Time Table Management System
Test Report
Group - 03

Group Members

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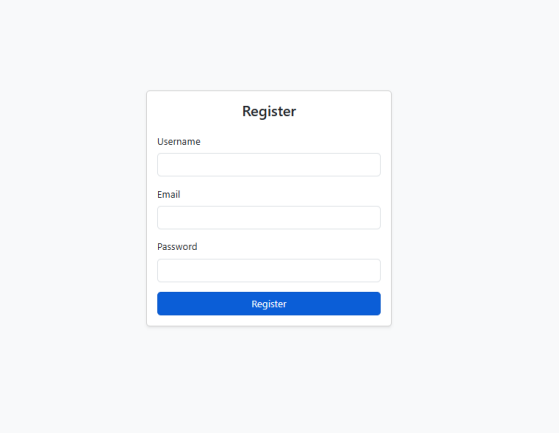
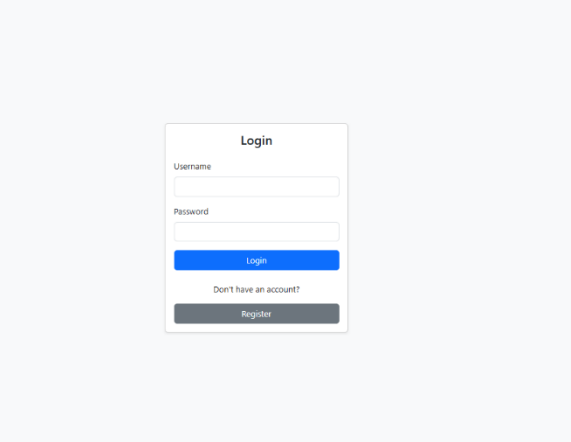
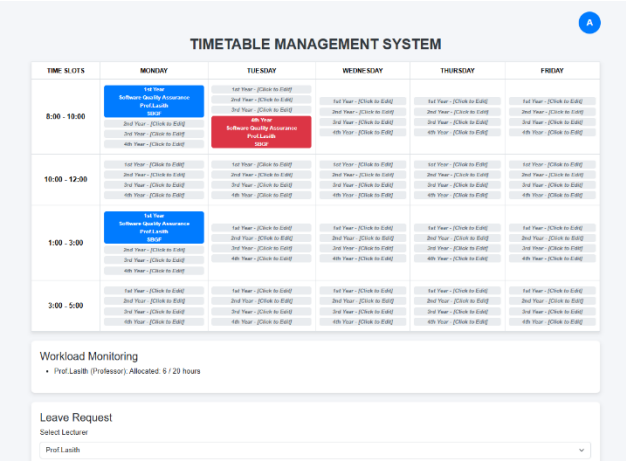
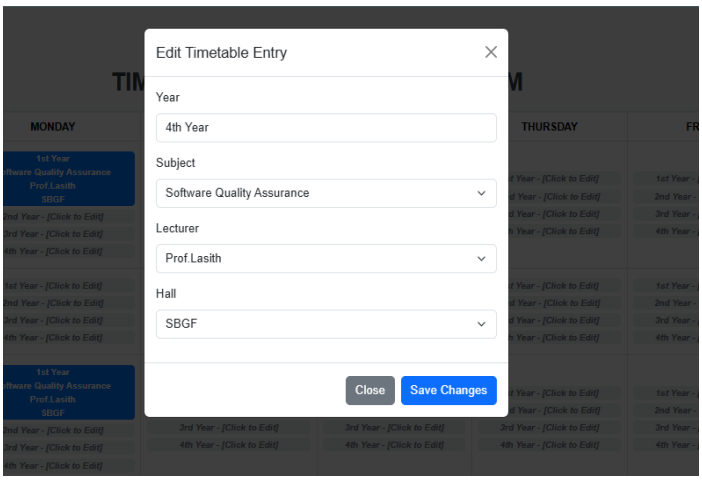
Git Hub Link: https://github.com/Charaka22912/Time-Table.git









Objective:

To validate the Timetable Management System for correct functionality, performance, and error handling, ensuring it meets all requirements for

- **Timetable Creation and Editing**
- **Workload monitoring**
- **Leave requests**
- **Subject/lecturer assignment management**

Test Scope:

- Login and Registration
- Timetable creation and editing
- Workload monitoring
- Leave requests and replacement lecturer functionality
- Subject and Lecturer Management
- Timetable entry deletion

Test Methodology:

- Black-box testing to validate the system's outputs based on various inputs.
- Functional testing based on requirements and business rules.
- Boundary testing for time slots, subject fields, and lecturer availability.

Test Cases:

1. Login and Registration Test Cases

Test ID	Test Description	Black Box Technique	Expected Result	Status
TC001	Attempt login with correct username and password	Equivalence Partitioning	User logs in successfully	Pass
TC002	Attempt login with wrong password (3 attempts)	Boundary Value Analysis	User account is locked or deleted after 3 attempts	Pass
TC003	Attempt login with non-existing username	Error Guessing	Error message: “User not found”	Pass
TC004	Register a new user with a password less than 6 characters	Boundary Value Analysis	Error message: “Password must be at least 6 characters”	Pass
TC005	Register a new user without a symbol in the password	Error Guessing	Error message: “Password must contain at least one symbol”	Pass
TC006	Register a new user without a number in the password	Error Guessing	Error message: “Password must contain at least one number”	Pass
TC007	Register a new user with all required password criteria	Equivalence Partitioning	User is registered successfully	Pass

2. Timetable Creation and Editing

Test ID	Test Description	Black Box Technique	Expected Result	Status
TC001	Create a new timetable entry with valid data (subject, lecturer, hall)	Equivalence Partitioning	Timetable entry is created successfully	Pass
TC002	Create a timetable entry with missing subject	Error Guessing	Error message: “Missing required fields”	Pass
TC003	Create a timetable entry with missing hall	Error Guessing	Error message: “Missing required fields”	Pass
TC004	Create a timetable entry with overlapping lecturer assignment	Boundary Value Analysis	Error message: “Lecturer already assigned”	Pass
TC005	Edit an existing timetable entry with new data	State Transition Testing	Timetable entry is updated successfully	Pass

3. Workload Monitoring

Test ID	Test Description	Black Box Technique	Expected Result	Status
TC006	View workload for a lecturer with assigned slots	Equivalence Partitioning	Lecturer's workload is displayed correctly	Pass
TC007	View workload for a lecturer with no assigned slots	Boundary Value Analysis	Workload shows 0 hours	Pass

4. Leave Request & Replacement Lecturer

Test ID	Test Description	Black Box Technique	Expected Result	Status
TC009	Request leave for a lecturer and find replacement	State Transition Testing	Replacement lecturers are shown correctly	Pass
TC010	Request leave for a lecturer with no replacements	Error Guessing	Message: "No replacements available"	Pass

5. Timetable Entry Deletion

Test ID	Test Description	Black Box Technique	Expected Result	Status
TC012	Delete a timetable entry and verify removal	State Transition Testing	Entry is deleted and timetable is updated	Pass

The **Timetable Management System** has been thoroughly tested for all functional requirements, using various black-box testing techniques to ensure robustness, reliability, and accurate data processing. All features, including **timetable creation, editing**, **workload monitoring**, and **leave request management**, have been tested for expected functionality and error handling.

White box Testing

Objective

The objective of the white box testing was to:

- Validate the functionality of backend logic and database operations.
- Test individual modules such as schedule management, lecturer workloads, and leave applications.
- Ensure proper error handling and edge case coverage.

The Test implementation is located in the test.py file in the project repository.
GitHub Link: https://github.com/Charaka22912/Time-Table.git- test.py
To run the tests, use the following command in your project directory:
python manage.py test

Result

Test Case ID	Test Description	Input	Expected Output	Result
TC01	Create a subject	Subject name: Math, Code: MTH101	Subject is created and saved in the database.	Passed
TC02	Create a lecturer	Name: Dr. John, Role: Professor	Lecturer is created and saved in the database.	Passed
TC03	Create a timetable entry	Day: Monday, Time Slot: 8:00-10:00	Entry is saved with the correct relationships.	Passed
TC04	Save a timetable entry via HTTP POST request	Timetable details in POST request	HTTP 200 response with success message.	Passed
TC05	Monitor workload of a lecturer	Lecturer with 1 slot (2 hours)	Lecturer's workload is calculated as 2 hours.	Passed

White box testing confirmed that all internal operations and database interactions work as expected.The tests ensure that the system meets functional requirements with a high level of reliability.