Kobe Demographics API

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Problems of current demographic data

- Current demographic data
  - Understanding and analysis of complicated table structure is required
  - Extraction of data of interest is very complicated
  - To incorporate in web applications is hard
  - There is no demographic data at the micro level

  Data of micro level is data by town block, street, or age level
When holding events

- Determination of the venue and notice of the event is difficult
  - Where do people who are likely to participate live?
    - Where is the desired demographic data?
  - There is no demographic data at the micro level
    - Can not hold a small number of events
    - Can not know the proper venue

- It is hard for private companies and general people to hold events
- It is difficult to hold events close to local people
Proposed system

Kobe Demographics API

- Allows easy access to micro demographic data
  - Can be retrieved from various viewpoints and granularity such as period, place, gender, and age
  - Can be retrieved by town block, street, or age

- Viewer using API

We can realize applications, services, events that are close to the lives of Kobe citizens
Using open data

“Basic Resident Registration (Japanese /Foreigners) Population by Town block, Street, and Age”

- PDF or XLS format
- Population statistics information by town block, street, and age

<table>
<thead>
<tr>
<th>Ward Name</th>
<th>Ward Code</th>
<th>Town Code</th>
<th>Town-chome Name</th>
<th>0 years old</th>
<th>Man</th>
<th>Woman</th>
<th>Total</th>
<th>1 year old</th>
<th>2 year old</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>灘区計</em></td>
<td>28102</td>
<td></td>
<td>神戸市灘区</td>
<td>67142</td>
<td>62179</td>
<td>70955</td>
<td>133134</td>
<td>1141</td>
<td>1215</td>
</tr>
<tr>
<td>灘区</td>
<td>28102</td>
<td>102001002</td>
<td>青谷町 2 丁目</td>
<td>117</td>
<td>101</td>
<td>134</td>
<td>235</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>灘区</td>
<td>28102</td>
<td>102001003</td>
<td>青谷町 3 丁目</td>
<td>227</td>
<td>148</td>
<td>231</td>
<td>379</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>灘区</td>
<td>28102</td>
<td>102001004</td>
<td>青谷町 4 丁目</td>
<td>277</td>
<td>243</td>
<td>295</td>
<td>538</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>灘区</td>
<td>28102</td>
<td>102002001</td>
<td>赤坂通 1 丁目</td>
<td>108</td>
<td>114</td>
<td>97</td>
<td>211</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>灘区</td>
<td>28102</td>
<td>102002002</td>
<td>赤坂通 2 丁目</td>
<td>45</td>
<td>40</td>
<td>42</td>
<td>82</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>灘区</td>
<td>28102</td>
<td>102002003</td>
<td>赤坂通 3 丁目</td>
<td>192</td>
<td>168</td>
<td>220</td>
<td>388</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

API: Population and coordinates

- Retrieve demographic data from Excel, PDF and store it into MySQL
- Store data by town block, street, and age
- Added latitude/longitude information using GeoCoding API of Yahoo Japan!

Structured demographic data for the API


```json
{
  "address": "神戸市東灘区魚崎北町1丁目",
  "from": 0,
  "gender": "total",
  "latitude": 34.7181473,
  "longitude": 135.2759896,
  "month": 6,
  "population": 83,
  "to": 10,
  "townCode": 101001001,
  "townName": "魚崎北町1丁目",
  "wardCode": 28101,
  "wardName": "東灘区",
  "year": 2017
}
```
API : Section of town

- API of section data of town block and street
  - Using `e-Stat` released by Japanese government

Structured demographic data for the API


```
[{
  "townCode":"101001001","seq":"1",
  "x":135.276767964987,"y":34.7168359359825},
{
  "townCode":"101001001","seq":"2",
  "x":135.275724097756,"y":34.716483438139},
{
  "townCode":"101001001","seq":"3",
  "x":135.275700098988,"y":34.7165332051693},
...
```
Kobe Demographics Viewer

年月
2017年 3月

年齢
0歳 ～ 0歳

VIEW
Create a viewer to visualize demographic data
• Demographic data is displayed as a heat map
• Calculation of population
  ◦ by **temporal designation** of year and month
  ◦ by **spatial designation** of latitude, longitude and radius

Micro population information visualized on the map
Actual usage example

- Holding an event close to Kobe citizens

  Event organized based on regional population information

9月15日は「敬老の日」

2017年、篠原本町では64名の人が長寿祝いを迎えられます。

還暦（13名）、古希（16名）、喜寿（13名）
傘寿（10名）、卒寿（8名）、卒寿（4名）

御長寿の方のお住まいに近い三丁目公民館で
お祝いをします。みなさまお集まりください。
Other applications

- Use for marketing of public facilities
  - Nursing care welfare facility
  - Public kindergarten
  - Community space

- Functions under consideration
  - Event proposal
    - By accumulating data, it is possible to propose an event, a venue from the service
  - Visualization such as aging rate
    - To make it possible for local people to find and solve problems in the area in which they live
Conclusion

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