April 4, 2024

**Economic Development and Transportation Infrastructure\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Project Title)**

Binghui li\_\_\_\_\_\_\_\_\_\_\_\_\_(Name)

**OBJECTIVES**

To compare the impact of transportation infrastructure on economic development in Boston and New York, considering historical and current data to identify trends and opportunities.

**ASSIGNMENTS**

Complete the following assignments. Deliverables will include pushing to your public GitHub and updating the README at every step.

**Project Proposal**

1. **Fill in the highlighted portions of this prompt. Utilize the Group Prompts for inspiration.**
   * Propose at least 5 vector datasets and 2 raster images that will address your topic.
   * What relationships will you analyze? Propose at least 3 spatial queries.

**2. Create a new Final Project repository and invite Jon & Kunal to collaborate on GitHub.**

**Due Friday, April 5 @ 5 pm (10 Points)**

**Assignment 1 – Data Acquisition, Processing, & Database Setup**

1. **Find and Process Geospatial Data**
   * Acquire data for at least 5 vector layers & 2 rasters:
     + **Vector Data (historical and current data for boston and nyc)**
       1. train station data
       2. airport data
       3. business licenses type
       4. property values
       5. demographic data
     + **Raster Data**
       1. n/a
   * Be sure to provide sources, descriptions, and visualizations in your README.
2. **Set Up Database Schema**
   * Create schema for your chosen topic.
   * What attributes should you be mindful of?
3. **Pre-process the Data**
   * Process the data to align different datasets temporally and spatially.
   * Be sure to capture the details in your README.

**Due Friday, April 12 @ 5 pm (10 Points)**

**Assignment 2 – Import Spatial Data & Normalize Tables**

1. **Import your data into PostgreSQL tables/schema created in Assignment 1.**
2. **Normalize your tables (1NF up to possibly 4NF, depending on your data) and explain the logic in your README.**
   * Even if normalization is not required, explain why in your README.

**Due Friday, April 19 @ 5 pm (20 Points)**

**Assignment 3 - Spatial Queries & Presentation**

Perform spatial analyses to determine:

* How do patterns of economic growth correlate with the expansion of transportation infrastructure in Boston and New York
* What is the relationship between transportation accessibility and property values
* How do areas with poor public transportation compare between Boston and New York, and what is the economic impact on their respective communities?

**Spatial Analysis & Presentation are Due Thursday, April 25 @ 10:15 am (40 Points)**

**Final GitHub Repo & README are Due Friday, May 3 @ 5 pm (30 Points)**

**Total: 110 Points**

**NO LATE SUBMISSIONS ACCEPTED AFTER MAY 3 -- Plan accordingly.**