CSP584
Project Instructions

General Instructions:

This is a Full-Stack development project and there are **THREE PHASES** and deliverables for this project

1. **Phase 1:** Project description and requirement specifications. In this phase you will document and present a walkthrough of the requirements and features that you plan to implement for your project; you will present the design, architecture, and data sources of your application. Create the front-end web pages of your project.

2. **Phase 2:** Project demonstration. In this phase, you document and present the complete detailed design and demonstrate that you have completed the implementation of 50% of the requirements and features you planned to implement; you are not required to have 100% complete implementation of your project in this phase.

3. **Phase 3:** Final Project Deliverables. In this phase you will submit the complete documentation and the complete source code you implemented for your final project. Submit your final project as a SINGLE ZIP file on Blackboard with the name "Project_YourLastName,FirstName".

Project Technical Requirements:

1. Identify the topic of your interest from the following list of online Software applications:
    1) City of Chicago Community and Business Intelligence Hub
    2) Financial Services Hub, to search, apply, review for financial services and products, ATM, loans, financial instruments, cryptocurrency services, etc.
    3) Insurance Services Hub, to search, apply, review for insurance services and products, eligibility, coverage area, etc.
    4) Grocery Hub to buy groceries on daily, weekly, or as-needed basis for home delivery or in-store pickup
    5) Health Hub to order/search for Health clubs, doctors, medical services, hospitals, etc.
    6) Home Hub to order/search for services, repairs, tools, etc.
    7) Logistics and Shipping Hub to search for shipping and delivery services, service providers, coverage area, etc.

2. Your application must implement the following features:
    1) User Account/Profile, Access-Control, Transaction management
    2) Product and Services management
    3) Auto-Complete Products/Services Search
    4) Analytics & Visual Reports
    5) Knowledge-Graph Search
    6) Geospatial and Near-ME Search
    7) Trending, Realtime streaming of new products, services, events, etc.
    8) Recommenders for at least one of the followings:
        i. Social places (restaurants bars, etc.) based on the user profile, locations, date/time, posts, search histories.
        ii. Social events (Musical concerts, Theater, Comedy, etc.) based on the user profile, locations, date/time, posts, search histories.
        iii. Sports events (basketball, baseball, etc.) based on the user profile, locations, date/time, posts, search histories.
        iv. Use of Generative AI (OpenAI API) to make recommendations based on the user profile.

3. Technologies must be utilized in your implementation: JavaScript, Java, Go, Python, Tensorflow/Keras, Flask, Node.js/Express, NGINX, and React/Angular

4. Your application must utilize SQL, NoSQL, and Graph database engines as the backend datastore

5. You must enter sufficient data in your database for the different products and services in order to demonstrate the functionalities and completeness of the requirements and features you implemented in your final project.

6. Data must be created for users/customers in different locations (zip codes)

7. Context-aware (location, time, events, etc.) recommenders must be utilized in your project.

8. Your application shall export the data it has into CSV/JSON and utilize it in Neoj4/Cypher/Python/Java to create the knowledge graph of people, location, and events in order to detect communities and most influential people in the Graph

9. After you identify the topic that you are interested in from the list of topics provided above, you are required to document the requirements, features, architecture, detailed design, source code, and output for your project. Your Final Project deliverables are:
    1) Project overview statement, features, and requirements
    2) Requirements, architecture, and design diagrams
    3) Source Code
    4) Compiled Code
    5) Readme file for how to build/deploy your project.
    6) Clearly state how many lines of code you wrote in the Readme file
    7) All Screen-Shots of your Application MUST BE captured and documented in a pdf file called OUTPUT.pdf
    8) Use Panopto or screenpal (https://screenpal.com/) and record a demo (video + audio) for 5 minutes of your project live-run for all features implemented.

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