Core Java Interview Questions and Answers

1.What is java?

- **Java is a simple and most widely used programing language.**
- **Java is fast,reliable and secure**

2.Why are we go for java?

- **Freeware and opensource**
- **It is platform independent i.e program written in one operating system is capable of running in all other operating systems due to bytecode concept.**
- **It runs multiple application at a time.**

3.What are the main features of java?

***Java has more features,**

- **Platform independent**
- **Open source**
- **Multithreading**
- **More secure**
- **Portable**

4.What is platform independent?

- **During the compilation the java program is converted into byte code(not machine specific).**
- **Bytecode can be runned by jvm of any platform.**
- **So code developed in one platform is capable of running in all other platform.**

5.What is mean by Open Source?

- **A program in which source code is available to the general public for use and/or modification**
  from its original design at free of cost is called open source.

6.What are IDE/tools availabe in market for java?

- **Notepad**
- **Netbeans**
- **Eclipse**
- **JDeveloper(oracle)**
- **RAD(IBM)**

7.What are difference between JDK,JVM,JRE?

JDK:

- **Java Development Kit.**
- **If we want to create any applications in java JDK have to be installed in our system.**
- **JDK versions: 1.0 to 1.14.**

JRE:

- **Java Runtime Environment.**
- **It is a pre-defined class files (i.e.) library files.**

JVM:

- **Java Virtual Machine.**
- **It is mainly used to allocate the memory and compiling.**

8.What is mean by oops?

- **OOPS is Object Oriented Programming Structure.**
- **OOPS is a method of implementation in which programs are organised as collection of objects, class and methods.**

9.What are the coding Standard used in java?

- **Pascal notation: Every word's first letter ,must be a capital letter**
- **Example:GreensTechnology**
- **Camel notation: First word's first letter should be a small letter, all the other suceeding word's first letter should be a capital letter.**
- **Example:greensTechnology**

10.What is mean by class,method,object?

Class:

- **Class is a collection of objects and methods**
- **Class contains attributes(variables and methods) that are common to all the objects created in a class.**

Method:

- **Method defines the set of action to be performed.**

Object:

- **Object is the run time memory allocation.**
- **Using object we call any methods.**

11.What is mean by Encapsulation?

- **It is the structure of creating folders.**
- **It wraps the data and code acting on data together in to a single unit.**
- **Example of encapsulation is POJO class.**
- **It is otherwise called Data hiding.**

12.What are the datatypes used in java?

- **byte**
- **short**
- **int**
- **long**
- **float**
- **double**
- **boolean**
- **char**
- **String**

13.What is byte size and range of int datatypes?

- **Size of byte is 1 byte (8 bit)**
- **Range formula =[-2^(n-1)] to [(2^(n-1))-1] for int n=32**

14.What is mean by Wrapper class?

- **Classes of data types is called wrapper class.**
- **It is used to convert any data type into an object.**
- **All classes and wrapper classes default value is null.**

15.What is the main use of Scanner class?

- **To get the inputs from the user at the run time.**

16.What are the methods available in Scanner Class?

- **nextByte();**
- **nextShort();**
- **nextInt();**
- **nextLong();**
- **nextFloat();**
- **nextDouble();**
- **next().charAt(0);**
- **next();**

- **nextLine();**
- **nextBoolean();**

17.What is mean by inheritance?

- **Accessing one class Properties in another class without multiple object creation.**
- **It avoids time and memory wastage.**
- **It ensures code reusability**

18.What are the ways to access the methods /data from another class?

- **We can access the another class methods either by creating object or using extends keyword.**

19.What is mean by polymorphism?

- **Poly-many.**
- **Morphism-forms.**
- **Taking more than one forms is called polymorphism or one task implemented in many ways.**

20.What are the difference between method overloading and overriding?

Method overloading(static binding/compile time polymorphism):

When we have multiple methods with same method name but differs only based on its datatype,datatype count and order.

- **Class-name**
- **Method-same**
- **Argument-differ based on datatype,order,number**

Method overriding(dynamic binding/run time polymorphism):

When you are not satisfied with the logic of your super class method,you can create the same method(with exact same method name) in your sub-class and you can write your required business logic.When you create object for sub-class,sub class method only will get executed.so here child class method overriding parent class method.

- **Class name-differ(using extends)**
- **Method-same**
- **Argument-same**

21.What are the types of inheritance?

- **Single Inheritance**

- **Multilevel Inheritance**
- **Multiple Inheritance**
- **Hybrid Inheritance**
- **Hierarchical Inheritance**

22.Why multiple inheritance is not supported in java?

- **Compilation error/syntax error-After extends keyword we can mention only one classname(, not allowed)**
- **Priority problem-When multiple parent classes has methods with same name and arguments,compiler will not know which method should be called.**

23.What are the difference between Multiple and Multilevel inheritance?

Multiple inheritance:

- **More than one parent class directly supporting into same child class.**
- **Multiple inheritance not supported in java due to Compilation problem and priority problem**
- **We have achieve multiple inheritance in java through interface.**

Multilevel inheritance:

- **More than one parent class supporting into one child class in tree level structure.**
- **It is supported in java**

24.What is mean by access specifier?

- **It defines the scope or level of access for variables,methods and classes**

25.What are the difference between public and protected?

Public:

- **It is global level access(same package + different package).**

Protected:

- **can access Inside package (object creation + extends)**

26.What is mean by Abstraction?

- **Hiding the implementation part or business logic is called abstraction.**

27.What are the types of Abstraction?

- **Partially abstraction(using abstract class).**
- **Fully abstraction(using interface).**

28.Can we create Object for Abstract class?

- **No, we cant create object for abstract class.**

29.What is mean by Interface?

- **It will support only abstract method(without business logic), won't support non abstract method(method with business logic)**
- **In interface "public abstract" is default.**
- **using "implements" keyword we can implement the interface in a class where we can write the business logic for all unimplemented methods.**

30.What are the difference between Abstract and Interface?

Abstract class:

- **Using Abstract class,we can acheive partial abstraction.**
- **It support both abstract method and non-abstract method.**
- **using "extends" keyword you can inherit an abstract class.**
- **For any abstract method we need to mention "public abstract".**

Interface:

- **Using interface,we can acheive full abstraction.**
- **It supports only abstract method.**
- **It is using "implements" keyword.**
- **"public Abstract" is default, no need to mention it explicitly.**

31.What is mean by String?

- **Collection of characters or words enclosed within double quotes is called as String.**
- **String is a class in java**
- **String is index based**
- **Example : "greenstechnology".**

32.What are the method available in string?

- **equals();**
- **equalsignorecase();**
- **contains();**
- **split();**

- **toUpperCase();**
- **toLowerCase();**
- **subString();**
- **isEmpty();**
- **identifyHashCode();**
- **startsWith();**
- **endsWith();**
- **CompareTo();**
- **charAt();**
- **indexOf();**
- **lastIndexOf();**
- **replace();**

33.What is mean by constructor?

- **Constructor is a special method which is called by default when object is created for that particular class.(implicit call)**
- **Class name and constructor name must be same.**
- **It doesn't have any return type.**
- **It supports method overloading but won't support method overriding.**
- **purpose of constructor:It is used to initialise the values to variables.**

34.Explain the types of constructor?

- **Parameterized constructor**
- **Non parameterized constructor**

35.Do constructors have any return type?

- **No,constructor can't have any return type.**

36.Write a syntax for creating constructor?

- **Access specifier classname(){**
- **}**

37.What are the rules for defining a constructor?

- **Class name and constructor name must be same.**
- **It should not have any return type.**

38.Why a return type is not allowed for constructor?

- **constructor is not directly called by your code, its called by memory allocation and object initialisation in the run time.**
- **Its return value is opaque to the user so we cant mention it.**

39.Can we declare constructor as 'private'?

- **Yes,we can declare constructor as private.**

40.Why a compiler given constructor is called as default constructor?

- **If we didnt create a constructor explictly it will take the default constructor.**

41.What is constructor chaining and how can it be achieved in Java?

- **The process of calling one constructor from another constructor with respect to current object is called constructor chaining.**
- **By using this() and super() methods we can achieve constructor chaining.**

42.What are the difference between this() and super()?

- **this() is used to call class level constructor.**
- **super() is used to call the parent class constructor.**

43.What is the super class of all java?

- **Object is the super class of all classes in java.**

44.What are the types of variable?

- **Local level variable.**
- **Global/Class level variable.**
- **Static variable.**
- **Final variable**

45.What is meant by local variable,instance variable,class/static variable?

- **Static Variable-It is shared by all the objects in the class.**
- **Local Variable-A variable declared inside a method/block.Level of access:only inside the block**
- **Class variable-A variable declared outside all methods but inside class. Level of access is only with in object**

46.What is mean by static keyword in java?

- **The static keyword is mainly used for memory management.**
- **It is used to share the same variable or method by objects of given class.**

47.Can we override static method in java?

- **No,we can't override the static method because it is part of a class rather than an object.**

48.Can we overload static method in java?

- **Yes, we can overload the static method in java.**

49.What is mean by static variable?

- **When a variable is declared as static,then a single copy of variable is created and shared among all object at class level.**
- **Static variable are essentially global variable.**
- **All the instance of the class share the same static variable.**

50.What is mean by static method?

- **When a method is declared as static,we need not create object to call the paticular method.We can call as Classname.methodname()**
- **Static method in java belong to the class(not to an object).**
- **They use no instance variables and will usually take the input from the parameters and perform action on it,then return some result.**

51.What is mean by final keyword and what's happend when we declare final as in class,method,variable?

- **Final is a non access modifier applicable to a variable, method or a class.**
- **When a variable is declared with final keyword,its value can't be modified.**
- **When a method is declared as final we can prevent method overriding.**
- **When a class is declared as final we can prevent inheritance.**

52.What is difference between final and finally keyword?

Final:

- **Final varaible can't be modified.**
- **Final method can't be overrided.**
- **Final class can't be inherited.**

Finally:

- **Code given inside finally block will always get executed whether exception occurs or not.**

53.Where local,static and class variables stores in jvm?

- **Static variables are stored in the permGen section of heap memory.**
- **Local variables are stored in stack.**
- **Class variables are stored in heap memory.**

54.What is Exception?

- **Exception is an unexpected event which when occurs in a program,your program will terminate abnormally.**
- **We can avoid this abnormal termination using exception handling mechanisms(try,catch,finally,throw,throws)**

55.Explain about types of Expection?

- **Unchecked exception(Run time exception)**
- **Checked exception(Compile time exception)**

56.What are the difference between checked expection and unchecked expection?

Unchecked exception:

- **It will occur at the Run time.**

Checked exception:

- **Checked exception will occur at the Compile time.**

57.What is the super class for Exception and Error?

- **Throwable**
- **Exception**

58.Can we have try block without catch block?

- **Yes we can have try block without catch block.But in that case finally block must be present.(There will be no syntax error)**
- **Possible but we will not able to handle the exception without catch block.**

59.Can we write multiple catch blocks under single try block?

- **Yes,we write multiple catch blocks under single try block.**

60.How to write user defined exception or custom exception in java?

- **First customised exception must come under Exception class.**
- **access_specifier method_name() throws customException {**
  throw new customException();
  }

61.What are the different ways to print exception message on console?

- **ref.printStackTrace() method is used to print the exception message in the console.**

62.What are the differences between final finally and finalize in java?

Final:

- **A final class variable whose value cannot be changed.**
- **A final method is declared in class level, they cannot be inherited.**
- **A class declared as final can't be inherited.**
- **Finally:**

- **It's a block of statement that definitely executes after the try catch block.**
- **Exception occurs or not,finally block always get executed.**
- **Finalize:**

- **It will clean up unused memory space.**

63.What are the differences between throw and throws?

Throw:

- **Throw is a keyword, using which we can throw any any exception.This keyword always given inside the method.**
- **At a time we can throw only one exception using throw keyword.**

Throws:

- **Throws is a keyword, it is used to handle the exception(given in method level).**
- **we can handle more than one exception using throws keyword.**

64.Explain Java Exception Hierarchy?

- **Exception**

Unchecked exception (Run time exception)	**Checked exception (Compile time exception)**
• **ArithmeticException**	• **IOException**
• **NullPointerException**	• **SQLException**
• **InputMismatchException**	• **FileNotFoundException**
• **ArrayIndexOutOfBoundExcepion**	• **ClassNotFoundException**
• **StringIndexOutOfBoundExcepion**	•
• **IndexOutOfBoundExcepion**	•
• **NumberFormatException**	•

65.What is mean by throw and throws?

- **Throw is a keyword,used to explicitly throw an exception**
- **Throws is a keyword, it is used to handle the exceptions(in method level).**

66.What is mean by array?

- **Storing multiple values of similar datatype in a single variable.**
- **It is index based one.**

67.What are the advantages and disadvantages of array?

Advantage:

- **In a single variable we can store multiple values.**

Disadvantages:

- **It support only similar data types.**
- **Size fixed at compile time.**
- **Memory wastage is high.**

68.Different ways to intialise array?

- **Datatype refName[]= new Datatype[size];**
- **Datatype[] refname={ value1,value2,....};**

69.Can we change the memory size of array after intialization?

- **No,we can't change the memory size of array after intialization.**

70.What is collection ?

- **It will support storage of multiple values with dissimilar data types.**
- **It is dynamic memory allocation.**
- **No memory wastage like array.**

71.What is the difference between ArrayList and Vector?

ArrayList:

- **Asynchronized**
- **It is not a thread safe**

Vector:

- **Synchronized**
- **Thread safe**

72.What is the difference between ArrayList and LinkedList?

LinkedList:

- **Insertion and deletion is a best one.**
- **Searching/retrieving is a worst.**
- **It's makes performance issue.**

ArrayList:

- **In Arraylist retrieve/searching is a best one**
- **In ArrayList deletion and insertion is a worst one because if we delete/insert one index value after all the index move to forward/backward.**
- **It makes performance issue.**

73.Difference between Collection and Collections

- **Collection-Collection is an interface under which we have list,set,queue**
- **Collections-is an utility class in which we have lots of predefined methods which we can apply over collection objects. Eg:Collections.min(),Collections.max(),Collections.sort()**

74.Describe the Collections type hierarchy ? What are the main interfaces ?

Collection:

- **List**
- **Set**
- **Map----doesnt come under collection,it is a separate interface in java**

Hierarchy:

List:

- **ArrayList**
- **LinkedList**
- **Vector**

Set:

- **Hashset**
- **LinkedHashSet**

- **Treeset**

  Map:

- **HashMap**
- **LinkedHashMap**
- **Hashtable**
- **TreeMap**
- **ConcurrentHahMap**

75.What is difference between set and List?

Set:

- **It is a value based one.**
- **It prints in random order.**
- **It won't allow duplicates.**

List:

- **It is a Index based one.**
- **It prints in insertion order.**
- **It allow duplicates.**

76.What is the difference between HashSet and TreeSet ?

HashSet:

- **It prints in random order.**

TreeSet:

- **Treeset prints in ascending order**

77.How to convert List into Set?

- **By addAll() we can convert List into set.(all the elements in list will get added to set)**

78.What is map?

- **It is key and value pair.**
- **Here key+value is one entry.**
- **Key ignore the duplicate value and value allow the duplicates.**

79.What is difference between Hash Map and Hash Table?

HashMap:

- **Key allows single null.**
- **Asynchronised(not thread safe).**

Hashtable:

- **Key and value won't allow null.**
- **Synchronised(thread safe).**

80.What is difference between set and Map?

Set:

- **It is a value based one.**
- **It print in random order.**
- **It won't allow duplicates.**

Map:

- **It is key and value pair.**
- **Here key+value is one entry.**
- **Key ignore the duplicate value and value allow the duplicates.**

81.Can we iterator the list using normal for loop?

- **Yes,we can iterate the list using both normal and enhanced for loop.**

82.What are the methods available in list But not in set?

- **indexOf();**
- **get();**
- **lastIndexOf();**

83.Explain about user defined Map?

- **It is key and value pair.**
- **Here key+value is one entry.**
- **Key ignore the duplicate value and value allow the duplicates.**

84.How much null allows in below maps:

- **HashMap :k?,v?**
- **LinkedHashMap:k?,v?**
- **TreeMap :k?,v?**
- **HashTable :k?,v?**
- **HashMap :k-1 null,v- n null**
- **LinkedHashMap:k-1 null,v- n null**
- **TreeMap :k-ignore null,v- allow null**
- **HashTable :k-ignore null,v- ignore null**

85.How to Iterate Map?

- **We can iterate the map by using entrySet() method.**
- **86.What is the return type of entrySet?**

- **Set<Entry<key,value>>**

87.Write the methods to get the key only and value only?

- **For key only keySet() method is used.**
- **For value only values() method is used.**

88.What is mean by File? In which package it is available?

- **File is a class and it is used to achieve the file operation.**
- **It is available in java.io package.**

89.What are the methods available in File ?

- **mkdir();**
- **mkdirs();**
- **list();**
- **createNewFile();**
- **isDirectory();**
- **isFile();**
- **isHidden();**

90.While creating a file if we not mention the format then under which format it will save the file?

- **If we do not mention the file format it will automatically take format as file.**

91.What are the difference between append and updating the file?

For updating the file:

- **It will replace the old contents of the file.**

For appending the file:

- **It will add the contents at the end of the file.**

92.What is mean by Enumerator,Iteratorand List Iterator?

Enumeration:

- **It is an interface used to iterate only legacy class or interface.**
- **Only iterates in forward direction**

Iterator:

- **It is an interface used to iterate the collection objects**
- **Only iterates in forward direction**

List Iterator:

- **It is an interface used for iterating list type classes**

- **iterates in forward as well as backward direction**

93.Difference between Enumurator,Iterator and List Iterator?

Enumerator:

- **applicable only for legacy class and interface**
- **no remove method is available.**
- **no Backward direction is possible**

Iterator:

- **It is an Interface used to iterate the collection objects**
- **remove method is available.**
- **no Backward direction is possible.**

ListIterator:

- **It is an interface used for iterating list type classes**
- **remove method is available.**
- **Backward direction is possible.**

94.What are the methods available in Enumerator,Iteratorand List Iterator?

Enumerator Methods:

- **hasMoreElements();**
- **nextElement();**

Iterator Methods:

- **hasNext();**
- **next();**
- **remove();**

ListIterator Methods:

- **hasNext();**
- **next();**
- **remove();**
- **hasPrevious();**
- **previous();**

95.Explain JDBC connection steps?

- **Import JDBC packages.**
- **Load and register the JDBC driver.**

- **Open a connection to the database.**
- **Create a statement object to perform a query.**
- **Execute the statement object and return a query resultset.**
- **Process the resultset.**
- **Close the resultset and statement objects.**
- **Close the connection.**

96.What are control statement?

- **Statement which has control over the loop or program is called control statements.**
- **Example:if,if else,for,while,dowhile etc**

97.Different control statements available in java

Break:

- **It is used to terminate the loop**

Continue:

- **It is used to skip the current iteration.**

while and do while

While:

- **It is entry check loop.**

Do While:

- **It is a exit check loop.**

if and if else

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if

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- **executes only when the condition becomes true.**

if else

- **executes the else part when the condition becomes false and executes if part when condition becomes true.**

98.Difference between immutable and mutable string

immutable and mutable string

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Immutable string:

- **Once created,we cant change the value in memory**
- **In concatenation, it will create new memory**

mutable string:

- **After creation,we can modify the value in reference(memory)**
- **In concetanation, its takes same memory**

99.Difference between Remove all() and Retain all

Remove all() and Retain all

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removeAll():

- **removeAll() is a method , it is used to compare the 2 lists and remove all the common values**

retainAll():

- **retainAll() is a method, it is used to compare both lists and retains only the common values**

100.Difference between Literal String and Non literal string

Literal String and Non literal string

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Literal String:

- **In case of String duplicates,it will share the same memory address**
- **Its stored inside the heap memory(string pool or string constant).**
- **It share the memory if same value (duplicate value)**

Non literal string:

- **Even incase of String duplicates,it will have different memory address.**
- **It's stored in the heap memory.**
- **Its create a new memory every time even if it is a duplicate value(same value)**

101.Difference between Heap and stack memory

Heap and stack memory

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Heap memory:

- **Heap is used for dynamic memory allocation.**
- **Memory access is slow.**

Static memory:

- **Stack is used for static memory allocation.**
- **Variables allocated on the stack are stored directly to the memory and access will be very fast.**

102.What is the default Package in java?

- **java.lang**

103.What are the difference between equals() & hashcode()?

equals:

- **Used to compare the two string.**

Hashcode:

- **Used to return the address where it stored.**

104.How can we make Array list As a synchronized?

- **collections.SynchronisedList(refName of array);**