On your java knowledge, If you want to rate youself on scale on 1-10, how will you rate yourself.

Can you tell me something about yourself.??

Manual: Regression, Sanity, Smoke

Tell me about yourself?

Q57). What are OOPS Concepts used in Java ?

* Below are the following OOPS concepts used
* Inheritance
* Polymorphism
* Encapsulation ( POM )
* Abstraction

**16. Can we override a non-static method as static in Java?**(answer)  
Yes, you can override the non-static method in Java, no problem on them but it should not be private or final :)

### What is the purpose of static methods and variables?

The methods or variables defined as static are shared among all the objects of the class. The static is the part of the class and not of the object. The static variables are stored in the class area, and we do not need to create the object to access such variables. Therefore, static is used in the case, where we need to define variables or methods which are common to all the objects of the class.

For example, In the class simulating the collection of the students in a college, the name of the college is the common attribute to all the students. Therefore, the college name will be defined as **static**.

### How many types of constructors are used in Java?

Based on the parameters passed in the constructors, there are two types of constructors in Java.

* **Default Constructor:** default constructor is the one which does not accept any value. The default constructor is mainly used to initialize the instance variable with the default values. It can also be used for performing some useful task on object creation. A default constructor is invoked implicitly by the compiler if there is no constructor defined in the class.
* **Parameterized Constructor:** The parameterized constructor is the one which can initialize the instance variables with the given values. In other words, we can say that the constructors which can accept the arguments are called parameterized constructors.

### Does constructor return any value?

**Ans:** yes, The constructor implicitly returns the current instance of the class (You can't use an explicit return type with the constructor).[More Details.](https://www.javatpoint.com/constructor)

### Is constructor inherited?

No, The constructor is not inherited.

### Can you make a constructor final?

No, the constructor can't be final.

### What are the main uses of the super keyword?

There are the following uses of super keyword.

* super can be used to refer to the immediate parent class instance variable.
* super can be used to invoke the immediate parent class method.
* super() can be used to invoke immediate parent class constructor.

### What are the differences between this and super keyword?

There are the following differences between this and super keyword.

* The super keyword always points to the parent class contexts whereas this keyword always points to the current class context.
* The super keyword is primarily used for initializing the base class variables within the derived class constructor whereas this keyword primarily used to differentiate between local and instance variables when passed in the class constructor.
* The super and this must be the first statement inside constructor otherwise the compiler will throw an error.

**17. Can we override the final method in Java?** ([answer](http://javarevisited.blogspot.com/2013/12/when-to-make-method-final-in-java.html))  
No, you cannot override a final method in Java, the final keyword with the method is to prevent method overriding. You use the final when you don't want subclass changing the logic of your method by overriding it due to security reasons. This is [why the String class is final in Java](http://java67.blogspot.com/2014/01/why-string-class-has-made-immutable-or-final-java.html). This concept is also used in the template design patterns where the template method is made final to prevent overriding.  
  
Read more: <https://www.java67.com/2015/12/top-30-oops-concept-interview-questions-answers-java.html#ixzz7LyTjh0Bc>

Q What is the difference between throw and throws?

| **Sr. No.** | **Key** | **throw** | **throws** |
| --- | --- | --- | --- |
| 1 | Definition | Throw is a keyword which is used to throw an exception explicitly in the program inside a function or inside a block of code. | Throws is a keyword used in the method signature used to declare an exception which might get thrown by the function while executing the code. |
| 2 | Internal implementation | Internally throw is implemented as it is allowed to throw only single exception at a time i.e we cannot throw multiple exception with throw keyword. | On other hand we can declare multiple exceptions with throws keyword that could get thrown by the function where throws keyword is used. |
| 3 | Type of exception | With throw keyword we can propagate only unchecked exception i.e checked exception cannot be propagated using throw. | On other hand with throws keyword both checked and unchecked exceptions can be declared and for the propagation checked exception must use throws keyword followed by specific exception class name. |
| 4 | Syntax | Syntax wise throw keyword is followed by the instance variable. | On other hand syntax wise throws keyword is followed by exception class names. |
| 5 | Declaration | In order to use throw keyword we should know that throw keyword is used within the method. | On other hand throws keyword is used with the method signature. |

Scenario 1:

In this scenario you are testing a university application, to generate result,

If a student is getting marks between 1-39 he is fail //**Values to be tested are 0,1,39,40**

If a student is getting marks between 40-59 he is pass//**Values to be tested are 59**

If a student is getting marks between 60-74 and above he is 1st class.  **60,74**

If a student is getting m between arks 75-100 and above is distinction. **75/100/101**

Total value to be tested are 0,1,39,40,59,60,74,75,100,101

Scenarios 2:

On a Webpage there is a Table which contains columns such as Name, Location, Desination,

Now here I want to find like how many unique location are present in the table. How I can achieve so?

**HashSet** contains unique elements only

Scerario 3

Suppose I have a method who’s return type is string.

Public string Eployeedname()

{

Return string.

}

There is a webpage which we have details of employee name, Age and profession.

### ****What is Constructor in Java?****

Constructor in Java is used in the creation of an Object that is an instance of a Class. The constructor name should be the same as the class name. It looks like a method but it’s not a method. It won’t return any value. We have seen that methods may return a value. If there is no constructor in a class, then the compiler automatically creates a default constructor.

No, you cannot directly override a constructor in Java in the same way you override methods. Here's why:

* Constructors are not inherited:

Unlike methods, constructors are not inherited by subclasses. Each class defines its own constructors.

* Constructor names are fixed:

The name of a constructor must always be the same as the class name, so a subclass cannot have a constructor with the same signature as its superclass.

Alternative approaches:

* Constructor chaining:

You can use super() to call a constructor of the superclass from a constructor in the subclass. This allows you to reuse initialization logic and customize it further in the subclass.

* Constructor overloading:

You can define multiple constructors in a class with different parameter lists. This allows you to create objects in different ways depending on the available data.

### ****1. What is Local Variable and Instance Variable?****

**Local Variable:**

A local variable is a variable that we declare inside a Method. A method will often store its temporary state in local variables.

**Instance Variable (Non-static):**

An instance variable is a variable that is declared inside a Class but outside a Method. We don’t declare this variable as Static because these variables are non-static variables.

### ****16. What is Method Overloading?****

### A class having multiple methods with the same name but different parameters are called Method Overloading\There are three ways to overload a method.

* Parameters with different data types
* Parameters with a different sequence of data types
* Different number of parameters

### ****17. What is Method Overriding?****

### Declaring a method in child class that is already present in the parent class is called Method Overriding.\In simple words, overriding means to override the functionality of an existing method.

### 18) When ArrayIndexOutOfBoundsException occurs?

The ArrayIndexOutOfBoundsException occurs when the program tries to access the index of an array. The exception also occurs when the index is higher than the size of the array or the index is negative.

### 21) What is the difference between Array and ArrayList?

**Array:** Array is static. It is of fixed size. Its size cannot be changed once it is declared. It contains both primitive data types and objects of a class. Array does not have generic features.

**ArrayList:** ArrayList is dynamic in size. Its size or capacity automatically grows when we add element into it. It contains only the object entries. It has a generic feature.

**Web Driver** is a public **interface**

### ****21. What is Interface in Java?****

An interface in Java looks similar to a class but both the interface and class are two different concepts. An interface can have methods and variables just like the class but the methods declared in interface are by default abstract. We can achieve 100% abstraction and multiple inheritance in Java with Interface. Read more on [Interface in Java](https://www.softwaretestingmaterial.com/interface-in-java/).

### ****34. How to read a file line by line in Java?****

### We can read a file line by line in Java in two ways.

1. BufferedReader Class  
2. Scanner Class

### ****37. What are the different access modifiers available in Java?****

Access modifiers are subdivided into four types such as Default, Public, Private, Protected

**default:** The scope of default access modifier is limited to the package only. If we do not mention any access modifier, then it acts like a default access modifier.

**private:**The scope of private access modifier is only within the classes.

Note: Class or Interface cannot be declared as private

**protected:** The scope of protected access modifier is within a package and also outside the package through inheritance only.

Note: Class cannot be declared as protected

**public:**The scope of public access modifier is everywhere. It has no restrictions. Data members, methods and classes that declared public can be accessed from anywhere.

### ****40. What is Multiple Inheritance?****

If a class implements multiple interfaces, or an interface extends multiple interfaces then it is known as multiple inheritance.

We will update this post “Java Interview Questions For Selenium Testers” ASAP. Keep visiting.

If you like this post, share it with your friends.

#### Q101). Does Java support multiple inheritance?

Java does not support Multiple inheritance.

In Java, the finalize() method is a protected method in the Object class, which is the parent class of all classes. It is called by the garbage collector before an object is garbage collected and removed from memory.

Purpose:

* Perform cleanup operations before an object is destroyed.
* Release resources held by the object, such as file handles, network connections, or database connections.

Syntax:

Java

protected void finalize() throws Throwable {  
 *// Cleanup code here*  
}

Selenium Latest Stable Version:

[**3.141.59**](https://selenium-release.storage.googleapis.com/3.141/selenium-server-standalone-3.141.59.jar)

2) What are the advantages of automation testing?

Some basic Advantages of automation testing are as follows.

Automation testing supports both functional and performance test on an application.

It supports the execution of repeated test cases.

It facilitates parallel execution.

It aids in testing a large test matrix.

It improves accuracy because there are no chances of human errors.

It saves time and money.

| **Set** | **List** |
| --- | --- |
| It is an unordered sequence. | It is an ordered sequence. |
| Duplicate elements are not permitted in Set. | Duplicate elements are allowed in the list |
| Access to items from a certain position is not permitted. | Elements can be accessed based on their position. |
| A null element can only be stored once. | It is possible to store several null elements. |

| **ArrayList** | **LinkedList** |
| --- | --- |
| The elements of this class are stored in a dynamic array. This class now supports the storage of all types of objects thanks to the addition of generics. | The elements of this class are stored in a doubly-linked list. This class, like the ArrayList, allows for the storage of any type of object. |
| The List interface is implemented by this class. As a result, this serves as a list. | The List and Deque interfaces are both implemented by this class. As a result, it can be used as both a list and a deque. |
| Because of the internal implementation, manipulating an ArrayList takes longer. Internally, the array is scanned and the memory bits are shifted whenever we remove an element. | Because there is no concept of changing memory bits in a doubly-linked list, manipulating it takes less time than manipulating an ArrayList. The reference link is changed after traversing the list. |
| This class is more useful when the application requires data storage and access. | This class is more useful when the application requires data manipulation. |

| **Array** | **Collection** |
| --- | --- |
| Arrays have a set size, which means that once we build one, we can't change it to meet our needs. | Collection are naturally grow-able and can be customized to meet our needs. We can change its size as per our requirement. |
| When it comes to performance, Arrays are the preferred to Collection. | Considering performance, Collection are not preferred to Arrays. |
| Only homogeneous data type elements can be stored in arrays. | Both homogeneous and heterogeneous components can be stored in a collection. |
| Because arrays have no underlying data structure, there is no ready-made method support. | Any collection class is built on a standard data structure, and so there is ready-made method support for every demand as a performance. These methods can be used directly, and we are not responsible for their implementation. |
| Objects and primitives can both be stored in arrays. | Only object types can be stored in a collection. |
| When it comes to memory, Arrays are not preferred to Collection. | Considering memory, Collection are preferred to Arrays. |

| **Set** | **Map** |
| --- | --- |
| It cannot have values that are repeated. It is not possible to add the same elements to a set. Only the unique value is stored in each class that implements the Set interface. | It is possible for different keys to have the same value. The map has a unique key and values that are repeated. |
| Using the keyset() and entryset() methods, we can quickly iterate the Set items. | It is not possible to iterate across map elements. To iterate the elements, we must convert Map to Set. |
| The Set interface does not keep track of insertion order. Some of its classes, such as LinkedHashSet, however, keep the insertion order. | The Map does not keep track of the insertion sequence. Some Map classes, such as TreeMap and LinkedHashMap, do the same thing. |

| **HashSet** | **HashMap** |
| --- | --- |
| It implements the Set Interface. | It implements the Map Interface. |
| It does not allow duplicate values. | The key needs to be unique while two different keys can have the same value. |
| While adding an element it requires only one object as a parameter. | While adding an entry, it requires two object values, the **Key**and the **Value**as the parameter. |
| Internally, HashSet uses HashMap to add entries. The key K in a HashSet is the argument supplied in the add(Object) method. For each value supplied in the add(Object) method, Java assigns a dummy value. | There is no concept of duplicate values. |
| It is slower than HashMap. | It is faster than HashSet. |
| It uses the add() method for adding elements. | It uses the put() method for adding data elements. |

**Selenium**

Q71). How many types of WebDriver APIs using in Selenium?

* Chrome Driver
* Firefox Driver
* Gecko Driver
* InternetExplorer Driver
* Opera Driver
* Android Driver
* iPhone Driver

15. What are different types of frameworks?

The different types of frameworks are:

Data Driven Framework:-

When the entire test data is generated from some external files like Excel, CSV, XML or some database table, then it is called Data Driven framework.

Keyword Driven Framework:-

When only the instructions and operations are written in a different file like an Excel worksheet, it is called Keyword Driven framework.

Hybrid Framework:-

A combination of both the Data Driven framework and the Keyword Driven framework is called Hybrid framework.

#### Q82). How to get the Source code of the webpage?

driver.getPageSource();

47) List out different types of locators?

Different types of locators are

By.id()-1

By.name()-1

By.tagName()-1

By.className()-1

By.linkText()-1

By.partialLinkText()-1

By.xpath-1

By.cssSelector()-1

Q55). How do you select a value from Drop Down ?

* We can select a drop down value from Select Class
* Select sel=new Select ( WebElement)
* selectbyVisibleText or Index or Value

# How to input text in the text box without calling the sendKeys() using Selenium?

We can input text in the text box without the method sendKeys with thehelp of the JavaScript Executor. Selenium executes JavaScript commands with the help of the executeScript method.

# How to get entered text from a textbox in selenium

We can get the entered text from a textbox in Selenium webdriver. To obtain the value attribute of an element in the html document, we have to use the **getAttribute()** method. Then the **value**is passed as a parameter to the method.

What is the differences between get() and navigate() methods are listed below.

| **sl.no.** | **get()** | **navigate()** |
| --- | --- | --- |
| 1 | It is responsible for loading the page and waits until the page has finished loading. | It is only responsible for redirecting the page and then returning immediately. |
| 2 | It cannot track the history of the browser. | It tracks the browser history and can perform back and forth in the browser. |

## Difference between “/” and “//” in XPath

There are mainly three differences between single slash and double slash.

1. Single slash is used to create absolute XPath whereas Double slash is used to create relative XPath.

2. Single slash selects an element from the root node. For example, /html will select the root HTML element.

### ****11 Common Exceptions in Selenium WebDriver****

One can find a complete list of [Selenium WebDriver](https://www.browserstack.com/guide/selenium-webdriver-tutorial) Exceptions in the documentation given by Selenium, but below are a few standard Selenium exceptions faced while running a test :

1. **ElementNotSelectableException**: An element is disabled (can not be clicked/selected) in spite of being present in the DOM
2. **ElementNotInteractableException**: An element is not in a state, where it can be interacted with (can not be clicked or able to send keys) in spite of it being present in the DOM
3. **ElementNotVisibleException**: In spite of the element being present in the DOM, it is not visible (can not be interactive). For example, elements defined in HTML with type =”hidden”. It is a subclass of the ElementNotInteractableException
4. **NoSuchElementException**: Webdriver is not able to determine the elements during runtime, i.e., the FindBy method cannot find a particular component
5. **NoSuchFrameException**: Webdriver attempts to switch to an invalid frame, which is unavailable
6. **NoAlertPresentException**: Webdriver is trying to switch to an invalid alert, which is unavailable
7. **NoSuchWindowException**: Webdriver is trying to switch to an invalid window, which is unavailable
8. **StaleElementReferenceException**: The referenced element is no longer present on the DOM page (a reference to a component is now Stale). For example, the item belongs to a different frame than the current one or the user has navigated away to another page
9. **SessionNotFoundException**: Webdriver is acting immediately after ‘quitting’ the browser
10. **TimeoutException**: The command did not complete in the specified time. For example, the element didn’t display at the specified time. This is especially encountered when working with waits
11. **WebDriverException**: Webdriver is acting immediately after ‘closing’ the browser

Q56). How do you Select a sub menu from a Main Menu

We can select a sub menu by using Actions Class with move to element method

45) What is the difference between getWindowhandles() and getwindowhandle() ?

getwindowhandles(): It is used to get the address of all the open browser and its return type is Set<String>

getwindowhandle(): It is used to get the address of the current browser where the control is and return type is string

A radio button in HTML can be defined using the **<input>** tag.

The HTML **<checkbox>** tag is used to define the square boxes.

25. Can you navigate back and forth the webpage in Selenium?

Yes. You can navigate in the browser. A few methods using which you can achieve it are:

driver.navigate.forward

driver.manage.back

driver.manage.navigate

driver.navigate.to(“url”)

46) Explain how you can switch back from a frame?

To switch back from a frame use method defaultContent()

Syntax-driver.switchTo().defaultContent();

39) Explain how you can switch between frames?

To switch between frames webdrivers [ driver.switchTo().frame() ] method takes one of the three possible arguments

A number: It selects the number by its (zero-based) index

A name or ID: Select a frame by its name or ID

Previously found WebElement: Using its previously located WebElement select a frame

16) Explain the difference between assert and verify commands?

Assert: Assert command checks if the given condition is true or false. If the condition is true, the program control will execute the next phase of testing, and if the condition is false, execution will stop, and nothing will be executed.

Verify: Verify command also checks if the given condition is true or false. It doesn't halt program execution, i.e., any failure during verification would not stop the execution, and all the test phases would be executed.

25) What is the difference between findElement() and findElements()?

findElement(): It is used to find the first element within the current page using the given "locating mechanism". It returns a single WebElement.

findElements(): It uses the given "locating mechanism" to find all the elements within the current page. It returns a list of web elements.

Q81). How many test types are support to Selenium?

There are 7 types are supporting

* Integration Testing
* Regression Testing
* Functional Testing
* Smoke Testing
* Responsive Testing
* Cross Browsers Testing
* UI testing (black box)

26) What is the wait? How many types of waits in selenium?

Selenium Webdriver introduces the concept of waits for the AJAX-based application. There are two types of waits:

Implicit Wait

Explicit Wait

22. How to handle multiple windows in Selenium?

A window handle is a unique identifier that holds the address of all the windows. This is basically a pointer to a window, which returns the string value.

get.windowhandle(): helps in getting the window handle of the current window.

get.windowhandles(): helps in getting the handles of all the windows opened.

set: helps to set the window handles which is in the form of a string.

switch to: helps in switching between the windows.

action: helps to perform certain actions on the windows.

Q38). How to perform keyboard operation in selenium?

By using Action class

Assert.assertEquals(actual, expected); 🡺 Hard Assertion

 **Pros:** Ensures quick feedback when a critical assertion fails, making it easier to identify the root cause of the failure.

 **Cons:** Stops test execution upon the first failure, potentially preventing other validations from being executed and obscuring additional issues that might exist.

Q39). What is Soft assert in selenium?

In selenium soft assert is used to continue the execution without failing the test if any assertion fails. In the end it will collect all exception and fail the test.

@Test

public void testSoftAssertion() {

int expected1 = 5;

int actual1 = 7;

String expected2 = "Hello";

String actual2 = "Hi";

SoftAssertions softAssert = new SoftAssertions();

softAssert.assertThat(actual1).isEqualTo(expected1); // This assertion will fail

softAssert.assertThat(actual2).isEqualTo(expected2); // This assertion will fail

softAssert.assertAll(); // This collects all failures and reports them at once

// Code after assertAll will be executed even if there are assertion failures

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

}

7. What is POM (Page Object Model)? What are its advantages?

Page Object Model is a design pattern for creating an Object Repository for web UI elements. Each web page in the application is required to have it’s own corresponding page class. The page class is thus responsible for finding the WebElements in that page and then perform operations on those WebElements.

The advantages of using POM are:

Allows us to separate operations and flows in the UI from Verification – improves code readability

Since the Object Repository is independent of Test Cases, multiple tests can use the same Object Repository

Reusability of code

8. What is Page Factory?

Page Factory gives an optimized way to implement Page Object Model. When we say it is optimized, it refers to the fact that the memory utilization is very good and also the implementation is done in an object oriented manner.

Page Factory is used to initialize the elements of the Page Object or instantiate the Page Objects itself. Annotations for elements can also be created (and recommended) as the describing properties may not always be descriptive enough to differentiate one object from the other.

The concept of separating the Page Object Repository and Test Methods is followed here also. Instead of having to use ‘FindElements’, we use annotations like: @FindBy to find WebElement, and initElements method to initialize web elements from the Page Factory class.

**3. What are the annotations available in TestNG?**

@BeforeTest  
@AfterTest  
@BeforeClass  
@AfterClass  
@BeforeMethod  
@AfterMethod  
@BeforeSuite  
@AfterSuite  
@BeforeGroups  
@AfterGroups  
@Test

**4. Can you arrange the below *testng.xml* tags from parent to child?**

<test>

<suite>

<class>

<methods>

<classes>

The correct order of the TestNG tags are as follows



|  |  |
| --- | --- |
| 1  2  3  4  5 | <suite>  <test>  <classes>  <class>  <methods> |

**9. What is Soft Assert in TestNG?**

Soft Assert collects errors during *@Test*. Soft Assert does not throw an exception when an assert fails and would continue with the next step after the assert statement.

If there is any exception and you want to throw it then you need to use assertAll() method as a last statement in the @Test and test suite again continue with next @Test as it is.

**10. What is Hard Assert in TestNG?**

Hard Assert throws an AssertException immediately when an assert statement fails and test suite continues with next *@Test*

**33. What are @Factory and @DataProvider annotation?**

@Factory: A factory will execute all the test methods present inside a test class using a separate instance of the respective class with different set of data.

@DataProvider: A test method that uses DataProvider will be executed the specific methods multiple number of times based on the data provided by the DataProvider. The test method will be executed using the same instance of the test class to which the test method belongs.

Maven is the latest build testing tool. It has several new features as compare to Ant, like dependency, etc.

Maven is a project build or project management tool. It is used to check the compilation issues between framework components whenever multiple test engineer integrates their files into the same framework.

**1) What is Cucumber? What are the advantages of Cucumber?**

To run functional tests written in a plain text Cucumber tool is used. It is written in a Ruby programming language.

**Advantages of Cucumber are:**

* You can involve business stakeholders who cannot code
* End-user experience is a priority
* High code reuse

**4) Give an example of a behavior is driven test in plain text?**

* **Feature:**Visit**XYZ** page in abc.com
* **Scenario:** Visit abc.com
* **Given:** I am on abc.com
* **When:**I click on XYZ page
* **Then:**I should see ABC page

**What is the use of glue property under cucumber Options tag?**

**Answer:**

Glue property is used to let Cucumber framework identify the location of step definition files.

Question: **What is the purpose of Examples keyword in Cucumber?**

**Answer:**

Examples keyword is used to specify values for each parameter used in the scenario. Scenario Outline keyword must always be followed by the keyword Examples.

**5) What is Scenario Outline in feature file?**

**Scenario Outline is**the same scenario can be executed for multiple sets of data using the scenario outline. The data is provided by a tabular structure separated by (I I).

**6) Explain the term step definition in Cucumber**

A step definition is the actual code implementation of the feature mentioned in the feature file.

**11) What is the language used for expressing scenario in feature file?**

Gherkin language is used to express scenario in feature files and ruby files containing unobtrusive automation testing for the steps in scenarios

**Q #14) What symbol is used for parameterization in Cucumber?**

**Answer:** Pipe symbol (|) is used to specify one or more parameter values in a feature file.

**Q #13) What is the use of Background keyword in Cucumber?**

**Answer:** Background keyword is used to group multiple given statements into a single group. This is generally used when the same set of given statements are repeated in each scenario of the feature file.

**Q #24) What is the name of the plugin that is used to integrate Eclipse with Cucumber?**

**Answer:**Cucumber Natural Plugin is the plugin that is used to integrate Eclipse with Cucumber.

**API Testing**

### What are the protocols used in API Testing?

Protocols used in API testing are:

* HTTP
* REST
* SOAP
* JMS
* UDDI

### 5) What are the tools used for API Testing?

Tools used for API testing are:

* Parasoft SOAtest
* PostMan
* AlertSite API monitoring

### 25) What is Resource in REST?

REST architecture treats any content as resource, which can be text files, HTML pages, images, videos or dynamic business information. REST server gives the functionality to access the resources and modifies them. We can identify the each resources by URIs/ global IDs.

### 31) What is the HTTP protocol supported by REST?

**GET:** GET is used to request data from the specified resource.

GET request can be cached and bookmark. It remains in the browser history and has length restriction. When dealing with sensitive data GET requests should not be used.

**POST:** POST is used to send data to server for creation or updating the resources.

POST requests are never cached or bookmark.

**PUT:** PUT replaces the current representation of the target resource with the request payload.

**DELETE:** DELETE removes the specified resource.

**OPTIONS:** OPTION is used to describe the communication option for the target resources.

**HEAD:** HEAD asks for response which is identical to GET requests, but without the response body.

**21. What is the difference between PUT and POST methods?**

PUT and POST methods are sometimes confused in regards to when each should be used. Using POST request, our intent is to create a new object on the server whereas with PUT request, our intent is to replace an object by another object.

POST should be used when the client sends the page to the server and then the server lets the client know where it put it. PUT should be used when the client specifies the location of the page

## Rest API Response Codes

Here are some sample Response Codes which we will normally see while performing REST API testing over POSTMAN or over any REST API client.

- Common categories include 1xx informational, 2xx success, 3xx redirection, 4xx client errors, and 5xx server errors.

**#1) 100 Series**  
These are temporary Responses

* 100 Continue
* 101 Switching Protocols
* 102 Processing

**#2) 200 Series**  
The client accepts the Request, being processed successfully at the server.

* 200 – OK
* 201 – Created
* 202 – Accepted
* 203 – Non-Authoritative Information
* 204 – No Content
* 205 – Reset Content
* 206 – Partial Content
* 207 – Multi-Status
* 208 – Already Reported
* 226 – IM Used

**#3) 300 Series**  
Most of the codes related to this series are for URL Redirection.

* 300 – Multiple Choices
* 301 – Moved Permanently
* 302 – Found
* 303 – Check Other
* 304 – Not Modified
* 305 – Use Proxy
* 306 – Switch Proxy
* 307 – Temporary Redirect
* 308 – Permanent Redirect

**#4) 400 Series**  
These are specific to client-side error.

* 400 – Bad Request
* 401 – Unauthorised
* 402 – Payment Required
* 403 – Forbidden
* 404 – Not Found
* 405 – Method Not Allowed
* 406 – Not Acceptable
* 407 – Proxy Authentication Required
* 408 – Request Timeout
* 409 – Conflict
* 410 – Gone
* 411 – Length Required
* 412 – Precondition Failed
* 413 – Payload Too Large
* 414 – URI Too Long
* 415 – Unsupported Media Type
* 416 – Range Not Satisfiable
* 417 – Expectation Failed
* 418 – I’m a teapot
* 421 – Misdirected Request
* 422 – Unprocessable Entity
* 423 – Locked
* 424 – Failed Dependency
* 426 – Upgrade Required
* 428 – Precondition Required
* 429 – Too Many Requests
* 431 – Request Header Fields Too Large
* 451 – Unavailable For Legal Reasons

**#5) 500 Series**  
These are specific to the server-side error.

* 500 – Internal Server Error
* 501 – Not Implemented
* 502 – Bad Gateway
* 503 – Service Unavailable
* 504 – Gateway Timeout
* 505 – HTTP Version Not Supported
* 506 – Variant Also Negotiates
* 507 – Insufficient Storage
* 508 – Loop Detected
* 510 – Not Extended
* 511 – Network Authentication Required

**SQL**

**Q #43) Define join and name different types of joins?**

**Answer:** Join keyword is used to fetch data from two or more related tables. It returns rows where there is at least one match in both the tables included in the join. [Read more here](https://www.w3schools.com/sql/sql_join.asp).  
**Type of joins are:**

1. Right join
2. Outer join
3. Full join
4. Cross join
5. Self join.

**Q #42) How to select all records from the table?**

**Answer:** To select all the records from the table we need to use the following syntax:

|  |
| --- |
| Select \* from table\_name; |

**Q #44) What is the syntax to add a record to a table?**

**Answer:** To add a record in a table INSERT syntax is used.

**For Example,**

|  |
| --- |
| INSERT into table\_name VALUES (value1, value2..); |

**Q #45) How do you add a column to a table?**

**Answer:**To add another column in the table, use the following command:

|  |
| --- |
| ALTER TABLE table\_name ADD (column\_name); |

**Q #48) What is the Primary key?**

**Answer:** A Primary key is a column whose values uniquely identify every row in a table. Primary key values can never be reused.

**Q #49) What are Foreign keys?**

**Answer:** When a table’s primary key field is added to related tables in order to create the common field which relates the two tables, it called a foreign key in other tables. Foreign key constraints enforce referential integrity.

**Q #51) Is it possible for a table to have more than one foreign key?**

**Answer:** Yes, a table can have many foreign keys but only one primary key.

**Q #53) What is a stored procedure?**

**Answer:** A stored procedure is a set of SQL queries that can take input and send back output.

**Q #65) Difference between TRUNCATE, DELETE and DROP commands?**

**Answer:**

* **DELETE** removes some or all rows from a table based on the condition. It can be rolled back.
* **TRUNCATE** removes ALL rows from a table by de-allocating the memory pages. The operation cannot be rolled back
* **DROP** command removes a table from the database completely.

◦ How to locate a eliminate which will only load when you scroll the webpage and also the position of element varies everytime?

Ans: Refer selenium JS executor, scroll based on visibility of element.

◦ How to handle random popups ?

Ans : Refer Try, Catch, Finally concept

EmployeeInfo Table:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EmpID** | **EmpFname** | **EmpLname** | **Department** | **Project** | **Address** | **DOB** | **Gender** |
| 1 | Sanjay | Mehra | HR | P1 | Hyderabad(HYD) | 01/12/1976 | M |
| 2 | Ananya | Mishra | Admin | P2 | Delhi(DEL) | 02/05/1968 | F |
| 3 | Rohan | Diwan | Account | P3 | Mumbai(BOM) | 01/01/1980 | M |
| 4 | Sonia | Kulkarni | HR | P1 | Hyderabad(HYD) | 02/05/1992 | F |
| 5 | Ankit | Kapoor | Admin | P2 | Delhi(DEL) | 03/07/1994 | M |

EmployeePosition Table:

|  |  |  |  |
| --- | --- | --- | --- |
| **EmpID** | **EmpPosition** | **DateOfJoining** | **Salary** |
| 1 | Manager | 01/05/2022 | 500000 |
| 2 | Executive | 02/05/2022 | 75000 |
| 3 | Manager | 01/05/2022 | 90000 |
| 2 | Lead | 02/05/2022 | 85000 |
| 1 | Executive | 01/05/2022 | 300000 |
|  |  |  |  |

### ****Q2. Write a query to fetch the number of employees working in the department ‘HR’.****

|  |  |
| --- | --- |
| 1 | SELECT COUNT(\*) FROM EmployeeInfo WHERE Department = 'HR'; |

### ****Q3. Write a query to get the current date.****

You can write a query as follows in SQL Server:

|  |  |
| --- | --- |
| 1 | SELECT GETDATE(); |

SELECT SYSTDATE();

|  |  |
| --- | --- |
| 1 | SELECT SYSTDATE(); |

### ****Q4. Write a query to retrieve the first four characters of  EmpLname from the EmployeeInfo table.****

|  |  |
| --- | --- |
| 1 | SELECT SUBSTRING(EmpLname, 1, 4) FROM EmployeeInfo; |

### ****Q5. Write a query to fetch only the place name(string before brackets) from the Address column of EmployeeInfo table.****

Using the MID function in [MySQL](https://www.edureka.co/blog/what-is-mysql/)

|  |  |
| --- | --- |
| 1 | SELECT MID(Address, 0, LOCATE('(',Address)) FROM EmployeeInfo; |

Using SUBSTRING

|  |  |
| --- | --- |
| 1 | SELECT SUBSTRING(Address, 1, CHARINDEX('(',Address)) FROM EmployeeInfo; |

### ****Q7. Write q query to find all the employees whose salary is between 50000 to 100000.****

|  |  |
| --- | --- |
| 1 | SELECT \* FROM EmployeePosition WHERE Salary BETWEEN '50000' AND '100000'; |

### ****Q8. Write a query to find the names of employees that begin with ‘S’****

|  |  |
| --- | --- |
| 1 | SELECT \* FROM EmployeeInfo WHERE EmpFname LIKE 'S%'; |

<https://www.edureka.co/blog/interview-questions/sql-query-interview-questions>

Performance

**Q2. What are the different types of Performance Testing?**

The different types of performance testing are:

****

* **Load testing –** It checks the application’s ability to perform under anticipated user loads. The objective is to identify performance bottlenecks before the software application goes live.
* [**Stress testing**](https://www.edureka.co/blog/stress-testing-using-jmeter/)**–** This involves testing an application under extreme workloads to see how it handles high traffic or data processing. The objective is to identify the breaking point of an application.
* **Endurance testing –** It is done to make sure the software can handle the expected load over a long period of time.
* **Spike testing –** This tests the software’s reaction to sudden large spikes in the load generated by users.
* **Volume testing** – Under Volume Testing large no. of. Data is populated in a database and the overall software system’s behavior is monitored.
* **Scalability testing**– The objective of scalability testing is to determine the software application’s effectiveness in scaling up to support an increase in user load.
* **Q11. What is Endurance Testing & Spike Testing?**
* **Endurance Testing** – It is a type of performance testing where the testing is conducted to evaluate the behavior of the system when a significant workload is given continuously.
* **Spike Testing** – It is a type of performance testing that is performed to analyze the behavior of the system when the load is increased substantially.

**Q16. What is a Protocol? Name some Protocols.**

A protocol is a defined as a set of various rules for the purpose of information communication between the two or more systems.

Some of the Protocols are :

* **HTTP**
* **HTTPS**
* **FTP**
* **Web Services**
* **Citrix**

**Q18. What are the types of Performance Tuning?**

There are two types of Performance Tuning:

1. **Hardware Tuning** – Enhancing, adding or supplanting the hardware components of the system under test and changes in the framework level to augment the system’s performance is called hardware tuning.
2. **Software Tuning** – Identifying the software level bottlenecks by profiling the code, database etc. Fine tuning or modifying the software to fix the bottlenecks is called software tuning.

## Difference between Static testing and Dynamic Testing

|  |  |
| --- | --- |
| **Static testing** | **Dynamic testing** |
| In static testing, we will check the code or the application without executing the code. | In dynamic testing, we will check the code/application by executing the code. |
| Static testing includes activities like code Review, Walkthrough, etc. | Dynamic testing includes activities like functional and non-functional testing such as UT (usability testing), IT (integration testing), ST (System testing) & UAT (user acceptance testing). |
| Static testing is a **Verification**Process. | Dynamic testing is a **Validation** Process. |
| Static testing is used to prevent defects. | Dynamic testing is used to find and fix the defects. |
| Static testing is a more cost-effective process. | Dynamic testing is a less cost-effective process. |
| This type of testing can be performed before the compilation of code. | Dynamic testing can be done only after the executables are prepared. |
| Under static testing, we can perform the statement coverage testing and structural testing. | Equivalence Partitioning and Boundary Value Analysis technique are performed under dynamic testing. |
| It involves the checklist and process which has been followed by the test engineer. | This type of testing required the test case for the execution of the code. |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Test Plan** | **Test Strategy** | |
| 1. | It is a formal document used to define the scope of testing and different testing activities. | It is a high-level document that involves planning for all the testing activities and delivering a quality product. |
| 2. | It is derived with the help of Use Case documents, SRS (Software Requirement Specification), and Product Description. | While the Test Strategy can be derived with the help of the BRS (Business Requirement Specification) document. |
| 3. | A test plan is developed by Test Lead or test/ Project manager. | Generally, the test strategy is developed by the Business Analyst and approved by the Project Manager. |
| 4. | A Test Plan is a dynamic document that can be updated frequently when new requirements or modifications have occurred. | It is a static document, which implies that it cannot be changed or modified. |
| 5. | A test plan defines the whole testing activities thoroughly. | The test strategy defines high-level test design methods. |
| 6. | A test plan is specified at the project level. | A test strategy is specified at the organization level, which can be used by multiple projects. |
| 7. | The important testing attributes included in the test plan are as follows:   * **Objective** * **Scope** * **Test methodology** * **Approach** * **Assumption** * **Risk** * **Mitigation plan,** * **Roles and responsibility** * **Schedule** * **Bug tracking** * **Test environments** * **Entry and exit criteria** * **Test automation** * **Effort estimation,** * **Test deliverables** * **Templets** | The significant testing components include in the test strategy are as follows:   * **Scope and overview** * **Testing tools** * **Testing metrics** * **Requirement Traceability Matrix** * **Training plan,** * **Business issues** * **Reporting tool** * **Change and configuration management** * **Test summary** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO.** | | | **Stubs** | | **Drivers** |
| **1.** | | | A section of code that imitates the called function is known as Stubs. | | A section of code that imitates the calling function is known as Drivers. |
| **2.** | | | It is used to test the functionality of modules and test modules and also replicate the performance of the lower-level module which are not yet merged, and the activity of the missing module/components. | | When the main module is prepared or ready, we will take the help of drivers. Generally, drivers are a bit more complex as compared to the stubs. |
| **3.** | | | The stubs are developed during the Top-down approach of incremental integration testing. | | The drivers are developed during the bottom-up approach of incremental integration testing. |
| **4.** | | | Stubs replicate the activity of not developed and missing modules or components. | | Drivers authorizes test cases to another system and which refer the modules under testing. |
| **5.** | | | The stubs are created by the team of test engineers. | | Mostly, the drivers are created by the developer and the unit Test engineers. |
| **6.** | | | Stubs are developed when high-level modules are tested, and lower-level modules are not formed. | | Drivers are acquired when lower-level modules are tested, and higher-level modules are not yet developed. |
| **7.** | | | These are parallel to the modules of the software, which are under development process. | | On the other hand, the drivers are used to reminding the component, which needs to be tested. |
| **8.** | | | The stubs signify the low-level modules. | | The drivers signify the high-level modules. |
| **9.** | | | Fundamentally, the Stubs are also known as a called program and initially used in the Top-down integration testing. | | The Drivers are also known as the calling program and are mainly used in bottom-up integration testing. |
| **10.** | | | These are reserved for testing the feature and functionality of the modules. | | The drivers are used if the core module of the software isn't estab |
|  | | |  | |  |
| **S.No.** | | **Comparison Basis** | **Smoke Testing** | | **Sanity Testing** |
| 1 | | Test coverage | It is a broad approach to testing where all parts of the application are tested. | | It is a narrow approach to testing where specific parts of the application are tested. |
| 2 | | Measures | It measures the stability of the system by performing rigorous testing. | | It measures the rationality of the system by performing rigorous testing. |
| 3 | | Technique | Smoke testing can be either manual or automated. | | Sanity testing can be done without test cases or scripts. |
| 4 | | Executed by | It is performed by both testers and developers. | | It is performed by only testers. |
| 5 | | Purpose | Testing is done without getting into deep but whenever needed tester has to go into deep. | | Sanity testing does not need to go into deep of the application. |
| 6. | | Performed at | Smoke testing is the first testing performed on the initial build. | | Sanity testing is performed when the build is comparatively stable. |
| 7 | | Documentation | Smoke testing is documented. | | Sanity testing is not documented. |
| 8 | | Used to | It is used to test End to End function of the application. | | It is used to test only modified or defect fixed functions. |
| 9 | | Subset | It is considered as a subset of acceptance testing. | | It is considered as a subset of regression testing. |

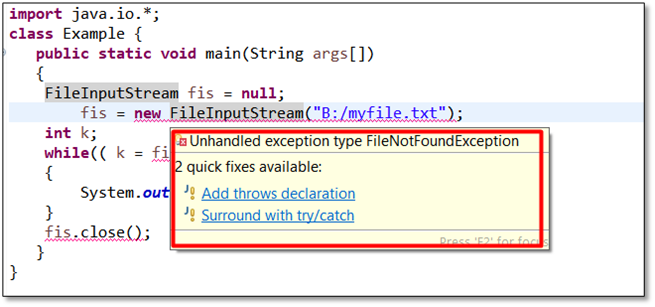
### What are the different types of exceptions in java?

Java Exceptions are broadly categorized into **Checked** and **Un Checked** exceptions.

Checked exceptions are checked during compile time, Unchecked exceptions are thrown during run time.

Consider if you are using eclipse IDE, checked exceptions are shown instantly inside your IDE, however, Unchecked exceptions are thrown only when you execute the program

**Example of Checked Exception: Eclipse IDE**(For your Reference Only)



**Example : Unchecked Exception**

public class UnCheckedException

{

    public sta public class UnCheckedException

{

    public static void main (String[] args)

    {

      int a=10;

      int b = a/0;

    }

}

**Output:**

Exception in thread "main" java.lang.ArithmeticException: / by zero

   at UnCheckedException.main(UnCheckedException.java:6)

tic void main (String[] args)

    {

      int a=10;

      int b = a/0;

    }

}

**Output:**

### Could you explain IS-A and HAS-A relationship?

**IS -A relationship**

**IS-A relationship** is formed in inheritance, The class which inherit is known as subclass or child class. That means that child class is the type of parent class.

For example, Orange is a Fruit, you need to extend fruit class to make IS-A relationship

**Example Code Snippet  : IS-A Relationship**

class Fruit{

    //some code

}

//IS-A relationship

class Orange extends Fruit {

//some code

}

**HAS -A relationship**

**HAS-A relationship** is composition, which means you are creating the object of a class inside another class. Let’s take the example of Room. The room has a chair. The room should contain chair class reference, i.e you need to create an instance of Chair particular class inside the Room class.

**Example Code Snippet : HAS-A Relationship**

class Room {

    Chair chair = new Chair();

}

**PYTHON**

**What does division by zero mean in Python?**

ZeroDivisionError is a built-in Python exception thrown when a number is divided by 0.

**# Python code to swap two numbers**

**# using + and - operators**

x = 5.4

y = 10.3

print ("Before swapping: ")

print("Value of x : ", x, " and y : ", y)

# Swap code

x = x + y # x = 15.7, y = 10.3

y = x - y # x = 15.7, y = 5.4

x = x - y # x = 10.3, y = 5.4

print ("After swapping: ")

print("Value of x : ", x, " and y : ", y)

**# Python 3 code to demonstrate**

**# removing duplicated from list**

**# using set()**

# initializing list

test\_list = [1, 5, 3, 6, 3, 5, 6, 1]

print ("The original list is : "

        + str(test\_list))

# using set()

# to remove duplicated

# from list

test\_list = list(set(test\_list))

# printing list after removal

# distorted ordering

print ("The list after removing duplicates : "

        + str(test\_list))

## Main Concepts of Object-Oriented Programming (OOPs)

* Class
* Objects
* Polymorphism
* Encapsulation
* Inheritance
* Data Abstraction

### 13) How to remove whitespaces from a string in Python?

To remove the whitespaces and trailing spaces from the string, Python providies strip([str]) built-in function. This function returns a copy of the string after removing whitespaces if present. Otherwise returns original string.

**Example:**

1. string = "  javatpoint "
2. string2 = "    javatpoint        "
3. string3 = "       javatpoint"
4. **print**(string)
5. **print**(string2)
6. **print**(string3)
7. **print**("After stripping all have placed in a sequence:")
8. **print**(string.strip())
9. **print**(string2.strip())
10. **print**(string3.strip())

### 18) What is tuple in Python?

A tuple is a built-in data collection type. It allows us to store values in a sequence. It is immutable, so no change is reflected in the original data. It uses () brackets rather than [] square brackets to create a tuple. We cannot remove any element but can find in the tuple. We can use indexing to get elements. It also allows traversing elements in reverse order by using negative indexing. Tuple supports various methods like max(), sum(), sorted(), Len() etc.

To create a tuple, we can declare it as below.

**Example:**

1. # Declaring tuple
2. tup = (2,4,6,8)
3. # Displaying value
4. **print**(tup)
6. # Displaying Single value
7. **print**(tup[2])

**Output:**

(2, 4, 6, 8)

6

Are string mutable or immutable?

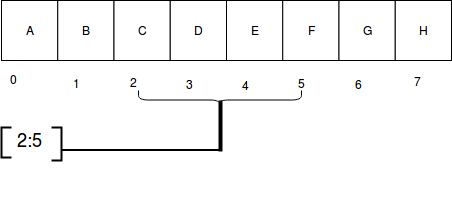
Strings are **not mutable** in Python. Strings are a immutable data types which means that its value cannot be updated.

**can we inherit two classes at same time in python?**

In Python **a class can inherit from more than one class**. If a class inherits, it has the methods and variables from the parent classes. In essence, it's called multiple inheritance because a class can inherit from multiple classes. This is a concept from object orientated programming.

### 31) What is slicing in Python?

Slicing is a mechanism used to select a range of items from sequence type like list, tuple, and string. It is beneficial and easy to get elements from a range by using slice way. It requires a : (colon) which separates the start and end index of the field. All the data collection types List or tuple allows us to use slicing to fetch elements. Although we can get elements by specifying an index, we get only single element whereas using slicing we can get a group of elements.



### 38) What is the usage of help() and dir() function in Python?

Help() and dir() both functions are accessible from the Python interpreter and used for viewing a consolidated dump of built-in functions.

**Help() function**: The help() function is used to display the documentation string and also facilitates us to see the help related to modules, keywords, and attributes.

**Dir() function**: The dir() function is used to display the defined symbols.

**Java Program:**

import java.util.\*;

public class ComapreArraylistExample3

{

public static void main(String args[])

{

//first array list

ArrayList<Integer> firstList=new ArrayList<Integer>(Arrays.asList(12, 4, 67, 90,1780, 34));

System.out.println("First array list: ");

System.out.println(firstList);

//second array list

List<Integer> secondList=new ArrayList<Integer>(Arrays.asList(12, 4, 67, 0, 34));

System.out.println("Second array list: ");

System.out.println(secondList);

//returns the common elements in both list

firstList.removeAll(secondList);

System.out.println("Un-common element of the first list: ");

System.out.println(firstList);

}

}

import java.util.\*;

public class ComapreArraylistExample4

{

public static void main(String args[])

{

//first arraylist

ArrayList<String> firstList=new ArrayList<String>(Arrays.asList("M", "W", "J","Z", "K", "T"));

System.out.println("First arraylist: ");

System.out.println(firstList);

//second arraylist

List<String> secondList=new ArrayList<String>(Arrays.asList("M", "W", "E", "K", "T"));

System.out.println("Second arraylist: ");

System.out.println(secondList);

//returns the common elements in both list

secondList.retainAll(firstList);

System.out.println("Common elements in both list: ");

System.out.println(secondList);

}

}