CPRE 414
SW Tools for Big Data Analytics
Iowa State University

CPRE/SE 4140: Intro to Software Systems for Big Data Analytics

Fall 2024

Project 4

(due: Thursday, Dec. 12 at 11:59PM)

Objective: The purpose of your last assignment is for you to practice the concepts from GIS and spatial data management/querying, using QGIS as a tool.

In your labs, you were practicing basic scenarios with spatial data: overlaying different layers and querying over different sources (i.e., executing the join operation over spatial datasets), which is the focus of this assignment.

Specifications:

You will use the same two datasets for QGIS that were used in the lab: (i) the shapefile of Borough boundaries of New York city; (ii) the shapefile of Street Pavement Rating for all streets in New York city. You are required to implement the following queries in QGIS:

Q1 (50 pts.): *What is the total number of streets (of any rating) in each of the NYC Boroughs;*

Q2 (50 pts.): *What is the total number of streets with GOOD rating in each of the NYC Boroughs;*

(Extra Credit) Q3 (20 pts.): *What is the total length of the streets' segments in each of the NYC Boroughs.*

What to turnin:
For each of the queries, the output (i.e., the answer) will be a new "thematic layer", and for each such layer obtained as an outcome of the join, you will have attributes table (adding the newly-defined attribute, as part of the "group by"). For this assignment, you are expected to submit the answers (i.e., respective tables) for each of the queries above.
You are allowed to work in teams of two students – *but please makes sure to put the names of the team members in a file "team-members.txt"*. Save this file, along with the file/document containing your solutions, in a folder named "Project-4". Then zip and upload that folder for the respective Assignment on Canvas.