

Selenium WebDriver

Data Driven Testing using
Microsoft Excel

Agenda



- Read data from Excel
- Write data into Excel
- Data Driven Testing

Apache POI API



- WebDriver does not support excel directly.
- We can take help of third party drivers.
- We can read and write on excel file with the help of Java IO package and Apache POI library.
- **Latest version POI (Poor Obfuscation Implementation)jars from**

<http://poi.apache.org/download.html>

Binary Distribution

- [poi-bin-3.17-20170915.tar.gz](#) (20.11 MB, signature (.asc))
MD5 checksum: [00d75d263fa8aaf991b4d9f538fa3499](#)
SHA1 checksum: [30b4ddd491a1d016e48e10fbd92e0cc43a6cb196](#)
SHA512 checksum: [c1a760f4f051054e5cf17c512e837b22fd28484bd82](#)
- [poi-bin-3.17-20170915.zip](#) (28.65 MB, signature (.asc))
MD5 checksum: [d3f49331d4c3375f9729d864c1fa1164](#)
SHA1 checksum: [517824614c6a90ea6f0843b8efdb0b7ad80f69ed](#)
SHA512 checksum: [39f4a85f2cc8a0355c65c73e28df1ac91e5a24baa25](#)

Associate Apache POI drivers to Eclipse WebDriver Project

docs	6/30/2014 5:01 PM	File folder	
lib	6/30/2014 5:01 PM	File folder	
ooxml-lib	6/30/2014 5:00 PM	File folder	
LICENSE	1/16/2014 10:07 AM	File	27 KB
NOTICE	1/16/2014 10:07 AM	File	1 KB
poi-3.10-FINAL-20140208.jar	2/1/2014 7:30 PM	Executable Jar File	1,906 KB
poi-examples-3.10-FINAL-20140208.jar	2/1/2014 7:30 PM	Executable Jar File	306 KB
poi-excelant-3.10-FINAL-20140208.jar	2/1/2014 7:30 PM	Executable Jar File	30 KB
poi-ooxml-3.10-FINAL-20140208.jar	2/1/2014 7:30 PM	Executable Jar File	1,008 KB
poi-ooxml-schemas-3.10-FINAL-20140208.jar	2/1/2014 7:30 PM	Executable Jar File	4,831 KB
poi-scratchpad-3.10-FINAL-20140208.jar	2/1/2014 7:30 PM	Executable Jar File	1,212 KB

ooxml folder

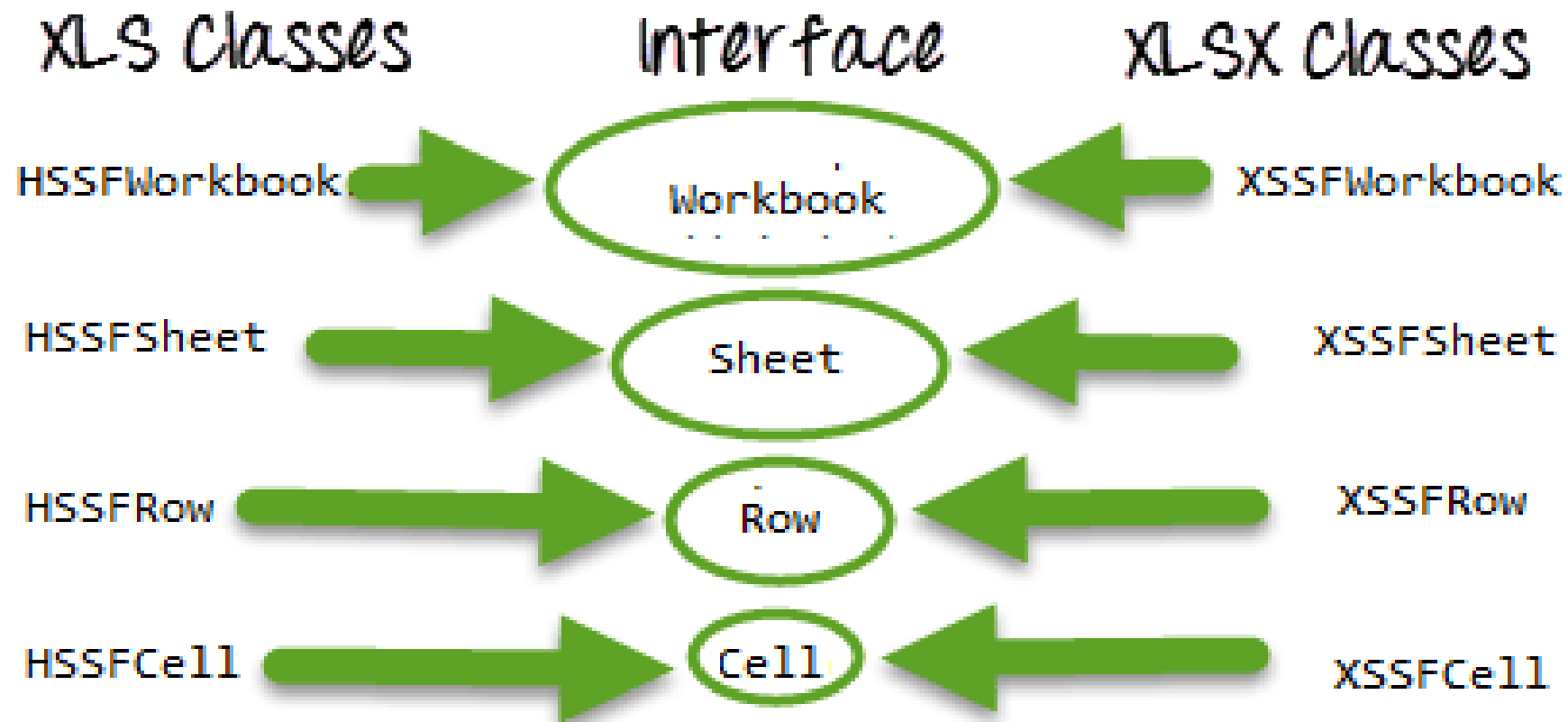
dom4j-1.6.1.jar	1/16/2014 10:12 AM	Executable Jar File	307 KB
stax-api-1.0.1.jar	1/16/2014 10:13 AM	Executable Jar File	26 KB
xmlbeans-2.3.0.jar	1/16/2014 10:13 AM	Executable Jar File	2,605 KB

lib folder

commons-codec-1.5.jar	1/16/2014 10:12 AM	Executable Jar File	72 KB
commons-logging-1.1.jar	1/16/2014 10:12 AM	Executable Jar File	52 KB
junit-4.11.jar	1/16/2014 10:12 AM	Executable Jar File	240 KB
log4j-1.2.13.jar	1/16/2014 10:12 AM	Executable Jar File	350 KB

Add all
these
Files

Classes and Interfaces in Apache POI



Read Data from Excel



	A	B	C	D
1	EMPID	FIRSTNAME	LASTNAME	SALARY
2	111	ABC	ABC	50000
3	112	PQR	PQR	70000
4	113	MNO	MNO	40000
5	114	XYZ	XYZ	60000
6	115	ABC1	ABC1	50000
7	116	PQR1	PQR1	70000
8	117	MNO1	MNO1	40000
9	118	XYZ1	XYZ1	60000
10	119	ABC2	ABC2	50000
11	120	PQR2	PQR2	70000
12	121	MNO2	MNO2	40000
13	122	XYZ2	XYZ2	60000



```
import java.io.FileInputStream;
import java.io.IOException;
import org.apache.poi.xssf.usermodel.XSSFRow;
import org.apache.poi.xssf.usermodel.XSSFSheet;
import org.apache.poi.xssf.usermodel.XSSFWorkbook;

public class ReadingExcel {

    public static void main(String[] args) throws IOException {

        FileInputStream file = new FileInputStream("C://SeleniumPractice/data3.xlsx");
        XSSFWorkbook workbook = new XSSFWorkbook(file);
        XSSFSheet sheet = workbook.getSheet("Sheet1");

        int rownum = sheet.getLastRowNum(); // returns number of rows present in excel sheet
        int colcount = sheet.getRow(0).getLastCellNum(); // returns number of cells present in a row

        for (int i = 0; i < rownum; i++) {
            XSSFRow row = sheet.getRow(i);

            for (int j = 0; j < colcount; j++) {
                String value = row.getCell(j).toString(); // reading the data from cell
                System.out.print(value + " ");
            }
            System.out.println();
        }
    }
}
```

Write Data into Excel

Test Script

```
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import org.apache.poi.xssf.usermodel.XSSFRow;
import org.apache.poi.xssf.usermodel.XSSFSheet;
import org.apache.poi.xssf.usermodel.XSSFWorkbook;

public class WritingDataintoExcel {
    public static void main(String[] args) throws IOException {

        FileOutputStream file = new FileOutputStream("C://SeleniumPractice//testing.xlsx");
        XSSFWorkbook workbook = new XSSFWorkbook();
        XSSFSheet sheet = workbook.createSheet("data");

        for (int i = 0; i <= 5; i++) {
            XSSFRow row = sheet.createRow(i);
            for (int j = 0; j < 3; j++) {
                row.createCell(j).setCellValue("abcdef");
            }
        }
        workbook.write(file);
        System.out.println("writing excel is completed");
    }
}
```



	A	B	C
1	abcdef	abcdef	abcdef
2	abcdef	abcdef	abcdef
3	abcdef	abcdef	abcdef
4	abcdef	abcdef	abcdef
5	abcdef	abcdef	abcdef
6	abcdef	abcdef	abcdef

Excel Common Utility - Methods



```
public static int getRowCount(String xfile,String xlsheet) throws IOException
{
    fi=new FileInputStream(xfile);
    wb=new XSSFWorkbook(fi);
    ws=wb.getSheet(xlsheet);
    int rowcount=ws.getLastRowNum();
    wb.close();
    fi.close();
    return rowcount;
}
```

```
public static String getCellData(String xfile,String xlsheet,int rownum,int colnum) throws IOException
{
    fi=new FileInputStream(xfile);
    wb=new XSSFWorkbook(fi);
    ws=wb.getSheet(xlsheet);
    row=ws.getRow(rownum);
    cell=row.getCell(colnum);
    String data;
    try
    {
        //data=cell.getStringCellValue();
        data=cell.toString();
    }
    catch (Exception e)
    {
        data="";
    }
    wb.close();
    fi.close();
    return data; }
}
```

```
public static int getCellCount(String xfile,String xlsheet,int rownum) throws IOException
{
    fi=new FileInputStream(xfile);
    wb=new XSSFWorkbook(fi);
    ws=wb.getSheet(xlsheet);
    row=ws.getRow(rownum);
    int cellcount=row.getLastCellNum();
    wb.close();
    fi.close();
    return cellcount;
}
```

```
public static void setCellData(String xfile,String xlsheet,int rownum,int colnum,String data)
throws IOException
{
    fi=new FileInputStream(xfile);
    wb=new XSSFWorkbook(fi);
    ws=wb.getSheet(xlsheet);
    row=ws.getRow(rownum);
    cell=row.createCell(colnum);
    cell.setCellValue(data);
    fo=new FileOutputStream(xfile);
    wb.write(fo);
    wb.close();
    fi.close();
    fo.close();
}
```


Data Driven Test-1 (Read Data from Excel)



Application URL: <http://www.moneycontrol.com/fixed-income/calculator/state-bank-of-india-sbi/fixed-deposit-calculator-SBI-BSB001.html>



	A	B	C	D	E
1	Principle	Rate of Interest	Period(Years)	Frequency	Maturity Value
2	2000	10	2	Simple Interest	2400
3	4000	15	5	Simple Interest	8352
4	50000	10	3	Simple Interest	65000
5	75000	6	2	Simple Interest	84000

Fixed Deposit Calculator

Principal (Rs.)

Rate of Interest (%)

Period

 day(s) ▼

Frequency

 Compounded Quarterly ▼

CALCULATE

CLEAR

Data Driven Test-2

(Read Data & Write results into Excel)

Application URL: <http://newtours.demoaut.com/mercurywelcome.php>



	A	B	C
1	UserName	Password	Results
2	mercury	mercury	
3	mercury	asdasdA	
4	mno	asdasdA	
5	mercury	mercury	

Input

Output

Login

Find A Flight

Registered users can **sign-in here** to find the lowest fare on participating airlines.

User Name: mercury

Password: ●●●●●●●●

Sign-In

Valid

Invalid

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FLIGHT FINDER

Use our Flight Finder to search for the lowest fare on participating airlines. Once you've booked your flight, don't forget to visit the Mercury Tours Hotel Finder to reserve lodging in your destination city.

Flight Details

Type: ☒ Round Trip ☐ One Way

Passengers: 1

Departing From: Acapulco

On: February 22

Arriving In: Acapulco

Returning: February 22

Preferences

Service Class: ☒ Economy class ☐ Business class ☐ First class

Airline: No Preference

[CONTINUE](#)

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SIGN-ON

Welcome back to Mercury Tours! Enter your user information to access the member-only areas of this site. If you don't have a log-in, please fill out the [registration form](#).

User Name:

Password:

[SUBMIT](#)

Data Driven Test-3 (Read Data from Excel)



Application URL: <http://newtours.demoaut.com/mercuryregister.php>



	A	B	C	D	E	F	G	H	I	J	K
1	Fist_Name	Last_Name	Phone	Email	Address	City	State	PostelCode	Country	UserName	Password
2	AAAAA	aaaaa	1234567890	a@gmail.com	HYDERABAD	HYDERABAD	AP	500073	INDIA	aaaaa	aaaaa
3	BBBBB	bbbbb	1234567891	b@gmail.com	CHENNAI	CHENNAI	TN	500074	INDIA	bbbbb	bbbbb
4	CCCCC	ccccc	1234567892	c@gmail.com	BANGOLORE	BANGOLORE	KR	500075	INDIA	ccccc	ccccc
5	DDDDD	ddddd	1234567890	d@gmail.com	DELHI	DELHI	UP	500071	INDIA	ddddd	ddddd
6	EEEE	eeee	1234567890	e@gmail.com	MUMBAI	MUMBAI	MH	500079	INDIA	eeee	eeee
7	XXXXXX	xxxxxxx	1234567891	x@gmail.com	CHENNAI	CHENNAI	TN	500080	INDIA	xxxxxxx	xxxxxxx
8	YYYYYY	yyyyyy	1234567892	y@gamil.com	BANGOLORE	BANGOLORE	KR	500081	INDIA	yyyyyy	yyyyyy
9	ZZZZZZ	zzzzzzz	1234567893	z@gmail.com	DELHI	DELHI	UP	500082	INDIA	zzzzzzz	zzzzzzz



Not secure | newtours.demoaut.com/mercuryregister.php

MERCURY TOURS

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HTML VERSION
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SAVINGS!
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CLICK HERE

REGISTER

To create your account, we'll need some basic information about you. This information will be used to send reservation confirmation emails, mail tickets when needed and contact you if your travel arrangements change. Please fill in the form completely.

Contact Information

First Name:
Last Name:
Phone:
Email:

Mailing Information

Address:

City:
State/Province:
Postal Code:
Country:

User Information

User Name:
Password:
Confirm Password:

SUBMIT

Registration form

Data Driven Test-4

(Read Data & Write results into Excel)

Application URL: <https://www.easycalculation.com/simple-interest.php>



	A	B	C	D	E
1	Principle	Interest Rate	Time Period(Years)	Simple Interest	Result
2	200000	10	2	40000	
3	400000	15	5	300000	
4	500000	10	3	150000	
5	750000	6	2	90000	

Result

Simple Interest Calculator

Loan, Deposit Rate Calculation

I want to calculate

Simple Interest (SI) ▼

Principle or Sum [P]

Rate % per Annum [R]

Time [T]

Years ▼

Simple Interest [S.I.]

Calculate

Reset