QnA

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Jmeter Mastery

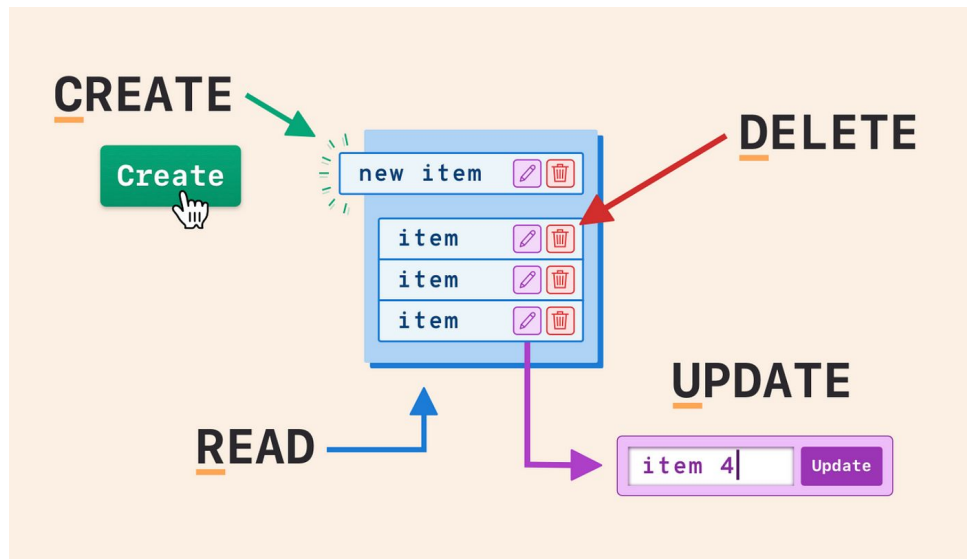**Pramod Dutta**
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Agenda

1. CRUD (API Testing)
2. Jmeter Interface
3. Create Test Plan
4. Add a Thread Group.
5. Configure HTTP Request
6. Add Listeners
7. Add Assertions
8. Run and Analyze Results.

What is CRUD?

- CRUD is an acronym that stands for Create, Read, Update, and Delete.

CREATE Operation

Create:

- In Databases: Refers to creating new records. In SQL, this is typically done with the INSERT statement.
- In Web APIs: Often associated with the HTTP POST method to create a new resource.

READ Operation

Read:

- In Databases: Involves querying and retrieving data. This is usually achieved using the SELECT statement in SQL.
- In Web APIs: Corresponds to the HTTP GET method for retrieving data.

Update (Full vs Partial)

Update:

In Databases: Refers to modifying existing records. The UPDATE statement in SQL is used for this purpose.
In Web APIs: Generally maps to the HTTP PUT or PATCH methods. PUT is often used for updating entire resources, whereas PATCH is used for partial updates.

DELETE Operation

Delete:

In Databases: Means removing existing records. This is done with the DELETE statement in SQL.
In Web APIs: Corresponds to the HTTP DELETE method for removing resources.

Introduction of Jmeter.

- JMeter is an open-source performance testing tool.
- Developed by the Apache Software Foundation.
- It is written in Java.
- It is designed to test the performance, load, and scalability of the application.

JMeter Interface

- Explain About Jmeter Shortcuts and menus.

Jmeter Elements
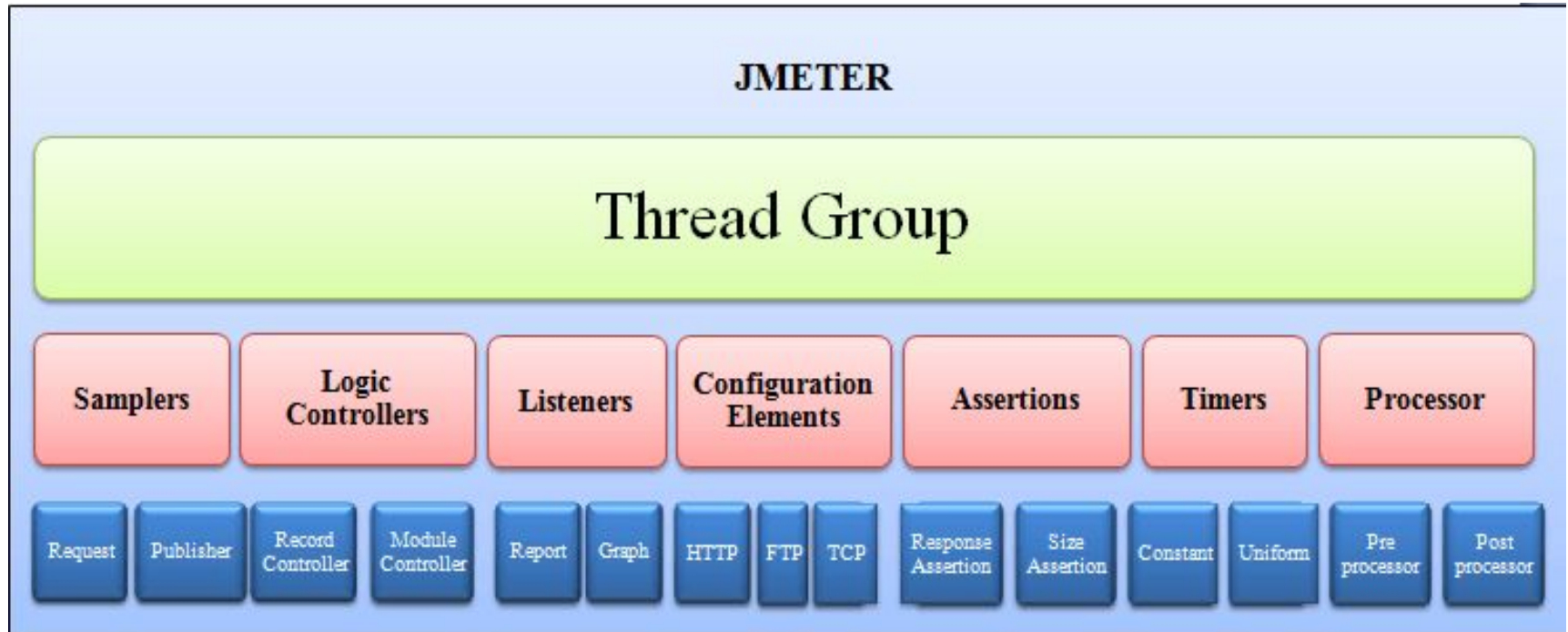
List of Elements that will explore

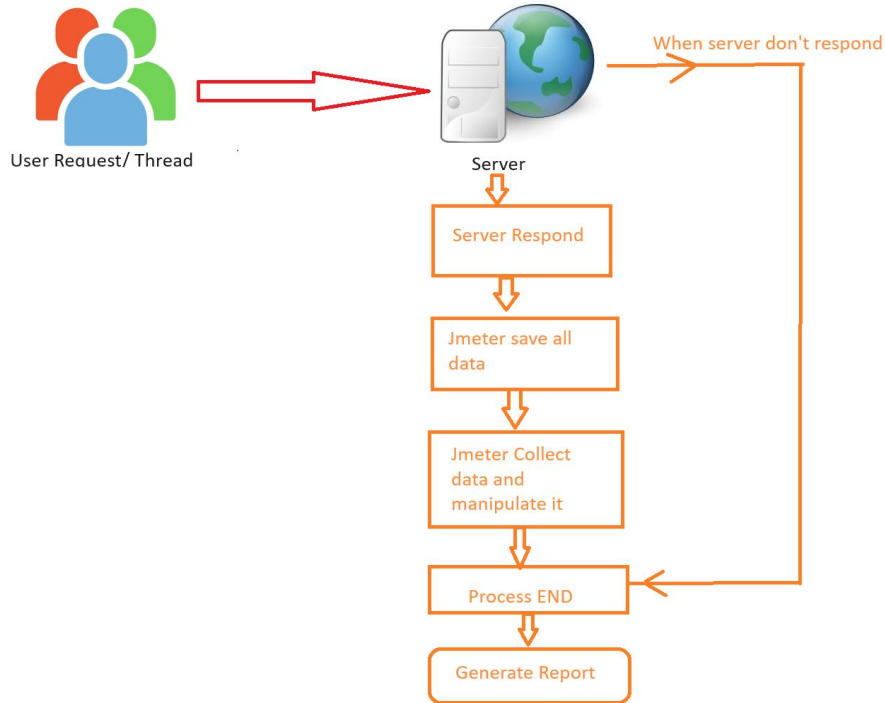- **Thread Group**   :- number of users

- **Samplers**   :- Type of request that will send.

- **Listeners**   :- it represent different type of reports.

Create Test Plan

:- Creating First Test in JMeter **(Get Request)**

   :- Create test plan.

   :- add Thread group

   :- add Sampler

   :- add Listeners as View Result in tree and Table. Explain it.

   :- Run it.

:- Can use gmail.com, www.google.com, restful-booker.herokuapp.com

Request Diagram

User Request/ Thread

When server don't respond

Server

Server Respond

Jmeter save all data

Jmeter Collect data and manipulate it

Process END

Generate Report

Create Test Plan

:- Creating First Test in JMeter **(Post Request)**

   :- Create test plan.

   :- add Thread group

   :- add Sampler

   :- add Listeners View Result in tree and Table. Explain it.

   :- Run it.

:- Can use restful-booker.herokuapp.com

How To Perform CRUD Operation in the Jmeter

:- How to Fetch the Response data and store into The Variable.

:- How to Pass the Variable in the Header and URL.

:- How to verify The status code Using Assertion.

Easy Way to Convert your API Test case into Jmeter Test case Using the https://loadium.io/new-test

Record and Play

:- https://www.blazemeter.com/

:- blazemeter Plugin

Assertion in JMeter

- assertions are used to validate whether the response from the server meets certain criteria.

List of Assertions are as follows:

BeanShell Assertion
BSF Assertion
Compare Assertion
Duration Assertion
HTML Assertion
JSR223 Assertion
MD5Hex Assertion
Response Assertion
Size Assertion
SMIME Assertion
XML Assertion
XML Schema Assertion
XPath Assertion

Timer in JMeter

- The purpose of the 'Timer' element is to pause a JMeter Thread for a certain amount of time.

- Timers allow JMeter to delay each request that a thread makes. A timer can solve the server overload problem.

JMeter Has Nine Different timer types

- **Constant Timer**
- **Uniform Random Timer**
- Precise Throughput Timer
- **Constant Throughput Timer**
- Gaussian Random Timer
- JRS223 Timer
- Poisson Random Timer
- Synchronizing Timer
- BeanShell Timer

> We can add Timer on Plan Level, Group Level and Request Level.

Constant Timer

- it delays each sampler by a constant Thread Delay value. If we were to add a Constant Timer to the test and set the delay to be 2000 milliseconds. Constant Timer. And then execute the test we see that the execution of each sampler is delayed by 2000 milliseconds.

  Its Like Thread.sleep(2000) that we use in selenium.

> We can add Timer on **Plan Level**, **Group/Thread Level** and **Request Level**.

Uniform Random Timer

- it used to generate a random time delay between requests.

- The Uniform Random Timer generates a random time delay within a specified range. The range is defined by **two parameters**: **"Range Start"** and **"Range End"**. The **"Range Start" specifies the minimum time delay**, while the **"Range End" specifies the maximum time delay.** The **timer will randomly select a time delay within the range for each request.**

Constant Throughput Time

- Constant Throughput Timer is a JMeter timer that allows users to specify the **desired throughput for a test**. This means that JMeter will try to **maintain a constant number of requests per Minute during the test.**

  throughput :- throughput refers to the number of requests per unit of time that the server can handle. example 100 request my server can handle under 1 minutes.

The Constant Throughput Timer can be used to simulate a variety of real-world scenarios, such as:

- A web application that is expected to receive a consistent number of requests per second. (login with mobile number and OTP)
- A database server that is expected to handle a consistent number of queries per second. (uploading the files or searching the products from big data base)

Generate HTML Report

- We Can generate HTML report Two ways

1) 1st Using the Jmeter tool and
2) Using the CMD.

Thanks, for attending Class

I hope you liked it.