

## **DATA DRIVEN FRAMEWORK:**

- Using data driven framework we can easily retrieve the data from excel sheet.
- If we maintaining all our input data are in Excel sheet, it will be very easy to reuse.
- In excel sheet have 2 different extensions like,
  1. Xls
  2. Xlsx

### **Xls:**

- Xls is a old one (i.e.) it we used before 2007
- In Xls have some limitations like,
  1. It will support only 512( $2^9$ ) rows and 65536 ( $2^{16}$ ) columns
  2. It will not support macros(xml format)
  3. Colors also limited (i.e.) up to 56 colors
  4. It will support only xls format

### **Xlsx:**

- In this extensions only we have using recently
- Xlsx support up to  $2^{14}$  rows and  $2^{20}$  columns
- It will support macros
- Colors are unlimited
- It will support both xls and xlsx format

### **Jars:**

1. Jxl
  2. Apache POI
- Jxl is an old one. So it will support only xls format.
  - Apache POI is a recent one. It will support both xls and xlsx.
  - Now a days we mostly used Apache POI jar

### **Steps:**

1. Download Apache POI jar
2. Set path (Excel sheet location)
3. Sheet name
4. Rows detail
5. Cell detail
6. Cell type(number, string, Boolean, blank or formula)
7. String conversion( if other than string)

## Program:

### To read data from Excel:

```
public class HotelSearchTest {
    public static void main(String[] args) {

        List<HashMap<String, String>> mapDatalist = new ArrayList();
        try {
            File excelLocation = new File("./Excel/Adactin.xlsx");

            String sheetName = "Adact";

            FileInputStream f = new FileInputStream(
                excelLocation.getAbsolutePath());
            Workbook w = new XSSFWorkbook(f);
            Sheet sheet = w.getSheet(sheetName);
            Row headerRow = sheet.getRow(0);
            for (int i = 0; i < sheet.getPhysicalNumberOfRows(); i++) {
                Row currentRow = sheet.getRow(i);
                HashMap<String, String> mapData = new HashMap<String, String>();
                for (int j = 0; j < headerRow.getPhysicalNumberOfCells(); j++) {
                    Cell currentCell = currentRow.getCell(j);

                    switch (currentCell.getCellType()) {
                        case Cell.CELL_TYPE_STRING:

                            mapData.put(headerRow.getCell(j).getStringCellValue(),
                                currentCell.getStringCellValue());

                            break;
                        case Cell.CELL_TYPE_NUMERIC:

                            mapData.put(headerRow.getCell(j).getStringCellValue(),
                                String.valueOf(currentCell
                                    .getNumericCellValue()));

                            break;
                    }
                }

                mapDatalist.add(mapData);
            }

            // System.out.println(mapDatalist);
        }
    }
}
```

```

String s = mapDatasList.get(1).get("Username");
String s1 = mapDatasList.get(1).get("Password");
System.out.println(s);
System.out.println(s1);

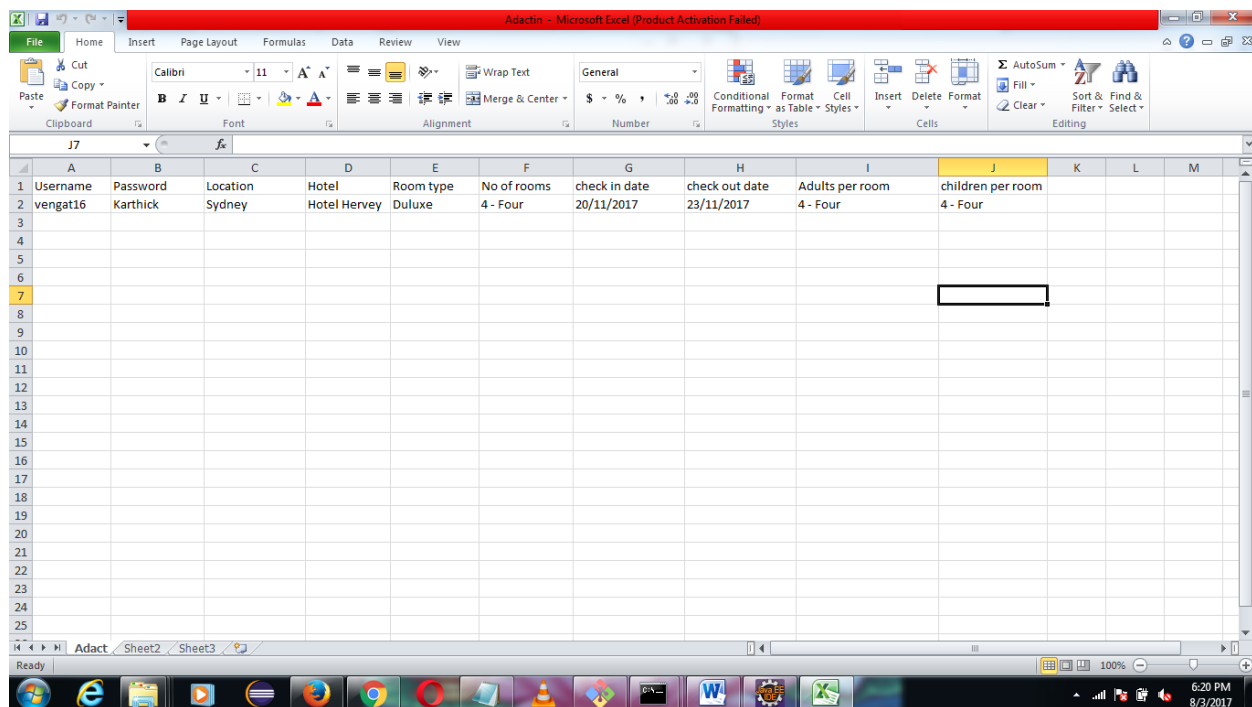
    } catch (Throwable e) {
        e.printStackTrace();
    }

}

}

```

## Input data:



The screenshot shows a Microsoft Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Username	Password	Location	Hotel	Room type	No of rooms	check in date	check out date	Adults per room	children per room			
2	vengat16	Karthick	Sydney	Hotel Hervey	Duluxe	4 - Four	20/11/2017	23/11/2017	4 - Four	4 - Four			
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## Output:

vengat16  
Karthick

Here,

- Excel is a workbook
- Workbook → class

- Xlsx → in this format we use XSSFworkbook
- If the input data is number, then we have to convert into String because in sendkeys we should pass only string.
- Using valueOf() method we can convert integer into string
- For ex
 

```
Int num=12;
String s=String.valueOf(num);
```
- Cell data type, if it is 0 means it is a numeric and if it is 1 means it will be String
- getTyp() is a method is used to print the data type of the input data.

### Advantages of Data driven:

- Easy to maintain
- User friendly
- Reusable purpose

### Disadvantages of Data driven:

- If we use excel sheet have some restrictions like limited rows and columns only we can able read

### Exercise:

### Facebook registration using data driven framework

#### 1. Base class:

```
public class Base {
    static WebDriver driver;
    WebDriverWait wait;

    static File fl = new File("./JSON/Configuration.json");

    public static WebDriver getDriver() {
        JSONObject jsonObject = JSONReadFromFile();
        String browser = (String) jsonObject.get("browser");

        File f = new File("./driver");
        if (browser.equals("chrome")) {
            System.setProperty("webdriver.chrome.driver", f.getAbsolutePath()
                + "/chromedriver.exe");
            driver = new ChromeDriver();
        } else if (browser.equals("firefox")) {
            System.setProperty("webdriver.gecko.driver", f.getAbsolutePath()
```

```

        + "/geckodriver.exe");
        driver = new FirefoxDriver();

    } else if (browser.equals("ie")) {
        System.setProperty("webdriver.ie.driver", f.getAbsolutePath()
            + "/IEDriverServer.exe");
        driver = new InternetExplorerDriver();

    }

    driver.manage().window().maximize();
    driver.get((String) jsonObject.get("url"));
    return driver;
}

public boolean elementToBeVisible(WebDriver driver, int time,
    WebElement element) {
    boolean flag = false;
    try {
        wait = new WebDriverWait(driver, time);
        wait.until(ExpectedConditions.visibilityOf(element));
        flag = true;
    } catch (Exception e) {
        e.printStackTrace();
    }
    return flag;
}

public boolean elementFound(WebDriver driver, int time, WebElement element) {
    boolean res = false;
    driver.manage().timeouts().implicitlyWait(time, TimeUnit.SECONDS);
    try {
        res = element.isDisplayed();
    } catch (Exception e) {
        e.printStackTrace();
    }
    return res;
}

public boolean elementFound(WebElement element) {
    boolean b = false;
    try {
        b = element.isDisplayed();
    } catch (Exception e) {
        e.printStackTrace();
    }
}

```

```

    }
    return b;
}

public void setText(WebElement element, String name) {
    if (name != null && elementFound(element)) {
        element.clear();
        element.sendKeys(name);
    }
}

public String getText(WebElement element) {
    String name = null;
    if (elementFound(element)) {
        name = element.getAttribute("value");
    }
    return name;
}

public void clickBtn(WebElement element) {
    if (elementFound(element)) {
        element.click();
    }
}

public static JSONObject JSONReadFromFile() {
    JSONParser parser = new JSONParser();
    JSONObject jsonObject = null;
    try {
        Object obj = parser.parse(new FileReader(f1.getAbsolutePath()));

        jsonObject = (JSONObject) obj;

    } catch (Exception e) {
        e.printStackTrace();
    }
    return jsonObject;
}

public void dropDownSelect(WebElement element, String name) {

```

```

        Select s = new Select(element);
        s.selectByValue(name);
    }

    public void dropDownSelectVText(WebElement element, String name) {
        Select s = new Select(element);
        s.selectByVisibleText(name);
    }

    public void getScreenShot(String screenShotFileName) {
        File screenShotLocation = new File("./screenshot/" + screenShotFileName
            + ".png");
        TakesScreenshot screenshot = (TakesScreenshot) driver;
        File file = screenshot.getScreenshotAs(OutputType.FILE);
        try {
            FileUtils.copyFile(file, screenShotLocation);
        } catch (IOException e) {
            e.printStackTrace();
        }
    }

    public static List<HashMap<String, String>> readValueFromExcelSheet() {
        List<HashMap<String, String>> mapDatasList = new ArrayList();
        try {
            File excelLocaltion = new File("./Excel/Facebook.xlsx");

            String sheetName = "Sheet1";

            FileInputStream f = new FileInputStream(
                excelLocaltion.getAbsolutePath());
            Workbook w = new XSSFWorkbook(f);
            Sheet sheet = w.getSheet(sheetName);
            Row headerRow = sheet.getRow(0);
            for (int i = 0; i < sheet.getPhysicalNumberOfRows(); i++) {
                Row currentRow = sheet.getRow(i);
                HashMap<String, String> mapDatas = new HashMap<String,
String>();

                for (int j = 0; j < headerRow.getPhysicalNumberOfCells(); j++) {
                    Cell currentCell = currentRow.getCell(j);

                    switch (currentCell.getCellType()) {
                        case Cell.CELL_TYPE_STRING:

                            mapDatas.put(headerRow.getCell(j).getStringCellValue(),
                                currentCell.getStringCellValue());

                            break;

```

```

                case Cell.CELL_TYPE_NUMERIC:

mapDatas.put(headerRow.getCell(j).getStringCellValue(),
                String.valueOf(currentCell

.getNumericCellValue()));

                break;

            }
        }

        mapDatasList.add(mapDatas);
    }

    } catch (Throwable e) {
        e.printStackTrace();
    }
    return mapDatasList;
}
}

```

## 2. JUnit class:

```

public class LoginPageTest extends Base {
    static WebDriver driver;
    LoginPage loginPage;
    static Base base;
    NextPage next;
    @Before
    public void launchBrowser() {
        base = new Base();
        driver=base.getDriver();
    }
    @Test
    public void verifyLogin() {
        loginPage=new LoginPage(driver);
        next=new NextPage(driver);
        getScreenShot("facebookPage");
        setText(loginPage.getTxtFirstName(), readValueFromExcelSheet().get(1)
                .get("Firstname"));
        getScreenShot("firstname");
        setText(loginPage.getTxtSurName(), readValueFromExcelSheet().get(1)

```



```

        .get("Surname"));
getScreenShot("lastname");
setText(loginPage.getTxtMobileNum(), readValueFromExcelSheet().get(1)
        .get("Mobile"));
getScreenShot("mobile");
setText(loginPage.getTxtPassword(), readValueFromExcelSheet().get(1)
        .get("Password"));
getScreenShot("password");

dropDownSelectVText(loginPage.getDrpDwnDay(), "16");
dropDownSelectVText(loginPage.getDrpDwnMonth(), "Nov");
dropDownSelectVText(loginPage.getDrpDwnYear(), "1993");
clickBtn(loginPage.getBtnMale());
clickBtn(loginPage.getBtnSignup());
    }
    @After
    public void closeBrowser() {
        driver.quit();
    }
}

```

### 3. Main class:

```

public class LoginPage {
    static WebDriver driver;
    @FindBy(id="u_0_2")
    private WebElement txtFirstName;
    @FindBy(id="u_0_4")
    private WebElement txtSurName;
    @FindBy(id="u_0_7")
    private WebElement txtMobileNum;

    @FindBy(id="u_0_e")
    private WebElement txtPassword;
    @FindBy(id="day")
    private WebElement drpDwnDay;
    @FindBy(id="month")
    private WebElement drpDwnMonth ;
    @FindBy(id="year")
    private WebElement drpDwnYear;
    @FindBy(id="u_0_i")
    private WebElement btnMale;
    @FindBy(id="u_0_m")

```

```
private WebElement btnSignup;

public LoginPage(WebDriver ldriver) {
    this.driver=ldriver;
    PageFactory.initElements(driver, this);
}

public static WebDriver getDriver() {
    return driver;
}

public WebElement getTxtFirstName() {
    return txtFirstName;
}

public WebElement getTxtSurName() {
    return txtSurName;
}

public WebElement getTxtMobileNum() {
    return txtMobileNum;
}

public WebElement getTxtPassword() {
    return txtPassword;
}

public WebElement getDrpDwnDay() {
    return drpDwnDay;
}

public WebElement getDrpDwnMonth() {
    return drpDwnMonth;
}

public WebElement getDrpDwnYear() {
    return drpDwnYear;
}

public WebElement getBtnMale() {
    return btnMale;
}

public WebElement getBtnSignup() {
    return btnSignup;
}
```

}

}

## Input data:

Facebook - Microsoft Excel (Product Activation Failed)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Firstname	Surname	Mobile	Password	Day	Month	Year											
2	vengat	ram	98765539	Karthick	16	Nov	1993											
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Ready 8/3/2017 6:26 PM

## Screenshot output:

**facebook**

Email or Phone

Password

Log In

Forgotten account?

Facebook helps you connect and share with the people in your life.



## Create an account

It's free and always will be.

First name

Surname

Mobile number or email address

New password

Birthday

3  Aug  1999

Why do I need to provide my date of birth?

☐ Female ☐ Male

By clicking Create an account, you agree to our Terms and confirm that you have read our Data Policy, including our Cookie Use Policy. You may receive SMS message notifications from Facebook and can opt out at any time.

Create an account

Create a Page for a celebrity, band or business.

**facebook**

Email or Phone

Password

Log In

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vengat

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vengat

ram

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facebook

Email or Phone

Password

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## Create an account

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vengat

ram

9.87665539E8

New password

Birthday

3

Aug

1999

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vengat

ram

9.87665539E8

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Birthday

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1999

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