

Exercise 1: Using a Web Mapping Framework

Goal

The goal of this exercise is to initiate you in using a mapping framework. All materials for this CAS RIS module can be downloaded from <http://osgl.ethz.ch/osgl/Webmaps.html>.

Part 1: Prepare the Workspace

First of all, please unpack the contents of the “wamp.zip” (a portable version of the Apache HTTP Server) archive into the C:\workspace directory of your computer. If there is no “workspace” directory available in your C: drive, then please create this “workspace” directory.

Notes: In general, after every time you will decompress some software, please check that the corresponding unzipped content folder is directly located within in the “C:\workspace” directory (e.g. your server files should be located inside “C:\workspace\wamp”).

In addition, from now on, please work within the prepared workspace (“C:\workspace”).

Part 2: Start Your Local Server and Test Write Basic HTML Code

Locate the wamp folder in “C:\workspace” on your computer. Start the local server with the provided “.bat” file available in “C:\workspace\wamp”.

When starting the Apache web server (with the shortcut provided or by executing httpd.exe from the Apache2/bin directory) a black window appears. Note that if you close the window, the web server will stop running! Therefore please don't close the command window unless specifically instructed to do so. If any Windows Firewall warning appear, accept or dismiss the window.

Next, verify if the server works properly by typing in a web browser: <http://localhost>.

Then, locate the “index.html” under “C:\workspace\wamp\www” and open it in a text editor (e.g. Notepad++ or Oxygen XML Editor). Finally, please add some valid HTML code inside the “index.html” (e.g. add a head tag, a title tag, a body tag, and some text in a paragraph like shown in the lecture/). Check if your changes reflect in the web browser, by refreshing the page. Finally, please delete or rename this “index.html” file (to prevent confusion with another “index.html” that we will later use).

Part 3: Unpack and Study the Structure of a Basic Mapping Framework

Please unpack the contents of the “mymap.zip” archive into the “C:\workspace\wamp\www\” directory of your computer. This archive contains the Leaflet library with some additional libraries (e.g. bootstrap) and plugins that were conveniently bundled in advance for you.

Check if the basic map works by making a proper request in your web browser that will open the “index.html” from inside the recently unpacked “mymap” folder (“http://localhost/mymap/”). If you choose to rename the “mymap” folder, please remember this and adapt the web browser path accordingly.

Then please look briefly at the structure of the content available inside the “mymap” folder. Afterwards open the “index.html” from inside the “mymap” folder (note: it is a different file from the one you edited in the previous part of the exercise) and look how the bootstrap framework is linked to the webpage and how the leaflet framework is linked. Discuss the difference with your colleague.

Part 4: Customize the Base Map and Add a Scale Bar

In the “index.html” of “mymap”, study the code responsible for displaying the base map. In fact, the base map is displayed with the help of a Leaflet plugin named “Leaflet-providers”, that is linked in the map in a similar manner as shown below:

```
<!-- LEAFLET-PROVIDERS.js plugin -->
<script src="leaflet-providers-master/leaflet-providers.js"></script>
```

Please briefly consult the plugin's documentation at <https://github.com/leaflet-extras/leaflet-providers>. Now go to the Leaflet-providers preview demo at <http://leaflet-extras.github.io/leaflet-providers/preview/>, choose the background map of your choice and change it in the code.

Check in the web browser if the chosen background map is displayed.

Finally, please go to the Leaflet API documentation available at <http://leafletjs.com/reference.html> and find out how to add a scale bar to your map.

Discussion of the Exercise

Congratulations, you have published and customized your first web map.

Spoilers:

```
// Define the base layer object and add it to the map
var baseLayer = new L.tileLayer.provider('OpenStreetMap.Mapnik').addTo(map);

// Scale bar
L.control.scale().addTo(map);
```