Integration Testing

Plans

Objective: Ensure that the different modules of the timetable system work together as intended.

Scope:

- Test the interaction between the scheduling algorithm and the database.
- Verify that constraints (such as non-overlapping classes, no double-booking, and room sizes) are correctly enforced when all components work together.
- Test the integration with external APIs and ensure that data flow is consistent and correct.

Test Cases:

- **End-to-End Scheduling:** Test the entire process from receiving student and room data to generating a timetable, ensuring all constraints are met.
- **Data Consistency:** Verify that data passed between modules remains accurate and consistent.
- **Error Handling:** Test how the system handles unexpected data or failures in API calls.

Tools:

- Use integration testing tools like Selenium and Postman (for API testing)
- Use Vitest: ⚡ Vitest

Acceptance Criteria: Refer to Jira.

Progress + Results

Link: ⬡ jetedge/frontend/src/tests/api.test.ts at 424a40553042f056ead7881d3ae9bc2d3982d60a · hotungkhanh/jetedge

Use Vitest to implement tests from the frontend for the following cases:

- **End-to-End Scheduling:**
  - Send one or more sample problem(s) via frontend API method call
  - Expect return result to be one or more timetable solution(s)
    - This verifies that backend connection is established
    - This verifies that backend server can properly handle multiple solve requests
- **Data Consistency:**
  - Send a sample problem via frontend API method call
  - Expect solution to use the same data as sent from the sample problem