Capstone Project	Student Name: Vijina P	
Human Resource Management Domain Project		

# **Github repository**

The source code has been uploaded to the following git repository;

Url	https://github.com/vijinabalakrishnan/Capstone_Projects/tree/main/Human%20Resource%20Manage_ment/OrangeHRM_Automation_Test
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### **Scenario 1:**

Automate Orange HRM login and logout with 5 different data sets including valid and invalid data sets.

- 1. Save the data set in an Excel file
- 2. Write a script to read data from Excel
- 3. Prepare a scriptfor Login and logout
- 4. Perform assertion for valid data set (use Username: Admin and Password: admin123) test case should be passed and invalid data set (other than given data) test case should fail.
- 5. Capture Screenshot for every login functionality 6. Generate Extent Report for the same.

### Ans:

Data Input Excel Sheet: LoginData.xlsx

	Α	В
1	Username	Password
2	Admin	admin123
3	admin	wrong123
4	user1	pass1
5	test	12345
6	admin123	Admin
7		

Source code is given below.

# Scenario 2:

**Create a Page Object Model for two pages** 

- 1. Login Page
- 2. Admin Page

Write an automation script for Login functionality and Admin search feature

Create a Page and Class for the Login Page and automate the functionality of Orange HRM login for ValidTest Data:

- Username: Admin
- Password: admin123.

#### Ans:

#### Create a Page and class for Admin where you can prepare 4 important test cases:

1. Create a test case to get all 12 options from the left side menu and print the count which should be 12 from that list click on Admin then the Admin page will open.

#### **Test Scenario**

- 1. Login to OrangeHRM
- 2. Get all 12 left side menu items
- 3. Print the count of menu items(12)
- 4. Click on "Admin" menu link.
- 2. Create test case for search For Existing Employee search ByUserName(): here send username Admin to username text box and click on the search button and display total record found and refresh page.

#### **Test Scenario**

- 1. Login to OrangeHRM
- 2. Navigate to Admin section
- 3. Search for user with username Admin
- 4. Click Search
- 5. Display total records found
- 6. Refresh the page
- 3. Create test case for search For Existing Employee search ByUserRole(): here automate dropdown and select Role Admin and click on the search button and display the total record found and refresh the page.

### **Test Scenario**

- 1. Open OrangeHRM dashboard (after login)
- 2. Navigate to Admin page
- 3. Use SearchByUserRole("Admin") method to select user role from dropdown
- 4. Click Search
- 5. Display total records found
- 6. Refresh the page
- 4. Create test case for search For Existing Employee SearchByUserStatus(): here automate dropdownand select status Enabled or Disabled then click on the search button and display the total record found.

# **Test Scenario**;

- 1. Login and open the OrangeHRM dashboard
- 2. Navigate to Admin section
- 3. Use SearchByUserStatus ("Enabled") or SearchByUserStatus ("Disabled") to select from the dropdown
- 4. Click Search
- 5. Display total records found

### **Source Code**

#### Pom.xml:

```
<artifactId>OrangeHRM_Automation_Test</artifactId>
<version>0.0.1-SNAPSHOT</version>
<dependencies>
<!-- https://mvnrepository.com/artifact/org.seleniumhq.selenium/selenium-java -->
       <dependency>
         <groupId>org.seleniumhq.selenium
         <artifactId>selenium-java</artifactId>
         <version>4.34.0</version>
       </dependency>
       <dependency>
   <groupId>com.aventstack
   <artifactId>extentreports</artifactId>
  <version>5.0.9</version>
  </dependency>
  <dependency>
    <groupId>org.apache.poi
    <artifactId>poi-ooxml</artifactId>
    <version>5.2.5</version>
  </dependency>
</dependencies>
<build>
  <sourceDirectory>src</sourceDirectory>
  <plugins>
  <plugin>
    <artifactId>maven-compiler-plugin</artifactId>
    <version>3.13.0</version>
    <configuration>
     <release>13</release>
    </configuration>
  </plugin>
 </plugins>
</build>
</project>
testng.xml:
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE suite SYSTEM "https://testng.org/testng-1.0.dtd">
<suite name="Suite">
<test thread-count="5" name="OrangeHRM_Test">
  <classes>
   < class name="test.java.tests.LoginTests"/>
  <class name="test.java.tests.DashboardTests"/>
   < class name="test.java.tests.SearchUserTests"/>
  </classes>
</test> <!-- Test -->
</suite> <!-- Suite -->
\src\test\java\utils\ExcelUtils.java
package utils;
import org.apache.poi.ss.usermodel.*;
```

import org.apache.poi.xssf.usermodel.XSSFWorkbook;

```
import java.io.FileInputStream;
public class ExcelUtils {
  public static Object[][] getData(String filePath, String sheetName) throws Exception {
    FileInputStream fis = new FileInputStream(filePath);
    Workbook wb = new XSSFWorkbook(fis);
    Sheet sheet = wb.getSheet(sheetName);
    int rowCount = sheet.getPhysicalNumberOfRows();
    int colCount = sheet.getRow(0).getPhysicalNumberOfCells();
    Object[][] data = new Object[rowCount - 1][colCount];
    for (int i = 1; i < rowCount; i++) {
      Row row = sheet.getRow(i);
      for (int j = 0; j < colCount; j++) {
        data[i - 1][j] = row.getCell(j).toString();
      }
    wb.close();
    return data;
}
\src\test\java\utils\WaitUtils.java
package main.java.utils;
import org.openqa.selenium.*;
import org.openqa.selenium.support.ui.ExpectedConditions;
```

```
import org.openqa.selenium.support.ui.WebDriverWait;
import java.time.Duration;
public class WaitUtils {
  private WebDriver driver;
  private WebDriverWait wait;
  // Constructor
  public WaitUtils(WebDriver driver, int timeoutInSeconds) {
    this.driver = driver;
    this.wait = new WebDriverWait(driver, Duration.ofSeconds(timeoutInSeconds));
  }
  // Wait until element is visible
  public WebElement waitForVisibility(By locator) {
    return wait.until(ExpectedConditions.visibilityOfElementLocated(locator));
  // Wait until element is clickable
  public WebElement waitForClickable(By locator) {
    return wait.until(ExpectedConditions.elementToBeClickable(locator));
```

```
// Wait until element is present in the DOM
  public WebElement waitForPresence(By locator) {
    return wait.until(ExpectedConditions.presenceOfElementLocated(locator));
  // Wait until element is invisible
  public boolean waitForInvisibility(By locator) {
    return wait.until(ExpectedConditions.invisibilityOfElementLocated(locator));
  // Wait until text is present in element
  public boolean waitForText(By locator, String text) {
    return wait.until(ExpectedConditions.textToBePresentInElementLocated(locator, text));
  // Wait until alert is present
  public Alert waitForAlert() {
    return wait.until(ExpectedConditions.alertIsPresent());
  public void sleep()
        try {
                Thread.sleep(1000);
        } catch (InterruptedException e) {
                // TODO Auto-generated catch block
                e.printStackTrace();
  }
\src\test\java\base\BaseTest.java
```

```
package test.java.tests;
import com.aventstack.extentreports.ExtentReports;
import com.aventstack.extentreports.ExtentTest;
import com.aventstack.extentreports.reporter.ExtentSparkReporter;
import org.openga.selenium.WebDriver;
import org.testng.annotations.*;
import main.java.utils.WaitUtils;
import main.java.utils.WebDriverFactory;
import com.aventstack.extentreports.*;
import org.openga.selenium.OutputType;
import org.openga.selenium.TakesScreenshot;
import java.io.File;
import java.io.FileOutputStream;
import java.text.SimpleDateFormat;
import java.util.Date;
```

```
public class BaseTest {
  protected WebDriver driver;
  protected static ExtentReports extent;
  protected ExtentTest test;
  protected WaitUtils waitUtil;
  @BeforeSuite
  public void setupExtent() {
    ExtentSparkReporter spark = new ExtentSparkReporter("test-output/ExtentReport.html");
    extent = new ExtentReports();
    extent.attachReporter(spark);
  @AfterSuite
  public void tearDownExtent() {
    extent.flush();
  @BeforeMethod
  public void setupDriver() {
       System.setProperty("webdriver.chrome.driver",
                      win32\\chromedriver.exe");
               driver = WebDriverFactory.createDriver("chrome");
               driver.get("https://opensource-demo.orangehrmlive.com");
               waitUtil = new WaitUtils(driver,5);
  @AfterMethod
  public void quitDriver() {
    if(driver != null) {
      driver.quit();
  public String captureScreenshot(String testName) {
    String filePath = "screenshots/" + testName + "_" + timestamp() + ".png";
    try {
      TakesScreenshot ts = (TakesScreenshot) driver;
      byte[] src = ts.getScreenshotAs(OutputType.BYTES);
      FileOutputStream fos = new FileOutputStream(new File(filePath));
     fos.write(src);
     fos.close();
    } catch (Exception e) {
      e.printStackTrace();
    return filePath;
  private String timestamp() {
    return new SimpleDateFormat("yyyyMMddHHmmss").format(new Date());
```

```
\src\test\java\pages\DashboardPage.java
package main.java.pages;
import java.util.List;
import org.openqa.selenium.By;
import org.openga.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import main.java.utils.WaitUtils;
public class DashboardPage {
       private WebDriver driver;
  private WaitUtils waitUtil;
  By dashboardHeader = By.xpath("//h6[text()='Dashboard']");
  By navMenu = By.className("oxd-userdropdown-tab");
  By logoutBtn = By.cssSelector("a[href='/web/index.php/auth/logout']");
  By leftNavMenuBtn = By.xpath("/html/body/div/div[1]/div[1]/aside/nav/div[2]/div/div/button");
  By leftNavMenu = By.className("oxd-main-menu");
  By navMenuItem = By.className("oxd-main-menu-item-wrapper");
  By navMenuItemSpan = By.className("oxd-main-menu-item--name");
  public DashboardPage(WebDriver driver, WaitUtils waitUtil) {
    this.driver = driver;
    this.waitUtil = waitUtil;
  public boolean isDashboardDisplayed() {
    return driver.findElements(dashboardHeader).size() > 0;
  public boolean logoutUser() {
          driver.findElement(navMenu).click();
          waitUtil.sleep();
          waitUtil.waitForVisibility(logoutBtn);
          driver.findElement(logoutBtn).click();
          waitUtil.sleep();
          return true;
  public int getLeftNavMenuCount() {
          driver.findElement(leftNavMenuBtn).click();
          waitUtil.sleep();
          waitUtil.waitForVisibility(leftNavMenu);
          waitUtil.sleep();
          return driver.findElements(navMenuItem).size();
 }
  public void openAdminMenu() {
          List<WebElement> elems = driver.findElements(navMenuItem);
          for (WebElement elem: elems) {
```

```
\src\test\java\pages\LoginPage.java
package main.java.pages;
import org.openqa.selenium.By;
import org.openqa.selenium.Keys;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import main.java.utils.WaitUtils;
public class LoginPage {
       private WebDriver driver;
  private WaitUtils waitUtil;
  By username = By.name("username");
  By password = By.name("password");
  By loginBtn = By.xpath("//button[@type='submit']");
  By dashboardHeader = By.xpath("//h6[text()='Dashboard']");
  private By errorMessage = By.className("api-error");
  public LoginPage(WebDriver driver, WaitUtils waitUtil) {
    this.driver = driver;
    this.waitUtil = waitUtil;
  }
  public boolean isDashboardDisplayed() {
    return driver.findElements(dashboardHeader).size() > 0;
  public void login(String user, String pass) {
       driver.findElement(username).sendKeys(user);
       driver.findElement(password).sendKeys(pass);
       waitUtil.waitForClickable(loginBtn);
       driver.findElement(loginBtn).click();
 }
}
\src\test\java\pages\DashboardPage.java
package main.java.pages;
```

```
package main.java.pages;

import java.util.List;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;

import main.java.utils.WaitUtils;

public class DashboardPage {
    private WebDriver driver;
    private WaitUtils waitUtil;
    By dashboardHeader = By.xpath("//h6[text()='Dashboard']");
```

```
By navMenu = By.className("oxd-userdropdown-tab");
  By logoutBtn = By.cssSelector("a[href='/web/index.php/auth/logout']");
  By leftNavMenuBtn = By.xpath("/html/body/div/div[1]/div[1]/aside/nav/div[2]/div/div/button");
  By leftNavMenu = By.className("oxd-main-menu");
  By navMenuItem = By.className("oxd-main-menu-item-wrapper");
  By navMenuItemSpan = By.className("oxd-main-menu-item--name");
  public DashboardPage(WebDriver driver, WaitUtils waitUtil) {
    this.driver = driver;
    this.waitUtil = waitUtil;
  public boolean isDashboardDisplayed() {
    return driver.findElements(dashboardHeader).size() > 0;
  public boolean logoutUser() {
          driver.findElement(navMenu).click();
          waitUtil.sleep();
          waitUtil.waitForVisibility(logoutBtn);
          driver.findElement(logoutBtn).click();
          waitUtil.sleep();
          return true;
  public int getLeftNavMenuCount() {
          driver.findElement(leftNavMenuBtn).click();
          waitUtil.sleep();
          waitUtil.waitForVisibility(leftNavMenu);
          waitUtil.sleep();
          return driver.findElements(navMenuItem).size();
 }
  public void openAdminMenu() {
          List<WebElement> elems = driver.findElements(navMenuItem);
          for (WebElement elem : elems) {
                if (elem.getText().equals("Admin")) {
                       elem.click();
                       waitUtil.sleep();
                       return;
               }
}
\src\test\java\pages\SearchUserPage.java
package main.java.pages;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import main.java.utils.WaitUtils;
import java.util.List;
```

```
public class SearchUserPage {
  private WebDriver driver;
  private WaitUtils waitUtil;
  private By usrenameInput = By.className("oxd-input");
  private By userRoleDropdown = By.xpath("//label[text()='User Role']/../following-
sibling::div//div[contains(@class,'select-text')]");
  private By dropdownOptions = By.xpath("//div[@role='listbox']//span");
  private By searchButton = By.xpath("//button[normalize-space()='Search']");
  private By resultRows = By.cssSelector(".oxd-table-body .oxd-table-card");
  private By statusDropdown = By.xpath("//label[text()='Status']/../following-sibling::div//div[contains(@class,'select-
text')]");
  private By statusOptions = By.xpath("//div[@role='listbox']//span");
  public SearchUserPage(WebDriver driver, WaitUtils waitUtil) {
    this.driver = driver;
    this.waitUtil = waitUtil;
  public int SearchByUserName(String username) {
        List<WebElement> allInputs = driver.findElements(usrenameInput);
        WebElement[] arrayInputs = new WebElement[allInputs.size()];
        WebElement elem = allInputs.toArray(arrayInputs)[1];//username input textbox
        elem.click();
                elem.sendKeys(username);//enter input
                driver.findElement(searchButton).click();//search
                waitUtil.sleep();
                return driver.findElements(resultRows).size();
  public int SearchByUserRole(String roleName) {
    driver.findElement(userRoleDropdown).click();
    waitUtil.waitForVisibility(dropdownOptions);
    for (WebElement option : driver.findElements(dropdownOptions)) {
      if (option.getText().equalsIgnoreCase(roleName)) {
        option.click();
        driver.findElement(searchButton).click();//search
                waitUtil.sleep();
                return driver.findElements(resultRows).size();
        return 0;
  public int SearchByUserStatus(String statusText) {
    driver.findElement(statusDropdown).click();
    waitUtil.waitForVisibility(statusOptions);
    for (WebElement option : driver.findElements(statusOptions)) {
      if (option.getText().equalsIgnoreCase(statusText)) {
```

```
option.click();
        driver.findElement(searchButton).click();//search
               waitUtil.sleep();
               return driver.findElements(resultRows).size();
    }
       return 0;
  public void refreshPage() {
    driver.navigate().refresh();
}
\src\test\java\tests\LoginTest.java
package test.java.tests;
import com.aventstack.extentreports.Status;
import org.testng.Assert;
import org.testng.annotations.DataProvider;
import org.testng.annotations.Test;
import main.java.pages.*;
import main.java.utils.ExcelUtils;
public class LoginTests extends BaseTest {
  @Test(dataProvider = "loginData")
  public void loginTest(String username, String password) {
    test = extent.createTest("Login Test with user: " + username);
    LoginPage loginPage = new LoginPage(driver, waitUtil);
    loginPage.login(username, password);
    DashboardPage dashboardPage = new DashboardPage(driver, waitUtil);
    String screenshotPath = captureScreenshot("Login_" + username);
    if (username.equals("Admin") && password.equals("admin123")) {
      Assert.assertTrue(dashboardPage.isDashboardDisplayed());
      test.pass("Valid login successful").addScreenCaptureFromPath(screenshotPath);
      //logout
      dashboardPage.logoutUser();
      screenshotPath = captureScreenshot("Logout " + username);
      test.pass("Logout successful").addScreenCaptureFromPath(screenshotPath);
    } else {
      Assert.assertFalse(dashboardPage.isDashboardDisplayed());
      test.fail("Invalid login.").addScreenCaptureFromPath(screenshotPath);
```

```
@DataProvider(name = "loginData")
  public Object[][] getLoginData() throws Exception {
    return ExcelUtils.getData("data/LoginData.xlsx", "Sheet1");
}
   \src\test\java\tests\DashboardTests.java
   package test.java.tests;
   import com.aventstack.extentreports.Status;
   import org.testng.Assert;
   import org.testng.annotations.BeforeMethod;
   import org.testng.annotations.Test;
   import main.java.pages.*;
   import main.java.utils.WaitUtils;
   public class DashboardTests extends BaseTest {
      @BeforeMethod
      public void login() {
        LoginPage loginPage = new LoginPage(driver, waitUtil);
        loginPage.login("Admin", "admin123");
      }
      @Test
      public void checkLeftMenuItemsCount() {
        test = extent.createTest("Check left menu items count");
        DashboardPage dashBoardPage = new DashboardPage(driver, waitUtil);
        int cnt = dashBoardPage.getLeftNavMenuCount();
        String screenshotPath = captureScreenshot("Dashboard_Menu_Count");
        Assert.assertEquals(cnt,12,"Left menu item count was not 12. It was "+cnt+" instead.");
        if(cnt == 12)
               test.log(Status.PASS, "Left menu item count test passed. "+cnt+" menu items
   found").addScreenCaptureFromPath(screenshotPath);;
        else
               test.log(Status.FAIL, "Left menu item count test is not passed. Menu count is: "+cnt+" instead of
   12").addScreenCaptureFromPath(screenshotPath);;
        }
     }
   \src\test\java\tests\SearchUserTests.java
   package test.java.tests;
   import com.aventstack.extentreports.Status;
   import org.testng.Assert;
   import org.testng.annotations.BeforeMethod;
   import org.testng.annotations.Test;
```

```
import main.java.pages.*;
public class SearchUserTests extends BaseTest {
  @BeforeMethod
  public void login() {
    LoginPage loginPage = new LoginPage(driver, waitUtil);
    loginPage.login("Admin", "admin123");
  }
  @Test
  public void searchByUserName() {
   String keyword = "Admin";
    test = extent.createTest("Search for admin user using SearchByUserName()");
    DashboardPage dashBoardPage = new DashboardPage(driver, waitUtil);
    dashBoardPage.openAdminMenu();
    SearchUserPage searchUserPage = new SearchUserPage(driver, waitUtil);
    int cntResults = searchUserPage.SearchByUserName(keyword);
    String screenshotPath = captureScreenshot("Search_Username_"+keyword);
    Assert.assertTrue(cntResults>0,"Failed: searchByUserName() test failed. No of users found for ""+keyword+""
is "+cntResults);
    if(cntResults > 0)
           test.log(Status.PASS, "searchByUserName() test passed. No of users found for ""+keyword+" is
"+cntResults).addScreenCaptureFromPath(screenshotPath);
    else
           test.log(Status.FAIL, "Failed: searchByUserName() test failed. No of users found for ""+keyword+" is
"+cntResults).addScreenCaptureFromPath(screenshotPath);
    searchUserPage.refreshPage();
    test.log(Status.PASS, "Page refreshed");
  }
  @Test
  public void searchByUserRoleDropdown() {
   String keyword = "Admin";
    test = extent.createTest("Search for admin user using SearchByRole() dropdown");
    DashboardPage dashBoardPage = new DashboardPage(driver, waitUtil);
    dashBoardPage.openAdminMenu();
    SearchUserPage searchUserPage = new SearchUserPage(driver, waitUtil);
    int cntResults = searchUserPage.SearchByUserRole(keyword);
    String screenshotPath = captureScreenshot("Search_User_Role");
    Assert.assertTrue(cntResults>0,"Failed: SearchByRole() dropdown test failed. No of users found for
""+keyword+"" is "+cntResults);
    if(cntResults > 0)
```

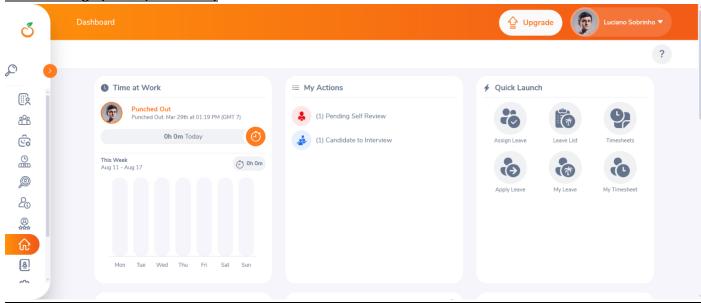
```
test.log(Status.PASS, "SearchByRole() dropdown test passed. No of users found for ""+keyword+" is
"+cntResults).addScreenCaptureFromPath(screenshotPath);
    else
           test.log(Status.FAIL, "Failed: SearchByRole() dropdown test failed. No of users found for
""+keyword+"" is "+cntResults).addScreenCaptureFromPath(screenshotPath);
    searchUserPage.refreshPage();
    test.log(Status.PASS, "Page refreshed");
  @Test
  public void searchByUserStatusDropdown() {
   String keyword = "Enabled";//Enabled status
    test = extent.createTest("Search for admin user using SearchByUserStatus() dropdown");
    DashboardPage dashBoardPage = new DashboardPage(driver, waitUtil);
    dashBoardPage.openAdminMenu();
    SearchUserPage searchUserPage = new SearchUserPage(driver, waitUtil);
    int cntResults = searchUserPage.SearchByUserStatus(keyword);
    String screenshotPath = captureScreenshot("Search_User_Status");
    Assert.assertTrue(cntResults>0,"Failed: SearchByUserStatus() dropdown test failed. No of users found for
""+keyword+"" is "+cntResults);
    if(cntResults > 0)
    {
           test.log(Status.PASS, "SearchByUserStatus() dropdown test passed. No of users found for
""+keyword+"" is "+cntResults).addScreenCaptureFromPath(screenshotPath);
    else
           test.log(Status.FAIL, "Failed: SearchByUserStatus() dropdown test failed. No of users found for
""+keyword+"" is "+cntResults).addScreenCaptureFromPath(screenshotPath);
    searchUserPage.refreshPage();
    test.log(Status.PASS, "Page refreshed");
  }
  @Test
  public void searchByUserStatusDropdownDisabled() {
   String keyword = "Disabled";//Disabled status
    test = extent.createTest("Search for admin user using SearchByUserStatus() dropdown");
    DashboardPage dashBoardPage = new DashboardPage(driver, waitUtil);
    dashBoardPage.openAdminMenu();
    SearchUserPage searchUserPage = new SearchUserPage(driver, waitUtil);
    int cntResults = searchUserPage.SearchByUserStatus(keyword);
    String screenshotPath = captureScreenshot("Search_User_Status");
```

# **Project Structure**

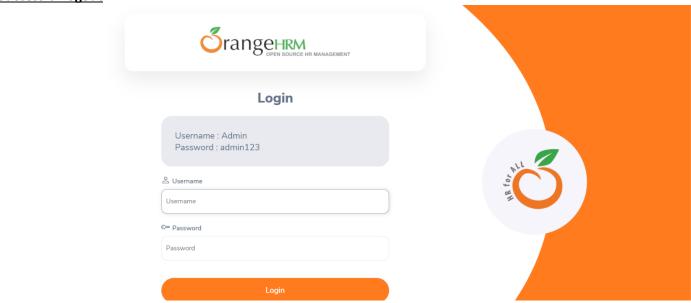
- - - - › B DashboardPage.java
      - > 🛺 LoginPage.java
      - > <a> SearchUserPage.java</a>
    - - > ExcelUtils.java
      - > 🛺 WaitUtils.java
      - > WebDriverFactory.java
    - test.java.listeners
    - # test.java.tests
      - > 🛺 BaseTest.java
      - > 🛺 DashboardTests.java
      - > 🛺 LoginTests.java
      - > A SearchUserTests.java
  - ➤ JRE System Library [JavaSE-13]
  - > Maven Dependencies
  - > Margan TestNG
    - bin
  - > 🗁 data
  - > 🔓 screenshots
  - > 🗁 target
  - > 🔓 test-output
    - 👪 pom.xml
    - 🚜 testng.xml

# **Screenshots**

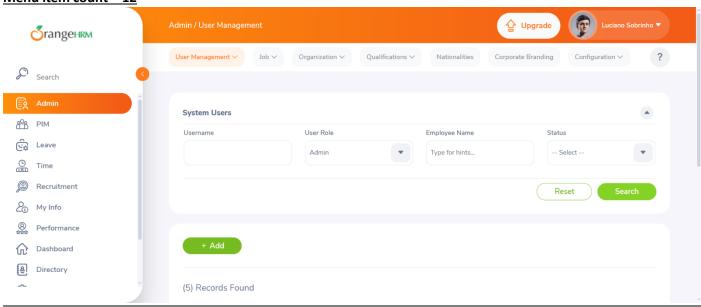
Successful login(Admin, admin123)



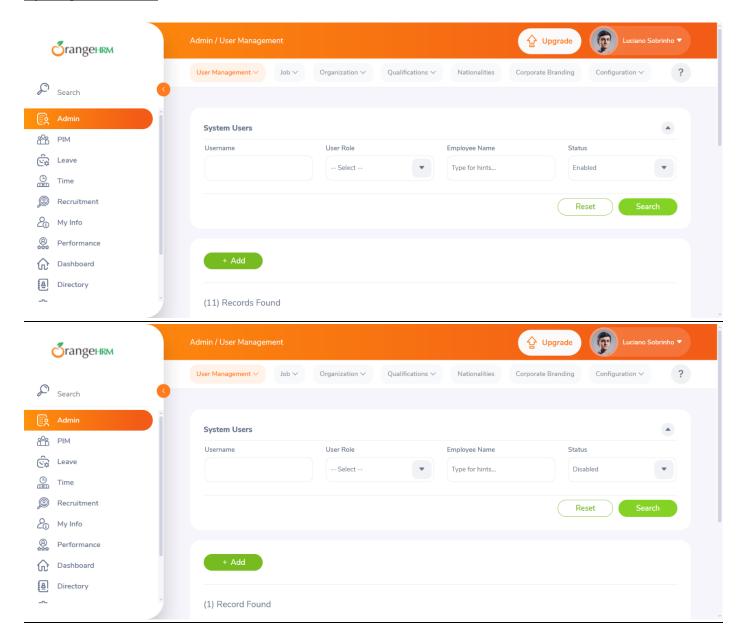
# Successful logout



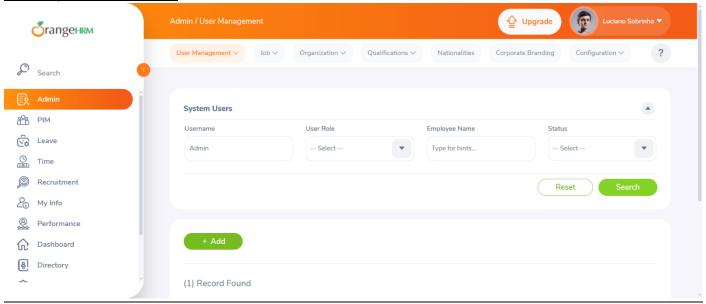
# Menu item count = 12



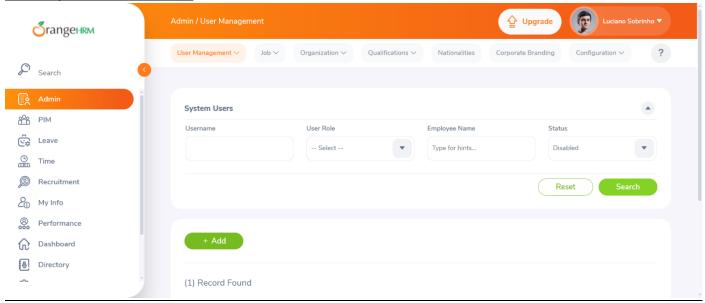
# **Opening Admin menu**



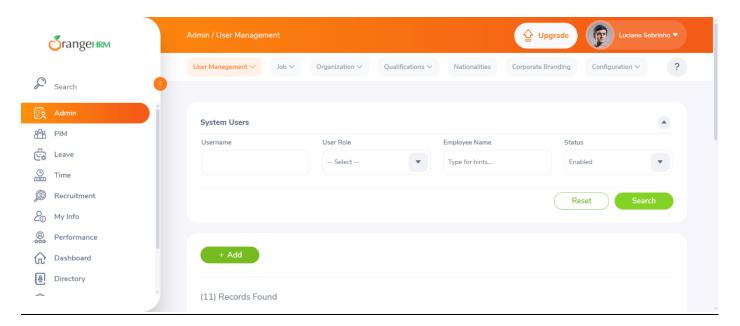
Search by username: Admin



Search by user status: Disabled



# Search by user status: Enabled



**Search by user role: Admin** 

