LIS 640 Fall 2025- 2026

Transportation Services

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Problem Statement:

UW–Madison Transportation Services struggles to identify comparable historical days due to the lack of a unified, easy-to-maintain date-tag dataset. Key external factors—academic schedules, construction closures, major events, weather, and transit changes—are tracked separately, creating inefficiencies. A consolidated dataset is needed to improve analysis, forecasting, and decision-making.

Solution Statement:

This project will create a visual calendar interface and a consolidated date-tagged dataset for UW–Madison Transportation Services to streamline the idpentification of comparable historical days and enhance forecasting. Staff will be able to drag, drop, and apply recurring tags for academic schedules, closures, events, weather, and transit changes without coding. Deliverables include the interactive interface, initial dataset, MySQL/Tableau integration guidance, job aids, and a workflow diagram showing data flow and use cases.

Completed Tasks (Last 2 Week):

- Cleaned and prepared the weather dataset (2019–2024).
- Cleaned and verified the road closure dataset.
- Scraped and organized the event calendar dataset.
- Confirmed that all necessary datasets are now collected and ready for use.

Tasks for the Next Project Report:

- Begin integrating all cleaned datasets into a unified master dataset.
- Ensure consistency in formats, identifiers, and time ranges across datasets.
- Document the integration process to guide future data updates.
- Prepare an initial combined dataset ready for tagging and interface development.

Questions I have or Issues I'm running into:

- Determining the most efficient way to merge datasets with differing formats and identifiers.
- Ensuring accuracy and avoiding duplication while combining event, weather, and closure data.
- Assessing whether the unified dataset will need additional validation from our partner before moving into interface development.

Methodology Paragraph Summary:

Our methodology involves a systematic, phased approach to build the centralized date-tagging system. First, we gather and validate relevant data from internal Transportation Services sources and public datasets, then define a flexible tag structure that can capture recurring and one-off events. We will develop a MySQL database to store tagged dates and build a user-friendly calendar interface enabling drag-and-drop and recurrence functionality. The system will be integrated with Tableau for reporting, and its effectiveness will be evaluated by verifying tag coverage, data accuracy, and usability for non-technical staff, ensuring it meets the problem statement of enabling efficient analysis and forecasting.

References:

https://www.cityofmadison.com/projects/completed

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