

Postman Testing

Module 1: Introduction to APIs and Postman

- What is an API? (REST, SOAP, GraphQL)
- API testing fundamentals
- Why use Postman for API testing?
- Installing Postman (Desktop & Web versions)
- Postman UI Overview (Tabs, Collections, History)

Module 2: Sending Basic API Requests

- Understanding HTTP Methods (GET, POST, PUT, DELETE, PATCH)
- Sending requests in Postman
- Setting and modifying request headers
- Working with request body (raw, JSON, form-data, x-www-form-urlencoded)
- Status codes and response formats (JSON, XML, HTML)

Module 3: Collections and Environments

- Creating and organizing Collections
- Creating Environments (local, staging, production)
- Using Environment and Global Variables
- Variable scopes and data resolution hierarchy
- Using `initial` vs `current` values in environments

Module 4: Writing Tests in Postman

- Introduction to Postman test scripts (using JavaScript)
- Using pm API (`pm.response`, `pm.expect`, etc.)
- Common assertions:
 - Status code
 - Response time
 - Content type
 - Response body values
- Using Chai Assertion Library in Postman
- Writing test cases for dynamic responses

Module 5: Automation with Pre-request & Test Scripts

- Difference between **Pre-request Script** and **Test Script**
- Scripting dynamic variables (UUIDs, timestamps)
- Chaining requests using environment variables
- Dynamic data manipulation using JavaScript
- Token generation and reuse (e.g., Bearer token authentication)

Module 6: Collection Runner & Data-Driven Testing

- Using the Collection Runner
- Data files: CSV and JSON
- Iterating over multiple sets of data (data-driven tests)
- Exporting test results
- Test summary and debug logs

Module 7: Advanced API Testing

- Authorization & Authentication:
 - Basic Auth
 - Bearer Tokens
 - OAuth 2.0 flows
 - API Keys
- Testing RESTful endpoints
- Working with GraphQL in Postman
- Testing file uploads and binary data

Module 8: Postman Tools & Utilities

- Postman Console
- Code snippet generation (in Python, JavaScript, Curl, etc.)
- Mock Servers in Postman
- Monitoring APIs
- Postman Flows (visual workflows)

Module 9: Continuous Integration and Collaboration

- Syncing Postman workspaces with Git
- Running Postman collections in CI/CD (with Newman)
- Installing and using Newman via CLI
- Integrating Newman with Jenkins, GitHub Actions, GitLab CI, etc.
- Exporting and sharing Collections & Environments
- API documentation with Postman

Module 10: API Performance, Security & Best Practices

- Measuring response times
- Rate limiting and throttling tests
- Testing error responses and edge cases
- Security testing basics (authentication, SQLi, input validation)
- Mocking and simulating APIs

Module 11: Postman Advanced Topics

- Using Postman with OpenAPI (Swagger) specs
- Creating custom Postman APIs
- Dynamic test generation
- Environment-specific automation
- API versioning and testing strategy

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