**TestNG (Test Next Generation) – Java-based Unit Testing Framework**

TestNG is a powerful testing framework inspired by JUnit and NUnit but designed to support a wide range of testing needs such as unit, functional, integration, and end-to-end testing.

✅ Advantages of TestNG:

1. Test Cases and Test Suites

* Organizes test cases into test suites using XML configuration files.

1. Grouping of Test Cases

* Test cases can be logically grouped (e.g., *smoke*, *regression*, *sanity*) using the groups attribute.
* Enables selective execution of grouped tests.

1. Prioritization of Test Cases

* Controls the order of execution using the priority attribute in the @Test annotation.

1. Parametrization

* TestNG allows passing parameters at runtime via the XML file using <parameter> tag or @Parameters annotation.
* Useful for dynamic data like: Browser name, Application URL

1. Parallel Testing

* Supports running tests in parallel on multiple threads or browsers.
* Reduces execution time.
* Configured via XML using parallel and thread-count attributes at the suite or test level.

1. Reports

* Generates detailed HTML and XML reports by default.
* Supports integration with third-party reporting tools like: ExtentReports, Allure or ReportNG.
* Provides better visualization, logs, and customization.