Final Project and Presentation

CEE412 / CET522

TRANSPORTATION DATA MANAGEMENT AND VISUALIZATION

WINTER 2020

Introduction

- Target: Practice your skills of database design, data process, data visualization.
- Final Results/Product: Create a data pipeline to collect and visualize transportation data
- Key tasks:
  - Build database for hosting the collected bicycle count data and new survey data.
  - Develop a Shiny App to view existing data, input collected data, and visualize preliminary analysis results.

Requirements

- Database design and develop
  - Follow our database design procedures
    - Given proper assumptions
    - Draw E/R diagram
    - Generate Relational Schema
  - Build database in your group's SQL Server database
    - Be careful for the data types

Requirements

- A Shiny App:
  1. User friendly Interface
     - Dashboard or other templates?
     - Appropriate colors and styles. Choose suitable font size and styles.
     - Proper arrangement of UI components
  2. **Connection to your database**
  3. **Two** data collection/input interfaces
     - Bicycle count data
     - Survey data
  4. Views to show your existing data
  5. Interactive or static charts/plots/maps to visualize your preliminary analysis results
  6. (Optional) extra features? Be creative!
  7. **Deploy Shiny App to ShinyApps.io** to let other access it

Requirements

- Think about the Shiny App
  - Who might be your App user?
  - Do you feel good when you use your Shiny App as a new user?
  - Bicycle count data has many items/column. How to arrange the UI components to make the bicycle count data collection interface more intuitive and informative? (Hint: we have provided you the bicycle count form)
  - What kind of extra feature may be useful for your App users?
  - Which feature/function in your App makes it outstanding?

Requirements

- A project report
  - Introduction
  - Assumptions: assumptions should support your database design and your data visualization
  - Database design: E/R diagram, relational schema, database development, data import, etc.
  - Concise user manual of your Shiny App
  - A link to your Shiny App
  - Summary
  - Duties of each team member
    - Contribution evaluation should be based on group member's **true contributions**
    - If a student did not make enough contributions to the final project without proper reasons, his/her final grades might be affected.

Final Presentation

- A seven-minutes video for each group
  - Record final presentation remotely
  - If you have difficulties to incorporate all group member's voice in the final presentation, your group can designate one speaker.
  - But it is required to let everyone be involved in the final presentation.
  - The video is recommended to have
    - A presentation of your final project
    - A demo of your Shiny App
  - Presentation Style has no limits
- A Shiny App Link

CEE412/CET522 Shiny App Contest

- We will have a Shiny App Contest
  - Three prizes for the contest
    - Grand Prize Winner
    - First Runner Up Prize
    - Second Runner Up Prize
  - **Awards**
    - A bunch of hex sticker and cheat sheets supported by Rstudio
    - The winning groups' Shiny Apps and group members will be posted in the Gallery of course website with the students' consent
      - https://zhiyongcui.com/CEE412_CET522/docs/gallery/
  - **This contest is supported by RStudio**
    - Dr. Mine Çetinkaya-Rundel supported us by providing a bunch of hex sticker and cheat sheets from RStudio
      - She is the organizer and judge of the Shiny Contest 2020
      - She is Associate Professor of the Practice at Duke University & a Data Scientist and Professional Educator at RStudio, Inc.
  - You are welcomed to participate in the Shiny Contest 2020 after the final presentation (Due on Mar 20)
    - https://blog.rstudio.com/2020/02/12/shiny-contest-2020-is-here/

CEE412/CET522 Shiny App Contest

- Shiny App Contest Criteria
  - Complete all required tasks
  - Easy-to-use functions
  - User friendly UI
  - Cool extra features

- Your Shiny App will be evaluated along with your final presentation

Final Presentation and Shiny App Evaluation

- Every student's Peer Review will determine:
  - Winters of the Shiny App Contest

Top Three Shiny Apps	
Group	
Group	
Group	

  - The grade of your final presentation (30% grade of the final project)

	1 (Poor)	2 (Fair)	3 (Good)	4 (Very Good)	5 (Excellent)
Presentation quality (e.g., voice, logic, and expression)	○	○	○	○	○
All tasks given in the project completed?	○	○	○	○	○
Website design (easy to use? informative?)	○	○	○	○	○
Extra features (creative in function and appearance?)	○	○	○	○	○

Comments:

  - Cannot vote or comment to your own group.