API

1) What is API?

APL stands for application programming interface. It is used to communicate between two applications. It simply knows as sending the request and getting the response. Example :- communication bet^ Amazon and Gpay

~~2) What are the advantages of API Testing?~~

2) What is API Testing?

API testing means Data conversion between client and server via XML Request and Response. It is a software testing that validate application programing interface.

3) What are the advantages of API Testing?
- It provides the security
- API checks the authentication and the data that we are passing
- API can transfer the load to different microservices.
- It is Time Effective
- Easy integration with GUI

4) ~~Types~~ What are the Types of API?
    ~~RE~~ SOAP API (Simple object access probocol)
    REST API (Representational state transfer)

5) What is Difference between API and Webservice?

API call internally and Webservices call over the internet. The only difference is that Webservice interact between two application over a network. API is an interface which communicate between two application with each other. All web services are API but APIs are not web services. ✗ Webservice supports HTTP protocol and API support HTTPS protocol.

6) What is WebService?

Service available over the web is called Webservice. It is used to communication between applications over the web. It is an intermediary that allows two applications to talk to each other and exchange data with each other. WebService allows you to expose the functionality of your existing code over network. Once it is exposed on the network other applications can use the functionality of your program.

Example :- When we going to restaurant and order some dish so there is a intermediator means waiter who is doing the communication between You and kitchen the waiter or intermediator is perform the role of Webservice.

Types of webservices :-

SOAP service
REST service.

7) What are the Components / Specifications / Standards of SOAP Web services?
i) WSDL
ii) UDDI
iii) SOAP

i) WSDL :-

WSDL stands for web service description language. It is used to how to access a web service and what operations it will perform. A client program connecting to a web service can read WSDL to determine what functions are available on the server. It is an XML document with a < definitions>

elements at the root and the child elements are types, message, portType and binding. It is an XML based interface which is used to describe the functionality of webservice.

a) definations :-
    It defines the name of web service

b) Types :-
    It defining the data types that are used by the webservice

c) Message :-
    It describe the data being exchanged between the webservice providers and consumers.

d) portType :-
    It combine one request and one response message into a single request/response operations.

e) Binding :-
    To combine all operations together. It provides specific details on how a portType operation will actually be transmitted over the web.

ii) UDDI :-
    UDDI stands for Universal Description discovery integration. It is an XML based standard for publishing and finding webservices. This is online registry or directory is called UDDI. A webservice provider publishes his web service through WSDL on an online directory from where consumers can query & search the webservices.

iii) SOAP :-

SOAP stands for simple object access protocol. It is an XML based protocol for exchanging information between web services. SOAP provides data transport for web services it is a communication protocol. XML message has defined structure as SOAP message. SOAP message consists of Envelope, Header, Body and Fault.

a) Envelope :-

It is an mandatory part of SOAP message. Every SOAP message has a root Envelope Element. It indicates the start and end of the message so that the receiver knows when an entire message has transmitted and it solves the problem of knowing when you are done receiving a message and ready to process it.

b) Header :-

It is an optional part of SOAP message. It contains optional attributes of message used in processing the message.

c) Body :-

It is an mandatory part of SOAP message which contains the application defined XML data being exchanged in SOAP message.

d) Fault :-

It is an optional part of SOAP message that provides information about errors that occurred while processing the message.

8) Which thing Developer will give tester for testing SOAP service using SOAP UI Tool?
- Developer will provide WSDL file.
- Unit testing documents like Screenshots, Tables, Sample Request, sample response code etc.
- Time taken for the response.
- Authorization Details like Username & Password.

Test Case

9) What are Test Cases in SOAP service?
1) Validating SOAP Response
2) Validating data and count of data present in response
3) Validating tagnames / attributes present in response
4) Validating different status codes in the response.
5) Validating time taken for the response
6) Applying assertions for verification. (To apply assertion we have to generate test suite)
7) Validating functionality by passing test data (re-testing)
8) Validating negative test cases

10) Difference between SOAP and REST

SOAP	REST
i) SOAP stands for simple object access protocol	i) REST stands for representational state transfer
ii) It is based on XML language	ii) It is based on HTTP, JSON, URI and XML
iii) For testing SOAP service we require WSDL file	iii) For testing REST service we require URI/URL
iv) SOAP is a protocol	iv) REST is a architecture
v) SOAP is used for web based	v) REST is used for web based, mobile, desktop application

11) What are different assertions present in SOAPUI?

i) Contains :- checks for the existence of a specific string.

ii) Not contains :- checks for the non-existence of a specific string

iii) Valid HTTP status codes :-
Checks that the target TestStep received an HTTP result with a status code in the list of defined codes.

iv) Invalid HTTP status codes :-
Checks that the target TestStep received an HTTP result with a status code not in the list of defined codes.

v) SOAP fault :-
validates that the last received message is a SOAP fault.

vi) NOT SOAP fault :-
validates that the last received message is not a SOAP fault.

vii) Response SLA :-
validates that the last received response time was within the defined limit.

viii) Xpath Assertion :-
Xpath is a query language for selecting nodes (tagnames) from an XML document.
Some functions like count, matches

12) What is difference between URL and URI

URL	URI
URL stands for Uniform Resources Locator	URI stands for Uniform Resource Identifier
URL is used to describe the identify of an item on links webpage	URI is used to distinguish one resource from other regardless of the method use

13) Type of Request / Methods Used in REST ?

i) GET Method :-
   GET method is used to get data from a resource
   (Similar to select)

ii) POST Method :-
   POST method is used to send data to a server to create a
   resource. (Similar to insert)

iii) Patch Method :-
   Patch requests are to make partial update on a resource
        (similar update)

iv) PUT method :-
   PUT is used to send data to a server to update a resource
(similar update to statement)

v) DELETE Method :-
   DELETE method deletes the specified resource
        (Similar delete to statement)

14) What is CRUD ?

CRUD :- Create, Retrieve, Update and Delete.

POST — Create / Insert
GET — Retrieve
PUT / PATCH — Update
DELETE — Delete.

15) What are the different status code?

1) ~~Informational response (1xx)~~
2) ~~Success (2xx)~~
3) ~~Redirection (3xx)~~
4) ~~Clien~~

1) Informational Response (1XX)
2) Successful Response (2XX)
3) Redirection (3XX)
4) Server Errors (4XX)
5) Internal Errors (5XX)

* Successful Response (2XX) :-

i) 200 - OK :- The request has succeeded. The meaning of the success depends on the HTTP method

ii) 201 - Created :- The request has succeeded and a new resource has been created as a result.

iii) 202 - Accepted :- If data will sent to server for storing purpose

iv) 204 - No Content :- If unique data sent to server then it sent no content.

* Server Errors (4xx) (Database) :-

i) 400 - Bad Request :- The server could not understand the request due to invalid data.

ii) 401 - Unauthorized :- If invalid authorization will be provided in request.

iii) 403 - Forbidden :- The client does not have access rights to the content.

iv) 404 - Not Found :- The server can not find the requested resource. In the browser means URL is not recognized

v) 405 - Method Not Allowed :- The request method is known by the server but has been disabled and cannot be used.

vi) 408 - Request Timeout :- The server timed out waiting for the request

* Internal Errors (5xx) (client) :-

i) 500 - Internal server error :- The server has encountered a situation it doesn't know how to handle.

ii) 501 - Not Implemented :- The request method is not supported by the server and cannot be handled.

iii) 502 - Bad Gateway :- The request method received an invalid response.

iv) 503 - Service Unavailable :- The server is not ready to handle the request. Common cause because of

16) Disadvantages of API?
- A fixed scale is neccessary.
- Creating API is Time consuming
- Maintenance cost is High
- Can crash when testing API

17) Disadvantages of WebService?
- It doest not access from Browser
- HTTP protocol is not reliable.

18) Difference between HTTP and HTTPS.?

HTTP	HTTPS
i) It is stands for Hyper Text Transfer protocol	i) It is stands for Hyper Text Transfer protocol with secure.
ii) It is less secure	ii) It is more secure
iii) It doesn't uses Data Encryption	iii) It uses Data Encryption
~~iv) It is slower~~ iv) It is faster than HTTPS	iv) It is slower than HTTP