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## Cyient Software Engineer Interview Questions

### Q1.  What are basics of OOPS Concepts?

**OOP concepts in Java** are the main ideas behind Java's Object-Oriented Programming. They are an abstraction, encapsulation, inheritance, and polymorphism.

There are four main OOP concepts in Java. They are:

- **Abstraction:** It involves utilizing simple things to represent complexity. In Java, abstraction means simple things like objects, classes, and variables that represent more complex underlying code and data.
- **Encapsulation:** The practice of keeping fields within a class private, then providing access to them via public methods.
- **Polymorphism:** This Java OOP notion lets programmers utilize the very term to indicate different items in diverse contexts.
- **Inheritance:** This is a special characteristic of Object-Oriented Programming in Java. It allows programmers to create distinct groups that share many of the properties of existing groups.

### Q2.  Write SQL query to join two tables?

A JOIN condition is applied to join rows from two or added tables, founded on a similar column connecting them.

The various kinds of the JOINs in SQL:

- **LEFT (OUTER) JOIN:** Returns every record from the left chart, and the harmonized reports from the right record.
- **(INNER) JOIN:** Returns reports which have harmonizing values in both charts.
- **RIGHT (OUTER) JOIN:** Returns every record from the right record, and the harmonized reports from the left chart.
- **FULL (OUTER) JOIN:** Returns every record while there is in harmony with each left or right record.

The general query to join is as below for the list of the orders with all customer information in it.

```
SELECT OrderNumber, TotalAmount, FirstName, LastName, City, Country
  FROM Order JOIN Customer
    ON Order.CustomerId = Customer.Id
```

### Q3.  What is Abstract class and interface?

**Abstract Class:** An abstract class is a class that is declared abstract, it may or may not include abstract methods. When an abstract class is subclassed, the subclass usually provides implementations for all of the abstract methods in its parent class. However, if it does not, then the subclass must also be declared abstract.

**Interface:** An interface is a reference type in Java. It is similar to a class. It is a collection of abstract methods. A class implements an interface, thereby inheriting the abstract methods of the interface. Along with abstract methods, an interface may also contain constants, default methods, static methods, and nested types.

## Q4. What is Exception handling?

**Exception Handling** is one of the powerful mechanisms to handle runtime errors so that the normal flow of the application can be maintained.

## Q5. Do you have knowledge of GIT?

**Yes**, Git is a kind of Version Control System (VCS) that presents it simpler to trace modifications to files. For instance, when we change a file, git may help us discover exactly everything altered, who edited it, and why.

## Q6. List different types of inheritance supported by Java?

The various kinds of inheritance that is backed by Java.

- **Single Inheritance:** Single Inheritance is the easy inheritance of all, while a group lengthens another group (Simply one class) then one calls it as Single inheritance.
- **Hierarchical Inheritance:** In Hierarchical inheritance, one mother group will be received by multiple subclasses.
- **Multilevel Inheritance:** In Multilevel Inheritance, a derived group will be inheriting a mother group and as also as the derived group performance as the mother group to other groups.
- **Hybrid Inheritance (Through Interface):** Hybrid Inheritance is the mixture of both Multiple and Single Inheritance.

## Q7. What are collections in Java?

**Collections in Java** are a group of individual objects represented as a single unit. Java presents Collection Framework which describes several groups and interfaces to express a collection of things as a particular unit. Using collections you can achieve all the operations that you perform on data such as searching, sorting, insertion, manipulation, and deletion.

## Q8. [Tell me some difference between java and c?](#)

**Difference between java and c programming is**

**Java** is an Object-Oriented language. Java is a high-level language as the interpretation of code directs place into computer language utilizing compiler or translator. Java is an Interpreted language which as is in Java, the cryptogram is first modified into bytecode and that bytecode is later administered by the JVM (Java Virtual Machine). Java cuts down to Objects. Together with application programming and system programming cannot be used in Java.

**C** is a Procedural Programming Language. C stands as a middle-level language as the binding of the clefts takes place betwixt high-level languages and device-level language. C is a codified language that changes the cryptogram into the automaton language so that it may be followed by the tool or arrangement. C usually breaks down to uses. C programming language may be utilized for system programming as thoroughly as Application programming.

## Q9. [What is hashmap and hashtable?](#)

**HashMap** is not synchronized. It is not-thread protected and cannot be distributed between multiple strings without fitting synchronization cryptogram whereas the Hash table is synchronized. It is thread-safe and may be distributed with multiple threads. Also, HashMap permits one null pointer and added null states whereas the Hash table does not support any null pointer or value.

**Hash table** and HashMap reserve key or rate sets in a hash table. While utilizing a HashMap or Hash table we designate an item that is utilized as a solution and the rate that we want to connect to that solution. The answer is next hashed, and the delivering hash code is utilized as the ratio at which the state is collected inside the table.

## Q10. [What is outer join?](#)

An outer join is applied to deliver results by connecting lines from two or added tables. But dissimilar to an internal join, the outer join will deliver every line from one detailed table, also if the join state fails. When making an inner join, lines from each record that are unequaled in the different tables are not delivered. In an outer join, unequaled lines in one or either table may be delivered.

There are several kinds of outer joins:

- RIGHT JOIN delivers only unequaled lines from the right record.
- LEFT JOIN delivers only unequaled lines from the left record.
- FULL OUTER JOIN delivers unequaled lines from both tables.

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