***API* NOTE\**

**Api / webservice testing (end to end testing process)**

1. **Api Documentation(SwaggerUI)**
2. **Writing Test Cases**
3. **Setting up Environment(Test Bed)**
4. **Test Execution/Automation**

**Interactive documentation— interactive documentation we are getting in api perspective,**

**Interactive documentation means we can understand the requirement and also we explore this requirement.**

**SoapUi-Api/ReadyAPI**

Wsdl=web service description language.mostly it is xml formate,

url=www.deneonline.com/calculator.asmx?wsdl

url=http://www.dneonline.com/calculator.asmx?wsdl

wizdler

Create soap project using wsdl webservice description language.

Assertion

Contains-- Added Contains assertion

Parallaly and serquentially—using soap ui we can our test cases parrallaly and sequentially,

Soap rest api—soap ui also support rest api

https://restcountries.eu/

https://restcountries.com/v3.1/name/india

https://restcountries.com/v3.1/name/Bangladesh

here- https://restcountries.com are domain

v3.1/name/Bangladesh is resource.

Soapui assertions—there are ,many assertions we have to vliadtae in soap ui

Like using soap ui and rest api

Contains and not contains assertion---

url= <https://ws.footballpool.dataaccess.eu/info.wso?WSDL>

C

Contain and not contain assertion

Contain assertion:- we just verify test is visible or not.

Not contains – just verify the this text is not present in my response text.

**RestAssured framework**

**Objective- 1. Reuseabilty**

**2. Maintainability**

**3. Readability**

**Phases-Understanding requirement**

**%- Functional specification(static)**

**-swagger**

**Three-part Development -Execution -Continus integration**

**Endpoints package -create routes class contains all the urls**

Cookies—

We validate cookie is present or not or cookies is generate or not

Headers- we validate headers log().heders();

***/.body(hp)***

***//org.json .body(data.toString())***

***//pojo .body(data)***

***// usin json external file .body(data.toString())***

**/ HashMap hp = new HashMap<>();**

**//**

**// hp.put("name", "javed sifat");**

**// hp.put("City", "brooklyn");**

**// String courseArr[] = {"api", "RestAssured"};**

**// hp.put("course", courseArr);**

**// using json library org.json**

**// JSONObject data =new JSONObject();**

**//// data.put("name", "javed sifat");**

**//// data.put("City", "brooklyn");**

**//// String courseArr[] = {"api", "RestAssured"};**

**//// data.put("course", courseArr);**

**// using pojo-plain old java object class**

**// Pojo\_Demo data=new Pojo\_Demo();**

**// data.setName("javeed Sifat");**

**// data.setCity("brooklyn");**

**// String courseArr[]={"api","selenium"}**

**// data.setCourse(courseArr);**

**//using external json file**

**File f=new File(".\\body.json");**

**FileReader fr=new FileReader(f);**

**JSONTokener jt =new JSONTokener(fr);**

**JSONObject data =new JSONObject(jt);**

**@Test(priority = 1)**

**void testHashmap(){**

**HashMap data =new HashMap<>();**

**data.put("firstname","sifat");**

**data.put("lastname","jhon");**

**data.put("adress","102 east 7th street");**

**data.put("phone","123456789");**

**data.put("city","brooklyn");**

**data.put("state","New York");**

**String accountArr[]={"checking","saving"};**

**data.put("account",accountArr);**

**given()**

**.contentType("application/json")**

**.body(data)**

**.when()**

**.post(" http://localhost:3000/New\_Users")**

**.then()**

**.statusCode(201)**

**.body("firstname",equalTo("sifat"))**

**.body("lastname",equalTo("jhon"))**

**.body("adress",equalTo("102 east 7th street"))**

**.body("phone",equalTo("123456789"))**

**.body("city",equalTo("brooklyn"))**

**.body("account[0]",equalTo("checking"))**

**.body("account[1]",equalTo("saving"))**

**.header("Content-Type","application/json; charset=utf-8")**

**.log().all() ;**

**}**

**Rest Assured**

Dependecies

restAssured-🡪 json-path-🡪 json🡪 gson --. TestNG

scribejava –apis, -- json-schema-validator

HashMap

HashMap hp = new HashMap<>();

//

// hp.put("name", "javed sifat");

// hp.put("City", "brooklyn");

// String courseArr[] = {"api", "RestAssured"};

// hp.put("course", courseArr);

Using org .json

JSONObject data =new JSONObject();

//// data.put("name", "javed sifat");

//// data.put("City", "brooklyn");

//// String courseArr[] = {"api", "RestAssured"};

//// data.put("course", courseArr);

Using pojo and json external file

// using pojo-plain old java object class

// Pojo\_Demo data=new Pojo\_Demo();

// data.setName("javeed Sifat");

// data.setCity("brooklyn");

// String courseArr[]={"api","selenium"}

// data.setCourse(courseArr);

//using external json file

File f=new File(".\\body.json");

FileReader fr=new FileReader(f);

JSONTokener jt =new JSONTokener(fr);

JSONObject data =new JSONObject(jt);

How ways we can create a request body?

Multiple ways we can create a request body like

Ans=- 1 hashmap.--> using org.json >> using pojo(plain old java object) >> using external json file.

Statuscode=400,404,401,422,415,403,

**Gerkin -Keywords rest assured By default support it.**

**Given()=prerequisite type of content like content type.**

**When()= all request url inside the when(); like post.put,**

**Then()= all the validation like status code , extract response, extract headers,**

**Cookis and response body.**

**Restassured support static packages and import this**

*{*

*"id": "1234",*

*"first name": "javeed",*

*"last name": "sifat",*

*"Adress": "409 west 5th Street",*

*"City": "Brooklyn",*

*"State": "New York",*

*"phone": "1234567890",*

*"Account": [*

*"Checking",*

*"Saving",*

*"join"*

*]*

*},*

**Path and query parameter**

[**https://reqres.in/api/users?page=2&id=5**](https://reqres.in/api/users?page=2&id=5)

**different between path parameter and query parameter?**

Ans- path parameter is a variable and we can define it but query parameter we can not define it goes like with our request.

**Spulunk**

**MY SPLUNK** [**EMAIL-abujabed30@gmail.com**](mailto:EMAIL-abujabed30@gmail.com)

**Password-Jabed\_@92**

**Xampp configuration with Api using open cart—**

**url- http:// localhost/phpMyAdmin/**

**How to stop another**

**My sql go run and type service.msc and go my sql and have to fix it**

For json and xml validation

**url-- https://petstore.swagger.io/?displayOperationId=1**

**Swagger interactive documents. We can explore this document it is not static**

**Document static document we can see only .**

[**https://fakerestapi.azurewebsites.net/index.html**](https://fakerestapi.azurewebsites.net/index.html)

**Curl—Client url some time we will only curl instead of all documents this curl is common for all request or using this curl we will get all the document.**

**Api token- > My Key :: 915ee93763c98ba921ffbb08562444d8**

**Password-Jabed\_1992**

**Username-abu-12**

**Email-abujabed30@gmail.com**

**Bearer Token**

**Primary Token----- 21358ec3bac0d14f7db0c0829e334151ca95af3cae33a8cd4c54920db9be543e**

**Url--https: //gorest.co.in**

**End poin- /public/v2/users**

**Rest Api**

**Post: /public/v2/users – create new users**

**Get -/public/v2/users/2942 🡪 Get user details**

**Put/Patch --/public/v2/users/2942 🡪Update user details.**

**Delete--/public/v2/users/2942 🡪 Delete user**

**Request Body--**

{

"name":"sifat javeed",

"gender":"male",

"email":"abc@gmail.com",

"status":"inactive"

}

Api Authentications

**Books Api----**

Url--https://simple-books-api.glitch.me/

Token retrieve URL-https://simple-books-api.glitch.me/api-clients/

Acess Token: "accessToken": "7ae368586bbd2202a547309e15cfb3d7e0633bbe6d982d9c5ab0bcb1c5c8ac64"

**What is workspace?**

Ans- workspace in postman we save our all files. files is nothing like save our all the test cases .

**What is collections?**

Ans- collection is nothing it contains some folder where we keep our all http request.one work space can have end number of collection.

**How many types of Api?**

Ans- There are two types of Api

**Soap Api**- Simple object access protocol.

**Rest Api** – Representational State transfer.

**Difference between webservice and api?**

Ans- webservice in api wrapped the http request

All the webservice are api but all the are not web service.

Webservice need internet but api do not need internet.

**What’s the difference between https and http?**

Ans- the main difference between https and http is https stand on hyper test transfer protocol with secured because https sends the data with in scripted format but http like hypertext transfer protocol not with secured even it transfer data with original format.

**Explain Api terminologies?**

Ans=http://localhost:3000/Students

Url=uniform resource locator.

Uri = uniform resource identifier.

Urn =uniform resource name.

Different report understanding and different uses some people call URL and Some people call URI.

What is payload?

Ans=

***What is Json and why we send data into Json and xml format?***

Ans- Jason: java script object notation.

Jason is a syntax for storing and exchanging data.

Basically, it was designed for human readable data interchange.

It has extended from java scripting language.

The file name extension is .Json.

We send data Json and xml format it is lightweight so it is faster than text, this format also in scripted not a de scripted so it is secured than original format that’s why we send data into xml or Json format.

***Json data types-***

Ans- Number,String , Boolean,Object,null,Array

And should be always key value pairs.

“Key”: “Value”,

String Json format-

{

“Name”: “javeed”

}

Key should always inside the Double qottesion.

Json Array formate- number format-

“phone”:[1223334,1222334]

“Status”: true/false booloean format

“Firstname”:”javedd”,

“lastname “:null

This all together are object.

**How validate data in complex json payload?**

Ans json path finder I have used to data validate of my complex paylod. I can easily extract my data and validate my payload.

Jason path finder why you have used?

Ans—by using json path we can extract the data from json file.

Whats the different between json and xml file?

Ans- json--- json simple to read and write.

Json supports array

Json file are more readable than xml

Json support text and number data type.

Xml—xml less simple compared Json,

Xml not support Array

Less human readable

Support text,number,images,charts

Json object- Jason object holds key value fairs ,

Key value separate by colon,each key value separate by coma, and curley basis represent Json object.

Validation Scopes

Status codes-

Headers-

Cookies-

Response time-

Response body

Assertion -validation

Pm-library

Functions

Java script

Chai frame work in postman contains set of number function

Like normal function and arrow function.

Test for response code

Arrow functions:--

pm.test("status code is 200",()=>{

pm.response.to.have.status(200)}

);

Normal functions-

pm.test("status code is 200",function(){

pm.response.to.have.status(200)}

validate response code-> if want to test for the status code being one of a

set , include them all in an array and use one of.

pm.test("Successful Get request", ()=>

{

pm.expect(pm.response.code).to.be.oneOf([200,201])

}

);

**Check the Status Code text**

**Pm.test(“status code name has String”,() =>**

**{**

**Pm.response.to.have.status(“created”);**

**}**

);

Headers part validation===

headers contains lot of information like data, server, network information so we don’t need validate all evry thing we just validate static value like mostly content type . what ever value are dynamic I mean whatever change on run time date,keep alive, content length ,cache-control we don’t need to validate it .we validate like--

1. every heders have proper value or not.
2. And we validate conten type if content is json format the application will **Application/json** if content json format the value will be like application/xml its call **mime type**, this mime will represent the type data which are json or xml.

Testing headers

**Check that a response headers is present -**

pm.test("content type header is present ", ()=>

{

pm.response.to.have.header("Content-Type");

}

);

**Test for response header having a particular value**

pm.test("Content type header is Application/json", () =>

{

pm.expect(pm.response.headers.get('Content-Type')).to.eql('application/json;charset=utf-8');

}

)

Cookies test

**Test if a cookie is present in the response**

pm.test("cookie 'language' is present",() =>

{

pm.expect(pm.cookies.has('language')).to.be.true;

}

);

**Test for particular cookie value**

What is api?

What is api testing?

What is template API used?

There are several rest API template in the market and open API like swagger is the most popular open source documentation template in the market.it aims to meet the challenges of teaching and documenting API at the same time it uses Jason objects to describe API elements.

Swagger UI---- it is popular tool help users build, document,test and consume RESTful web services.

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There are several rest API template in the market and open API like swagger is the most popular open source documentation template in the market.it aims to meet the challenges of teaching and documenting API at the same time it uses Jason objects to describe API elements.

Swagger UI---- it is popular tool help users build, document,test and consume RESTful web services.

What is main different between web service and api?

Ans—all the web service are api but all api r not web service because web service can not maintain all the specification like cannot perform the task task is mainly perform api like all the core engine is api if I give you example like in my login api when I perform from my phone laptop that time I have to put some backend data like Jason, xml then I see in on the screen and web provide me to next destination even my jar file when I loaded that it will provide me some method it is also api and web help me source code to executable code. Like when I write it gives me all class level static main executable method.

Different between Soap and rest

Soap == Soap is simple object xml foremate. -than it will more benefited and slower than rest. Soap runs http method. soap is used for mostly custom desktop applications. And it is closely connected with our server. Soap is supported cashing.

REST== rest is faster than soap and different format like xml, Jason, text but less benefited .rest support http and headers toggle the meta information rest is not client service like offer software base, architectural base, network base and support cashing.

When customer or client tell you have to perform mostly api that what is your approach

Like what is your testing process and what you will be test?

Ans—in general mostly developer or client provide me uri or url I mean end point right so that time I will provide a request by rest api and ckeck key parameter, path parameter if it is not three I will attached we can having droap down there we mention here we mention also url,path parameter/query parameter like key value and hit button if it is Jason formate we validate response code, responsetime,authorization, we can perform also performance testing security testing.

What are the main challenge in api testing

Categorize the para meter I mean sizzing the parameter is main challenging in api because it is drive the business logic I have to sequencing the parameter even those kind of parameter I have to mention properly. one api is fail rest will be the fail also mis understanding is one reason make the api challenging like I am not understand requirement clearly or developer is build properly that time get error response code it is also challenging.

What is up to bottom and bottom up in soap api ?

Ans actually when the business logic purpose my upper modules is working good but my lower modules is not working good that

Api testing we get the requirement write test cases and do reviws. Developer when get the requirement they will get normal format every body can understand.then developer design this document technical format . developer make this document make this document interactive document .developer what ever provide software document it send testing team send with interactive document.to prepare interective tool swagger .developer send intetrevtive document testing team swagger so tester not only see the functionality if tester ca explore this functionality but it is not testing.it is hard coded just give us oppourtunaty to test with explore the functionality.so swagger provide interactive documentation we can get the functionality and can explor api with dummy data.

Api write my test case

TC id==Title==requestURL==HTTPmethod==

requestBOdy==authKey==response==validation==bug

when we send our post request what is our prerequest

content type data which formate we can say also local variable.

Given();

.content type(which foramate )

.body (data)

.then()

.status(200)

.log.body()

.extract().response

Response code I validate by test ng and body I valdate by hamcrest has item equuail.to

Response code==

401== unAuthorized here dropdown the parametertrs when I put my api key

As key value that is my unique id its mean it is create a relations between client server for this specific system like this tools and ip address suppose if my unique system id wrong that time I got this error. It will connected the server like I have a card I put the credit card it will goes the atm and connected with atm but I will not get the money.

Client server

404==When I create localhost when I replace same localhost or with in third party localhost I have to replace that time it is not replace properly the main issue is Indexing the index number is not the same its called not found

Soup api