

# A Revolutionary Learning in IT

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# **API Testing Curriculum**

#### **COURSE SYLLABUS**

## **COURSE INTRODUCTION**

#### API INTRODUCTION

# Introduction to web application architecture

# **Introduction to**

- Client & Server model
- HTTP & HTTPS protocols
- SSL & TLS protocols
- Hand-shake process
- HTTP Request Headers
- HTTP Response Headers
- Request & Response Cookies
- HTTP Methods/HTTP verbs

#### Safe methods vs. unsafe methods

- **GET**
- **POST**
- PUT
- PATCH
- **DELETE**
- OPTIONS & HEAD
- ✓ Introduction to APIs
- ✓ Where does an API reside i.e., middle-ware layer/business layer
- ✓ Introduction to API architecture/Web-Services
  - REST API
  - **SOAP API**















#### **API TESTING**

- What is API testing?
- Advantages of API testing
- Testing techniques used in API testing
- Definition of API --> Understanding Protocol, API URI, end points, Query Parameters, Resources, HTTP verbs, Request body, Authentication type
- Why Postman for API Testing?

#### INTRODUCTIONTO POSTMAN TOOL

- What is Postman tool
- Installation of Native Postman tool for Windows OS
- Introduction to Postman landscape
- Introduction to Postman Settings& GUI
- Introduction to Postman API network & Postman Templates

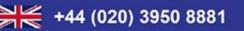
# POSTMAN WORKSPACE

- An introduction to Workspaces (Personal, Team, Public, Private)
- How to create and manage Workspaces
- Invite to Workspaces
- Leave Workspace & Delete Workspace
- Collaboration of Workspaces

#### INTRODUCTION TO WIZDLER TOOL-SOAP API TESTING TOOL

- What are SOAP web-services/APIs
- What is WSDL file
- Installation of Wizdler tool as a chrome app for the chrome browser for Windows OS/Mac OS
- Introduction to Wizdler tool
- How to parse SOAP WSDL file using Wizdler tool
- Testing SOAP APIs using Wizdler tool & Postman tool
- Understanding Request headers & Response headers
- Understanding Authentication API examples using Wizdler tool















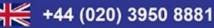
#### TESTING REST APIS & SOAP APIS WITH POSTMAN TOOL

- Testing REST API request using Postman tool with HTTP protocol & HTTPS protocol
- Testing SOAP API request using Postman tool
- Validating Response Code, Response Description, Response Body, Cookies, Response Time, Response Size, HTTP Request Headers, HTTP Response Headers
- Functional Testing of API's (Positive & Negative Test Cases)
- Understanding History tab in Postman tool [Save Responses, Delete, Clear All, Add]
- REST API testing with authentication types [BASIC AUTH, DIGEST AUTH, ACCESS TOKEN]
- Understanding query parameters on sending API request
- Validating REST API that returns JSON/XML/HTML/IMAGES/DOCUMENTS with Postman client
- Examples on validating response headers and status codes
- What are Cookies & How to understand Cookies parameters
- Analyzing Cookies after API response is received
- Saving API responses in Postman client
- Find & Replace option in Postman client
- Postman Browse view, Build view, Boot camp view, 2 pane view, console view

# POSTMAN COLLECTIONS

- Introduction to Collections
- Creating &Understanding Collections feature
- Setting up Test Project & Collections with REST APIs
- Setting up Test Project & Collections with SOAP APIs
- Exporting& Importing collections in .JSON format, from Postman tool and to Postman tool
- Share Collections [internal Workspaces and to external users]
- Run Collections Remotely with Collection URL
- View& Collaborate Collections documentation in Postman web dashboard
- Introduction to Collection Runner
- Introduction to Collection-Change log
- Introduction to Collection Results-View/Download/Delete Historical Collection runs
- Publishing Collections to Postman API Network & Templates
- Unpublishing the Collections from Postman API Network & Templates
- Create a Fork request, Create Pull request, Merge Changes in Postman tool
- How to create Mock API suing GET, POST, PUT, DELETE methods to simulate API response













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# **CURL COMMANDS**

- Understanding curl commands syntax for GET, POST, PUT, PATCH, DELETE HTTP methods
- Deriving API URL and end point from CURL commands
- Importing an API request from a browser into Postman tool
- Importing an API request from a CURL command into Postman tool
- Execution of imported CURL commands in the Postman tool

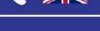
# **POSTMAN VARIABLES**

#### **Introduction to Postman variables**

- Collection/Private variables [at different levels such as protocol, Base URL, Endpoint, Request Headers, Request Body, Query Parma's, Authorization]
- Global variables [at different levels such as protocol, Base URL, Endpoint, Request Headers, Request Body, Query Parma's, Authorization]
- Environment variables [at different levels such as protocol, Base URL, Endpoint, Request Headers, Request Body, Query Parma's, Authorization]
- How to set and get collection/private variables through wizard & manual ways
- How to set and get Global variables through pre-request scrip's at all layers [API, Folder, Collection]
- How to set & get Environment variables thro pre-request scrip's at all layers [API, Folder, Collection]
- Creating Global & Environment variables and its usage at API, Folder & Collection levels

#### API AUTOMATION-PART 1

- How to use Postman proxy to record all API calls from a browser
- Postman monitors-Scheduling the API testing periodically (Monitors)
- How to create quick automation test scripts using reusable Java Scripts/code snippets
- How to create Pre-request scripts using reusable Java Scripts/code snippets
- API chaining of API requests
- Grabbing the response body into string for advance validations
- Data Driven API testing using external data sources
  - o CSV
  - o JSON
- Performance/Load testing of API testing in Postman tool
- Introducing delays for scheduled or continuous load API testing











# **API AUTOMATION-PART 2**

- Command line execution with Newman tool
- Basic introduction to NPM tool & Node JS
- Installing Node JS& Newman tool
- Running a collection with Newman tool
- Exploring and Execution of all CLI commands using Newman tool
- Generating the API test report(s) using Newman tool
  - i)JSON/CLI
  - ii) HTMLEXTRA
- How to debug & troubleshoot in Postman
- Logging feature to debug automation scripts
  - o console.log | console. Debug | console.info| console. Warn | console. Error
- Postman APIs integration with CI/CD (Jenkins)
- Using Postman to Create a Reusable API Framework

#### CASE STUDY/ASSIGNMENT

- Postman Tool hands on assignments against a REST & SOAP Web-Services/APIs
- Building Test Plan & Test Cases for an API project
- API objective/subjective test assessment

#### **KEY FEATURES**



**Instructor-led Sessions** 



Learn from Experts



**Assignments** 





**Real-time Case Studies** 

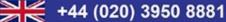


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