



**Software Engineering and Web Technologies Laboratory Integrated
Project on**

FACULTY PROFILE MANAGEMENT

Bachelor of Engineering

IN

COMPUTER SCIENCE AND ENGINEERING

Submitted By

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1.Introduction

1.1 Preamble

The purpose of doing “*Faculty Profile Management*” website is to create an interface for faculties to host their profile on it. The website is developed using MEAN stack. The website contains all the necessary information about faculties belonging to *SoCSE* of *KLE TECH* such as their Achievements, Publications, Research Interests, Contact information, Timetable. It allows them to perform CRUD operations on the above-mentioned entities.

1.2 Problem Definition

To build a university website called **Faculty Profile Management** to host Faculty Profile. It enables them to add, delete, update their Achievements, Publications, Research Interests, Timetable.

The Website systematically maintains the profile of faculties belonging to SoCSE of KLE TECH.

1.3 Objectives

1. To provide the login interface to the faculty.
2. To provide guaranteed access to the faculty members.

3. To manage the details of the Faculty, Courses, and Lectures.
4. To build a website to reduce the manual work for managing the faculty and lectures.
5. To display the leave details of the faculty.
6. To provide a facility to view the faculty's timetable and cabin.

2 Software System Requirements

2.1 Functional Requirements

2.1.1. The web application shall provide the login facility to existing faculty.

2.1.2. The website shall provide the Sign-up facility to new faculty.

2.1.3. The web application shall allow the admin to add a new faculty.

2.1.4. The website shall allow faculty to edit their publications, achievements, and research activities.

2.1.5. The web application shall provide the information and description of the faculty.

2.1.6. The website shall allow other public to view the profile.

The web application shall allow others to download the profile in pdf format.

Use case diagram

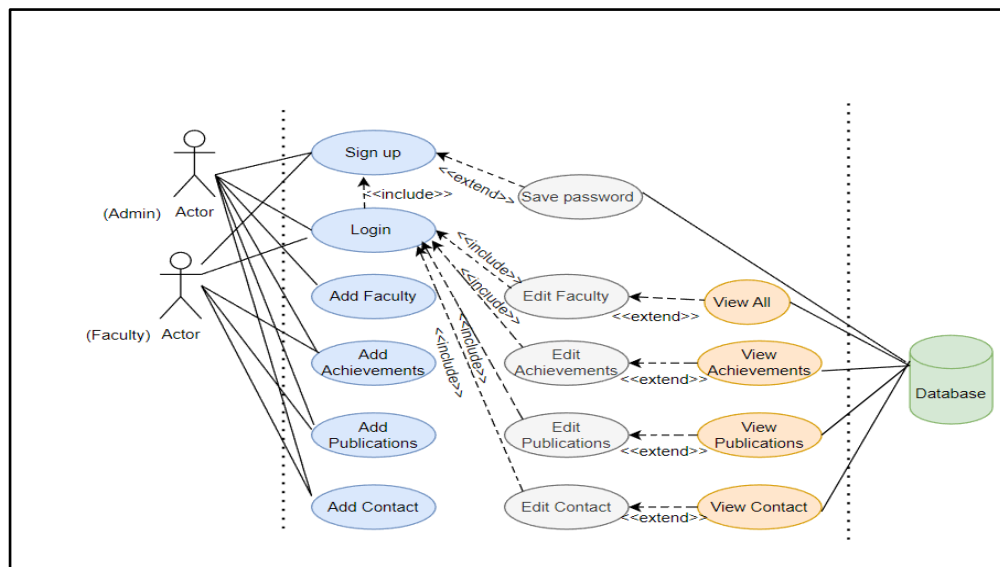


Fig 2.1.1 Represents Use Case Diagram of FPM

2.2 Non-Functional Requirements

2.2.1. The website should allow a maximum of 3 login attempts to the faculty.

2.2.2. The web application should be able display to list of all faculty profile

2.2.3. The website should display the courses the faculty has taught along with the period of duration.

2.2.4. The web application should have a heading size of 22px (h2 tag), sub-heading size of 20px (h3 tag) and the articles and paragraph size 16px.

2.3 Hardware and Software Requirements

2.3.1 Software requirements include

- Latest version of Angular CLI
- Latest Version of Node Js server environment.
- MongoDB setup
- Express Framework

2.3.2 Hardware requirements include

Processor	AMD Ryzen 7 4800H
Core	8 core
Threads	16 threads
RAM	16 GB

Frequency	1600 Mhz
Graphics	NVIDIA (GeForce GTX 1650)- 4GB GDDR6

2.4 Test plans and Test cases

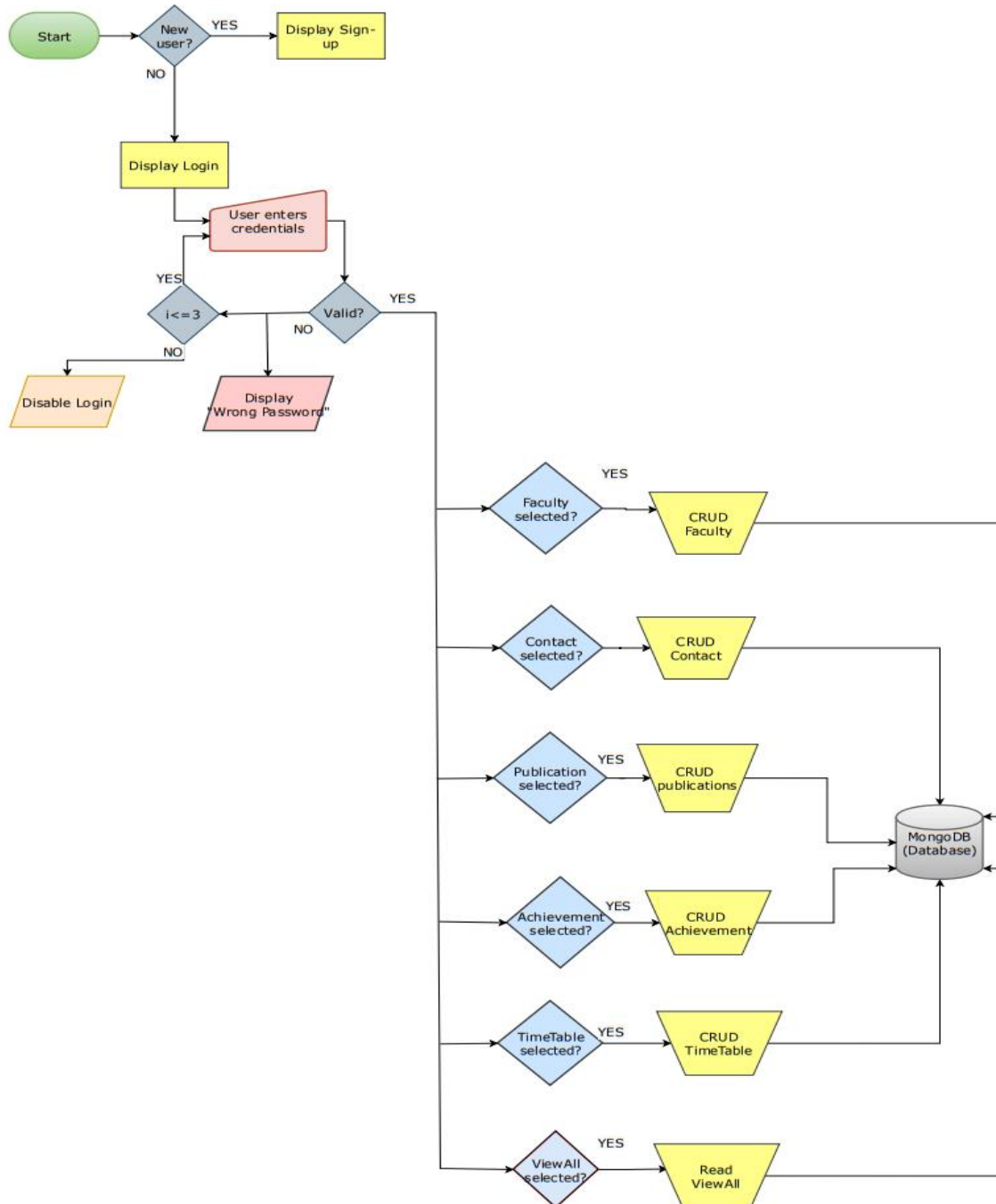
Requirement Id	Test Case ID	Test Case Description	Test Steps	Test Input Data	Expected Results	Actual Results	Pass/Fail
RE01	TU01	Check faculty login With valid input	1.Go to site 2. Enter email 3. Enter password 4. Click Submit	Email: kushagra@gmail.com Password: "kushagra"	User should log into the application.	Login Successful	PASS
RE02	TU02	Check faculty login With invalid input	1.Go to site 2. Enter email 3. Enter password 4. Click Submit	Email: pranav@kletech.ac.in Password: "kushagra"	User should not log into the application.	Login Failed	PASS
RE03	TU03	Insert faculty contact.	1.Go to site/add-contact 2. Enter faculty name 3. Enter address 4. Click Submit	Name: "Manjula Pawar" Address: "Hubli"	Faculty name and address should be inserted.	Faculty contact gets added	PASS

Faculty Profile Management

RE04	TU04	Enable editing the faculty achievement.	1.Go to site /Achievement-list 2. Select the record to be edited. 3. Edit the record 4. Click Submit	New record: "Best Paper Award"	The existing record should be edited and replaced by a new record.	Edit Successful. Record replaced.	PASS
RE05	TU05	Enable deletion of publication record	1.Go to site/publication-list 2. Select the record to be edited 3.Delete the record	Event: Click delete button.	The selected record should be deleted.	Delete Successful. Record removed.	PASS
RE06	TU06	Updating timetable	1.Go to site/timetable 2.Select the time slot 3.Assign faculty name	Monday: "Parikshit Hegde CSC305"	Faculty name should be assigned to the selected timeslot.	Faculty name assigned. Timetable updated.	PASS
RE07	TU07	Disable login if total attempts exceed 3	1.Go to site. 2.Enter incorrect credentials four times	do{ Email: kushagra@gmail.com Password: pranav }while(i<3)	It should display "wrong password". Login button should get disabled.	Login disabled after 3 attempts. "Wrong password" displayed.	PASS
RE08	TU08	Check the working of redirecting to social media	1. Go to site/view-all 2.Click on social media links	Event: click on social media icons.	It should be redirected to the respective social media.	Redirected successfully	PASS

3. System Design and Implementation

3.1 Flowchart



3.2 Database Description

The database used for implementing the website is *MongoDB*.

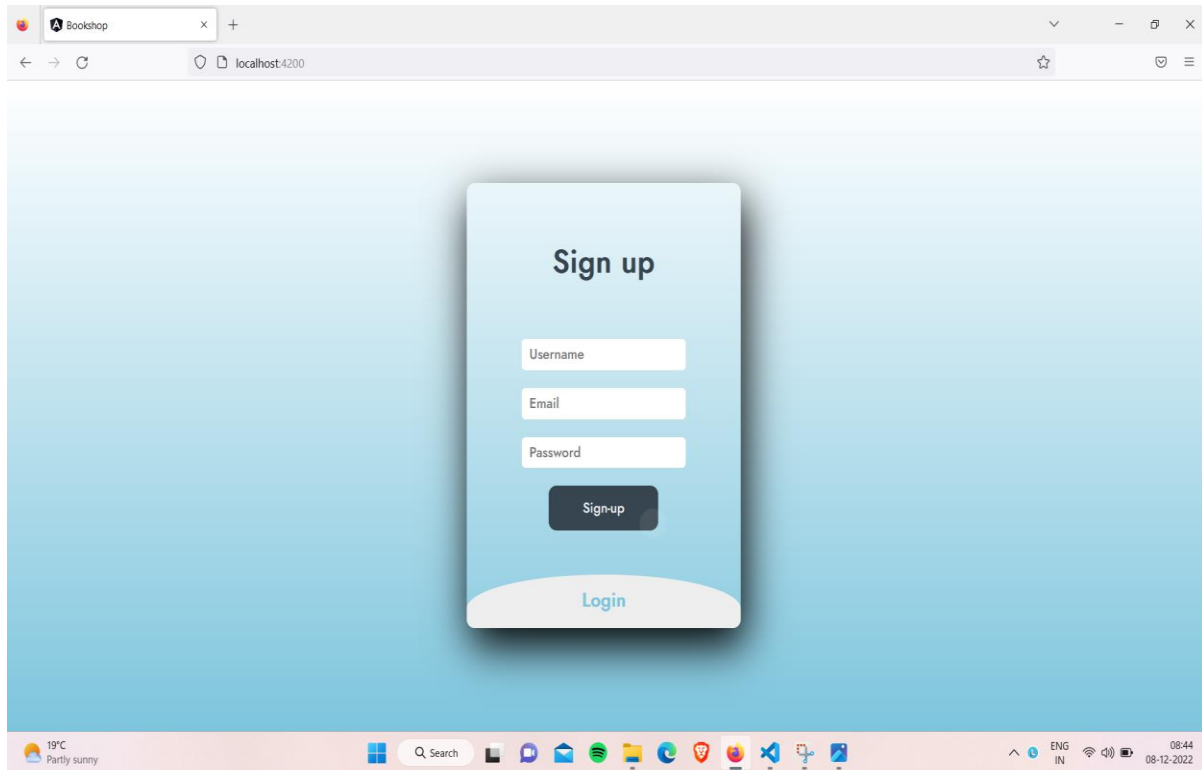
3.3 Modules Description

1. timetable: Displays timetable for all the faculty.
2. user-login: Provides login feature.
3. view-all: Displays all faculty in grid view with their social media.
4. achievement-detail: Used to edit the achievement form.
5. achievement-list: Displays all the available achievements
6. add-achievement: Adds new achievement
7. faculty-detail: Used to edit the faculty form.
8. faculty-list: Displays all the available faculty members.
9. add-faculty: Adds new faculty members.
- 10.contacts-detail: Used to edit the Contacts form.
- 11.contacts-list: Displays all the available contacts
- 12.add-contacts: Adds new contacts.
- 13.research-detail: Used to edit the research form.
- 14.research-list: Displays all the available research on the website.
- 15.add-research: Adds new research.
- 16.publication-detail: Used to edit the achievement form.
- 17.publication-list: Displays all the available achievements
- 18.add-publication: Adds new achievement

4. Results and Discussions

4.1 Results

The screenshots taken after running the angular application have been displayed below.



4.1.1 Sign up page

KLE Technological University
Creating Value, Leveraging Knowledge

FACULTY PROFILE MANAGEMENT

Creating Value, Leveraging Knowledge

All Professors' Details

Id	Name	Email	Department	Mobile	Action
6391500cd4c3bea91b23e1be	Dr. Meena S M	msm@kletech.ac.in	CSE	1234567890	Edit Delete
63915073d4c3bea91b23e1c1	Dr. Satyadhyhan Chikerur	chikerursr@kletech.ac.in	CSE	1234567890	Edit Delete
6391509ed4c3bea91b23e1c4	Ms. Manjula Pawar	manjulap@kletech.ac.in	CSE	1234567890	Edit Delete
639150c9d4c3bea91b23e1c7	Mr. Uday Kulkarni	uday_kulkarni@kletech.ac.in	CSE	1234567890	Edit Delete

4.1.2 Faculty details

KLE Technological University
Creating Value, Leveraging Knowledge

FACULTY PROFILE MANAGEMENT

Creating Value, Leveraging Knowledge

All Publications Details

Id	Paper Name	Publication Year	Publisher	Action
63915318d4c3bea91b23e1d7	Dynamic Ran Slicing	2022	IEEE	Edit Delete
63915333d4c3bea91b23e1da	Image Caption Generation	2022	Springer	Edit Delete
63915347d4c3bea91b23e1dd	Change Detection	2022	IEEE	Edit Delete

4.1.3 Publication details

KLE Technological University
Creating Value, Leveraging Knowledge

FACULTY PROFILE MANAGEMENT

Creating Value, Leveraging Knowledge

All Achievements Details

Id	Desc.	Year	Event	Action
638cc977c4b8aad5555a3a09	Best Paper Award	2022	IEEE	Edit Delete
6391526dd4c3bea91b23e1d0	Best Faculty Award	2021	Annual Event	Edit Delete
639152d0d4c3bea91b23e1d3	Best Workshop Held	2022	PUPA 2k22	Edit Delete

4.1.4 Achievement Details

KLE Technological University
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FACULTY PROFILE MANAGEMENT

Creating Value, Leveraging Knowledge

All Contact Details

Id	Name	Address	Action
6391538ad4c3bea91b23e1e8	Ms Meena S M	Hubli-Dharwad	Edit Delete
639153b6d4c3bea91b23e1ee	Dr Satyadhyhan Chikerur	Hubli- Dharwad	Edit Delete
639153cbd4c3bea91b23e1f1	Ms Manjula Pawar	Hubli- Dharwad	Edit Delete
639153dad4c3bea91b23e1f4	Mr Uday Kulkarni	Hubli- Dharwad	Edit Delete
639153ebd4c3bea91b23e1f7	Mr Prakash Hegade	Hubli- Dharwad	Edit Delete

4.1.5 Contact details

	Monday	Tuesday	Wednesday	Thursday	Friday
P1	CN1 TUT B1 (PPH, ASM) ML LAB B2 (UK, SV)	SE (POD)	SS (GSH)	ML (UK)	SS (GSH)
P2	NLP (PP)	ML (UK)	NLP (PP)	SE (POD)	SS (GSH)
Break					
P3	CN1 TUT B2 (PPH, ASM) ML LAB B1 (UK, SV)	WT LAB B2 (WP, NT) SS LAB B1 (GSH, TAB)	ML (UK)	SS (GSH)	CN1 (PPH)
Lunch					
P4	NLP (PP)	NLP (PP)	NLP (PP)	NLP (PP)	NLP (PP)
P5	NLP (PP)	NLP (PP)	NLP (PP)	NLP (PP)	NLP (PP)

4.1.6 Timetable

4.2 Testing Report

Test cases and their results have been displayed along with the screenshots for the same.

Test Case TU01: Login Successful

```

async function example() {
  let driver = await new Builder().forBrowser("firefox").build();
  await driver.get("http://localhost:4200/");
  await driver.findElement(By.id("s-name")).sendKeys("kushagra", Key.RETURN);
  await driver.findElement(By.id("s-email")).sendKeys("kushagra@gmail.com", Key.RETURN);
  await driver.findElement(By.id("s-pass")).sendKeys("kushagra", Key.RETURN);

  await driver.findElement(By.id("l-email")).sendKeys("kushagra@gmail.com", Key.RETURN);
  await driver.findElement(By.id("l-pass")).sendKeys("kushgara", Key.RETURN);
}
example();

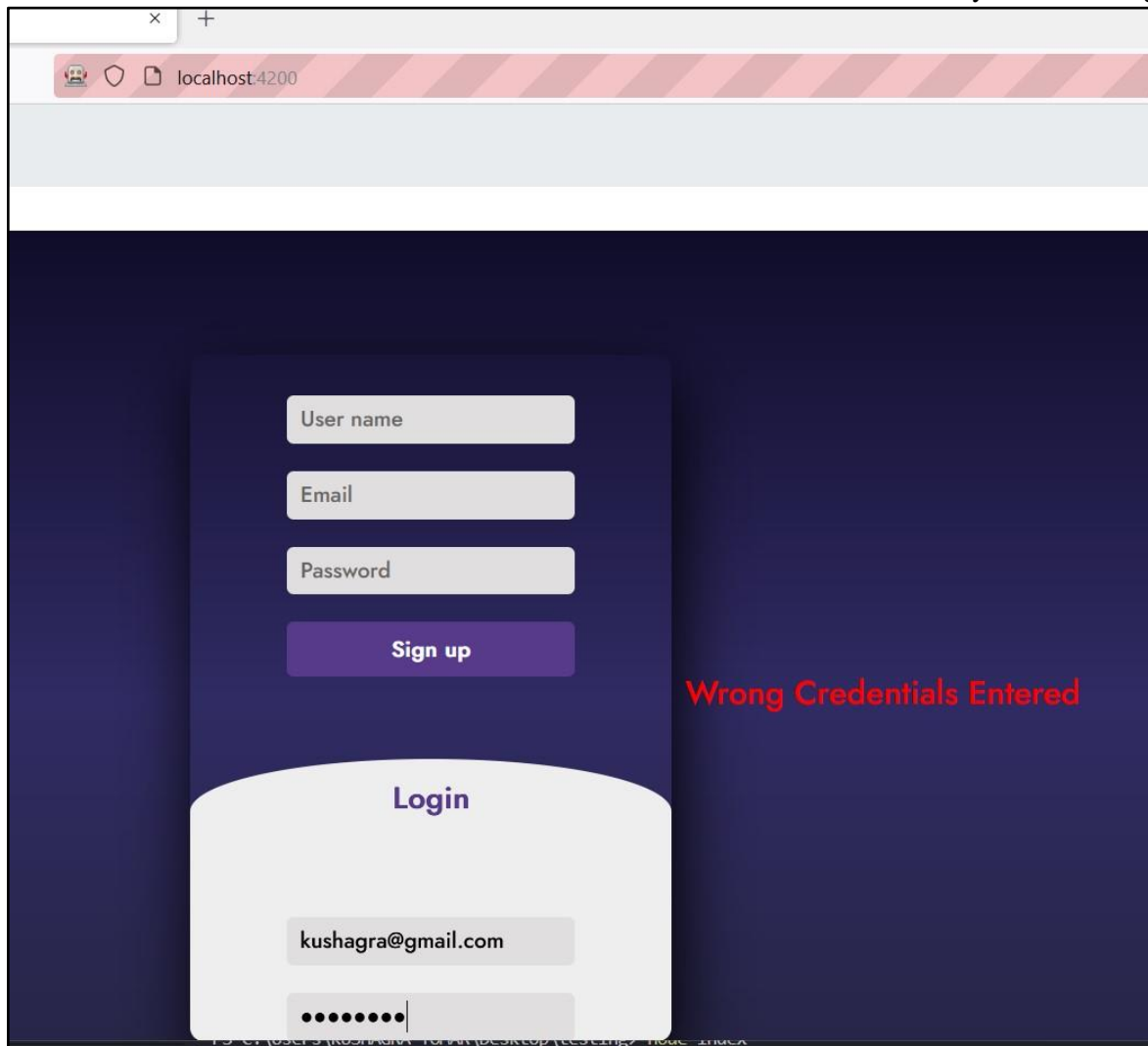
```

1.1 Code snippet.

Test Case TU02: Login Unsuccessful

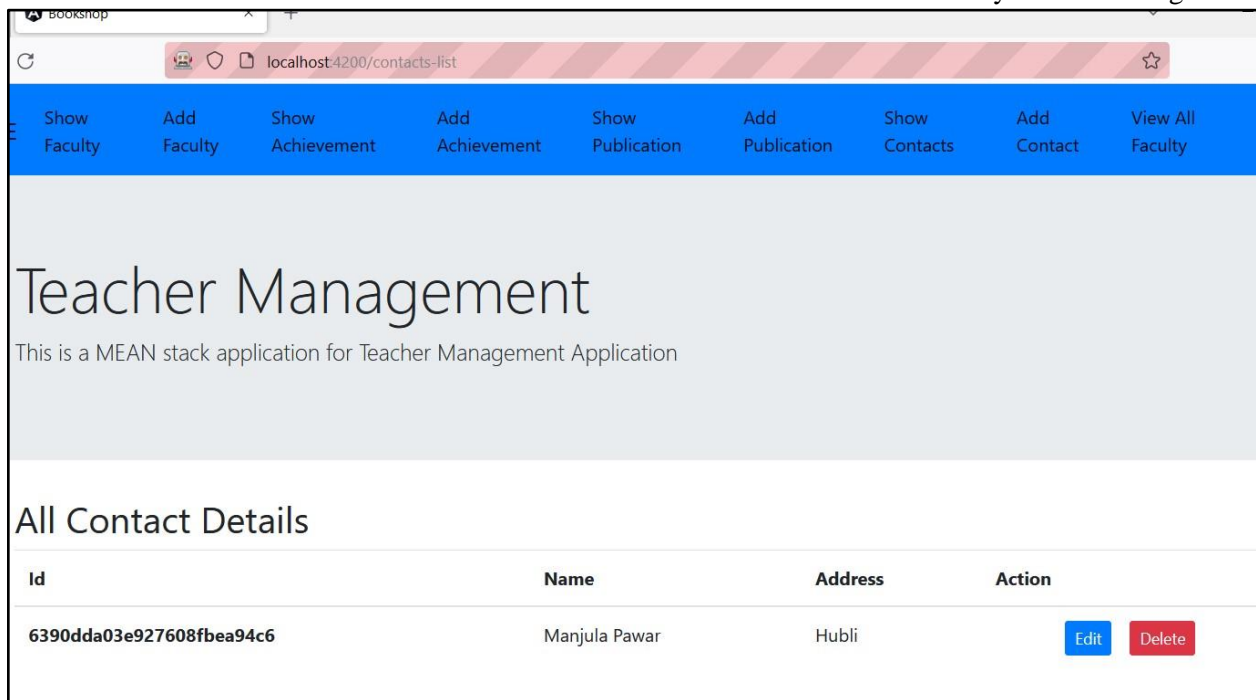
```
async function example() {  
  let driver = await new Builder().forBrowser("firefox").build();  
  await driver.get("http://localhost:4200/");  
  await driver.findElement(By.id("s-name")).sendKeys("pranav",Key.RETURN);  
  await driver.findElement(By.id("s-email")).sendKeys("pranav@gmail.com",Key.RETURN);  
  await driver.findElement(By.id("s-pass")).sendKeys("pranav",Key.RETURN);  
  
  await driver.findElement(By.id("l-email")).sendKeys("kushagra@gmail.com",Key.RETURN);  
  await driver.findElement(By.id("l-pass")).sendKeys("kushgara",Key.RETURN);  
  // await driver.findElement(By.id("l-btn")).click();  
}  
example();
```

2.1 Code snippet



2.2 Screenshot of automated test.

Test Case TU03: Faculty contact gets added



3.1 Screenshot

Test Case TU04: Edit Successful, Record replaced.

```
const {Builder, By, Key, util} = require("selenium-webdriver");

async function example() {
  let driver = await new Builder().forBrowser("firefox").build();
  await driver.get("http://localhost:4200/achievement-list");
  await driver.findElement(By.id("a-edit")).click();
  await driver.findElement(By.id("ed-name")).clear();

  await driver.findElement(By.id("ed-name")).sendKeys("Best Paper Award",Key.RETURN);
}

example();
```

4.1 code snippet

localhost:4200/achievement-list

Show Faculty Add Faculty Show Achievement Add Achievement Show Publication Add Publication Show Contacts Add Contact View All Faculty

Teacher Management

This is a MEAN stack application for Teacher Management Application

All Achievements Details

Id	Desc.	Year	Event	Action
638cc977c4b8aad5555a3a09	Gold Medal	2022	IEEE	Edit Delete

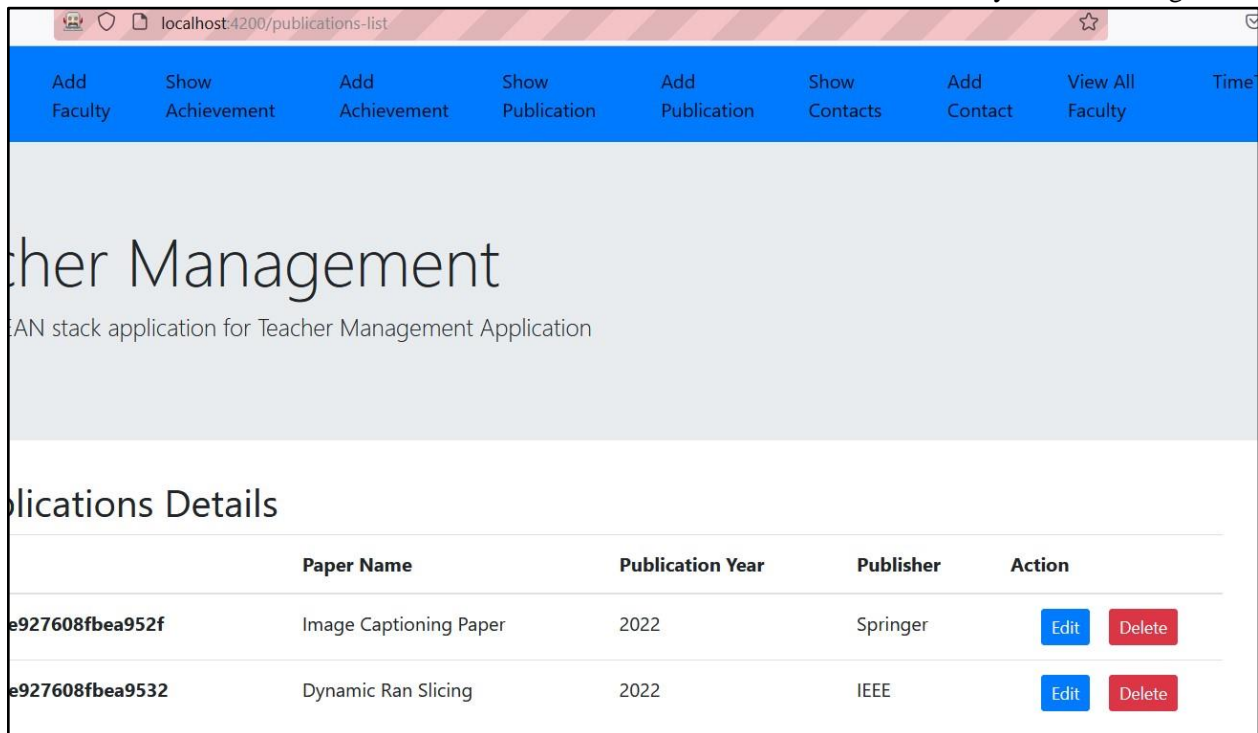
4.2 Before edit

4.3 After edit

The screenshot shows a web browser window with the address bar displaying 'localhost:4200/achievement-list'. The application has a blue navigation bar with the following links: Add Faculty, Show Achievement, Add Achievement, Show Publication, Add Publication, Show Contacts, Add Contact, and View All Faculty. The main content area has a light blue header with the text 'her Management' and 'AN stack application for Teacher Management Application'. Below this is a section titled 'Achievements Details' which contains a table with one row of data.

	Desc.	Year	Event	Action
b8aad5555a3a09	Best Paper Award	2022	IEEE	Edit Delete

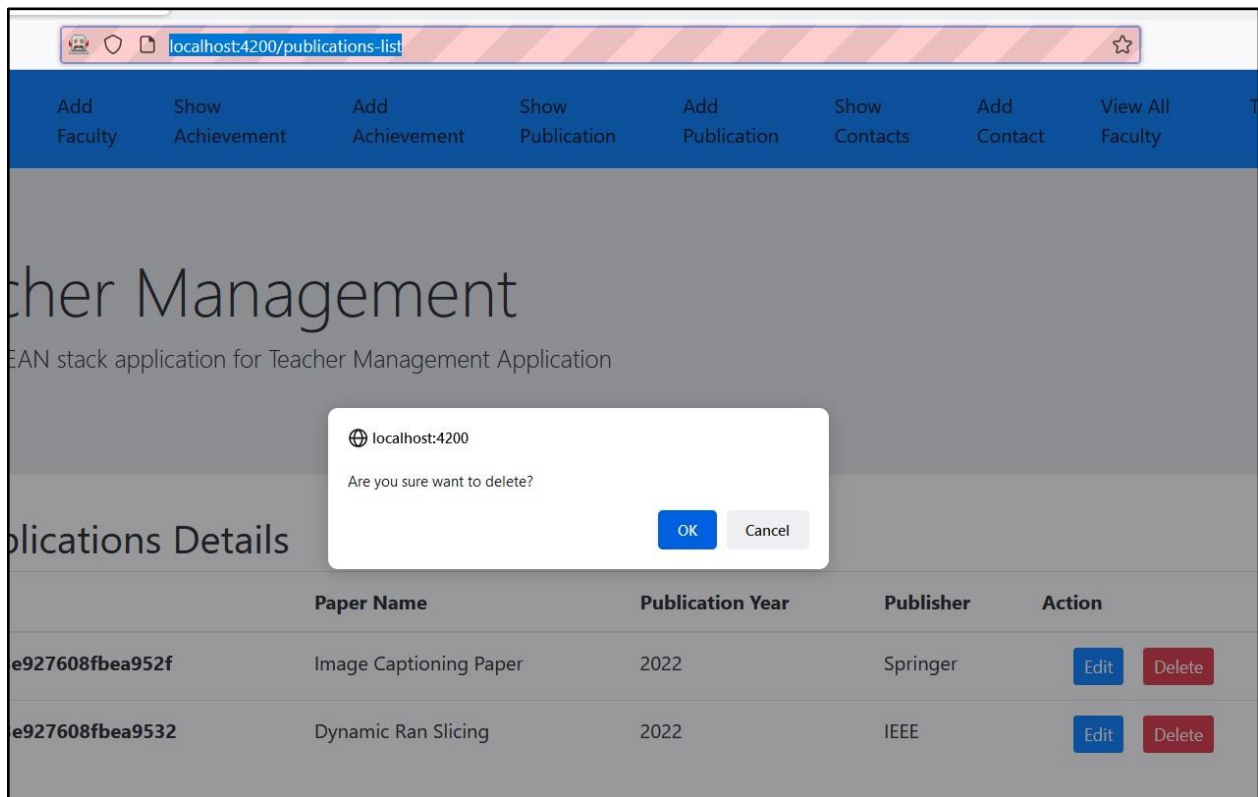
Test Case TU05: Delete record, record removed



The screenshot shows a web application titled "Faculty Profile Management" running on localhost:4200/publications-list. The application has a blue header with navigation links: Add Faculty, Show Achievement, Add Achievement, Show Publication, Add Publication, Show Contacts, Add Contact, View All Faculty, and Time. Below the header, the main content area displays "Teacher Management" and "AAN stack application for Teacher Management Application". The "Publications Details" section contains a table with the following data:

	Paper Name	Publication Year	Publisher	Action
e927608fbea952f	Image Captioning Paper	2022	Springer	Edit Delete
e927608fbea9532	Dynamic Ran Slicing	2022	IEEE	Edit Delete

5.1 Before deleting



The screenshot shows the same web application as before, but with a confirmation dialog box open in the center. The dialog box has a title "localhost:4200" and a message "Are you sure want to delete?". It has two buttons: "OK" and "Cancel". The background content is dimmed, showing the same "Publications Details" table as in the previous screenshot.

5.2 During Deletion

Teacher Management

This is a MEAN stack application for Teacher Management Application

All Publications Details

Id	Paper Name	Publication Year	Publisher	Action
6390edc93e927608fba9532	Dynamic Ran Slicing	2022	IEEE	Edit Delete

5.3 After deleting

```

x.js > ...
const {Builder, By, Key, util} = require("selenium-webdriver");

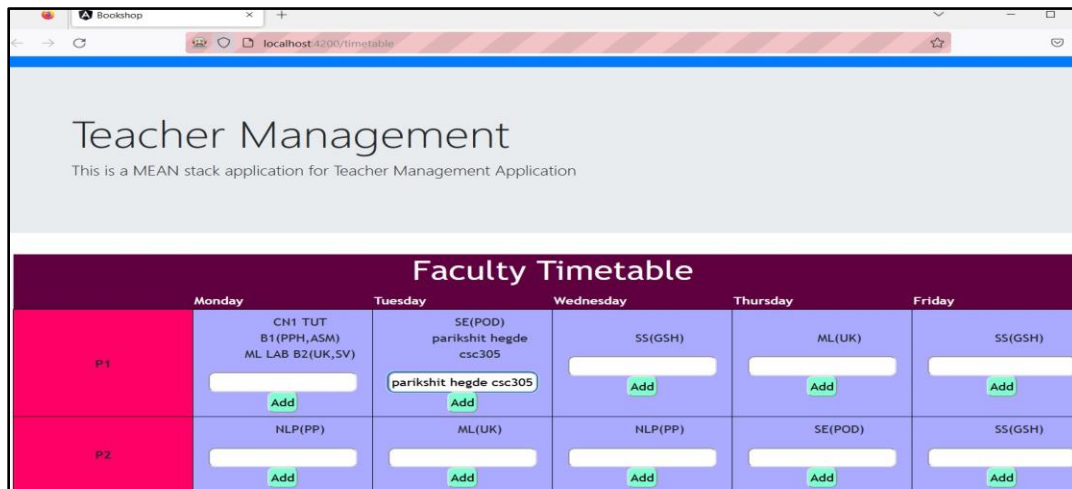
async function example() {
  let driver = await new Builder().forBrowser("firefox").build();
  await driver.get("http://localhost:4200/publications-list");

  await driver.findElement(By.id("pdel")).click();
}

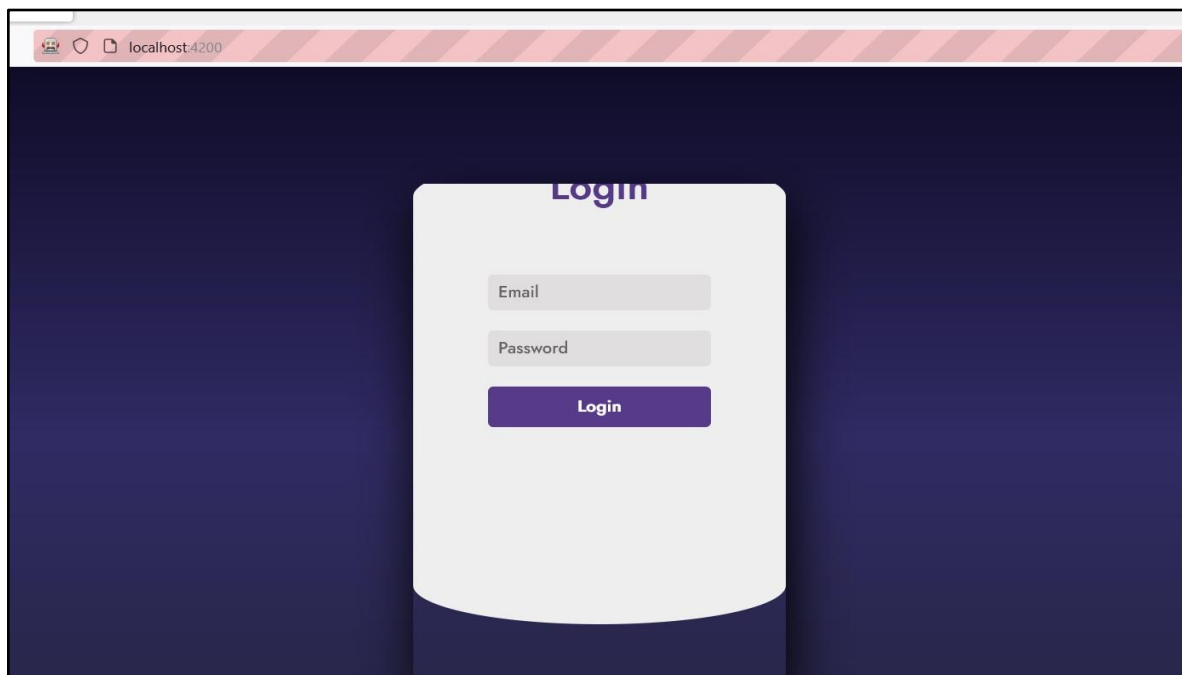
example();

```

5.4 Code snippet

Test Case TU06: Faculty name assigned, Timetable updated


	Monday	Tuesday	Wednesday	Thursday	Friday
P1	CN1 TUT B1 (PPH,ASM) ML LAB B2(UK,SV) <input type="text"/> <input type="button" value="Add"/>	SE(POD) parikshit hegde csc305 <input type="text" value="parikshit hegde csc305"/> <input type="button" value="Add"/>	SS(GSH) <input type="text"/> <input type="button" value="Add"/>	ML(UK) <input type="text"/> <input type="button" value="Add"/>	SS(GSH) <input type="text"/> <input type="button" value="Add"/>
P2	NLP(PP) <input type="text"/> <input type="button" value="Add"/>	ML(UK) <input type="text"/> <input type="button" value="Add"/>	NLP(PP) <input type="text"/> <input type="button" value="Add"/>	SE(POD) <input type="text"/> <input type="button" value="Add"/>	SS(GSH) <input type="text"/> <input type="button" value="Add"/>

Test Case TU07: Login disabled after 3 attempts. “Wrong password” displayed.


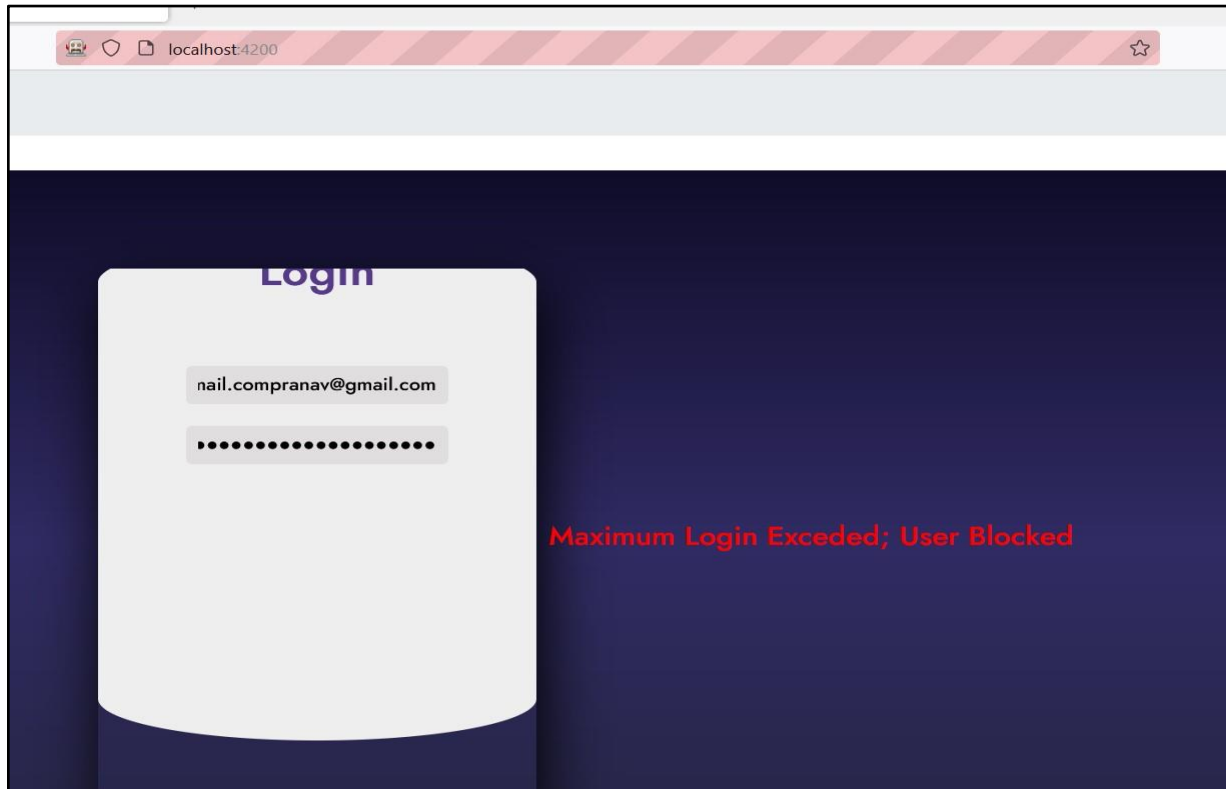
localhost:4200

Login

Email

Password

7.1 before exceeding 3 attempts.



7.2 After exceeding 3 attempts.

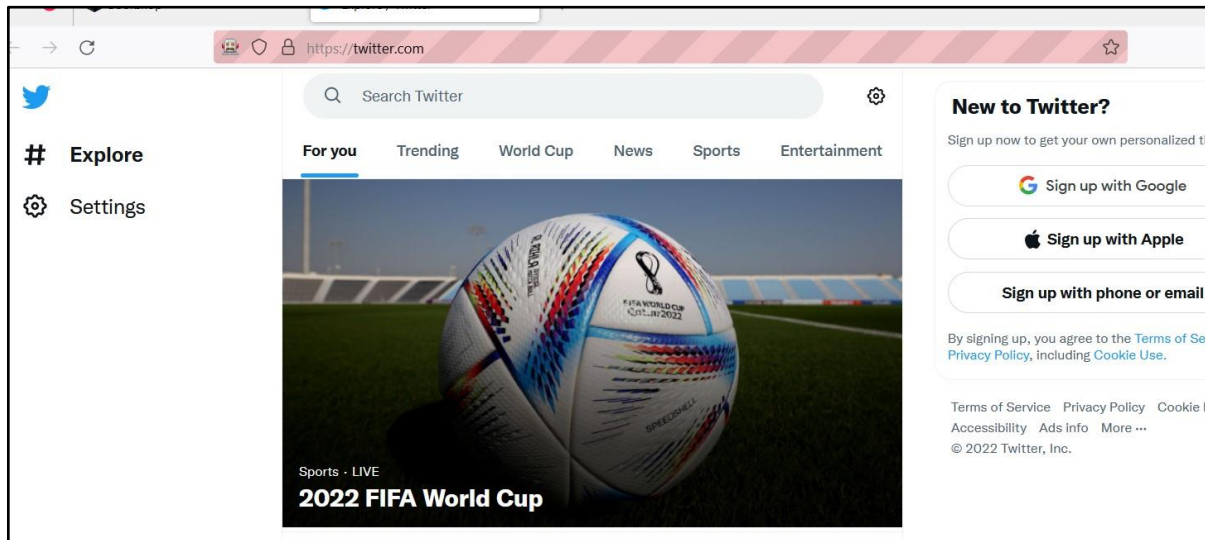
```
example
await driver.get("http://localhost:4200/");

await driver.findElement(By.id("s-name")).sendKeys("kushagra",Key.RETURN);
await driver.findElement(By.id("s-email")).sendKeys("kushagra@gmail.com",Key.RETURN);
await driver.findElement(By.id("s-pass")).sendKeys("kushagra",Key.RETURN);

await driver.findElement(By.id("l-email")).sendKeys("pranav@gmail.com",Key.RETURN);
await driver.findElement(By.id("l-pass")).sendKeys("pranav",Key.RETURN);
await driver.findElement(By.id("l-email")).sendKeys("pranav@gmail.com",Key.RETURN);
await driver.findElement(By.id("l-pass")).sendKeys("pranav",Key.RETURN);
await driver.findElement(By.id("l-email")).sendKeys("pranav@gmail.com",Key.RETURN);
await driver.findElement(By.id("l-pass")).sendKeys("pranav",Key.RETURN);
await driver.findElement(By.id("l-email")).sendKeys("pranav@gmail.com",Key.RETURN);
await driver.findElement(By.id("l-pass")).sendKeys("pranav",Key.RETURN);
await driver.findElement(By.id("l-email")).sendKeys("pranav@gmail.com",Key.RETURN);
await driver.findElement(By.id("l-pass")).sendKeys("pranav",Key.RETURN);
```

7.3 Code snippet.

Test Case TU08: Redirected successfully to twitter.



```
async function example() {  
  let driver = await new Builder().forBrowser("firefox").build();  
  await driver.get("http://localhost:4200/view-all");  
  
  await driver.findElement(By.id("face")).click();  
  await driver.findElement(By.id("twet")).click();  
  await driver.findElement(By.id("inst")).click();  
}  
example();
```

8.1 Redirecting page

4.3 Testing Tool

- The testing tool used for this project is Selenium.
- It automates the testing.
- It is accompanied by Selenium WebDriver, a collection of language specific bindings to drive a browser - the way it is meant to be driven.
- Test cases are written using javascript in selenium.
- Since the browser is firefox, geckodriver had to be installed and configured.

4.4 Continuous Integration and continuous delivery (Jenkins)

A collection of plugins called Jenkins Pipeline enables the integration of continuous delivery pipelines into Jenkins.

A continuous delivery (CD) pipeline is an automated representation of your software delivery process, from version control to users and clients. Every modification to your programme that is committed to source control must pass through a rigorous process before it can be made public. This procedure entails constructing the software in a repeatable and dependable manner and advancing the created program—referred to as a "build"—through several testing and deployment stages.

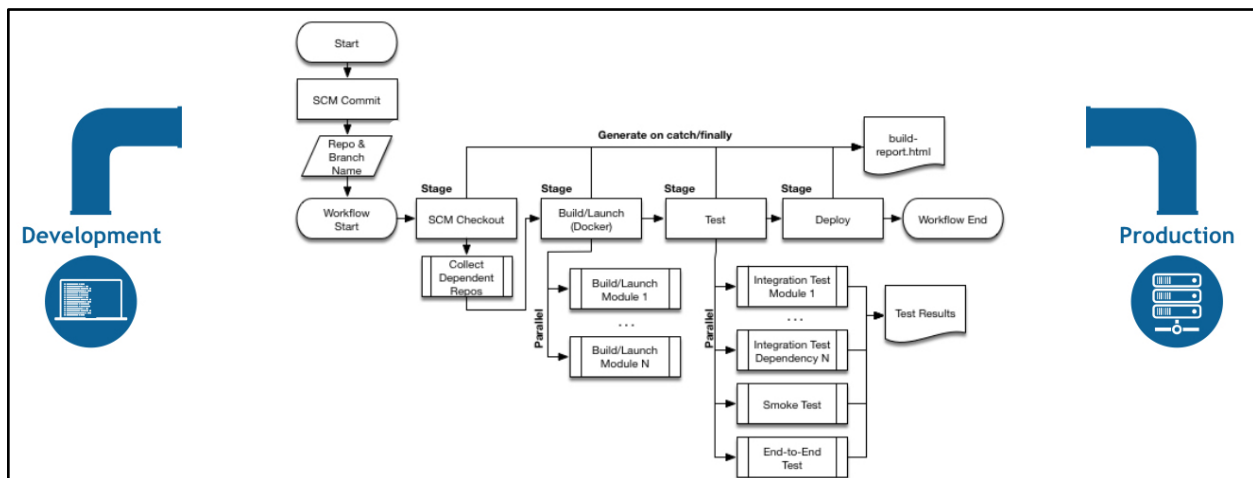


Fig.4.4.1: Jenkins pipeline

Advantages of Jenkins:

Code: Teams may modify, review, and iterate on their delivery pipelines since pipelines are implemented in code and often checked into source control.

Pipelines are resilient; they can withstand planned and unforeseen restarts of the Jenkins controller.

Pausable: Before continuing the Pipeline run, Pipelines may choose to pause and wait for human input or approval.

Pipelines are adaptable because they can fork/join, loop, and execute tasks concurrently, supporting complex real-world CD requirements.

Flexible: The Pipeline plugin has numerous options for integrating with other plugins and supports bespoke additions to its DSL.

5. Conclusions and Future scope

Faculty Profile Management for the faculty of SoCSE, KLE Tech has been demonstrated in this project. The project has been built using Angular. It facilitates the Create, Read, Update and Delete (CRUD) operations over faculty details such as contacts, publications, timetable etc.

The future scope of this project includes extending this project to the entire faculty of KLE Tech.

6. Appendix

1.Roles and responsibilities of team-mates

Frontend: Mayuri, Rakshita and Kushagra

Backend: Kushagra

Testing: Pranav and Kushagra

Report: Rakshita, Mayuri, Pranav