Geospatial Visualization of Computer Science Faculty Activities at USTHB Campus

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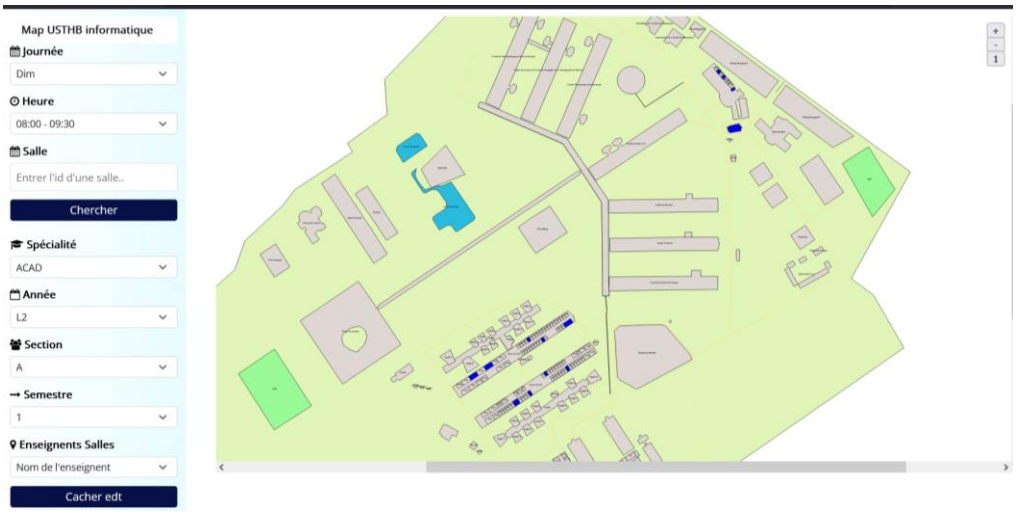
The aim of this project is to visualize the activities of the Computer Science Faculty on the USTHB campus by creating an interactive map of the university. This map will display information about the utilization of various rooms and facilities by computer science students.
With this project, users will be able to interactively explore the activities of the Computer Science Faculty on the USTHB campus. They can view room occupancy, instructor schedules, and events at various times and dates, providing a valuable resource for students, staff, and administrators to plan their activities effectively.



The visualization shows the occupancy for a specific time slot during a given day and semester(classes colored by blue color).

Implementation Steps

1. Create a map of the USTHB campus, including the rooms used by the Computer Science Faculty such as computer labs, lecture rooms, amphitheaters, meeting rooms, etc. This by creating a new GeoJSON file and a mapping tool (https://geojson.io) to draw boundaries for different areas.
2. Collect data on the room occupancy, subjects, group numbers, and instructors for computer science student's specialization. This by creating python script that extracts all relevant information from PDF schedule files.
3. Visualize the room occupancy by Master's students in the Visual Computing specialization on the map and computer science student's (level L2 to M2). The visualization shows the occupancy for a specific time slot during a given day and semester. The display includes information about the subject being taught, room number, group or section number, and the instructor's name using a tooltip data visualization type.
4. Add the ability to visualize the schedule time and rooms used by a specific instructor.

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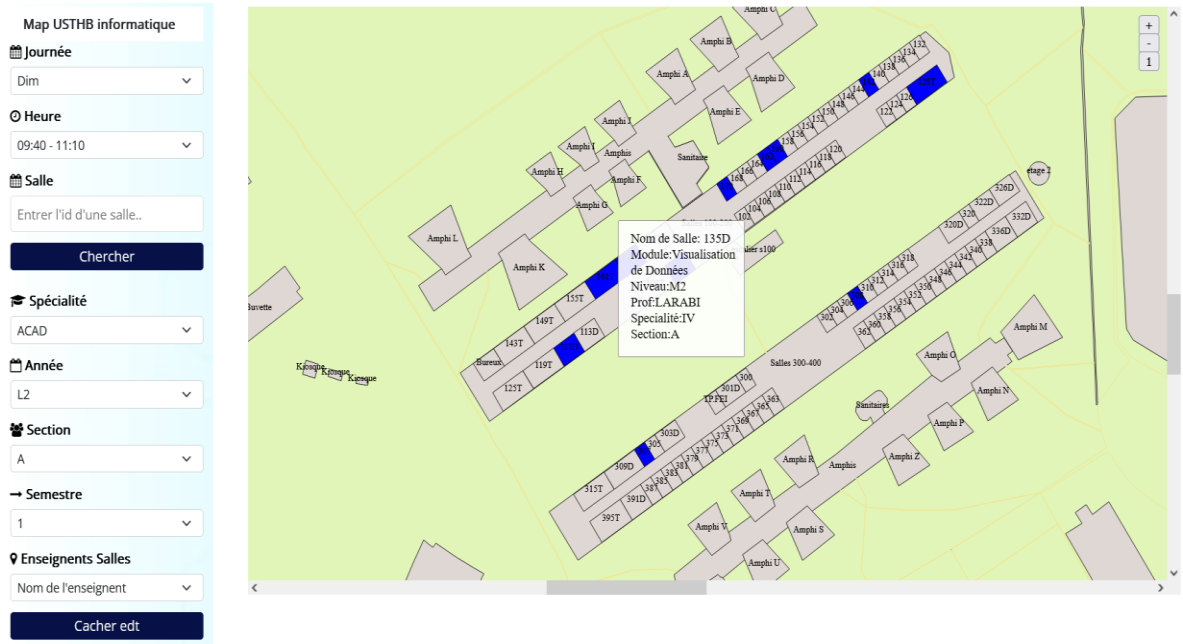
Approach:

- Implement an interactive map using a suitable JavaScript library D3.js to display the campus layout and class occupancy information.
- Add filters and controls to the map interface to allow users to select specific time slots, days, and semesters.
- Add a zoom function to zoom the map.
- Integrate event data and display it on the map to visualize ongoing or planned events.

Results:



The visualization shows information about the subject being taught, class number, group or section number, and the instructor's name using a tooltip for a specific class.