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Q1

How many variables are being supported by java justify your answer with the help of java code.

Variable is name at reserved area allocated in memory. In other words, it is a name location. It is a combination of vary + able that means its value can be changed.

There are three types of variables in java

Local variable
instance variable
static variable

1) Local variable

A variable declared inside the body of the method is called local variable. You can use this variable only within that method and the other methods in the class are not even aware that the variable exists. A local variable can not be defined with static keywords.

2) Instance variable

A variable declared inside the class but outside the body of the method is called instance variable. It is not declared as static. It is called instance variable because its value is instance specific and is not shared among instances.

3) Static Variable

A variable which is declared as static is called static variable. It cannot be local. You can create a single copy of static variable and share among all the instance of the class. Memory allocation for static variable happens only once when class is loaded in the memory.

Examples Types of variable in Java

```
class {
```

```
int data = 50; // instance variable
```

```
static int m = 100; // static variable
```

```
void name() {
```

```
int n = 30; // local variable
```

```
}
```

```
}
```

Q2 Why "if" is used in java justify your answer with examples?

The java if statement is the most simple decision-making statement. It is used to decide whether a certain statement or block of statement will be executed or not i.e. if a certain condition is true then a block of statement is executed otherwise not. Control falls into the if block. It is often desirable to execute a certain section of code based upon whether the specified condition is true or false. For such cases control flow statements are used.

In java the syntax of the if then statement is

```
if (expression) {
    // statement
}
```

Here (expression) is a boolean expression. A boolean expression returns either true or false. If the expression is evaluated to true statements inside the body of (if) are executed. If the expression is evaluated to false then the statements are skipped from execution.

Coded example in Java

```

public class statement {
    public static void main (String args[])
    {
        int num = 70;
        if (num < 100) {
            System.out.println ("number
            is less than 100");
        }
    }
}

```

Output :

number is less than 100

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Q3 why "if else if" is used in java
Justify the answer with coded
examples

The if statement executes a certain section of code if the test expression is evaluated to true. However, if the test expression is evaluated to false, it does nothing. In this case we can use an optional "else" block. Statements inside the body of "else" block are executed if the test is evaluated to false. This is known as the if-then-else statement in Java.

if-else-if: Here, a user can decide among multiple options. The if statements are executed from the top down. As soon as one of the conditions controlling the if is true, the statement associated with that if is executed and the rest of the ladder is bypassed. If none of the conditions is true, then the final else statement will be executed.

```
if (condition)  
    statement;
```

```
elseif (condition)  
    statement;
```

```
⋮
```

```
else  
    statement;
```

coded example in Java

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```
class ifelseif
```

```
{ public static void main (String args[])
```

```
{ int i = 20;
```

```
  if (i == 10)
```

```
    System.out.println("i is 10");
```

```
  else if (i == 15)
```

```
    System.out.println("i is 15");
```

```
  else if (i == 20)
```

```
    System.out.println("i is 20");
```

```
  else
```

```
    System.out.println("i is not present");
```

```
}  
}  
}
```

Out put

i is 20

Q4 What are loops, why they are used in java and How many loop are being supported in Java?

In computer science, a loop is a programming structure that repeats a sequence of instruction until a specific condition is met. Programmers use loops to cycle through the values add sums of numbers, repeat functions and many other things. Two of the most common types of loops are while loop and for loop. In Java we have three types of basic loops. for loop, while loop and do-while loop.

for loop:-

In java for loop is a control flow statement that iterates a part of the program multiple times. If the number of iteration is fixed, it is recommended to use for loop

Example:-

```
// for loop
for (int i=1; i<=10; i++) {
    System.out.println(i);
}
```

Output

12345678910

while-loop:-

In Java while loop is control flow statement that executes a part of the programs repeatedly on the basis of given boolean condition. If the number of iterations is not fixed, it is recommended to use while loop.

Example:-

```
// while loop
int i=1;
while (i<=10) {
    System.out.println(i);
    i++;
}
output
12345678910
```

do-while loop:-

The Java do while loop is a control flow statement that executes a part of the program at least once and the further execution depends upon the given boolean condition. If the number of iterations is not fixed and you must have to execute the loop once at least. It is recommended to use do-while loop.

```
// do-while loop
int i=1;
do {
    System.out.println(i);
    i++;
} while (i<=10);
12345678910
```

Q5)

writes table in decremented form in Java which takes input form user write Java coded program?

//multiplication table in deremented
import java.util;

```

class Display-Reverse-Table {
public static void main (string
args[])
{
system.out.println("Enter
the table you want:");
Scanner sc= new Scanner (system.in);
int number = sc.nextln();
for (int i=10; i>=1; i--)
{
int product = number x i;
system.out.println(number + "x"
+i + " = " + product);
}
}
}

```

when this programmes runs the programe will ask the user to enter the table you want. In this case the table is 3

output

10

$$3 \times 10 = 30$$

$$3 \times 9 = 27$$

$$3 \times 8 = 24$$

$$3 \times 7 = 21$$

$$3 \times 6 = 18$$

$$3 \times 5 = 15$$

$$3 \times 4 = 12$$

$$3 \times 3 = 9$$

$$3 \times 2 = 6$$

$$3 \times 1 = 3$$