Created on 2020-06-30
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Group Time tool: A LizMap customized JavaScript for time series.

Abstract

This document presents a small test-script attached to a LizMap time series project. The script aims at displaying a group of layers on the same subject but at different epochs as a video or a GIF. The tool also offer the possibility to generate and download a customized GIF.

Requirements and install

The tool uses two JavaScript libraries to work:

- *html2canvas* (http://html2canvas.hertzen.com/), an API to capture the canvas of a DOM element.
- *gif.js* (https://jnordberg.github.io/gif.js/), a GIF encoder which has to be downloaded **here**. The files contained in the ***dist*** folder have to be place in a folder named ***gif.js-0.2.0***.

The tool is integrated in the LizMap project by following the figure 1 tree structure:

```
repositoryName/
        |_ projectName.qgs
        |_ projectName.qgs.cfg
        |_ media/
                |_ images/
                        |_ timetool20.png
                |_ js/
                        |_ projectName/
                                |_ grouptimetool.js
                                |_ timetool.html
                        |_ gif.js-0.2.0/
                                |_ gif.js
                                |_ gif.js.map
                                |_ gif.worker.js
                                |_ gif.worker.js.map
```

Figure 1: Project tree with the tool

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Functioning

The script creates a LizMap tool based on the mini-docks. When the LizMap UI is created, the tool is set up and retrieve the main groups in the layer's tree (not the subgroups).

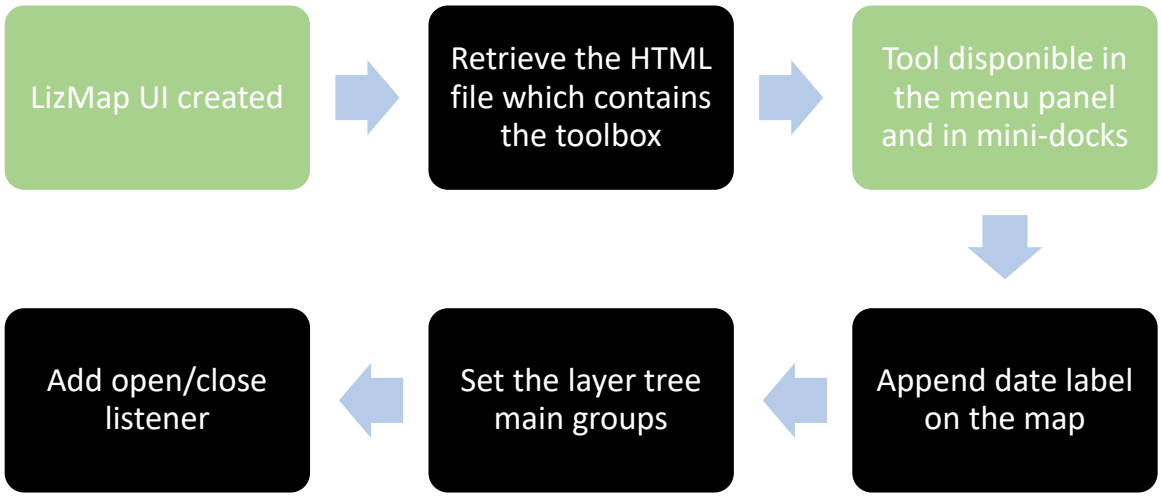

Figure 2: Tool set up after opening the project

The user can open the tool through the menu panel by clicking one the last icon:  . The starting up toolbox is divided in three parts: the tool options, the navigation buttons and the download button (see fig. 3).

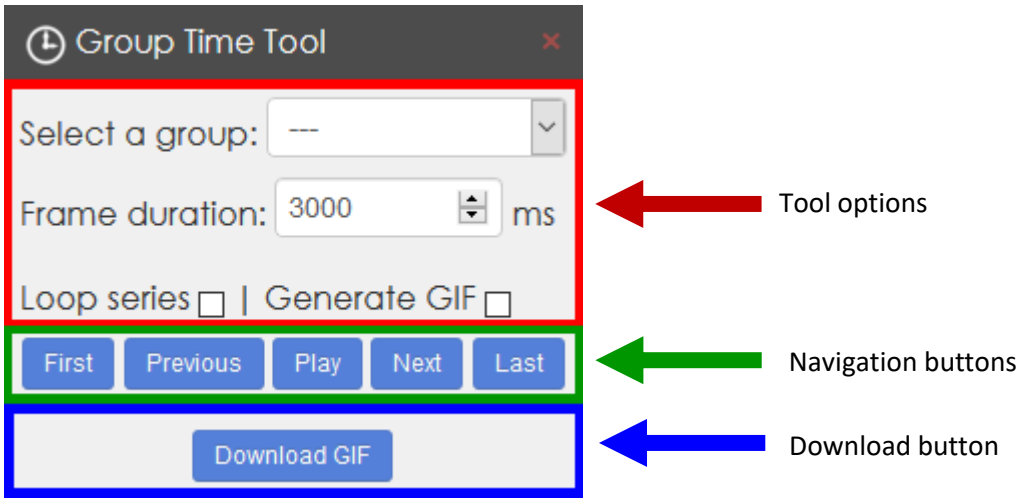

Figure 3: Initial toolbox

When the tool is opened, the navigations buttons are disabled and the user have to choose a layer group in a combobox (the other tool options are also enabled). The chosen group must contain, a least, one valid layer:

- A defined geometry (point, polyline, polygon),
- A date in the layer name with a precise format (A letter followed by a date in the form of YYYY-MM-DD or YYYY_MM_DD, e.g. *D2020-05-11*).

The validation of these conditions launch the loading of the "spatio-temporal" layer. The layers are retrieved through LizMap default WMS request for each layer. It can prevents from a time out error due to a big layer. When all the layers are loaded (**loadstart** and **loadend** events on the layers), the lectures buttons are enabled and the first layer, in a chronological order, is displayed (see fig. 3).

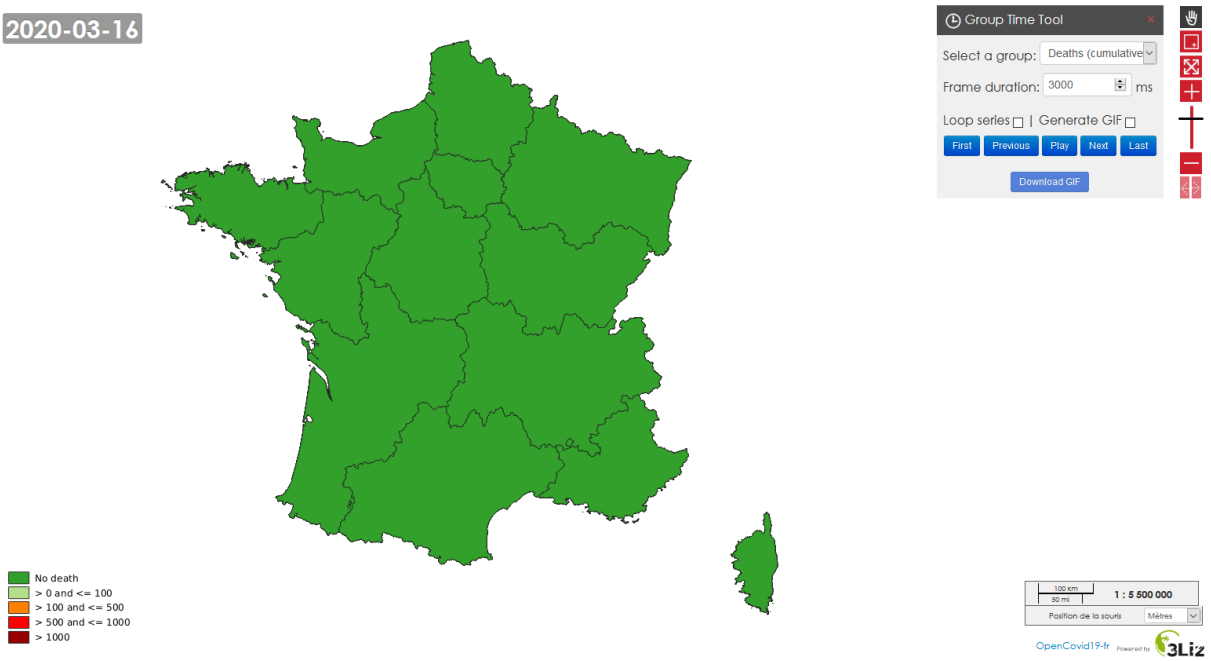

Figure 4: Example of a loaded time series

The table below summarizes the available options to customize the playing:

OPTION	ACTION	DEFAULT VALUE	INTERFACE
Group selection *(REQUIRED)*	Select the displayed group.	0	Select a group: ---
Frame duration *(OPTIONNAL)*	Set the duration of one frame (between 1000 and 60000 milliseconds).	3000	Frame duration: 3000 ms
Loop series *(OPTIONNAL)*	Enable the never-ending playing.	false	Loop series ☐
Generate a GIF *(OPTIONNAL)*	Enable the GIF generator while playing.	false	Generate GIF ☐

NOTE: It is not needed to enable loop series to create a never-ended GIF.

The buttons *Next* and *Previous* enable the manual change of the visible layer. The button *First* displays the first layer and the button *Last*, the last layer. They are all disabled during the lecture (see fig. 5).

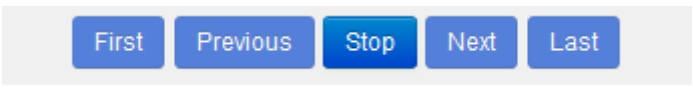

Figure 5: Navigation buttons while playing

The lecture works in the same way as if a user click consecutively on *Next*. When play is on, the button became the stop button until the user click on or the play is finished (see fig. 5).

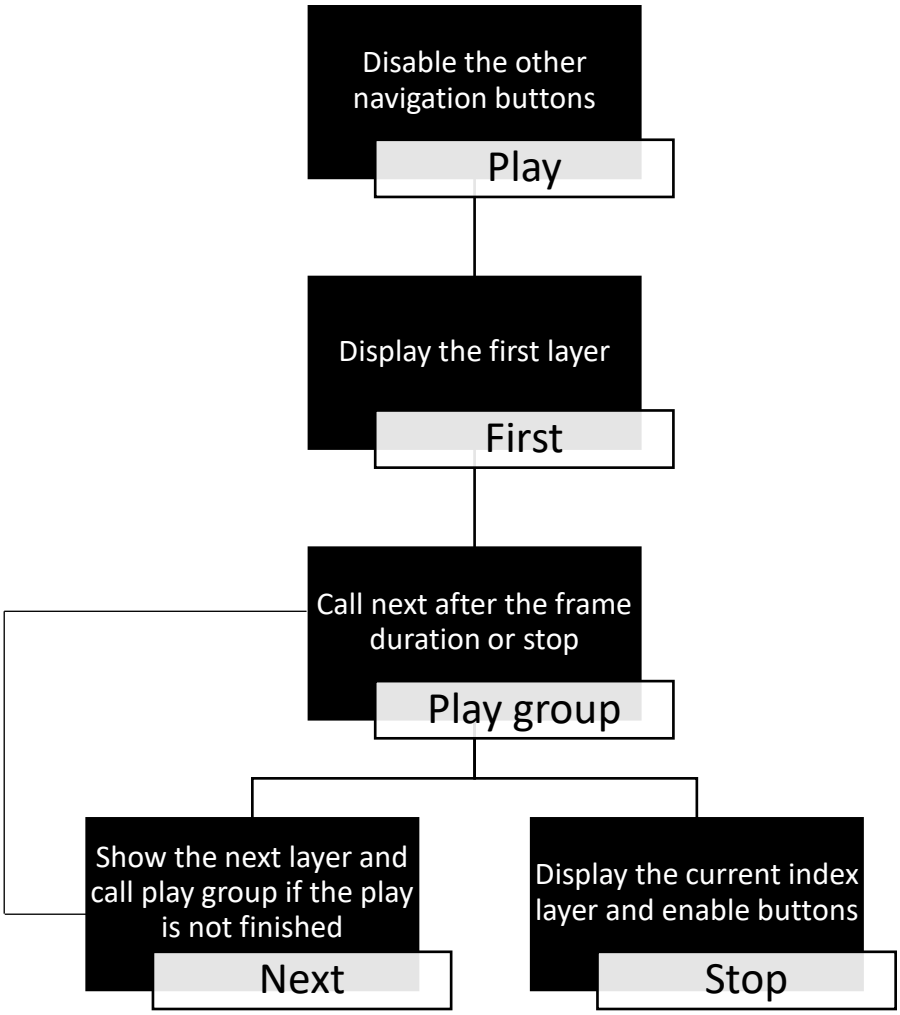

Figure 6: Play activity

Finally, if the GIF generator is enabled, the download button is enabled after playing and the user can download the GIF produced while playing. If the user selects another group and then come back on his choice, the last GIF generated is available for download.
By default, the GIF is named after the project name and the displayed group name.