**What is OOP in java?**

**Answer: Object-Oriented Programming** is a methodology or paradigm to design a program using classes and objects. It simplifies the software development and maintenance by providing some concepts:

**Object:** Any entity that has state and behavior is known as an object. For example a bike, a car etc.

**Class**: It is a collection of objects.

**Inheritance**: When a child class acquires all the properties and behavior of parents is known as inheritance, also it’s providing code reusability.

**Polymorphism**: when one task is performed by different ways is known as polymorphism, in java we use method overloading and method overriding to achieve polymorphism.

* **Method Overloading**: It is a way we can create more than one method with same name by changing the argument of method, that mean argument will different but method name will be same. So method overloading is nothing but overload the method by changing the number of argument.
* **Method overriding:**  It is an ability of a subclass to override a method allows a class to inherit from a super class.

**Abstraction**: Abstract will help us to implement the method of an interface based on our requirement.

**Encapsulation**: Encapsulation is a mechanism where you bind your data and code together as a single unit and keeping your original data as private.

**Interface**:

* It is used to achieve total abstraction
* Since java does not support multiple inheritance in case of class, but by using interface it can achieve multiple inheritance.

**What is difference between Error and Exception?**

* An error is an irrecoverable condition occurring at runtime. Such as OutOfMemory error. These JVM errors you cannot repair them at runtime. Though error can be caught in catch block but the execution of application will come to a halt and is not recoverable.
* While exceptions are conditions that occur because of bad input or human error etc. e.g. FileNotFoundException will be thrown if the specified file does not exist. Or a NullPointerException will take place if you try using a null reference. In most of the cases it is possible to recover from an exception (probably by giving user a feedback for entering proper values etc.

### ****Q2. How can you handle Java exceptions?****

There are five keywords used to handle exceptions in java:

Try

catch

finally

throw

throws

### ****Q3. What are the differences between Checked Exception and Unchecked Exception?****

Checked Exception

* Checked exceptions are checked at compile-time.

Example: IO-Exception, SQL-Exception etc.

Unchecked Exception

* Unchecked exceptions are checked at run-time.

Example: Arithmetic-Exception, Null-Pointer-Exception etc.

**What are multiple inheritances why multiple inheritances are not supported in Java?**

**Answer**: If a child class inherits the property from multiple classes is known as multiple inheritances. Java does not allow extending multiple classes.

Because of diamond pattern, diamond pattern creates ambiguity and make problem for compiler. Anyway java supports multiple inheritances via interfaces.

**What is abstract class?**

Answer**:** A class that is declared with abstract keyword, is known as abstract class in java, Abstract class will help you to implement the method of interface based on you requirement

**What is the purpose of Iterator in java?**

Answer: The purpose of iterator is to iterate the collection of data, assume that we have an array list and we want to iterate all the data or retrieve the data, or we want to print, so how can do that, in iterator is basically interface and it has 3 methods, hasNext(), next(), and remove(), so hasNext() will check weather is any data in collection of object, next() will return the data and pointer to the next element and remove() will remove the data from the collection of object.

**Difference between ArrayList and LinkedList in Java?**

Answer:

* Basically main difference between of them is architecture of classes, if we look at diagram
* Array list store data based on index, so whenever data will increment in the same time size of dynamic array will grow
* Manipulation array list is slow because If I remove data from index 2 the array list internally it will rearrange, Array list is better for sorting and accessing data
* Linked list data will store based on node concept,
* Linked List class maintains insertion order.

**What is collection of framework in java?**

Answer: Basically is nothing but combination of classes and interface that implement commonly reusable for collection of data structures.

Also collection of framework allow us to manipulated and store group of object.

Collection interface and classes are present in java.util.pacakge.

**What is JVM and is it platform independent?**

Answer: Java Virtual Machine (JVM) is the heart of java programming language.

**What is the difference between JDK and JVM?**

Answer: Java Development Kit (JDK) is for development purpose and JVM is a part of it to execute the java programs.

JDK provides all the tools, executables and binaries required to compile, debug and execute a Java Program. The execution part is handled by JVM to provide machine independence.

**Which class is the superclass of all classes?**

Answer: java.lang.Object is the root class for all the java classes and we don’t need to extend it.

**What is the importance of main method in Java?**

Answer: main() method is the entry point of any standalone java application. The syntax of main method is public static void main(String args[]).

main method is public and static so that java can access it without initializing the object.

**Can we overload main method?**

Answer: Yes, we can have multiple methods with name “main” in a single class. However if we run the class, java runtime environment will look for main method with syntax as public static void main(String args[]).

**Can we have multiple public classes in a java source file?**

Answer: We can’t have more than one public class in a single java source file. A single source file can have multiple classes that are not public.

**What are Java Package and which package is imported by default?**

Answer: Java package is the mechanism to organize the java classes by grouping them. The grouping logic can be based on modules

java.lang package is imported by default and we don’t need to import any class from this package explicitly.

**What are access modifiers?**

Answer: Java provides access control through public, private and protected access modifier keywords. When none of these are used, it’s called default access modifier.

**What is final keyword?**

Answer: final keyword is used in class to make sure no other class can extend it, for example String class is final and we cannot extend it.

We can use final keyword in methods to make sure child classes cannot override it.

Final keyword can be used with variables to make sure that it can be assigned only once. However the state of the variable can be changed, for example we can assign a final variable to an object only once but the object variables can change later on.

Java interface variables are by default final and static.

**What is static keyword?**

Answer: static keyword can be used with class level variables to make it global. We don’t need to create any instance.

Static keyword can be used with methods also. A static method can access only static variables of class and invoke only static methods of the class.

**Can we declare a class as static?**

Answer: We can’t declare a top-level class as static however an inner class can be declared as static. If inner class is declared as static, it’s called static nested class.  
Static nested class is same as any other top-level class and is nested for only packaging convenience.

Read more about inner classes at [java inner class](https://www.journaldev.com/996/java-inner-class).

**What is the difference between abstract class and interface?**

Answer: Interface are rules that provides only method declarations and not the implementation

Interface give the idea what is to be done but not how it will be done, so implementation completely depend on the developer given signature of method

Abstract doesn’t support multiple inheritance

Abstract classes may contain abstract declarations, concrete implementations, or both, but implementation cannot have concrete implementation

Interface support multiple inheritance

**What is Java Annotations?**

Answer: Java Annotations provide information about the code and they have no direct effect on the code they annotate. Annotations are introduced in Java 5. Annotation is metadata about the program embedded in the program itself. It can be parsed by the annotation parsing tool or by compiler. We can also specify annotation availability to either compile time only or till runtime also. Java Built-in annotations are @Override, @Deprecated and @SuppressWarnings. Read more at [java annotations](https://www.journaldev.com/721/java-annotations).

**What is inner class in java?**

We can define a class inside a class and they are called nested classes. Any non-static nested class is known as inner class. Inner classes are associated with the object of the class and they can access all the variables and methods of the outer class. Since inner classes are associated with instance, we can’t have any static variables in them.

We can have local inner class or anonymous inner class inside a class. For more details read [java inner class](https://www.journaldev.com/996/java-inner-class).

**What is anonymous inner class?**

A local inner class without name is known as anonymous inner class. An anonymous class is defined and instantiated in a single statement. Anonymous inner class always extend a class or implement an interface.

Since an anonymous class has no name, it is not possible to define a constructor for an anonymous class. Anonymous inner classes are accessible only at the point where it is defined.

**What does super keyword do?**

Super keyword can be used to access super class method when you have overridden the method in the child class.

We can use super keyword to invoke super class constructor in child class constructor but in this case it should be the first statement in the constructor method.

**What is break and continue statement?**

We can use break statement to terminate for, while, or do-while loop. We can use break statement in switch statement to exit the switch case. You can see the example of break statement at [java break](https://www.journaldev.com/588/java-switch-case-string). We can use break with label to terminate the nested loops.

The continue statement skips the current iteration of a for, while or do-while loop. We can use continue statement with label to skip the current iteration of outermost loop.

**What is this keyword?**

This keyword provides reference to the current object and it’s mostly used to make sure that object variables are used, not the local variables having same name

**What is default constructor?**

When we don’t define any constructor for the class, java compiler automatically creates the default no-args constructor for the class. If there are other constructors defined, then compiler won’t create default constructor for us.

 Also, it has no return type and it is automatically called when an object is created.

**Can you access non static variable in static context?**

No you cannot access static variable in non static context in Java

**Can we have try without catch block?**

Yes, we can have try-finally statement and hence avoiding catch block.

**What is runtime polymorphism or dynamic method dispatch?**

In Java, runtime polymorphism or dynamic method dispatch is a process in which a call to an overridden method is resolved at runtime rather than at compile-time. In this process, an overridden method is called through the reference variable of a superclass. Let’s take a look at the example below to understand it better.

**What is the difference between interface and abstract class in java?**

* Interface are rules that provides only method declarations and not the implementation
* Interface give the idea what is to be done but not how it will be done, so implementation completely depend on the developer given signature of method
* Abstract doesn’t support multiple inheritance
* Abstract classes may contain abstract declarations, concrete implementations, or both, but implementation cannot have concrete implementation
* Interface support multiple inheritance

**What is interface?**

Answer: The interface in java is a mechanism to achieve abstraction. Interface is used to achieve abstraction and multiple inheritances. We know in java we cannot achieve multiple inheritances but using interface we can achieve multiple inheritance.

**What are the difference between function and method?**

Function is a block of code (usually with its own scope

A method is a function that is owned by an object

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**What is x-path function?**

**Answer:**  **It is a syntax or language for finding any element on the web page using XML path expression**

Xpath=//tagname[attribute=’value’]

**What are the attribute to find out elements on webpage?**

**Answer:**Id,Name,Link,DOM,XPath,CSS

**How to handle dynamic elements when a table data will be changing in selenium?**

**Answer:**

**Step 1:**First get the entire HTML table and store this in a variable ‘htmltable’ of type web element.

**Step 2**: Get all the rows with tag name ‘tr’ and store all the elements in a list of web elements. Now all the elements with tag ‘tr’ are stored in ‘rows’ list.

**Step 3**: Loop through each row and get the list of elements with tag ‘th’. ‘rows.get(0)’ will give first row and ‘findElements(By.tagName(“th”))’ will give list of columns for the row.

**Step 4**: Iterate using ‘columns.getsize()’ and get the details of each cell.

**Answer**: Automation testing is the process of testing the software using an automation tools to find the defect. In this process executing the test scripts and generating the result. Some most popular tools to do automation testing are HP QTP/UFT, Selenium Web-Driver etc.

**What are benefits of automation testing?**

**Answer:** Save time and money, automation testing is faster in execution,

Reusability of code, create one time execute multiple time with less or no maintenance

Easy reporting, it generate automate report after execution

**What types testing have you automated?**

**Answer**: Our main focus is automated test cases to do regression testing, smoke testing, functional testing, database testing and sometime based on project time estimation we do end to end testing.

**How many test cases have you wrote every day basis?**

Answer**:** It depends on the test cases scenario complexity and length. I did automated 2-5 test cases per day when the complexity is limited. Sometimes one or fewer per day when complexity is high.

**What is framework?**

**Answer:**  A framework define set of rules or best practice and that way we can achieve our desired result

**What is selenium and what are component in selenium to development application?**

**Answer:** Selenium is an open source automated testing tool it support to execute test cases in different browser. Selenium IDE [Integrated Development Environment], Selenium RC [Remote Control] and Selenium Web-Driver and Selenium Grid

**What are exceptions have you found in selenium?**

**Answer**: Web-DriverException, TimeOutException, NoAlertPresentException, NoSuchElementException, NoSuchWindowEeception.

**What is exception?**

**Answer**: An exception (or exceptional event) is a problem that arises during the execution of a program. When an **Exception** occur the normal flow of the program is disrupted.

**What is try-catch and final?**

**Answer:** "**Try**" and "**catch**" are keywords that represent the handling of exceptions due to data or coding errors during program execution.If a statement in try block found an exception, then the rest of the try block doesn’t execute and control passes to the **corresponding** catch block. After executing catch block, the control will be transferred to finally block (if present) and then rest program will be executed.

**How to login any site if it is showing pop-up?**

**Answer:** To handle this type of pop-up, we can pass username and password with URL.

**What are the different types of wait in web-driver?**

**Answer:** Implicit wait->implicit wait tell the web-driver to wait for a certain amount of time before it throw an exception. Once we set the time, web-driver will wait based on time

driver.manage().timeouts().implicitlyWait(TimeOut, TimeUnit.SECONDS);

Explicit wait->explicit wait is applied on a certain element or specified element, Explicit wait can also throw an exception when element are not found.

WebDriverWait wait = new WebDriverWait(WebDriverRefrence,TimeOut);

**How to input text in the text box in selenium?**

**Answer:** By using sendKeys() method, syntax = driver.findElements(By.Xpath(“”).sendKeys(“abc”) );

**How to input text in the text box without using send-keys in selenium?**

**Answer:** Byusing JavaScriptExecutor class, we need to initialize an object then JavaScriptExecutor has provided a method called executorScript().

**How to get text of a web element?**

**Answer:** By using getText() method.

**How to get an attribute value from a selenium webElement?**

**Answer:** by using getAttribute() method.

**How to pause a test execution for 5 seconds at specific point?**

**Answer**: By using thread.sleep(5000);

**What is difference between driver.get() and driver.navigate.get()?**

**Answer:** driver.url() to open an url and it wait till whole page gets loaded.

driver.navigate.get() to navigate an url and it will not wait till the whole page gets loaded

**What is the difference driver.close() and driver.quit()?**

**Answer:** driver.close() method will close only the current brower and driver.quit() method it will close all browser which are currently open.

**What is difference between driver.getWindowHandle() and driver.getWindowHandles()**

**Answer**: driver.getWindowHandle()-> it returns a handle for current page

driver.getWindowHandles()->it returns set of handles of the all the pages

**What is the difference between driver.findElement() and driver.findeElements()?**

**Answer:** driver.findElement()-> it return a single web-Element based on the locator

driver.findElements()->it return a list of web-Elements based on the locator.

**Difference between isDisplayed(), isEnabled(), isSelected() methods in selenium?**

**Asnwer: isDisplayed()->**This method determines  if an element is displayed or not. It returns true if the element is displayed and false if it is not

**isEnabled()->**This method determines if an element is selected or not. It returns true if the element is selected and false if it is not.  It is widely used on check boxes, radio buttons and options in a select.

**isSelected()->**This method determines if an element is enabled or not. It returns true if element is enabled

**How to select a drop down in selenium?**

**Answer:** Using select class and that select class has list of method like selectByVisibleText(), selectByIndex() and selectByValue().

**How tocapture a screenshoot in selenium?**

**Answer:** By using takesSceenShot interface.

**How to mouse over on a web element using web-driver?**

**Answer:** By using action class for that we need to create an object and action class is provided a method moveToElement() and perform() methods.

**How can we handle web based pop-up?**

**Answer:** Byusing Alert interface, there are four methods we can handle pop-up

**1) void dismiss()** – The dismiss() method clicks on the “Cancel” button as soon as the pop up window appears.  
**2) void accept()** – The accept() method clicks on the “Ok” button as soon as the pop up window appears.  
**3) String getText()** – The getText() method returns the text displayed on the alert box.  
**4) void sendKeys(String stringToSend)** – The sendKeys() method enters the specified string pattern into the alert box.

**How to handle hidden elements in selenium?**

**Answer**: using JavaScriptExecutor class, we need to initialize an object then JavaScriptExecutor has a method called executorScript().

**How do we read test data from excel?**

**Answer:** Using apache poi library

**How can we use recovery scenario in selenium?**

**Answer:** using try-catch and block

**What are the scenarios we cannot automate in selenium?**

**Answer:** bitmap comparison is not possible

Automating captha is not possible and Bar code

**How to upload a file in selenium?**

**Answer:** by using sendkeys and AutoIT script method.

**How to connect a database in selenium?**

**Answer:** using JDBC driver we can connect the database in selenium.

**How to drag and drop in selenium?**

**Answer:** using Action class

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What is testNG?

**Answer**: testNG is testing framework to simplify a board rang of testing needs, from unit testing to integration testing

**What are advantage testng?**

**Answer**: testNG provide parallel execution of test methods, It allow us to assign priority to test method, It allows grouping of test methods into test group, It has parameter zing test using @parameters annotation, It allows data driven testing using @data-provider annotation, It has different assertion that helps in checking the expected and actual result. Also it has provided a default testing report.

**What is annotation in testng?**

**Answer**: Annotation define guides what to do next or which method should be executed next @BeforeSuite

The annotated method will be run only once before all tests in this suite have run.

@AfterSuite

The annotated method will be run only once after all tests in this suite have run.

@BeforeClass

The annotated method will be run only once before the first test method in the current class is invoked.

@AfterClass

The annotated method will be run only once after all the test methods in the current class have run.

@BeforeTest

The annotated method will be run before any test method belonging to the classes inside the <test> tag is run.

@AfterTest

The annotated method will be run after all the test methods belonging to the classes inside the <test> tag have run.

@BeforeGroups

The list of groups that this configuration method will run before. This method is guaranteed to run shortly before the first test method that belongs to any of these groups is invoked.

@AfterGroups

The list of groups that this configuration method will run after. This method is guaranteed to run shortly after the last test method that belongs to any of these groups is invoked.

@BeforeMethod

The annotated method will be run before each test method.

@AfterMethod

The annotated method will be run after each test method.

@Data-Provider

Marks a method as supplying data for a test method. The annotated method must return an Object[ ][ ], where each Object[ ] can be assigned the parameter list of the test method. The @Test method that wants to receive data from this Data-Provider needs to use a data-Provider name equals to the name of this annotation.

@Factory

Marks a method as a factory that returns objects that will be used by Test-NG as Test classes. The method must return Object [ ].

@Listeners

Defines listeners on a test class.

@Parameters

Describes how to pass parameters to a @Test method.

@Test

Mark a method as a part of the test.

**What are order testNG.xml suite tags?**

**Answer**: <suite><test><clases><class> and also before tag we need to define xml schema and Doctype

**What is the importance of testng.xml file?**

**Answer:** testNG provide parallel execution of test methods, It allow us to assign priority to test method, it allows grouping of test methods into test group, it has parameter zing test cases using @parameters

**How to pass parameter through testng.xml file to a test case?**

**Answer:** First we need to initialized @parameter annotation and pass a parameter name before the method and we could set the parameter using the syntax like <parameter name=”parameter name” value=”value” > in testng.xml

**What is testNg assert and list out common testng Assertion?**

**Answer:** Testng help us to verify the condition of the test in the middle of the test run, based on the testng assertion.

AssertEqual(String actual, String expected)

AssertEqual(String actual, String expected, String message)

AssertEquals(boolean actual, Boolean expected)

AssertTrue(String actual, String expected)

AssertFalse(String actual, String expected)

**How to set test case priority in selenium?**

**Answer:** We use priority attribute to the @Test annotation, in case priority is not set then the test script will execute in alphabetical order.

@Test(priority=0)

Public void test01(){}

@Test(priority=1)

Public void test02(){}

**What is parameterized in testng?**

**Answer:** parameterized test allow developer to run the same test over and over again using different value, there are two ways to set these parameter, using testng.xml and using data provider

**How we can create a datadriven framework in testng framework?**

**Answer:** using data-Provider annotation we can create data driven framework, @DataProvider(name=”getData”)

**How to run group test case in testng?**

**Answer:** Groups are specified in testng.xml file using the <groups> tag. It can be found either under the <test> or <suite> tag. Groups specified in the <suite> tag apply to all the <test> tags underneath.

@Test(group={“ functest”,” checkintest”})

<suite>

<test>

<groups>

<run>

<include name = " functest "/>

</run>

</groups>

</test>

</suite>

**How to create group of groups in testng?**

**Answer:** Groups are specified in testng.xml file using the <groups> tag. It can be found either under the <test> or <suite> tag. Groups specified in the <suite> tag apply to all the <test> tags underneath.

<suite>

<test>

<groups>

<define name = "all">

<exclude name = "functest"/>

<include name = "checkintest"/>

</define>

<run>

<include name = " functest "/>

</run>

</groups>

</test>

</suite>

**How to run test cases in parallel in testng?**

**Answer:** We can use parallel attribute in testng.xml to accomplish parallel test execution in testng, parallel attribute suite tag accept four value like tests, methods, classes and instances

<suite name=”testName” parallel=”methods” thread-count=5>, thread-count=5 , it will run 5 different chrome browser.

**How to exclude a particular test method from a test cases execution?**

**Answer:** using exclude tag in the testng.xml

<classes >

**<class** name=”class1”**>**

**<method>**

**<exclude name=”methodName”/>**

**</method>**

**</class>**

**</classes>**

**How to disable a test case in testng?**

**Answer:**  to disable the test case we use parameter enable = false to the @Test Annotation

@Test(enable=false)

**How to skip @Test method from execution in testNG?**

**Answer:** By using skipException()

**What are way different way to produce reports for testng?**

**Answer:** Listeners implement the interface org.tesng.ITListener and org.tesng.IReporter when a test start passes, fails etc

**What are uses of @listerner in testng?**

Answer: TestNG listeners are used to configure reports and logging, one of the most listener interfaces are used in testNG is ITestListener interface, it has methods like OnTestStart, OnTestSuccess, OnTestFailur, For an example suppose we have 100 or more test cases to run same time we don’t know where failure will be occur, sometimes it is very unpredictable. In that case listener will catch that failure and it will make a HTML report.

**How to run test cases from desktop to Jenkins**

**Answer:** In Jenkins by clicking create new jobs define project name. Then select on maven project and click on OK, Then general window form will be appeared and scroll down in build section we need to provide application directory if test cases run from local machine or Git repository, Jenkins needs to know where POM directory in Root POM. Also, we need to provide Goals and option by using clean install command. When Jenkins will trigger that command will clean and run test cases. For testng report we need to install testng plugin. We have to supply testng default \*\*/testng-result.xml. To execute test cases by clicking trigger build now, then one by one test case will be executed and generate testng report.

**How to integrated Jenkins with github**

In Jenkins by clicking create new jobs define project name. Then select on maven project and click on OK, Then general window form will be appeared and scroll down in build section we need to provide application directory if test cases run from Git repository, Jenkins needs to know what is the repository URL. Also, we need to provide Goals and option by using clean install command. When Jenkins will trigger that command will clean and run test cases. For testng report we need to install testng plugin. We have to supply testng default \*\*/testng-result.xml. To execute test cases by clicking trigger build now, then one by one test case will be executed and generate testng report.

**How to set-up schedule job in Jenkins?**

In build triggers section we need to select build periodically then we can specify when test cases would be executed based on setting period.

**What is the array and difference between one dimensional array and two dimensional arrays?**

Array is a container that stores the collection of data elements of same data type. So that the position of each element can be computed from its index

An array which uses only row or column is called one dimensional array.

An array which uses multiple rows and column is called multi dimensional array.

**Can you write down two dimensional array pseudo codes?**

//creating two matrices

int a[][]={{1,3,4},{3,4,5}};

int b[][]={{1,3,4},{3,4,5}};

//creating another matrix to store the sum of two matrices

int c[][]=new int[2][3];

//adding, substation and multiply of 2 metrics using loop.

for(int i=0;i<2;i++){

for(int j=0;j<3;j++){

c[i][j]=a[i][j]+b[i][j];

System.out.print(c[i][j]+" ");

}

**How to handle unknown Exception?**

Whenever developer do not known what type of exception is going to be raised in the try block is known as **unknown Exception**. Java supports three mechanisms to handle unknown Exception.

Using Exception class

Using printStackTrace()

Using getMessage()

**Try**

**{**

**.....**

**.....**

**}**

**Catch (Exception e)**

**{**

**e.printStackTrace()/**getMessage()

}

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**What is database testing?**

Answer: Database testing is one of the major testing which requires tester to expertise in checking tables and writing queries. Testing can be performed in web application or desktop and database can be used in the application like SQL or Oracle.

Database testing basically include the following:

Data validity testing.

Data Integrity testing

Performance related to data base.

Testing of Procedure, triggers and functions.

**What is the database trigger, how to verify the trigger is fired or not and can you invoke trigger on demand?**

**Answer: Triggers are special kind of stored procedures that get executed automatically when an INSERT, UPDATE or DELETE operation takes place on a table.**

**They get triggered only when an associated action (INSERT, UPDATE, DELETE) happens on the table on which they are defined.**

**Triggers can't be invoked on demand.**

**After entering the data from the front-end application interface, how do you test whether a database is updated or not?**

**Answer: It depends upon the application interface.**

**1) If your application provides view functionality for the entered data, then you can verify that from front end only. This way Black- box test engineers verify the functionality most of the times.**

**2) If your application has only data entry from front end and there is no view from the front end, then you have to go to Database and run relevant SQL query.**

**3) You can also use database checkpoint function in QTP.**

**What are joins and mention different types of joins??**

**Answer:** A JOIN clause is used to combine rows from two or more tables, based on a related column between them.

**(INNER) JOIN**: Returns a records that have matching values in both tables🡪 SELECT column\_name(s)  
FROM table1  
INNER JOIN table2 ON table1.column\_name = table2.column\_name;

**LEFT (OUTER) JOIN**: Return all records from the left table, and the matched records from the right table🡪 SELECT column\_name(s)  
FROM table1  
LEFT JOIN table2 ON table1.column\_name = table2.column\_name;

**RIGHT (OUTER) JOIN**: Return all records from the right table, and the matched records from the left table🡪 SELECT column\_name(s)  
FROM table1  
RIGHT JOIN table2 ON table1.column\_name = table2.column\_name;

**FULL (OUTER) JOIN**: Return all records when there is a match in either left or right table🡪 SELECT column\_name(s)  
FROM table1  
FULL OUTER JOIN table2 ON table1.column\_name = table2.column\_name;

**What do you mean by DML?**

**Answer:  DML (Data Manipulation Language):** These statements are used to manipulate the data in records. Commonly used DML statements are Insert, Update, and Delete.

**Answer: DDL (Data Definition Language):** It is used to define the database structure such as tables. It includes three statements such as Create, Alter, and Drop.

**How to write a query to get the second largest value from a given column of a table?**

**Answer:** select max(sal) from emp\_table where sal < (select max(sal) from emp\_table)

**How to write a query to get 10thhighest salary from an employee table?**

**Answer**: We can find the max salary for each department by grouping all records by DepartmentId and then using MAX() function to calculate max salary in each department.

SELECT DepartmentID, MAX(Salary)

FROM Employee

GROUP BY DepartmentID

**How many Aggregate Functions are available there in SQL?**

**Answer:** Aggregate Functions calculates values from multiple columns in a table and returns a single value.

There are 7 aggregate functions we use in SQL

**AVG():** Returns the average value from specified columns

**COUNT():** Returns number of table rows

**MAX():** Returns largest value among the records

**MIN():** Returns smallest value among the records

**SUM():** Returns the sum of specified column values

**FIRST():** Returns the first value

**LAST():** Returns Last value

**What are different Clauses used in SQL?**

**Answer: +**

**WHERE Clause: This clause is used to define the condition**

**Syntax: SELECT column\_name(s)**

**FROM table\_name**

**WHERE condition;**

**GROUP BY Clause: It is used with SELECT statement to group the result of the executed query using the value specified in it.**

**Syntax: SELECT column\_name(s)**

**FROM table\_name**

**GROUP BY column\_name;**

**HAVING clause: This clause is used in association with GROUP BY clause.**

**Syntax: SELECT column\_name(s)**

**FROM table\_name**

**GROUP BY column\_name**

**HAVING condition;**

**ORDER BY clause: This clause is to define the order of the query output either in ascending (ASC) or in descending (DESC) order.**

**Syntax: SELECT column\_name(s)**

**FROM table\_name**

**WHERE condition**

**ORDER BY column\_name ASC|DESC;**

**USING clause: USING clause comes in use while working with SQL Joins.**

**Syntax: SELECT column\_name(s)**

**FROM table\_name**

**JOIN table\_name**

**USING (column\_name);**

***What are 5 major constraints are used in SQL, such as?***

***Answer:***

**NOT NULL: That indicates that the column must have some value and cannot be null**

**UNIQUE: This constraint is used to ensure that each row and column has unique value**

**PRIMARY KEY: This** constraint uniquely identifies each record in a database table. A **Primary key** must contain UNIQUE values, and cannot contain NULL values. A table can have only one **primary key**

**FOREIGN KEY: It is used to ensure the referential integrity of data in the table**

**CHECK: It is used to ensure whether the value in columns fulfills the specified condition**

**What are triggers**?

Answer: Triggers in SQL is kind of stored procedures used to create a response to a specific action performed on the table such as Insert, Update or Delete. You can invoke triggers explicitly on the table in the database.

Action and Event are two main components of SQL triggers when certain actions are performed the event occurs in response to that action.

***Syntax:***CREATE TRIGGER name {BEFORE|AFTER} (event [OR..]}  
ON table\_name [FOR [EACH] {ROW|STATEMENT}]  
EXECUTE PROCEDURE functionname {arguments}

**How we can update the view?**

**Answer:** CREATE OR REPLACE VIEW view\_name AS  
SELECT column\_name(s)  
FROM table\_name  
WHERE condition

**Explain the working of SQL Privileges?**

**Answer:** SQL GRANT and REVOKE commands are used to implement privileges in SQL multiple user environments.  The administrator of the database can grant or revoke privileges to or from users of database object like SELECT, INSERT, UPDATE, DELETE, ALL etc.

**What is SQL Injection?**

**Answer:** SQL Injection is a type of database attack technique that might destroy your database

**SQL injection** is one of the most common web hacking techniques.

***For Example:*** SELECT column\_name(s) FROM table\_name WHERE condition;

**What do you mean by Subquery?**

**Answer:** Query within another query is called as Subquery. A subquery is called inner query which returns output that is to be used by another query.

Select emp\_name, from emp where salary>(select salary from emp where emp\_name=’Al’)

**What is the difference between DELETE and TRUNCATE?**

* **Answer:** The basic difference in both is DELETE is DML command and TRUNCATE is DDL
* DELETE is used to delete a specific row from the table whereas TRUNCATE is used to remove all rows from the table
* We can use DELETE with WHERE clause but cannot use TRUNCATE with it

**What is the difference between DROP and TRUNCATE?**

**Answer:** TRUNCATE removes all rows from the table which cannot be retrieved back, DROP removes the entire table from the database and it cannot be retrieved back.

**What is Relationship? How many types of Relationship are there in SQL?**

**Answer:** The relationship can be defined as the connection between more than one tables in the database.

**There are 4 types of relationships**

* One to One Relationship
* Many to One Relationship
* Many to Many Relationship
* One to Many Relationship

**What is Database White Box Testing?**

**Answer: Database White Box Testing involves**

* Database Consistency and ACID properties
* Database triggers and logical views
* Decision Coverage, Condition Coverage, and Statement Coverage
* Database Tables, Data Model, and Database Schema
* Referential integrity rules

**What is Database Black Box Testing?**

**Answer: Database Black Box Testing involves**

* Data Mapping
* Data stored and retrieved
* Use of Black Box techniques such as Equivalence Partitioning and Boundary Value Analysis (BVA)

**What does SQL stand for?**

**Answer:** SQL stands for [Structured Query Language](http://en.wikipedia.org/wiki/SQL).

**Write a SQL SELECT query that only returns each name only once from a table?**

**Answer:** To get the each name only once, we need to use the DISTINCT keyword.

SELECT DISTINCT name FROM table\_name;

**Suppose a Student column has two columns, Name and Marks. How to get name and marks of top three students.**

**Answer:** SELECT Name, Marks FROM Student s1 where 3 <= (SELECT COUNT(\*) FROM Students s2 WHERE s1.marks = s2.marks)

**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.

**What is schema?**

**Answer:** A schema is a collection of database objects for a User.

**What is Table?**

**Answer:** A table is the basic unit of data storage in the database management system. Table data is stored in rows and columns.

**What is the difference between Having clause and Where clause?**

**Answer:** Both specify a search condition but Having clause is used only with the SELECT statement and typically used with GROUP BY clause.  
If GROUP BY clause is not used then Having behaves like WHERE clause only

**Answer:** Both specify a search condition but Having clause is used only with the SELECT statement and typically used with GROUP BY clause.  
If GROUP BY clause is not used then Having behaves like WHERE clause only.

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**List out the pre-requisite to use APPIUM?**

Pre-requisite to use APPIUM is

ANDROID SDK

JDK

TestNG

Eclipse

Selenium Server JAR

Webdriver Language Binding Library

APPIUM for Windows

APK App Info On Google Play

Js

**Explain how to find DOM element or xPath in a mobile application?**

To find the DOM element use "UIAutomateviewer" to find DOM element for Android application.

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**What does a feature file contain?**

A feature file in cucumber specifies parameters and conditions for executing the test code. It can combine any of the following.

**1-** A feature.  
**2-** A user scenario.  
**3-** The scenario outline.  
**4-** A <Given> clause.  
**5-** A <When> clause.  
**6-** A <Then> clause.

**What are the advantages of Cucumber?**

Cucumber acceptance tests are written from user’s perspective

Team Collaboration (Product owners, business analysts, developers, testers are all involved in writing scenarios)

Code reusability

Tests are written in plain-text English so people with less technical skills can also write scenarios

**What are the two files required to run a cucumber test?**

Feature file

Step Definition file

**What is the two main purpose of using Gherkin?**

Documentation

Automated tests

**What are the keywords used in Feature file?**

Feature

Background

Scenario

Scenario Outline

Given

When

Then

And

But

**Explain Scenario Outline in feature file**

Scenario Outline keyword in feature file is used to execute scenarios multiple times using a different set of test data. Multiple sets of test data are provided

**Explain Cucumber Tags**

Cucumber tags are used to organize scenarios in your feature file. You can have as many tags as you like before a scenario or feature. @ is used to represent tags. Example: @regression, @sprint5, @EndtoEnd

Tags are used to

Group scenarios

Ignore scenarios from execution

Logically group (OR & AND)

**Name any two testing framework that can be integrated with Cucumber?**

JUnit

TestNG

**Name any two build management tools that can be integrated with Cucumber?**

Gradle

Maven

**What software do you need to run cucumber in JAVA?**

Eclipse or IntelliJ IDE

Gradle or Maven build tool

Junit or TestNG testing framework

Cucumber

Selenium (To automate browser)

**Name any advanced framework design that can be used with Cucumber?**

Page Object Model

Log4j

**Explain Cucumber Hooks**

Cucumber Hooks are blocks of code that can be used to run before and after the scenarios using @before and @after methods. It helps us eliminates the redundant code steps that we write for every scenario and also manages our code workflow.

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**What are the non-functional testing have you tested during testing.**

**Load testing**: It is a test to check the user’s response time of number of users using single modules of the same application at the same time.

**Stress testing**: In this type of testing the application is tested against heavy load such as complex numerical values, large number of inputs, large number of queries etc. which checks for the stress/load of the applications

**Performance testing**: It is a test to check the user’s response time of number of users using multiple of the same application at the same time.

**How to handle Iframe in selenium?**

Switch to iframe by name,index and id

driver.switchTo.iframe("frame1")

To get back to the parent frame

driver.switchTo().parentFrame();

To get back to the first/main frame, use:

driver.switchTo().defaultContent();