Retrying Failed Tests

In this topic, we will see how to trigger the failed tests.

Manually re-running failed tests

At the end of the test suite run, by default, ***testng-failed.xml*** is created in the output directory containing only the ***failed*** tests. We can run this test suite to rerun only the failed tests.

Programmatically re-running failed tests

To programmatically trigger the failed tests right after the tests fail, we can use `IRetryAnalyzer`. Implementation of the `SampleRetryAnalyzer` needs to be added to test methods to enable this.

```java
import org.testng.IRetryAnalyzer;
import org.testng.ITestResult;

public class SampleRetryAnalyzer implements IRetryAnalyzer {

  private int retryCount = 0;
  private static final int maxRetryCount = 2;

  @Override
  public boolean retry(ITestResult result) {
    if (retryCount < maxRetryCount) {
      retryCount++;
      return true;
    }
    return false;
  }
}
```

```
  }
```

The above code snippet is to tell TestNG how many times the retrying of failed tests should be attempted. This implementation requires adding `@Test(retryAnalyzer = SampleRetryAnalyzer.class)` to every test method.

```java
import org.testng.Assert;
import org.testng.annotations.Test;

public class SampleTestClass {

  @Test(retryAnalyzer = SampleRetryAnalyzer.class)
  public void testMethod() {
    Assert.fail();
  }
}
```

To avoid this repetition and make this globally applicable for all the test methods, we can make sure of `IAnnotationTransformer` listener of TestNG as:

```java
public class RetryListener implements IAnnotationTransformer {

    public void transform( ITestAnnotation annotation, Class testClass, Constructor testConstructor, Method testMethod ) {
        annotation.setRetryAnalyzer(SampleRetryAnalyzer.class);
    }

}
```

And this listener needs to be added in the test class like `@Listeners(SampleRetryAnalyzer.class)` or in **testng.xml** as:

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd">
<suite name="Sample Test Suite" parallel="tests" thread-count="5">
    <listeners>
        <listener class-name="com.example.SampleRetryAnalyzer" />
    </listeners>
    <test name="Sample Test">
        ...
    </test>
</suite>
```

That is how the failed tests can be tried again. In the next lesson, you will learn how to make your own annotations.