Meeting Minutes – First Client Meeting

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Project: Language-Based Geographic Reasoning System
Attendees: Whole group

1. Project Background

- The project aims to develop a **language-based geographic reasoning system**.
- It involves using different types of maps (e.g., Google Maps, digital orthophoto maps, DOM vector maps) to identify destinations and extract geographic information.
- The primary focus is on **vector maps**, which consist of:
    - Points
    - Lines
    - Polygons

2. Project Objectives

- Enable **searching of specific map layers** from a large geo-database using user-provided text queries.
- Use **Large Language Models (LLMs)** to generate SQL queries based on natural language input.
- Visualize the extracted geographic data to validate its accuracy and relevance.

3. Tasks & Action Items

Task	Responsible	Notes
Verify the quality of generated SQL code	Team	Consider using RM if the quality is low
Generate high-quality datasets aligned with user queries	Team	Ensure datasets match expected results
Design a framework for data visualization	Team	Simple and user-friendly for casual users
Explore data sources	Team	Install and explore using QGIS and GeoPandas
Think of example queries in natural language	Team	Focus on English initially
Manually validate SQL code output	Team	Crucial to ensure correct data extraction
Share SQL code and outputs with client	Team	Required for transparency
Install required tools (QGIS, etc.)	All team members	Must be done before the next meeting

4. Tools and Technologies

- **QGIS** – For geospatial data handling and visualization
- **GeoPandas** – Python library for working with geospatial data
- **PostgreSQL with PostGIS extension** – For storing and querying geospatial datasets
- **Text-to-SQL Model** – To convert user queries into SQL statements

5. Key Points Discussed

- **Dataset Scope**: Global data – no constraints or filtering needed.
- **Query Input Format**: Text-based natural language queries.
- **Interface Requirements**:
    - User-friendly interface
    - Should not require knowledge of database schema (e.g., table names)
    - Entire dataset should be presented clearly
- **Multilingual Support**: Possible in future, but start with English.
- **Quality Assurance**: Manual inspection of SQL queries and output is essential.
- **Data Validation**: Cross-check the SQL result with map visualizations.

6. Next Steps

- Install QGIS and explore sample datasets.
- Start brainstorming natural language queries.
- Familiarize with GeoPandas and PostGIS schema.
- Await shared Google Sheet (from client) containing data or instructions.
- Prepare for the next meeting with initial insights and findings.