



**Courses:** Java Selenium, Java Full Stack, Python Full Stack  
JS Cypress, Playwright, Data Analyst, Flutter

**Trainers:** Ram Sarath Palanivel Xavier  
8939982246 9884291190 9344653712

## Encapsulation:

It is the process of Wrapping the data and code acting on the data into single class file.

## How to implement Encapsulation:

### Step 1: Create a POJO class

POJO - Plain Old Java Object

It is user defined class which contains data members and getters and setters methods.

Database Layer - Huge amount of data store - Table format - column

No of column in Table = No of private variables in POJO class

Rules for DataMembers

Columnname = Variablename

DataType of the column = Datatype of the variable

Getters and setters: Setters are input method to assign value for the data members

Getters are output methods to get value from the data members

Setters Syntax:

```
public void setVariablename(argument){  
    business logic;  
}
```

Getters Syntax:

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```
public returnType getVariableName(){
    business logic;
}
```

**Step 2:** Create a local database

Create a text file and store in localdisk

**Step 3:** Add the database in the project

Create a folder

Copy the text file and paste in folder

**Step 4:** Read the data from the database file

Excel - Apache poi ooxml lib

Notepad - commons io jar file - 2.7

Download commons io jar file - google - download commons io - Select mvn repository link

- click on jar

Copy and paste the file in the folder

**Step 5:** Integrate the External jar file with java jar files

RC on the jar - Build path - Add

**Step 6:** Write a reusable function to read the data from the Text file

6.1 Create object for File - class - to mention the file path

6.2 FileUtils - pre defined class - commons io jar file

readLines - static method

```
List<String> allData = FileUtils.readLines(f);
```

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**Step 7:** In the setter method write the logic to check the username is valid or not.

Program:

```
//User defined Class - POJO
public class HDFCPojo {

    //Data members
    private String username;//Username of Ravi is
Validated

    private String password;

    private int balance;

    Map<String, Integer> m;

    //Getters and setters
    //Setters
    public void setUsername(String s) {
        if(s.equals("Ravi@user1")) {
            this.username="Username of Ravi is
Validated";
        }
        else if(s.equals("Anand@user2")) {
            this.username="Username of Anand is
Validated";
        }
    }
}
```

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```
        else if(s.equals("Babu@user3")) {
            this.username="Username of Babu is
Validated";
        }
        else {
            this.username="Username is not Validated";
        }
    }

    public void setPassword(String s) {
        if(s.equals("Ravi@123") &&
this.username.contains("Ravi")) {
            this.password="Account of Ravi is Valid";
        }
        else if(s.equals("Anand@123") &&
this.username.contains("Anand")) {
            this.password="Account of Anand is Valid";
        }
        else if(s.equals("Babu@123") &&
this.username.contains("Babu")) {
            this.password="Account of Babu is Valid";
        }
        else {
            this.password="Not Valid Account";
        }
    }

    public void setBalance(int a) {
        if(a==1 && this.password.equals("Account of Ravi
is Valid")) {
```

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```
        this.balance=m.get("Ravi@user1");
    }
    else if(a==2 && this.password.equals("Account of
Anand is Valid")) {
        this.balance = m.get("Anand@user2");
    }
    else if(a==3 && this.password.equals("Account of
Babu is Valid")) {
        this.balance = m.get("Babu@user3");
    }
    else {
        this.balance=0;
    }
}
//Getters
public String getUsername() {
    return username;
}
public String getPassword() {
    return password;
}
public int getBalance() {
    return balance;
}

public void readDataFromTextFile() throws IOException
{
    File f = new
File("C:\\Users\\LENOVO\\newEclipseWorkspe\\Septemeber24A
PI\\ExternalFiles\\HDFCDatabase.txt");
```

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```
List<String> readLines = FileUtils.readLines(f);  
m = new LinkedHashMap();  
for(int i=0; i<readLines.size(); i++) {  
    String individualLine = readLines.get(i);  
    String[] individualLinewords =  
individualLine.split(",");  
    String username = individualLinewords[0];  
    String balanceString =  
individualLinewords[2];  
    int balance =  
Integer.parseInt(balanceString);  
    m.put(username, balance);  
}  
}
```

```
public class Implementation {  
  
    public static void main(String[] args) throws  
IOException {  
  
        HDFCPojo h = new HDFCPojo();  
        h.readDataFromTextFile();  
        h.setUsername("Ravi@user1");  
        h.setPassword("Ravi@123");  
    }  
}
```

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```
h.setBalance(1);
```

```
HDFCPojo h1 = new HDFCPojo();  
h1.readDataFromTextFile();  
h1.setUsername("Anand@user2");  
h1.setPassword("Anand@123");  
h1.setBalance(2);
```

```
HDFCPojo h2 = new HDFCPojo();  
h2.readDataFromTextFile();  
h2.setUsername("Babu@user3");  
h2.setPassword("Babu@123");  
h2.setBalance(3);
```

```
HDFCPojo h4 = new HDFCPojo();  
h4.readDataFromTextFile();  
h4.setUsername("Anand@user2");  
h4.setPassword("Anand@123");  
h4.setBalance(4);
```

```
//List - Generics - Similar Datatype - Wrapper  
class - Pre defined class  
//List - Generics - User defined Wrapper Class -  
User defined List  
List<HDFCPojo> li = new ArrayList();  
li.add(h);  
li.add(h1);  
li.add(h2);  
li.add(h4);
```

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```
System.out.println("====User defined
List=====");
//Iterate
for(int i=0; i<li.size(); i++) {
    HDFCPojo hdfcPojo = li.get(i);
    System.out.println(hdfcPojo.getBalance());
}

//User defind Set
Set<HDFCPojo> si = new LinkedHashSet();
si.addAll(li);

System.out.println("====User defined
set=====");
//Iterate
for(HDFCPojo s1:si) {
    System.out.println(s1.getBalance());
}

System.out.println("====User defined
map=====");
Map<Integer, HDFCPojo> m = new LinkedHashMap();
m.put(10, h);
m.put(20, h1);
m.put(30, h2);
m.put(40, h4);

//Iterate
Collection<HDFCPojo> values = m.values();
for(HDFCPojo s1:values) {
```

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```
        System.out.println(s1.getBalance());
    }

}

}
```

## JSON:

JSON – Java Script Object Notation

- It is a lightweight file format which is used to transfer the data between client and server.
- It is most widely used format in API
- Two Types of JSON
  - i) JSON Object
  - ii) JSON Array

JSON Object:

It is the combination of several pairs.

Pair – It is the combination of key and value

It is represented by {}

Each pair inside the json object is separated by ,

The key and value of a single pair is separated by :

The keys of the JSON object will always be in String format.

The value of the JSON object will be in different format.

DataTypes of JSON:

- i) String
  - a. {"name": "Ram Sarath", "institute": "Greens"}

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- ii) Number(Whole number and decimal number)  
Eg: {"age":32, "height":5.8}
- iii) Boolean  
a. {"marriedStatus":true}
- iv) Object  
a. {"address":{"city":"Chennai", "state":"TamilNadu", "country":"India"}}
- v) Array  
a. {"courses":["Java", "Selenium", "Maven"]}

JSONArray:

It is combination of several values of similar datatype

It is represented by []

Each value is separated by ,

Sample JSON File:

```
{  
  "name": "Ram Sarath",  
  "age": 32,  
  "status": true,  
  "address": {"city": "Chennai", "state": "TamilNadu"},  
  "courses": ["Java", "Selenium"]  
}
```

### How to Read the Data from JSON file:

Step 1: Create a maven project

Step 2: Add dependency

Json simple dependency 1.1.1

Step 3: Package, class, main method

Step 4: Create a json file with data and add within the resources folder

Step 5: Create object for FileReader class to mention the file path.

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Step 6: Create object for JSONParser class to access the parse() method which is used to read the data from the JSON file.

Step 7: The parse() method will read the data from the JSON file and store in Java Object format.

```
public class Sample {  
  
    public static void main(String[] args) throws  
IOException, ParseException {  
        FileReader fileReader = new FileReader(new  
File("C:\\Users\\LENOVO\\newEclipseWorkspe\\Sep24APIMaven  
\\src\\test\\resources\\Sample.json"));  
        JSONParser jsonParser = new JSONParser();  
        Object parse = jsonParser.parse(fileReader);  
        //Object - Supermost class of Java JSONObject -  
Pre defined class  
        //Type casting lowerOrder obj = (LowerOrder)  
higherOrderobjref;  
        JSONObject jsonObject = (JSONObject)parse;  
        System.out.println(jsonObject.get("name"));  
        System.out.println(jsonObject.get("age"));  
        System.out.println(jsonObject.get("status"));  
        System.out.println(jsonObject.get("address"));  
        System.out.println(jsonObject.get("courses"));  
    }  
}
```

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### Deserialization and Serialization:

Serialization – Conversion of Java Pojo objects into JSON objects.(Writing data into JSON file)

DeSerialization – Conversion of JSON Objects into Java Pojo objects.(Reading the data from JSON file)

Step 1: Create a Maven project

Step 2: Add dependency

Jackson databind dependency – latest version

Step 3: Package, class, main method

Step 4: Create a json file and add data under resources folder

Step 5: Create object for FileReader class to mention the file path

Step 6: Create object for ObjectMapper class

Step 7: Create POJO classes as per the json file to be read.

No of pair in the json	=	No of private variables in Pojo
Datatype of the pair	=	Datatype of private variable
KeyName	=	Variablename
String in json	=	String in java
Number – whole	=	int in java
Number- decimal	=	double in java
Boolean	=	Boolean
JSONObject	=	Class in java
JSONArray	=	ArrayList in java

Step 8: Generte getters and setters

Step 9: In the implementation class – call a method readValue(arg1, arg2);


Arg1 – filepath of json

Arg2 – Root Pojo class object

Step 10: Call the getters method of Pojo class all the data will be read.

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```
public class Sample {  
  
    public static void main(String[] args) throws  
IOException {  
        FileReader fileReader = new FileReader(new  
File("C:\\Users\\LENOVO\\newEclipseWorkspe\\Sep24APIMaven  
\\src\\test\\resources\\Sample.json"));  
        ObjectMapper objectMapper = new ObjectMapper();  
        Root readValue =  
objectMapper.readValue(fileReader, Root.class);  
        System.out.println(readValue.getName());  
        System.out.println(readValue.getAge());  
        System.out.println(readValue.isStatus());  
  
        Address address = readValue.getAddress();  
        System.out.println(address.getCity());  
        System.out.println(address.getState());  
  
        ArrayList<String> courses =  
readValue.getCourses();  
        for(int i=0; i<courses.size(); i++) {  
            System.out.println(courses.get(i));  
        }  
    }  
}
```

```
package org.logout;
```

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```
import java.util.ArrayList;

public class Root {

    private String name;

    private int age;

    private boolean status;

    private Address address;

    private ArrayList<String> courses;

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public int getAge() {
        return age;
    }

    public void setAge(int age) {
        this.age = age;
    }
}
```

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```
public boolean isStatus() {
    return status;
}

public void setStatus(boolean status) {
    this.status = status;
}

public Address getAddress() {
    return address;
}

public void setAddress(Address address) {
    this.address = address;
}

public ArrayList<String> getCourses() {
    return courses;
}

public void setCourses(ArrayList<String> courses) {
    this.courses = courses;
}

}
```

---

```
package org.logout;
```

```
public class Address {
```

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```
private String city;

private String state;

public String getCity() {
    return city;
}

public void setCity(String city) {
    this.city = city;
}

public String getState() {
    return state;
}

public void setState(String state) {
    this.state = state;
}

}
```

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### How to Write the Data into JSON file:

Serialization: Conversion of Java pojo objects into JSON objects.

Step 1: Create a Maven project

Step 2: Add dependency

Jackson databind dependency

Step 3: Create package, class and main method

Step 4: Create object for File class – to mention the target location of the json file.

Step 5: Create POJO classes as per the json file to be created.

Step 6: Inside the POJO class create constructor for the POJO class.

RC on POJO – Source - Generate constructor using fileds.

Step 7: Inside the implementation class create object for ObjectMapper class.

Step 8: Call writeValue(arg1, arg2); arg1 – filepath, arg2 – Obj ref of Root POJO class

Program:

```
{
  "name": "Ram Sarath",
  "age": 32,
  "status": true,
  "address": {
    "city": "Chennai",
    "state": "Tamil Nadu"
  },
  "courses": [
    "java",
    "selenium"
  ]
}
```

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```
public class Sample {  
  
    public static void main(String[] args) throws  
StreamWriteException, DatabindException, IOException {  
        File f = new  
File("C:\\Users\\LENOVO\\newEclipseWorkspe\\Sep24APIMaven  
\\src\\test\\resources\\Write.json");  
        ObjectMapper objectMapper = new ObjectMapper();  
        ArrayList<String> courses = new ArrayList();  
        courses.add("java");  
        courses.add("selenium");  
        Address address = new Address("Chennai", "Tamil  
Nadu");  
        Root root = new Root("Ram Sarath", 32, true,  
address, courses);  
        objectMapper.writeValue(f, root);  
    }  
  
}
```

```
public class Root {  
  
    private String name;  
  
    private int age;  
  
    private boolean status;  
  
    private Address address;
```

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```
private ArrayList<String> courses;

public String getName() {
    return name;
}

public void setName(String name) {
    this.name = name;
}

public int getAge() {
    return age;
}

public void setAge(int age) {
    this.age = age;
}

public boolean isStatus() {
    return status;
}

public void setStatus(boolean status) {
    this.status = status;
}

public Address getAddress() {
    return address;
}
```

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```
public void setAddress(Address address) {
    this.address = address;
}

public ArrayList<String> getCourses() {
    return courses;
}

public void setCourses(ArrayList<String> courses) {
    this.courses = courses;
}

public Root(String name, int age, boolean status,
Address address, ArrayList<String> courses) {
    super();
    this.name = name;
    this.age = age;
    this.status = status;
    this.address = address;
    this.courses = courses;
}
}

}

public class Address {
```

```
    private String city;
```

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```
private String state;

public String getCity() {
    return city;
}

public void setCity(String city) {
    this.city = city;
}

public String getState() {
    return state;
}

public void setState(String state) {
    this.state = state;
}

public Address(String city, String state) {
    super();
    this.city = city;
    this.state = state;
}

}
```

---

Sample JSON file:

```
{
```

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```
"id": "0001",
"type": "donut",
"name": "cake",
"ppu": 0.55,
"batters": {
  "batter": [
    {
      "id": "100",
      "type": "java"
    },
    {
      "id": "200",
      "type": "selenium"
    }
  ]
},
"topping": [
  {
    "id": "30",
    "type": "Maven"
  },
  {
    "id": "40",
    "type": "GIT"
  }
]
}
```

```
public class Sample {
```

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**9884291190**

**9344653712**

```
public static void main(String[] args) throws
StreamWriteException, DatabindException, IOException {

    File f = new
File("C:\\Users\\LENOVO\\newEclipseWorkspe\\Sep24APIMaven
\\src\\test\\resources\\Write1.json");
    ObjectMapper objectMapper = new ObjectMapper();
    Topping topping = new Topping("30", "Maven");
    Topping topping2 = new Topping("40", "GIT");
    ArrayList<Topping> al = new ArrayList();
    al.add(topping);
    al.add(topping2);
    Batter batter = new Batter("100", "java");
    Batter batter2 = new Batter("200", "selenium");
    ArrayList<Batter> batt = new ArrayList();
    batt.add(batter);
    batt.add(batter2);
    Batters batters = new Batters(batt);
    Root root = new Root("0001", "donut", "cake",
0.55, batters, al);
    objectMapper.writeValue(f, root);
}

}
```

```
public class Root {

    private String id;

    private String type;
```

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```
private String name;

private double ppu;

private Batters batters;

private ArrayList<Topping> topping;

public String getId() {
    return id;
}

public void setId(String id) {
    this.id = id;
}

public String getType() {
    return type;
}

public void setType(String type) {
    this.type = type;
}

public String getName() {
    return name;
}

public void setName(String name) {
    this.name = name;
}
```

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```
}  
  
public double getPpu() {  
    return ppu;  
}  
  
public void setPpu(double ppu) {  
    this.ppu = ppu;  
}  
  
public Batters getBatters() {  
    return batters;  
}  
  
public void setBatters(Batters batters) {  
    this.batters = batters;  
}  
  
public ArrayList<Topping> getTopping() {  
    return topping;  
}  
  
public void setTopping(ArrayList<Topping> topping) {  
    this.topping = topping;  
}  
  
public Root(String id, String type, String name,  
double ppu, Batters batters, ArrayList<Topping> topping)  
{  
    super();  
}
```

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```
    this.id = id;
    this.type = type;
    this.name = name;
    this.ppu = ppu;
    this.batters = batters;
    this.topping = topping;
}
```

```
}
```

```
public class Batters {

    private ArrayList<Batter> batter;

    public ArrayList<Batter> getBatter() {
        return batter;
    }

    public void setBatter(ArrayList<Batter> batter) {
        this.batter = batter;
    }

    public Batters(ArrayList<Batter> batter) {
        super();
        this.batter = batter;
    }
}
```

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```
}  


---

public class Topping {  
  
    private String id;  
  
    private String type;  
  
    public String getId() {  
        return id;  
    }  
  
    public void setId(String id) {  
        this.id = id;  
    }  
  
    public String getType() {  
        return type;  
    }  
  
    public void setType(String type) {  
        this.type = type;  
    }  
  
    public Topping(String id, String type) {  
        super();  
        this.id = id;  
        this.type = type;  
    }  
}
```

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```
}
```

```
public class Batter {  
  
    private String id;  
  
    private String type;  
  
    public String getId() {  
        return id;  
    }  
  
    public void setId(String id) {  
        this.id = id;  
    }  
  
    public String getType() {  
        return type;  
    }  
  
    public void setType(String type) {  
        this.type = type;  
    }  
  
    public Batter(String id, String type) {  
        super();  
        this.id = id;  
        this.type = type;  
    }  
}
```

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}

### Manual Testing of API:

API Terminologies:

**Client:** It can be a physical machine, software or application which is creating a request.

**Server:** It can be a physical machine, software or application which receives the request, process the request and creates the response.

### **Difference between REST and SOAP API:**

#### **REST:**

Representational State Transfer

It uses http or https protocol to communicate between client and server.

In http protocol different request methods are there

GET - To get the data from the server

POST - To create a new record in the server

PUT - To update the existing record in the server

DELETE - To remove the content from the server

PATCH - To partial update the existing data

It uses html, xml, text, json to transfer the data between client and server.

It requires less bandwidth and time to parse the data along with the URL

#### **SOAP:**

Simple Object Access protocol

It uses smtp, ftp protocol to communicate between client and server.

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It uses only GET method.

Only Xml format is allowed.

It requires more bandwidth and time to parse the data along with the URL

**Endpoint or URL:** It is the combination of BaseURI+ resources + Query Parameter+ Path parameter.

**BaseURI:** It is the combination of protocol type plus domain name.

**QueryParamter:** It is the part of the URL which is represented by ?, It is used to filter the data from the existing resources.

**PathParameter:** It is also part of the URL which is used to pick any particular data from the resources.

**Resources:** The complete data in the server.

Step 1: Prepare a test case document

Open Excel sheet

Step 2: Open Postman and create collection inside the POSTMAN

File – New – Collection – Name – Save

Step 3: Collection – Combination of Several request URLs.

Step 4: Add request URL inside the collection

File – New – Request URL – Enter the URL – Select the request Type – Save

Run the URL and check with the expected response.

Step 5: To add payload

POST & PUT – Body – raw – Select payload format -

200 series – Successful Response

200 – Status OK

201 – New Record is created, 204 – No Content

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Step 6: File – New Runner Tab – Drag and Drop the collection – Execute the collection.

### Validation Points in Postman:

Two Types of Scripts

- i) Pre request Script. - @Before
- ii) Post Request Script. – Tests Script - @After
- iii) URL - @Test

Pre request Script – It is used to set the variables in postman

Tests Script – To set the validation points.

By default postman uses js language to write Pre request and Tests script. (chai library)

In postman we will validate the response code and response body.

Validation of Response Code:

responseCode – pre defined object in postman

code – instance variable in postman

objname.variablename => responseCode.code

printing statement – Console.log();

```
tests[“Validation of Response Code”]= responseCode.code == 200;
```

Validation of Response body:

JSON format – element – jsonpath

Eg:

```
{“name”:”Ram Sarath”,  
  “age”: 32,  
  “address”:{“state”:”TN”, “country”:”IN”},  
  “courses”:[“Java”, “Selenium”]}
```

Element	JSONPath
---------	----------

Ram Sarath	name
------------	------

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---

32	age
IN	address.country
Selenium	courses[1]

How to Validate json path – Google – jsonpathfinder – Select the first link – paste your json file  
JSON – pre defined object in postman

Parse() – instance method – arg – responseBody – It will read the response and store in String

```
Var x = JSON.parse(responseBody);
```

```
Console.log(x);
```

```
x.get("jsonpath") == "Ferguson";
```

Prerequest Script – Set the variables in postman

### Types of Variables in Postman:

- i) Local Variable or Request Level Variable
- ii) Collection Level Variable
- iii) Global Variable
- iv) Environment Variable
- v) Data Level Variable

### **Local Variable:**

A variable declared inside the request, Scope of variable is only within the request.

If we try to access outside the request it will be disappeared.

Syntax: pm.variables.set(arg1, arg2);

Arg1 – Variablename

Arg2 – Variablevalue

```
pm.variables.get(variablename);
```

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### Collection Variable:

This variable is common for all the request present within a single collection.

Scope of the variable is only within the collection.

Syntax: `pm.collectionVariables.set(arg1, arg2);`

`pm.collectionVariables.get(variablename);`

Go for the collection – Edit – Variables – Manual Variable set

### Global Variable:

This variable is common for all the collection present in the workspace.

Scope of the variable is for a single workspace.

Syntax: `pm.globals.set(arg1, arg2);`

`pm.globals.get(variablename);`

Environment – Globals – Edit – Manual Set the global variable

### Environment Variable:

If the application is deployed in different environment then for each environment a variable can be assigned.

Syntax: `pm.environmentvariables.set(arg1, arg2);`

`Pm.environmentvariables.get(variablename);`

Environment Option – DropDown (No Env) – Add – Variable name and value.

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### **Data Level Variable & Data Driven Testing:**

If the value for the variable is stored inside any third party files like excel, csv and retrived into the postman.

Step 1: Create a csv(comma separated value) file and add data into the file.

Step 2: Create a collection and request URL and add variable name inside the collection.

Step 3: Open Runner Tab, and drag and drop the collection and select the test data file.

### **Authentication & Authorization:**

Authentication: It is a client side activity, If a client request a server for providing access for the resources using username, password, or authentication token.

Authorization: The server will receive the authentication token and process it and it will grant the access. It is a server side activity.

Types of Authentication:

- i) Basic Authentication
- ii) Digest Authentication
- iii) API Key
- iv) Bearer Token
- v) O Auth 2.0 Authentication

Basic Authentication – In addition to the request URL client will also share the username and password.

O Auth 2.0 Authentication

Step 1: Client will send a POST request along with username and password.

Step 2: In the response there will be id called as clientId.

Step 3: Using the clientId as the query parameter client will send GET request and get response

Step 4: In the response client will receive access token which is O Auth 2.0 token.

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## **IPT:**

### **GIT & GITHUB:**

Version Control System(VCS):

A system which performs Versioning, Cloning and Tracking is called as Version Control System.

Two Types of VCS

- i) CVCS – Centralized Version Control System.
- ii) DVCS – Distributed Version Control System.

Step 1: Download and install GIT in your machine

Step 2: Open GITHUB url and create a account.

#### **How to Push the code from the local machine to Remote Repository:**

Step 1: Open Eclipse and decide which project to be moved to the remote repository.

Step 2: Go to the location of the project.

Step 3: If Git is installed successfully then inside the location of the project when we perform right click we can find Open GIT Bash here.

Step 4: GIT Bash – It is a command line tool which is used to move the code from the local machine to remote repo. – Open the tool.

Step 5: Configure your git with github url

```
git config --global user.email "emailId"
```

```
git config --global user.name "username"
```

Step 6: Move the code from the local machine to Staging Area

```
git init – It will initialize the Empty Git repository for the project
```

```
git add .
```

Step 7: Move the code from the Staging Area to Local Repository

```
git commit -m "message"
```

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Step 8: Move the code from the Local Repository to Remote Repository

8.1 Open GITHUB url

8.2 Login

8.3 Create a Repository

8.4 Copy the URL

```
git remote add origin repourl
```

```
git push -u origin master
```

To know the current location of the file

git status – Red Color, Untracked files (Files are present in local machine)

git status – Green Color, Tracked files (Files are present in the Staging Area)

git status – Working Tree Clean (Files are present in Local Repository)

git status – Up to Track with Master( Files are present in Remote Repository)

### **How to Pull the code from the Remote Repository to Local Machine:**

Step 1: In the Remote Repository or GITHUB repository the project will be present in master branch by default. To pull the code from the Remote repository we are not authorized to access the master. Create a branch and pull the code.

Step 2: Create a folder in the local workspace.

Step 3: Copy the URL from the GITHUB repository

Step 4: Open GIT bash inside the newly created folder.

Step 5: Clone the code from the Remote repository to the local workspace.

```
git clone repourl
```

Step 6: Import the project from the local machine to Eclipse.

Step 7: Checkout the code from master to your working branch.

```
git checkout branchname
```

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Step 8: Do the Changes in Eclipse

Step 9: Push the code to the respective branch

```
git add .
```

```
git commit -m "message"
```

```
git push -u origin branchname
```

Step 10: Open GITHUB, the changes made will be reflected in branch but not in the master.

Pull Request – When a change is worked in local and pushed to branch but not reflected in master then we need to raise a request to accept the code and merge with master. This is called as pull request.

### **How to Resolve Merge Conflict:**

Step 1: Open GITBash in project location

```
git pull origin master
```

Step 2: All the previous commits from the point of branch creation will be displayed in Descending order

Place the head above the tail portion again push the code back to the previous branch.

```
git pull -r master
```

### **Installation of Oracle Db:**

Step 1: Download Oracle Db file

Step 2: Extract the compressed file.

Step 3: Install the OracleXE application file

Step 4: During installation

Password: abc

C.Password: abc

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---

Step 5: Once Installation is completed then Start – Type – Go to Database Homepage.

Step 6: Username: sys

Password: abc

Sys – admin username, HR – pre defined user Oracle Db – Employees pre defined Table

Administration – Database Users – HR – Password: abc

C.Password: abc

Account Status – Change to Unlocked

User privileges – Enable all the checkbox

Click on Alter User.

Step 7: Logout and login again using HR username

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### Automation of API using RestAssured:

RestAssured – dependency

Step 1: Create a Maven project

Step 2: Add dependency

Rest assured – latest version

Json simple – 1.1.1

Jackson databind dependency

Step 3: Create a package, class and main method

Step 4: Create Request Object

Syntax: RestAssured.baseURI= “baseURI”;

RequestSpecification rs = RestAssured.given(); - Return Type

RestAssured – pre defined class

baseURI – static variable (Classname.variableName) => to mention the baseURI

given() – static method used to create request object.(Classname.methodName)

It will create a request object and it will store the request object inside the RequestSpecification interface.

Using Request Object we can attach the Query parameter, Path parameter, Request Payload, Authentication Token, Headers and Create the response Object.

Step 5: Attach the Query Parameter

Syntax: rs.queryParam(arg1, arg2);

Arg1 – parameterName

Arg2 – ParameterValue

Step 6: Attach the Path Parameter

Syntax: rs.pathParam(arg1, arg2);

Arg1 – parameterName

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Arg2 – PrameterValue

Step 7: Attach the Authentication Token

Basic Authentication

Syntax: rs.auth().basic(username, password);

OAuth2.0 Authentication

Syntax: rs.auth().oauth2(accessToken);

Step 8: Attach the Payload

JSONObject – pre defined class

JSONObject js = new JSONObject();

Js.put(key, value);

rs.body(js.toJSONString());

Step 9: Create the Response Object

Syntax: rs.request(Method.GET, or Method.POST, or Method.PUT, or Method.DELETE, “endpoint”); - This method will return Response interface.

Response Object – We can get the response code, response body.

Step 10: Get the Response Code

Syntax: responseObjref.getStatusCode();

Step 11: Get the Response Body

Syntax: responseObjref.getBody().asPrettyString();

```
public class Sample {  
  
    public static void main(String[] args) {  
        // //create request object  
        // RestAssured.baseURI="https://reqres.in/";  
        // RequestSpecification rs = RestAssured.given();  
        // //Attach the Query Parameter
```

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```
// rs.queryParam("page", "2");
// //Create the Response Object
// //https://reqres.in/api/users?page=2
// Response response = rs.request(Method.GET,
"api/users");
// //Get the Response Code
// int statusCode = response.getStatusCode();
// System.out.println(statusCode);
// //Get the Response Body
// String asPrettyString =
response.getBody().asPrettyString();
// System.out.println(asPrettyString);

// RestAssured.baseURI="https://reqres.in";
// RequestSpecification rs = RestAssured.given();
// //Attach path Parameter
// rs.pathParam("id", "2");
// Response response = rs.request(Method.GET,
"api/users/{id}");
// System.out.println(response.getStatusCode());
//
System.out.println(response.getBody().asPrettyString(
));
```

```
RestAssured.baseURI="https://reqres.in";
RequestSpecification rs = RestAssured.given();
//Attach the Payload
JSONObject jsonObject = new JSONObject();
```

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```
        jsonObject.put("name", "Ram Sarath");
        jsonObject.put("job", "QA");
        rs.body(jsonObject.toJSONString());
        Response response = rs.request(Method.POST,
"api/users");
        System.out.println(response.getStatusCode());

        System.out.println(response.getBody().asPrettyString(
));

    }

}
```

```
public class BaseClass {

    // Create Request Object
    // Attach the Query Parameter
    // Attach the Path parameter
    // Create Response Object
    // Get the Response Code
    // Get the Response Body

    // 1. User defined Method
    // 2. Original Logic
    // 3. Inputs - Arguments Outputs - Return Type
```

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```
public static RequestSpecification
requestSpecification;
public static Response response;

public static void requestObject(String baseURI) {
    RestAssured.baseURI = baseURI;
    requestSpecification = RestAssured.given();
}

public static void attachQueryParameter(String
parameterName, String parameterValue) {
    requestSpecification.queryParam(parameterName,
parameterValue);
}

public static void attachPathParameter(String
parameterName, String parameterValue) {
    requestSpecification.pathParam(parameterName,
parameterValue);
}

public static void responseObject(String requestType,
String endPoint) {
    switch (requestType) {
        case "GET": {
            response =
requestSpecification.request(Method.GET, endPoint);
            break;
        }
        case "POST": {
```

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```
        response =
requestSpecification.request(Method.POST,
endPoint);break;
    }
    case "PUT": {
        response =
requestSpecification.request(Method.PUT, endPoint);break;
    }
    default: {
        response =
requestSpecification.request(Method.DELETE, endPoint);
    }
}

public static void responseCode() {
    int statusCode = response.getStatusCode();
    System.out.println(statusCode);
}

public static void responseBody() {
    String asPrettyString =
response.getBody().asPrettyString();
    System.out.println(asPrettyString);
}

public static String readFromExcel(int rowIndex, int
cellIndex) throws IOException {
    Workbook w = new XSSFWorkbook(new
FileInputStream(new
```

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```
File("C:\\Users\\LENOVO\\newEclipseWorkspe\\Sep24APIMaven
\\src\\test\\resources\\Daatprovider.xlsx"));
    return
w.getSheet("Sheet1").getRow(rowIndex).getCell(cellIndex).
getStringCellValue();
    }
}
```

```
public class Sample extends BaseClass{

    @BeforeMethod
    private void beforeMethod() {
        requestObject("https://reqres.in");
    }

    @Test(enabled=false)
    private void tc01() {
        attachQueryParameter("page", "2");
        responseObject("GET", "api/users");
    }

    @AfterMethod
    private void afterMethod() {

        System.out.println("=====");
        responseCode();
        responseBody();
    }

    @Test(enabled=false)
```

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```
private void tc02() {
    attachPathParameter("id", "2");
    responseObject("GET", "api/users/{id}");
}
```

```
@Test(dataProvider="SampleData")
private void tc03(String key1, String value1, String
key2, String value2) {
    //1. Attach the payload - jsonObject format
    //2. Add all the pair inside the HashMap - give
hashmap ref in body method
    //3. Serialization
    JSONObject jsonObject = new JSONObject();
    jsonObject.put(key1, value1);
    jsonObject.put(key2, value2);
```

```
requestSpecification.body(jsonObject.toJSONString());
    responseObject("POST", "api/users");
}
```

```
@Test(enabled=false)
private void tc04() {
    JSONObject jsonObject = new JSONObject();
    jsonObject.put("name", "Ram Sarath");
    jsonObject.put("job", "Trainer");
```

```
requestSpecification.body(jsonObject.toJSONString());
    attachPathParameter("id", "2");
    responseObject("PUT", "api/users/{id}");
}
```

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```
@Test(enabled=false)
private void tc05() {
    attachPathParameter("id", "2");
    responseObject("DELETE", "api/users/{id}");
}

@DataProvider(name = "SampleData")
public Object[][] data() throws IOException{
    return new Object[][] {
        {readFromExcel(0, 0), readFromExcel(1, 0),
readFromExcel(0, 1), readFromExcel(1, 1)},
        {readFromExcel(0, 0), readFromExcel(2, 0),
readFromExcel(0, 1), readFromExcel(2, 1)},
        {readFromExcel(0, 0), readFromExcel(3, 0),
readFromExcel(0, 1), readFromExcel(3, 1)}
    };
}
}
```

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