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Answer all the questions:-

1) explain about the main method in Java?

Ans:- 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 class. The input parameter is an array of String through which we can pass runtime arguments to the Java program

public: public is an access modifier, which is used to specify who can access this method. public means that this method will be accessible by any class

static: It is a keyword in Java which identifies it is class based i.e it can be accessed without creating the instance of a class

void: It is the return type of the method. void defines the Method which will not return any value.

Main: It is the name of the method which is searched by JVM as a starting point for an application with a particular signature only. It is the method where the Main execution occure

String args[]: It is the parameter passed to the main method

2) what are the different control flow statements available in Java?

Ans:- The control flow statement in Java allows you to run or skip block of code when special condition are met.

i) If statement:-
The If statement in Java works exactly like in most programming languages with the help of 'if' you can choose to execute a specific block of code when predefined condition is met. the structure of the 'if' statement in Java looks like this:

```
if (condition) {
        // execution code
}
```

ii) If else statement
with this statement you can control what to do if the condition is met and what to do otherwise.

```
if (condition) {
        // execution code
} else {
        // execution code
}
```

iii) the switch statement
in some cases you can avoid using multiple if-s in your code and make your code looks better.

```
Switch (variable) {
    case value 1
    // statements
    break;
    case value 2
    // statements
    break;
    default: (optional)
    // statements
    break;
    }
```

13) what is the difference between break and continue statement in Java?

Ans:- Both "break" and "continue" are the "Jump" statements, that transfer control of the program to another part of the program. Java supports three Jump statements. "break", "continue", "return". The main difference between break and continue is that 'break' is used for immediate termination of loop whereas continue terminate current iteration and resumes the control to the next iteration of the loop.

break:
1) it terminates the execution of remaining iteration of the loop
2) 'break' resumes the control of the program to the end of loop enclosing that 'break'.
3) It causes early termination of loop.
4) 'break' stops the continuation of loop.
5) 'break' can be used with 'switch', 'label'.

continue:
1) it terminates only the current iteration of the loop.
2) 'continue' resumes the control of the program to the next iteration of the loop.
3) It causes early execution of the next iteration.
4) 'continue' do not stops the continuation of loop it only stops the current iteration.
5) 'continue' can not be executed with 'switch' and 'labels'.

14) what is an array? How will you declare an array in Java?

Ans:- a) array is a collection of similar data types.
b) It can not have different data type. It can hold both primitive types (int, float, double) and object reference.
c) It is fixed in length (i.e) static in nature.
d) Arrays are created on the heap memory not on the stack.
e) Accessing an invalid index of an array will causes exception.

you can declare an array in Java by the following way

dataType [] arrayVariableName = new dataType [arraySize];

for example for int datatype you can declare an int arrays as

int [] temp = new int [256]

5) when will you get arrayIndexOutOfBoundsException?

Ans: Array out of bound exception is thrown when an attempt is made to access the array with illegal index. for example, Illegal index means if the index is of the negative or greater than or equal to the size of the array.

for example

```
public class exceptionexample {

public static void main(String args[]) {
int [] rollNumber = {23,17,20,29,30};
/* index below is greater than the size
of the given array */
int element = rollNumber[6];
System.out.println(element);
}
}
```

6) Define the syntax to create an object for a class and the naming convention to be followed while creating a class, method and a variable. Explain with example

Ans:-

create an object for a class

<className> referenceName = new <constructerName>();

name convention

class name: should start with upper case letter and be a noun eg: String, Color, Button, System, Thread and etc

MethodName: Should start with lowercase letter and be a verb e.g (Main(), getText(), println() and etc

variableName: should start with lowercase letter e.g firstname, lastname and etc

ex: ChromeDriver driver = new ChromeDriver();

7) what is variable? How will you declare a variable in Java?

Ans:- A variable is a container which holds the value while the Java program is executed. A variable is assigned with a datatype. There are three types of variable in Java: local, instance and static.

A variable is declared as below.

```
public String name;
public int age;
```

A variable is initialized as below.

```
public String name = "TestLeaf";
public String age = "10";
```

8) what is String in Java? Is it a data type?

Ans:- String is a Java class (part of JDK) and it is not datatype like int, boolean, char etc it is a sequence of characters and enclosed with double quoted (" ").

for example:-

String str = "test leaf";

9) what are the different ways to create String object in Java?

Ans:- There are two ways to create the String object, by String literal and by new keyword.

i) String as literal like

String s = "Testleaf";

ii) String as object like:

String as = new String ("Test leaf");

10) what is the difference between .equals and == ?

Ans:- Both equals() and "==" operator in Java are used to compare objects to check equality. but there are certain difference between them.

a). equals() is a method and == is an operator.

b) == operator is used for reference comparison (address comparison) and .equals() method for content comparison (i.e) == checks if objects point to the same memory location whereas .equal() evaluates to the comparison of value in the objects.

c) If a class does not override the equal method, then by default it uses equals(Object) method of the closest parent class that has overridden this method

Eg:-

```
public class test {
    public static void main(String[] args)
    {
        String s1 = new String ("Test leaf");
        String s2 = new String ("Test leaf");
        System.out.println(s1==s2);
        System.out.println(s1.equals(s2));
    }
}
```