Geoapplications development
http://rgeo.wikience.org

Task 02

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Task – part I

Develop the geoapp that does the following:

1. Opens SHP file for Moscow administrative boundaries

    a) see course site for SHP files

    b) see example in worldwindx -> Shapefiles

2. Opens GeoTIFF files (bands 4 and 5) of Landsat 8 satellite that cover Moscow (take the files from EarthExplorer, see next slides)

3. Calculates pixel by pixel NDVI within each administrative boundary

4. Aggregates the NDVI values within each administrative boundary into min, max, avg values

Task – part II

5. Assign the attributes of respective min, max, avg values to each administrative boundary (vector features)

6. Saves the result as a vector file

Task – part III

Student must answer questions during the dialog student-tutor
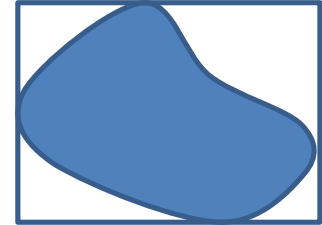
The questions influence the marking

Marking – part I

The solution of steps 1-4 gives 4.5 items

The final mark is the sum of items

Marking – part II

Representing an administrative boundary as a polygon or a bounding box (calculate NDVI for pixels inside the bounding box VS the original polygon)

Polygon – 2.1 items

Bounding box – 0.4 items

Do not perform an exhaustive check of each pixel (whether it is inside a polygon or not) – this will not give you more than 1 item

Marking – part III

Save to

GeoJSON – 2.1 items

ShapeFile – 1 item

KML – 0.4 items

Practice

Example is in worldwindx -> Shapefiles

Satellite data, including Landsat 8

EarthExplorer

References

NDVI: http://gis-lab.info/qa/ndvi.html

EarthExplorer: http://earthexplorer.usgs.gov/

Tasks uncertainties

The lecturer reserves the right to clarify the task and make its subsequent modifications in case of any uncertainties are found by students.

Deadline

Deadline: 16 Oct 2018