

ASSIGNMENT 3: YOUR GIS PROJECT

1. OBJECTIVE

This project-based assignment aims to enable you:

- To work through all stages of a typical GIS project, from design to report;
- To work individually as well as in a professional team;
- To practise professional presentations (in reports and, in particular, in visualizations such as maps and diagrams) and critical thinking in self-reflections.

At the end of the semester you should have confidence using a professional GIS tool, have a solid understanding of GIS data and functionality for analysis and visualization, and experience in designing and running a GIS project.

2. INTRODUCTION

This assignment gives you all freedom to realize “your” GIS project in a team. It provides only a semi-structured framework for guidance. With this framework at hand you will find two defined deliverables in the process: A design report, and a project report. Again you are encouraged to go beyond, to trial, and to challenge yourself.

3. STRUCTURE

The process consists of these stages:

- Teams will be formed by LMS after the semester enrolment deadlines. Team members will be from the same lab class, in order to enable team meetings with the demonstrators.
- **Design Stage:** In your team, agree on a topical challenge and design a GIS project. Address all tasks listed in Section 4, and think about an allocation of work for each individual team member.

Tip 1: In order to provide all group members a learning opportunity the design must identify some contributions to the overall GIS analysis from each group member.

Tip 2: Each group will have a mix of complementary skills. Find them out early and allocate the work accordingly.

Tip 3: In your first group meeting you should share with each other what your individual expectations for this project are. You should also agree on a time plan for internal deliveries.

- **Project Stage:** In your team, realize your suggested GIS project. Address all tasks listed in Section 4. Apply your work plan (and revise or refine where necessary).

Tip 1: Again, semi-structured tasks work better with a strict time management. Set up a schedule for the team and track your progress regularly.

Tip 2: Keep in mind that the last week of the semester is typically stressful, and plan to deliver earlier.

4. DELIVERABLES

The assignment requires a number of activities and responsibilities, but only four deliverables are expected.

4.1 Design stage

4.1.1 Project design

The project design (group work) is limited to 5000 words maximum and an arbitrary number of figures. It should cover:

1. The chosen project client, client need (topic) and the motivation of the topic.

This part requires a literature review for support.

2. The concrete project research question
3. The data required, and its sources
4. The analysis planned, and the intended outcomes.

Your work plan should be concrete, i.e., explain which data would be used to derive which results, and how the steps of your suggested analysis connects to a work flow producing the envisioned results. The experts among you would think of tools like ModelBuilder, but tools are optional, of course.

5. A detailed time plan with task allocations to individual group members.

The time plan should be detailed (linking to the concrete work plan), and in particular it should identify the allocation of work items to persons. Remember, we expect that every group member contributes a work item to the GIS analysis. An expert method for developing a time plan could be a GANTT chart, but again, the form of presentation is secondary.

The project design, as group work, is submitted as a single submission per group. Submission deadlines are published in LMS. Similar to any commercial project in the profession, no late submissions are accepted.

4.1.2 Individual reflection on the project design

The project design report has to be accompanied by an individual report reflecting on the personal contribution to the design. The length of this reflection is limited to one page maximum. It should cover, in roughly equal parts:

1. What was your contribution in this first phase of the project?

2. How do you assess your contribution in itself? What was challenging? Can you defend the results? What would you have liked to do in addition?
3. How do you reflect on your role in the group and your contribution to the group?

Every team member has to submit an individual reflection. Submission deadlines are published in LMS. Similar to any commercial project in the profession, no late submissions are accepted.

4.2 Project stage

4.2.1 Project client report

The project report has to be addressed to your chosen client. It is limited to 10,000 words maximum and an arbitrary number of figures. It should cover:

1. The (potentially revised or refined) project topic, motivation and research question.

This part can be extracted from your proposal report and revised or refined. It should include a review of the background for a proper motivation. Make sure this section does not exceed 2 pages.

2. The work flow of the applied methodology.

The methodology should be a detailed step by step process flow including any data pre-processing steps and reasoning/logic applied at various stages of the project (answer the what, how and why). But this doesn't mean that you should write an ArcGIS tutorial. Provide only the necessary details which describe your workflow such that it is clearly understood by the reader.

3. The results and their discussion.

Make sure you describe your results. What do you infer from your result maps? Are these results sufficient to answer your research/project questions? Are there any limitations at any step which might affect these results?

The map representation should be of cartographic standards. Make sure the maps are presented with all the required elements.

4. A recommendation to the client.

This section intends to provide a fair recommendation to the client based on your project results.

If you want to present some supplementary results, or some data sources, put them in the appendix.

The project client report, as group work, is submitted as a single submission per group. Submission deadlines are published in LMS. Similar to any commercial project in the profession, no late submissions are accepted.

4.2.2 Individual reflection on the project client report

The project client report has to be accompanied by an individual report reflecting on the personal contribution to the project. The length of this reflection is limited to one page maximum. It should cover, in roughly equal parts:

1. What was your contribution in this second phase of the project?
2. How do you assess your contribution in itself? What was challenging? Can you defend the results? What would you have liked to do in addition?
3. What do you think about the project outcome? Was it designed well, with realistic goals? What would you do differently next time? Can you stand by the results?
4. How do you reflect on your role in the group and your contribution to the group?

Every team member has to submit an individual reflection. Submission deadlines are published in LMS. Similar to any commercial project in the profession, no late submissions are accepted.

5. ASSESSMENT

Each submission is assessed:

- The project design group report is worth 10 marks.
- The individual reflection on the design is worth 5 marks.

If an individual group member's reflection is assessed 1.5 or more marks below the average of the other group members' reflections, the group will be called for a discussion with teaching staff. We want to ensure that everybody contributes equally and responsibly to the group outcome. At this stage into the project, group dynamics can still be changed.

- The group report to the client is worth 20 marks.
- The individual reflection of the client report is worth 5 marks.

If an individual group member's reflection is assessed 1.5 or more marks below the average of the other group members' reflections, we must assume that, despite the group's review at the end of the first stage, this individual group member has not contributed equally to the group outcome. In this case this individual group member's marks for the client report will be adjusted by taking the normalized individual reflection marks as a weight.

Rubrics for all four types of submissions are provided in LMS. In each category of the rubric there are only full or half integer marks, and no other fractions. The marks you achieve provide you this feedback: You will achieve 50% of the marks (a 'pass') if you provide a report or reflection with no significant gap, no significant error, no poor decision, and of acceptable presentation form. Marks below 50% indicate the presence of at least one of these issues. You will achieve 70% of the marks if you give a fully satisfying report (the class average). You will achieve higher marks only if your report or reflection stands out from average, for example by a broader variety of analysis, some creativity in applying analysis methods, a more thorough validation or documentation, or intellectual rigour.

MATERIALS & RESOURCES

There are many information and data resources available to you. The links listed below provide a starting point for your search for data. You are free to search and include any resources you find supportive and appropriate.

- <https://data.vic.gov.au/>
- <http://www.ga.gov.au/>
- <http://aurin.org.au/>

- <https://data.csiro.au/dap/home?execution=e2s1>
- <http://www.lib.unimelb.edu.au/collections/maps/>
- <http://vicroadsopendata.vicroadsmaps.opendata.arcgis.com/>
- <http://www.abs.gov.au>
- <http://www.crimestatistics.vic.gov.au/>