Repository and Mining of Temporal Data

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Goals

- To create a web application to share, analyze, and predict future trends in data
- Allow users to upload data and compare it to data already stored on the site.
- Recognize that data has different granularity and be able to handle it
  - i.e., throw away some data, average the data together, compare both points of data
- Have speed optimization
  - Don't want to wait a long time for the program to finish

Approach

The project is meant to answer three questions:

- Is there a significant change in the target variable?
  - The program will analyze data collected from data providers.
- Why was there a significant change and what are the top variables that have affected the target?
  - List the variables that have affected the target the most during a certain period of time.
- What is the value in the next stamp?
  - Forecast a possible value in the next time period.

Challenges

- Uninformed on what data mining is, needs, and requires
- Debating on programming languages for the analysis program and the website application, and need to learn if picking an unfamiliar language
  - Main Program: Java, Python, C++, or R
  - Website: HTML, CSS, JavaScript
- GUI
  - Very few buttons: Start program, Exit, Search Query, Upload data, Open/Download data

Milestone 1 (Oct 2)

- Investigate which programming language is best for our project and learn how to use it if needed
- Determine if additional plugins are needed, research algorithms, web application plugins
- Preliminary program able to read .CSV files
- Create Requirements Document
- Create Design Document
- Create Test Plan

Milestone 2 (Oct 30)

- Design, implement, test, and demo GUI for user input
  - Demo can display query back
- Implement, test, demo whether or not the target variable has a significant change
  - Question 1
- Get website running
- Implement, test, and demo .CSV file reading
- Implement, test, and demo preliminary analysis

Milestone 3 (Nov 27)

- Refine analysis algorithm
- Refine website
- Implement, test, and demo which variables correlate with the target variable the most (Question 2)
- Add additional buttons on GUI if needed
- Implement .CSV output