SYNTAX
TECHNOLOGIES

JAVA

Class 33

Agenda

Working with Files

File Input & Output

FileInputStream and FileOutputStream classes comes from java.io package and used to read and write data in the file. In another word, they are used for file handling in java.

FileInputStream is useful to read data from a file.

Java FileOutputStream is an output stream for writing data to a file.

What is a Properties file in Java

Properties files are mainly used in Java programs to maintain project configuration data, database config or project settings etc.
Properties files stores simple parameters as key-value pairs, outside of compiled code. Key and Values are separated using = sign. Example:

Key=Value or **Key:Value**
School=Syntax

We can easily read properties from some file using object of type Properties. This is a utility provided by Java itself.
The advantage of using properties file is we can configure things which are prone to change over a period of time without need of changing anything in code.

How to Read Property File

1. Create Object of FileInputStream Class. Pass file path.

   FileInputStream fis = new FileInputStream(System.getProperty("user.dir") + "/configs/Credentials.properties");
2. Create Object of Properties Class to access the property file.

   Properties obj = new Properties();
3. Pass object reference fis to load method of Properties object.

   obj.load(objfile);
4. Accessing element locators of all web elements using **obj.getProperty(key);**

How to Read Property File

```
public class ReafingFile {

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

        String filePath = "configs/FileReading.properties";
        FileInputStream fis = new FileInputStream(filePath);

        Properties prop = new Properties();
        prop.load(fis);

        String name = prop.getProperty("name");
        System.out.println(name);

        fis.close();
    }
}
```

Task

Create a property file to store following configurations:

- browser=chrome
- url=https://facebook.com
- username
- password

Read file and extract values of browser & url

Using Excel files

Apache POI is an open source java library to create and manipulate various file formats based on Microsoft Office (doc, docx, ppt, pptx, xls, xlsx)

Apache POI is mostly used for reading and writing excel documents.It has many predefined methods, classes, and interfaces that we can use to read and write into Excel files

Reading Excel file

```
String xlFile="/Users/assele4ka/Desktop/SyntaxHrmsData.xlsx";
// create file input stream object and load file
FileInputStream fis =new FileInputStream(xlFile);
// create object for workbook and load file
Workbook workbook = new XSSFWorkbook(fis);
// get the sheet which you want to modify or create
Sheet sheet = workbook.getSheet("Login");
//create object for row
Row row = sheet.getRow(0);
//create object for cell
Cell cell = row.getCell(0);
//get and print the value from specific cell
String value = cell.toString();
System.out.println(value);
```

Reading Excel file

```java
import java.io.FileInputStream;
import org.apache.poi.ss.usermodel.Sheet;
import org.apache.poi.ss.usermodel.Workbook;
import org.apache.poi.xssf.usermodel.XSSFWorkbook;
import org.testng.annotations.Test;

public class XlFileReading {


    @Test
    public void read() throws Exception {
        String xlFile="/Users/assele4ka/Desktop/SyntaxHrmsData.xlsx";
        // create file input stream object and load file
        FileInputStream fis =new FileInputStream(xlFile);
        // create object for workbook and load file
        Workbook wbook = new XSSFWorkbook(fis);
        // get the sheet which you want to modify or create
        Sheet sheet = wbook.getSheet("Login");
        //get number of rows
        int rows=sheet.getPhysicalNumberOfRows();
        //get number of cols
        int cols=sheet.getRow(0).getLastCellNum();
        //loop through each row and column
        for (int i=0; i<rows; i++) {
            for (int y=0; y<cols; y++) {
                //access value at specified address location
                String value=sheet.getRow(i).getCell(y).toString();
                System.out.println(value);
            }
        }
        wbook.close();
        fis.close();
    }
}
```

Writing to Excel file

```
String xlFile="/Users/assele4ka/Desktop/SyntaxHrmsData.xlsx";
  FileInputStream fis =new FileInputStream(xlFile);
  // create object for workbook and load file
  Workbook workbook = new XSSFWorkbook(fis);
  // get the sheet which you want to modify or create
  Sheet sheet = workbook.getSheetAt(0);
  //create 4 row and create 1 column
  sheet.createRow(3).createCell(0).setCellValue("user");
  //get 4 row and create 2 column
  sheet.getRow(3).createCell(1).setCellValue("user123");
  // create file output stream object and load file
  FileOutputStream fos=new FileOutputStream(xlFile);
  //write content
  workbook.write(fos);
  //close the stream
  fos.close();
```

Writing to Excel file

```java
import java.io.FileInputStream;
import java.io.FileOutputStream;
import org.apache.poi.ss.usermodel.Sheet;
import org.apache.poi.ss.usermodel.Workbook;
import org.apache.poi.xssf.usermodel.XSSFWorkbook;
import org.testng.annotations.Test;

public class XlFileWriting {

    @Test
    public void read() throws Exception {
        String xlFile = "/Users/assele4ka/Desktop/SyntaxHrmsData.xlsx";
        // create file input stream object and load file
        FileInputStream fis = new FileInputStream(xlFile);
        // create object for workbook and load file
        Workbook wbook = new XSSFWorkbook(fis);
        // get the sheet which you want to modify or create
        Sheet sheet = wbook.getSheet("Login");
        // create 4 row and create 1 column
        sheet.createRow(3).createCell(0).setCellValue("User");
        // get 4 row and create 2 column
        sheet.getRow(3).createCell(1).setCellValue("user123");
        // create file output stream object and load file
        FileOutputStream fos = new FileOutputStream(xlFile);
        // write content
        wbook.write(fos);
        // close the stream
        fos.close();

    }
}
```