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DEPARTMENT OF
INFORMATION AND COMMUNICATION TECHNOLOGY

REPORT ON

WEBSITE TESTING USING SELENIUM WEBDRIVER

SOFTWARE QUALITY ASSURANCE & TESTING LAB

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Abstract

An automated testing tool Selenium IDE or Selenium WebDriver is used to test web application. Java programming language has been used to test an example web application named “**Orange HRM**” using Selenium WebDriver. In order to perform different types of test cases, it is important to design efficient test cases and perform those test cases with corresponding test outputs. Google chrome browser is commonly used to perform the automated testing. In Java, the mostly common used IDE is Netbeans where Selenium java-jar is added to perform the automated testing.

Keywords:

Selenium IDE, Selenium WebDriver, Netbeans, Orange HRM, PIM, KPI, java-jar, Test cases, Test set up, Test results

Introduction to Web Application Testing

Web application testing is a technique that is strictly dedicated to test the web based applications. It tests the application interfaces and other functionalities of applications hosted on the web. This testing process usually consists of multiple steps that ensure that an application is fully functional and runs smoothly and securely without any disturbance. It is a vital part of web development and ensures that an application is running properly before its release. In simple terms, web testing is checking the application for potential bugs before its release. During this stage issues such as security of web application, the site's functionality, its access to handicapped as well as regular users and its ability to handle traffic is checked.

A web-based system needs to be checked completely from end-to-end before it goes live for end users.

Some or all of the following testing types may be performed depending on your web testing requirements.

1. **Functionality testing:** The functions of the systems are tested in this step. It is a Quality Assurance (QA) and a type of black-box testing that bases its test cases on the specifications of the software component under test. The tester feeds it input and examines the output.

Typically, functional testing includes:

- the identification of functions that software is supposed to do
- data input and entry
- the execution of the test case
- an analysis of the actual results

2. **Usability testing:** Usability testing can be carried out by individual testers or small focus groups similar to the target audience of the web application.

Usability testing includes:

- testing the site navigation
- testing the content

3. **Interface testing:** Interface testing ensures the smoothness of the interactions between the web server and application server interfaces. This includes checking the

communication processes as well as making sure that error messages are displayed correctly.

Three areas to be tested here are - Application, Web and Database Server

- **Application:** Test requests are sent correctly to the Database and output at the client side is displayed correctly. Errors if any must be caught by the application and must be only shown to the administrator and not the end user.
 - **Web Server:** Test Web server is handling all application requests without any service denial.
 - **Database Server:** Make sure queries sent to the database give expected results.
4. **Compatibility testing:** Compatibility testing ensures that the web application displays correctly across different devices. This would include:
- Browser compatibility
 - Operating system compatibility
 - Mobile compatibility
5. **Performance testing:** Performance testing will ensure the site works under all loads. Testing activities will include:
- Response time at different connection speeds
 - Load test the application to determine its behavior under normal and peak loads
 - Test if a crash occurs due to peak load
 - How the site recovers
6. **Security testing:** Security testing includes
- Testing unauthorized access to secure pages should not be permitted
 - Restricted files should not be downloadable without appropriate access
 - Check sessions are automatically killed

Example Web Application

For our web application testing process we chose Orange HRM as our example web application. It is a demo HR management site. We can write Selenium webDriver scripts to validate various users and access level test cases from this application.

Website link: <https://opensource-demo.orangehrmlive.com>

The web application “**Orange HRM**” is an open source HR management. There are several functionalities in this web application-

- (i) Admin: In this module, user management, job details, organizational information, qualification and configuration are organized.
- (ii) PIM: Employee list and reports are recorded
- (iii) Leave: Entitlements, leave list, assign leave are maintained
- (iv) Time: Timesheets, attendance, project info are enlisted here
- (v) Recruitment: Candidates and vacancies are enlisted
- (vi) Performance: Manage reviews and employee trackers are evaluated
- (vii) Dashboard: An instant view- quick launch, employee distribution, leave request are provided
- (viii) Directory: Information about board of directors is provided.

Web Application Testing Tool

In order to conduct web application testing successfully, we use various web application testing tools. In our testing process, we used selenium.

Selenium is one of the most popular automated testing suite. Selenium is designed in a way to support and encourage automation testing of functional aspects of web based applications and a wide range of browsers and platforms.

Selenium suite is comprised of 4 basic components; Selenium IDE, Selenium RC, WebDriver, Selenium Grid. Selenium IDE is Firefox add-on for record-and-playback web application tests. WebDriver directly communicates with the web browser and uses its native compatibility to automate.

We used the Selenium webdriver for our process. It is an extension for NetBeans IDE.

Step by step installation process of Selenium IDE.

Selenium is a portable software-testing framework for web applications. Selenium provides a playback (formerly also recording) tool for authoring tests without the need to learn a test scripting language (Selenium IDE). It also provides a test domain-specific language (Selenese) to write tests in a number of popular programming languages, including C#, Groovy, Java, Perl, PHP, Python, Ruby and Scala. The tests can then run against most modern web browsers. Selenium deploys on Windows, Linux, and macOS platform.

Now there is an overview of installing selenium.

1. Open Mozilla Firefox browser.(always open by internet connection)

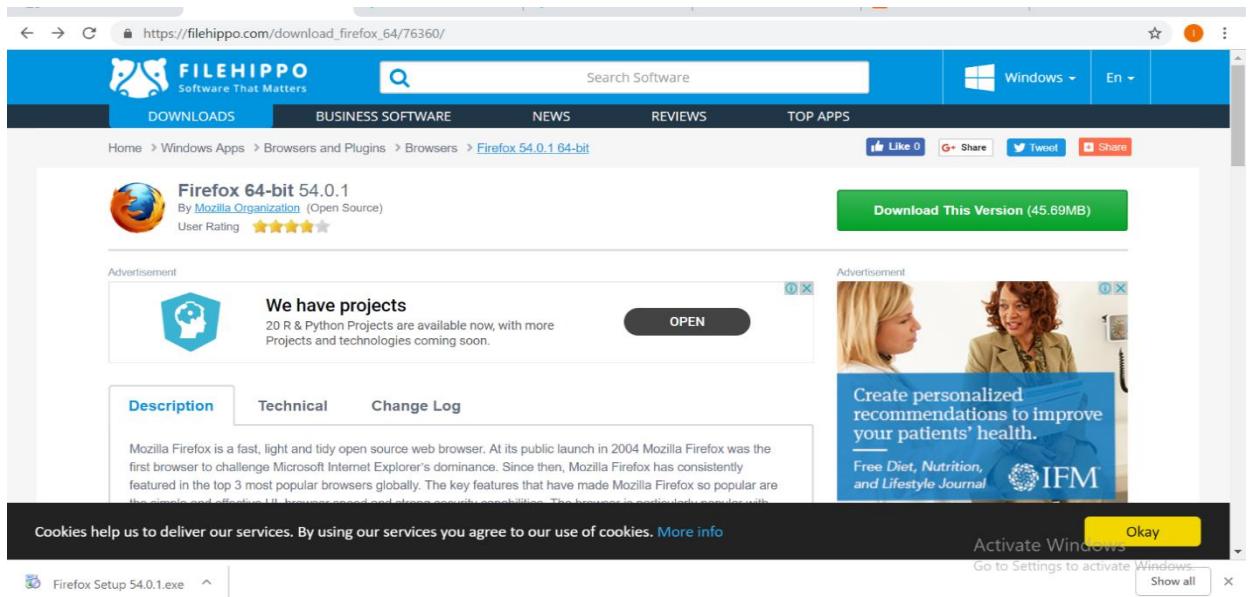


Fig 1.1

2. Download firefox from the link

https://filehippo.com/download_firefox_64/76360/

3. After that "Install" option just click on it.

4. when download finished restart firefox.

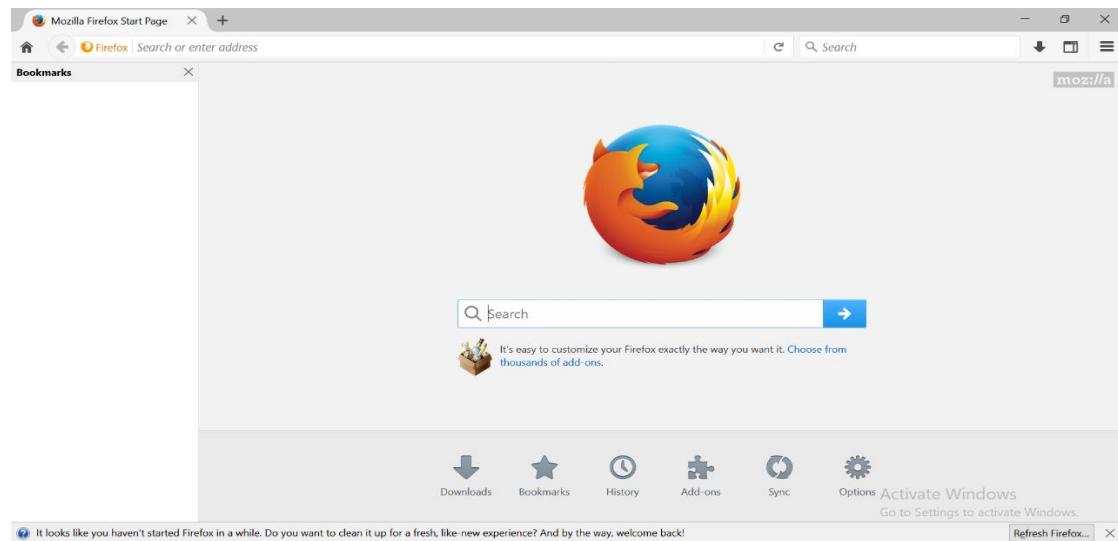


Fig:1.2

5. Open the firefox and search selenium ide by your web browser

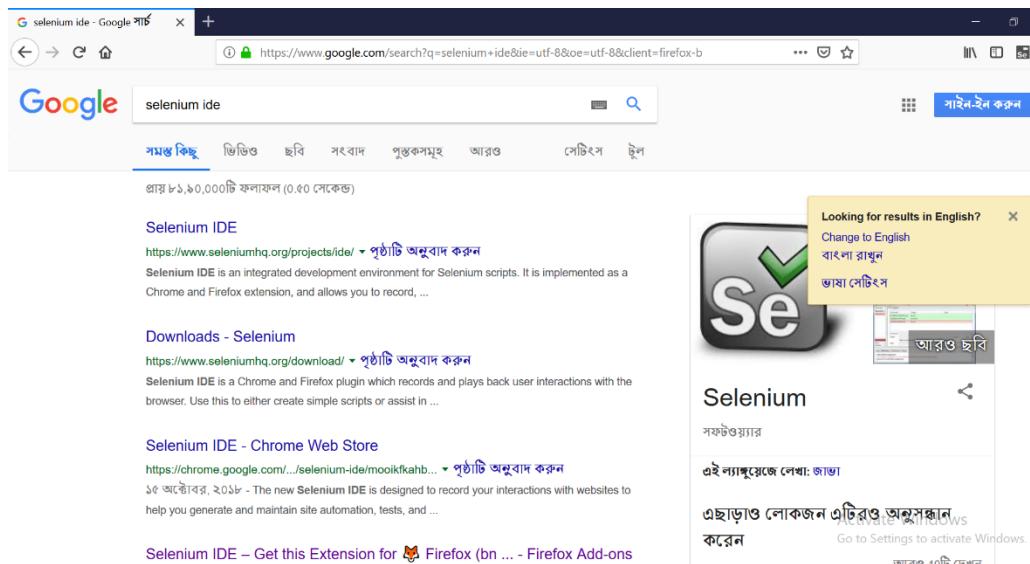


Fig 1.3

6. Then go to this link and the IDE.

<https://addons.mozilla.org/bn-BD/firefox/addon/selenium-ide/>

7. Go to "Tools" and click on "selenium IDE"

8. Give the project name

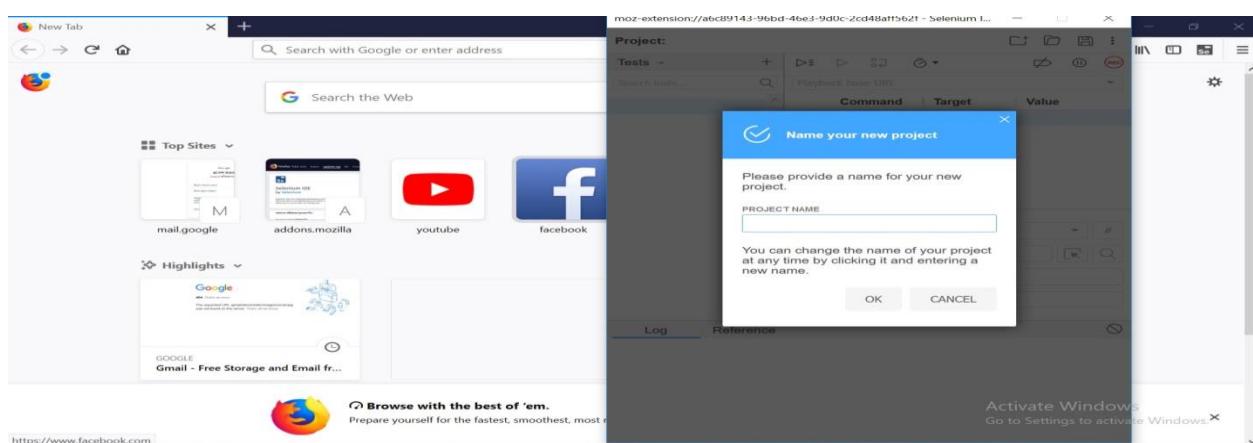


Fig 1.4

9. After successfully given the project name, then give the web app link.

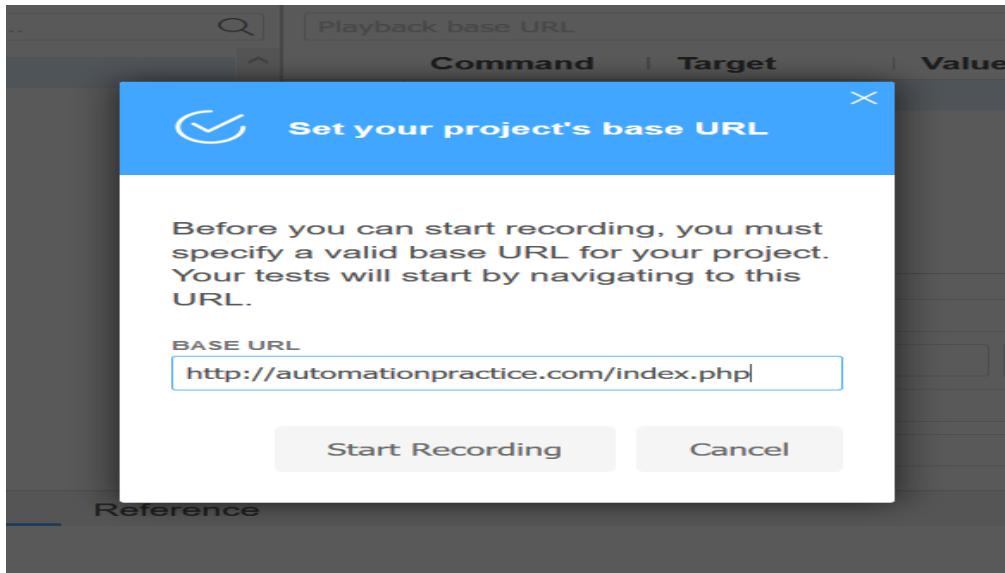


Fig 1.5

<https://opensource-demo.orangehrmlive.com/>

10. After giving the url of the orange HRM project, the project will be automatically opened on Selenium IDE.

The screenshot shows the OrangeHRM dashboard. The top navigation bar includes links for Admin, PIM, Leave, Time, Recruitment, Performance, Dashboard (which is highlighted in orange), and Directory. Below the navigation bar is a large orange header bar. The main content area is titled 'Dashboard'. It features a 'Quick Launch' section with three buttons: 'Assign Leave', 'Leave List', and 'Timesheets'. To the right of this is a pie chart titled 'Employee Distribution by Subunit' with the following data: Administration (33%), Sales (22%), Finance (22%), and IT (22%). A legend on the right side maps colors to subunits: yellow for Administration, light blue for Finance, red for IT, and green for Sales. On the far right, there is a section titled 'Pending Leave Requests' with the message 'No Records are Available'. At the bottom right, it shows '3 month(s)' and 'Total : 0 / 0'.

Fig 1.6

Test Case Design

Testing web application: Orange HRM

Testing website: <https://opensource-demo.orangehrmlive.com/>

Test case design:

Test Case-1:

Test Scenario	Test Cases	Test Data	Expected Result
Authentication	1. Login with incorrect username or password 2. Login with correct username and password	1. Username: admin Password: a 2. Username: Admin Password: admin123	1. Invalid credentials 2. Entering into the Dashboard of the website

Table-4.1: Test case-1

Test Case-2:

Test Scenario	Test Cases	Test Data	Expected Result
Admin Search	1. Search from the given list 2. Reset the search result	1. Username: sir 2. User role: admin 3. User role: ESS 4. Clicking Reset button	1. No records found 2. 1 record will be displayed 3. 9 records will be displayed 4. Search data will be reset

Table-4.2: Test case-2

Test Case-3:

Test Scenario	Test Cases	Test Data	Expected Result
Add/ Delete user	1. Add new user 2.Delete selected user	1.Username: 2.User role: admin 3.User role: ESS 4.Employee name: 5.Status:Enabled 6.Password 7.Select username	1. Successfully added 2. Successfully deleted 3.no user selected

Table-4.3: Test case-3

Test Case-4

Test Scenario	Test Cases	Test Data	Expected Result
Add job title/Delete job title	1.Add new job title 2.Delete existing job title	1.job title 2.job description 3.job specification 4.select job title	1. Successfully saved 2. Successfully deleted

Table-4.4: Test case-4

Test Case-5

Test Scenario	Test Cases	Test Data	Expected Result
Search organization	1.Search location 2.Reset the search result	1.Location name 2.city 3.country 4. clicking Reset button	1.no location found 2.location found 3.Search result will reset

Table-4.5: Test case-5

Test Case-6

Test Scenario	Test Cases	Test Data	Expected Result
Mail Configuration	1.Edit mail Configuration 2. Reset the result	1.Mail sent as: 2.path to sendmail: 3.Sending Method 4. clicking Reset button	1. Edited/Save Successfully 2.no match found 3. result will reset

Table-4.6: Test case-6

Test Case-7

Test Scenario	Test Cases	Test Data	Expected Result
Search Employee	1. Search from the given list 2. Reset the search result	1.employee name: Hannah Flores 2.id: Engineer 3.employee status 4.include:current/past 5.supervisor name 5.job title 6.sub unit 7. clicking Reset button	1. 1 record found 2. No match found 3. Search result will reset

Table-4.7: Test case-7

Test Case -8

Test Scenario	Test Cases	Test Data	Expected Result
Add/Delete Employee	1.Add new employee 2.Delete a selected employee	1.Full name(Mr. X) 2.employee id 3.photograph 4.username 5.password 6.confirm password 7.Status 8.select a employee record (Mr. X)	1.saved successfully 2.required information 3.deleted successfully

Table-4.8: Test case-8

Test Case-9

Test Scenario	Test Cases	Test Data	Expected Result
Employee reports	1. Add a report 2. search report 3. Reset the search result	1.name of report 2.clicking Reset button	1.report successfully added 2. report found 3.Search result will reset

Table-4.9: Test case-9

Test Case-10

Test Scenario	Test Cases	Test Data	Expected Result
Directory	1.Search directory 2. Reset the result	1.name 2.job title 3.location	1. record found 2.no record found 3. Search result will reset

Table-4.10: Test case-10

Test Case -11

Test Scenario	Test Cases	Test Data	Expected Result
performance	1.Search key performance indicators	1.job title	1. no record found

Table-4.11: Test case-11

Test Case -12

Test Scenario	Test Cases	Test Data	Expected Result
performance	1.Add key performance indicator for job title 2. Delete existing performance indicator	1.job title 2.key performance indicator 3.minimum rating 4.maximum rating 5.select record	1.saved successfully 2.delete successfully

Table-4.12: Test case-12

Test Case-13

Test Scenario	Test Cases	Test Data	Expected Result
Manage reviews(performance)	1.search performance reviews 2. Reset the result	1.employee name 2.job title 3.status 4.required date 5.reviewer 6. .clicking Reset button	1. no record found 2.Search result will reset

Table-4.13: Test case-13

Test Case-14

Test Scenario	Test Cases	Test Data	Expected Result
Leave	1.Leave List 2.Leave Entitlements & usage report	1.From Date: 2015-08-03 2.To Date: 2015-10-01 3.Leave Type 4.Vacation US 5.In the year 2015	1. 2 record found 2.13 records found

Table-4.14: Test case-14

Test Case-15

Test Scenario	Test Cases	Test Data	Expected Result
Time	1.Timesheets	1.Employee Name: Test User	1. No Timesheets Found

Table-4.15: Test case-15

Test Case-16

Test Scenario	Test Cases	Test Data	Expected Result
Time	1.Project Info	1.Customer Name: Mrs. N 2.Project Name: White Elephant Project	1. A new record is inserted successfully

Table-4.16: Test case-16

Test Case-17

Test Scenario	Test Cases	Test Data	Expected Result
Recruitment	1.Vacancies	1.Job Title: CEO 2.Vacancy Name: Managing Director 3.Hiring Manager: Russel Hamilton	1. A new record is inserted successfully

Table-4.17: Test case-17

Test Case-18

Test Scenario	Test Cases	Test Data	Expected Result
Dashboard	1.Navigate to Leave list 2.Navigate to Timesheets	1.Clicking the link for leave list 2. Clicking the link for timesheets	Navigating to the corresponding URL

Table-4.18: Test case-18

Test Case-19

Test Scenario	Test Cases	Test Data	Expected Result
Official website of Orange HRM	1.Navigate to official website of Orange HRM	1.Clicking the link given as an Image	Navigating to the corresponding URL

Table-4.19: Test case-19

Test Case-20

Test Scenario	Test Cases	Test Data	Expected Result
Logout	1.Loggin out of Orange HRM	1.Clicking the link Logout	Navigating to the Login page

Table-4.20: Test case-20

Test Result Output:

Test Case-1: Authentication

1. Incorrect username/password results “Invalid Credentials”.

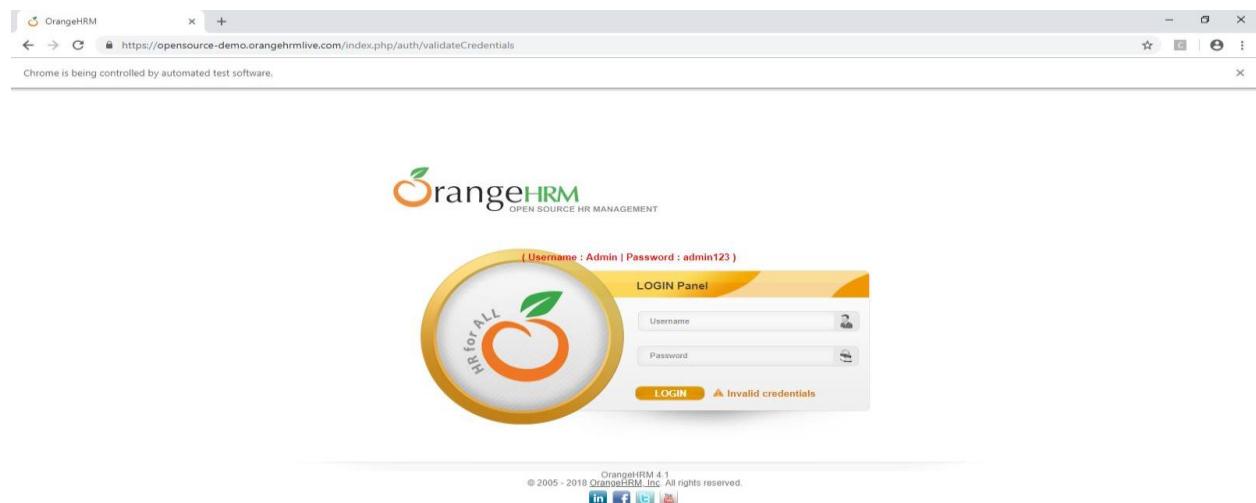


Fig-5.1: Incorrect username/password

2. Correct Username: Admin and password: admin123 results opening the Dashboard of the website.

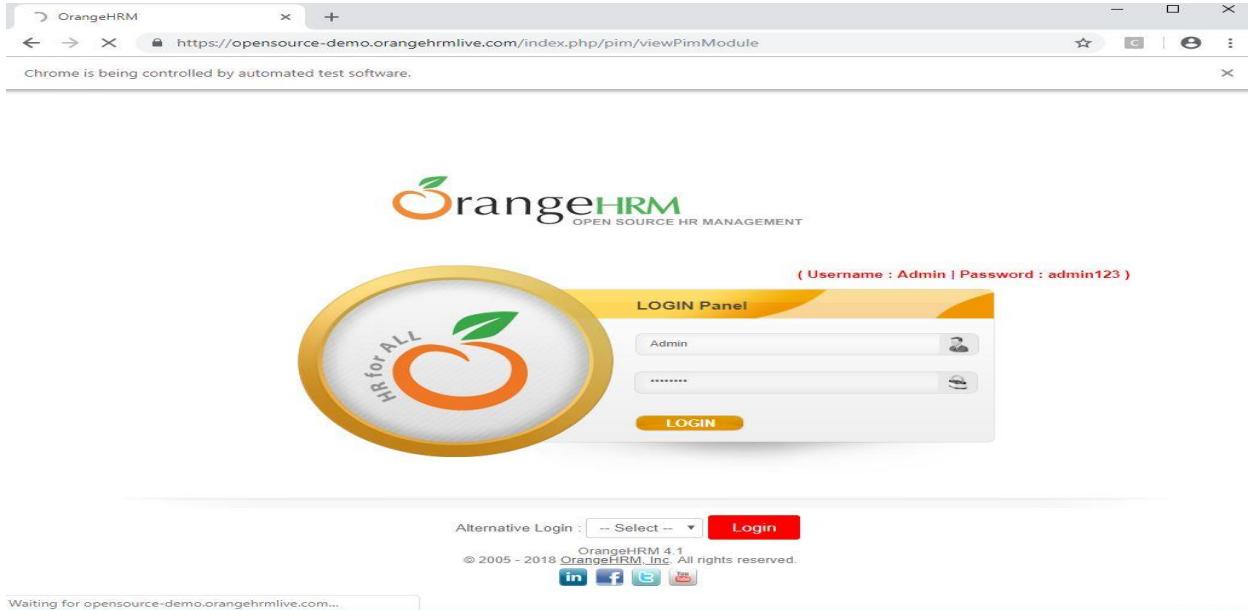


Fig-5.2: Correct Username and password

The screenshot shows a web browser window for OrangeHRM. The URL is https://opensource-demo.orangehrmlive.com/index.php/pim/viewEmployeeList. The title bar says "OrangeHRM". The page features the OrangeHRM logo and a navigation menu with tabs: Admin, PIM (highlighted), Leave, Time, Recruitment, Performance, Dashboard, and Directory. Below the menu, a sub-menu shows Configuration, Employee List (highlighted), Add Employee, and Reports. A "Welcome Admin" message is on the right. The main content area is titled "Employee Information" and includes search fields for Employee Name, Supervisor Name, Id, Job Title, Employment Status, Sub Unit, and Include. Below this is a search bar with "Search" and "Reset" buttons. The main table area has "Add" and "Delete" buttons at the top. The table lists employee data:

	ID	First & Middle Name	Last Name	Job Title	Employment Status	Sub Unit	Supervisor
<input type="checkbox"/>	0001	Linda	Anderson	HR Manager	Full-Time Permanent	Administration	John Smith
<input type="checkbox"/>	0006	Robert	Craig	Sales Manager	Full-Time Permanent	Sales	John Smith
<input type="checkbox"/>	0004	Steven	Edwards	Finance Manager	Full-Time Permanent	Finance	John Smith
<input type="checkbox"/>	0005	Thomas	Fleming	IT Manager	Full-Time Contract	IT	John Smith
<input type="checkbox"/>	0002	Hannah	Flores	IT Executive	Full-Time Permanent	IT	Thomas Fleming

Fig-5.3: Results opening Dashboard of the website

```

Selenium - NetBeans IDE 8.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Projects X Files Services Start Page Login.java
Calculate GAE Test getting-started Java Interface JavaApplication2 MavenJF_WebProject MavenTest Maven Webapp ProjectBank4Account Selenium
Source Packages com.testing Login.java Test Packages Libraries client-combined-3.14.1-5-sources.jar client-combined-3.14.1.jar client-buddy-1.8.15.jar commons-exec-1.3.jar guava-25.0-jre.jar okhttp-3.11.0.jar okio-1.14.0.jar JDK 1.8 (Default) Test Libraries UVAOnlineJudge
main - Navigator Members <empty>
Login main(String[] args)
Output - Selenium (run)
run:
Starting ChromeDriver 2.43.600210 (60dcf5eebde37173d4027fa8635e332711d2874a) on port 5297
Only local connections are allowed.
Nov 10, 2018 1:01:50 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: OSS
OrangeHRM
BUILD SUCCESSFUL (total time: 46 seconds)

```

Fig-5.4: Title of the page (Orange HRM)

Test Case-2: Admin Search

- Search from the given list: Username: sir

OrangeHRM OPEN SOURCE HR MANAGEMENT

Welcome Admin

Admin PIM Leave Time Recruitment Performance Dashboard Directory

User Management Job Organization Qualifications Nationalities Configuration

System Users

Username	User Role	Employee Name	Status
sir	All	Type for hints...	All

Search **Reset**

Add Delete

Username	User Role	Employee Name	Status
No Records Found			

OrangeHRM 4.1
© 2005 - 2018 OrangeHRM Inc. All rights reserved.

<https://opensource-demo.orangehrmlive.com/index.php/admin/viewAdminModule>

Fig-5.5: No Records Found with searching username: sir

```

public class AdminSearchSir {
    public static void main(String args[]) throws InterruptedException {
        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
        driver.findElement(By.xpath("//*[@id='btnLogin']")).click();

        driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

        driver.findElement(By.xpath("//*[@id='searchSystemUser_userName']")).sendKeys("sir");

        driver.findElement(By.xpath("//*[@id='searchBtn']")).click();

        //driver.quit();
    }
}

```

Fig-5.6: Code for searching username: sir

2. Search from the given list with User Role: Admin that results 1 record

The screenshot shows a web browser window for the OrangeHRM application. The URL is https://opensource-demo.orangehrmlive.com/index.php/admin/viewSystemUsers. The page title is 'OrangeHRM - OPEN SOURCE HR MANAGEMENT'. The top navigation bar includes links for Admin, PIM, Leave, Time, Recruitment, Performance, Dashboard, and Directory. A sub-menu for 'User Management' is open, showing options like Job, Organization, Qualifications, Nationalities, and Configuration. The main content area is titled 'System Users' and contains a search form with fields for Username, User Role (set to 'Admin'), Employee Name, and Status (set to 'All'). Below the search form are 'Search' and 'Reset' buttons. A table lists one user record: 'Admin' with 'User Role' 'Admin' and 'Employee Name' 'Type hints...' and 'Status' 'Enabled'. At the bottom of the page, there are 'Add' and 'Delete' buttons, and a footer note: '© 2005 - 2018 OrangeHRM Inc. All rights reserved.'

Username	User Role	Employee Name	Status
Admin	Admin	Type hints...	All

Fig-5.7: 1 record with searching user role: Admin

```

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

        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']]")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']]")).sendKeys("admin123");
        driver.findElement(By.xpath("//*[@id='btnLogin']]")).click();

        driver.findElement(By.xpath("/html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

        Select select = new Select(driver.findElement(By.id("searchSystemUser_userType")));
        select.selectByIndex(1);

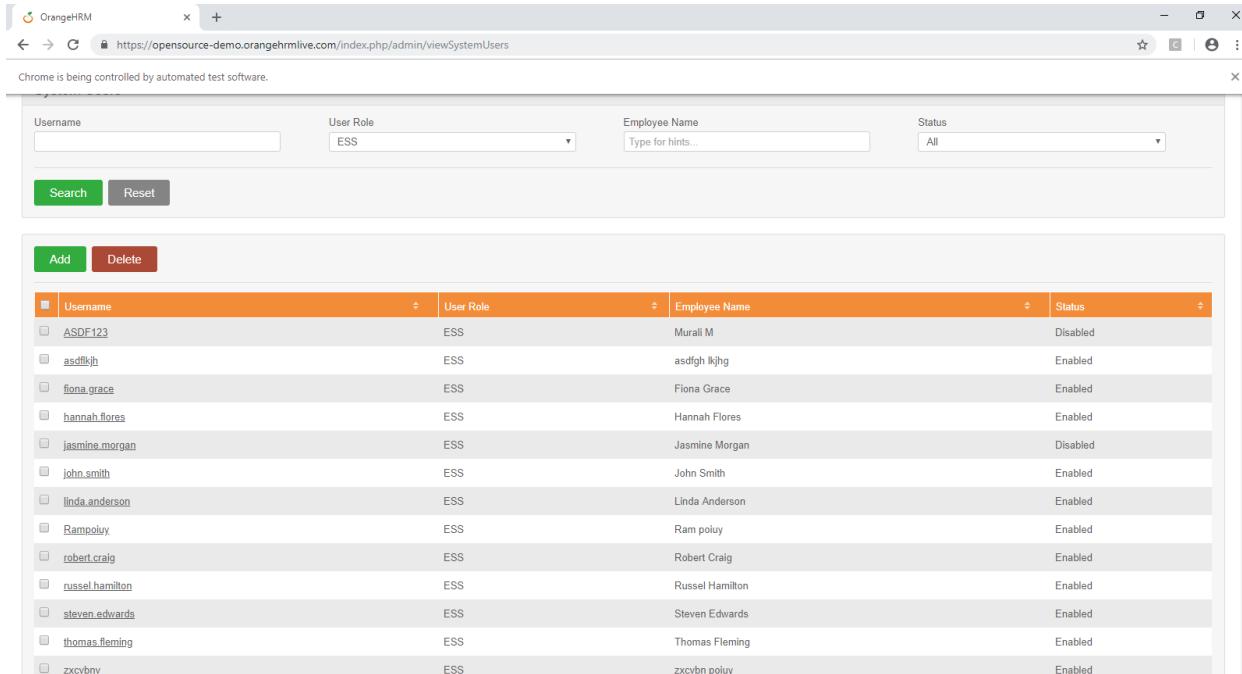
        driver.findElement(By.xpath("//*[@id='searchBtn']]")).click();

        //driver.quit();
    }
}

```

Fig-5.8: Code for searching with User Role: Admin

3. Search from the given list with User Role: ESS that results 9 records.



The screenshot shows a web browser window for the OrangeHRM application. The URL is https://opensource-demo.orangehrmlive.com/index.php/admin/viewSystemUsers. The page displays a search interface with fields for Username, User Role (set to ESS), Employee Name, and Status (All). Below the search bar are 'Search' and 'Reset' buttons. The main area shows a table of user records:

	Username	User Role	Employee Name	Status
<input type="checkbox"/>	ASDF123	ESS	Murali M	Disabled
<input type="checkbox"/>	asdflikjh	ESS	asdfgh lkjhg	Enabled
<input type="checkbox"/>	fiona.grace	ESS	Fiona Grace	Enabled
<input type="checkbox"/>	hannah.fl ores	ESS	Hannah Flores	Enabled
<input type="checkbox"/>	jasmine.morgan	ESS	Jasmine Morgan	Disabled
<input type="checkbox"/>	john.smith	ESS	John Smith	Enabled
<input type="checkbox"/>	linda.anderson	ESS	Linda Anderson	Enabled
<input type="checkbox"/>	Rampoly	ESS	Ram poliy	Enabled
<input type="checkbox"/>	robert.craig	ESS	Robert Craig	Enabled
<input type="checkbox"/>	russel.hamilton	ESS	Russel Hamilton	Enabled
<input type="checkbox"/>	steven.edwards	ESS	Steven Edwards	Enabled
<input type="checkbox"/>	thomas.fleming	ESS	Thomas Fleming	Enabled
<input type="checkbox"/>	zxcvbn	ESS	zxcvbn poliy	Enabled

Fig-5.9: 9 records with searching user role: ESS

```

public class AdminSearchESS {
    public static void main(String args[]) throws InterruptedException {
        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
        driver.findElement(By.xpath("//*[@id='btnLogin']")).click();

        driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

        Select select = new Select(driver.findElement(By.id("searchSystemUser_userType")));
        select.selectByIndex(2);

        driver.findElement(By.xpath("//*[@id='searchBtn']")).click();
    }
}

```

Fig-5.10: Code for searching with User Role: ESS

4. Reset the previous search result by clicking Reset button.

Username	User Role	Employee Name	Status
Admin	Admin		Enabled
ASDF123	ESS	Murali M	Disabled
asdfkjh	ESS	asdfgh lkjhg	Enabled
fiona.grace	ESS	Fiona Grace	Enabled
hannah.flores	ESS	Hannah Flores	Enabled
jasmine.morgan	ESS	Jasmine Morgan	Disabled
john.smith	ESS	John Smith	Enabled

Fig-5.11: Reset search result

```

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

        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
        driver.findElement(By.xpath("//*[@id='btnLogin']")).click();

        driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

        Select select = new Select(driver.findElement(By.id("searchSystemUser_userType")));
        select.selectByIndex(2);

        driver.findElement(By.xpath("//*[@id='searchBtn']")).click();
        driver.findElement(By.xpath("//*[@id='resetBtn']")).click();

    }
}

```

Fig-5.12: Code for Reset search result

Test Case-3: Add/Delete user

1. Add user with the values:

User Role: Admin

Employee Name: Jasmine Morgan

Username: Mr.abcd

Status: Enabled

The screenshot shows the OrangeHRM User Management interface. The URL in the browser is https://opensource-demo.orangehrmlive.com/index.php/admin/saveSystemUser. The page title is 'OrangeHRM OPEN SOURCE HR MANAGEMENT'. The top navigation bar includes links for Admin, PIM, Leave, Time, Recruitment, Performance, Dashboard, and Directory. A sub-navigation bar for User Management shows 'User Management' as the active tab, along with Job, Organization, Qualifications, Nationalities, and Configuration. On the right, it says 'Welcome Admin'. The main content area is titled 'Add User'. It contains the following form fields:

User Role *	Admin
Employee Name *	Jasmine Morgan
Username *	Mr.abcd
Status *	Enabled
Password	<small>For a strong password, please use a hard to guess combination of text with upper and lower case characters, symbols and numbers.</small>
Confirm Password	

* Required field

Save Cancel

Fig-5.13: Add a new user

```

public class AdminAdd {
    public static void main(String args[]) throws InterruptedException {
        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']]")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']]")).sendKeys("admin123");

        driver.findElement(By.xpath("//*[@id='btnLogin']]")).click();

        driver.findElement(By.xpath("/html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

        driver.findElement(By.xpath("//*[@id='btnAdd']]")).click();

        Select select = new Select(driver.findElement(By.id("systemUser_userType")));
        select.selectByIndex(0);

        driver.findElement(By.xpath("//*[@id='systemUser_employeeName_empName']]")).sendKeys("Jasmine Morgan");
        driver.findElement(By.xpath("//*[@id='systemUser_userName']]")).sendKeys("Mr.abcd");

        WebElement submit = driver.findElement(By.id("btnSave"));
        submit.click();
    }
}

```

Fig-5.14: Code for adding a new user

2. Delete a selected user

Username: Mr.abcd

<input type="checkbox"/>	Username	User Role	Employee Name	Status
<input type="checkbox"/>	Admin	Admin		Enabled
<input type="checkbox"/>	ASDF123	ESS	Murali M	Disabled
<input type="checkbox"/>	asdflkjh	ESS	asdflkjhg	Enabled
<input type="checkbox"/>	fiona.grace	ESS	Fiona Grace	Enabled
<input type="checkbox"/>	hannah.flores	ESS	Hannah Flores	Enabled
<input type="checkbox"/>	jasmine.morgan	ESS	Jasmine Morgan	Disabled
<input type="checkbox"/>	john.smith	ESS	John Smith	Enabled
<input type="checkbox"/>	linda.anderson	ESS	Linda Anderson	Enabled
<input checked="" type="checkbox"/>	Mr.abcd	Admin	Jasmine Morgan	Enabled
<input type="checkbox"/>	Rampoluy	ESS	Ram poluy	Enabled
<input type="checkbox"/>	robert.craig	ESS	Robert Craig	Enabled
<input type="checkbox"/>	russel.hamilton	ESS	Russel Hamilton	Enabled
<input type="checkbox"/>	steven.edwards	ESS	Steven Edwards	Enabled
<input type="checkbox"/>	thomas.fleming	ESS	Thomas Fleming	Enabled
<input type="checkbox"/>	zxcvbnm	ESS	zxcvbn poluy	Enabled

Fig-5.15: Delete the selected user

```

public static void main(String args[]) throws InterruptedException {
    System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
    WebDriver driver = new ChromeDriver();
    driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

    driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
    driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");

    driver.findElement(By.xpath("//*[@id='btnLogin']")).click();

    driver.findElement(By.xpath("/html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

    WebElement check = driver.findElement(By.id("ohrmList_chkSelectRecord_40"));

    if (check.isSelected()) {
        System.out.println("Checkbox is Toggled On");
    } else {
        System.out.println("Checkbox is Toggled Off");
    }

    check.click();

    driver.findElement(By.xpath("//*[@id='btnDelete']")).click();
    driver.findElement(By.xpath("//*[@id='dialogDeleteBtn']")).click();
}

}

```

Fig-5.16: Code for deleting the selected user

Test Case-4: Add/Delete job title

1. Add a new job title:

The screenshot shows the OrangeHRM Admin interface with the following details:

- Page Title:** OrangeHRM
- URL:** https://opensource-demo.orangehrmlive.com/index.php/admin/saveJobTitle
- User:** Welcome Admin
- Menu:** Admin (selected), PIM, Leave, Time, Recruitment, Performance, Dashboard, Directory
- Sub-Menu:** User Management > Job
- Form Title:** Add Job Title
- Form Fields:**
 - Job Title: ICT
 - Job Description: (Empty text area)
 - Job Specification: Choose File (No file chosen) - Accepts up to 1MB
 - Note: (Empty text area)
- Buttons:** Save, Cancel

Fig-5.17: Add job title: ICT

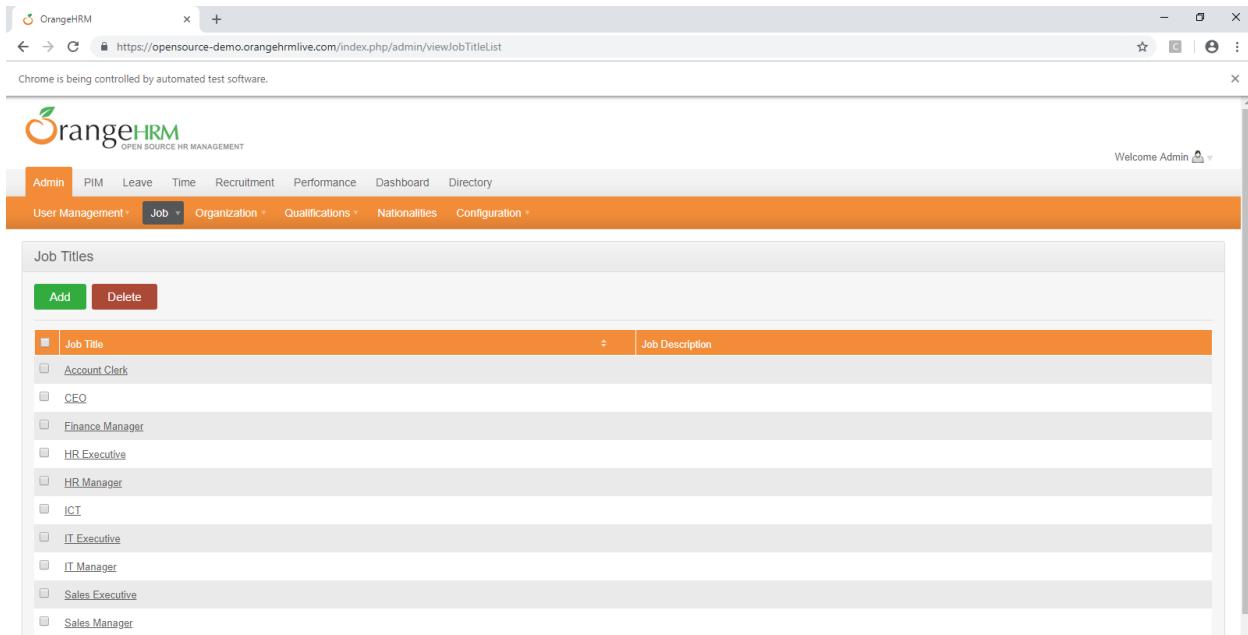


Fig-5.18: Successfully add job title: ICT

The screenshot shows the NetBeans IDE interface with the title 'Selenium - NetBeans IDE 8.2'. The code editor displays a Java class named 'AdminAddJob'. The code implements a main method that sets the webdriver to Chrome, opens the OrangeHRM login page, logs in with 'admin' and 'admin123', navigates to the job title list, and adds a new job title 'ICT'. The output window at the bottom shows the command to start ChromeDriver and the message 'ICT has been Added'.

```

public class AdminAddJob {
    public static void main(String args[]) throws InterruptedException {
        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");

        driver.findElement(By.xpath("//*[@id='btnLogin']")).click();

        driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

        driver.findElement(By.xpath("//*[@id='menu_admin_Job']")).click();

        driver.findElement(By.xpath("//*[@id='menu_admin_viewJobTitleList']")).click();
        driver.findElement(By.xpath("//*[@id='btnAdd']")).click();
        driver.findElement(By.xpath("//*[@id='jobTitle_jobTitle']")).sendKeys("ICT");
        driver.findElement(By.xpath("//*[@id='btnSave']")).click();

        System.out.println ("ICT has been Added");
    }
}

```

Fig-5.19: Code for adding a job title-ICT

2. Delete a selected job title-ICT

The screenshot shows the OrangeHRM application interface. At the top, there is a navigation bar with links for Admin, PIM, Leave, Time, Recruitment, Performance, Dashboard, and Directory. Below this is a secondary navigation bar with User Management, Job (which is currently selected), Organization, Qualifications, Nationalities, and Configuration. The main content area is titled "Job Titles". It contains a table with two columns: "Job Title" and "Job Description". On the left side of the table, there is a list of job titles: Account Clerk, CEO, Finance Manager, HR Executive, HR Manager, ICT (with a checked checkbox), IT Executive, IT Manager, Sales Executive, and Sales Manager. The "ICT" checkbox is highlighted with a red border.

Fig-5.20: Delete a selected job title-ICT

The screenshot shows the NetBeans IDE interface with the following details:

- File Menu:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help.
- Toolbar:** Standard NetBeans toolbar with icons for file operations.
- Project Explorer:** Shows a project named "Selenium - NetBeans IDE 8.2" containing several Java files under the "Source Packages" and "Test Packages" sections.
- Code Editor:** Displays Java code for a class named "AdminDeleteJob". The code includes imports for Selenium WebDriver and various utility classes. It defines a main method that sets the web driver to Chrome, navigates to the OrangeHRM PIM module, finds the "ICT" checkbox, and performs a click operation on it.
- Output Window:** Shows the command-line output of the run command, indicating successful execution and the message "ICT has been Deleted".

```

public class AdminDeleteJob {
    public static void main(String args[]) throws InterruptedException {
        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
        driver.findElement(By.xpath("//*[@id='btnLogin']")).click();

        driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

        driver.findElement(By.xpath("//*[@id='menu_admin_Job']")).click();
        driver.findElement(By.xpath("//*[@id='menu_admin_viewJobTitleList']")).click();
        WebElement check = driver.findElement(By.id("ohrmList_chkSelectRecord_10"));

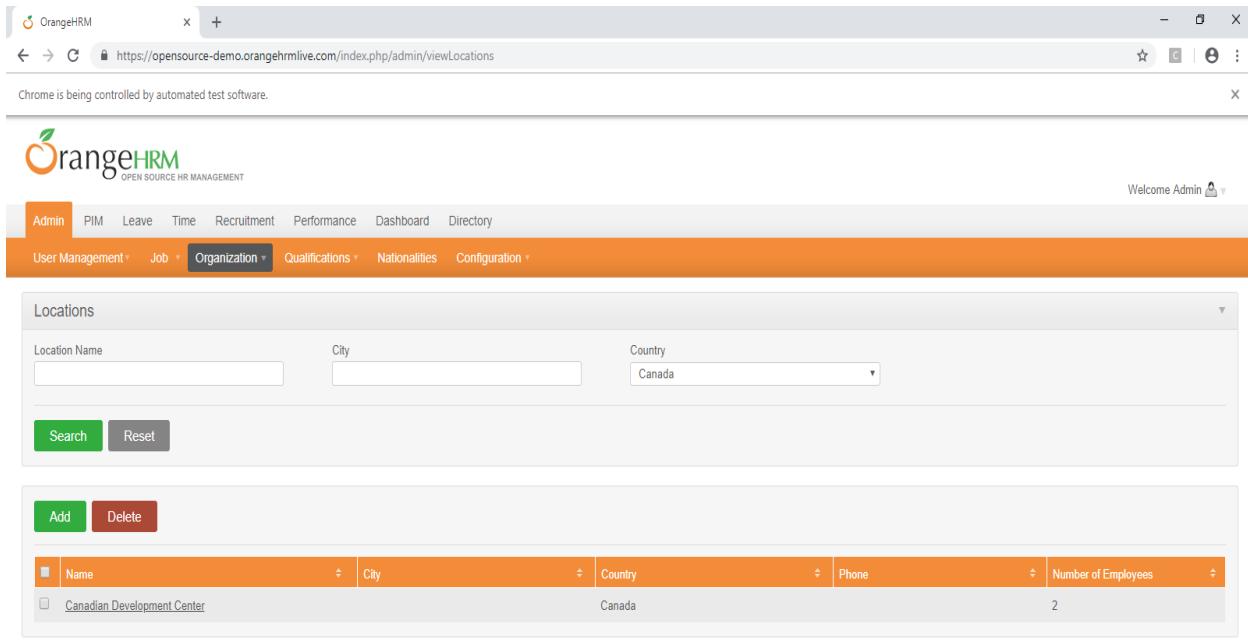
        if (check.isSelected()) {
            System.out.println("Job Title Checkbox is Toggled On");
        } else {
            System.out.println("Job Title Checkbox is Toggled Off");
        }
        check.click();
        driver.findElement(By.xpath("//*[@id='btnDelete']")).click();
        driver.findElement(By.xpath("//*[@id='dialogDeleteBtn']")).click();
        System.out.println("ICT has been Deleted");
    }
}

```

Fig-5.21: Code for deleting a selected job title-ICT

Test Case-5: Search Organization

1. Search by Country: Canada



The screenshot shows the OrangeHRM web interface. The browser title bar says "OrangeHRM" and the URL is "https://opensource-demo.orangehrmlive.com/index.php/admin/viewLocations". A message at the top states "Chrome is being controlled by automated test software." The page header includes the OrangeHRM logo and a "Welcome Admin" message. The navigation menu has tabs for Admin, PIM, Leave, Time, Recruitment, Performance, Dashboard, and Directory. Under "User Management", the "Organization" tab is selected. Below the menu is a search form titled "Locations" with fields for "Location Name", "City", and "Country". The "Country" dropdown is set to "Canada". There are "Search" and "Reset" buttons. Below the search form is a table with columns: Name, City, Country, Phone, and Number of Employees. One row is visible: "Canadian Development Center" in "City", "Canada" in "Country", and "2" in "Number of Employees". At the bottom of the page is a footer with the text "OrangeHRM 4.1" and "© 2005 - 2018 OrangeHRM Inc. All rights reserved."

Fig-5.22: Search Location with Country- Canada

```
public class SearchOrg {
    public static void main(String args[]) throws InterruptedException {
        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
        driver.findElement(By.xpath("//*[@id='btnLogin']")).click();

        driver.findElement(By.xpath("/html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

        driver.findElement(By.xpath("//*[@id='menu_admin_Organization']")).click();
        driver.findElement(By.xpath("//*[@id='menu_admin_viewLocations']")).click();

        Select country = new Select(driver.findElement(By.id("searchLocation_country")));
        country.selectByIndex(38);

        driver.findElement(By.xpath("//*[@id='btnSearch']")).click();
    }
}
```

Fig-5.23: Code for searching Location with Country- Canada

2. Reset the previous search result

Name	City	Country	Phone	Number of Employees
Canadian Development Center		Canada		2
HQ - CA USA		United States		3
New York Sales Office		United States		2
Texas R&D		United States		2

Fig-5.24: Reset searched Location with Country- Canada

```

public class DeleteOrg {
    public static void main(String args[]) throws InterruptedException {
        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
        driver.findElement(By.xpath("//*[@id='btnLogin']")).click();

        driver.findElement(By.xpath("/html/body/div[1]/div[2]/ul/li[1]/a/b")).click();

        driver.findElement(By.xpath("//*[@id='menu_admin_Organization']")).click();
        driver.findElement(By.xpath("//*[@id='menu_admin_viewLocations']")).click();

        Select country = new Select(driver.findElement(By.id("searchLocation_country")));
        country.selectByIndex(38);

        driver.findElement(By.xpath("//*[@id='btnSearch']")).click();

        driver.findElement(By.xpath("//*[@id='btnReset']")).click();
    }
}

```

Fig-5.25: Code for Reset searched location

Test Case-6: Mail Configuration

1. Edit Mail Configuration set Sent Mail as: zahidmuhammad095@gmail.com

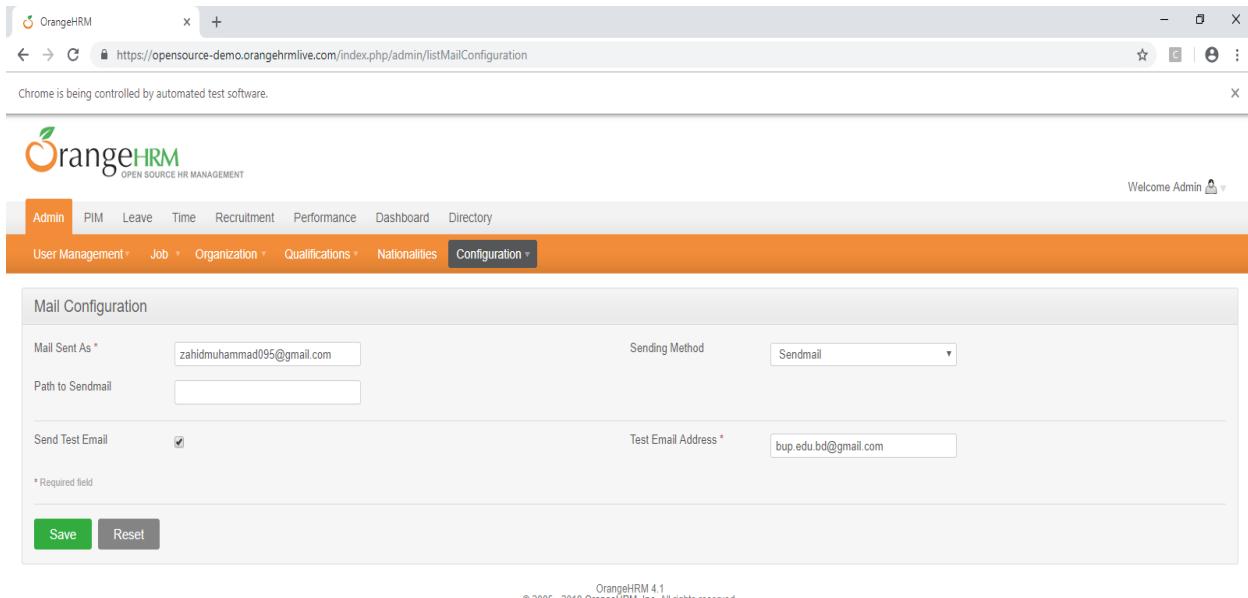


Fig-5.26: Mail Configuration

```
18 public class MailConfig {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[1]/a/b")).click();
32
33         driver.findElement(By.xpath("//*[@id='menu_admin_Configuration']")).click();
34         driver.findElement(By.xpath("//*[@id='menu_admin_listMailConfiguration']")).click();
35
36         driver.findElement(By.xpath("//*[@id='editBtn']")).click();
37         //driver.findElement(By.xpath("//*[@id='emailConfigurationForm_txtEmailAddress']")).sendKeys("zahidmuhammad095@gmail.com");
38
39         WebElement check = driver.findElement(By.id("emailConfigurationForm_chkSendTestEmail"));
40         check.click();
41         driver.findElement(By.xpath("//*[@id='emailConfigurationForm_txtTestEmail']")).sendKeys("bup.edu.bd@gmail.com");
42         driver.findElement(By.xpath("//*[@id='editBtn']")).click();
43
44     }
45
46 }
```

Fig-5.27: Code for Mail Configuration

2. Reset the test mail:

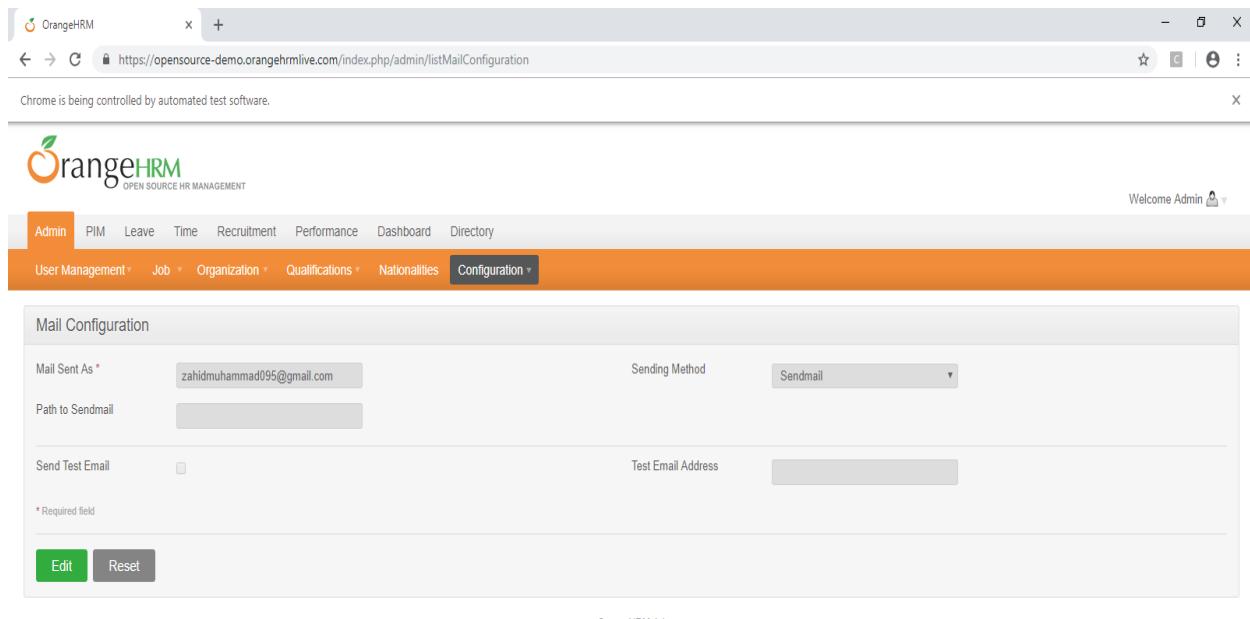


Fig-5.28: Reset Mail Configuration

```

18 |     public class ResetMail {
19 |         public static void main(String args[]) throws InterruptedException {
20 |
21 |             System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22 |             WebDriver driver = new ChromeDriver();
23 |             driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24 |
25 |             driver.manage().window().maximize();
26 |
27 |             driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28 |             driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29 |             driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30 |
31 |             driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[1]/a/b")).click();
32 |
33 |             driver.findElement(By.xpath("//*[@id='menu_admin_Configuration']")).click();
34 |             driver.findElement(By.xpath("//*[@id='menu_admin_listMailConfiguration']")).click();
35 |
36 |             driver.findElement(By.xpath("//*[@id='editBtn']")).click();
37 |             WebElement check = driver.findElement(By.id("emailConfigurationForm_chkSendTestEmail"));
38 |             check.click();
39 |             driver.findElement(By.xpath("//*[@id='emailConfigurationForm_txtTestEmail']")).sendKeys("bup.edu.bd@gmail.com");
40 |             driver.findElement(By.xpath("//*[@id='editBtn']")).click();
41 |             Thread.sleep(5000);
42 |             driver.findElement(By.xpath("//*[@id='resetBtn']")).click();
43 |
44 |
45 |         }
46 |
47 |     }
48 |

```

Fig-5.29: Code for Reset Mail Configuration

Test Case-7: Search Employee

1. Search from the given list with Employee Name: Hannah Flores

The screenshot shows the OrangeHRM web application interface. The browser title bar says "OrangeHRM" and the URL is "https://opensource-demo.orangehrmlive.com/index.php/pim/viewEmployeeList". The page header includes the OrangeHRM logo, a welcome message "Welcome Admin", and navigation links for Admin, PIM, Leave, Time, Recruitment, Performance, Dashboard, and Directory. The PIM tab is active. Below the header is a search form titled "Employee Information" with fields for Employee Name (Hannah Flores), Id (Type Employee Id...), Employment Status (All), Supervisor Name (Type for hints...), Job Title (All), Sub Unit (All), and an "Include" dropdown set to "Current Employees Only". There are "Search" and "Reset" buttons. Below the search form is a table with columns: Id, First & Middle Name, Last Name, Job Title, Employment Status, Sub Unit, and Supervisor. A single record is listed: Id 0002, First & Middle Name Hannah, Last Name Flores, Job Title IT Executive, Employment Status Full-Time Permanent, Sub Unit IT, and Supervisor Thomas Fleming. At the bottom of the page is a footer with the text "OrangeHRM 4.1 © 2005 - 2018 OrangeHRM Inc. All rights reserved."

Fig-5.30: Search result with 1 record

```
17 public class SearchEmployee {
18     public static void main(String args[]) throws InterruptedException {
19
20         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
21         WebDriver driver = new ChromeDriver();
22         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
23
24         driver.manage().window().maximize();
25
26         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
27         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
28         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
29
30         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[2]/a/b")).click();
31
32         Thread.sleep(5000);
33         driver.findElement(By.xpath("//*[@id='empsearch_employee_name_empName']")).sendKeys("Hannah Flores");
34         Thread.sleep(5000);
35         driver.findElement(By.xpath("//*[@id='searchBtn']")).click();
36
37
38     }
39 }
40
41 }
42 }
```

Fig-5.31: Code for Search result with 1 record

2. Reset the previous Search Result

The screenshot shows the OrangeHRM web application interface. The top navigation bar includes links for Admin, PIM (which is active), Leave, Time, Recruitment, Performance, Dashboard, and Directory. Below this is a secondary navigation bar with Configuration, Employee List (which is active), Add Employee, and Reports. The main content area is titled 'Employee Information' and contains a search form with fields for Employee Name, Id, Employment Status, Supervisor Name, Job Title, Sub Unit, and a dropdown for 'Include'. Below the search form are two buttons: 'Search' (green) and 'Reset' (grey). The main table displays employee records with columns for Id, First (Middle) Name, Last Name, Job Title, Employment Status, Sub Unit, and Supervisor. One record is highlighted in grey.

	ID	First (Middle) Name	Last Name	Job Title	Employment Status	Sub Unit	Supervisor
0006	Robert	Craig	Sales Manager	Full-Time Permanent	Sales	John Smith	
0004	Steven	Edwards	Finance Manager	Full-Time Permanent	Finance	John Smith	
0005	Thomas	Fleming	IT Manager	Full-Time Contract	IT	John Smith	
0002	Hannah	Flores	IT Executive	Full-Time Permanent	IT	Thomas Fleming	
0007	Fiona	Grace	HR Executive	Part-Time Contract	Administration	Test User	

Fig-5.32: Reset the employee search

```

17 public class ResetSearchResult {
18     public static void main(String args[]) throws InterruptedException {
19
20         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
21         WebDriver driver = new ChromeDriver();
22         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
23
24         driver.manage().window().maximize();
25
26         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
27         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
28         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
29
30         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[2]/a/b")).click();
31
32         Thread.sleep(5000);
33         driver.findElement(By.xpath("//*[@id='empsearch_employee_name_empName']")).sendKeys("Hannah Flores");
34         Thread.sleep(5000);
35         driver.findElement(By.xpath("//*[@id='searchBtn']")).click();
36
37         driver.findElement(By.xpath("//*[@id='resetBtn']")).click();
38     }
39 }
40 }
41 }
42 }
```

Fig-5.33: Code for Reset the employee search

Test Case-8: Add/Delete Employee

1. Add a new employee with Name: Mr. X

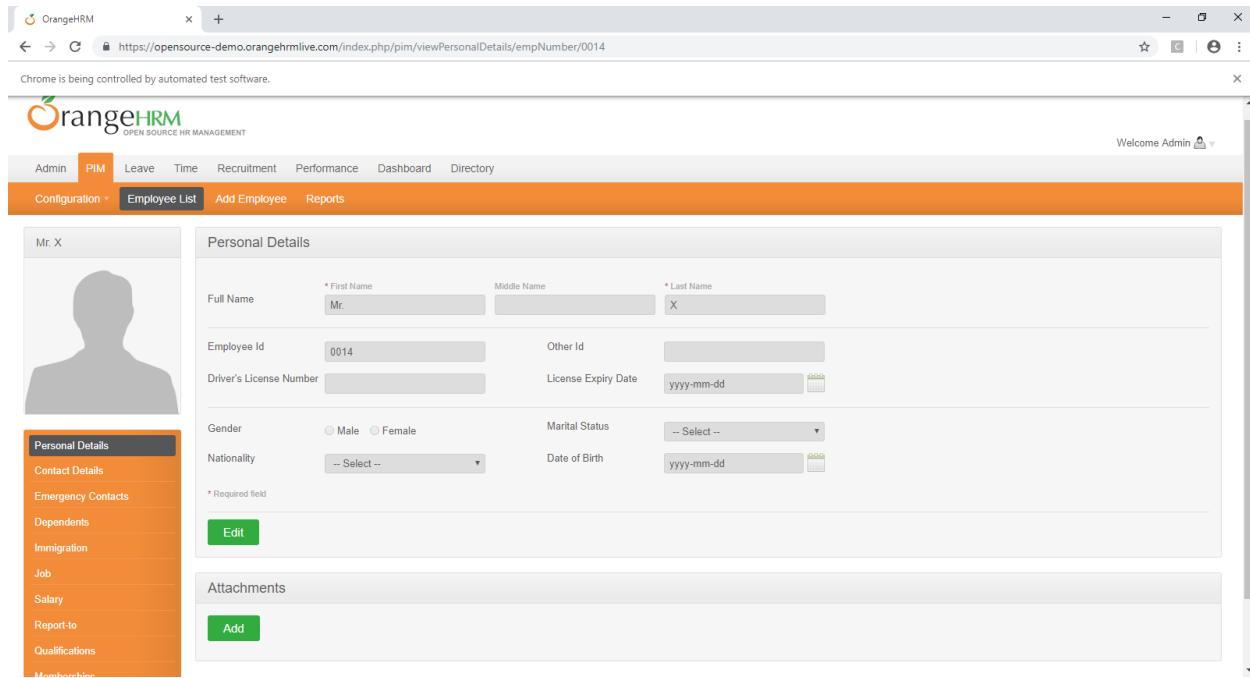


Fig-5.34: Add a new employee

```
17 public class AddEmployee {
18     public static void main(String args[]) throws InterruptedException {
19
20         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
21         WebDriver driver = new ChromeDriver();
22         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
23
24         driver.manage().window().maximize();
25
26         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
27         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
28         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
29
30         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[2]/a/b")).click();
31
32         driver.findElement(By.xpath("//*[@id='btnAdd']")).click();
33
34         driver.findElement(By.xpath("//*[@id='firstName']")).sendKeys("Mr.");
35         driver.findElement(By.xpath("//*[@id='lastName']")).sendKeys("X");
36         driver.findElement(By.xpath("//*[@id='btnSave']")).click();
37
38     }
39
40 }
```

Fig-5.35: Code for adding a new employee

2. Delete an employee record with employee name: Mr. X

	Id	First & Middle Name	Last Name	Job Title	Employment Status	Sub Unit	Supervisor
<input type="checkbox"/>	0006	Robert	Craig	Sales Manager	Full-Time Permanent	Sales	John Smith
<input type="checkbox"/>	0004	Steven	Edwards	Finance Manager	Full-Time Permanent	Finance	John Smith
<input type="checkbox"/>	0005	Thomas	Fleming	IT Manager	Full-Time Contract	IT	John Smith
<input type="checkbox"/>	0002	Hannah	Flores	IT Executive	Full-Time Permanent	IT	Thomas Fleming
<input type="checkbox"/>	0007	Fiona	Grace	HR Executive	Part-Time Contract	Administration	Test User
<input type="checkbox"/>	0008	Russel	Hamilton	Sales Executive	Full-Time Probation	Sales	Robert Craig
<input type="checkbox"/>	0010	sudhakar	k				
<input type="checkbox"/>	0009	Jasmine	Morgan	Account Clerk	Part-Time Internship	Finance	Steven Edwards
<input type="checkbox"/>	0011	p sek	p				
<input type="checkbox"/>	as@@786	rama@@123	ravan@@1234	seetha 143@@			
<input type="checkbox"/>	0003	John	Smith	CEO	Full-Time Permanent	Administration	
<input type="checkbox"/>	0001	Test	User	HR Manager	Full-Time Permanent	Administration	John Smith
<input type="checkbox"/>	0012	Zia	Zia				

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Fig-5.36: Delete a selected employee

```

public class DeleteEmployee {
    public static void main(String args[]) throws InterruptedException {
        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//[id='txtUsername']")).sendKeys("Admin");
        driver.findElement(By.xpath("//[id='txtPassword']")).sendKeys("admin123");
        driver.findElement(By.xpath("//[id='btnLogin']")).click();

        driver.findElement(By.xpath("//*[@id='menu_pim_viewEmployeeList']/ul/li[2]/a/b")).click();

        WebElement check = driver.findElement(By.id("ohrmList_chkSelectRecord_16"));

        if (check.isSelected()) {
            System.out.println("Employee Checkbox is Toggled On");
        } else {
            System.out.println("Employee Checkbox is Toggled Off");
        }
        check.click();

        driver.findElement(By.xpath("//*[id='btnDelete']")).click();
        driver.findElement(By.xpath("//*[id='dialogDeleteBtn']")).click();
        System.out.println("Successfully Employee Deleted");
    }
}

```

Output - Selenium (run)

- INFO: Detected dialect: OSS
- Employee Checkbox is Toggled Off
- Successfully Employee Deleted
- BUILD SUCCESSFUL (total time: 26 seconds)

Fig-5.37: Code for deleting a selected employee

Test Case-9: Employee Reports under PIM tab

1. Add a new Report, name- My Report

The screenshot shows the 'Employee Reports' section of the OrangeHRM application. The 'Report Name' input field contains 'My Report'. Below the input field are 'Search' and 'Reset' buttons. A table displays the following data:

Report Name	Run	Edit
My Report	Run	Edit
PIM Sample Report	Run	Edit

At the bottom of the page, there is a copyright notice: '© 2005 - 2018 OrangeHRM Inc. All rights reserved.'

Fig-5.38: Add “My Report”

```

public class AddReport {
    public static void main(String args[]) throws InterruptedException {
        System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");

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

        driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
        driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
        driver.findElement(By.xpath("//*[@id='btnLogin']")).click();

        driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[2]/a/b")).click();
        driver.findElement(By.xpath("//*[@id='menu_core_viewDefinedPredefinedReports']")).click();
        driver.findElement(By.xpath("//*[@id='btnAdd']")).click();

        driver.findElement(By.xpath("//*[@id='report_report_name']")).sendKeys("My Report");

        driver.findElement(By.xpath("//*[@id='btnAddDisplayField']")).click();
        driver.findElement(By.xpath("//*[@id='btnSave']")).click();

        System.out.println("Successfully Report is Added");
    }
}

```

The output window shows the results of the run:

- INFO: Detected dialect: OSS
- Successfully Report is Added
- BUILD SUCCESSFUL (total time: 16 seconds)

Fig-5.39: Code for adding “My Report”

2. Search for a report, name- “My Report”

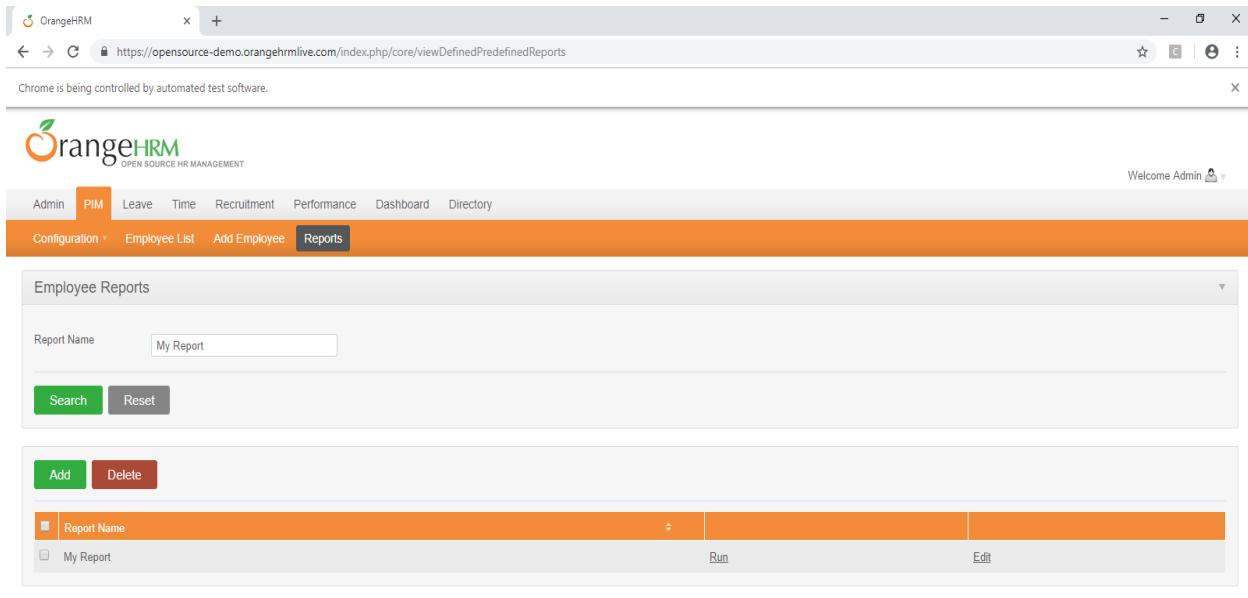


Fig-5.40: Search Report- “My Report”

```

17 public class SearchReport {
18     public static void main(String args[]) throws InterruptedException {
19
20         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
21         WebDriver driver = new ChromeDriver();
22         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
23
24         driver.manage().window().maximize();
25
26         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
27         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
28         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
29
30         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[2]/a/b")).click();
31         driver.findElement(By.xpath("//*[@id='menu_core_viewDefinedPredefinedReports']")).click();
32
33         Thread.sleep(5000);
34         driver.findElement(By.xpath("//*[@id='search_search']")).sendKeys("My Report");
35         Thread.sleep(5000);
36
37         driver.findElement(By.xpath("//html/body/div[1]/div[3]/div[1]/div[2]/form/fieldset/p/input[1]")).click();
38
39         System.out.println("My Report is Found");
40
41     }
42
43 }
```

Fig-5.41: Search Report- “My Report”

3. Reset the search result

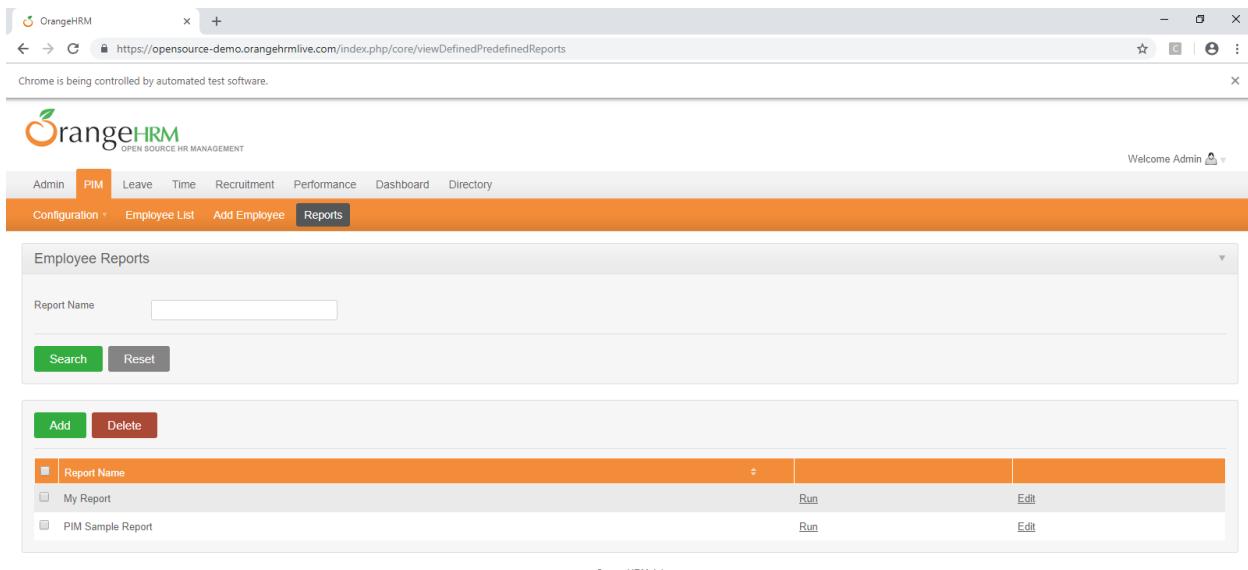


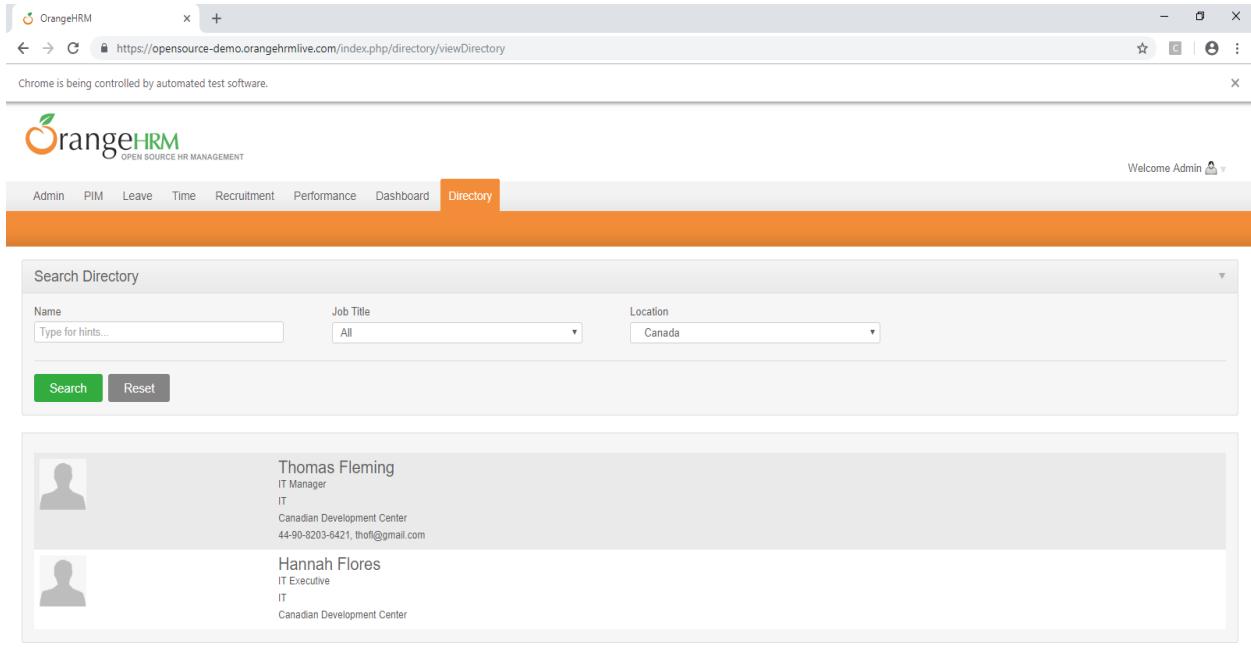
Fig-5.42: Reset previous search result

```
17 public class ResetReportSearch {
18     public static void main(String args[]) throws InterruptedException {
19
20         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
21         WebDriver driver = new ChromeDriver();
22         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
23
24         driver.manage().window().maximize();
25
26         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
27         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
28         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
29
30         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[2]/a/b")).click();
31         driver.findElement(By.xpath("//*[@id='menu_core_viewDefinedPredefinedReports']")).click();
32
33         Thread.sleep(2000);
34         driver.findElement(By.xpath("//*[@id='search_search']")).sendKeys("My Report");
35         Thread.sleep(2000);
36
37         driver.findElement(By.xpath("//html/body/div[1]/div[3]/div[1]/div[2]/form/fieldset/p/input[1]")).click();
38         driver.findElement(By.xpath("//html/body/div[1]/div[3]/div[1]/div[2]/form/fieldset/p/input[2]")).click();
39
40     }
41 }
42 }
43 }
```

Fig-5.43: Code for reset previous search result

Test Case-10: Directory

1. Search the entire directory by Location = Canada



The screenshot shows the OrangeHRM web application interface. The title bar says "OrangeHRM" and the URL is "https://opensource-demo.orangehrmlive.com/index.php/directory/viewDirectory". A message at the top states "Chrome is being controlled by automated test software." The navigation bar includes links for Admin, PIM, Leave, Time, Recruitment, Performance, Dashboard, and Directory, with "Directory" being the active tab. On the right, there is a "Welcome Admin" message. The main content area is titled "Search Directory". It has three input fields: "Name" (with placeholder "Type for hints..."), "Job Title" (set to "All"), and "Location" (set to "Canada"). Below these are "Search" and "Reset" buttons. The results section displays two employee entries:

Employee	Name	Job Title	Location
	Thomas Fleming	IT Manager IT Canadian Development Center 44-90-8203-6421, thoff@gmail.com	Canada
	Hannah Flores	IT Executive IT Canadian Development Center	Canada

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Fig-5.44: Searching Directory with location Canada

```
18 public class SearchDirectory {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[8]/a/b")).click();
32
33         Select country = new Select(driver.findElement(By.id("searchDirectory_location")));
34         country.selectByIndex(1);
35
36         driver.findElement(By.xpath("//*[@id='searchBtn']")).click();
37
38     }
39
40 }
```

Fig-5.45: Code for searching Directory with location Canada

2. Reset the previous search result

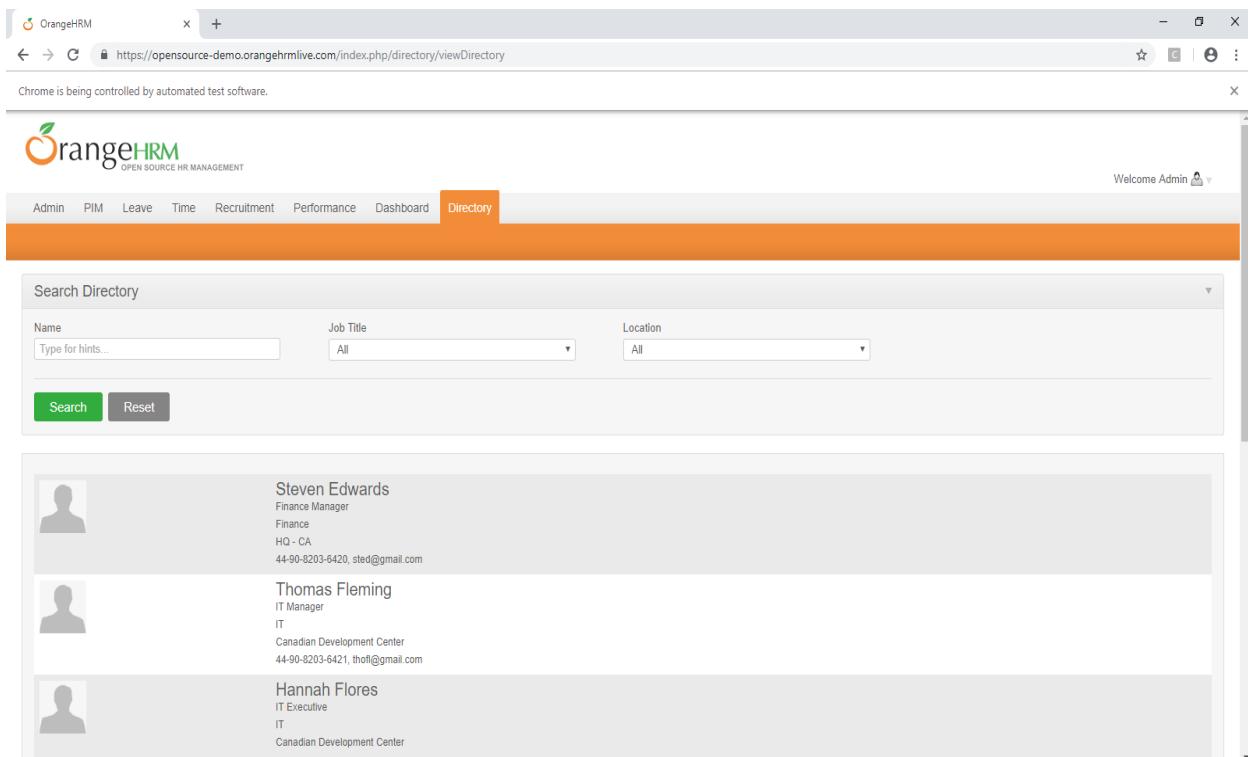


Fig-5.46: Reset the search Directory

```

18 |     public class ResetSearchDirectory {
19 |         public static void main(String args[]) throws InterruptedException {
20 |
21 |             System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22 |             WebDriver driver = new ChromeDriver();
23 |             driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24 |
25 |             driver.manage().window().maximize();
26 |
27 |             driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28 |             driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29 |             driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30 |
31 |             driver.findElement(By.xpath("/html/body/div[1]/div[2]/ul/li[8]/a/b")).click();
32 |
33 |             Select country = new Select(driver.findElement(By.id("searchDirectory_location")));
34 |             country.selectByIndex(1);
35 |
36 |             driver.findElement(By.xpath("//*[@id='searchBtn']")).click();
37 |
38 |
39 |             //reset
40 |             driver.findElement(By.xpath("//*[@id='resetBtn']")).click();
41 |
42 |         }
43 |
44 |     }

```

Fig-5.47: Code for reset the search Directory

Test Case-11: Performance (KPI)

KPI- Key Performance Indicators, search with job title- Sales Executive

The screenshot shows the OrangeHRM web interface. At the top, there's a navigation bar with links for Admin, PIM, Leave, Time, Recruitment, Performance (which is the active tab), Dashboard, and Directory. Below the navigation bar is a secondary menu with options for Configure, Manage Reviews, and Employee Trackers. The main content area has a search bar labeled "Search Key Performance Indicators". Underneath it, a dropdown menu is set to "Sales Executive". A green "Search" button is visible. Below the search bar, a section titled "Key Performance Indicators for Job Title" contains two buttons: "Add" (green) and "Delete" (red). A table header row is shown with columns for "Key Performance Indicator", "Job Title", "Min Rate", "Max Rate", and "Is Default". The message "No Records Found" is displayed below the table. At the bottom of the page, a footer note reads "OrangeHRM 4.1 © 2005 - 2018 OrangeHRM Inc. All rights reserved."

Fig-5.48: KPI search

Test Case-12: Performance (Add Key Performance Indicator)

1. Add a new KPI with the values:

Job Title: IT Manager

Key Performance Indicator: Performance

Minimum Rating: 80

Maximum Rating: 100

The screenshot shows the OrangeHRM web application interface. The top navigation bar includes links for Admin, PIM, Leave, Time, Recruitment, Performance (which is highlighted in orange), Dashboard, and Directory. A sub-navigation bar below shows Configure, Manage Reviews, and Employee Trackers. The main content area is titled 'Search Key Performance Indicators' and contains a dropdown for 'Job Title' set to 'All' and a green 'Search' button. Below this is a table titled 'Key Performance Indicators for Job Title' with two rows: one for 'Key Performance Indicator' (Job Title: IT Manager, Min Rate: 80, Max Rate: 100, Is Default: checked) and one for 'Performance' (Job Title: IT Manager, Min Rate: 80, Max Rate: 100, Is Default: checked). The footer displays the copyright notice '© 2005 - 2018 OrangeHRM Inc. All rights reserved.'

Fig-5.49: A new KPI named Performance

```

18 public class AddKPI {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']").sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']").sendKeys("admin123");
29         driver.findElement(By.xpath("//*[@id='btnLogin']").click();
30
31         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[6]/a/b")).click();
32         driver.findElement(By.xpath("//*[@id='menu_performance_Configure']").click();
33         driver.findElement(By.xpath("//*[@id='menu_performance_searchKpi']").click();
34
35         driver.findElement(By.xpath("//*[@id='btnAdd']").click();
36
37
38         Select country = new Select(driver.findElement(By.id("defineKpi360_jobTitleCode")));
39         country.selectByIndex(7);
40
41         driver.findElement(By.xpath("//*[@id='defineKpi360_keyPerformanceIndicators']").sendKeys("Performance");
42         driver.findElement(By.xpath("//*[@id='defineKpi360_minRating']").sendKeys("80");
43         driver.findElement(By.xpath("//*[@id='defineKpi360_maxRating']").sendKeys("100");
44         driver.findElement(By.xpath("//*[@id='saveBtn']").click();
45
46
47     }
48
49 }
```

Fig-5.50: Code for adding KPI named Performance

2. Delete a selected KPI, name- Performance

The screenshot shows the OrangeHRM web application interface. The browser title is "OrangeHRM" and the URL is "https://opensource-demo.orangehrmlive.com/index.php/performance/searchKpi". A message at the top says "Chrome is being controlled by automated test software." The page header includes links for Admin, PIM, Leave, Time, Recruitment, Performance (which is highlighted in orange), Dashboard, and Directory. On the right, it says "Welcome Admin". Below the header, there's a navigation bar with "Configure", "Manage Reviews", and "Employee Trackers". A search bar is present with the placeholder "Search Key Performance Indicators" and a dropdown menu for "Job Title" set to "All". A "Search" button is visible. The main content area is titled "Key Performance Indicators for Job Title" and contains a table with two rows. The table has columns for "Key Performance Indicator" (checkboxes), "Job Title", "Min Rate", "Max Rate", and "Is Default". The first row has a checkbox next to "Grade" and lists "Finance Manager" with rates 70 and 92, and "Is Default" checked. The second row also has a checkbox next to "Grade" and lists "Account Clerk" with rates 70 and 90, and "Is Default" checked. At the bottom of the table, it says "© 2005 - 2018 OrangeHRM Inc. All rights reserved."

Fig-5.51: Delete the KPI Performance

```

18 public class DeleteKPI {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[6]/a/b")).click();
32         driver.findElement(By.xpath("//*[@id='menu_performance_Configure']")).click();
33         driver.findElement(By.xpath("//*[@id='menu_performance_searchKpi']")).click();
34
35         WebElement check = driver.findElement(By.id("ohrmList_chkSelectRecord_4"));
36
37         if (check.isSelected()) {
38             System.out.println("KPI Checkbox is Toggled On");
39
40         } else {
41             System.out.println("KPI Checkbox is Toggled Off");
42         }
43         check.click();
44
45         driver.findElement(By.xpath("//*[@id='btnDelete']")).click();
46         driver.findElement(By.xpath("//*[@id='dialogDeleteBtn']")).click();
47
48     }
49
50 }
```

Fig-5.52: Code for deleting the KPI Performance

Test Case-13: Manage review in Performance

1. Manage Review with employee name: John Smith

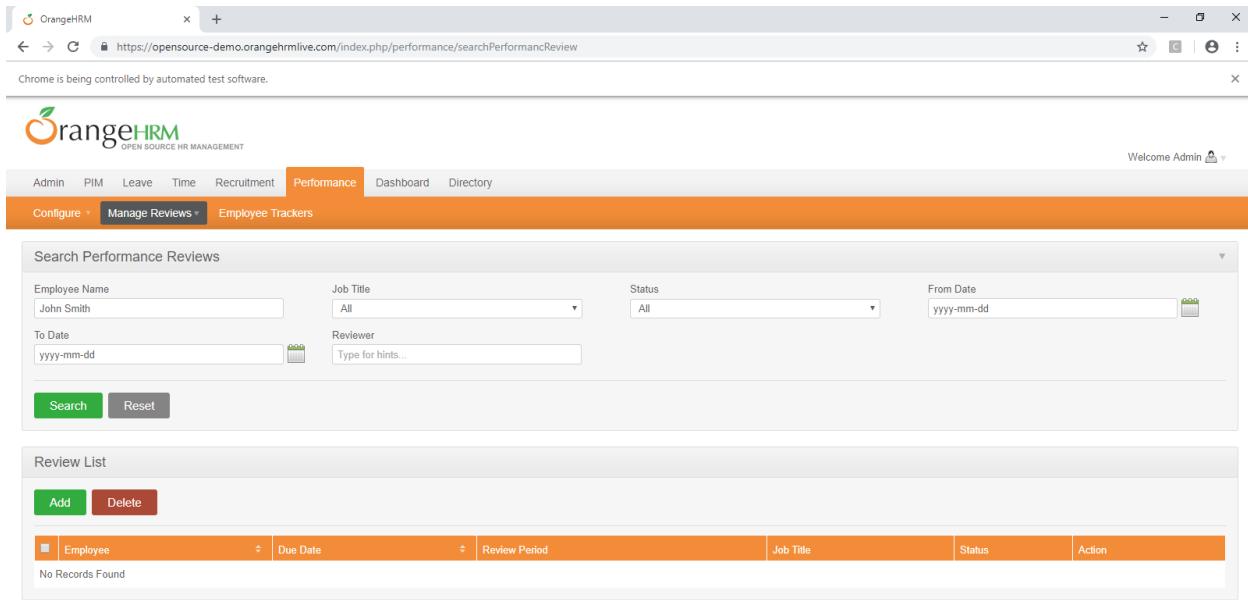


Fig-5.53: Manage Review

```
18 public class ManageReview {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[6]/a/b")).click();
32         driver.findElement(By.xpath("//*[@id='menu_performance_ManageReviews']")).click();
33         driver.findElement(By.xpath("//*[@id='menu_performance_searchPerformanceReview']")).click();
34
35         Thread.sleep(2000);
36         driver.findElement(By.xpath("//*[@id='performanceReview360SearchForm_employeeName']")).sendKeys("John Smith");
37         Thread.sleep(2000);
38         driver.findElement(By.xpath("//*[@id='btnSearch']")).click();
39     }
40 }
41
42 }
```

Fig-5.54: Code for Manage Review

Test Case-14: Leave entitlements and usage report

- Leave List within 2015-08-03 to 2015-10-01 results 2 records found

The screenshot shows the OrangeHRM Leave List page. At the top, there are date filters set from '2015-08-03' to '2015-10-01'. Below the filters, there are several search criteria: 'Employee' (Type for hints...), 'Sub Unit' (All), and 'Include Past Employees' (checkbox). There are also 'Search' and 'Reset' buttons. The main table displays two rows of leave data:

Date	Employee Name	Leave Type	Leave Balance (Days)	Number of Days	Status	Comments	Actions
2015-09-23 to 2015-09-30	Russel Hamilton	FMLA US	24.00	6.00	Pending Approval(6.00)		Select Action
2015-08-03 to 2015-08-07	Test User	FMLA US	25.50	4.50	Pending Approval(4.50)		Select Action

A green 'Save' button is located at the bottom left of the table area.

Fig-5.55: Leave list employees

```

18  public class LeaveList {
19      public static void main(String args[]) throws InterruptedException {
20
21          System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22          WebDriver driver = new ChromeDriver();
23          driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25          driver.manage().window().maximize();
26
27          driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28          driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29          driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31          driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[3]/a/b")).click();
32          driver.findElement(By.xpath("//*[@id='menu_leave_viewLeaveList']")).click();
33
34          driver.findElement(By.xpath("//*[@id='calFromDate']")).clear();
35          driver.findElement(By.xpath("//*[@id='calToDate']")).clear();
36          Thread.sleep(2000);
37          driver.findElement(By.xpath("//*[@id='calFromDate']")).sendKeys("2015-08-03");
38          Thread.sleep(2000);
39          driver.findElement(By.xpath("//*[@id='calToDate']")).sendKeys("2015-10-01");
40          driver.findElement(By.xpath("//*[@id='btnSearch']")).click();
41
42      }
43
44  }

```

Fig-5.56: Code for Leave list employees

2. Leave Entitlements & Usage Reports for Leave Type: Vacation US in the year 2015

Employee	Leave Entitlements (Days)	Leave Pending Approval (Days)	Leave Scheduled (Days)	Leave Taken (Days)	Leave Balance (Days)
Russel Hamilton	30.00	0.00	0.00	0.00	30.00
Barbora Layerová	0.00	0.00	0.00	0.00	0.00
Barbora Layerová	0.00	0.00	0.00	0.00	0.00
Jasmine Morgan	30.00	0.00	0.00	0.00	30.00
John Smith	30.00	0.00	0.00	0.00	30.00
Test User	30.00	0.00	0.00	0.00	30.00
Test User	30.00	0.00	0.00	0.00	30.00
Test User	30.00	0.00	0.00	0.00	30.00
Test User	30.00	0.00	0.00	0.00	30.00

Fig-5.57: Leave Entitlements & Usage Reports

```

18 public class LeaveEntitlements {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29
30         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
31
32         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[3]/a/b")).click();
33         driver.findElement(By.xpath("//*[@id='menu_leave_Report']")).click();
34         driver.findElement(By.xpath("//*[@id='menu_leave_viewLeaveBalanceReport']")).click();
35
36         Select a = new Select(driver.findElement(By.id("leave_balance_report_type")));
37         a.selectByIndex(1);
38
39         Select c = new Select(driver.findElement(By.id("leave_balance_leave_type")));
40         c.selectByIndex(3);
41
42         Select date = new Select(driver.findElement(By.id("period")));
43         date.selectByIndex(0);
44
45         Thread.sleep(2000);
46         driver.findElement(By.xpath("//*[@id='viewBtn']")).click();
47
48     }
49
50 }
```

Fig-5.58: Code for Leave Entitlements & Usage Reports

Test Case-15: Timesheets

1. Timesheets with the employee name: Test User

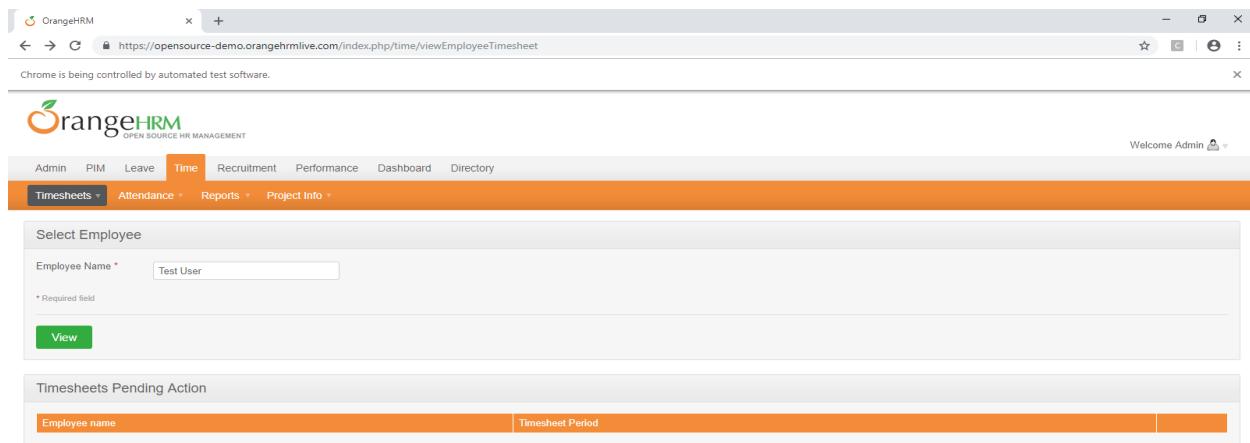


Fig-5.59: Timesheet with employee Test User

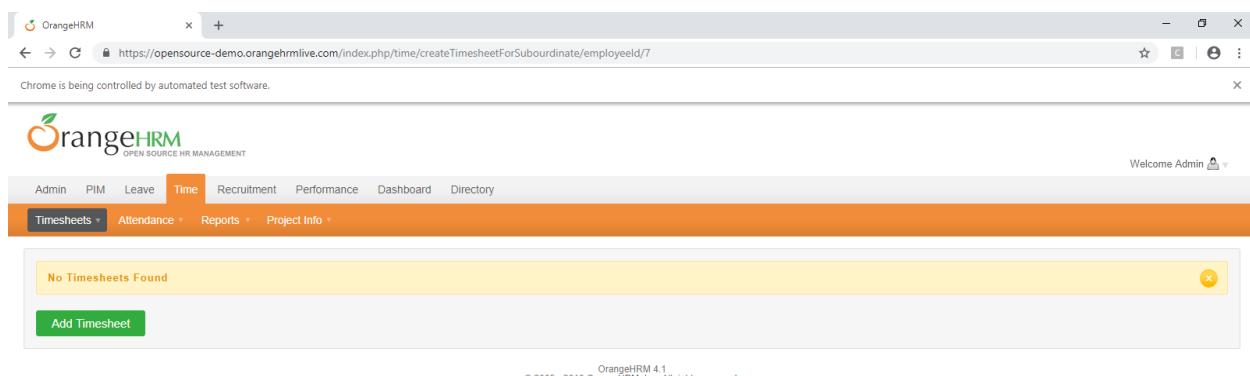


Fig-5.60: Timesheet with employee Test User results No Timesheet Found

```
18 public class TimeSheets {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[4]/a/b")).click();
32         driver.findElement(By.xpath("//*[@id='menu_time_Timesheets']")).click();
33         driver.findElement(By.xpath("//*[@id='menu_time_viewEmployeeTimesheet']")).click();
34         driver.findElement(By.xpath("//*[@id='employee']")).clear();
35         driver.findElement(By.xpath("//*[@id='employee']")).sendKeys("Test User");
36
37         Thread.sleep(2000);
38         driver.findElement(By.xpath("//*[@id='btnView']")).click();
39
40     }
41
42 }
```

Fig-5.61: Code for Timesheet with employee Test User

Test Case-16: Creating New Project for a Customer

1. Creating a new project named “White Elephant Project” for a new customer- “Mr. R”

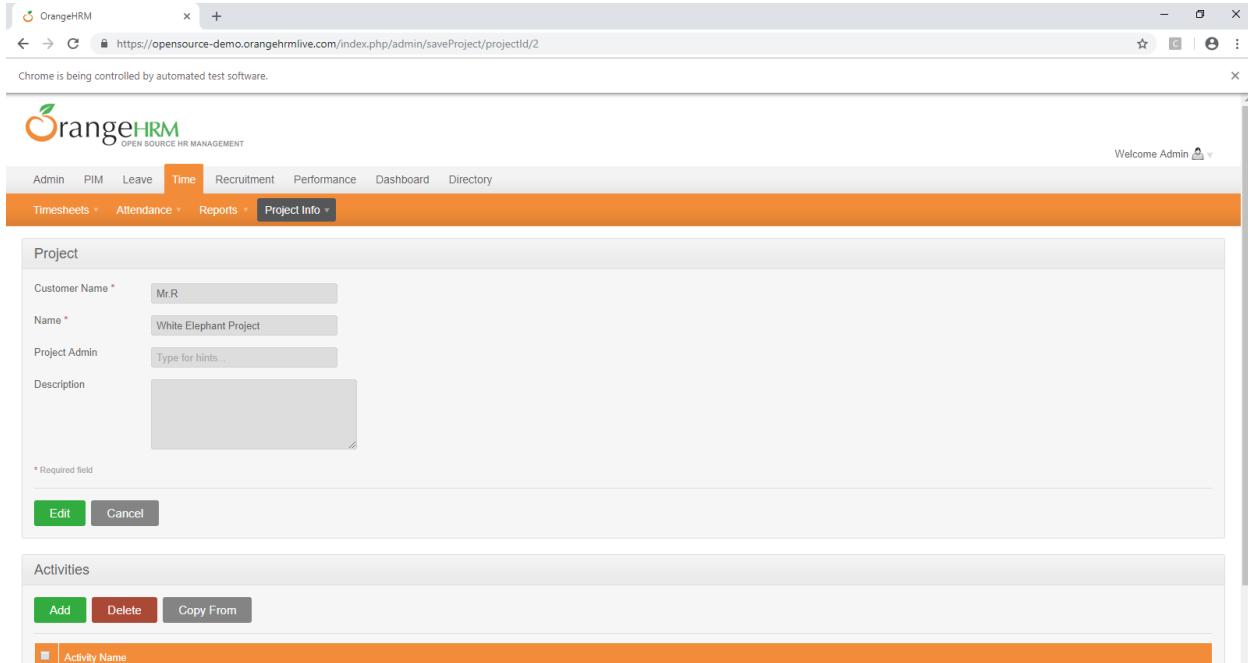


Fig-5.62: Add a new Project “White Elephant Project”

```
18 public class Project {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[4]/a/b")).click();
32
33         driver.findElement(By.xpath("//*[@id='menu_admin_ProjectInfo']")).click();
34         driver.findElement(By.xpath("//*[@id='menu_admin_viewProjects']")).click();
35
36         driver.findElement(By.xpath("//*[@id='btnAdd']")).click();
37         driver.findElement(By.xpath("//*[@id='addCustomerLink']")).click();
38
39         driver.findElement(By.xpath("//*[@id='addCustomer_customerName']")).sendKeys("Mr.R");
40         driver.findElement(By.xpath("//*[@id='dialogSave']")).click();
41
42         Thread.sleep(2000);
43         driver.findElement(By.xpath("//*[@id='addProject_projectName']")).sendKeys("White Elephant Project");
44
45         Thread.sleep(2000);
46         driver.findElement(By.xpath("//*[@id='btnSave']")).click();
47     }
48
49 }
50 }
```

Fig-5.63: Code for adding a new Project “White Elephant Project”

Test Case-17: Recruitment with Vacancy

1. Create a new Vacancy “Managing Director” with Job Title “CEO” and Hiring Manager “Russel Hamilton”

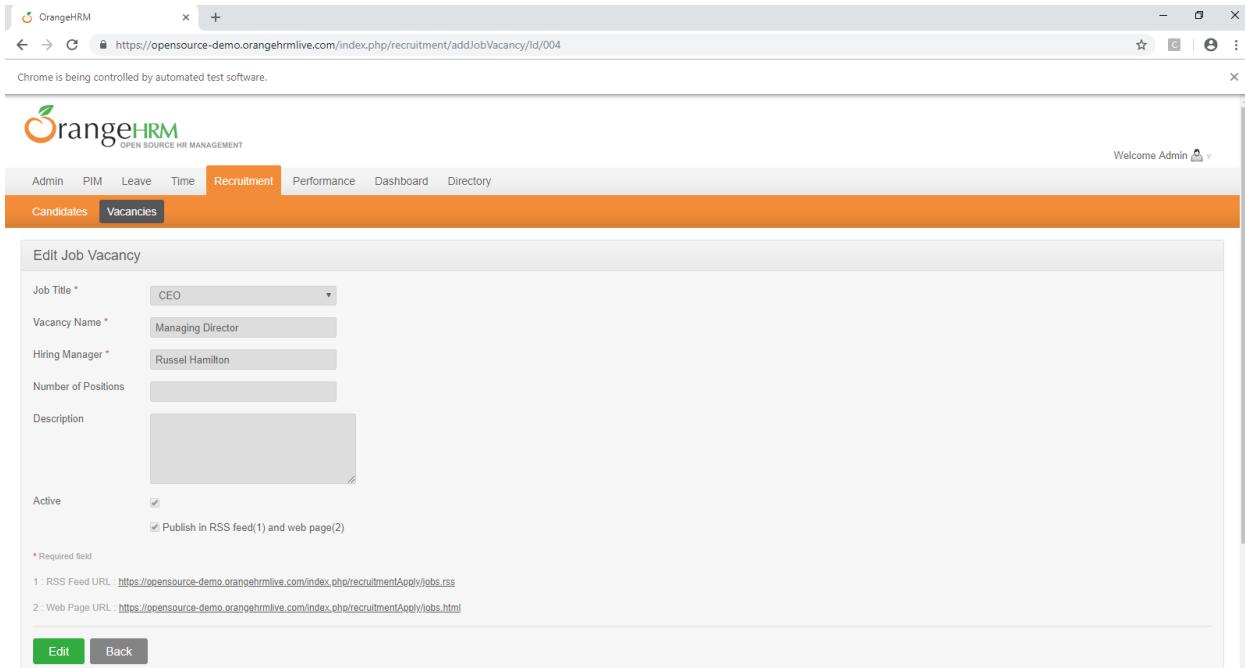


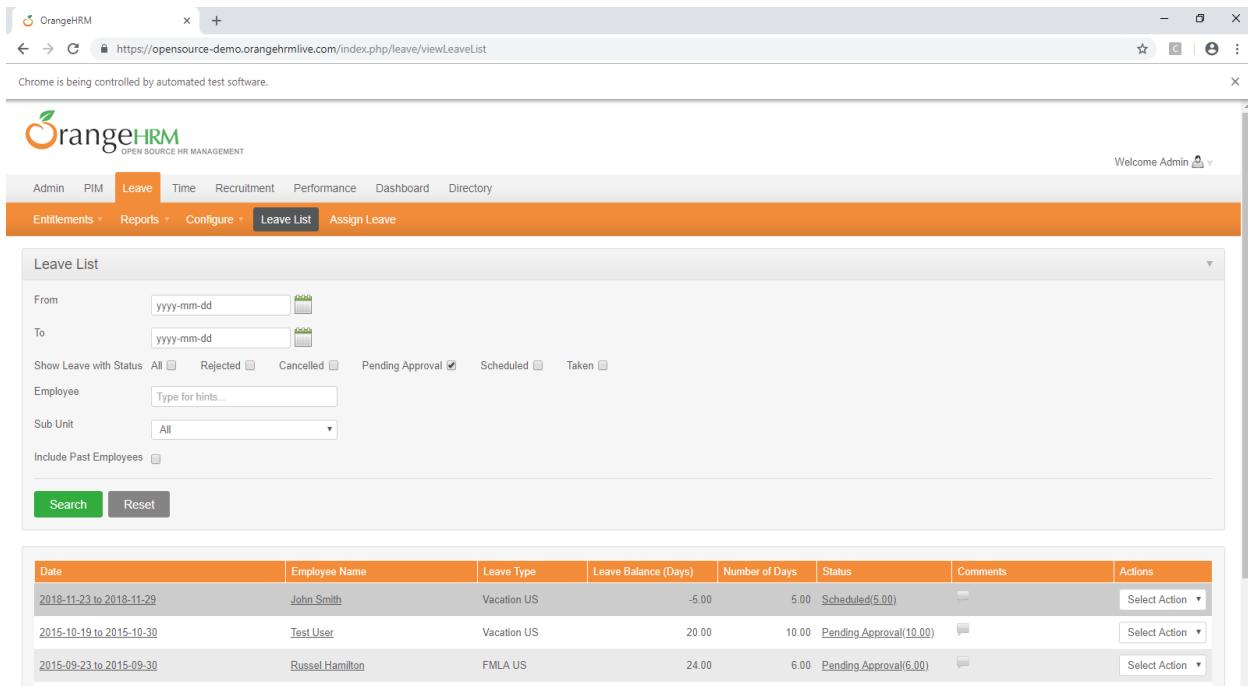
Fig-5.64: Create Vacancy Managing Director

```
18 public class Vacancy {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31         driver.findElement(By.xpath("//*[@id='menu_recruitment_viewJobVacancy']")).click();
32
33         driver.findElement(By.xpath("//*[@id='btnAdd']")).click();
34
35         Select a = new Select(driver.findElement(By.id("addJobVacancy_jobTitle")));
36         a.selectByIndex(2);
37
38         driver.findElement(By.xpath("//*[@id='addJobVacancy_name']")).sendKeys("Managing Director");
39
40         Thread.sleep(2000);
41         driver.findElement(By.xpath("//*[@id='addJobVacancy_hiringManager']")).sendKeys("Russel Hamilton");
42         Thread.sleep(2000);
43
44         driver.findElement(By.xpath("//*[@id='btnSave']")).click();
45
46     }
47
48 }
```

Fig-5.65: Code for creating Vacancy Managing Director

Test Case-18: Dashboard

1. Navigating to the URL for Leave list

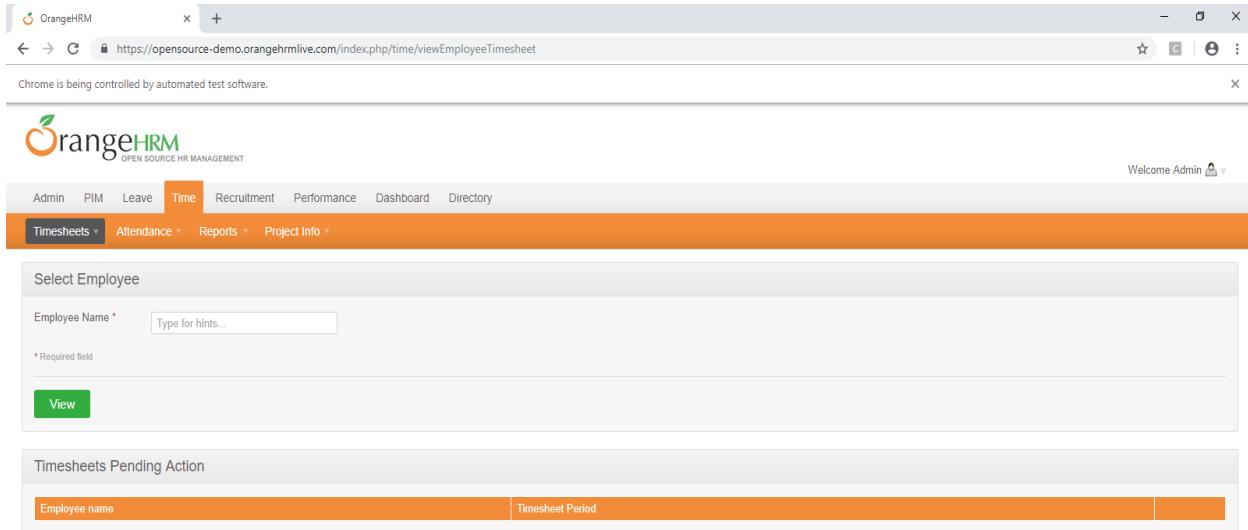


The screenshot shows the OrangeHRM web interface. The browser title bar says "OrangeHRM". The address bar shows the URL: https://opensource-demo.orangehrmlive.com/index.php/leave/viewLeaveList. Below the address bar, a message says "Chrome is being controlled by automated test software." The main header has the OrangeHRM logo and the text "OPEN SOURCE HR MANAGEMENT". The navigation menu includes Admin, PIM, Leave, Time, Recruitment, Performance, Dashboard, and Directory. Under the Leave menu, "Leave List" is selected. The page title is "Leave List". There are search filters for "From" and "To" dates, employee names, and leave types like "Vacation US", "FMLA US", etc. A table lists leave requests with columns: Date, Employee Name, Leave Type, Leave Balance (Days), Number of Days, Status, Comments, and Actions. The first row shows a request from John Smith for Vacation US, scheduled for 5 days.

Date	Employee Name	Leave Type	Leave Balance (Days)	Number of Days	Status	Comments	Actions
2018-11-23 to 2018-11-29	John Smith	Vacation US	-5.00	5.00	Scheduled(5.00)		Select Action
2015-10-19 to 2015-10-30	Test User	Vacation US	20.00	10.00	Pending Approval(10.00)		Select Action
2015-09-23 to 2015-09-30	Russel Hamilton	FMLA US	24.00	6.00	Pending Approval(6.00)		Select Action

Fig-5.66: Navigating to Leave list

2. Navigating to the URL for Timesheets



The screenshot shows the OrangeHRM web interface. The browser title bar says "OrangeHRM". The address bar shows the URL: https://opensource-demo.orangehrmlive.com/index.php/time/viewEmployeeTimesheet. Below the address bar, a message says "Chrome is being controlled by automated test software." The main header has the OrangeHRM logo and the text "OPEN SOURCE HR MANAGEMENT". The navigation menu includes Admin, PIM, Leave, Time, Recruitment, Performance, Dashboard, and Directory. Under the Time menu, "Timesheets" is selected. The page title is "Select Employee". There is a search field for "Employee Name" with a placeholder "Type for hints...". A "View" button is present. Below this, a section titled "Timesheets Pending Action" shows a table with columns: Employee name and Timesheet Period. The first row shows a pending timesheet for "Employee name".

Employee name	Timesheet Period
Employee name	

Fig-5.67: Navigating to Timesheets

```

18 public class Dashboard {
19     public static void main(String args[]) throws InterruptedException {
20
21         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22         WebDriver driver = new ChromeDriver();
23         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25         driver.manage().window().maximize();
26
27         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31         //Leave List:
32         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[7]/a/b")).click();
33         driver.findElement(By.xpath("//html/body/div[1]/div[3]/div/div[2]/div[1]/div/div/div/fieldset/div/div/table/tbody/tr/td[2]/div/a/img")).click();
34
35         Thread.sleep(3000);
36         //Timesheets:
37         driver.findElement(By.xpath("//html/body/div[1]/div[2]/ul/li[7]/a/b")).click();
38         driver.findElement(By.xpath("//html/body/div[1]/div[3]/div/div[2]/div[1]/div/div/div/fieldset/div/div/table/tbody/tr/td[3]/div/a/img")).click();
39     }
40 }
41
42

```

Fig-5.68: Code for navigating from dashboard to leave list & timesheets

Test Case-19: Official website of Orange HRM

- Navigating to the Official website “Orange HRM” by clicking the image at the top left



Fig-5.69: Navigating to the Official Orange HRM

```

18  public class Official {
19      public static void main(String args[]) throws InterruptedException {
20
21          System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");
22          WebDriver driver = new ChromeDriver();
23          driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");
24
25          driver.manage().window().maximize();
26
27          driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");
28          driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");
29          driver.findElement(By.xpath("//*[@id='btnLogin']")).click();
30
31          //Official Website:
32          driver.findElement(By.xpath("//html/body/div[1]/div[1]/a[1]/img")).click();
33
34      }
35
36  }

```

Fig-5.70: Code for navigating to the Official Orange HRM

Test Case-20: Logout

1. Logging out from the Orange HRM navigating to the login page

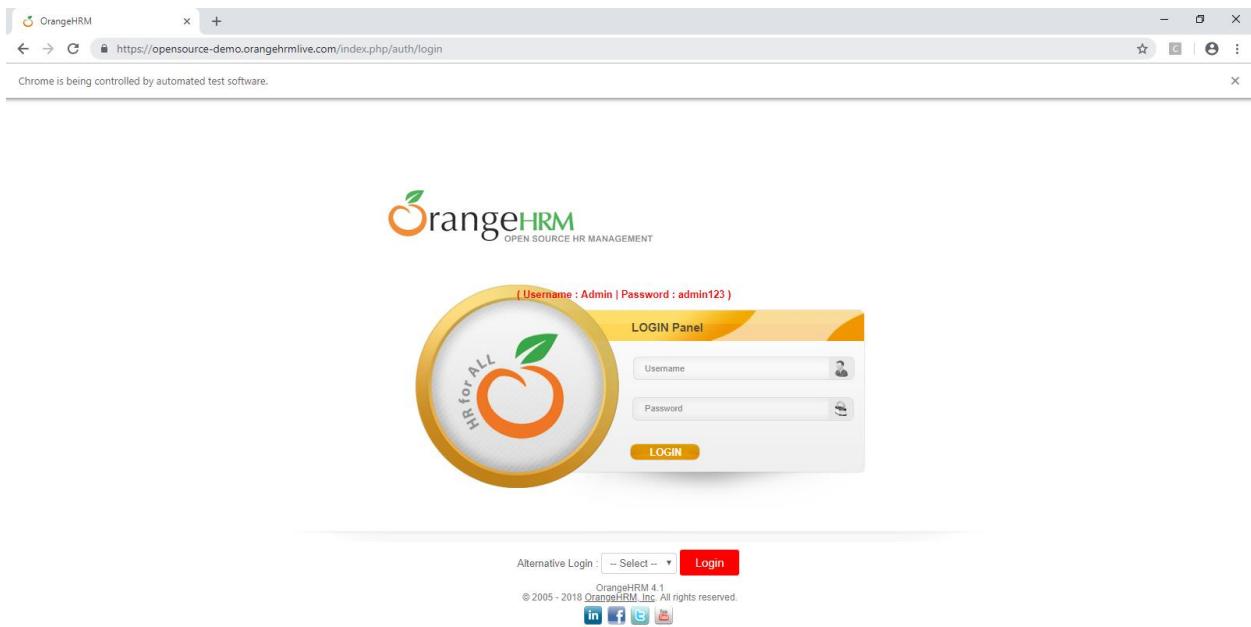


Fig-5.71: Logout and navigate to Login page

```
16 public class Logout {  
17  
18     public static void main(String args[]) throws InterruptedException {  
19  
20         System.setProperty("webdriver.chrome.driver", "E:\\Software\\Developing_Software\\Selenium\\chromedriver_win32\\chromedriver.exe");  
21         WebDriver driver = new ChromeDriver();  
22         driver.get("https://opensource-demo.orangehrmlive.com/index.php/pim/viewPimModule");  
23  
24         driver.manage().window().maximize();  
25  
26         driver.findElement(By.xpath("//*[@id='txtUsername']")).sendKeys("Admin");  
27         driver.findElement(By.xpath("//*[@id='txtPassword']")).sendKeys("admin123");  
28         driver.findElement(By.xpath("//*[@id='btnLogin']")).click();  
29         Thread.sleep(2000);  
30         driver.findElement(By.xpath("//*[@id='welcome']")).click();  
31         Thread.sleep(2000);  
32         driver.findElement(By.xpath("//html/body/div[1]/div[1]/div[1]/ul/li[2]/a")).click();  
33  
34     }  
35  
36 }
```

Fig-5.72: Code for logging out and navigate to Login page

Conclusion:

Selenium based testing requires knowledge of web driver API. Moreover it's necessary to be proficient in the chosen development language. It's possible to have a "Test Library" module for simplifying the procedures, but that also requires training on. For a successful web application testing, the mentioned test cases are a complete necessity. With these sets performed we have figured out all the existing issues that need to be worked on to obtain a flawless application.

References:

[1] Check box in selenium web driver in java:

<https://www.guru99.com/accessing-forms-in-webdriver.html#8>

[2] Select dropdown menu in selenium web driver in java:

<https://www.guru99.com/select-option-dropdown-selenium-webdriver.html>

[3] Writing Java code using Selenium Web Driver tutorial:

<https://www.youtube.com/watch?v=juKRybHPMwE>

[4] Web Element tutorial:

<https://www.youtube.com/watch?v=2SzdhH8xAX4&t=7s>

[5] Selenium IDE tutorial:

<https://www.youtube.com/watch?v=3Yz9hzTueWM>