



Spatial Information Systems

Advanced basics of geographic information systems



Exercise WiSe 2024/25

(Course notes for internal use only!)



Exercise 3

- (1) Summary Exercise 2
- (2) Exercise 3 (tasks and workflow)

(1) Summary Exercise 2

Sum of exercise 2

- 96% submitted in time (group 12 is missing)
- Most maps are very good, complete and well readable 😊
- A few forgot to submit all files
and some submitted more files than necessary

Requirements of exercise 2

- Creation of **3** layers → 10 *sights*, 2 *squares* and major *roads*
A *sight* is an object, which it is worth to be visit. This can be a building, a monument or a beautiful place.
A *square* describes a location where tourist may arrive in Weimar, e.g. a plaza with public transport systems (train, bus) or taxi spot.
Required *roads* are the major roads between sights and squares.
- Every layer should content *name* as attribute.
- Layer *sight* should includes 2 further attributes: *type*, *way of visiting*
- All 3 options for *way of visiting* should be used (interior, exterior, both)
- Your final map should includes at least title, date, group no., legend, scale bar, north arrow and grid!

(2) Exercise 3 (tasks and workflow)

Tasks of exercise 3

1. Simple Geo-data Analysis

The goal is to use object attributes and spatial information for planning purposes.

One example is a group of senior citizens, who arrived in Weimar by bus on a rainy day. This group is looking for sights, which can be reached by foot in a few minutes and which can be explored from inside.

2. Use of free Geo-data

The goal is to create an exemplary map sheet of Weimar using freely available geo-data on the Internet.

Information regarding attributes in OSM:

https://wiki.openstreetmap.org/wiki/Map_features

Workflow of exercise 3

1. Simple Geo-data Analysis

Use your results from the second exercise as starting point.

- a) Define for the layer sights additional filters to display different colors for the three sightseeing options (Properties → Symbology → Categorized).
- b) Select two central squares and define for this selection a buffer as radius of action at a distance of e.g. 200 meters (processing toolbox → Vector geometry → Buffer). Now filter all the sights within the buffer zone (processing toolbox → Vector selection → Extract by location).
- c) Due to the rain only sights from b) should appear, which can be explored from inside (Layer → Filter).
- d) Create a map with all colored sights from a) and a second one that shows the buffer zones and the filtered sights from c).

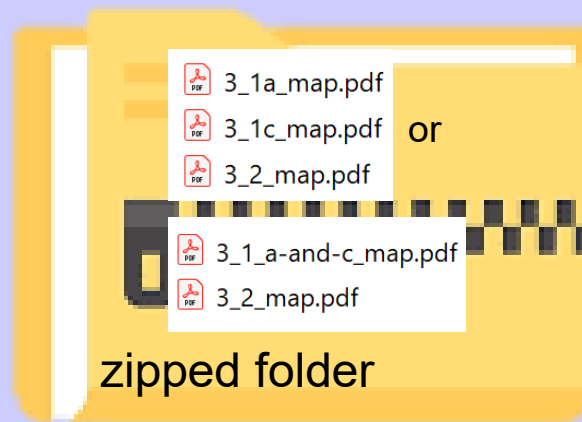
Optional: Design both maps in one map sheet (Map Item Properties → Layers with options: *Lock layers* and *Lock styles for layers*)

Workflow of exercise 3

2. Use of free Geo-data

- a) Start QGIS with a new project and extend the functionality with the plugins *QuickOSM* and *QuickMapServices*.
- b) Start *attribute query* with *QuickOSM* plugin and select at least three classes of polygons on a general topic (e.g. education: school, kindergarten, university). Check plausibility of your query results and save them separately in new layers (Layer → Export → Save Features as). Visualize them accordingly and meaningful.
- c) For the background, you optional can download a *satellite image* e. g. from Bing Maps and place this layer at bottom (Web → QuickMapServices).
- d) Create a map sheet and save this compilation for submission as a PDF document.

Submission



Thank you!

questions?

