1. Which APi testing Tool you have used?

PostMan & RestAssured

1. Types of API testing ?
2. Soap WebServcie API testing
3. REST WebServcie API testing
4. What is API ?

Application programing Interface, testing interface between two application

Testing the application in business layer is called API testing , with out browser

EG : Rest webservcie is API testing

Soap WebServcie is API testing

1. How many years of Experience in API project?

2 years

1. Where did you used API in your Previous project & Purpose of the API?

Product , contacts , Quote , Case

1. How many you have tested

20 RestFull API

1. Can you Write or list Out few API in your Previous Project

Product

Get <Http://autodesk-test-env.com:8084/products>

Post <Http://autodesk-test-env.com:8084/products/addproduct>

Put patch ,delete [Http://autodesk-test-env.com:8084/product/{productID}](Http://autodesk-test-env.com:8084/product/%7bproductID%7d)

Get <Http://autodesk-test-env.com:8084/products>?name =hplabtaop

1. Write on POST API request in your previous Project

EG:

Post <Http://autodesk-test-env.com:8084/products/addproduct>

{

"ProductNAme" : "name"

"SerailNum" : 123

"Manfauting date" : ""

"unitPrice" : 2000INR

"Qty" : 10

}

1. Write one API response in your previous Project

{

"name": "name",

"msg": "successfully added",

"id": "625",

"createdAt": "2020-11-02T08:05:40.255Z"

}

EG : get all Products

Get <Http://autodesk-test-env.com:8084/products>

{

"page": 2,

"per\_page": 6,

"total": 12,

"total\_pages": 2,

"data": [

{

"id": 7,

"product": "michael.lawson@reqres.in",

"first\_name": "Michael",

"last\_name": "Lawson",

"avatar": "https://s3.amazonaws.com/uifaces/faces/twitter/follettkyle/128.jpg"

},

{

"id": 8,

"email": "lindsay.ferguson@reqres.in",

"first\_name": "Lindsay",

"last\_name": "Ferguson",

"avatar": "https://s3.amazonaws.com/uifaces/faces/twitter/araa3185/128.jpg"

},

{

"id": 9,

"email": "tobias.funke@reqres.in",

"first\_name": "Tobias",

"last\_name": "Funke",

"avatar": "https://s3.amazonaws.com/uifaces/faces/twitter/vivekprvr/128.jpg"

},

{

"id": 10,

"email": "byron.fields@reqres.in",

"first\_name": "Byron",

"last\_name": "Fields",

"avatar": "https://s3.amazonaws.com/uifaces/faces/twitter/russoedu/128.jpg"

},

{

"id": 11,

"email": "george.edwards@reqres.in",

"first\_name": "George",

"last\_name": "Edwards",

"avatar": "https://s3.amazonaws.com/uifaces/faces/twitter/mrmoiree/128.jpg"

},

{

"id": 12,

"email": "rachel.howell@reqres.in",

"first\_name": "Rachel",

"last\_name": "Howell",

"avatar": "https://s3.amazonaws.com/uifaces/faces/twitter/hebertialmeida/128.jpg"

}

],

"ad": {

"company": "StatusCode Weekly",

"url": "<http://statuscode.org/>",

"text": "A weekly newsletter focusing on software development, infrastructure, the server, performance, and the stack end of things."

}

}

1. How many API test case you written

20 API 🡺 100 tc

1. Explain httpRequest / httpResponse structure

HttpREquest :

httpMtd : specify the type of the request

Web URL : uniquely identify the WebResourse inside the Web Application

ContentType : specify the type of content available in body the Request/Response

formData : data collected in html Form / or request body

HttpREsponse

Status Code : specify the status of the Request

ContentType

Actaul Data : data available in response body

1. Explain the http method which you used In your previous project

Get = > read resource from the sever

Post => create resource inside the sever

Put=> create resource/ complete update resource inside the sever

Patch => partial update resource inside the sever

Delete => create resource inside the sever

1. Explain the status code which you encounter in your previous project

**100 Continue**

**--------------------------SucessFull----------------------**

[**200 (OK)**](https://restfulapi.net/http-status-200-ok/) **: able to read resource from the server**

[201 (Created)](https://restfulapi.net/http-status-201-created/) : able to create **resource inside the server**

[202 (Accepted)](https://restfulapi.net/http-status-202-accepted/) : able to accept the permission request inside the server

[204 (No Content)](https://restfulapi.net/http-status-204-no-content/) : got response from the server but no content

---------------------------------- **Redirected** ---------------------------------

300 Redirected : indicates that further action needs to be taken by the user agent in order to fulfill the request. http method is not supported

-------------------------------**Client Side Error-----------------------------------------------**

400 (Bad Request) : The request could not be understood by the server due to malformed syntax

401 (Unauthorized) : request is not authorized to access the resource inside the server

403 (Forbidden) : server understood the request but not authorized person to access

404 (Not Found) : not able to find the resource inside the server which you requested

405 Method Not Allowed

---------------------------------------**Server Side Error-------------------------------------------------**

500 Internal Server Error : problem from server side

502 Bad Gateway : proxy / firewall (network) issue in server side

503 Service Unavailable : The server is currently unable to handle the request

504 Gateway Timeout : server not response even waiting fro long time

1. **What is Crud operation**

**Create read update delete**

1. **Challenges you faced in API Testing**
2. End to End Scenario testing is challenging because we have do API Chaining

EG: Scenario 🡪Search Product + ADD to cart + Billing + Logistic

API : API -1 for Search Product

API-2 for ADD to cart

API-3 for Billing

API-4 for Logistic

1. API Document is not clear , API testing challenging
2. Negative testing is challenging
3. Validation of Complex response is challenging
4. **Prerequisite for APi testing**

* Knowledge of client server architecture of the application
* Knowledge of HTTP request and HTTP response;
* Knowledge of JSON or XML language
* API documentation / API Functional spec from Development team
* Get the list of END POINT
* Knowledge of CRUD
* Write test case for every API that include CRUD operation
* Required tool for API TESTING

Postman 🡪 GUI based API testing tool

RestAssured 🡪 Headless Java libraries for REST API testing

* Collect API authentication if required (like Basic Auth , Bearer Auth , Oauth-1.0, Oauth-2.0)
* Basic knowledge on database

1. **How to verify the complex response in API testing?**

**Will write jsonPath to navigate to specific data inside the response , then will go for “JSon Value checker ”Assert**

1. **How to post Complex request in api testing**

**We can post json File Itself in postman 🡺 body🡺binary🡺 select File**

1. **Explain the validation available in APi testing**
2. ResponseBody : Verify status Code
3. ResponseBody : time is less than ---
4. ResponseBody : json value Check
5. ResponseBody : contain string
6. ResponseBody : equal to String
7. **sendRequest**

1. What is Parameter & types of Paremter

To achieve data driven testing we go for Paremter

1. Path parameter : it’s the Part the URI , execute same request with diff End Point
2. Query parameter : it’s part of the Query String, execute same request with did filter /search criteria
3. form Parameter : send complete request body in the form of Parameter
4. What Authentication & Autherization

Authentication: used to check whether you are valid user or not?

Authorization : used to check your permission / accesses to the resource

1. **Types of API Athentication & which Athentication you have used in your previous project**
2. Basic Auth
3. Bearer Token
4. OAuth-1.0
5. OAuth-2.0
6. **What is Request chaining ?**

let jsonData;

pm.**test**("Your test name", **function** () {

     jsonData **=** pm.response.json();

    pm.expect(jsonData.data[0].first\_name).to.eql("Michael");

});

let var2 **=** jsonData.data[0].id

pm.sendRequest("https://reqres.in/api/users/"**+**var2, **function** (err, response) {

    console.**log**(response.json());

});

1. **What Is Collection in PostMan**

Collection(suite) of API requests

1. **How to execute API collection with Different Environment?**

In post we have concept of Environment window , where we can create Global data

Like BASEURI , PORTNUM , BEARER TOKEN

EG :

{{BaseURI}}/{{PORTNUM}}/endpoint/12

1. **How to execute API collection in command line**
2. Export Collection from POSTMAN
3. Download Collection in .json format
4. Go to Commandline
5. Install new MAN

cmd> npm install –g new man

1. Execute collction in CMD

Cmd> newman run path

1. How many types variables in API testing?
2. **Difference between XML & JSON**
3. **Difference between SOAP / rest Web service**

===================================================

1. Write a program to convert JAVA to JSON , Sterilization

// ObjectMapper(Parser) used to parsing(Serialization / DeSerialization) ,

// means convert java to JSON visa versa

ObjectMapper objmap = **new** ObjectMapper();

objmap.writeValue(**new** File("./sigleProject.json"), projObj);

====================POJO class=========================

**package** com.rmgyantra.api.pojolib;

**import** org.codehaus.jackson.annotate.JsonPropertyOrder;

@JsonPropertyOrder(

value = {

"projectName",

"createdOn",

"createdBy",

"status",

"teamSize"

}

)

**public** **class** Project {

String createdBy;

String projectName;

String status;

**int** teamSize;

**public** Project(String createdBy, String projectName, String status, **int** teamSize) {

**super**();

**this**.createdBy = createdBy;

**this**.projectName = projectName;

**this**.status = status;

**this**.teamSize = teamSize;

}

**public** String getCreatedBy() {

**return** createdBy;

}

**public** **void** setCreatedBy(String createdBy) {

**this**.createdBy = createdBy;

}

**public** String getProjectName() {

**return** projectName;

}

**public** **void** setProjectName(String projectName) {

**this**.projectName = projectName;

}

**public** String getStatus() {

**return** status;

}

**public** **void** setStatus(String status) {

**this**.status = status;

}

**public** **int** getTeamSize() {

**return** teamSize;

}

**public** **void** setTeamSize(**int** teamSize) {

**this**.teamSize = teamSize;

}

}

1. What is the use ObjectMApper ?

Its class available in JACKSON , JERSSY , which is used for serializations /De serializations

1. How any ways we can post a Request in RestAssured ?
2. Using jSONObject class
3. Using HAshMAP
4. Using POJO class
5. Using JSONFile
6. How to Post Complex Request body in Rest Assured?
7. Using POJO class
8. Using JSONFile
9. How to Validate Complex Response in Rest Assured

Using JSONPATH() we can write jsonXpath to navigate to specific node in Response , it will written Object if single match else return List<Object> if multiple match found

1. What is the use RequestSpecBuilder

It’s a class available in RestAssured , using RequestSpeccBilder we can put common configuration which required for the API test Sctipts like ContentType , Authentication , baseURI

EG :

**public** **class** BaseAPIClass {

**public** RequestSpecification requestSpec;

@BeforeSuite

**public** **void** configBeforeSuite() {

RequestSpecBuilder builder = **new** RequestSpecBuilder();

builder.setBaseUri("http://localhost:8084");

builder.setContentType(ContentType.***JSON***);

requestSpec = builder.build(); }

===================to use in test ===================================

**public** **class** CreateProject\_BDD **extends** BaseAPIClass{

@Test

**public** **void** createPRoject() {

Project pObj = **new** Project("deepak", "HDFC", "Completed", 10);

*given*()

**.spec(requestSpec)**

.body(pObj)

.when()

.post("/addProject")

.then()

.assertThat().statusCode(201)

.log().all();

}}

1. **Write a Program to check Specific Data available in complex Response**

**package** practice;

**import** org.testng.annotations.Test;

**import** com.rmgyantra.api.genericUtils.BaseAPIClass;

**import** io.restassured.http.ContentType;

**import** io.restassured.response.Response;

**import** **static** io.restassured.RestAssured.\*;

**import** java.util.ArrayList;

**public** **class** GetAndFindProject {

@Test

**public** **void** getAndVerifyProject() {

Response resp = *given*()

.contentType(ContentType.***JSON***)

.when()

.get("http://localhost:8084/projects");

resp.then()

.assertThat().statusCode(200);

ArrayList<String> lst = resp.jsonPath().get("projectName");

**for**(**int** i=0; i<lst.size();i++) {

**if**(lst.get(i).equals("HDFC")) {

System.***out***.println("PASS");

**break**;

}

}

}

}

1. **What types of Authentication you have used in previous Project ?**

**We have used Bearer Token Autehtication**

@Test

**public** **void** getAllProject() {

given()

.auth().oauth2("BearerTokenID")

.contentType(ContentType.JSON)

.when()

.get("http://localhost:8084/projects")

.then()

.log().all()

}

}

1. **Can you write a program to POST a request?**

**Import static io.restassured.RestAussured.\*;**

**Class CreateCustomer{**

**@test**

**Public void createCustomer(){**

**HashMAp map = new HAshMAp()**

**Map.put(“customerNAme” , “hdfc”);**

**Map.put(“add”, “bangalore”);**

**Map.put(“id” , 123);**

**Given()**

**.contentType(ContentType.JSON)**

**.auth().oath2(“barereTokenID”)**

**.body(map)**

**.when()**

**.post(“http://rmgyantra.com/projects”)**

**.then()**

**.assertThat().statusCode(200)**

**}**

**}**

**What all the Class/ API used in RestAssured?**

**RestAssured**

**Response**

**RequestSpecification**

**ResponseValidator**

**RequestSpecBuilder**

**What is the Advantages of restAssured ?**

* **Support for http methods**
* **Support for BDD**
* **Use of Hamcrest matches for validation /Assertions**
* **Provide inbuilt method to create a request header & body**
* **Provide inbuilt method to validate response header & body**
* **Handles various authentication like Token AUTH, Basic auth , oauth1.0 , oauth2.0**
* **Send request over the network using existing protocol like http**
* **Integrate seamlessly with existing java based framework like selenium, testing , jdbc , poi etc**
* **Used for complete backend automation**
* **Framework can integrate with CI/CD pipeline**
* **Open source headless client**

**How execute same API multiple times with Different data**

**public** **class** CreateProject\_BDD **extends** BaseAPIClass{

@Test(dataProvider = "getData")

**public** **void** createPRoject(String prjectNAme , String status) {

Project pObj = **new** Project("deepak", prjectNAme, status, 10);

*given*()

.spec(requestSpec)

.body(pObj)

.when()

.post("/addProject")

.then()

.assertThat().statusCode(201)

.log().all();

}

@DataProvider

**public** Object[][] getData() {

Object[][] objArr = **new** Object[4][2];

objArr[0][0] = "HDFC-11";

objArr[0][1] = "Completed";

objArr[1][0] = "ICICI";

objArr[1][1] = "Completed";

objArr[2][0] = "YES";

objArr[2][1] = "Completed";

objArr[3][0] = "SMB";

objArr[3][1] = "Completed";

**return** objArr;

}

}

**Types of parameter available in RestAssured ?**

1. **Path parameter**
2. **Query Parameter**
3. **Form parameter**
4. **Param parameter**

**What is Request Chaining?**

**Get the data from one response & pass it to another Request**

**package** practice;

**import** org.testng.annotations.Test;

**import** com.rmgyantra.api.genericUtils.BaseAPIClass;

**import** io.restassured.http.ContentType;

**import** io.restassured.response.Response;

**import** **static** io.restassured.RestAssured.\*;

**import** java.util.ArrayList;

**public** **class** GetAndFindProject {

@Test

**public** **void** getAndVerifyProject() {

Response resp = *given*()

.contentType(ContentType.***JSON***)

.when()

.get("http://localhost:8084/projects");

String projectId = resp.jsonPath().get("projectId[0]");

System.***out***.println(projectId);

*given*()

.contentType(ContentType.***JSON***)

.pathParam("PID", projectId)

.when()

.delete("http://localhost:8084/projects/{PID}")

.then()

.assertThat().statusCode(204);

}

}