ACHIEVING 3D THEMATIC CARTOGRAPHY THROUGH OPEN SOURCE: SYNERGY OF QGIS AND THREE.JS

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INTRODUCTION

The 3D visualization of geospatial data is nowadays used in many areas and to various issues, which is conditioned by expansion of hardware devices and software tools enabling 3D geovisualization. 3D geovisualizations include broad spectrum of instances from photorealistic visualizations to abstract depictions of attribute data. Exploration of applicability or possible modifications of traditional cartographic visualization methods in 3D is therefore progressive topic. We studied possibilities of creation and effective use of 3D dot maps, statistical surfaces (fishnet maps), prism maps and graduated 3D symbols (3D diagram maps).

EXAMPLES OF 3D THEMATIC MAPS

3D dot maps - seismic events in 2015 in north-western Czechia

Fishnet maps - seismic events in 2015 in Czechia

Prism maps - relative amount of fires in 2015 in Czechia [number of fires per 1000 inhabitants]

3D diagram maps - absolute amount of fires in 2015 in Czechia

DISCUSSION

Advantages of using 3D thematic maps:
+ more space for displaying additional data variables,
+ resolving the issues related to hidden symbols,
+ more familiar view of the space.

Possible usability problems of 3D thematic maps:
- occlusion of objects in a 3D scene,
- perspective distortion,
- countless scales within one view,
- incomparable geometries of objects.

Solutions of disadvantages of 3D thematic maps:
+ interactive movement,
+ setting transparency of map layers,
+ cutting planes,
+ pop-up windows.

Used data sources:
Natural Earth – http://www.naturalearthdata.com
OpenData.CZ – http://geoportal.ceskavyzivnazemлю
WildService apps
RÚAN – http://ruan.ceskavyzivnazemлю
Srnicí Portal – http://www.srniciportal.eu

Used software:
QGIS 2.12
Qgis2three.js plug-in Debscape

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