Sprint 3 Retrospective

Sprint Retrospective Report

1. What Went Well

- The final sprint was a success, focusing on finalizing the product, especially in full-stack integration (linking frontend and backend).
- Significant developments were made on:
  - Backend algorithm for timetable generation.
  - Frontend redesign for admin pages.
- Completed key pages including:
  - Admin homepage displaying the timetable of running courses.
  - Individual pages for campuses, courses, units, classrooms, students, and staff, all efficiently retrieving and displaying data from the database.
- Developed an AI assistant page by linking ChatGPT APIs, allowing users to:
  - Type commands for the AI assistant to generate a JSON script.
  - Execute backend changes (e.g., update staff details) seamlessly through the generated scripts.
- Successfully added additional frontend functionality:
  - Enabled CSV file uploading and processing with PapaParse, allowing data import directly into the backend.
- With limited time, the team successfully produced an almost fully functioning webpage, ready for the project presentation.

2. What Didn’t Go Well

- Encountered challenges with full-stack integration, particularly with data retrieval:
  - Each page included its own filter bars, complicating data retrieval from multiple database tables.
  - Required joining separately recorded datasets, which increased complexity and impacted data loading speed.
  - Debugging and optimizing these retrieval processes took extra time and effort.

3. Action Items for Improvement

- **Enhanced Database Structuring**: For future projects, we should focus on optimizing the database structure to streamline data joining and retrieval. Implementing indices on commonly joined fields and consolidating related data into views or precomputed tables could reduce retrieval complexity.
- **Better Time Management for Presentations**: Since finalising the project with limited time was a challenge, setting an earlier internal deadline for key functionality could give extra time for polish and preparation in the final sprint.

4. New Ideas or Experiments for Future Projects

- **Automated Testing for Full Stack Integration**: We could incorporate automated integration tests to catch issues in data retrieval and joining early in development, improving the stability of the system.
- **Real-Time Data Syncing**: Future iterations could benefit from real-time data syncing between frontend and backend, ensuring that updates appear instantly without requiring page reloads, enhancing user experience.