**Data Driven Testing**

**Objective:**

* What is Data Driven testing?
* Types of DDT :

1. Using 2D array

2. Using Apache POI for Excel data sheet

* What is Apache POI?
* What is TestNG Data Providers?
* How to use Data Providers with Excel data sheet?

**What do you mean by data driven framework?**

* Is a type of testing framework
* Used to test only for the data contained in data files.
* Input and output values are read from data files(CSV,Excel,ODBC etc)
* These data are loaded into variables in manually coded script.
* Variables are used to identify both inputs and outputs.
* Test scripts are coded for 1. Navigation of pgm 2.reading data files 3.logging test status

Adv: reduces redundancy and duplication of automated scripts

Scripts developed paralley during appl developing is in progress

If functionality changes, only specific script of fun needs to be changed

Data storage is easily maintained in test records.

Disadv: needs proficiency in scripting language, needs multiple data files

**Data Driven Testing?**

* Ability to test large volumes of data on the Test Automation Frameworks quickly.
* It allows us to manipulate the data sets, perform calculations, and quickly create hundreds of test iterations and permutations with minimal effort.
* Test Automation Frameworks must have capability to integrate with spreadsheets and provide powerful calculation features.

**Apache POI (Excel)???**

* Automated software tools to support data driven testing.
* Allow you to automatically run a test case multiple times with different input and validation values.
* It is preferred to use Microsoft Excel as the format for storing the parameters (test data)

## TestNG Data Providers???

* When you need to pass parameters that need to be created from Java (complex objects, objects read from a property file or a database, etc…), in such cases parameters can be passed using Dataproviders.
* A Data Provider is a method annotated with @DataProviders.
* A Data Provider returns an array of objects.

## How to use Data Providers with Excel data sheet??

Step by step process to Implement Excel with TestNg Data Provider.

**Step 1:** **Create a test case of Login Application with TestNG Data Provider.**

(Eg: LoginCredentialCheck-method in main java)

**Step 2:**  **Create a Test Data sheet.**

(Eg: Data sheet in data folder)

**Step 3: Create functions to Open & Read data from Excel**

(Eg: ExcelDatConfig method in Library folder)

**Step 4:** **Create a TestNg test case for accepting data from Excel using Data Provider.**

(Eg: PassData() method in main pgm)

**Step 5:** **Run the test against the Test Case name in the Test Data file.**

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