Project Proposal: "Economic Trends in Minnesota: A County-Level Analysis of Income and Unemployment (2019–2023)"

Overview

This project aims to explore and visualize economic trends across Minnesota's counties from 2019 to 2023, focusing on:

- **Median Household Income**

- **Unemployment Rates**

By analyzing these metrics, the project seeks to uncover patterns and disparities among counties, providing insights into economic well-being and employment trends within the state.

Data Sources

1. **Median Household Income Data:**

   - **Source: hdpulse.nimhd.nih.gov/data**
   - Minimum 100+ county records
2. **Unemployment Rates:**

   - **Source: hdpulse.nimhd.nih.gov/data**
   - Minimum 100+ county records

Tools & Technologies

- **Python** for data processing and visualization, Pandas, Patplotlib

  - `Pandas`, `Matplotlib`

- **PostgreSQL** database to store and query the data

- **SQLAlchemy** or `psycopg2` to connect Python with PostgreSQL

- **Jupyter Notebook** for interactive filtering and visualization

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Visualizations

Three clear and distinct views will be presented:

1. **Bar Chart**

   - Top counties by **income**
   - Top counties by **unemployment**
   - User can select the counties

2. **Heat Map (GeoPandas + matplotlib, plotly)**

   - Color-coded map showing **median household income** by county
   - Color-coded map showing **unemployment** by county
   - Filterable by county

3. **Line Plot**

   - US average income line with all MN county lines (user can select the counties)
   - US average unemployment line with all MN county lines (user can select the counties)

Each visualization will update based on user-filtered selections via dropdowns or inputs in the Jupyter Notebook.

Jackson	Erica	Ally	Derek	Brynn
HeatMap	Project Manager Slides	README Coding	Plotting/Coding	Plotting/Coding