03 – Test Plan Structure

🎯Objective

Understand the **JMeter test plan tree**, what each element does, and **where things must be placed** to avoid silent failures.

What is a Test Plan?

A **Test Plan** is the **root container** of everything in JMeter.

It defines: - What will be tested - How load will be generated - How results will be collected

👉Nothing runs without a Test Plan.

JMeter Tree – High Level View

```
Test Plan
└── Thread Group
    ├── Config Elements
    ├── Controllers
    ├── Samplers
    └── Listeners
```

Order matters. Placement matters.

Core Components Explained

Test Plan

Purpose: - Global settings - User-defined variables - Test metadata

Best practice: - Keep it **light** - No heavy logic here

Thread Group

Purpose: - Defines **load model** - Controls users, ramp-up, loops

Rule:

> If it's not inside a Thread Group, **it will not run**.

Samplers (Actual Work)

Samplers send requests.

Examples: - HTTP Request - JDBC Request - JMS Request

For API testing:

> **HTTP Request sampler = API call**

Config Elements (Support System)

Config elements provide **data & configuration** to samplers.

Common ones: - HTTP Header Manager - HTTP Request Defaults - CSV Data Set Config

👃 Scope rule:

> A config element affects **everything under it**.

Controllers (Flow Control)

Controllers control **execution logic**.

Examples: - Simple Controller - If Controller - Loop Controller - Transaction Controller

Use when: - You want conditions - You want grouping

Listeners (Results)

Listeners collect results.

Common listeners: - Summary Report - Aggregate Report - View Results Tree

👉Warning:

> Listeners are **heavy** — avoid many in load tests.

Correct vs Wrong Structure

Wrong

```
Test Plan
 ├── HTTP Request
 └── Thread Group
```

HTTP Request will **never execute**.

Correct

```
Test Plan
 └── Thread Group
      └── HTTP Request
```

Scope Example (Very Important)

```
Thread Group
 ├── HTTP Header Manager
 ├── Login API
 └── Profile API
```

Result: - Headers apply to **both APIs**

```
Thread Group
 ├── Login API
 │    └── HTTP Header Manager
 └── Profile API
```

Result: - Headers apply **only to Login**

Real Org Mapping

JMeter Element	Org Meaning
Thread Group	Users / traffic
HTTP Sampler	API endpoint
Header Manager	Auth / CIAM headers
Controller	Business flow
Listener	Reports / SLA

Common Beginner Mistakes 🥏

👈Putting Header Manager under Test Plan 👈Multiple Thread Groups accidentally 👈View Results Tree in heavy load 👈No clear naming

Naming Best Practices

```
Login - CIAM
Profile - GET
Submit - POST
```

Clear names = easy debugging.

Hands-on Assignment 🎯

1. Create Test Plan
2. Add Thread Group
3. Inside Thread Group:
4. Add 1 HTTP Request (dummy)
5. Add 1 Summary Report
6. Do NOT execute yet

Key Takeaways

• Structure defines behavior
• Scope mistakes cause silent failures
• Always think in tree hierarchy

👉Next file: **04_http_sampler.md**