

## Part A: Environment Setup

1. Install the latest version of **Apache JMeter**.
2. Configure JMeter with:
  - Java (latest stable version)
  - Plugins Manager (for graphs and reports)
3. Verify installation by launching JMeter in GUI mode.

Deliverable: Screenshot of JMeter home screen.

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## Part B: Test Plan Design

1. Create a **Test Plan** for the following user journey:
  - Open application homepage (use: <https://reqres.in> or any demo app).
  - Login with credentials (POST /login).
  - Search for a resource (GET /users?page=2).
  - Submit a form (POST /users).
2. Add the following **Thread Group configuration**:
  - Users: 50
  - Ramp-up: 10 seconds
  - Loop Count: 2
3. Add these JMeter elements:
  - **HTTP Request Defaults**
  - **HTTP Header Manager**
  - **Listeners** → View Results Tree, Summary Report, Aggregate Report, Graph Results.

Deliverable: Exported JMX Test Plan.

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## Part C: Test Execution

1. Run the test with 50 concurrent users.
2. Collect performance metrics:
  - **Average Response Time**
  - **90th Percentile Response Time**
  - **Throughput (requests/sec)**
  - **Error %**

Deliverable: Screenshots of JMeter listeners + CSV report.

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## Part D: Advanced Practical – Parameterization & Correlation

1. Use **CSV Data Set Config** to parameterize login with at least 5 different user credentials.
2. Apply **Correlation**: Extract a dynamic value (e.g., token/session ID) from the login response using a **Regular Expression Extractor** and pass it to subsequent requests.

Deliverable: JMeter script with parameterization & correlation + evidence of successful execution.

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## Part E: Analysis & Reporting

1. Generate the **HTML Dashboard Report** from JMeter.
2. Interpret the results:
  - Were there any failed requests? Why?

- Did response times remain consistent under load?
  - What was the throughput trend?
3. Suggest **2 optimization recommendations** (technical/business level).

Deliverable: HTML report + 1-page summary (Word/PPT).

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## ◆ **Submission Checklist**

- JMX script file.
- CSV test data file (for parameterization).
- Screenshots of results.
- JMeter HTML Dashboard.
- Executive summary (management-friendly).