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 identification 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 Weeks):**

- Collaborated with the teammates to clean unwanted and redundant entries in the dataset before integration.
- Verified dataset consistency and ensured cleaned tables align with the schema used for SQL upload.
- Developed the first draft of the **frontend calendar visualization tool**, which dynamically displays tags and events from 2020–2024.
- Implemented interactive UI components using **HTML, Tailwind CSS, and JavaScript**, enabling users to upload multiple CSVs and filter by category (Events, Sports, Weather, Closures).
- Designed and tested the **modal interface** to show detailed information for each selected day (weather, closures, sports, events).
- Ensured responsive design and improved data readability through tag badges, layout grids, and adaptive cards.

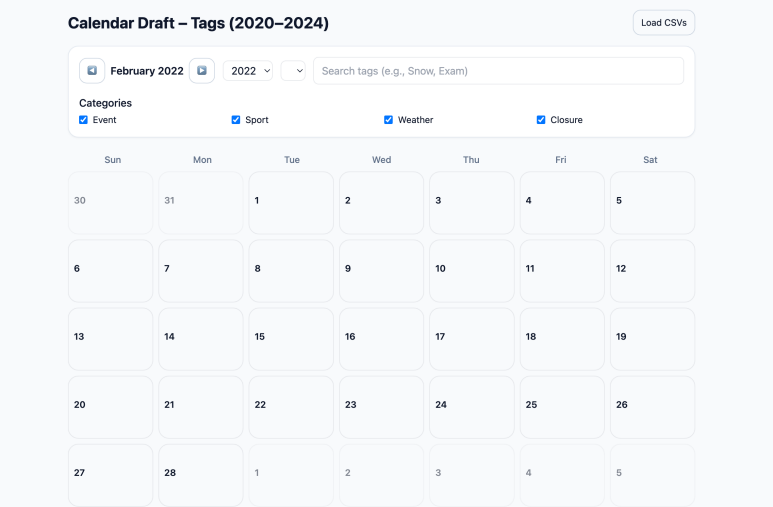
**Tasks for the Next Project Report:**

- Develop SQL queries to extract key data for the frontend interface.
- Set up data views for the frontend team to connect to.
- Document the schema and ER diagram for future maintenance.
- Assist frontend developers in integrating database queries into the application.

**Questions I have or Issues I'm running into:**

- Uncertain about the purpose and placement of **Tableau integration**, since the current web-based visualization already displays and filters data effectively.
- Clarification needed on how SQL query results will be formatted for frontend integration (e.g., through JSON API or direct database connection).
- Some CSV files still have inconsistent field names, will align with the finalized SQL schema before next stage.

## Draft Work Product:




## References:

https://www.cityofmadison.com/projects/completed
https://meteostat.net/en/place/us/madison?s=72641&t=2025-09-07/2025-09-07
https://uwmadison.account.box.com/login?redirect_url=https%3A%2F%2Fuwmadison.app.box.com%2Fs%2F9b2qlxtsuxfc20vouvuksey1nv7ufgzq
https://data-cityofmadison.opendata.arcgis.com/datasets/912f842a975542978e4dc5ffa216ebc8_14/explore?location=43.093702%2C-89.409250%2C11.92
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https://www.wiaawi.org/Sports/Winter/Boys-Basketball/State-Results-Archive?utm_source=chatgpt.com#42241447-2019-tournament-results
https://www.opm.gov/policy-data-oversight/pay-leave/federal-holidays/?utm_source=chatgpt.com#url=Historical-Data
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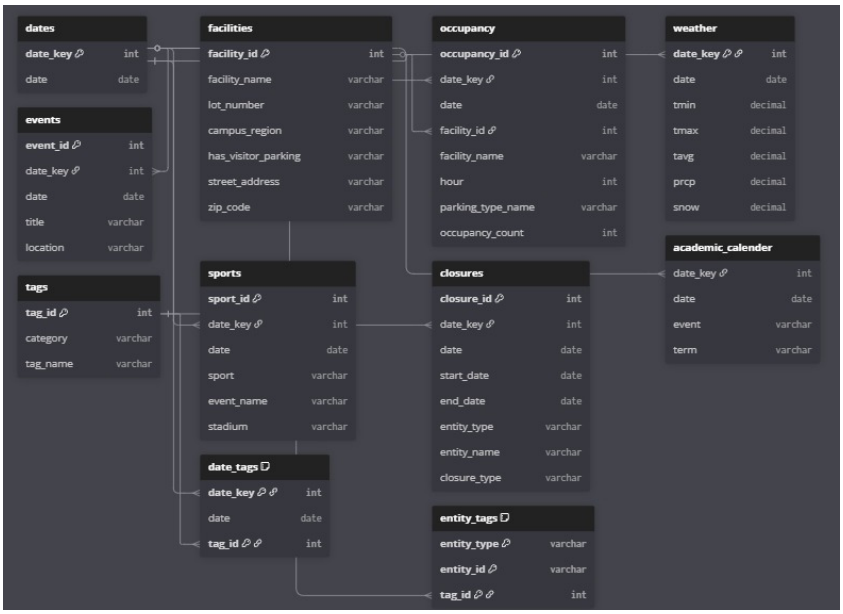
## Appendix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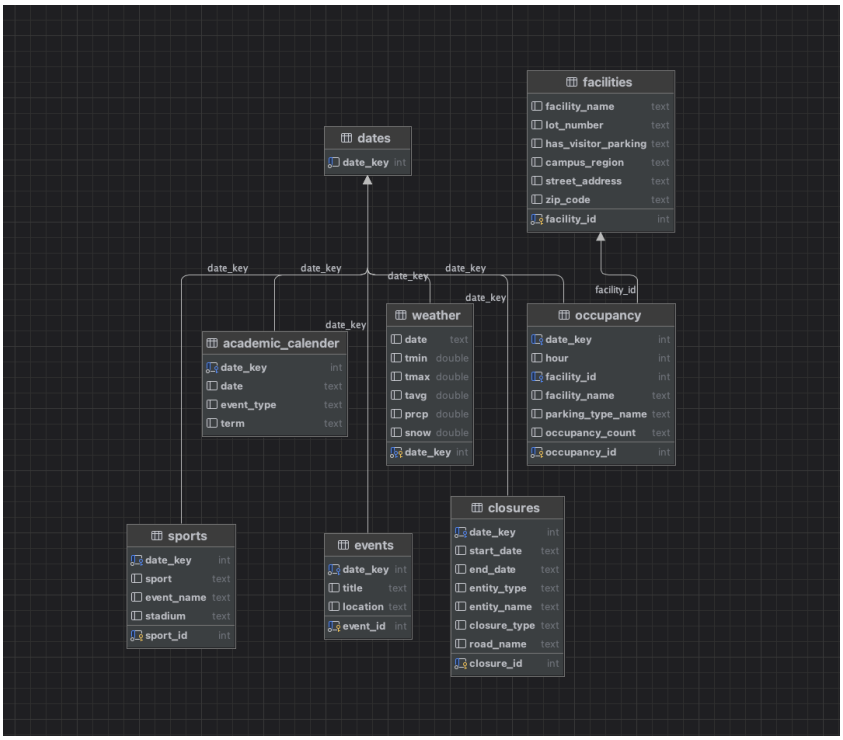
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