2-chart-lib* is a chart library using d3.js (version 4) for Angular5 written by TypeScript2.

*Demo Page,*

<https://ohtsu.github.io/o2-chart-lib-consumer/>

*Sample Program for setting config data,*

<https://github.com/ohtsu/o2-chart/>

## Overview

- *o2-chart-lib* is a wrapper library of d3.js (version 4) for Angular5
- 12 main charts are supported

(Line, Bar, Pie, ScatterPlot, Histogram, Stack Bar, Geo Map, Geo Orthographic, Tree,

- Axis

You can include axis automatically by the configuration file.

- Legend

You can include legend automatically by the configuration file.

- Animation

You can animate such charts as Bar, Pie, Histogram, Stack Bar, Geo Orthographic .

## Prerequisite

- node.js
- Typescript2
- Angular5

## Installation

To install this library, run:

```
$ npm install d3@4.3.0 --save
$ npm install o2-chart-lib --save
```

## Version

- o2-chart-lib : 1.0
- Angular5 : 5.2.0
- TypeScript : 2.5.3
- d3.js : 4.3.0

## Reference

- "データビジュアライゼーションのためのD3.js徹底入門 Webで魅せるグラフ&チャートの作り方",2014/6/6,by 古旗 一浩,  
[http://www.amazon.co.jp/s/ref=nb\\_sb\\_noss?\\_\\_mk\\_ja\\_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-4-7973-6886-4&rh=i%3Aaps%2Ck%3AISBN978-4-7973-6886-4](http://www.amazon.co.jp/s/ref=nb_sb_noss?__mk_ja_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-4-7973-6886-4&rh=i%3Aaps%2Ck%3AISBN978-4-7973-6886-4)
- "D3.js by Example",2015/12/29,by Michael Heydt  
[http://www.amazon.co.jp/s/ref=nb\\_sb\\_noss?\\_\\_mk\\_ja\\_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-1-78528-008-5&rh=i%3Aaps%2Ck%3AISBN978-1-78528-008-5](http://www.amazon.co.jp/s/ref=nb_sb_noss?__mk_ja_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-1-78528-008-5&rh=i%3Aaps%2Ck%3AISBN978-1-78528-008-5)
- "Mastering D3.js",2014/8/25,by Pablo Navarro,  
[http://www.amazon.co.jp/s/ref=nb\\_sb\\_noss?\\_\\_mk\\_ja\\_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-1-78328-627-0&rh=i%3Aaps%2Ck%3AISBN978-1-78328-627-0](http://www.amazon.co.jp/s/ref=nb_sb_noss?__mk_ja_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-1-78328-627-0&rh=i%3Aaps%2Ck%3AISBN978-1-78328-627-0)
- "Data Visualization With D3 and Angularjs",2015/4/27,by Christoph Korner,  
[http://www.amazon.co.jp/s/ref=nb\\_sb\\_noss?\\_\\_mk\\_ja\\_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-1-78439-848-4&rh=i%3Aaps%2Ck%3AISBN978-1-78439-848-4](http://www.amazon.co.jp/s/ref=nb_sb_noss?__mk_ja_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-1-78439-848-4&rh=i%3Aaps%2Ck%3AISBN978-1-78439-848-4)
- "Mastering TypeScript",2015/4/23,by Nathan Rozentals,  
[http://www.amazon.co.jp/s/ref=nb\\_sb\\_noss?\\_\\_mk\\_ja\\_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-1-78439-966-5&rh=i%3Aaps%2Ck%3AISBN978-1-78439-966-5](http://www.amazon.co.jp/s/ref=nb_sb_noss?__mk_ja_JP=%E3%82%AB%E3%82%BF%E3%82%AB%E3%83%8A&url=search-alias%3Daps&field-keywords=ISBN978-1-78439-966-5&rh=i%3Aaps%2Ck%3AISBN978-1-78439-966-5)
- "D3 Tips and Tricks v4.x",by Malcolm Maclean,Leanpub,  
<https://leanpub.com/d3-t-and-t-v4/read>

## Change Log

- 2016.12.5 version 0.1 uploaded
- 2018.3.5 version 1.0 uploaded

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## Step by Step Intallation for Angular-CLI

*Video,*  
<https://youtu.be/>

### Install @angular/cli

```
$ npm install -g @angular/cli
```

### Create New Project

```
$ ng new sample-chart (Your project name)
$ cd sample-chart
```

### Check Your Program

If you start local server as follows, you can get the first page in your browser by accessing **<http://localhost:4200>**.

```
$ ng serve
```

- *First Page*



# Welcome to app!



Here are some links to help you start:

- [Tour of Heroes](#)
- [CLI Documentation](#)
- [Angular blog](#)

## Stop Local Server

Input **Ctrl+C** and **y+Return** to stop the local server.

## Install o2-chart-lib

```
$ npm install d3@4.3.0 --save
$ npm install o2-chart-lib --save
```

## Modify app.module.ts

```
$ cd src/app
```

Change directory to "src/app", you will find **app.module.ts**.

Modify this file as follows.

```
import { BrowserModule } from '@angular/platform-browser';
import { NgModule } from '@angular/core';
import { FormsModule } from '@angular/forms';
import { HttpClientModule } from '@angular/http';

import { AppComponent } from './app.component';
import { O2ChartComponent, ChartConst } from 'o2-chart-lib'; // <= Add

@NgModule({
  declarations: [
    O2ChartComponent, // <= Add
    AppComponent
  ],
  imports: [
    BrowserModule,
    FormsModule,
    HttpClientModule
  ],
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule { }
```

### Modify app.component.ts

In the same directory, modify **app.component.ts** as follows. This example explains how to install **Bar Chart**. So **graphData** are only for **Bar Chart**. You can install other charts by changing **chartType** name and **graphData(JsonData)**.

```
import { Component } from '@angular/core';
import { ChartConst } from 'O2-chart-lib'; // <= Add

@Component({
  selector: 'app-root',
  templateUrl: './app.component.html',
  styleUrls: ['./app.component.css']
})
export class AppComponent {
  title = 'app works!';

  // Add Start -----
  chartType:string;
  configData:any;
  barDataJson:any;
  barTypeName:string;

  constructor() {
    this.barTypeName = ChartConst.BAR_CHART_TYPE_NAME;
    this.initilizeData();
  }

  private initilizeData(){
    this.configData ={
      "className":{
```

```

        "axis": "axis",
        "axisXBorder": "axis_x",
        "axisXText": "axis-x-text",
        "bar": "bar",
        "barValue": "bar-value",
        "line": "line",
        "multiLinePrefix": "line-",
        "grid": "grid",
        "pie": "pie",
        "pieInnerTitle": "pie-inner-title",
        "pieInnerRadius": "total",
        "histogram": "histogram",
        "histogramBar": "histogram-bar",
        "treemap": "treemap",
        "treemapLabel": "treemap-label",
        "packlayout": "packlayout",
        "packlayoutLabel": "packlayout-label",
    },
    "label": {
        "display": true,
    },
    "title": {
        "display": true,
        "name": "Title",
        "className": "chart-title",
        "height": 30,
        "leftMargin": -20,
        "bottomMargin": 10
    },
    "maxValue": {
        "auto": true,
        "x": 100,
        "y": 100,
    },
    "legend": {
        "display": true,
        "position": "right",
        "totalWidth": 80,
        "initXPos": 5,
        "initYPos": 10,
        "rectWidth": 10,
        "rectHeight": 10,
        "xSpacing": 2,
        "ySpacing": 2
    },
    "color": {
        "auto": true, //
        "defaultColorNumber": 10,
        "opacity": 1.0,
        "userColors": [
            "blue",
            "red",
            "green",
            "yellow",
            "PaleGoldenrod",
            "Khaki",
            "DarkKhaki",
            "Gold",
            "Cornsilk",
            "BlanchedAlmond",

```

```

        "Bisque",
        "NavajoWhite",
        "Wheat",
        "BurlyWood",
        "Tan",
        "RosyBrown",
        "SandyBrown",
        "Goldenrod",
        "DarkGoldenrod",
        "Peru",
        "Chocolate"
    ],
    "focusColor": "red",
},
"pie": {
    "innerRadius": {
        "percent": 20,
        "title": "Total"
    },
    "value": {
        "display": true,
    },
    "percent": {
        "display": false,
    }
},
"line": {
    "legend": "lineEnd",
    "interpolate": "linear",
},
"grid": {
    "x": {
        "display": true,
    },
    "y": {
        "display": true,
    },
},
"margin": {
    "top": 30,
    "left": 30,
    "right": 10,
    "bottom": 20,
    "between": 5
},
"axis": {
    "rotation": 0,
    "borderLineWidth": 1,
    "xLabel": {
        "leftMargin": 0,
        "bottomMargin": 5
    },
    "yLabel": {
        "leftMargin": 0,
        "bottomMargin": 0
    },
},
},
"animation": {
    "enable": true,

```

```

        "duration":4000,
    },
};

this.barDataJson =
{
    "series":[
        "English",
        "Math"
    ],
    "data":[
        {
            "x": "suzuki",
            "y": [92,73],
        },
        {
            "x": "inoue",
            "y": [69,45],
        },
        {
            "x": "sato",
            "y": [70,100],
        },
        {
            "x": "tanaka",
            "y": [43,66],
        },
        {
            "x": "ida",
            "y": [60,70],
        },
        {
            "x": "kato",
            "y": [55,63],
        },
    ],
};

}

// Add End -----
}

```

## Modify app.component.html

In the same directory, modify **app.component.html** as follows.

```

<h1>
  {{title}}
</h1>
<!-- Add Start -->
  <h2>Bar</h2>
  <o2-chart [chartType]="barTypeName" [configData]="configData" [graphData]="b.
<!-- Add End -->

```



## Modify styles.css

Change to the parent directory, you will find **styles.css**. Add the following script into the file.

```
$ cd ..
```

```
.line {fill:none; stroke:black;stroke-width: 1.5;}
.line-0 {fill:none; stroke:#1f77b4;stroke-width: 1.5;stroke-dasharray:4
.line-1 {fill:none; stroke:#ff7f0e;stroke-width: 1.5;stroke-dasharray:2
.line-2 {fill:none; stroke:#2ca02c;stroke-width: 1.5;}
.line-3 {fill:none; stroke:#d62728;stroke-width: 1.5;}
.line-4 {fill:none; stroke:#9467bd;stroke-width: 1.5;}
.line-5 {fill:none; stroke:#8c564b;stroke-width: 1.5;}
.line-6 {fill:none; stroke:#e377c2;stroke-width: 1.5;}
.line-7 {fill:none; stroke:#7f7f7f;stroke-width: 1.5;}
.line-8 {fill:none; stroke:#bcbd22;stroke-width: 1.5;}
.line-9 {fill:none; stroke:b#17becf;stroke-width: 1.5;}

.bar { fill:#aaa; stroke:white;stroke-width: 1;}
.bar-value { fill:black;font-size: 8pt;}
.name { font-size: 10pt;text-anchor: middle}
path {fill:white;stroke:black;stroke-width:0.5;}
.axis text {
    font-family: sans-serif;
    font-size: 11px;
}
.axis path,
.axis line {
    fill: none;
    stroke: black;
}
.axis_x line {
    fill: none;
    stroke: black;
}
}
.chart-title { fill:red;font-size: 18pt;text-anchor: middle;}
.histogram-bar{fill:blue; stroke:white;stroke-width: 1;}
.axis-x-text{ fill:blue;font-size: 12pt;}
.treemap { stroke:black;fill:#777}
.treemap-label { font-size: 10pt;text-anchor: middle}
.packlayout{ stroke:black;}
.packlayout-label{ font-size: 10pt;text-anchor: middle}
.pie-inner-title {font-size:9pt;text-anchor:middle;}
.pieNum {font-size:10pt;text-anchor:middle;}
.grid {stroke:gray;stroke-dasharray: 4,2;shape-rendering:crispEdges}

.tree-node circle {
    fill: #fff;
    stroke: steelblue;
    stroke-width: 3px;
}
.tree-node text {
    font: 12px sans-serif;
}
.tree-node-internal text {
    text-shadow: 0 1px 0 #fff, 0 -1px 0 #fff, 1px 0 0 #fff, -1px 0 0 #f
}
.tree-node-link {
```

```
        fill: none;
        stroke: #ccc;
        stroke-width: 2px;
    }
    .force-links line {
        stroke: #999;
        stroke-opacity: 0.6;
    }

    .force-nodes circle {
        stroke: #fff;
        stroke-width: 1.5px;
    }
```

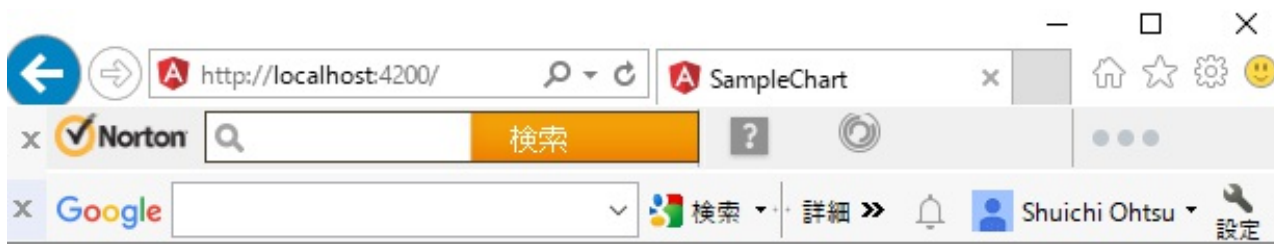
## Restart local server

Restart the local server as follows.

```
$ ng serve
```

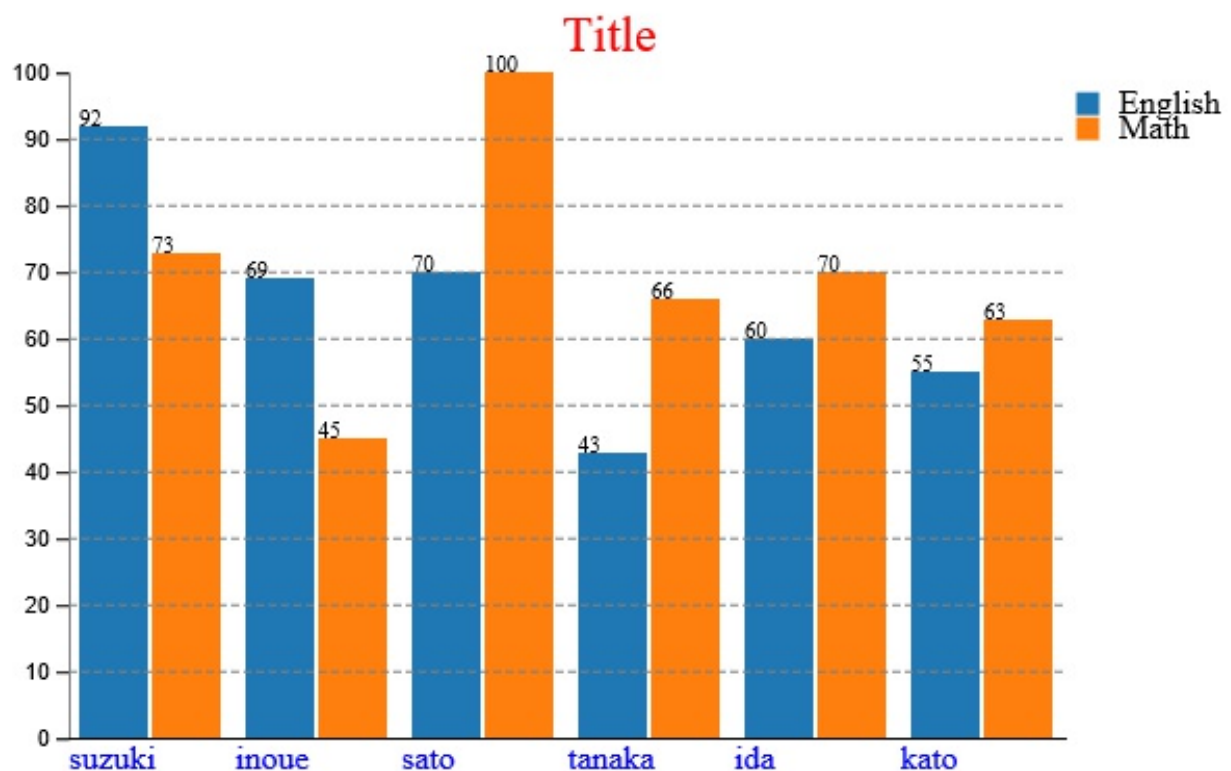
And you will get a simple **Bar Chart** in your browser by accessing **<http://localhost:4200>**.

- ***First Bar Chart***



**app works!**

## Bar



## Chart Data

There are two types of data: `configData`, `graphData`.

- **configData**

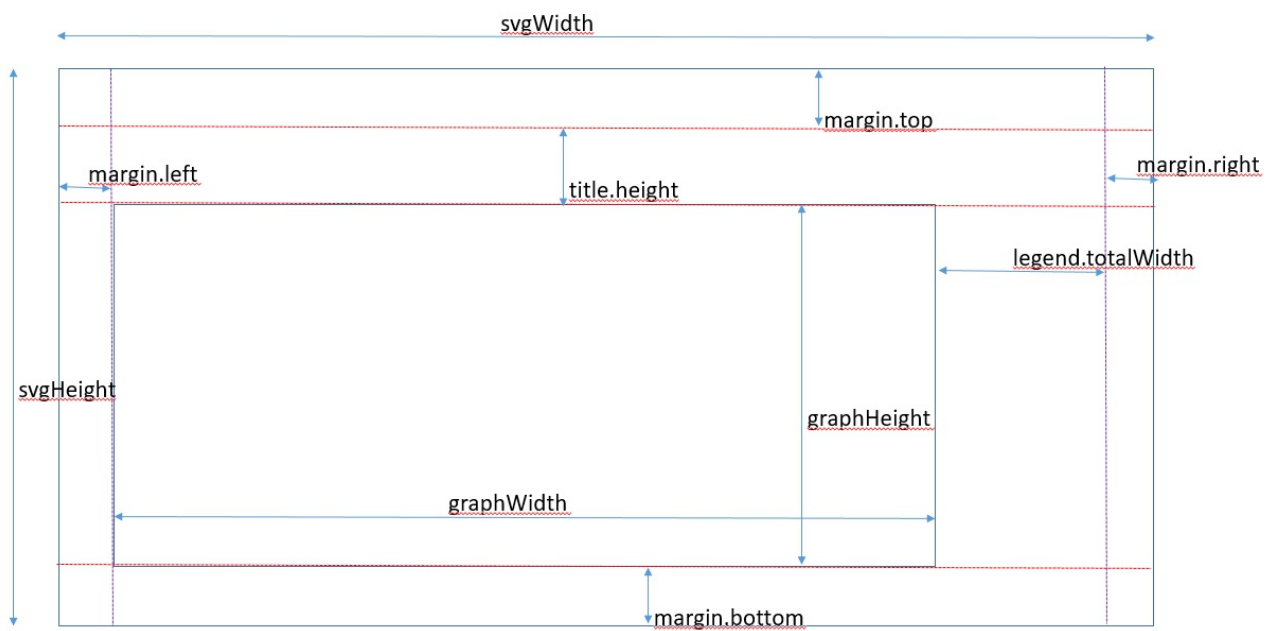
This is a common setting data of all charts. In this file, you can set info as follows.

-Class name defined by "html" file

-Title Name

-Legend (display or not, position, size)

- Color (Auto color number: 10 or 20, Opacity)
- Line (interpolate)
- Grid (display or not, position, size)
- Animation (enable or not, duration)
- Margin (top, left, right,bottom,between)
- Axis (left margin, bottom mergin)



- **Sample configData**

```
configData = {
  "className": {
    "axis": "axis",
    "axisXBorder": "axis_x",
    "axisXText": "axis-x-text",
    "bar": "bar",
    "barValue": "bar-value",
    "line": "line",
    "multiLinePrefix": "line-",
    "grid": "grid",
    "pie": "pie",
    "pieInnerTitle": "pie-inner-title",
    "pieInnerRadius": "total",
    "histogram": "histogram",
    "histogramBar": "histogram-bar",
    "treemap": "treemap",
    "treemapLabel": "treemap-label",
    "packlayout": "packlayout",
    "packlayoutLabel": "packlayout-label",
  },
  "label": {
    "display": true,
  }
}
```

```

},
"title": {
    "display": true,
    "name": "Title",
    "className": "chart-title",
    "height": 30,
    "leftMargin": -20,
    "bottomMargin": 10
},
"maxValue": {
    "auto": true,
    "x": 100,
    "y": 100,
},
"legend": {
    "display": true,
    "position": "right",
    "totalWidth": 80,
    "initXPos": 5,
    "initYPos": 10,
    "rectWidth": 10,
    "rectHeight": 10,
    "xSpacing": 2,
    "ySpacing": 2
},
"color": {
    "auto": true, //
    "defaultColorNumber": 10,
    "opacity": 1.0,
    "userColors": [
        "blue",
        "red",
        "green",
        "yellow",
        "PaleGoldenrod",
        "Khaki",
        "DarkKhaki",
        "Gold",
        "Cornsilk",
        "BlanchedAlmond",
        "Bisque",
        "NavajoWhite",
        "Wheat",
        "BurlyWood",
        "Tan",
        "RosyBrown",
        "SandyBrown",
        "Goldenrod",
        "DarkGoldenrod",
        "Peru",
        "Chocolate"
    ],
    "focusColor": "red",
},
"pie": {
    "innerRadius": {
        "percent": 20,
        "title": "Total"
    },
    "value": {

```

```

        "display":true,
    },
    "percent":{
        "display":false,
    }
},
"line": {
    "legend":"lineEnd",
    "interpolate" : "linear",
},
"grid":{
    "x":{
        "display":true,
    },
    "y":{
        "display":true,
    },
},
"margin":{
    "top":30,
    "left":30,
    "right":10,
    "bottom":20,
    "between":5
},
"axis":{
    "rotation":0,
    "borderLineWidth":1,
    "xLabel":{
        "leftMargin":0,
        "bottomMargin":5
    },
    "yLabel":{
        "leftMargin":0,
        "bottomMargin":0
    },
},
"animation":{
    "enable":true,
    "duration":4000,
},
};

```

- **graphData**

Each chart needs its own data in Json format.

- ***Sample GraphData for Line***

```

lineDataJson =
{
    "series":[
        "year",
        "sell",
    ],
    "data":[
        {
            "name": "software",

```

```
    "value": [
      {
        "x": "2010",
        "y": 18
      },
      {
        "x": "2011",
        "y": 22
      },
      {
        "x": "2012",
        "y": 30
      },
      {
        "x": "2013",
        "y": 31
      },
    ]
  },
  {
    "name": "hardware",
    "value": [
      {
        "x": "2010",
        "y": 15
      },
      {
        "x": "2011",
        "y": 16
      },
      {
        "x": "2012",
        "y": 10
      },
      {
        "x": "2013",
        "y": 21
      },
    ]
  },
  {
    "name": "device",
    "value": [
      {
        "x": "2010",
        "y": 25
      },
      {
        "x": "2011",
        "y": 26
      },
      {
        "x": "2012",
        "y": 30
      },
      {
        "x": "2013",
        "y": 31
      },
    ]
  }
]
```

```

    },
    {
      "name": "others",
      "value": [
        {
          "x": "2010",
          "y": 100
        },
        {
          "x": "2011",
          "y": 16
        },
        {
          "x": "2012",
          "y": 20
        },
        {
          "x": "2013",
          "y": 41
        }
      ]
    }
  ],
};

```

- *Visual for Line*

## Line



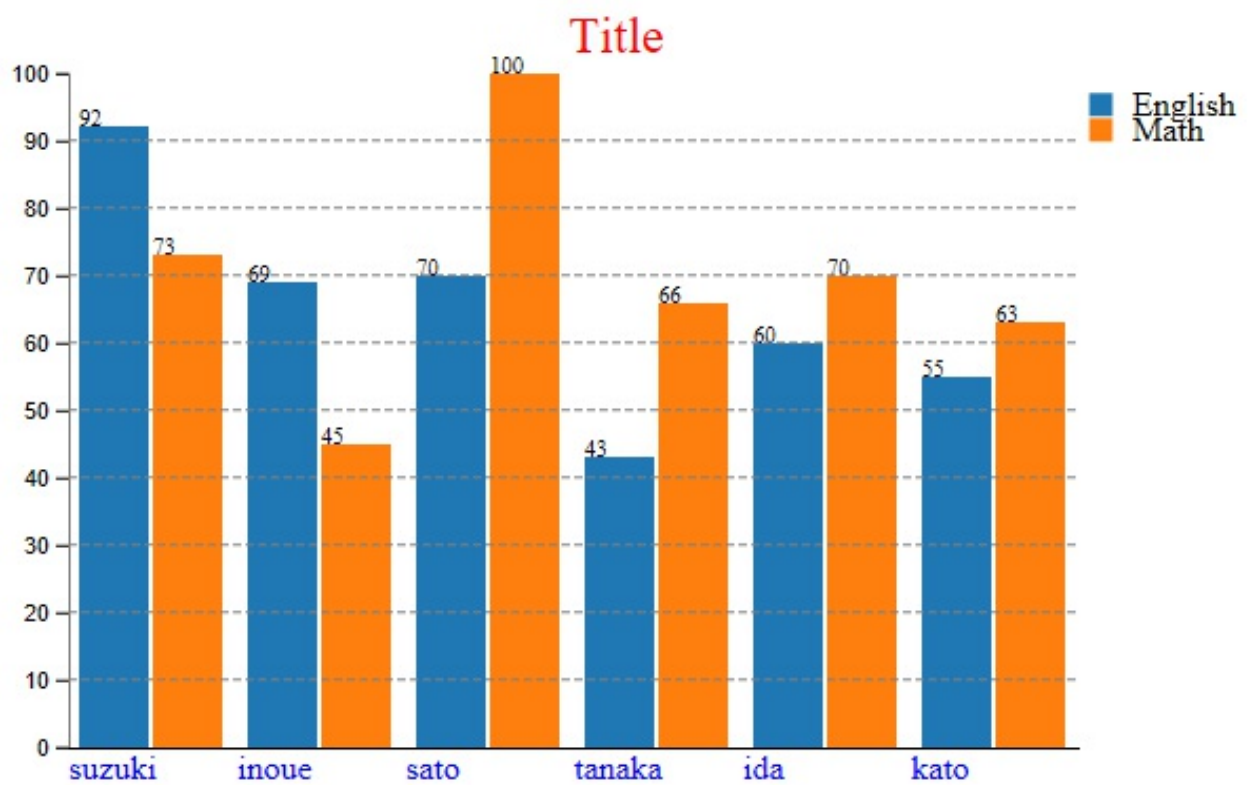
- *Sample GraphData for Bar*



```
barDataJson =
{
  "series":[
    "English",
    "Math"
  ],
  "data":[
    {
      "x": "suzuki",
      "y": [92,73],
    },
    {
      "x": "inoue",
      "y": [69,45],
    },
    {
      "x": "sato",
      "y": [70,100],
    },
    {
      "x": "tanaka",
      "y": [43,66],
    },
    {
      "x": "ida",
      "y": [60,70],
    },
    {
      "x": "kato",
      "y": [55,63],
    },
  ],
};
```

- ***Visual for Bar***

## Bar

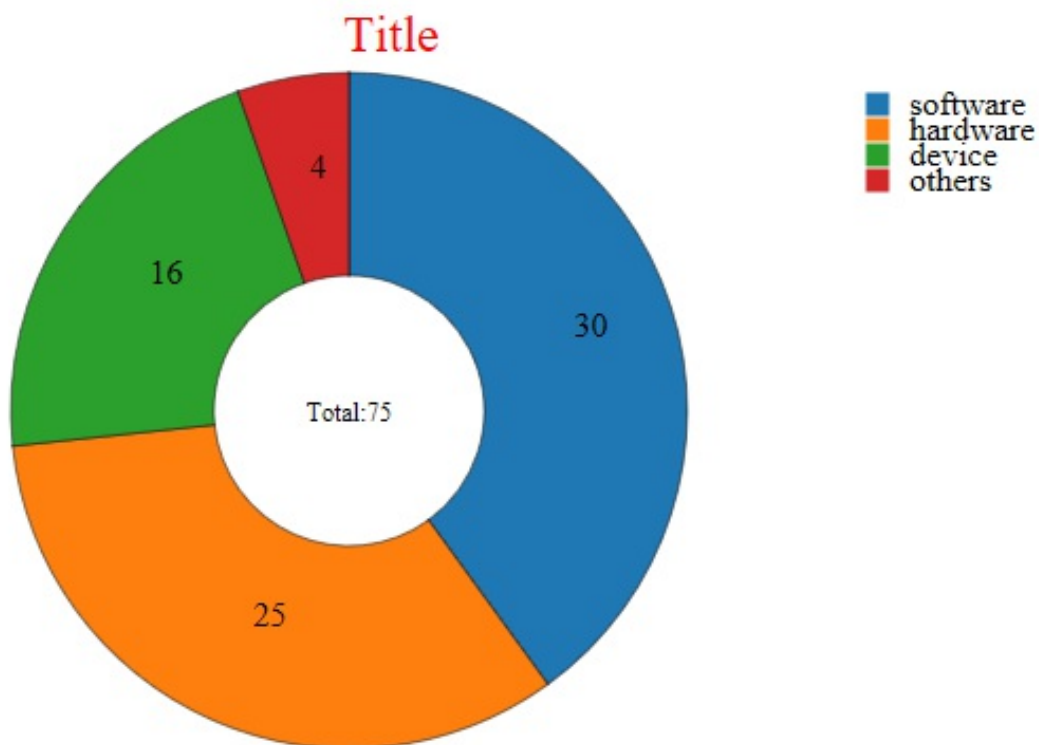


- *Sample GraphData for Pie*

```
pieDataJson =
{
  "data": [
    {
      "name": "software",
      "value": 30,
    },
    {
      "name": "hardware",
      "value": 25,
    },
    {
      "name": "device",
      "value": 16,
    },
    {
      "name": "others",
      "value": 4,
    },
  ],
};
```

- *Visual for Pie*

## Pie



- *Sample GraphData for ScatterPlot*

```
scatterPlotDataJson =
{
  "series": [
    "seriesA",
    "seriesB",
    "seriesC"
  ],
  "data": [
    {
      "name": "suzuki",
      "value": [
        {"x": 30, "y": 40, "r": 5},
        {"x": 120, "y": 115, "r": 10},
        {"x": 125, "y": 90, "r": 2},
        {"x": 150, "y": 160, "r": 1},
        {"x": 150, "y": 160, "r": 3},
        {"x": 128, "y": 215, "r": 5},
        {"x": 130, "y": 40, "r": 15},
        {"x": 220, "y": 115, "r": 25},
      ]
    },
    {
      "name": "inoue",
      "value": [
        {"x": 130, "y": 140, "r": 5},
        {"x": 20, "y": 15, "r": 10},
      ]
    }
  ]
}
```

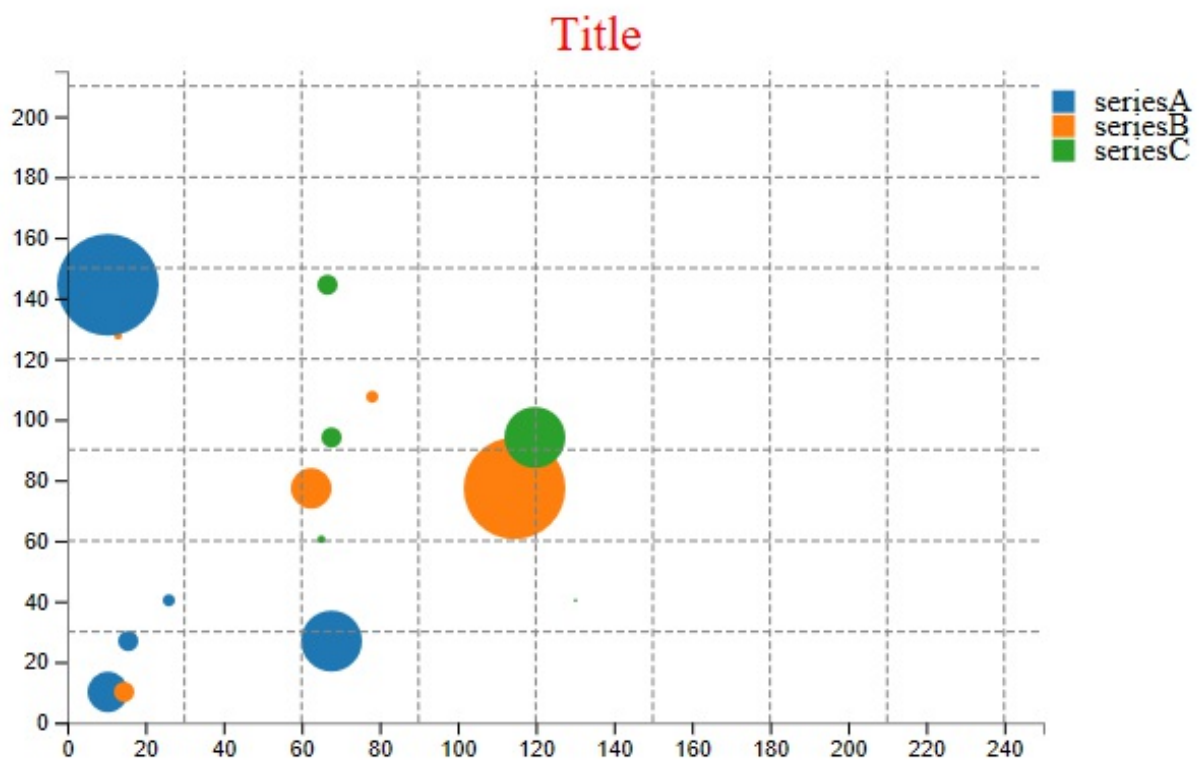
```

        {"x":25,"y":190,"r":2},
        {"x":250,"y":60,"r":1},
        {"x":50,"y":60,"r":3},
        {"x":28,"y":15,"r":5},
        {"x":230,"y":140,"r":15},
        {"x":20,"y":215,"r":25},
    ],
    },
    ],
};

```

- *Visual for ScatterPlot*

## ScatterPlot



- *Sample GraphData for Histogram*

```

histogramDataJson =
{
    "range": [0,100],
    "bins": [0,10,20,30,40,50,60,70,80,90,100],
    "data": [
        50,95,60,44,60,50,35,20,10,8,
        56,70,65,42,22,33,40,53,52,89,
        90,55,50,55,65,72,45,35,15,45,
        50,95,60,44,60,50,35,20,10,8,
        56,70,65,42,22,33,40,53,52,89,
    ]
}

```

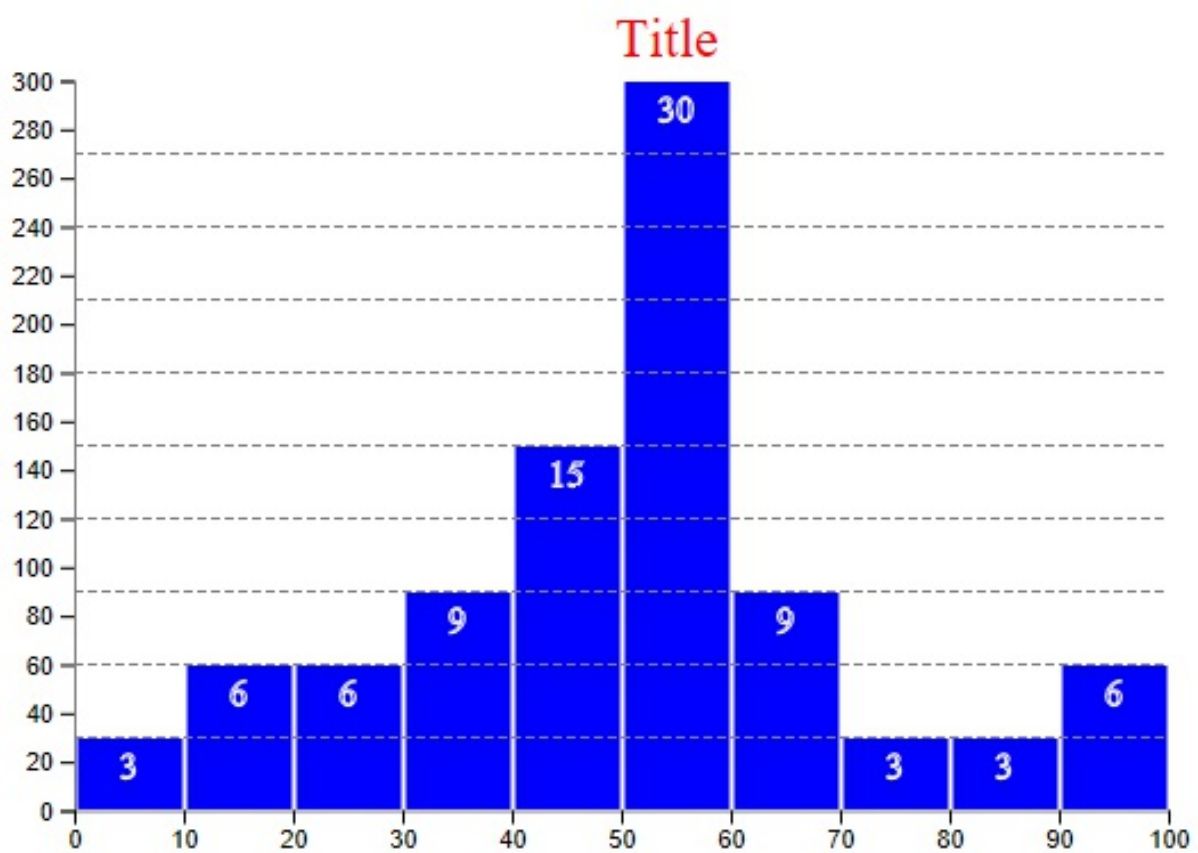
```

90,55,50,55,65,72,45,35,15,45,
50,95,60,44,60,50,35,20,10,8,
56,70,65,42,22,33,40,53,52,89,
90,55,50,55,65,72,45,35,15,45,
],
};

```

- *Visual for Histogram*

## Histogram



- *Sample GraphData for StackBar*

```

stackBarDataJson =
{
  "config":{
    "timeFormat": "%Y",
  },
  "series": [
    "year",
    "sell",
  ],
  "data": [
    {
      "name": "software",

```

```
    "value":[
      {
        "x":"2010",
        "y":18
      },
      {
        "x":"2011",
        "y":22
      },
      {
        "x":"2012",
        "y":30
      },
      {
        "x":"2013",
        "y":31
      },
    ]
  },
  {
    "name": "hardware",
    "value":[
      {
        "x":"2010",
        "y":15
      },
      {
        "x":"2011",
        "y":16
      },
      {
        "x":"2012",
        "y":10
      },
      {
        "x":"2013",
        "y":21
      },
    ]
  },
  {
    "name": "device",
    "value":[
      {
        "x":"2010",
        "y":25
      },
      {
        "x":"2011",
        "y":26
      },
      {
        "x":"2012",
        "y":30
      },
      {
        "x":"2013",
        "y":31
      },
    ]
  }
]
```

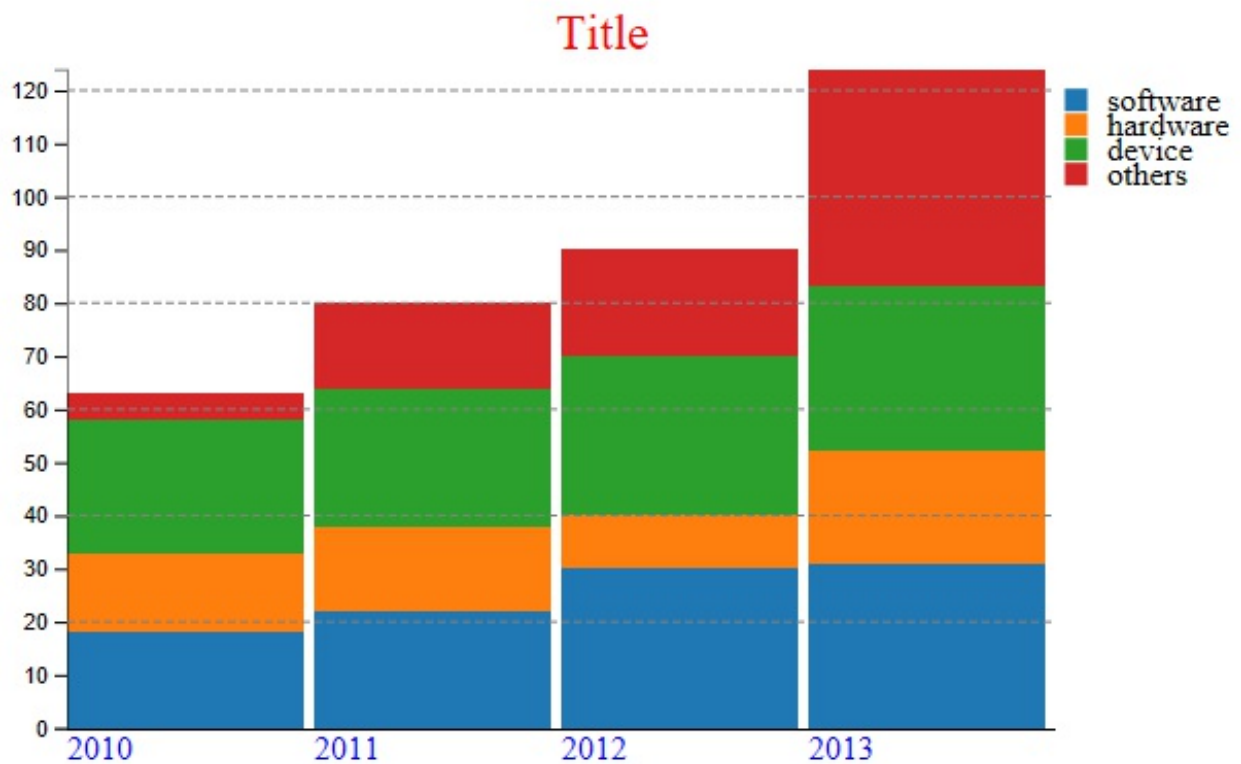
```

    },
    {
      "name": "others",
      "value": [
        {
          "x": "2010",
          "y": 5
        },
        {
          "x": "2011",
          "y": 16
        },
        {
          "x": "2012",
          "y": 20
        },
        {
          "x": "2013",
          "y": 41
        }
      ]
    }
  ],
};

```

- *Visual for StackBar*

## StackBar



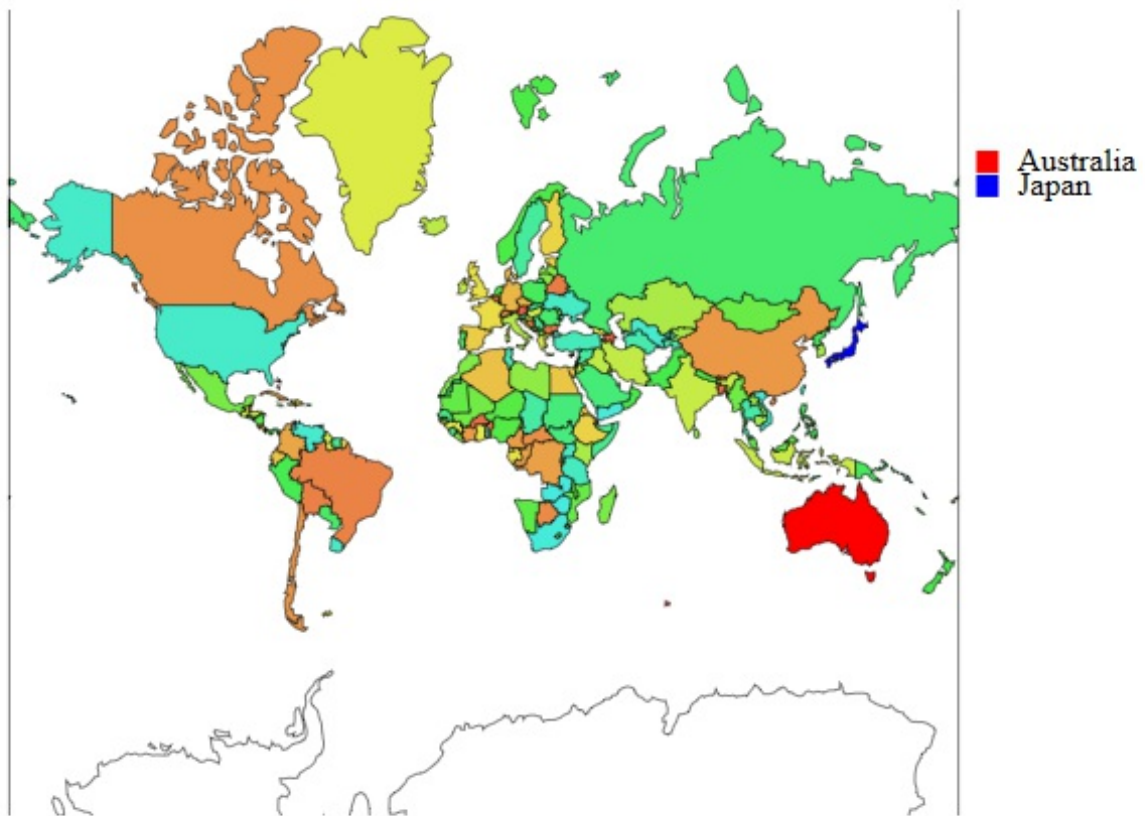
- ***Sample GraphData for GeoMap***

```
geoMapDataJson =  
{  
  "map":{  
    "baseGeoDataUrl":"https://raw.githubusercontent.com/Ohtsu/d.  
    "scale":75,  
    "keyDataName":"features",  
    "targetPropertyName":"properties.name",  
  },  
  "data":[  
    {  
      "name":"Australia",  
      "color":"red"  
    },  
    {  
      "name":"Antarctica",  
      "color":"white"  
    },  
    {  
      "name":"Japan",  
      "color":"blue"  
    },  
  ],  
};
```

- ***Visual for GeoMap***



# GeoMap



- *Sample GraphData for GeoOrthographic*

```
geoOrthographicDataJson =
{
  "map":{
    "baseGeoDataUrl":"https://raw.githubusercontent.com/Ohtsu/d.
    "keyDataName":"features",
    "targetPropertyName":"properties.name",
    "scale":160,
    "colorNumber":10,
    "rotate":{
      "horizontal":210,
      "vertical":5
    },
    "clipAngle":90,
    "oceanColor":"navy",
    "antarcticaColor":"white",
  },
  "data":[
    {
      "name":"Australia",
      "color":"red"
    },
    {
      "name":"Antarctica",
      "color":"white"
    },
  ]
}
```

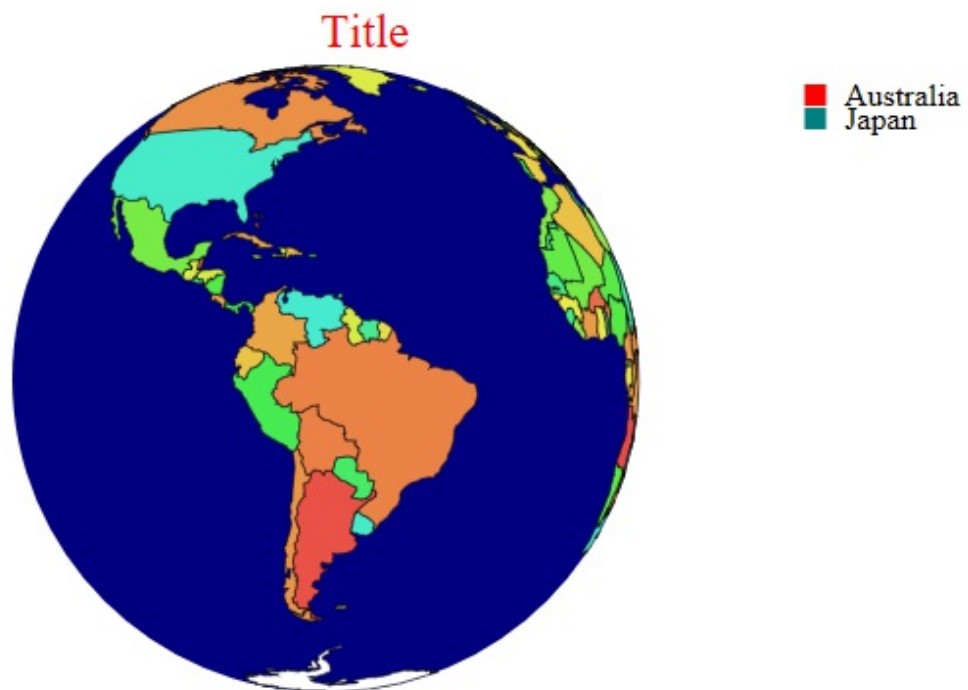
```

        "name": "Japan",
        "color": "teal"
    },
]
}

```

- *Visual for GeoOrthographic*

## GeoOrthographic



- *Sample GraphData for Tree*

```

treeDataJson =
{
    "name": "Eve",
    "children": [
        { "name": "Cain"
        },
        {
            "name": "Seth",
            "children": [
                { "name": "Enos" },
                { "name": "Noam" }
            ]
        },
        { "name": "Abel"
        },
        {
            "name": "Awan",

```

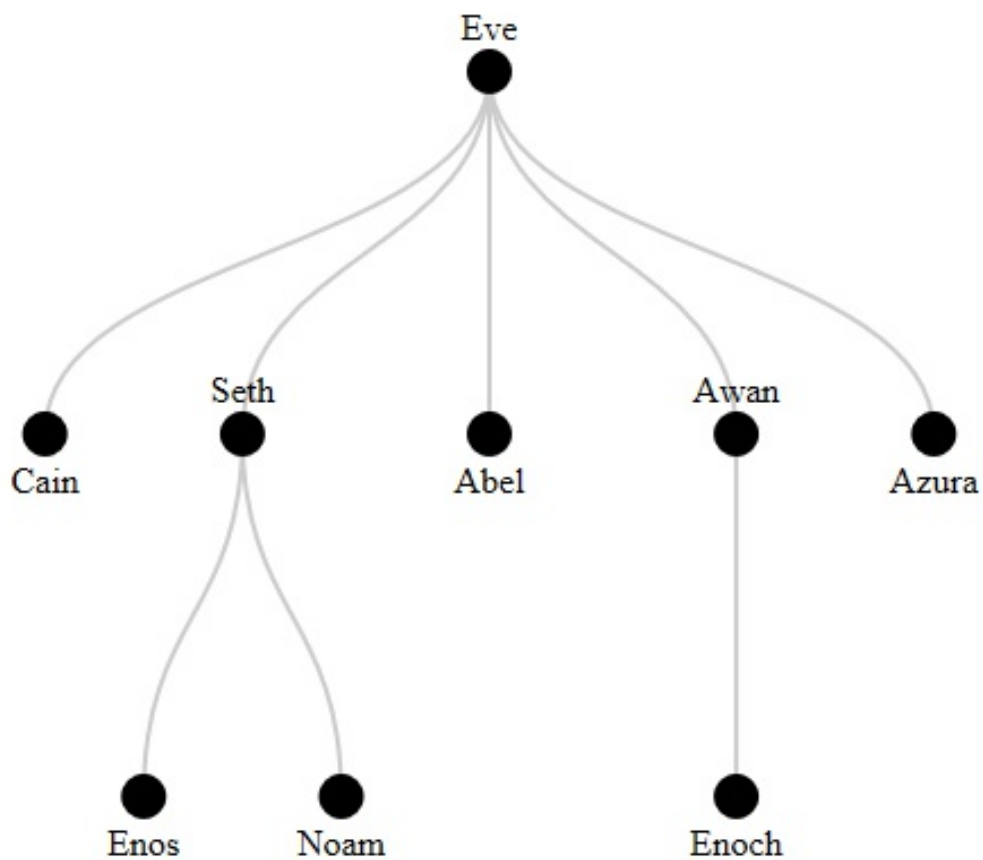
```

        "children": [
            { "name": "Enoch" }
        ]
    },
    { "name": "Azura"
    },
]
};

```

- *Visual for Tree*

## Tree



- *Sample GraphData for PackLayout*

```

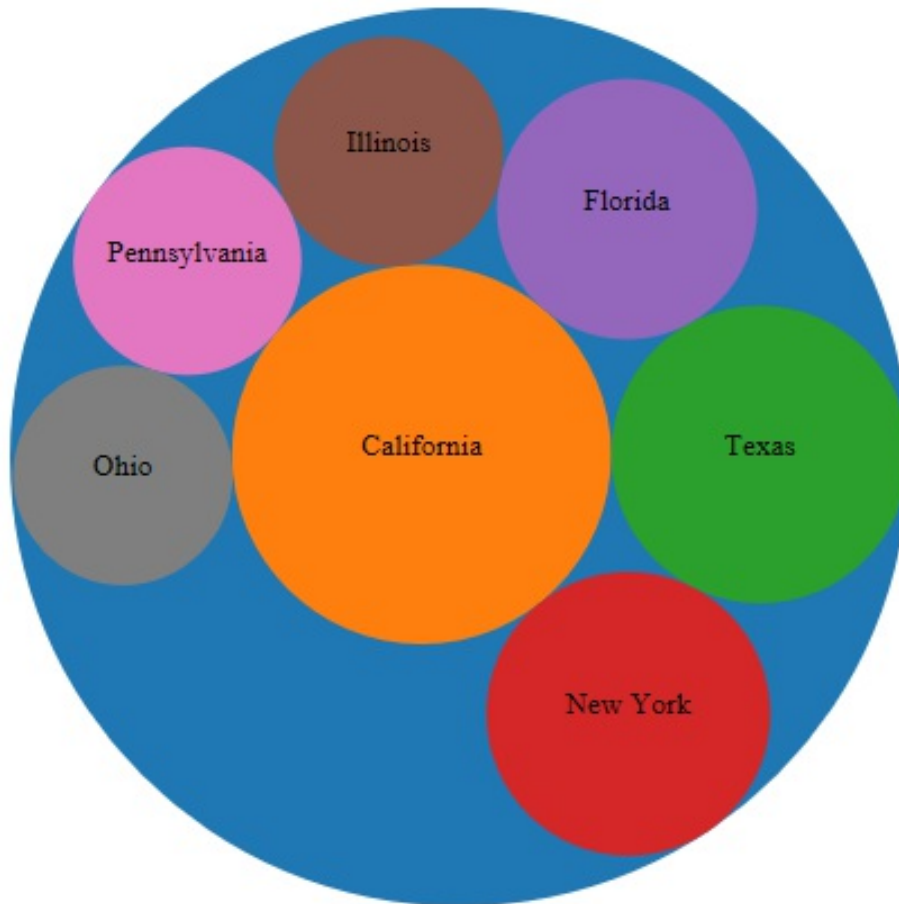
packLayoutDataJson = {
    "name": "United States", "value" : 281421906,
    "children" : [
        {"name": "California", "value" : 33871648},
        {"name": "Texas", "value" : 20851820},
        {"name": "New York", "value" : 18976457},
        {"name": "Florida", "value" : 15982378},
        {"name": "Illinois", "value" : 12419293},
        {"name": "Pennsylvania", "value" : 12281054},
        {"name": "Ohio", "value" : 11353140},
    ]
}

```

```
}  
]
```

- *Visual for PackLayout*

## PackLayout



- *Sample GraphData for Choropleth*

```
choroplethDataJson = {  
  "map": {  
    "baseGeoDataUrl": "https://raw.githubusercontent.com/Ohtsu/data/1",  
    "scale": 900,  
    "center": [137.571, 37.500],  
    "startColor": "blue",  
    "endColor": "red",  
    "colorNumber": 10,  
    "keyDataName": "features",  
    "targetPropertyName": "properties.id"  
  },  
  "data":  
  [  
    {  
      "id": 1,  

```

```
        "value":7.12
    },
    {
        "id":2,
        "value":8.97
    },
    {
        "id":3,
        "value":7.07
    },
    {
        "id":4,
        "value":7.78
    },
    {
        "id":5,
        "value":6.97
    },
    {
        "id":6,
        "value":5.79
    },
    {
        "id":7,
        "value":7.14
    },
    {
        "id":8,
        "value":6.68
    },
    {
        "id":9,
        "value":6.28
    },
    {
        "id":10,
        "value":6.32
    },
    {
        "id":11,
        "value":6.29
    },
    {
        "id":12,
        "value":6.14
    },
    {
        "id":13,
        "value":5.87
    },
    {
        "id":14,
        "value":5.75
    },
    {
        "id":15,
        "value":5.50
    },
    {
        "id":16,
```

```
        "value":5.21
    },
    {
        "id":17,
        "value":5.37
    },
    {
        "id":18,
        "value":5.23
    },
    {
        "id":19,
        "value":6.18
    },
    {
        "id":20,
        "value":5.44
    },
    {
        "id":21,
        "value":5.57
    },
    {
        "id":22,
        "value":5.81
    },
    {
        "id":23,
        "value":5.09
    },
    {
        "id":24,
        "value":5.08
    },
    {
        "id":25,
        "value":5.07
    },
    {
        "id":26,
        "value":6.21
    },
    {
        "id":27,
        "value":7.97
    },
    {
        "id":28,
        "value":6.54
    },
    {
        "id":29,
        "value":7.41
    },
    {
        "id":30,
        "value":6.74
    },
    {
        "id":31,
```

```
        "value":5.90
    },
    {
        "id":32,
        "value":4.55
    },
    {
        "id":33,
        "value":7.24
    },
    {
        "id":34,
        "value":5.35
    },
    {
        "id":35,
        "value":5.93
    },
    {
        "id":36,
        "value":7.62
    },
    {
        "id":37,
        "value":6.25
    },
    {
        "id":38,
        "value":7.26
    },
    {
        "id":39,
        "value":7.70
    },
    {
        "id":40,
        "value":7.84
    },
    {
        "id":41,
        "value":6.32
    },
    {
        "id":42,
        "value":6.64
    },
    {
        "id":43,
        "value":6.67
    },
    {
        "id":44,
        "value":7.07
    },
    {
        "id":45,
        "value":7.01
    },
    {
        "id":46,
```

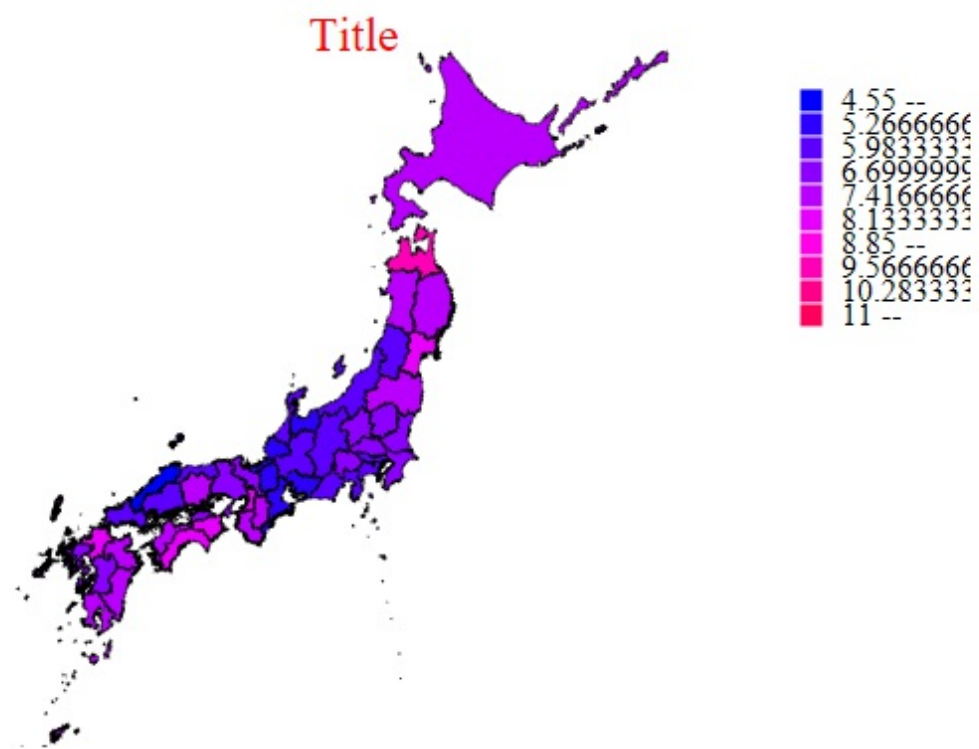
```

        "value":6.84
    },
    {
        "id":47,
        "value":11.0
    }
]
};

```

- *Visual for Choropleth*

## Choropleth



- *Sample GraphData for Force*

```

forceDataJson =
{
    "groups": [
        {"id": 1, "name": "Hokkaido"},
        {"id": 2, "name": "Tohoku"},
        {"id": 3, "name": "Kanto"},
        {"id": 4, "name": "Chubu"},
        {"id": 5, "name": "kinki"},
        {"id": 6, "name": "Chugoku"},
        {"id": 7, "name": "Shikoku"},
        {"id": 8, "name": "Kyushu"},
    ],
    "nodes": [

```



```

{"id": "Sapporo", "group": 1},
{"id": "Sendai", "group": 2},
{"id": "Morioka", "group": 2},
{"id": "Akita", "group": 2},
{"id": "Fukushima", "group": 2},
{"id": "Mito", "group": 3},
{"id": "Utsunomiya", "group": 3},
{"id": "Saitama", "group": 3},
{"id": "Chiba", "group": 3},
{"id": "Tokyo", "group": 3},
{"id": "Kofu", "group": 4},
{"id": "Nagano", "group": 4},
{"id": "Niigata", "group": 4},
{"id": "Toyama", "group": 4},
{"id": "Kanazawa", "group": 4},
{"id": "Fukui", "group": 4},
{"id": "Shizuoka", "group": 4},
{"id": "Nagoya", "group": 4},
{"id": "Gifu", "group": 4},
{"id": "Otsu", "group": 5},
{"id": "Kyoto", "group": 5},
{"id": "Osaka", "group": 5},
{"id": "Kobe", "group": 5},
{"id": "Nara", "group": 5},
{"id": "Kyoto", "group": 5},
{"id": "Tottori", "group": 6},
{"id": "Hiroshima", "group": 6},
{"id": "Matsue", "group": 6},
{"id": "Matsuyama", "group": 7},
{"id": "Tokushima", "group": 7},
{"id": "Kochi", "group": 7},
{"id": "Fukuoka", "group": 8},
{"id": "Nagasaki", "group": 8},
{"id": "Kumamoto", "group": 8},
{"id": "Naha", "group": 8},
],
"links": [
{"source": "Sendai", "target": "Sapporo", "value": 1},
{"source": "Morioka", "target": "Sapporo", "value": 1},
{"source": "Akita", "target": "Sapporo", "value": 1},
{"source": "Fukushima", "target": "Sapporo", "value": 1},
{"source": "Morioka", "target": "Sendai", "value": 10},
{"source": "Akita", "target": "Sendai", "value": 10},
{"source": "Fukushima", "target": "Sendai", "value": 10},
{"source": "Chiba", "target": "Tokyo", "value": 20},
{"source": "Utsunomiya", "target": "Tokyo", "value": 20},
{"source": "Mito", "target": "Tokyo", "value": 20},
{"source": "Saitama", "target": "Tokyo", "value": 30},
{"source": "Kofu", "target": "Tokyo", "value": 30},
{"source": "Nagano", "target": "Tokyo", "value": 30},
{"source": "Naha", "target": "Tokyo", "value": 30},
{"source": "Osaka", "target": "Tokyo", "value": 40},
{"source": "Sendai", "target": "Tokyo", "value": 40},
{"source": "Hiroshima", "target": "Tokyo", "value": 20},
{"source": "Shizuoka", "target": "Nagoya", "value": 10},
{"source": "Tokyo", "target": "Nagoya", "value": 40},
{"source": "Osaka", "target": "Nagoya", "value": 40},
{"source": "Kyoto", "target": "Nagoya", "value": 40},
{"source": "Kyoto", "target": "Osaka", "value": 30},
{"source": "Hiroshima", "target": "Osaka", "value": 20},

```

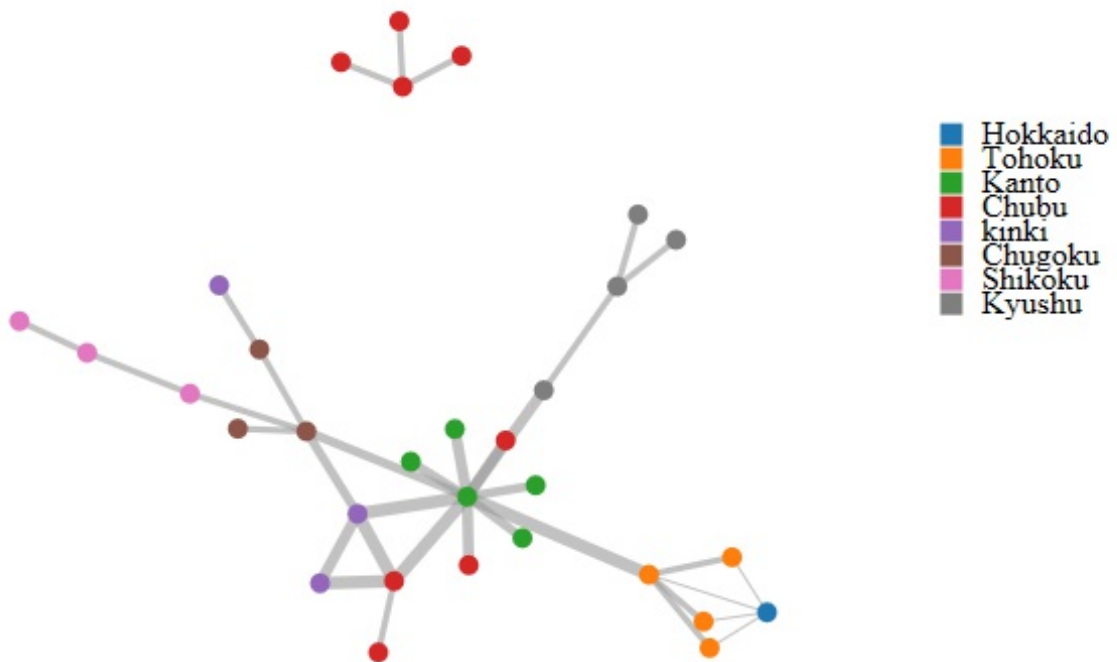
```

{"source": "Toyama", "target": "Kanazawa", "value": 10},
{"source": "Fukui", "target": "Kanazawa", "value": 10},
{"source": "Niigata", "target": "Kanazawa", "value": 10},
{"source": "Tottori", "target": "Kobe", "value": 10},
{"source": "Tottori", "target": "Hiroshima", "value": 10},
{"source": "Matsue", "target": "Hiroshima", "value": 10},
{"source": "Matsuyama", "target": "Hiroshima", "value": 10},
{"source": "Tokushima", "target": "Kochi", "value": 10},
{"source": "Matsuyama", "target": "Kochi", "value": 10},
{"source": "Nagasaki", "target": "Fukuoka", "value": 10},
{"source": "Kumamoto", "target": "Fukuoka", "value": 10},
{"source": "Naha", "target": "Fukuoka", "value": 10},
]
};

```

- *Visual for Force*

## Force



- *Sample Style Sheet for index.html*

```

<style>
.line {fill:none; stroke:black;stroke-width: 1.5;}
.line-0 {fill:none; stroke:#1f77b4;stroke-width: 1.5;stroke-dasharray:4}
.line-1 {fill:none; stroke:#ff7f0e;stroke-width: 1.5;stroke-dasharray:2}
.line-2 {fill:none; stroke:#2ca02c;stroke-width: 1.5;}
.line-3 {fill:none; stroke:#d62728;stroke-width: 1.5;}
.line-4 {fill:none; stroke:#9467bd;stroke-width: 1.5;}

```

```

.line-5 {fill:none; stroke:#8c564b;stroke-width: 1.5;}
.line-6 {fill:none; stroke:#e377c2;stroke-width: 1.5;}
.line-7 {fill:none; stroke:#7f7f7f;stroke-width: 1.5;}
.line-8 {fill:none; stroke:#bcbd22;stroke-width: 1.5;}
.line-9 {fill:none; stroke:b#17becf;stroke-width: 1.5;}

.bar { fill:#aaa; stroke:white;stroke-width: 1;}
.bar-value { fill:black;font-size: 8pt;}
.name { font-size: 10pt;text-anchor: middle}
path {fill:white;stroke:black;stroke-width:0.5;}
.axis text {
    font-family: sans-serif;
    font-size: 11px;
}
.axis path,
.axis line {
    fill: none;
    stroke: black;
}
.axis_x line {
    fill: none;
    stroke: black;
}
}
.chart-title { fill:red;font-size: 18pt;text-anchor: middle;}
.histogram-bar{fill:blue; stroke:white;stroke-width: 1;}
.axis-x-text{ fill:blue;font-size: 12pt;}
.treemap { stroke:black;fill:#777}
.treemap-label { font-size: 10pt;text-anchor: middle}
.packlayout{ stroke:black;}
.packlayout-label{ font-size: 10pt;text-anchor: middle}
.pie-inner-title {font-size:9pt;text-anchor:middle;}
.pieNum {font-size:10pt;text-anchor:middle;}
.grid {stroke:gray;stroke-dasharray: 4,2;shape-rendering:crispEdges}

.tree-node circle {
    fill: #fff;
    stroke: steelblue;
    stroke-width: 3px;
}
.tree-node text {
    font: 12px sans-serif;
}
.tree-node-internal text {
    text-shadow: 0 1px 0 #fff, 0 -1px 0 #fff, 1px 0 0 #fff, -1px 0 0 #f
}
.tree-node-link {
    fill: none;
    stroke: #ccc;
    stroke-width: 2px;
}
}
.force-links line {
stroke: #999;
stroke-opacity: 0.6;
}
}

.force-nodes circle {
stroke: #fff;
stroke-width: 1.5px;
}
}

```

</style>