MapInfo2Leaflet

User Guide

TWIAV.NL

Version 0.35 – 7 November 2014

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1. Introduction

With **MapInfo2Leaflet** you can export a MapInfo table to a web map application using Leaflet - the output consists of an html file, a json file (containing a GeoJSON FeatureCollection) and css files for the styling.

Optionally you can export a thematic layer to color the geometry based on attribute data.

Leaflet is a modern open-source JavaScript library for mobile-friendly interactive maps.

More information: http://leafletjs.com/

This version of **MapInfo2Leaflet** is compatible with the 'classic' 32 bit version of MapInfo Professional (version 9.5 or higher)

2. Export a MapInfo Table to a Web Map Application using Leaflet

2.1. Preparation: open a table or create a query

In MapInfo Professional open the table you want to export to a web map application.

Create a query if you only want to export a subset of your table.

Create a thematic map (Type: Ranges or Individual) if you want to color the geometry based on attribute data.

A note on geometry conversion:

The table/query to export should:

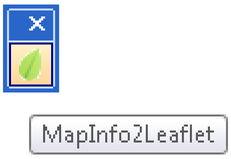
- only contain **point data** (*point objects* and *multipoint objects*) , or
- only contain **line data** (*arc objects, line objects* and *polyline objects*), or
- only contain **region data** (*ellipse objects, region objects, rectangle objects* and *rounded rectangle objects*).

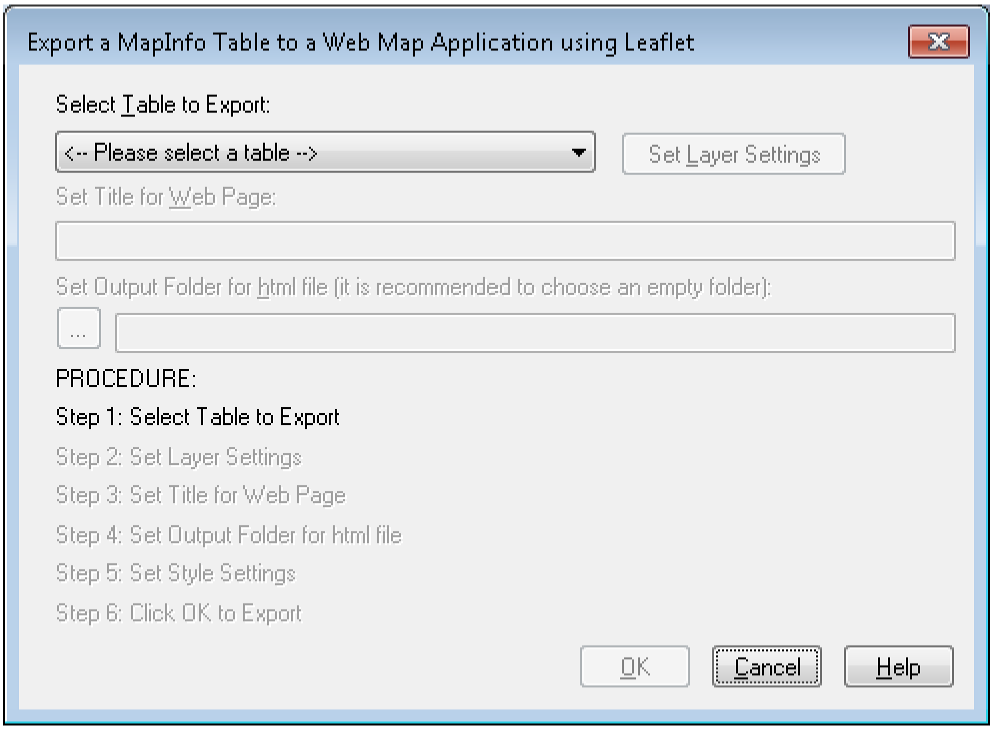
Tables containing a mixture of point, line and region data will not be processed by **MapInfo2Leaflet**.

The geometry will be converted to GeoJSON. For a description of the this format, see the GeoJSON Format Specification at http://geojson.org/geojson-spec.html

The output json files will be stored in the geodata subfolder.

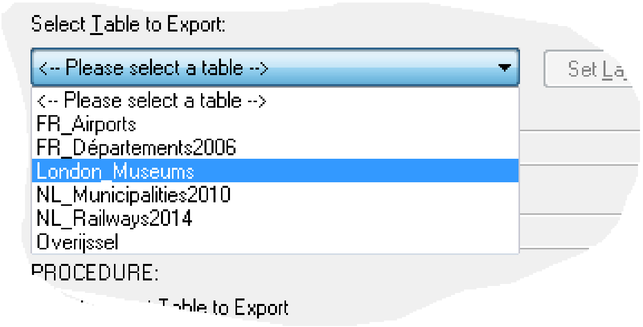
When the data is ready, go to **MapInfo2Leaflet > MapInfo2Leaflet** or click the **MapInfo2Leaflet** button




Export a MapInfo Table to a Web Map Application using Leaflet
Select Table to Export:
<-- Please select a table -->
Set Layer Settings
Set Title for Web Page:
Set Output Folder for html file (it is recommended to choose an empty folder):
...
PROCEDURE:
Step 1: Select Table to Export
Step 2: Set Layer Settings
Step 3: Set Title for Web Page
Step 4: Set Output Folder for html file
Step 5: Set Style Settings
Step 6: Click OK to Export
OK
Cancel
Help

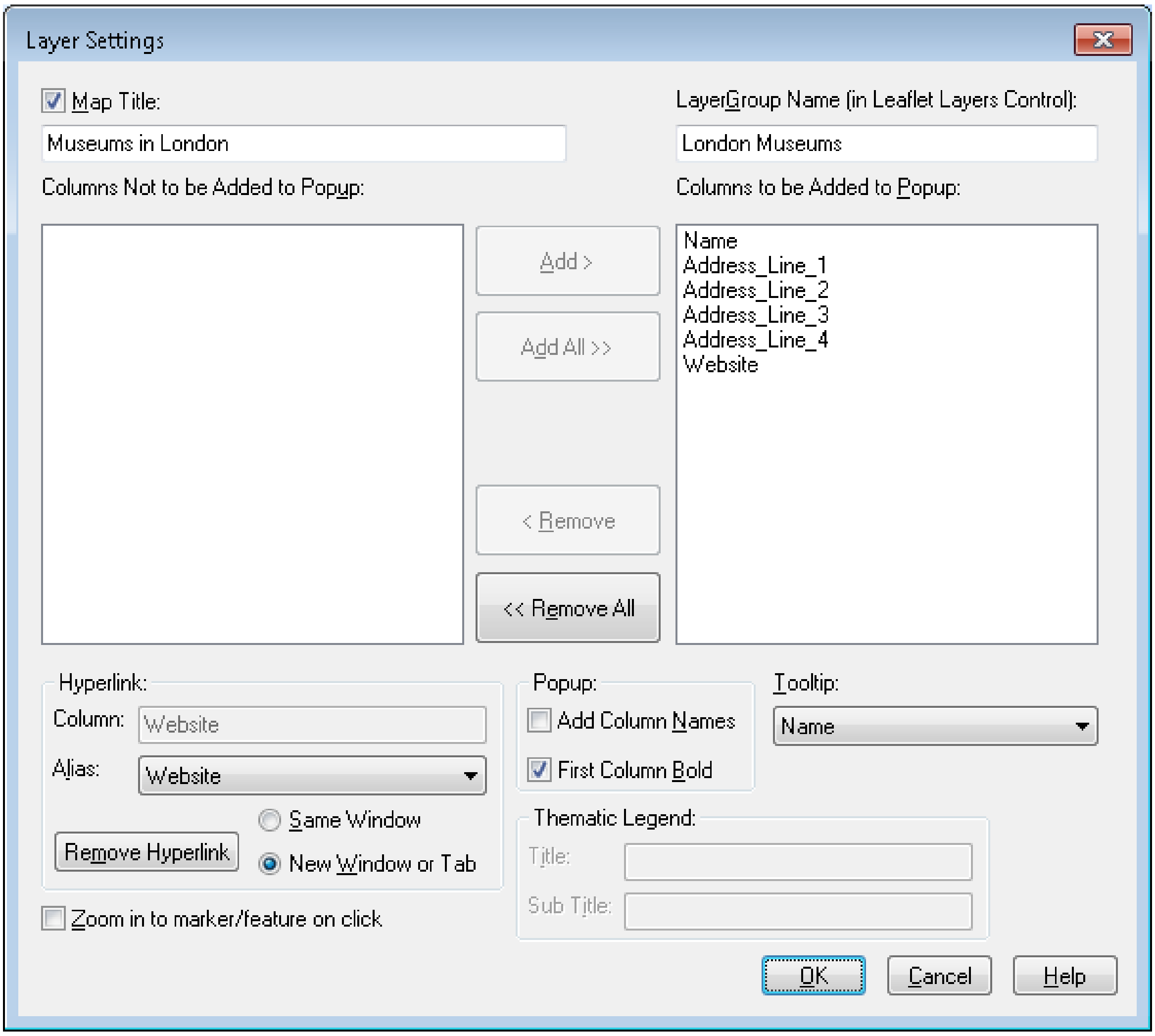
2.2. Step 1: Select Table to Export

Select your table from the available tables, e.g. ***London_Museums***. This will activate the **Set Layer Settings** button.



2.3. Step 2: Set Layer Settings

When you click the **Set Layer Settings** button, the **Layer Settings** dialog will appear.



☑ Map Title: Museums in London

LayerGroup Name (in Leaflet Layers Control): London Museums

Columns Not to be Added to Popup:

Columns to be Added to Popup:
Name
Address_Line_1
Address_Line_2
Address_Line_3
Address_Line_4
Website

Hyperlink:
Column: Website
Alias: Website
○ Same Window
● New Window or Tab

☐ Zoom in to marker/feature on click

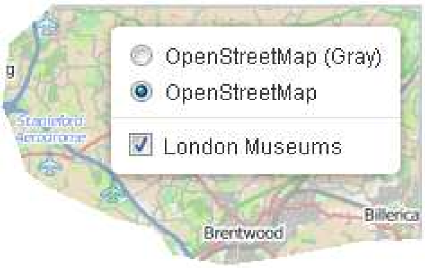
Popup:
☐ Add Column Names
☑ First Column Bold

Tooltip: Name

Thematic Legend:
Title:
Sub Title:

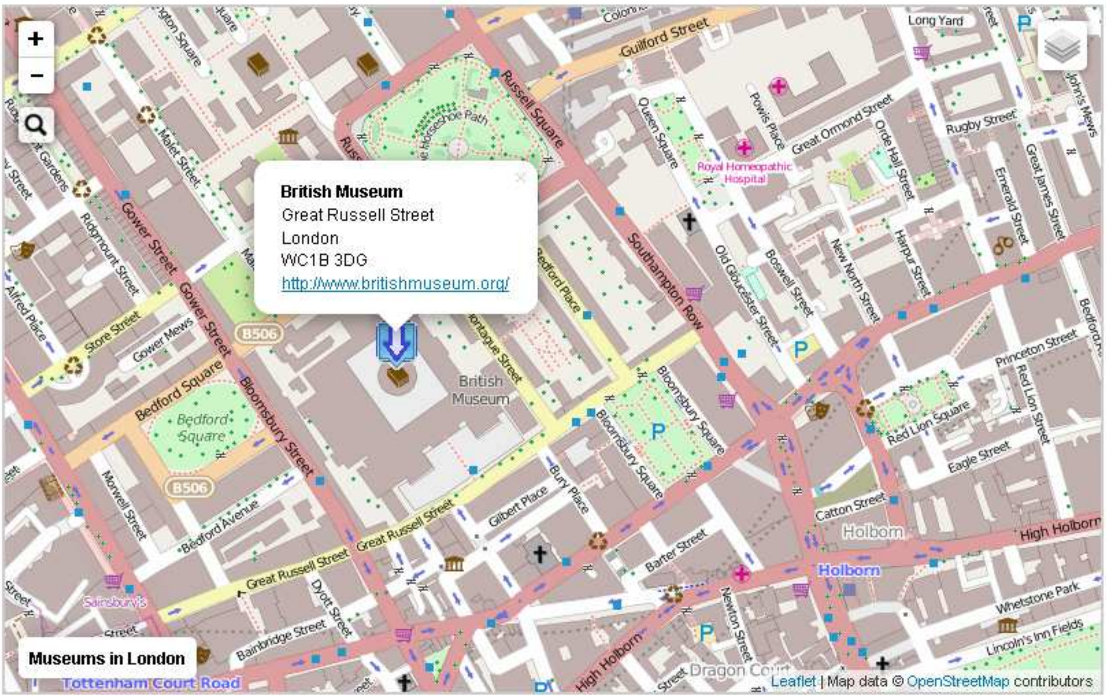
In the **Layer Settings** dialog you can set the following options:

- **Map Title** (optional) – this title will appear in the lower left corner of the map window.
- **LayerGroup Name** – this name will be shown in the **Leaflet Layers Control** in the web map application.



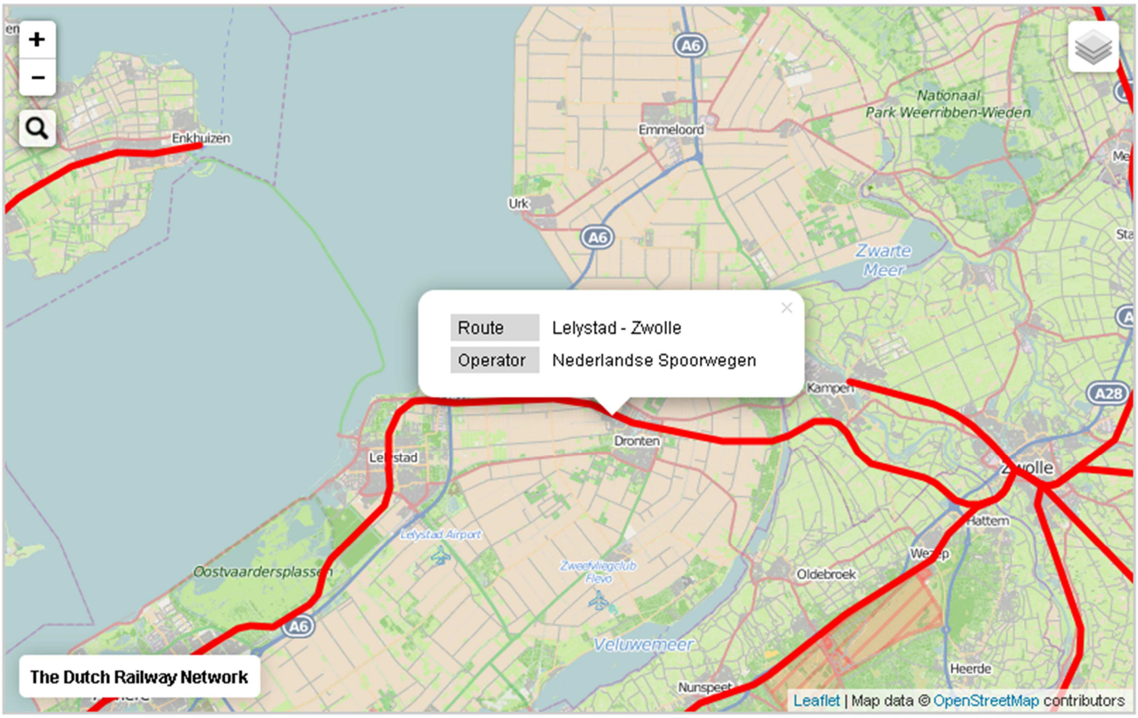
○ OpenStreetMap (Gray)
● OpenStreetMap
☑ London Museums

- **Columns to be Added to Popup** - defaults to all columns in the table, but you can **Remove** columns from the list. To reorder the columns in the popup: **Remove All**, and manually **Add** in the right order.



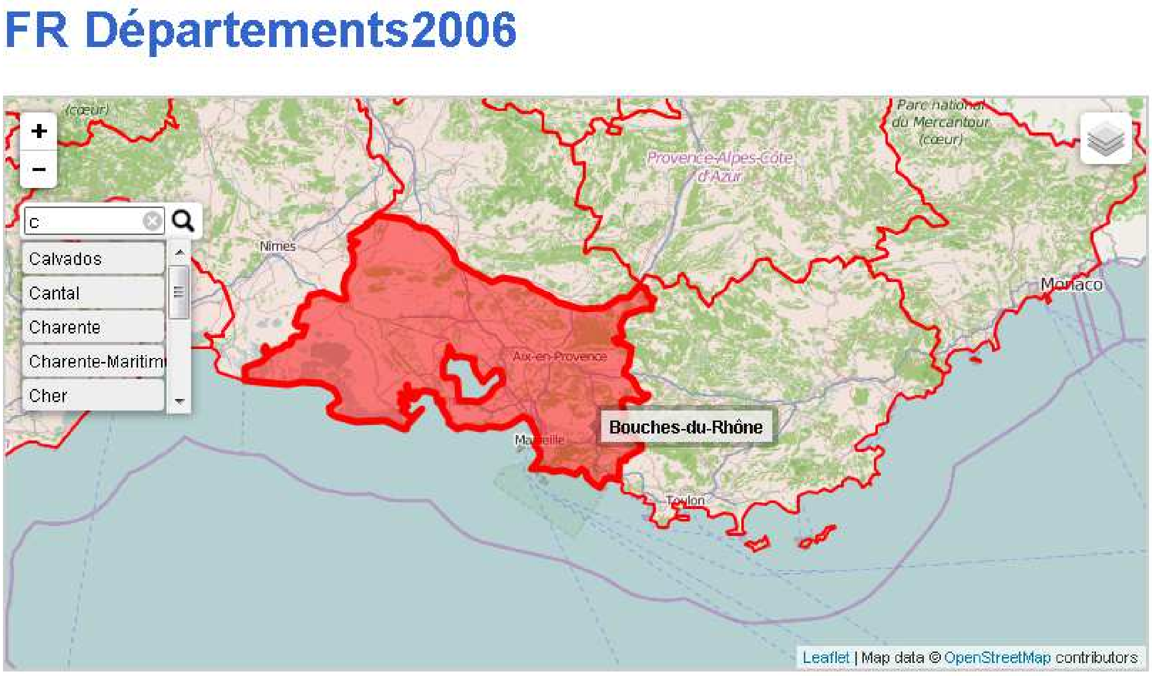
British Museum
Great Russell Street
London
WC1B 3DG
http://www.britishmuseum.org/

- **Hyperlink** – When processing the table **MapInfo2Leaflet** will automatically detect whether the table does contain a column with URLs, i.e. links to web pages. To be detected these URL values should start with “http”. If a column with URLs is present a hyperlink will be created automatically. (Optionally you can **Remove Hyperlink**.)
    - **Alias** – an **Alias** can be set for the hyperlink (the value of one of the other columns).
    - **Same Window / New Window or Tab** – specifies where to open the hyperlink. Uses `target="_blank"` to open in new window or tab.



Route	Lelystad - Zwolle
Operator	Nederlandse Spoorwegen

- **Popup**
    - **Add Column Names** – check this option to show column names in the popup.
    - **First Column Bold –** check this option to show the first column value bold in the popup.
- **Tooltip –** this column will be shown in the tooltip/label, and it will also be used in the search control.
- **Thematic Legend** (if applicable)
    - **Title** – defaults to theme column
    - **Sub Title** (optional) – you can use html tags here, e.g. `Inhabitants / km<sup>2</sup>` to get ***Inhabitants / km***^{2}



FR Départements2006

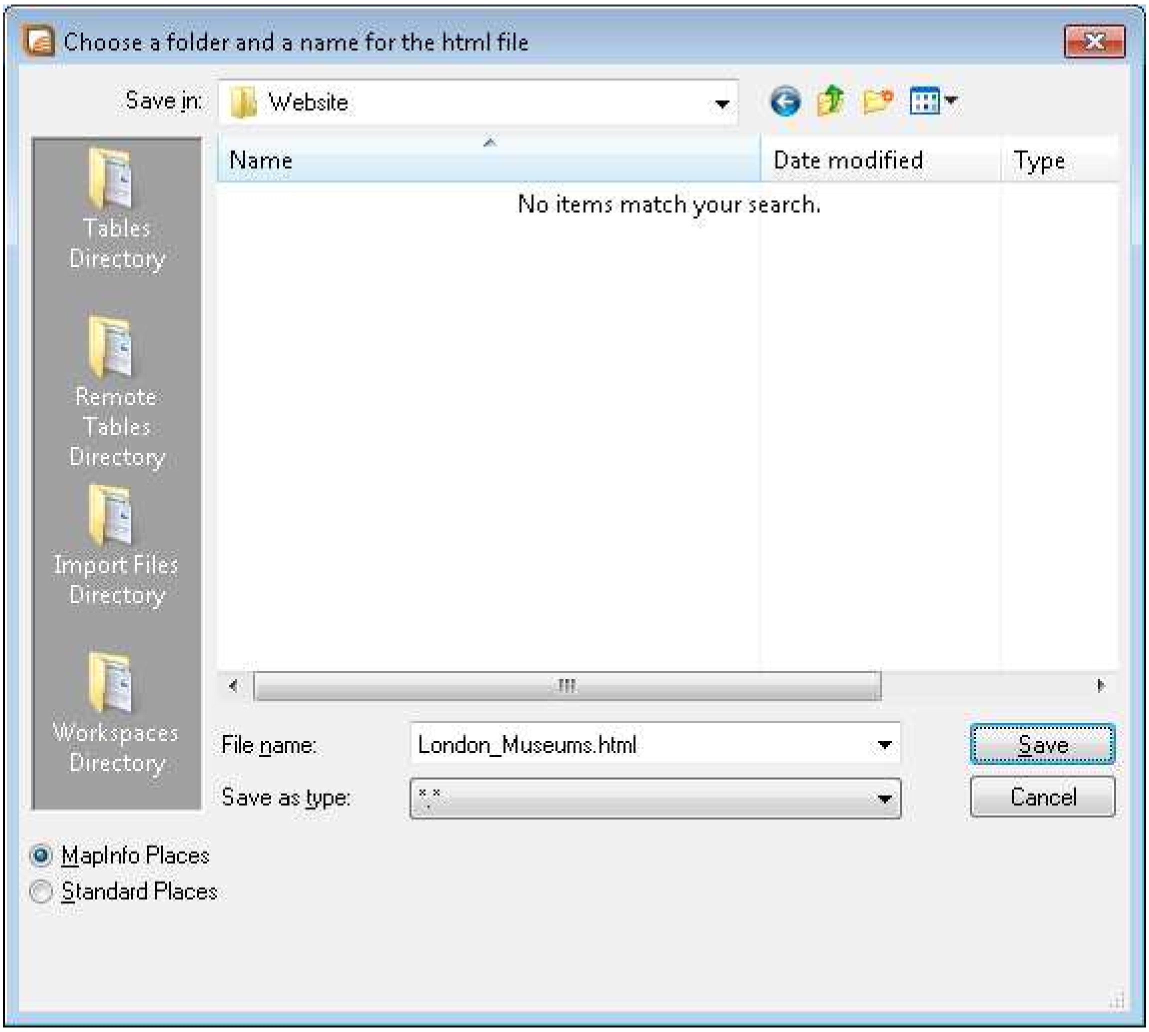
- **Zoom in to marker/feature on click –** be careful with this setting. Only use it on specific request by the end users. Why? What does this option do? Well, it makes sure that the map will be zoomed in on an object (marker or feature) when the user clicks this object. So, every time the user wants to open a tooltip by clicking an object the whole map will start moving.

Click **OK** to return to the **Export** dialog

2.4. Step 3: Set Title for Web Page

You can modify the title of the web page. The value you enter here will be used both in the TITLE element of the web page and in the header.

2.5. Step 4: Set Output Folder for html file



Choose a folder and a name for the html file

Save in: Website

No items match your search.

File name: London_Museums.html

Save as type: *.*

● MapInfo Places
○ Standard Places

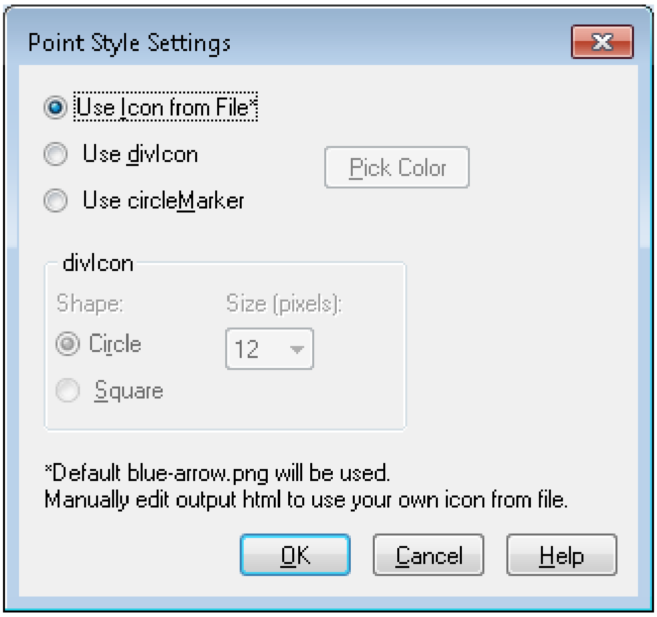
You can set the name and the output folder for the html file to be created.

It is **highly recommended** to choose an empty folder for this html file. This folder will not only be used to store the html file, but also all other components of the web map application. These other components will either be created in or copied to this folder. So after the export you will find multiple files and subfolders in the folder you specify here.

2.6. Step 5: Styling of Point, LineString and Polygon objects

- When exporting a thematic map, the thematic colors will be used.
- **Style for Point data**

When you click the **Set Point Style Settings** button, the **Point Style Settings** dialog will appear.



Point Style Settings

● Use Icon from File*

○ Use divIcon

○ Use circleMarker

divIcon

Shape: ● Circle ○ Square

Size (pixels): 12

*Default blue-arrow.png will be used.
Manually edit output html to use your own icon from file.

For point data you can choose between three styles:

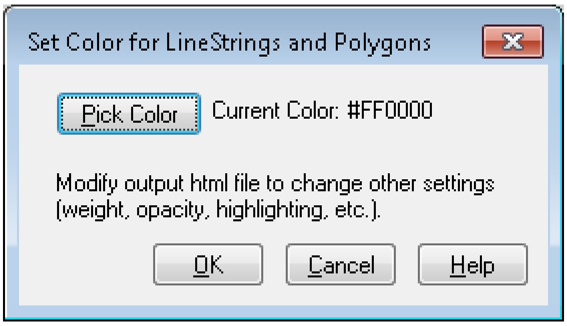
- **Use Icon from File**
- **Use divIcon**
- **Use circleMarker**

You can edit the html file after it has been created to modify the point style, i.e. use your own icon or change the colours of the circle.

Please note: do not remove or rename the file *blue-arrow.png* in the application folder because the application needs this file to create the web map application. Only replace the *.png file in the destination folder.

- **Style for LineString and Polygon data**

When you click the **Set Color** button, the **Set Color for LineStrings and Polygons** dialog will appear.



Set Color for LineStrings and Polygons

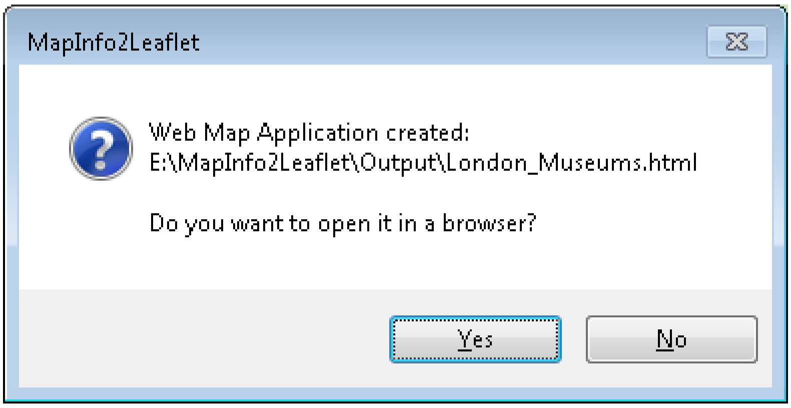
Current Color: #FF0000

Modify output html file to change other settings (weight, opacity, highlighting, etc.).

Here you can pick a color. All other style settings are set to default values. These values can be changed afterwards in the relevant html and css files.

2.7. Step 6: Click OK to Export

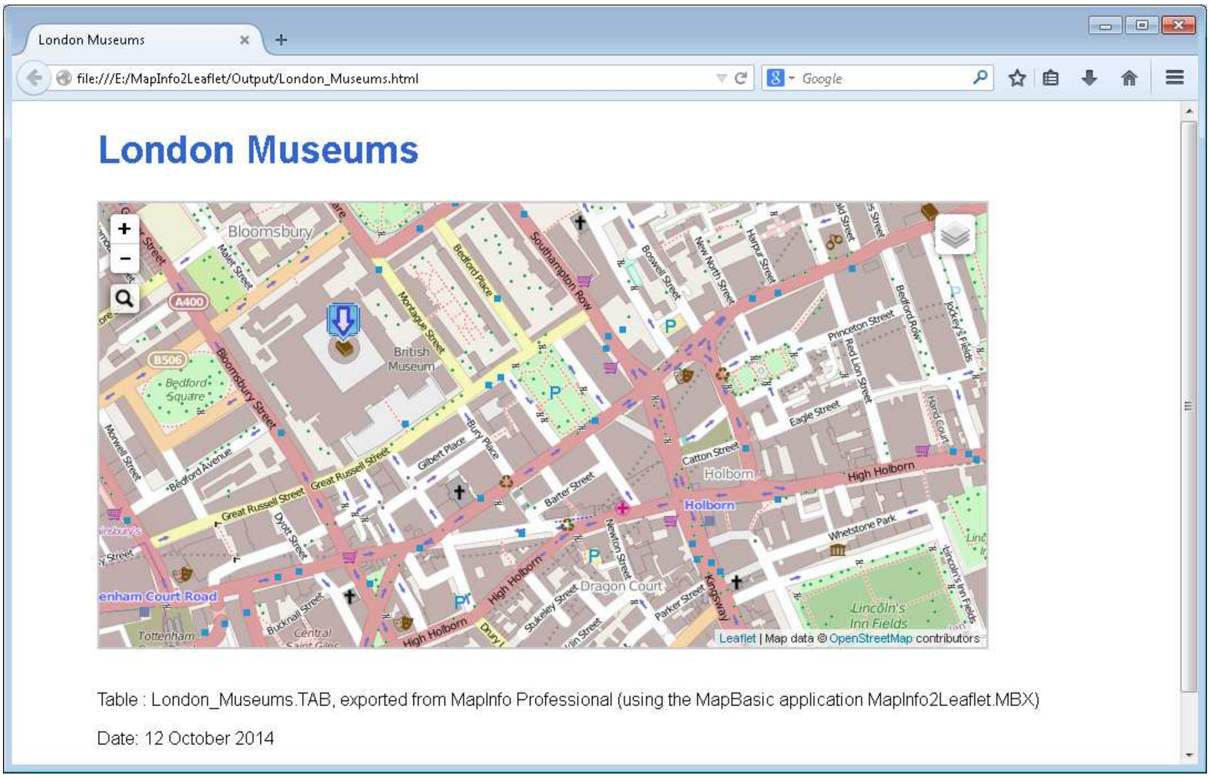
When all settings are set you can click **OK** to create the web map application.



MapInfo2Leaflet

Web Map Application created:
E:\MapInfo2Leaflet\Output\London_Museums.html

Do you want to open it in a browser?



London Museums
file:///E:/MapInfo2Leaflet/Output/London_Museums.html
Google
Bloomsbury
British Museum
Bedford Square
Holborn
High Holborn
Lincoln's Inn Fields
Leaflet | Map data © OpenStreetMap contributors

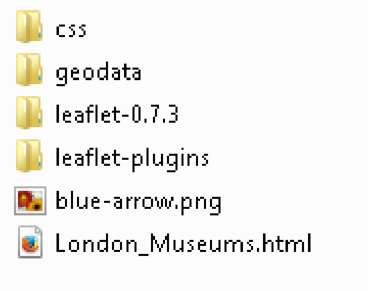
London Museums

Table : London_Museums.TAB, exported from MapInfo Professional (using the MapBasic application MapInfo2Leaflet.MBX)

Date: 12 October 2014

2.8. Output

The output consists of multiple files and folders:



css
geodata
leaflet-0.7.3
leaflet-plugins
blue-arrow.png
London_Museums.html

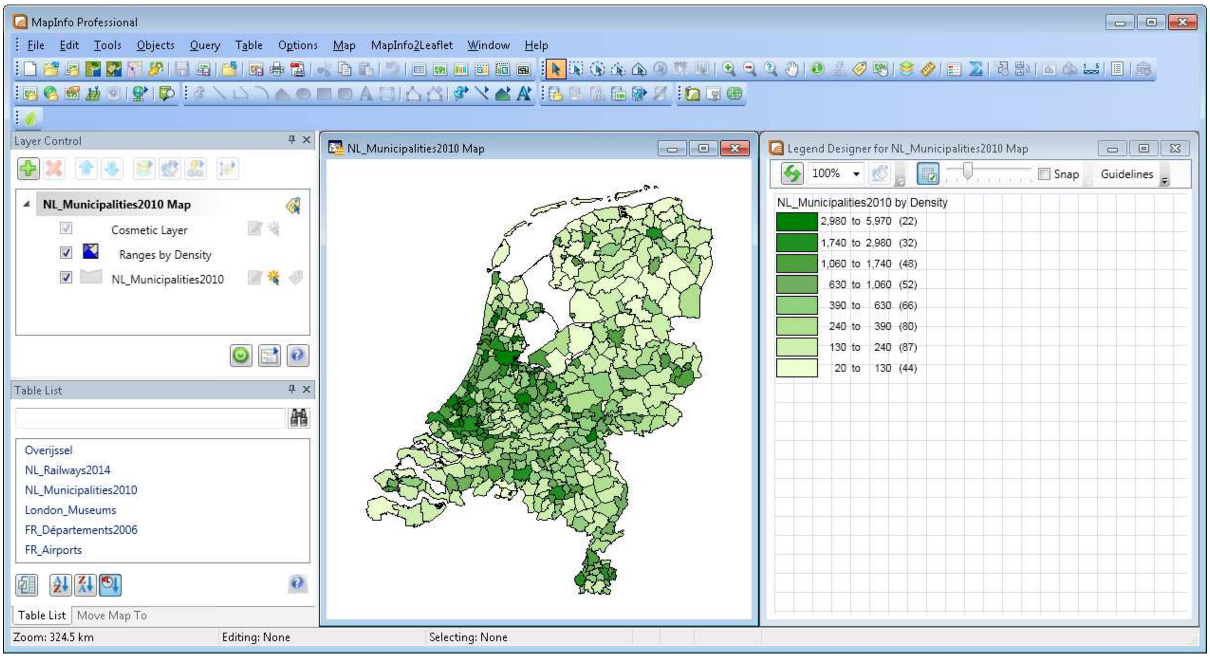
- An *.html file, e.g. **London_Museums.html**. This file contains the basic layout of the website.
- A *.json file, e.g. **London_Museums.json** (in the subfolder geodata). This file contains the geometry (a GeoJSON FeatureCollection).
- All other files and folders are just copied to the output folder

3. Exporting a thematic map

It is possible to export a thematic map to your web map application.

First, you will have to create a thematic map in MapInfo Professional, with the default functionality offered: **Map > Create Thematic Map…**

This thematic map should be of **Type: Ranges** or **Individual** and should only use color.



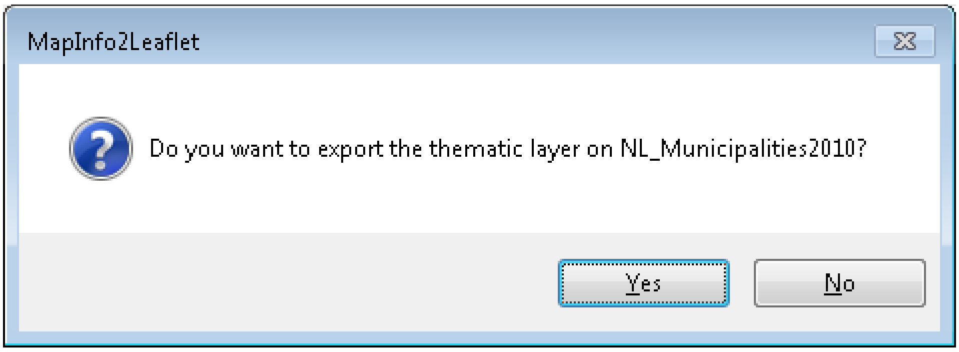
NL_Municipalities2010 by Density

🟩	2,980 to 5,970 (22)
🟩	1,740 to 2,980 (32)
🟩	1,060 to 1,740 (48)
🟩	630 to 1,060 (52)
🟩	390 to 630 (66)
🟩	240 to 390 (80)
🟩	130 to 240 (87)
🟩	20 to 130 (44)

Next, go to **MapInfo2Leaflet > MapInfo2Leaflet** or click the **MapInfo2Leaflet** button

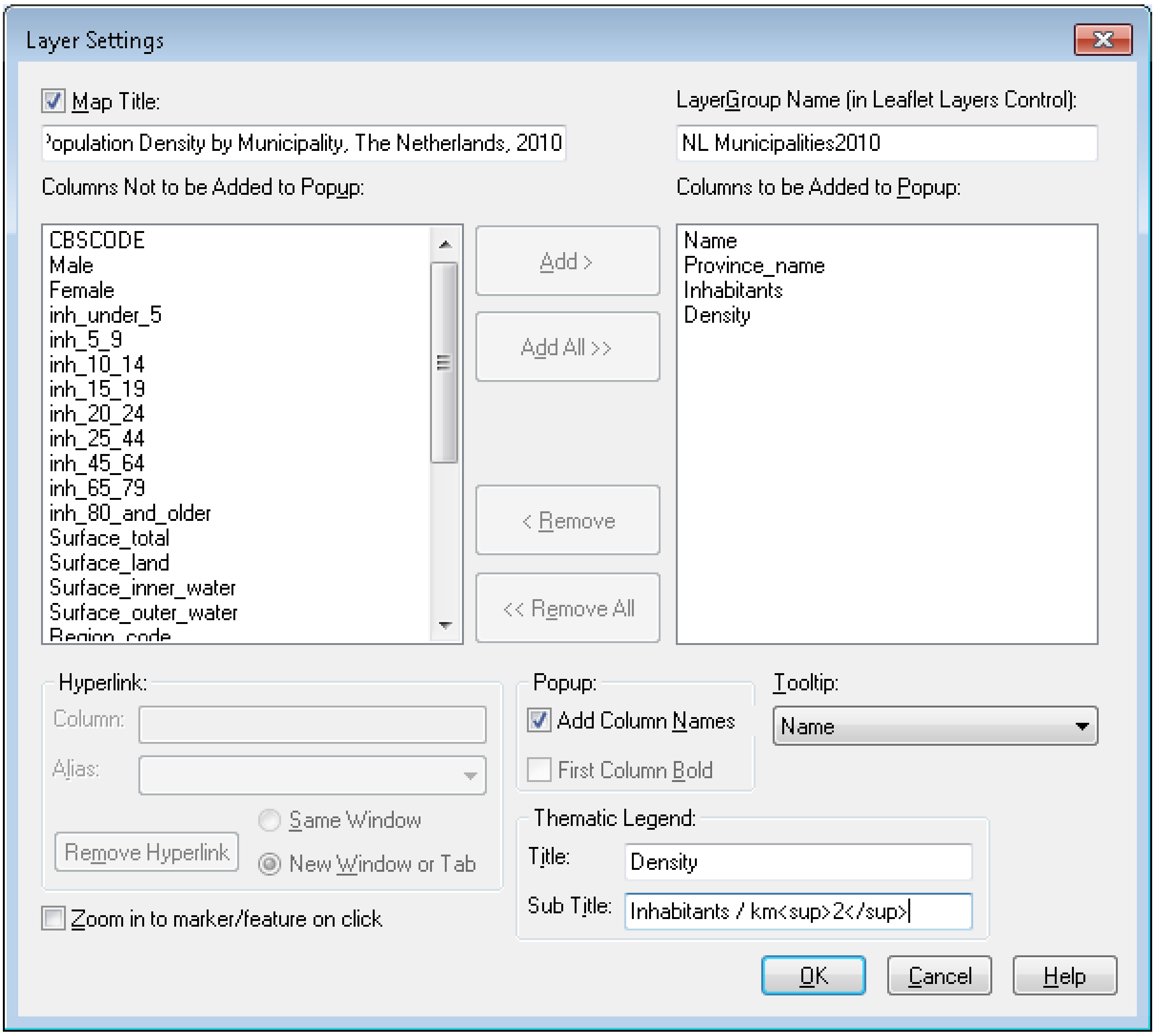
In the **Export** dialog, choose the layer you have used to create your thematic map and click **Set Layer Settings**.

The thematic map will be autodetected.



Do you want to export the thematic layer on NL_Municipalities2010?

Click **Yes**.



Layer Settings

☑ Map Title:

'opulation Density by Municipality, The Netherlands, 2010

LayerGroup Name (in Leaflet Layers Control):

NL Municipalities2010

Columns Not to be Added to Popup:

CBSCODE
Male
Female
inh_under_5
inh_5_9
inh_10_14
inh_15_19
inh_20_24
inh_25_44
inh_45_64
inh_65_79
inh_80_and_older
Surface_total
Surface_land
Surface_inner_water
Surface_outer_water
Region_code

Columns to be Added to Popup:

Name
Province_name
Inhabitants
Density

Hyperlink:

Column:

Alias:

○ Same Window

● New Window or Tab

□ Zoom in to marker/feature on click

Popup:

☑ Add Column Names

□ First Column Bold

Tooltip: Name

Thematic Legend:

Title: Density

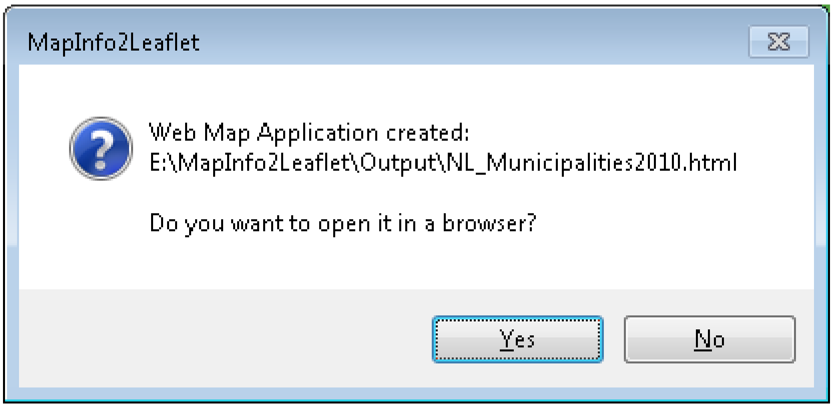
Sub Title: Inhabitants / km²

In the **Layer Settings** dialog you can set the **Title** and (optionally) the **Sub Title** of the thematic legend. For other relevant settings, see previous chapter.

Click **OK.**

Back in the **Export** dialog you can't set any colors: **Thematic colors will be used**

Click **OK**.

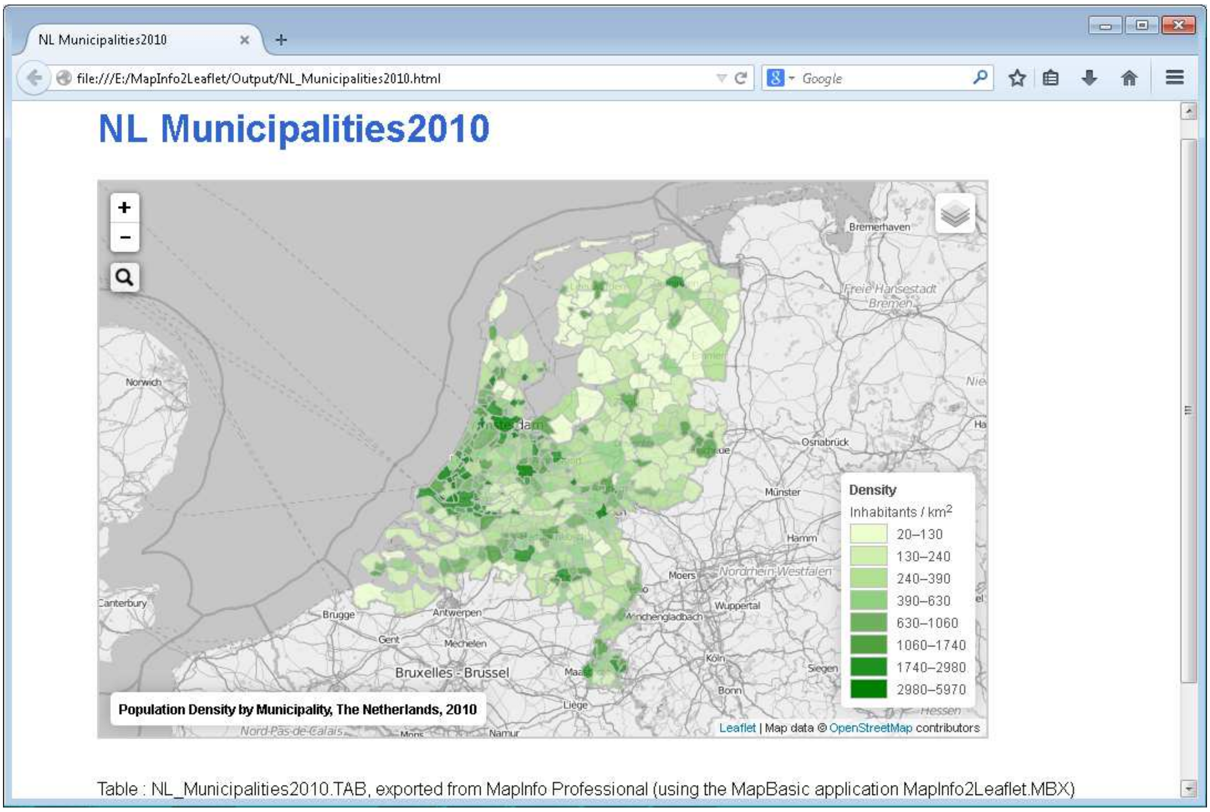


MapInfo2Leaflet

Web Map Application created:
E:\MapInfo2Leaflet\Output\NL_Municipalities2010.html

Do you want to open it in a browser?

Click **Yes**.



NL Municipalities2010

Population Density by Municipality, The Netherlands, 2010

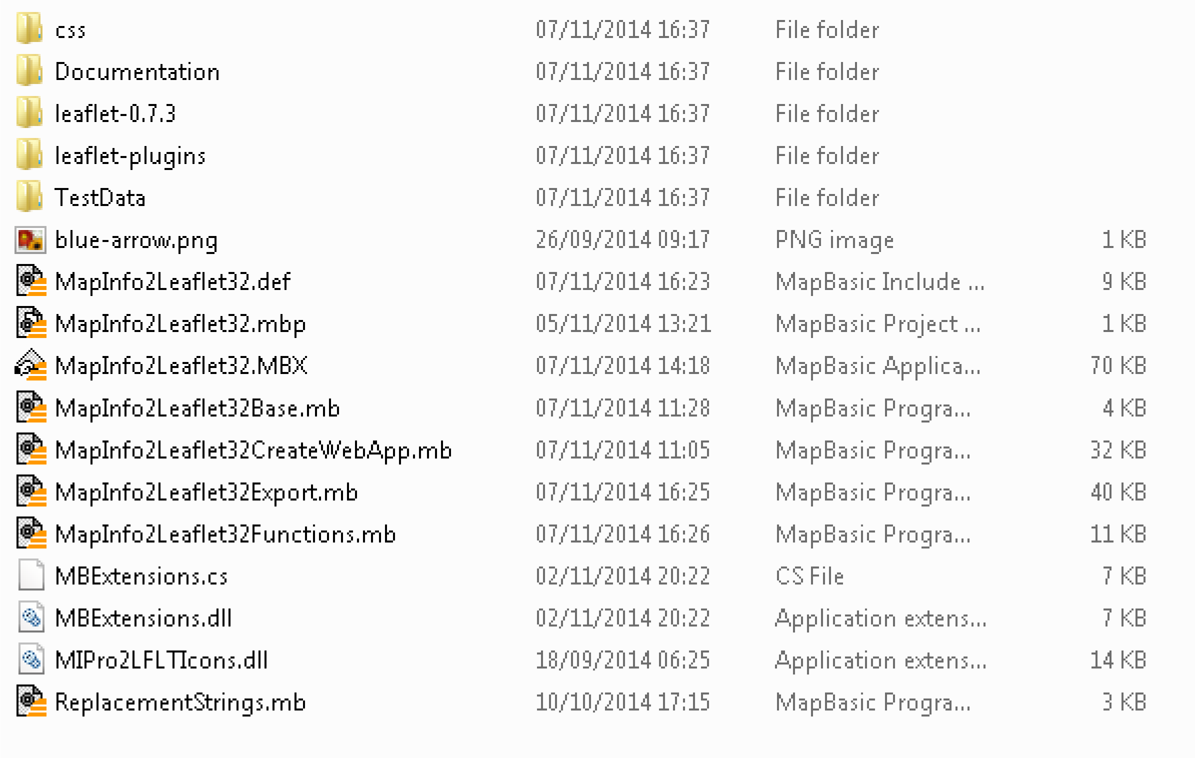
Table : NL_Municipalities2010.TAB, exported from MapInfo Professional (using the MapBasic application MapInfo2Leaflet.MBX)

4. Installation

4.1. MapInfo2Leaflet32Version035.zip

To install **MapInfo2Leaflet version 0.35** unzip **MapInfo2Leaflet32Version035.zip** in a folder of your choice.

The folder named **MapInfo2Leaflet32** does contain these files and folders:



css	07/11/2014 16:37	File folder	
Documentation	07/11/2014 16:37	File folder	
leaflet-0.7.3	07/11/2014 16:37	File folder	
leaflet-plugins	07/11/2014 16:37	File folder	
TestData	07/11/2014 16:37	File folder	
blue-arrow.png	26/09/2014 09:17	PNG image	1 KB
MapInfo2Leaflet32.def	07/11/2014 16:23	MapBasic Include ...	9 KB
MapInfo2Leaflet32.mbp	05/11/2014 13:21	MapBasic Project ...	1 KB
MapInfo2Leaflet32.MBX	07/11/2014 14:18	MapBasic Applica...	70 KB
MapInfo2Leaflet32Base.mb	07/11/2014 11:28	MapBasic Progra...	4 KB
MapInfo2Leaflet32CreateWebApp.mb	07/11/2014 11:05	MapBasic Progra...	32 KB
MapInfo2Leaflet32Export.mb	07/11/2014 16:25	MapBasic Progra...	40 KB
MapInfo2Leaflet32Functions.mb	07/11/2014 16:26	MapBasic Progra...	11 KB
MBExtensions.cs	02/11/2014 20:22	CS File	7 KB
MBExtensions.dll	02/11/2014 20:22	Application extens...	7 KB
MIPro2LFLTIcons.dll	18/09/2014 06:25	Application extens...	14 KB
ReplacementStrings.mb	10/10/2014 17:15	MapBasic Progra...	3 KB

(Source code included.)

4.2. Installation includes Leaflet library and plugins

The installation of **MapInfo2Leaflet** includes the Leaflet library in the folder `leaflet-0.7.3`.

The version included is Leaflet 0.7.3 (May 23, 2014).

Information on the latest version of Leaflet can be found here: http://leafletjs.com/download.html

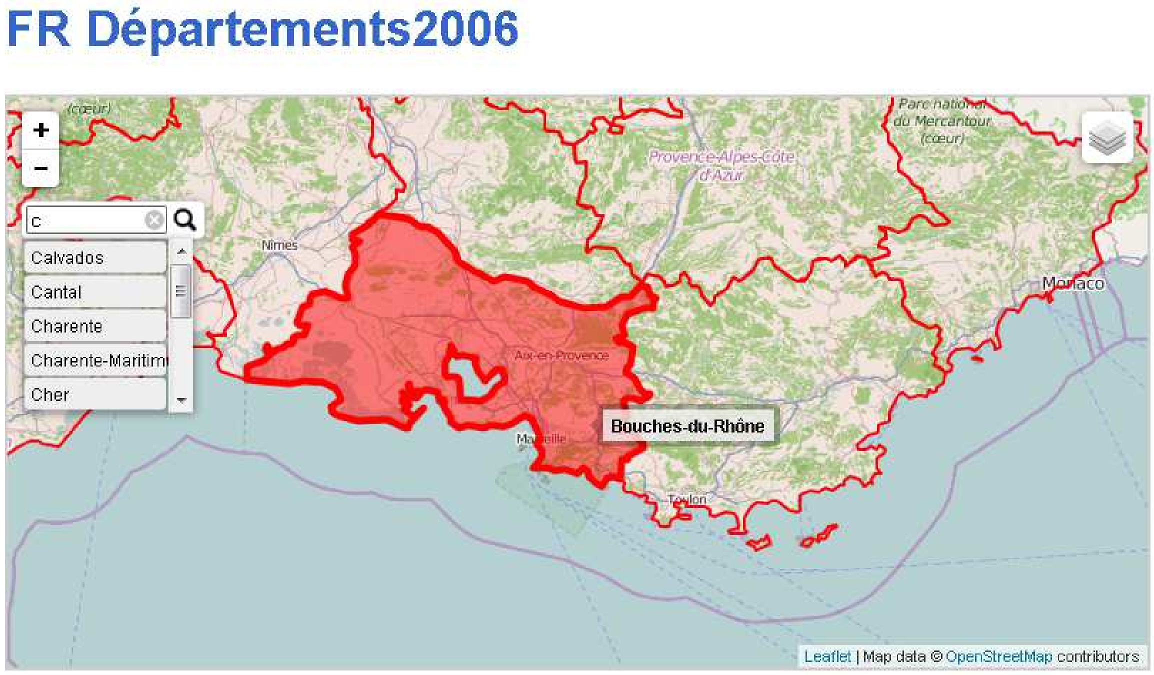
The installation of **MapInfo2Leaflet** also includes some Leaflet plugins in the folder `leaflet-plugins`.

These plugins are downloaded from the official Leaflet Plugins page: http://leafletjs.com/plugins.html

The plugins currently included with **MapInfo2Leaflet** are:

- `Leaflet.label` by Jacob Toye. This adds text labels to map markers and vector layers.
- `leaflet-search` by Stefano Cudini. This adds a control for search Markers/Features location by custom property in GeoJSON.
- `TileLayer.Grayscale` by Ilya Zverev. This returns a regular TileLayer with grayscale makeover.

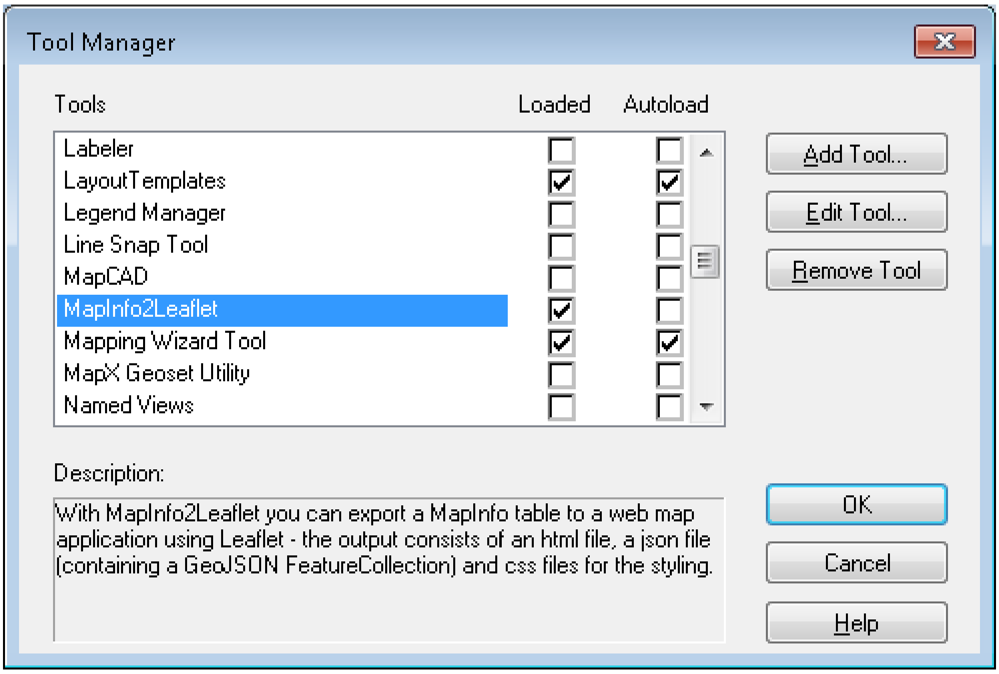
See screen dump below to see the plugins `Leaflet.label` and `leaflet-search` in action.



4.3. Run MapInfo2Leaflet: MapInfo2Leaflet32.MBX

To run **MapInfo2Leaflet** double-click `MapInfo2Leaflet32.MBX`

Optionally you can add the tool to the Tool Manager.



Tools	Loaded	Autoload
Labeler	□	□
LayoutTemplates	☑	☑
Legend Manager	□	□
Line Snap Tool	□	□
MapCAD	□	□
MapInfo2Leaflet	☑	□
Mapping Wizard Tool	☑	☑
MapX Geoset Utility	□	□
Named Views	□	□

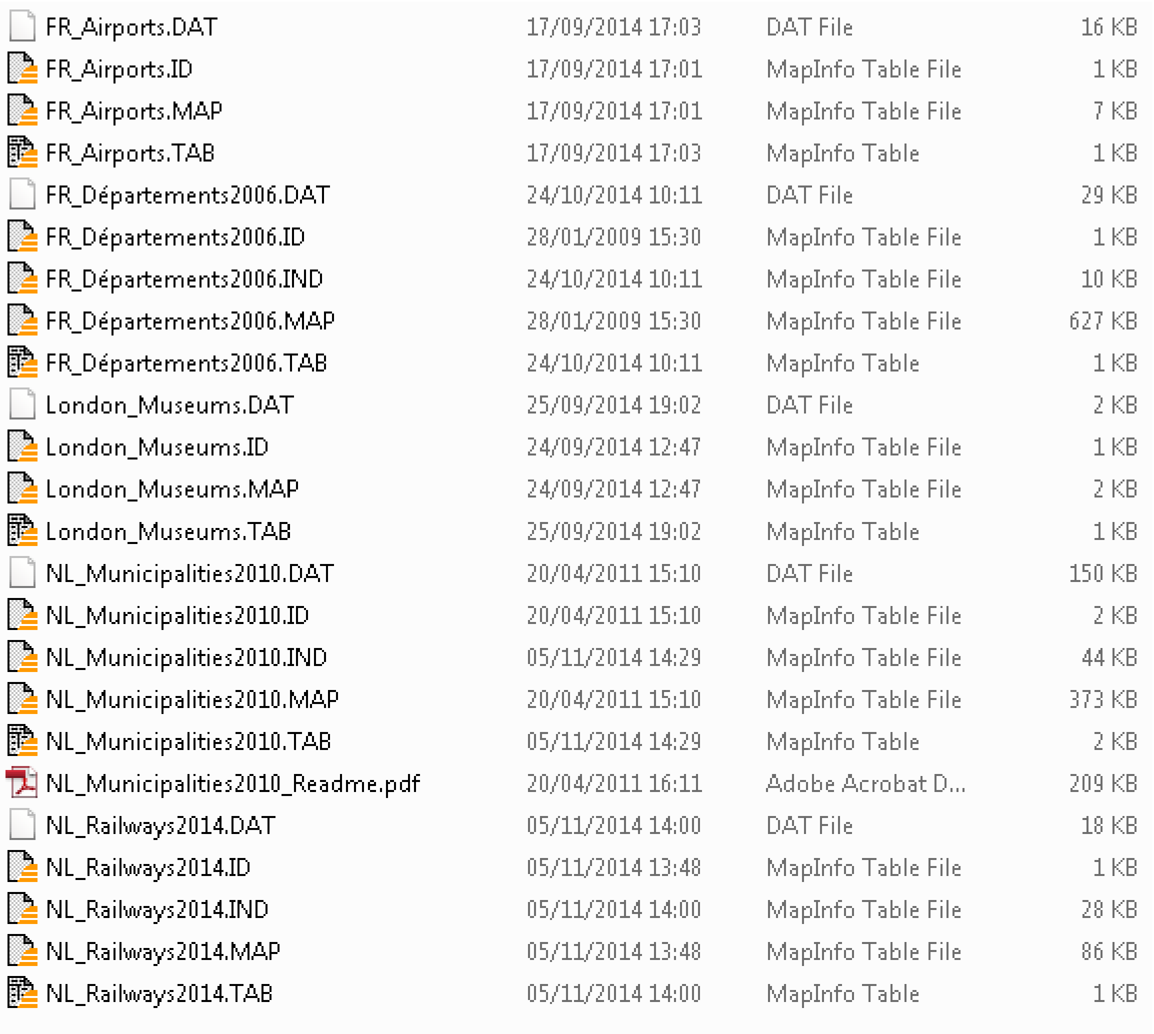
Description:

With MapInfo2Leaflet you can export a MapInfo table to a web map application using Leaflet - the output consists of an html file, a json file (containing a GeoJSON FeatureCollection) and css files for the styling.

4.4. Test data

Some tables which have been used during development and testing are included (see list below).

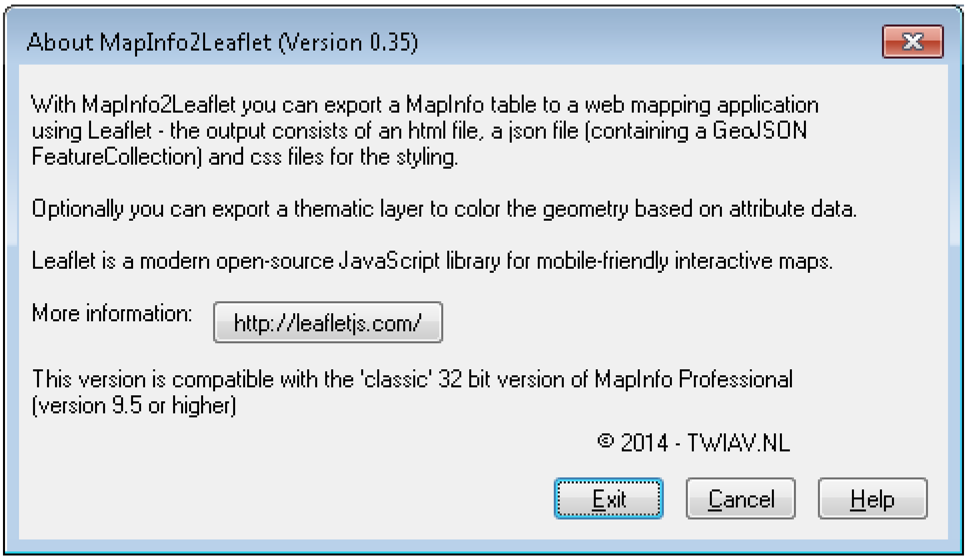
These tables are in local projections: British National Grid, French Lambert-93 and Netherlands National System, respectively.



FR_Airports.DAT	17/09/2014 17:03	DAT File	16 KB
FR_Airports.ID	17/09/2014 17:01	MapInfo Table File	1 KB
FR_Airports.MAP	17/09/2014 17:01	MapInfo Table File	7 KB
FR_Airports.TAB	17/09/2014 17:03	MapInfo Table	1 KB
FR_Départements2006.DAT	24/10/2014 10:11	DAT File	29 KB
FR_Départements2006.ID	28/01/2009 15:30	MapInfo Table File	1 KB
FR_Départements2006.IND	24/10/2014 10:11	MapInfo Table File	10 KB
FR_Départements2006.MAP	28/01/2009 15:30	MapInfo Table File	627 KB
FR_Départements2006.TAB	24/10/2014 10:11	MapInfo Table	1 KB
London_Museums.DAT	25/09/2014 19:02	DAT File	2 KB
London_Museums.ID	24/09/2014 12:47	MapInfo Table File	1 KB
London_Museums.MAP	24/09/2014 12:47	MapInfo Table File	2 KB
London_Museums.TAB	25/09/2014 19:02	MapInfo Table	1 KB
NL_Municipalities2010.DAT	20/04/2011 15:10	DAT File	150 KB
NL_Municipalities2010.ID	20/04/2011 15:10	MapInfo Table File	2 KB
NL_Municipalities2010.IND	05/11/2014 14:29	MapInfo Table File	44 KB
NL_Municipalities2010.MAP	20/04/2011 15:10	MapInfo Table File	373 KB
NL_Municipalities2010.TAB	05/11/2014 14:29	MapInfo Table	2 KB
NL_Municipalities2010_Readme.pdf	20/04/2011 16:11	Adobe Acrobat D...	209 KB
NL_Railways2014.DAT	05/11/2014 14:00	DAT File	18 KB
NL_Railways2014.ID	05/11/2014 13:48	MapInfo Table File	1 KB
NL_Railways2014.IND	05/11/2014 14:00	MapInfo Table File	28 KB
NL_Railways2014.MAP	05/11/2014 13:48	MapInfo Table File	86 KB
NL_Railways2014.TAB	05/11/2014 14:00	MapInfo Table	1 KB

4.5. Unload the tool

To unload the tool from MapInfo Professional, go to **MapInfo2Leaflet > About MapInfo2Leaflet**



About MapInfo2Leaflet (Version 0.35)

With MapInfo2Leaflet you can export a MapInfo table to a web mapping application using Leaflet - the output consists of an html file, a json file (containing a GeoJSON FeatureCollection) and css files for the styling.

Optionally you can export a thematic layer to color the geometry based on attribute data.

Leaflet is a modern open-source JavaScript library for mobile-friendly interactive maps.

More information: http://leafletjs.com/

This version is compatible with the 'classic' 32 bit version of MapInfo Professional (version 9.5 or higher)

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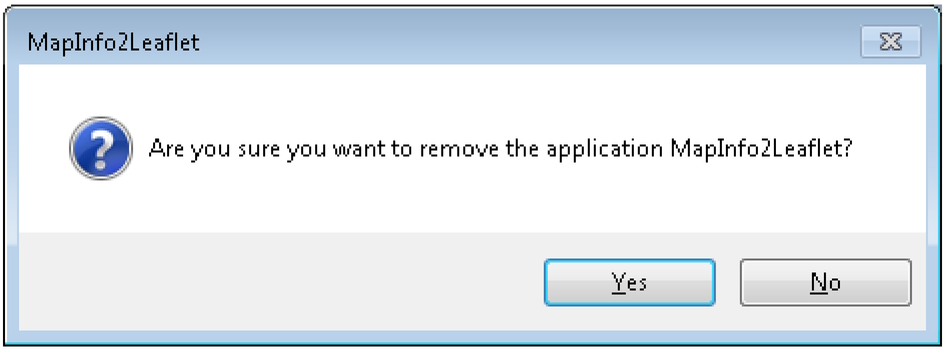
In the **About MapInfo2Leaflet** dialog, click the **Exit** button.



MapInfo2Leaflet

Are you sure you want to remove the application MapInfo2Leaflet?

5. The Web Map Application – technical details

5.1. Leaflet 0.7.3

In the Web Map Application we use Leaflet (http://leafletjs.com/).

Leaflet is a modern open-source JavaScript library for mobile-friendly interactive maps.

The **MapInfo2Leaflet** installation contains local copies of Leaflet and some plugins. These are stored in the subfolders `leaflet-0.7.3` and `leaflet-plugins` respectively.

Both these folders are copied to the destination folder of your web map application.

5.2. Background map: OpenStreetMap

The background map is OpenStreetMap:

```
var osmAttrib='Map data © <a
href="http://openstreetmap.org">OpenStreetMap</a> contributors',
osmUrl='http://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png';
```

5.3. Input Projection: any projection

The input MapInfo Table can be in any projection. During the creation of the GeoJSON FeatureCollection **MapInfo2Leaflet** will extract the coordinates in WGS84 (EPSG:4326), independent of the projection of the input table.

5.4. Output Projection: EPSG:4326 (WGS84)

The projection used in the GeoJSON file is EPSG:4326.

The CRS object added contains the value

```
"crs":{"type":"EPSG","properties":{"code":"4326"}}
```

Please note: as mentioned in the previous paragraph the input MapInfo Table can be in any projection. **MapInfo2Leaflet** will convert the coordinates to WGS84 (EPSG:4326) during the export.

5.5. Styling

Some basic styling of the web page is provided by a set of cascading style sheet (css) files: **page.css** – with some general style settings - and **mapinfo.css** – containing map specific settings. You can modify (or replace) this style sheet to suite your needs.

5.6. setMaxBounds

In the script for the map the method setMaxBounds is used. This restricts the view of the map to the given geographical bounds, bouncing the user back when he tries to pan outside the view. By default **MapInfo2Leaflet** sets this restriction to the bounds of the dataset, plus a margin. To increase this value, either:

- in MapInfo Professional zoom the map window out beyond the bounds of the dataset – if the map window covers a larger area than the dataset, the bounds of the map window will be taken.
- Manually modify the maximum values in the html file.