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My idea:
Extension of Gisquick platform filtering tool based on raster and vector spatio-temporal data.

My project will extend a basic filtering tool that is being developed as a part of my final thesis. Currently it is focused on spatio-temporal vector data filtering only. I would like to add support for general spatio-temporal both vector and raster data, as well as other functionalities that will make it easy to handle by every client and make the data publishing more effective.

Gisquick platform is a open source software developed as an easy and fast publishing platform for QGIS projects. It consists of Gisquick-plugin for QGIS, QGIS-server, server application using Django and JavaScript angular 1 based client. All wrapped into docker containers make it easy for deploying in any hardware.
In this moment Gisquick client is migrating into vue.js but most of the functionalities in order to make my GSoC project ready to begin have been done already. State of current time filter cannot be confirmed in this moment because it is still under development. There will be a simple user-friendly tool for filtering and displaying time data before the beginning of GSoC project. By adding raster data support and advanced data filtering widgets (small query builder, date picker, advanced animation, etc.), the filtering tool will be transformed from small experimental project into fully functional extension suitable for every user.
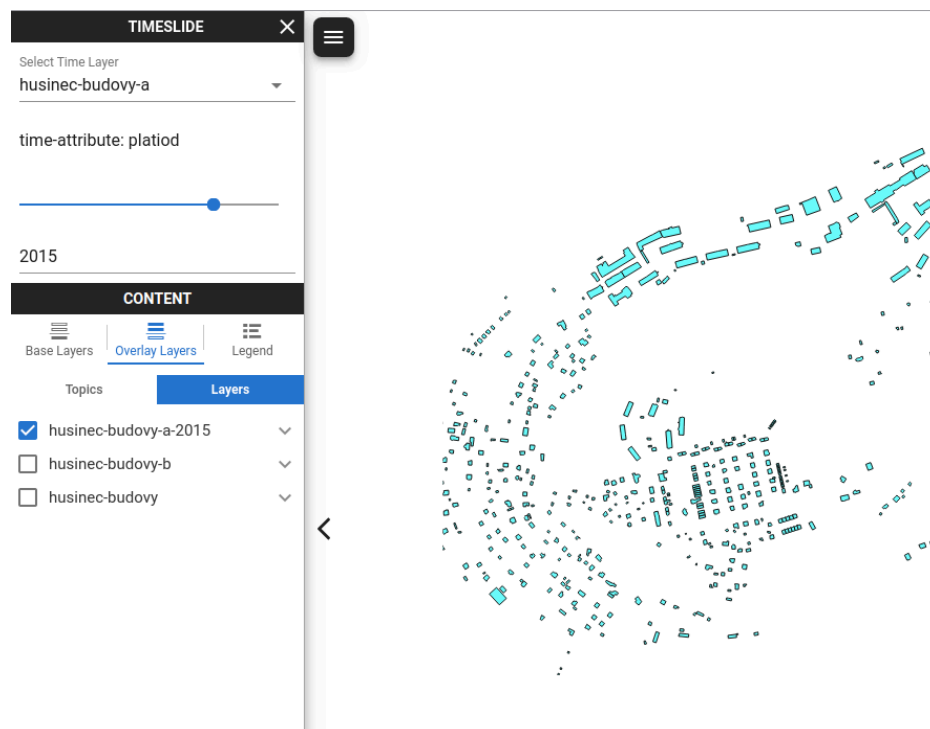
Current time filer tool experimental prototype

The purpose of my GSoC project is to add more functionalities into current filtering of vector data, namely simple query builder and advanced filtering and animating methods. Another and the most important step will be the implementation of raster data filtering. In order to support raster data, there will be changes made in Gisquick plugin for QGIS and probably also in QGIS server itself.

Future development could be the addition of various data support. For instance, different time formats or filter based on substring when there will be filtered only certain objects with given string in its name.

Timeline:
APRIL 23 - MAY 14
- bonding period
- research QGIS 3 support (currently Gisquick supports QGIS2 only)
- research Qdate format implementation into QGIS server
- current features review (Gisquick functionalities for layers with timestamp attribute(s) were still under development at the time of writing this document)

MAY 14 - 20
- due to the submission of my master thesis, the work of this week will be done within bonding period
- review possible raster data filtering ideas

MAY 21 - 27
- add simplified query builder for easier data filtering on client side that will extend recent filtering using slider

MAY 28 - JUNE 3
- improve animation for spatio-temporal filter
- animations should respect data discontinuity

JUNE 4 - 10
- changing client filtering tools responsivity in order to satisfy need of all devices (desktop, tablet, mobile phones)
- extra time in case of delay in extra filtering features implementation part

JUNE 11 - 17
- first evaluation of vector data filter widgets
- QGIS server changes in order to support Qdate time format

JUNE 18 - 24
- add support for spatio-temporal raster data
- changing of Gisquick UI for raster data support
- QGIS server changes in order to support Qdate time format

JUNE 25 - JULY 1
- extra time in case of additional QGIS server changes

JULY 9 - 15
- second evaluation, review of QGIS server changes and Qdate implementation
- add raster data support into Gisquick plugin

JULY 16 - 22
- add support for filtering multiple raster layers at the same time
- add raster data filter settings for multiple layers similar as vector data
- optionally adding raster support into the current filtering tool

JULY 23 - 29
- add possibility for user to create a new layer made of filtered data

JULY 30 - AUGUST 5
- add functionality for simple raster data animations

AUGUST 6 - 14
- spare week for testing and bug fix
- submitting code and evaluations

I fully understand the importance of the GSoC application.
So far I do not have any known conflicts. In case that some will appear and I would not be able to work for longer period, I'll discuss further plans with my mentor.

Studies:
I am currently a master student of Geomatics at the Faculty of Civil Engineering, Czech technical university in Prague. My major of undergraduate was Geodesy, cartography and geo-informatics. I was an exchange student at University of Seoul in Republic of Korea, where I attended courses from the faculty of Geo-informatics. Currently I am in my last semester of study and I am working on my final thesis. My thesis focuses on Gisquick platform extension supporting spatio-temporal data. This is my first time dealing with this platform.

Programming and GIS:
As a freelance programmer, I was participating on various of small projects and I mostly focused on website application frontend written in JavaScript using Angular 1,2,4 framework together with Node.js.
I have also experience with HTML and CSS languages and basic in Python.
Despite of my studies, my first deeper contact with GIS application as a developer was Gisquick platform during my master thesis.

GSoC participation:
This is my first time applying for GSoC project. I have never submitted any proposal to GSoC or any other similar org in year.