WEB Sensorizer
Usage Guide

Jin Nakazawa and Takuro Yonezawa

{jin, takuro}@ht.sfc.keio.ac.jp
Install

- Install the Chrome Extension of Sensorize It! 0.1 to Google Chrome
  - Sensorize It! can be downloaded from
    https://www.dropbox.com/s/ys2nzvg6dwdywil/chrome.crx

After install the extension, you can see the menu.
Basic Usage

1. **Create** a virtual sensor device on a web page.

2. **Add** sensors (we call transducers) to the virtual sensor device.

3. **Configure** the information of the device and transducers.

4. **Sensorize**!
1. Create a virtual sensor device

(1) right click where the text is appropriate as sensor node name

(2) Select this menu
2. Add transducers to the device

(1) right click where you want to add the sensor information as transducer

(2) Select this menu
3. Configure the information of the node and transducers

You can edit name of the device

Click here if you want to configure location of the device

Define the transducer name and unit
4. Sensorize!

<table>
<thead>
<tr>
<th>Transducer</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>feelslike</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>temperature</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>humidity</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>wind</td>
<td>mph</td>
<td></td>
</tr>
<tr>
<td>weather_icon</td>
<td>units</td>
<td></td>
</tr>
</tbody>
</table>

Click to select the units for each transducer. Then click OK to confirm the selection.

Confirmation dialog:

- Sensorize New York, NY Weather?
  - OK
  - Cancel
Advanced

Usage - Data Tuple -

If a page contains a list of values, and you want to include all those values in your sensor, you can sensorize the list using an XPath that points to the values in the list.

1. **Create** a virtual sensor device on a web page.

2. **Add** sensors (we call transducers) to the virtual sensor device

3. **Configure** the information of the device and transducers

4. **Sensorize** !
1. Create a virtual sensor device

(1) right click where the text is appropriate as sensor node name

(2) Select “New Device” menu
2. Add transducers to the device

(1) right click one of the data items in the list that you want to sense

(2) Select “New Transducer” menu
3. Configure the information of the node and transducers

Edit the XPath to specify the list of data items
In this case
//TABLE[@id='arrivadatagrid']/TBODY/TR[2]/TD[2]
→ //TABLE[@id='arrivadatagrid']/TBODY/TR/TD[2]
4. Sensorize!

- You can Sensorize this device as specified in the Basic Usage section. On publish, each row is packed into a tuple, and all tuples are put into one single publish data, meaning that the whole table is published atomically.
Advanced

Usage - Page Template -

If a page contains a list of values (or list of tuples of values), and you want to put a virtual sensor for each value (or tuple), you can use Page Template.

1. **Create** a virtual sensor **template** on a web page.

2. **Add** sensors (we call transducers) to the virtual sensor device

3. **Configure** the information of the device and transducers

4. **Sensorize**!
1. Create a virtual sensor template

(1) right click where the text is appropriate as sensor node name

(2) Select “New Template” menu
2. Add transducers to the device

(1) right click one of the data items in the list that you want to sense

(2) Select “New Transducer” menu
3. Configure the information of the node and transducers
3. Configure the information of the node and transducers

In this particular site, each row moves up in the table according to the current time. To ensure a virtual sensor to monitor the same single flight continuously, the transducer xpaths need to be specified indirectly anchored to flight names. So we first pick up the flight (e.g., AC6156) in each row by

```
string(//TABLE[@id='arrivatagrid']/TBODY/TR/TD[2])
```

then point the cell that contains the flight by

```
//td[contains(text()),string(//TABLE[@id='arrivatagrid'])]/../TD[1-5]
```

and finally point sibling cells relatively to the flight cell by

```
//td[contains(text()),string(//TABLE[@id='arrivatagrid'])]/../TD[5]
```

```
//td[contains(text()),string(//TABLE[@id='arrivatagrid'])]/../TD[4]
```

```
//td[contains(text()),string(//TABLE[@id='arrivatagrid'])]/../TD[3]
```

```
//td[contains(text()),string(//TABLE[@id='arrivatagrid'])]/../TD[2]
```

```
//td[contains(text()),string(//TABLE[@id='arrivatagrid'])]/../TD[1]
```
4. Sensorize!

- You can Sensorize this template as specified in the Basic Usage section. According to the template virtual sensors will be created in the server automatically.

Click “This Page” button
Advanced

Usage - Site Template -

If a web site contains many web pages which have the same structure but contain different values, you can sensorize all those pages automatically just with one Site Template.

1. **Create** a virtual sensor **template** on a web page.

2. **Add** sensors (we call transducers) to the virtual sensor device

3. **Configure** the information of the device and transducers

4. **Sensorize**!
1. Create a virtual sensor template

(1) right click where the text is appropriate as sensor node name

(2) Select “New Template” menu
2. Add transducers to the device
3. Configure the information of the node and transducers

Template can include an XPath in device name and location

Define the transducer name and unit
4. Sensorize!

- You can Sensorize this template as specified in the Basic Usage section. The sensorizer server will crawl all pages in the specified site, applying the template on each page. If a page matches to the template, the server creates a virtual sensor automatically.

Click “This Web Site” button
Architecture

client side

web page

(sensorizer)

(sensor definition)

(server side)

probe

Virtual Sensor Device (PubSub Node)
(based on Sensor Andrew)

Subscribe

App

App

App

App
TIPS
TIPS1: Using Template to Automate 1-3 above

STEP1: Creating a Virtual Sensor Device/Transducers for a Template

If you have so many virtual sensors in a table-based web page, consider using a template. To do so, first create from a row in the table.
TIPS1: Using Template to Automate 1-3 above

STEP2: Creating a Template with an Iterator

Specify corresponding sets of elements with XPATH in { and }.

```xml
//table[@id='results']/tbody/tr/td[1]
//table[@id='results']/tbody/tr/td[3]
//table[@id='results']/tbody/tr/td[5]
//table[@id='results']/tbody/tr/td[7]
//table[@id='results']/tbody/tr/td[9]
```
TIPS1: Using Template to Automate 1-3 above

STEP 3: Apply the Template

Click

Click
TIPS1: Using Template to Automate 1-3 above

STEP4: Sensorize

Automatically extracted from the page

So many virtual sensors created

Click
TIPS1: Using Template to Automate 1-3 above

Click

OPTION: Delete devices generated from a template

Confirmation
Remove all devices generated from this template?

OK Cancel

Click

Click
<table>
<thead>
<tr>
<th>URL</th>
<th><a href="http://www.airqualitynow.eu/comparing_home.php">http://www.airqualitynow.eu/comparing_home.php</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Update Rate</td>
<td>![Update Rate Icon]</td>
</tr>
<tr>
<td>Name</td>
<td>![Name Icon]</td>
</tr>
<tr>
<td>Location</td>
<td>![Location Icon]</td>
</tr>
<tr>
<td>Type</td>
<td>![Type Icon]</td>
</tr>
<tr>
<td>Transducer Roadside Yi</td>
<td>![Transducer Icon]</td>
</tr>
<tr>
<td>Transducer Roadside N</td>
<td>![Transducer Icon]</td>
</tr>
<tr>
<td>Transducer Background</td>
<td>![Transducer Icon]</td>
</tr>
<tr>
<td>Transducer Background</td>
<td>![Transducer Icon]</td>
</tr>
<tr>
<td>Transducer Background</td>
<td>![Transducer Icon]</td>
</tr>
<tr>
<td>Transducer Background</td>
<td>![Transducer Icon]</td>
</tr>
<tr>
<td>Transducer Background</td>
<td>![Transducer Icon]</td>
</tr>
</tbody>
</table>
Appendix 1

How to check sensor data from sensorized WEB
Tool: SOX Manager

- You can monitor/create/delete virtual sensor nodes
- Implemented with Javascript

SOX Manager
http://sox.ht.sfc.keio.ac.jp/~htroot/sox/tools/manager.html
ex. Monitoring

Select node to monitor

- Brussels_Weather_Tomorrow
- Current_Genova_Weather_Conditions
- genova24
- genova19
- Fujisawa_Meiji_Culture_Center
- genova23
- sb-image1
- genova10
- Brussels_Weather_Today
- 藤沢橋
- genova8
- genova29
- genova28

(1) Select the device name to monitor

(2) Click

(3) Sensor Info including meta information will be appeared
Appendix. 2

City Surfboard

(Very Early Prototype)
City Surfboard

http://www.ht.sfc.keio.ac.jp/~tomotaka/fujisawa-surfboard/
City Surfboard - how to add new widget

- Write widget name
- Select node
- Select transducer
- Select visualization type

Add Widget:

- Widget Name
- Node Name
- Transducer Name
- Visualization
- Widget Type
- Add Widget
City Surfboard - how to add new widget

New widget is hidden in second column so, please move “image sample” widget
Your Own App. Developer Guide

Coming Soon..