

## \* API Testing \*

→ API Testing is Nothing but Data Conversion between client and server via XML Request and Response XML.

→ whenever we Receive wsdl or url from software Development Team, we are going to Request that File and if Response is True, then we are going to check Data Base.

API Testing, is Software Testing that validate Application programming Interface.

The purpose of API Testing is to check the—

- 1> Functionality
- 2> Reliability
- 3> Performance
- 4> Security of programming Interface.

Includes —

- API Testing
- Tool selection
- work flow
- API method
- Advt. of API

URL = Uniform Resource Identifier.

URN = Uniform Resource Name.

URI = that uses the URN scheme.

All the API end point are appent in front Base url.

### \* Tool selection

- ① creating Test
- ② Automation Test
- ③ Debugging
- ④ Continuous Integration.

#### Soap UI

- 1) used to Test API protocol like SOAP, Rest, GraphQL.
- 2) It provide Data Driven Testing
- 3) Soap UI is Groovy Scripted

#### Postman.

- used to test only Rest API
- No feature of Data Driven.
- Javascript



2] what are the HTTP Methods Supported by Rest-

→  
① GET-

Get is used to Request Data from specified Resource.

② POST-

Post is used to send data to server for creation OR updating the Resource.

③ PUT-

put is used to update a specific Resource to server.

④ Delete -

Delete is used to Remove a specific Resource from server.

3] what are the protocols used in API Testing -?

- ① HTTP
- ② REST
- ③ SOAP
- ④ JMS
- ⑤ UDDI

Q] which Tools we use for API Testing?  
→ postman.

Q] can we use Get Request insted of PUT Request.

→ NO, GET Request is used to Request specific Resource to the server.  
But,  
PUT Request is used to update specific Resource to the server.

Q] What are the components of HTTP Requests?

→ HTTP Request have 5 component

- 1> HTTP Method
- 2> Uniform Resource Identifier.
- 3> HTTP Version like (HTTP V1.1)
- 4> Request Header
- 5> Request Body.



What is Difference Between HTTP and HTTPS-

→ HTTP →

- 1) It is Hypertext Transfer protocol.
- 2) Less secure
- 3) It uses port 80 by default
- 4) HTTP website doesn't use Encryption.
- 5) Do not need SSL
- 6) Does not Improve search Ranking
- 7) Fast

HTTPS

- 1) It is hyper Text Transfer protocol with secure.
- 2) It is secure against such attack.
- 3) It uses port 443 by default.
- 4) HTTPS uses Data Encryption.
- 5) HTTPS Requires SSL certificate.
- 6) Helps to Improve search Ranking
- 7) Slower than HTTP.

What is a Restful web services?

There are Two Types of web services-

- ① SOAP web services
- ② Restful web services.

① SOAP (Simple Object Access protocol)  
→ SOAP is a XML Based Method which is used in web services.

② Restful web services -

① In Rest Architecture HTTP method is used.

② Restful web services Define url, Response in JSON format.

What are the major challenges Faced During API Testing?

challenges we faces during API Testing.

- ① parameter selection
- ② Parameter Combination
- ③ Call sequencing
- ④ output verification and Validation.
- ⑤ A major challenge in providing input values which are very difficult because GUI is not Available.



What are the major challenges faced during API testing -

→ Challenges we face during API Testing.

- 1> Parameter selection.
- 2> Parameter combination
- 3> call sequencing
- 4> output verification and validation
- 5> A major challenge is providing input values, which are very difficult. Becoming GUI is not available.

What exactly needs to verify in API Testing.

- 
- ① we will verify the accuracy of data.
  - ② we will check HTTP status code.
  - ③ we will check Response time.
  - ④ Error codes in case API returns any errors.
  - ⑤ we are going to check Authorization.
  - ⑥ Non-functional Testing such as performance testing, security testing.

What is Difference Between SOAP and Rest API.

SOAP API	Rest API
1) Simple object access protocol	① Rest stands as Representational state Transfer.
2) soap is a protocol	② Rest is a Architecture pattern.
3) soap can work with XML format soap passed XML format Data	③ Rest permit different different data format- ① plain Text ② HTML ③ XML ④ JSON But most preferred format is JSON.

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Explain different status code in API Testing-?

200 OK → Means Request is ok.

201 Created → New Resource is Created.

202 Accepted → The Request is Accept for processing but not yet processed completely.

204 No content → this code is used to show that the Request is processed Successfully by server and not returning any content.

### Client Error-

400 → Bad Request

401 → Unauthorized

402 → Payment Required

403 → Forbidden

404 → Page Not Found

405 → Method Not allowed

406 → Not acceptable

407 → Proxy Authentication Required

408 → Request Timeout.

## Server Error-

- 500 → Internal Server Error
- 501 → Not Implemented
- 502 → Bad Gateway
- 503 → Service Unavailable
- 504 → Gateway Timeout
- 505 → HTTP Version Not Supported.

q) What are the Types of Bugs you can find During API Testing-

- i) Security
- ii) Duplicate or Missing Functionalities
- iii) unused flags.
- iv) performance.
- v) Improper Errors.

① Dis-Advantages of API-

- ① Creating API is time consuming.
- ② A fixed scale is necessary.
- ③ maintenance cost is high.
- ④ can crash when Testing API.

② Dis-Advantage of web Services.

- ① It does not Access from Browser.
- ② HTTP protocol is not reliable.
- ③ Does not offer any guarantee of Delivery of Response.



## Web service

① All webservices are API

② It support XML

③ You need a soap protocol to send or Receive Data over the Network, therefore it does not have light wt. Architecture.

④ It uses XML-RPC soap, Rest for communication

⑤ It provide support only for the HTTP protocol

## API

All APIs are not web services.

Responses are formatted using web APIs media Type formatter into XML, JSON or any other.

It is light weight Architecture.

API can be used for any style of communication.

provide support for HTTPS | protocol, Uri | Response head.