**EX NO: 8**

**DATE:**

**TEST THE SOFTWARE SYSTEM FOR ALL THE SCENARIOS IDENTIFIED AS PER THE USE CASE DIAGRAM**

**AIM :**

To test the software system for all the scenarios identified as per the use case diagram.

**MANUAL TESTING:**

**TEST CASES FOR U1: User Registration and Authentication**

1) Test Case ID: TC\_SYS\_U1\_001

* Unit to be Tested: User Registration & Login
* Assumptions: The user is new to the system
* Test Data: Username, Password, Email ID
* Steps to be Executed:
  + Open the user registration page
  + Enter valid details and submit
  + Login with registered details
* Expected Results:
  + User Registered Successfully
  + User Login Successful
* Actual Result:
  + User Registered Successfully
  + User Login Successful
* Pass / Fail: Pass

**TEST CASES FOR U2: Admin - Add and Delete Student**

2) Test Case ID: TC\_SYS\_U2\_001

* Unit to be Tested: Admin Dashboard - Student Management
* Assumptions: The Admin has valid login credentials
* Test Data: Student Name, ID, Course Details
* Steps to be Executed:
  + Login as Admin
  + Navigate to the "Add Student" section
  + Enter student details and submit
  + Navigate to the "Delete Student" section
  + Select a student and delete
* Expected Results:
  + Student added successfully
  + Student removed successfully
* Actual Result:
  + Student added successfully
  + Student removed successfully
* Pass / Fail: Pass

**TEST CASES FOR U3: Faculty - Add and View Reports**

3) Test Case ID: TC\_SYS\_U3\_001

* Unit to be Tested: Faculty Dashboard - Report Management
* Assumptions: The Faculty has valid login credentials
* Test Data: Report Title, Report Content
* Steps to be Executed:
  + Login as Faculty
  + Navigate to "Add Report"
  + Enter report details and submit
  + Navigate to "View Reports"
  + Verify if the added report is displayed
* Expected Results:
  + Report added successfully
  + Reports displayed correctly
* Actual Result:
  + Report added successfully
  + Reports displayed correctly
* Pass / Fail: Pass

**TEST CASES FOR U4: Student - Course Registration**

4) Test Case ID: TC\_SYS\_U4\_001

* Unit to be Tested: Student Dashboard - Course Registration
* Assumptions: The student has valid login credentials
* Test Data: Available Course List
* Steps to be Executed:
  + Login as Student
  + Navigate to "Course Registration"
  + Select a course and submit
  + Verify that the course is added to the student's profile
* Expected Results:
  + Course successfully registered for the student
* Actual Result:
  + Course successfully registered for the student
* Pass / Fail: Pass

**TEST CASES FOR U5: Logout Functionality**

5) Test Case ID: TC\_SYS\_U5\_001

* Unit to be Tested: Logout Functionality
* Assumptions: User is logged into the system
* Test Data: Valid session
* Steps to be Executed:
  + Click the "Logout" button
  + Verify redirection to the login page
  + Attempt to navigate back to the dashboard (should not be allowed)
* Expected Results:
  + User successfully logged out
  + Redirection to login page
  + Dashboard access restricted after logout
* Actual Result:
  + User successfully logged out
  + Redirection to login page
  + Dashboard access restricted after logout
* Pass / Fail: Pass

**AUTOMATED TESTING CODE IN INTELLIJ (SELENIUM):**

**//LoginTest.java**

package org.example;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.chrome.ChromeDriver;

import org.openqa.selenium.support.ui.ExpectedConditions;

import org.openqa.selenium.support.ui.WebDriverWait;

import io.github.bonigarcia.wdm.WebDriverManager;

import java.time.Duration;

public class LoginTest {

public static void main(String[] args) {

WebDriverManager.chromedriver().setup();

WebDriver driver = new ChromeDriver();

try {

driver.get("https://student-information-system-dun.vercel.app");

System.out.println("Page title: " + driver.getTitle());

testLogin(driver, "Admin Login", "admin", "admin", "/admin");

driver.get("https://student-information-system-dun.vercel.app");

testLogin(driver, "Faculty Login", "faculty", "faculty", "/faculty");

driver.get("https://student-information-system-dun.vercel.app");

testLogin(driver, "Student Login", "student", "student", "/student");

} catch (Exception e) {

System.err.println("Test failed: " + e.getMessage());

e.printStackTrace();

} finally {

driver.quit(); }}

private static void testLogin(WebDriver driver, String loginType,

String username, String password, String expectedPath) {

try {

WebDriverWait wait = new WebDriverWait(driver, Duration.ofSeconds(10));

System.out.println("\nTesting " + loginType + "...");

WebElement loginContainer = wait.until(ExpectedConditions.presenceOfElementLocated(

By.xpath("//div[contains(@class,'login-container')][.//h2[text()='" + loginType + "']]")));

WebElement usernameField = loginContainer.findElement(By.xpath(".//input[@type='text']"));

WebElement passwordField = loginContainer.findElement(By.xpath(".//input[@type='password']"));

WebElement loginButton = loginContainer.findElement(By.xpath(".//button"));

usernameField.clear();

usernameField.sendKeys(username);

passwordField.clear();

passwordField.sendKeys(password);

loginButton.click();

wait.until(ExpectedConditions.urlContains(expectedPath));

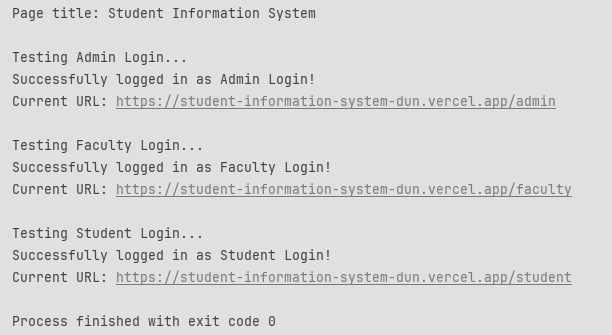
System.out.println("Successfully logged in as " + loginType + "!");

System.out.println("Current URL: " + driver.getCurrentUrl());

} catch (Exception e) {

System.err.println(loginType + " login failed: " + e.getMessage());

throw e; // Re-throw to mark test as failed}}}

**TESTING RESULT:**

**//AddStudentTest.java**

package org.example;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.chrome.ChromeDriver;

import org.openqa.selenium.support.ui.ExpectedConditions;

import org.openqa.selenium.support.ui.WebDriverWait;

import io.github.bonigarcia.wdm.WebDriverManager;

import java.time.Duration;

import java.util.UUID;

public class AddStudentTest {

public static void main(String[] args) {

WebDriverManager.chromedriver().setup();

WebDriver driver = new ChromeDriver();

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

try {

loginAsAdmin(driver);

navigateToStudentInfoPage(driver);

String randomId = UUID.randomUUID().toString().substring(0, 8);

String registerNumber = "STU" + randomId;

String studentName = "Test Student " + randomId;

addNewStudent(driver, registerNumber, studentName, "5", "Computer Science", "2023", "Regular");

System.out.println("Student added successfully. Register Number: " + registerNumber);

} catch (Exception e) {

System.err.println("Test failed: " + e.getMessage());

e.printStackTrace();

} finally {

// Close the browser

driver.quit(); } }

private static void loginAsAdmin(WebDriver driver) {

WebDriverWait wait = new WebDriverWait(driver, Duration.ofSeconds(20));

driver.get("https://student-information-system-dun.vercel.app");

System.out.println("Login page loaded");

WebElement adminContainer = wait.until(ExpectedConditions.presenceOfElementLocated(

By.xpath("//div[contains(@class,'login-container')][.//h2[text()='Admin Login']]")));

adminContainer.findElement(By.xpath(".//input[@type='text']")).sendKeys("admin");

adminContainer.findElement(By.xpath(".//input[@type='password']")).sendKeys("admin");

adminContainer.findElement(By.xpath(".//button")).click();

wait.until(ExpectedConditions.urlContains("/admin"));

System.out.println("Successfully logged in as admin"); }

private static void navigateToStudentInfoPage(WebDriver driver) {

WebDriverWait wait = new WebDriverWait(driver, Duration.ofSeconds(20));

try {

WebElement studentInfoLink = wait.until(ExpectedConditions.elementToBeClickable(

By.xpath("//a[contains(text(),'Student Info') or contains(@href,'/student-info')]")));

studentInfoLink.click();

} catch (Exception e) {

driver.get("https://student-information-system-dun.vercel.app/student-info");

}

wait.until(ExpectedConditions.urlContains("/student-info"));

wait.until(ExpectedConditions.presenceOfElementLocated(

By.xpath("//h2[contains(text(),'Student Details')]")));

System.out.println("Student info page loaded"); }

private static void addNewStudent(WebDriver driver, String registerNumber, String name,

String semester, String dept, String batchYear, String quota) {

WebDriverWait wait = new WebDriverWait(driver, Duration.ofSeconds(20));

wait.until(ExpectedConditions.presenceOfElementLocated(

By.xpath("//input[@placeholder='Register Number']")));

WebElement regNoInput = driver.findElement(By.xpath("//input[@placeholder='Register Number']"));

WebElement nameInput = driver.findElement(By.xpath("//input[@placeholder='Name']"));

WebElement semesterInput = driver.findElement(By.xpath("//input[@placeholder='Current Semester']"));

WebElement deptInput = driver.findElement(By.xpath("//input[@placeholder='Department']"));

WebElement batchInput = driver.findElement(By.xpath("//input[@placeholder='Batch Year']"));

WebElement quotaInput = driver.findElement(By.xpath("//input[@placeholder='Quota']"));

WebElement addButton = driver.findElement(By.xpath("//button[contains(text(),'Add Student')]"));

regNoInput.sendKeys(registerNumber);

nameInput.sendKeys(name);

semesterInput.sendKeys(semester);

deptInput.sendKeys(dept);

batchInput.sendKeys(batchYear);

quotaInput.sendKeys(quota);

addButton.click();

wait.until(ExpectedConditions.textToBePresentInElementValue(regNoInput, ""));

System.out.println("Form submitted successfully for student: " + name);

try {

Thread.sleep(3000); // Short delay to allow data processing

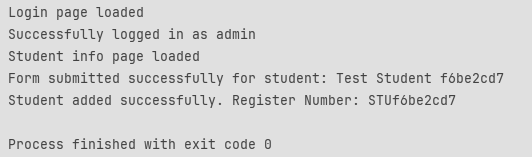
} catch (InterruptedException e) {

e.printStackTrace();

}

}

}

**TESTING RESULT:**

**RESULT:**