System Testing

Plans

Progress + Results

Plans

Objective: Test the entire timetable system as a whole to ensure it meets the specified requirements.

Scope:

- Conduct full-scale testing of the system with real-world data.
- Validate that all functional requirements, such as timetabling constraints and user interface functionality, are working correctly.

Test Cases:

- **Realistic Data Load:** Use real or simulated data representing actual student enrollments, room availability, and other factors.
- **Performance Testing:** Measure how the system performs with increasing numbers of students, classes, and constraints.
- **Usability Testing:** Ensure that the user interface is intuitive and meets user needs.

Tools:

- Load testing tools like Apache JMeter for performance.
- Manual testing combined with automated scripts for functional verification.

Acceptance Criteria: Refer to Jira.

Progress + Results

Load Testing: Since our website is designed to have one user at a time, we don't expect heavy traffic. Thus, we decide not to test with JMeter; Instead, all system tests will be done manually and the testing log will be registered as below:

Manual Testing: Timetabling for VIT

Test Case ID	Scenario	Expected Outcome	Actual Outcome	Status
TC01	Login with provided login details	Successfully login to Welcome Page	As expected	Pass
TC02	Login with wrong login details	The pop-up window says "Unauthorised"	AS expected	Pass
TC03	1, In front page, click "Generate Timetable" buttom. 2, Click "Upload" buttom to upload a random enrollment record of 10000 students. 3, Click "Proceed" buttom to the Information page. 4, Observe and check Unit information.	1, Check if all the units in the enrollment record are succussfully parsed into the Unit information section. 2, Check if the students enrolled in a certain units are successfully pared into student columns under the corresponding unit.	As expected	Pass

TC04	1, Repeat step 1 to 3 in TC03. 2, Select a cell in the last row, click ENTER, a new row appears for adding a new room information. 3, Refresh the page, repeat step 1 to 3 in TC03, check if the new added room persist.	The added room information persist.	As expected	Pass
TC05	1, Repeat step 1 to 3 in TC03. 2, Edit a room information: Campus, Building, Room Code, Capacity etc. 3, Refresh the page, repeat step 1 to 3 in TC03, check if the new added room persist.	The edited room informaiton persist	As expected	Pass
TC06	1, Repeat step 1 to 3 in TC03. 2, Right click a room that needs to be deleted, delete that room. 3, Refresh the page, repeat step 1 to 3 in TC03, check if the new added room persist.	The room has been successfully deleted	As expected	Pass
TC07	1, Repeat step 1 to 3 in TC03. 2, Click “Unit” button and edit Unit’s lecture duration, tutorial duration and lab duration. 3, Refresh the page, repeat step 1 to 3 in TC03, check if the newly edited unit information persist.	The unit information has been successfully edited and the information persist.	As expected	Pass
TC08	1, Repeat step 1 to 3 in TC03. 2, Repeat step 2 in TC04/TC05. [Add/Edit Room information] 3, Repeat step 2 in TC07 [Edit Unit information] 4, Click “GENERATE TIMETABLE” button 4, Wait until the page stop loading (about 2 minutes). 5, Click “Next” button and observe the generated timetable Gantt-chart.	All the units have been scheduled according to the campuses the units been delivered. Click each campus name and eye-balling them, there should be no/minimum overlap between units, thus no room conflict. [Room constrain satisfied]	As expected	Pass

TC09	1, Repeat step 1 to 5 in TC08. 2, Click “DOWNLOAD TIMETABLE“ button at the bottom of the Gantt-chart for each campus.	The respective timetables for each course in that campus should be downloaded in a zip file. Open that campus zip file, there should be some CSV file, one for each course in that campus.	As expected	Pass
TC10	1, Repeat step 1 to 5 in TC10. 2, Select a unit in the Gantt-chart using left-click of the mouse, holding it, and drag and drop it to another time or room. 3, Click “SAVE CHANGES” button.	If there is no room conflict, the drag and drop should be successful without warning. If there is a room conflict, the drag and drop action will trigger a popup window warning (“OVERLAPPED”). Once click “SAVE CHANGES” button, the changes persist.	As expected	Pass

Disclaimer: Due to time limit, the system tests may not be 100% complete, however, we have tried to cover all the main functionalities and use cases in a real-world scenario.