API Testing

What is Postman.

Postman is collaboration platform for API development.

Help us to design, share, build, test, document APIs.

Postman supports protocols \_REST, SOAP and graph QL

Dependencies:

<!-- https://mvnrepository.com/artifact/io.rest-assured/rest-assured -->

<!-- https://mvnrepository.com/artifact/org.testng/testng -->

<!-- https://mvnrepository.com/artifact/org.seleniumhq.selenium/selenium-java -->

<!-- https://mvnrepository.com/artifact/org.hamcrest/hamcrest -->

For POJO classes

<!-- https://mvnrepository.com/artifact/com.fasterxml.jackson.core/jackson-databind -->

-- <!-- https://mvnrepository.com/artifact/com.fasterxml.jackson.core/jackson-annotations<!-- https://mvnrepository.com/artifact/com.fasterxml.jackson.core/jackson-core --> -->

<!-- https://mvnrepository.com/artifact/com.google.code.gson/gson -->

1.What is API?

An **application programming interface** (**API**) is a way for two or more computer program (application) to communicate with each other. It is a type of software interface offering a service to other pieces of software.

END Point/Base URI- Address where API is hosted on the server.

CRUD operation:

HTTP methods which commonly used for communicate with the API are

GET, PUT, POST, DELETE

GET- The GET method is used to extract information from the given server using a given URI. While using GET request, it should only extract data and should have no other effect on the data. No Payload/Body required.

POST- post request used to send the data to the server, for example- to send customer information, file upload etc.

PUT- replace the existing information to the server. for example- to update contact no of employee.

DELETE- DELETE HTTP method is used to delete the information of particular request.

2. Resources :- Resource represent API/Collection which can be access from the server. Eg:

Google.com/maps

google.com/search

google.com/images

3. Path Parameters: Path parameter is variable part of URL path, They are typically used to find specific resources with in the collection, such as a user identified by ID. Eg

<https://www.google.com/Images/1123343>

<https://amazon.com/orders/112>

4.Query Parameters: It is used to sort/filter the resources.

Query Parameters are identified with “?”

<https://amazon.com/orders?sort_by=2/20/2020>

5. Header/cookies:

Headers represent the meta-data associated with the API request and response. In layman terms, we were sending additional details to API to process our request. Eg:

Authorization details

6. End Point Request URL can be constructed as below

Base URL/resource/(Query/Path)Parameters

URL- Uniform resource locator

URI- Uniform resource Identifier

7.RestAssured: working below 3 principle

given()- all input details

when()-submit the API-- resource and http method

then()- validate the response

8. What is OAuth2.0

OAuth 2.0 is the industry-standard protocol for authorization. OAuth 2.0 focuses on client developer simplicity while providing specific authorization flows for web applications, desktop applications, mobile phones, and living room devices.

OAuth 2.0, which stands for “Open Authorization”, is **a standard designed to allow a website or application to access resources hosted by other web apps on behalf of a user**.

Client- eg. BookMyShow

Client id- ID that identify the client

Client secret id- Book My Show Registered with google

Resource owner- Human

Resource/Authorization server- Google

-user sign in to google and get code (by hitting google authorization)

-Application will use this code to hit google resource server in backend to get (Acess token, first name, last name, email)

-Application grants access to user by validating access token.

**2. What are main differences between API and Web Service?**

* All Web services are APIs but not all APIs are Web services.
* [Web services](https://katalon.com/web-testing)might not contain all the specifications and cannot perform all the tasks that APIs would perform.
* A Web service uses only three styles of use: SOAP, REST and XML-RPC for communication whereas API may be exposed to in multiple ways.
* A Web service always needs a network to operate while APIs don’t need a network for operation.