1. **What is Java?**

Ans:- Java is programming Language and a platform. Java is a high level, robust, object-oriented and secure programming language.

1. **What is class in Java?**

Ans:- Class is a user defined prototype from which objects are created.

1. **How to achieve multiple inheritance in java?**

Ans:- We can achieve multiple inheritance **through the concept of interface.**

An interface is like a class that has variables and methods, however, unlike a class, the methods in an interface are abstract by default.

1. **Wrapper Class in Java?**

Ans:- Wrapper classes are **used to wrap primitive data types such as int, char, etc.** **into objects**.

This is useful when working with collections, where only objects can be stored, not primitive data types.

1. **Marker Interface?**

Ans:- An [interface](https://www.javatpoint.com/interface-in-java) that does not contain methods, fields, and constants is known as **marker interface**.

In other words, an empty interface is known as **marker interface** or **tag interface.**

1. **Difference between class and Interface?**

Ans:- Class can have both methods abstract and Concrete but Interface have only Abstract methods.

Interfaces have only static and final variable but class can have both non-static and non-final variables also.

1. **Composition in Java?**

Ans:- **The Composition** is a way to design or implement the **"has-a"** relationship. Composition and Inheritance both are design techniques. The Inheritance is used to implement the **"is-a"** relationship. The **"has-a"** relationship is used to ensure the code reusability in our program.

1. **What is ArrayList?**

Ans:- Java **ArrayList** class uses a dynamic [*array*](https://www.javatpoint.com/array-in-java) for storing the elements. It is like an array, but there is no size limit. We can add or remove elements anytime

1. **What is Collection?**

Ans:- The **Collection in Java** is a framework that provides an architecture to store and manipulate the group of objects.

Java Collections can achieve all the operations that you perform on a data such as searching, sorting, insertion, manipulation, and deletion.   
Java Collection means a single unit of objects. Java Collection framework provides many interfaces (Set, List, Queue, Deque) and classes ([ArrayList](https://www.javatpoint.com/java-arraylist), Vector, [LinkedList](https://www.javatpoint.com/java-linkedlist), [PriorityQueue](https://www.javatpoint.com/java-priorityqueue), HashSet, LinkedHashSet, TreeSet).

1. **When we use Collection?**

Ans:- Collections are used **to store, retrieve, manipulate, and communicate aggregate data**.

1. **Types of Collections?**

Ans:- **These types include:**

* Array.
* ArrayList.
* List<T>
* Queue.
* ConcurrentQueue<T>
* Stack.
* ConcurrentStack<T>
* LinkedList<T>

1. **What is method of object class?**

Ans:-

* tostring() method.
* hashCode() method.
* equals(Object obj) method.
* finalize() method.
* getClass() method.
* clone() method.
* wait(), notify() notifyAll() methods.

1. **Can we overload or Override, static methods in java?**

Ans:- **Static methods can be overloaded but not overridden**. They can have different parameters while having the same name in the same class or subclass. They cannot be overridden because they act on the class itself, not an object.

1. **What is static Overload?**

Ans:- Yes. we can overload static methods in java like non-static methods by changing the signature of the method.

1. **What is Constructor Overloading?**

Ans:- Constructor overloading means **having more than one constructor with the same name**. Constructors are methods invoked when an object is created.

1. **What is global variable? And its scope?**

Ans:- Global variable is **a variable with global scope, meaning that it is visible (hence accessible) throughout the program.**

Global variables are the variables whose scope is **the entire program.**

There are four scopes for variables in Java: **local, instance, class, and method parameters**.

1. **What is Singleton Class?**

Ans:- A singleton class in Java **ensures only one instance of itself exists**.

To make one, create a class with a private static instance variable and a private constructor. Then, provide a public static method to access the instance. This method checks if the instance exists; if not, it creates one.

1. **Why we use Lambda function in java?**

Ans:- The Lambda expression is used to provide the implementation of an interface which has functional interface.

It saves a lot of code.

**It helps to iterate, filter and extract data from collection**.

In case of lambda expression, we don't need to define the method again for providing the implementation.

1. **What are the features of Java 8, I used? And Major features?**

Ans:- **Some of the important Java 8 features are;**

* forEach() method in Iterable interface.
* default and static methods in Interfaces.
* Functional Interfaces and Lambda Expressions.
* Java Stream API for Bulk Data Operations on Collections.
* Java Time API.
* Collection API improvements.
* Concurrency API improvements.
* Java IO improvements.

1. **What is parent class of all the classes in java—Object Class?**

Ans:- **Object class** is the parent class in Java. All classes in Java directly or indirectly inherit the Object class.

1. **What is Heap Memory? How to use it?**

Ans:- Java heap memory is **a vital component of the Java Virtual Machine (JVM) responsible for dynamically allocating and managing objects during program execution**.

It acts as a runtime data area where objects are stored and accessed by the Java application.

1. **How many memory type—Stack and Heap?**

Ans:- Stack memory is the physical space or the RAM assigned to various Java objects during the run time. It is created for static memory allocation before executing a thread.

1. **Why Java platform independent?**

Ans:- it's **because of the JVM**. The byte code generated by source code compilation would run in any operating system, but the JVM present in a machine differs for each operating system. And this is how java is considered a platform-independent programming language.

1. **All design patterns in Java?**

Ans:- Every design pattern has **some specification or set of rules** for solving the problems.

 They are reusable in multiple projects.

 They provide the solutions that help to define the system architecture.

 They capture the software engineering experiences.

 They provide transparency to the design of an application.

1.Creational Design Pattern

2. Structural Design Pattern

3. Behavioral Design Pattern

1. **What is Final Keyword? Will it change?**

Ans:- The **final keyword** in java is used to restrict the user.

final method is inherited but we cannot override it.

If you make any variable as final, we cannot change the value of final variable(It will be constant).

If you make any method as final, we cannot override it.

If you make any class as final, we cannot extend it.

1. **What is Static Keyword?**

Ans:- It is used for memory management mainly. We can apply static keyword with [variables](https://www.javatpoint.com/java-variables), methods, blocks and [nested classes](https://www.javatpoint.com/java-inner-class). The static keyword belongs to the class than an instance of the class.

* A static method belongs to the class rather than the object of a class.
* A static method can be invoked without the need for creating an instance of a class.
* A static method can access static data member and can change the value of it.

1. **Finally Block in java?**

Ans:- **Java finally block** is a block used to execute important code such as closing the connection, etc.

Java finally block is always executed whether an exception is handled or not. Therefore, it contains all the necessary statements that need to be printed regardless of the exception occurs or not.

1. **Difference between Instance Variable vs Local Variable?**

Ans:- An instance variable is a variable that is specific to a certain object. It is declared within the curly braces of the class but outside of any method.

Local Variable- A variable declared inside the body of the method is called local variable.

1. **What is OOPs?**

Ans:- Object-Oriented Programming is a methodology to design a program using classes and objects.

1. **What is Exception Handling?**

Ans:- In Java, exceptions represent the abnormal condition that occurs during the execution of a program.

1. Advantances of Exception Handling?
2. How Many ways to reverse a string in java?
3. What is Dynamic Method Dispatch?
4. What is Funtional Interface?
5. Difference between ArrayList and LinkedList?
6. Difference between ArrayList and Set?
7. Difference between ArrayList and Array?
8. Difference between ArrayList and Vector?
9. Most efficient way of Pallindrome?
10. What is Data Encapsulation?