

Module 61-12: Option GIS-Python

Project Description

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business.

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Bachelor of Science HES-SO (BSc) in Business
Information Technology



> GIS/Python: Project



- **Goal: Develop a Web and GIS system to manage network risks for Oiken**

Requirements:

- **Groups of 2 students, max 3**
- **Use the Oiken dataset provided**
- **Deadline: 13.06.2025**
- **Evaluation: Project report + Presentation**

> Technical details

1. Data modelling:

- Import the Oiken dataset
- Model and create the rest of the data to be used, e.g. houses, buildings, other infrastructures (geometry and attributes).
- Model will have to be flexible enough to consider future services without its structure being called into question.

2. Propose a complete system as a Web application:

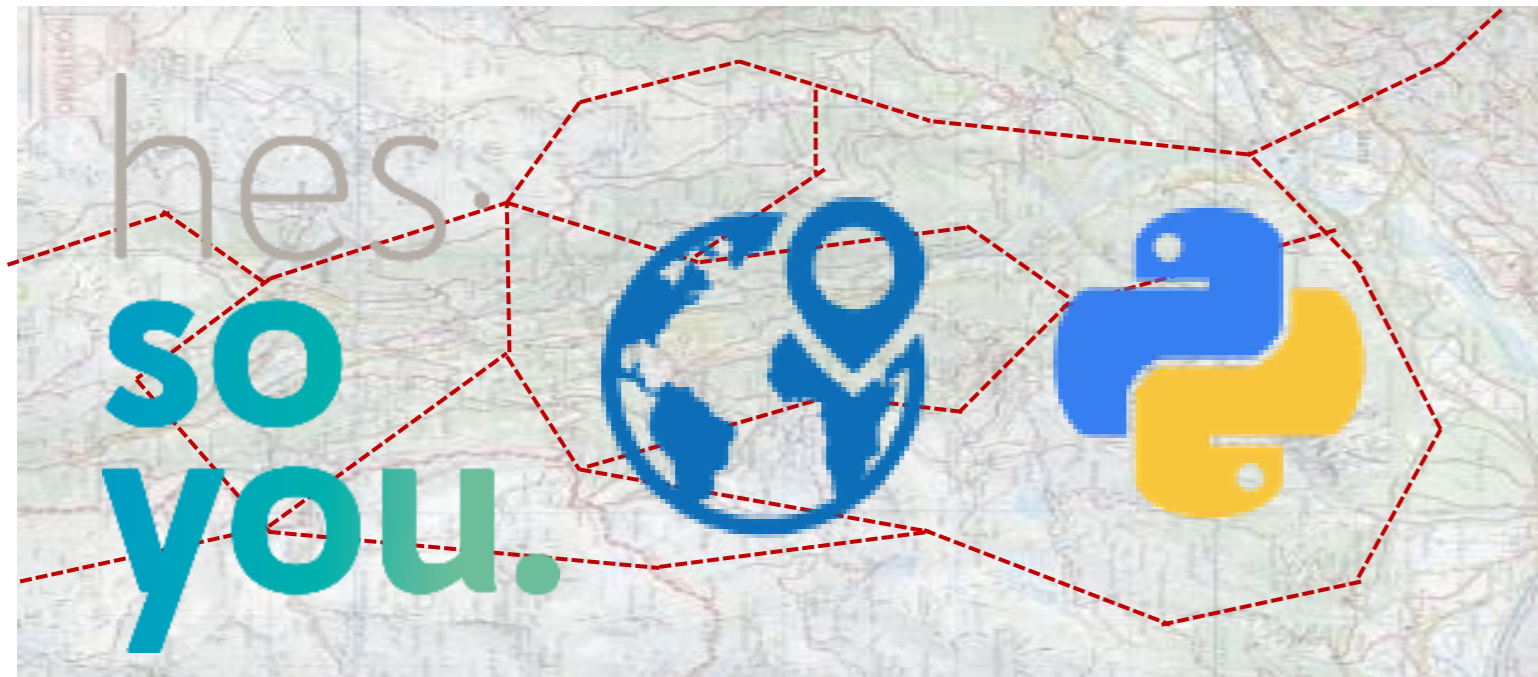
- Database using PostGIS
- Develop a backend (you can use GeoDjango or others)
- Develop the frontend (you can use Django Views and Leaflet, or others)
- Implement services for the Oiken network, examples:
 - Provide a management interface for operating the Oiken network
 - Analyze disruptions of service in the network
 - Simulate planned or unplanned cuts in the network
 - Use spatial operations to analyze: network density, potential risks, plan maintenance according to size distance, connections.

3. Usage of additional data and/or advanced services:

- e.g., add other layers (e.g. OpenStreetMap) to provide more services, add network-based prediction

> Evaluation

- The evaluation will take the form of a report of few pages (10 max) and a presentation in groups (20 minutes presentation and 10 minutes questions).
- Method of evaluation
- Presentation and Report Quality (10%)
- Item 1 (40% of the score)
- Item 2 (50% of the score)
- Item 3 (bonus + 0.5 pt on the final score)



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Good work!

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