WHITE PAPER:

Title: Priority in TestNG	January: 2016

Introduction:

TestNG is a testing framework, designed to run a single (unit) test or an integrated solution. It covers different types of test designs such as unit, functional, end to end, UI and integrated tests. For using TestNG as a runner, your project needs to be built on JDK 1.5 or higher.

While running @Test using testing, it sorts the test cases in ascending order and then attempts to run them. It happens in the backend. It is always a good practice for the test case to be named logically. If there is a condition that we can't change the logical name of test cases, in such cases every test case should run in a sequence. TestNG can thus leverage a mechanism of assigning priority to each of the test cases.

Now, while running; lower priority cases will be scheduled first.

Demo of TestNG code without Priority

Let's take a scenario where sequencing will be required to execute all test cases:

Scenario: Generate a code where you are required to perform a Google search with a specific keyword say "Facebook"; Now, verify that browser title changes to "Facebook - Google Search".

Note: Each step which you code should be in individual methods:

Method 1: Open Browser say Firefox (*openBrowser()*)
Method 2: Launch Google.com (*launchGoogle()*)
Method 3: Perform a search for "Facebook" (*performSearchAndClick1stLink()*)
Method 4: Verify Google search page title (*FaceBookPageTitleVerification()*)

```
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.testng.Assert;
import org.testng.annotations.Test;

public class Priority_In_testNG {
    WebDriver driver;
```

Code for our scenario:

```
import org.openqa.selenium.By;

    // Method 1: Open Brower say Firefox
    @Test
    public void openBrowser() {
        driver = new FirefoxDriver();
    }

    // Method 2: Launch Google.com
    @Test
    public void launchGoogle() {
        driver.get("http://www.google.co.in");
    }

    // Method 3: Perform a search using "Facebook"
    @Test
    public void peformSeachAndClick1stLink() {
        driver.findElement(By.xpath(".//*[@title='Search']")).sendKeys("Facebook");
    }

    // Method 4: Verify Google search page title.
    @Test
    public void FaceBookPageTitleVerification() throws Exception {
        driver.findElement(By.xpath(".//*[@value='Search']")).click();
        Thread.sleep(3000);
        Assert.assertEquals(driver.getTitle().contains("Facebook - Google Search"), true);
    }
}
```

Explanation of Code

As mentioned above we have created 4 test cases for performing each action in independent methods.

➢ The first method (openBrowser) initializes the browser.
➢ The second method (launchGoogle) launches Google.com is in the initialized browser.
➢ The third method (peformSeachAndClick1stLink) performs a search in the search box (with xpath (".//*[@title='Search']") with a search term as Facebook and
➢ The fourth and last method (FaceBookPageTitleVerification) clicks on search icon of Google and verifies that browser title has been changed to Facebook - Google Search.

Now run this code using TestNG as shown in the video - all test cases will fail. This is because there is a dependency for the previous test case to pass, for the next test case to start execution.

Paste VIDEO - 1

(https://ramandeep1991-gmail.tinytake.com/sf/Mzk1MDE2XzIyMDAwNjI)

In this case,

- First method to execute is openBrowser(). It passed because it does not have any dependency.
- Second method executed is **FaceBookPageTitleVerification();** it fails as we are trying to click search button and verify the browser title.
- You can see that if search activity is not processed no other test case will pass.

PASSED: openBrowser
FAILED: FaceBookPageTitleVerification
FAILED: launchGoogle
FAILED: peformSeachAndClick1stLink

Importance of Priority in running TestNG methods

As you have seen in the previous example sequencing is important for scenarios to be executed. We will be modifying the previous piece of code with **Priority Parameter** so that each test should run against the priority assigned to them. Herein again the lower priority test case will be executed first.

Priority in testNG in action

```java
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.testng.Assert;
import org.testng.annotations.Test;

public class Priority_In_testNG {
    WebDriver driver;

    // Method 1: Open Browser say Firefox
    @Test (priority=1)
    public void openBrowser() {
        driver = new FirefoxDriver();
    }

    // Method 2: Launch Google.com
    @Test (priority=2)
    public void launchGoogle() {
```

```
driver.get("http://www.google.co.in");
  }

  // Method 3: Perform a search using "Facebook"
  @Test (priority=3)
  public void peformSeachAndClick1stLink() {
      driver.findElement(By.xpath(".//*[@title='Search']")).sendKeys("Facebook");
  }

  // Method 4: Verify Google search page title.
  @Test (priority=4)
  public void FaceBookPageTitleVerification() throws Exception {
      driver.findElement(By.xpath(".//*[@value='Search']")).click();
      Thread.sleep(3000);
      Assert.assertEquals(driver.getTitle().contains("Facebook - Google Search"), true);
  }
}
```

Explanation of Code

After assigning priority to test cases, run the above code using TestNG as shown in Video-2 mentioned below. Here, you can see that test cases are prioritized. Test cases of lower priority are executed first i.e. now there is a sequential execution according to priority in the test cases. Hence, all test cases are passing now. Note the eclipse console:

Output :

PASSED: openBrowser
PASSED: launchGoogle
PASSED: peformSearchAndClick1stLink
PASSED: FaceBookPageTitleVerifications

Paste VIDEO-2

(https://ramandeep1991-gmail.tinytake.com/sf/Mzk1MDExXzIyMDAwMzU)

Case-sensitive in TestNG

Just for your information there is a standard syntax for defining priority in TestNG i.e. **@Test (priority=4);** This syntax is important for an error free compilation. Refer image below:

```
// Method 1: Open Brower say Firefox
@Test (PRIORITY=1)
public void openBrowser() {
    driver = new FirefoxDriver();
}

// Method 2: Launch Google.com
@Test (PRIORITY=2)
public
    dri
}

// Meth
@Test (
public
    dri                                          endKeys("Facebook");
}

// Meth
```

The attribute PRIORITY is undefined for the annotation type Test

24 quick fixes available:

⟳ Change to 'priority'
⟳ Change to 'alwaysRun'
⟳ Change to 'dataProvider'
⟳ Change to 'dataProviderClass'
⟳ Change to 'dependsOnGroups'
⟳ Change to 'dependsOnMethods'
⟳ Change to 'description'

Conclusion:

Thus if there is a requirement to run a set of test-cases in a specific sequence then it can be easily done using **Priority** in TestNG.

About QA InfoTech:

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Established in 2003, with less than five testing experts, QA InfoTech has grown leaps and bounds with its QA Centers of Excellence globally; three of which are located in the hub of IT activity in India, Noida, India and the other, our affiliate QA InfoTech Inc. Michigan USA. In 2010 and 2011, QA InfoTech has been ranked in the top 100 places to work for in India. For more details, please refer to our blog on this event.

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- **Mukesh Sharma, Founder & Chief Executive Officer**

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