**Q. Rest and soap difference**

|  |  |
| --- | --- |
| **SOAP** | **REST** |
| **1)** | **SOAP is a protocol.** | **REST is an architectural style.** |
| **2)** | **1 stands for Simple Object Access Protocol.** | **REST stands for Representational State**  **Transfer.** |
| **3)** | **SOAP can't use REST because it is a protocol.** | **REST can use SOAP web services because it is a**  **concept and can use any protocol like HTTP,**  **SOAP.** |
| **4)** | **SOAP uses services interfaces to expose the business logic.** | **REST uses URI to expose business logic.** |
| **5)** | **JAX-WS is the java API for SOAP web services.** | **JAX-RS is the java API for RESTful web services.** |
| **6)** | **SOAP defines standards to be strictly followed.** | **REST does not define too much standards**  **like SOAP.** |
| **7)** | **SOAP requires more bandwidth and resource than REST.** | **REST requires less bandwidth and resource**  **than SOAP.** |
| **8)** | **SOAP defines its own security.** | **RESTful web services inherits security**  **measures from the underlying transport.** |
| **9)** | **SOAP permits XML data format only.** | **REST permits different data format such as Plain text, HTML, XML, JSON, PLAIN TEXT, HTML, XML** |
| **10)** | **SOAP is less preferred than REST.** | **REST more preferred than SOAP.** |

Q. How to create new soap project?

**A**dd wsdl and name the project.(some webservice also have create, get and get all in built .. so once you add to s**oap** project it will automatically get created)

right click add to test case(test suite will be created)

insert steps i.e jdbc, properties, properties transfer, delay, conditional go to, groovy scripy, etc

Q. Explain what is SOAP UI?

SOAP UI is a free, open source cross-platform functional Testing solution.

It enables you to rapidly and easily create and execute automated regression, compliance, functional and load tests. Its used for Web Services Testing

Q. What all assertions you used in Soap UI?

We have used contains, containsvalue, Valid status codes, Invalid status codes, schema compliance, Xpath Match, Soap response, etc

Q.Difference between POST and PUT.

Put: Update new resources. identifier is choosen by the client.works as specific.it is idempotant.i.e if u put a resource twice then it has no effect.Put can act as post if resource do not exists

Post: To create new resources.identifier is returned by server.works as abstractive. post is neither safe nor idempotant. Post can act as put if the resource already exists

Q. Why soap heavy weight?

Every request or response is embedded within soap envelope making it heavy weight even for simple data transfers.

Q. What all status you have came across?

200  - success

201 - created

202 - accepted

**204-resource deleted**

400 - Bad request

500 - internal server error

Q. What does WSDL defined ?

It is used to describe webservice. It is written in XML. It defines operations, namespace, messages, porttypes,parmaters which are used by webservice.

Q. Explain X-path assertion.

It is used to check the absolute path of the response value. In xpath assertion we will assert the response using actual response data.

Say for e.g you have a response and in that response you have result counts that is 8

<addresponse......>

<addresult>8</addresult>

so here if we just assert with contains "8" it might be possible that any response which contains "8" will be asserted. so to make sure that we are checking on <addresult> only , xpath can help.

add assertion - xpath match - click on declare  -

So we can assert this <addresult> using xpath in below ways:

a) assert that in add result , 8 exists

b) assert that <addresult> is coming as the response in <addresponse> (with the help of exists)

c) assert that there is only 1 count with <addresult> in the whole response (with the help of count)

like wise count there are other aggreriate functions also which can be used such as sum, max, avg and min.

Q. WSDL stands for?

Web Services Description Language

Q. What is data sink ?

DataSink test step to store data collected in your tests to an external storage, such as Excel, text files, databases, and so on.

Q. What is data driven testing ?

running same test step with different set of data. The data is maintained in external file.

Q. How to add assertion? Means whole process from creating the project.

Q. How can you group tests in SOAP UI?

**SoapUI structures functional tests into three levels; TestSuites, TestCases and TestSteps.**

1. **A TestSuite is a collection of TestCases that can be used for grouping functional tests into logical units. Any number of TestSuites can be created inside a soapUI project to support massive testing scenarios.**
2. **A TestCase is a collection of TestSteps that are assembled to test some specific aspect of your service(s). You can add any number of TestCases to a containing TestSuite and even modularize them to call each other for complex testing scenarios.**
3. **TestSteps are the "building blocks" of functional tests in soapUI. They are added to a TestCase and used control the flow of execution and validate the functionality of the service(s) to be tested.**

**TestSuites (as mentioned above) are created at the project level for grouping TestCases into logical units. For example if you have a banking system to test you might have one TestSuite for account-related TestCases and another for TestCases related to payments. Your project can contain any number of TestSuites and you can see and execute them all (in sequence or parallel) from the Project TestSuites tab**

**Create new TestSuites either from the project popup menu ("New TestSuite") or with the corresponding button on top of the list of TestSuites .**

**A TestSuite can in turn contain any number of TestCases which can be executed either in sequence or parallell from the TestSuite window;**

**Creating TestCases is performed in the same manner as creating TestSuites; either from the containing TestSuite popup menu ("New TestCase") or with the corresponding button on top of the TestCase List. A TestCase contains an arbitrary number of TestSteps which are configured to validate the functionality of your target service(s),**

Q. Explain properties.

**Properties are a central aspect of more advanced testing with soapUI. In regard to Functional Testing properties are used to parameterize the execution and functionality of your tests(property is a key-value pair) for example:**

* **Properties can be used to hold the endpoints of your services, making it easy to change the actual endpoints used during test execution (see example below).**
* **Properties can be used to hold authentication credentials, making it easy to manage these in a central place or external file.**
* **Properties can be used to transfer and share session ids during test execution, so multiple teststeps or testcases can share the same sessions.**

**Properties can easily be both read and written from scripts and also transferred between TestSteps with the Property-Transfer TestStep**

Q. Difference between XML/HTML

**HTML is an abbreviation for HyperText Markup Language. HTML was designed to display data with focus on how data looks.HtMl tags are predefined.**

**XML is the acronym from Extensible Markup Language (meta-language of noting/marking). XML is a resembling language with HTML. It was developed for describing data. The XML tags are not pre-defined in XML. You will have to create tags according to your needs. XML is self descriptive.**XML uses DDT principle (Defining the Document Type) to formally describe the data.

Q. What is end point ?

The **Web service endpoint** is the port upon which you connect a **Web service** client to the server. You connect to the **Web service's endpoint** at the following **URL**, in which server is the IP address or host name of the host on which the  server is running.

Ex:[http://localhost:8080/TestWebService/HelloService"/](http://localhost:8080/TestWebService/HelloService%22/)

Q. JDBC process in SOAP UI ?

JDBC teststep uses the jdbc driver/connection to setup a connection with your DB and then it allows you(the tester) to pass/execute the SQL query or stored procedure. Then so executed jdbc teststep will provide the response in XML format

Adding a JDBC request teststep is the same old process of adding any regular teststep

**Driver** : select the respective driver for the connection (like SQL, Oracle, SAP, Sybase and so on)

**Host** : Name/IP address of the server where your database is residing (in my case it is at my localmachine, so localhost)

**Port** : let it remain the default port of communication or change if you know the open port on your DB server

**User** : username having the required permission to login & execute SQL queries/stored procedures.

**Password** : respective password for the entered username

**Database** : Your DB server may/may not have more than 1 databases. To execute your queries against specific Database provide the name in this field.

**Clear properties** : will clear all the entered data – somewhat similar to Reset feature.

**TestConnection** : click the Green colored icon to perform the check where your connection is running fine or not. You will get the “Connection Successful” message or an error message based on the parameters provided.

Now enter the SQL query/Stored Proc in the JDBC teststep (with Pro version you can use Build Query window) and execute the JDBC test step. The response returned by the DB will be displayed in the XML format (and tabular format – Pro version only) which can be asserted using simple assertion or advanced assertion (like xPath, xQuery, Script and so on).

Command for data manipulation

**Q. What is command you use to run selenium grid?**

**Install Selenium GRID**

**Step 1: Download Selenium Server jar file from Selenium’s official website which is formerly known as Selenium RC Server and save it at any location on the local disk.**

**URL of selenium HQ: http://www.seleniumhq.org/download/**

**Step 2: Open the command prompt and navigate to a folder where the server is located. Run the server by using below command**

**java -jar selenium-server-standalone-2.41.0.jar -role hub**

**The hub will use the port 4444 by default. This port can be changed by passing the different port number in command prompt provided the port is open and has not been assigned a task.**

**Status can be checked by using the web interface: http://localhost:4444/grid/console**

**Step 3: Go to the other machine where you intend to setup Nodes. Open the command prompt and run the below line.**

**1 java -jar selenium-server-standalone-2.41.0.jar -role node -hub**

**2 http://localhost:4444/grid/register -port 5556**

***JAVA***

Difference between abstract and interface ?

|  |  |
| --- | --- |
| **Abstract class** | **Interface** |
| **1) Abstract class can have abstract and non-abstract methods.** | **Interface can have only abstract methods.**  **Since Java 8, it can have default and static methods also.** |
| **2) Abstract class doesn't support multiple inheritance.** | **Interface supports multiple inheritance.** |
| **3) Abstract class can have final, non-final, static and non-static variables.** | **Interface has only static and final variables.** |
| **4) Abstract class can provide the implementation of interface.** | **Interface can't provide the implementation of**  **abstract class.** |
| **5) The abstract keyword is used to declare abstract class.** | **The interface keyword is used to declare interface.** |
| **6) Example: public abstract class Shape{ public abstract void draw(); }** | **Example: public interface Drawable{ void draw(); }** |

What is the use of abstract class?

Abstract classes are classes that contain one or more abstract methods. Anabstract method is a method that is declared, but contains no implementation.Abstract classes may not be instantiated, and require subclasses to provide implementations for the abstract methods. the main purpose ofabstract classes is to function as base classes which can be extended by subclasses to create a full implementation

What is base class?

A class that is used to create (or derive) another class is called thebase class. Also called a super class or parent class.

Difference between Set and list ?

**Set**

1. **Is an Unordered grouping of elements.**
2. **Set is used to collection of elements without duplicates.**
3. **No new methods are defined inside Set interface, so we have to use Collection interface methods only with Set subclasses.**
4. **implementation classes like Hashset, Linked Hashset and Tree set**

**List**

1. **Is an Ordered grouping of elements.**
2. **List is used to collection of elements with duplicates.**
3. **New methods are defined inside List interface.**
4. **implementation classes like Arraylist, linkedlist and Vector**

Which one is best array list or set

If your task doesn't need duplicate values then go for Set interface else go to List interface.

After selecting the interface then you have use the appropriate implemented class for better performance and memory usage.

If suppose if you go with Set interface. Then, If you don't need to maintain the order then go for HashSet else choose LinkedHashSet.

If you need sort the values then go for TreeSet. You can write your own sorting algorithm for TreeSet.

Explain the Hashmap?

HashMap – It is unsorted and unordered. It allows one null key and multiple null values.

HashMap internally uses hashcode- so in case you are adding any userdefined object as  a key in hashmap then equals and hashcode method should be overridden.

It contains only unique elements.

import java.util.\*;

class TestCollection13{

public static void main(String args[]){

 HashMap<Integer,String> hm=new HashMap<Integer,String>();

 hm.put(100,"Amit");

 hm.put(101,"Vijay");

 hm.put(102,"Rahul");

 System.out.println("details: "+ hm);

}

}

Result: details: {100=Amit, 101=Vijay, 102=Rahul}

Tell me the difference between ArrayList and LinkedList? Which one is better?

|  |  |
| --- | --- |
| **ArrayList** | **LinkedList** |
| **1) ArrayList internally uses dynamic array to store the elements.** | **LinkedList internally uses doubly linked list to**  **store the elements.** |
| **2) Manipulation with ArrayList is slow because it internally uses array. If any element is removed from the array, all the bits are shifted in memory.** | **Manipulation with LinkedList is faster than**  **ArrayList because it uses doubly linked list**  **so no bit shifting is required in memory.** |
| **3) ArrayList class can act as a list only because it implements List only.** | **LinkedList class can act as a list and queue**  **both because it implements List and Deque interfaces.** |
| **4 arraylist is faster for iterations and search criteria** | **faster for adding and removing elements** |

What is a linked list?

LinkedList- implements both List and Queue, faster for adding and removing elements

contain duplicate elements.

maintains insertion order

non synchronized.

In Java LinkedList class, manipulation is fast because no shifting needs to be occurred.

Java LinkedList class can be used as list, stack or queue.

Difference between hashmap and hashtable?

|  |  |
| --- | --- |
| **HASHMAP** | **HASHTABLE** |
|  |  |
| **It is non synchronized** | **It is synchronized** |
| **It allows one null key and multiple null values** | **Doesnot allow any null key or value** |
| **Is is fast** | **It is slow** |
| **It inherits abstract Map class** | **It inherits dictionary class** |
| **We can synchronized it by Map m = collections.synchronizedMap(hashMap)** | **it is internally synchronized and cant be unsynchronized** |
| **Iterator in HashMap is fail-fast.** | **Enumerator in Hashtable is not fail-fast** |

Can static methods be overloaded and overridden

**We cannot override the static method.But we can overload the static methods.**

**Overriding in Java simply means that the particular method would be called based on the run time type of the object and not on the compile time type of it (which is the case with overriden static methods).**

**Static methods are belongs to class, not belongs to object. Inheritance will not be applicable for class members**

**public** **class** CanWeOverrideStaticMethod {  
      **public** **static** **void** main(**String** args[]) {  
              Screen scrn = **new** ColorScreen();  
              *//if we can  override static , this should call method from Child class*  
             scrn.show();  
          }    
  }  
**class** Screen{  
  
    */\*  
     \* public static method which can not be overridden in Java  
     \*/*  
    **public** **static** **void** show(){  
        **System**.out.println("Static method from parent class");  
    }  
}  
  
**class** ColorScreen **extends** Screen{  
    */\*  
     \* static method of same name and method signature as existed in super  
     \* class, this is not method overriding instead this is called  
     \* method hiding in Java  
     \*/*  
    **public** **static** **void** show(){  
        **System**.out.println("Overridden static method in Child Class in Java");  
    }  
}  
  
**Output:**  
Static method from parent **class**

Stringbuilder and stringbuffer

These classes are mutable unlike String class.

**StringBuffer is *synchronized* i.e. thread safe. It means two threads can't call the methods of StringBuffer simultaneously. StringBuffer is *less efficient* than StringBuilder.**

StringBuffer st = new StringBuffer(“hello”);

   st.append(“world”);

**StringBuilder is *non-synchronized* i.e. not thread safe. It means two threads can call the methods of StringBuilder simultaneously. StringBuilder is more efficient than StringBuffer.**

StringBuilder  st = new StringBuilder(“hello”);

   st.append(“world”);

eg: when dealing with file data appending and whenever we have to modify string frequently we prefer stringbuffer and stringbuilder classes.

Explain local, instance and static variable?

Local Variables

Local variables are declared in methods, constructors, or blocks.

Local variables are created when the method, constructor or block is entered

Access modifiers cannot be used for local variables.

Local variables are visible only within the declared method, constructor, or block.

Local variables are implemented at stack level internally.

There is no default value for local variables, so local variables should be declared and an initial value should be assigned before the first use.

Instance Variables

Instance variables are declared in a class, but outside a method, constructor or any block.

Instance variables hold values that must be referenced by more than one method, constructor

Access modifiers can be given for instance variables

Instance variables have default values. For numbers, the default value is 0, for Booleans it is false, and for object references it is null. Values can be assigned during the declaration or within the constructor.

Instance variables can be accessed directly by calling the variable name inside the class. However, within static methods (when instance variables are given accessibility), they should be called using the fully qualified name. ObjectReference.VariableName.

public class Employee {

  // this instance variable is visible for any child class.

  public String name;

  // salary  variable is visible in Employee class only.

  private double salary;

  // The name variable is assigned in the constructor.

  public Employee (String empName) {

     name = empName;

  }

Static Variables

Class variables also known as static variables are declared with the static keyword in a class, but outside a method, constructor or a block.

Static variables are stored in the static memory.

Static variables can be accessed by calling with the class name ClassName.VariableName.

What is checked and unchecked exception and give examples

Checked exceptions − A checked exception is an exception that occurs at the compile time, these are also called as compile time exceptions. These exceptions cannot simply be ignored at the time of compilation, the programmer should take care of (handle) these exceptions.

 An unchecked exception is an exception that occurs at the time of execution. These are also called as Runtime Exceptions. These include programming bugs, such as logic errors or improper use of an API. Runtime exceptions are ignored at the time of compilation.

Does java support GC?

Yes it supports garbage collection automatically and hence java provide better memory management.

Does it do call automatically or need to call?

* **It makes java memory efficient because garbage collector removes the unreferenced objects from heap memory.**
* **It is automatically done by the garbage collector(a part of JVM) so we don't need to make extra efforts.**

Can you force GC?

Forcing GC at that point won't help, because if you are holding a reference to the object then it still won't be garbage collected.

When you force GC Does it Swipe immediately?

**No**

**Explain Static keyword.**

- It is a keyword in java and it is used for memory management mainly.

- We can apply static keyword with Variables, Methods, blocks and nested class.

- We can access static methods and variables by class name directly, we do not need object to be created to access static methods/ variables.

- The variable data gets shared between the objects if it is static. If it is non static every object

- Has its own copy of instance variables.

- If its static every class has its own copy of data.

- We do not need to create objects to access these variables unlike  instance variables/ methods..

- We cannot acces non static variables /methods inside a static method.

- Why because – static variables  do not need objects and they are loaded at the time your class gets        loaded—they don’t need objects but instance var’s need objects..

-We cannot declare a class with keyword static but a class is called as static class if all the methods and variables in class are static.

Static variable -  It is used to refer common property of all objects.i.e company name.

They are created when program starts and destroyed when program stops.They are declared as static outside constructor, method or block.

class Student8{

  int rollno;

   String name;

   static String college ="ITS”;

Static Method - It belongs to a class rather than object of a class.It can be invoked without the need for creating an instance of a class (object). Static Method cannot be overridden.

e.g student.change() where student is class name and change is static method name. Static method can access static data member and can change the value of it.

Restriction - Static method cannot use not static data member or call non static method directly

e.g

class a{

int b=40;

sop(b)

compile time error.

Static block - It is used to initialize static data member. It is executed before main method at the time of class loading.

**Difference between Throw and Throws**

|  |  |
| --- | --- |
| **throw** | **Throws** |
| **1)** | **Java throw keyword is used to explicitly throw an exception.** | **Java throws keyword is used to declare an exception.** |
| **2)** | **Checked exception cannot be propagated using throw only.** | **Checked exception can be propagated with throws.** |
| **3)** | **Throw is followed by an instance.** | **Throws is followed by class.** |
| **4)** | **Throw is used within the method.** | **Throws is used with the method signature.** |
| **5)** | **You cannot throw multiple exceptions.** | **You can declare multiple exceptions e.g. public void method()throws IOException,SQLException.** |

**Explain Throw and Throws:**

**Throw: -The Java throw keyword is used to explicitly throw an exception. Throw keyword is used to Throw a custom exception.**

**If you are creating your own Exception that is known as custom exception.**

**By the help of custom exception, you can have your own exception and message.**

**e.g: : throw new ArithmeticException("not valid");  / e.g custom exception:  throw new InvalidAgeException("not valid");**

**Throws:-  The Java throws keyword is used to declare an exception. It gives an information to the programmer that there may occur an exception so it is better for the programmer to provide the exception handling code so that normal flow can be maintained.**

**checked exception only, because: unchecked Exception: under your control so correct your code. and error: beyond your control e.g. you are unable to do anything if there occurs VirtualMachineError or StackOverflowError.**

**void method()throws IOException{**

**}**

Explain Final Finally and Finalize.

FINAL

classes: cannot be extended

methods - cannot be used outside of the classes

variables - cannot be used outside of the class

final is a keyword e variables declared as final should be initialized only once and cannot be changed. and the methods declared as final cannot be overridden. final class cannot be extended

FINALLY

finally - its is a block in java which is used in exception handling along with try catch and throws.

finally block always executes when try block exits. it ensures that finally block is executed even if there is an unexpected exception occurs

when ever you write an exception handling in try-catch block, regardless of an error the finally block will always execute

FINALIZE

finalize is the method in java which is called by garbage collector. before an object is garbage collected , the runtime system calls its finalize() method

**AccessModifiers:**

**Public – can be accessed from anywhere.**

**Private- can be accessed only within the class**

**Protected- can be accessed within same package and subclass of diff package.**

**Default- can be accessed within the same package.**

Difference b/w exception and wrapper class

Multithreading

Difference between Java 7 and Java 8.

What is new in Java9

Can we have multiple main methods in class?

**We can’t have multiple main methods in one class. Main methods indicates the entry point for a program, and a program can have only one entry point.**

How to handle exceptions? Types of exceptions?

**Program statements that you want to monitor for exceptions are contained within a try block. If an exception occurs within the try block, it is thrown. Your code can catch this exception(using catch) and handle it  in some rational manner.**

**System-generated exceptions are automatically thrown by the Java run-time system. To manually throw an exception, use the keyword throw.**

**Any exception that is thrown out of a method must be specified as such by a throws clause.**

**Any code that absolutely must be executed after a try block completes is put in a finally block.**

try {

// block of code to monitor for errors

}

catch (ExceptionType1 exOb)

**{**

// exception handler for ExceptionType1

}

catch (ExceptionType2 exOb) {

**// exception handler for ExceptionType2**

}

// ...

finally {

// block of code to be executed after try block ends

**}**

**All exception types are subclasses of the built-in class Throwable. Thus, Throwable is at the top of the exception class hierarchy. Immediately below Throwable are two subclasses that partition exceptions into two distinct branches. One branch is headed by Exception. This classic used for exceptional conditions that user programs should catch. This is also the class that you will subclass to create your own custom exception types. There is an important subclass of Exception, called RuntimeException.  Example: Division by zero and invalid array indexing.**

**The other branch is topped by Error, which defines exceptions that are not expected to be caught under normal circumstances by your program. Exceptions of type Error are used by the Java runtime system to indicate errors having to do with the runtime environment, itself.**

**Examples: Stack overflow is an example of such an error.**

**Java’s exceptions can be categorized into two types:**

Checked exceptions

Unchecked exceptions

What is staging?

**Staging is a step before the commit process in git. That is, a commit in git is performed in two steps: staging and actual commit. As long as a changeset is in the staging area, git allows you to edit it as you like (replace staged files with other versions of staged files, remove changes from staging).**

Wait and Notify

**wait() tells the calling thread to give up the monitor and go to sleep until some other thread enters the same monitor and calls notify( ).**

**notify() wakes up the first thread that called wait() on the same object.**

**public class ThreadA {**

**public static void main(String[] args){**

**ThreadB b = new ThreadB();**

**b.start();**

**synchronized(b){**

**try{**

**System.out.println("Waiting for b to complete...");**

**b.wait();**

**}catch(InterruptedException e){**

**e.printStackTrace();**

**}**

**System.out.println("Total is: " + b.total);**

**}**

**}**

**}**

**class ThreadB extends Thread{**

**int total;**

**@Override**

**public void run(){**

**synchronized(this){**

**for(int i=0; i<100 ; i++){**

**total += i;**

**}**

**notify();**

**}**

**}**

}

Can you make main non static?

**No we cannot make main non-static  
main() is called by the JVM before any objects are made. Since it is static it can be directly invoked via the class. Similarly, we use static sometime for user defined methods so that we need not to make objects**

**What is JDK, JRE and JVM**

**What is argument and parameter?**

A parameter is a variable in a method definition. When a method is called, the arguments are the data you pass into the method's parameters.

Parameter is variable in the declaration of function.

Argument is the actual value of this variable that gets passed to function.

consider this example

public class FibonnaciRecursion {

    public static void main(String[] args) {

        int n1=0;

        int n2=1;

        System.out.println("index"+n1);

        fibonacciSeries(n1,n2);// n1,n2 are arguments

    }

    public static void fibonacciSeries(int a,int b){  //These (int a, int b) are parameters

        int stoppingpoint=40;

        int index=0;

        b=1;

        System.out.println("index" +b);

        if(index==stoppingpoint)

            return;

        index++;

        fibonacciSeries(b,a+b);

**Explain pass by value and reference**

Call by value and Call by reference

Java Supports only Call-by-Value

public class PassByValue {

        int data=50;

        //In case of call by value original value is not changed

        void change(int data){

        data=data+100; //changes will be in the local variable only

        //In case of call by reference original value is changed if we made changes in the called method.

        // If we pass object in place of any primitive value,

        //original value will be changed. In this example we are passing object as a value.

        }

        void change(PassByValue op1){

            op1.data=op1.data+100;//changes will be in the instance variable

            }

        public static void main(String args[]){

          PassByValue op=new PassByValue();

          PassByValue op1=new PassByValue();

          System.out.println("before change "+op.data);

          op.change(500);

          System.out.println("after change "+op.data);

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

          System.out.println("before change "+op1.data);

          op.change(op1);//passing object

          System.out.println("after change "+op1.data);

        }

        }

How will java know you are reading a file?

**What is synchronization in Java?.**

If multiple threads try to access the same resources and finally produce erroneous and unforeseen results. So we need to be make sure by using some synchronization method that only one thread can access the resource at a given point of time.

Java provides a way of creating threads and synchronizing their task by using synchronized blocks.

Synchronized blocks in Java are marked with the synchronized keyword. A synchronized block in Java is synchronized on some object. All synchronized blocks synchronized on the same object can only have one thread executing inside them at a time. All other threads attempting to enter the synchronized block are blocked until the thread inside the synchronized block exits the block.

Synchronization is implemented in Java with a concept called monitors. Only one thread can own a monitor at a given time. When a thread acquires a lock, it is said to have entered the monitor. All other threads attempting to enter the locked monitor will be suspended until the first thread exits the monitor.

**Null pointer Exception in Java.**

**public class NullPointerException**

**extends** [**RuntimeException**](https://docs.oracle.com/javase/7/docs/api/java/lang/RuntimeException.html)

**Thrown when an application attempts to use null in a case where an object is required. These include:**

* **Calling the instance method of a null object.**
* **Accessing or modifying the field of a null object.**
* **Taking the length of null as if it were an array.**
* **Accessing or modifying the slots of null as if it were an array.**
* **Throwing null as if it were a Throwable value.**

**Example:**

**public** **class** NullPointerException {

**public** **static** **void** main(String[] args) {

        {

**try**{

                    String str=**null**;

                    System.***out***.println (str.length());

                }**catch**(Exception e){

                System.***out***.println("NullPointerException.."+e);

                }

**finally**{

                    System.***out***.println("This statement will be printed");

                }

            }

            }

}

Why do we write Webdriver driver = new Firefoxdriver() in selenium instead of WebDriver driver = new Web driver ()?

Why do we need to create the driver object with

WebDriver driver = new FirefoxDriver();

WebDriver driver = new ChromeDriver();

and not with

WebDriver driver = new WebDriver();

?

Assuming that this line works (it doesn’t but lets assume it does)

WebDriver driver = new WebDriver();

what is the browser that the driver is created for?

Is it Chrome?

Is it Firefox?

Is it Internet Explorer?

There is nothing that is tied to a specific browser.

We cannot create a generic driver that works for all browsers.

Each browser has its own driver:

Chrome uses the driver from chromedriver.exe file

Firefox uses the driver from a Firefox extension included in the Selenium jar files

IE uses the driver from the IEDriverServer.exe file

So, when creating the driver, you have to specify somehow which driver you need (for which browser).

Going back to

WebDriver driver = new WebDriver();

this line of code does not work because WebDriver is not a class but an interface

**JMETER**

Q. What Is A Test Plan In JMeter? List Some Of The Test Plan Elements Available In JMeter.

A Test Plan defines and provides a layout of how and what to test. JMeter can be used to prepare a Test Plan for the web application as well as the client server application. It behaves like a container for running tests.

A complete Test Plan comprises of one or more of the following elements.

1. ThreadGroup

2. Controllers

3. Listeners

4. Timers

5. Assertions

6. Configuration Elements

7. Pre-Processor Elements

8. Post-Processor Elements

A Test Plan should have at least one thread group.

Q. Explain The Role Of Workbench?

Ans. It is simply an area to store test elements while you are in the process of constructing a test. Once you’ve finished designing the test items in the Workbench, you can copy or move them into the Test Plan.

It also contains non-test elements like.

1. Http mirror server

2. HttpProxy server

These items aren’t available in the thread group and Test plan.

Q. What Is A Thread Group? List Down Its Main Parts?

Thread group elements are the beginning points of any Test Plan. It is mandatory to have at least one thread group in the Test Plan.

One should know the following about the Thread Group.

1. All controllers and samplers must be under a thread group.

2. Listeners may be placed directly under the test plan, in which case they will apply to all the thread groups.

3. The controls for a thread group allows you to:

    i. set the number of threads.

    ii. Define the ramp-up period.

    iii. Sets the number of times to execute the test.

Following are the parts of a thread group.

1. Sampler: It sends various types of requests to the server.

2. Listeners: It saves the results of the Run. It can be opened for viewing also.

3. Timer: It makes the run more realistic by inserting delays between the requests.

4. Controller: It is responsible for controlling the flow of the thread group. An example scenario is where request definition includes if-then-else or loop structure.

5. Config Element: information about the requests to be added to work with samplers.

6. Assertion: To check if the response is generated within given time and contain the expected data.

Q.List The Benefits That JMeter Offers For Performance Testing?

JMeter provides following advantages for performance testing.

1. It can be used to test performance for both, static resources as well as dynamic resources.

2. It can generate and handle a large number of concurrent users as it happens on a live website.

3. It provides the graphical analysis of performance reports.

Q. What Is Spike Testing And How Can We Perform It In JMeter?

Suddenly increasing the number of users at the certain point of application and then monitoring its behavior at that interval is Spike testing.

In JMeter, Spike testing can be performed using Synchronizing Timer. This timer keeps on blocking the threads until a particular number of threads get reserved. It then releases them at once thus creating large instantaneous load.

Q. What is performance testing?

It is a testing done to measure speed(responsiveness), scalability and stability of the application.

Q.Explain what is a timer in JMeter and what are the types of it?

A JMeter thread by default will send requests continuously without any pause. To get a pause between the request, Timers are used.

Some of the Timers used are Constant Timer, Gaussian Random Timer, Synchronizing Timer, Uniform Random Timer and so on.

Q. What all listeners you used in Jmeter ?

View results in table

View results in tree

Summary report

Assertion result

Graph results

Q. Explain below terms.

Standard deviation (part of summary report in listner)

Latency - the time taken in milliseconds to get the first response data for that request

Throughput (part of summary report in listner) -  It is calculated as requests/unit of time. The time is calculated from the start of the first sample to the end of the last sample. This includes any intervals between samples, as it is supposed to represent the load on the server.

Throughput is relation between time and data.It shows the relation between http request and unit time. Means how many requests are processed in how much time.  
Throughput = Number of requests / Time(second or millisecond)

Loop count -

Error threshold - Its a part of HTML assertion, No of errors allowed before alloting the particular request response as failed

Warning threshold - Part of HTML assertion, Number of warnings allowed before alloting the particular request response as failed

Median - It is a number which divides the samples into two equal halves.Half of the samples are smaller than the median, and half are larger. [Some samples may equal the median.]

Q. Can we test server matrix in jmeter?

Yes we can test it with the help of plugin manager.

Q. What are the different assertions you used in Jmeter ?

Size assertion - to do something with response size , to compare with Bytes in view results table. with signs >,<,=,etc

response assertion - to check if the response ---- contains, matches, equals(status code), etc

duration assertion - checking duration of response, to compare with Sample Time(ms)in view results table. By mentioning duration in miliseconds...if we put 1500 ms and if goes beyond that then test will fails and will get notification is assertion result.

HTML assertion - to check if the format is valid html or not and if its fails we can see the assertion results and can add error threshold and warning threshold.You can also generate report by browsing the file in filename column

XML assertion - will check the format

X path assertion - mostly used in API testing

Q. When can we start performance testing in a project ?

We can start the performance when the build is stable.

Q. Why J meter?

Becaue its open source tool, its freely available

It is a platform independent tool

It has simple GUI

iT can conduct load and performance test for many different server types − Web - HTTP, HTTPS, SOAP, Database via JDBC, LDAP, JMS, Mail - POP3, etc.

Q. What are the tools available for performance testing ?

Loadrunner, J meter, Zebrameter

Q. How do you do performance testing using Jmeter?

Q. Have you done any advance level of testing using Jmeter ?

Q. what did you test with Jmeter?

Q. Did you use any recorder in JMETER?

For chrome - blaze meter

Work bench  - add - non test elements - HTTPs test script recorder.

Q. How did you test API in J meter ?

Q. Can Jmeter test SOAP and Rest webservice ? If yes, How ?

Testing fundamentals

Example of high priority and low severity and vise versa

High priority and Low severity – yaho.com

This bug is High Priority- Yahoo.com is company logo and mistake in company logo need to resolve on high priority to keep brand.  
This bug is Low Severity- As its just spelling mistake then impact on  user is not much high.

High priority and high severity – ATM machine

**bug is high priority  because Bank is charging 20 rs per transaction for own ATM which is opposite to business logic.**

**bug is high severity this bug need to resolved immediately because thousands of user withdraw money per hour so it cost high.**

Low priority and Low severity – Logo of yahoo

**This bug is in Low Priority because - Its fine it wont impact much. User can still use the website and can be fix after some time.**

**This bug is in Low Severity because - Its fine it wont impact much. User can still use the website**

Low priority and high priority –  2 rs interest for every 1000rs and bug is it calculate interest rs4.

This bug is high severity - Due to bug interest is going double and bank may have thousands of accounts, So it will not be profitable for bank.  
This bug is Low priority  - Depositing interest is happen on last day of year so if its beginning of year like January then there is lot of time to solve this bug .

Format of writing a good test case

What are functional and non functional testing?

Difference between verification and validation

Explain load and stress test

WebServices

AUTOMATION FRAMEWORK

We created automation framework to reuse the code (avoid redundancy) and application is easy to maintain.

We used Page Object and Data Driven combination in our project.

Based on any programing language (Java)

We create Page Classes using SeleniumWebDriver, test classes using any unit test framework (TestNG)

We have separate package for Pages and Tests. All the web page related classes comes under pages package and test related classes comes under test package.

SRC/MAIN/JAVA

Base class - to handle common code.

    Pages - all web pages each page has each class.

Utility class/helper class - These classes will be static to deal with common functionalities and which are repetitive such as waits, screen shorts, Excel reader, logger listener, and properties file reader

SRC/TEST/JAVA

All test classes of web pages

We inject the driver object that is need in all page classes using a common mechanism (dependency injection)

We can create webdriver object easier way by using Java Factory design pattern.

We use TestNG framework: For assertions, test case management using testng xml files where we can combine different test cases as test suites.

    We can group test cases

We can handle dependent test cases (one test execution is dependent on other)

    We can prioritize test cases

    We can make use of inbuilt html/xml reports from TestNG

(We can also customize the reports using Ireporter, ITestListener- listener, we can customize logs using apache log4j and TestNG-TestListeneradapter.)

We have resources folder where we maintain all the non-java files

Screen shots captured - screen shot folder

    Driver executables - driver exe files

    Properties - CONFIG.PROPERTIES (dev url, satge url , driver )

Test data - to store the date in excel

We used maven for dependency and build management (we execute tests by using maven cmds like mvn test, mvn clean install)

(For this we integrate maven and testng together using maven surefire plug in config in pom.xml)

We are also using GIT as code repository and Jenkins for CI and CD.

What is absolute and relative  X-path ? Which one you preferred?

What all exceptions you faced in selenium?

Why you use testing and not j unit ? advantages of testng?

Difference between Testnj and Junit?

Explain what is Maven?

Explain page object pattern in your company ? did you created it or was already created ?

What is keyword driven testing ? when to use it , example ?

Rest API, did you worked on it ? challenges faced in testing API

How many automation test cases for current project ? approx ?

Explain log4j.

What will you do if we cannot reduce test cases and we have limited time ?

What do you know about Jenkins , did you used it ?

. How to initialize browser? and selenium functions?..can you explain..

How to create jobs ?

Most critical bug and how did you solved ?

What are all automation tools

Q. How did you use data driven framework.

Q. Explain data driven, key driven, page object, difference.

How to use grid in your project”

Did you use appium