

Explain why Java is considered as an Object Oriented Programming Language?

Java Supports the 3 Pillars of Object Oriented Programming viz,

- a) Inheritance
- b) Abstraction
- c) Encapsulation

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Hence Java is considered as an Object Oriented Programming Language.

Explain Why Java is considered as a Platform Independent Language?

A Platform is a combination of the operating system and underlying hardware in a computer.

Java Programs written on one computer can be directly executed on other computers with different platforms hence java is considered as Platform Independent.

What is Bytecode?

It is the intermediate level code in java.

It is generated by the compiler(javac) and is present inside the “.class” file.

It is not human readable.

It is used by the JVM for execution and is considered Java Executable Code.

Explain the role of JAVAC?

Javac is the name of the Java Compiler.

It takes source code present in “.java” file as an input and checks for syntax level mistakes.

If mistakes are found the compiler displays appropriate error messages.

If mistakes are not found the compiler generates “.class” file which contain java bytecode.

What is JVM?

JVM stands for Java Virtual Machine.

It is the execution engine of Java Language.

It takes bytecode present in “.class” file executes it line by line to provide the output.

JVM takes care of all the activities in the runtime.

It is a virtual machine and does not have a physical existence.

Refer Class Notes for Examples, Syntax and in depth explanation

What is JRE?

JRE stands for Java Runtime Environment.

The JVM makes use of several tools for execution like,

Loaders

Linkers

Verifiers

Event Handlers

etc,

This group of tools used by the JVM is collectively known as JRE.

All activities in the JRE is controlled by the JVM.

What is JDK?

JDK stands for Java Development Kit.

It is a bundled software that provides several tools after installation like

- a) Javac
  - b) JVM
  - c) JRE
  - d) Sample Programs
  - e) Libraries
- etc,

JDK has physical existence and can be installed and configured in a computer.

What are Keywords?

They are inbuilt words that have a special meaning.

As a programmer we can use keywords but we cannot change the meaning.

Keywords are completely in lowercase.

Keywords generally appear in a shade of blue color.

goto & const keywords are not used directly in java programming

Ex: class , public , static , void etc.

What are datatypes?

Datatypes are tokens used in a Java program to identify the type of value.

Datatypes are classified into 2 types,

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- 1) Primitive Data Types
- 2) Non-Primitive Data Types

What are primitives?

Primitives are inbuilt datatypes.

Primitives are used to create variables.

Java Provides the following 8-Primitives

byte, short, int, long, float, double, char, boolean.

What are variables?

A variable is a token/container that is used to store a value.

We can declare variables using below syntax,

*datatype variableName;*

*or*

*datatype variableName=value;*

The variable name is decided by the programmer.

We can print variables directly.

What are operators?

Operators are symbols that are used to perform a certain task.

In java operators are classified into the following families

Arithmetic Operators, Relational Operators, Logical Operators, Bitwise Operators, Unary Operators.

Difference between = and == operator?

=	==
It is known as assignment operator	It is known as Equals to operator
It is used to assign a value to a variable.	It is used to compare values or variables.
It comes under arithmetic operators	It comes under relational operators.

Refer Class Notes for Examples, Syntax and in depth explanation

Difference between post operation and pre operation?

Post Operation	Pre Operation
Current value in the variable will be used first then increment or decrement is done	First increment or decrement is done then value will be used
Variable++ or Variable--	++Variable or --Variable

What is Operator Overloading?

It the process of one operator performing multiple tasks

Java does not support operator overloading.

By default the “+” operator can perform addition and concatenation

Difference between for and while?

FOR	WHILE
No of iterations is known	No of Iterations is not known
We can do initialization and operation in declaration	We cannot do initialization and operation in declaration
Syntax	Syntax

Difference between while and do-while?

While	Do-While
Entry Checked Loop	Exit Checked Loop
Executes only when condition is true	Executes one time irrespective of condition
Condition is checked before each iteration	Condition is Checked after each iteration
Syntax	Syntax

What is the use of break keyword?

Break keyword is used to separate options in switch statement.

It can be used in loop statements to terminate loop execution.

What is the use of default keyword?

Default is an optional case in switch statement.

Default executes when the given choice value is invalid.

Refer Class Notes for Examples, Syntax and in depth explanation

After IF-statement how many else can be written?

Only One.

After IF-statement how many else-if can be written?

N-number.

Can we write else directly in a Java Program?

No.

What is an Infinite Loop?

A for/while loop in which the condition is always true is called an infinite loop.

It is the programmers responsibility to prevent infinite loops.

What are methods?

A method is a named block of code that is reusable in nature.

Syntax for creating a method

```
<access-modifier><modifier>return_type methodName(<arguments>)  
{  
  
}  

```

The method syntax consists of 2 parts,

- a) Method declaration
- b) Method definition

A method should always be declared in the class body directly.

A method gets executed only when it is called.

We can call the same method n-number of times.

We can declare multiple methods in a class based on our requirement.

What is passing values?

It is the concept of sending values from calling method to called method.

We can pass values with the help of arguments,

Actual arguments : values provided in the method call.

Formal arguments : variables declared in the method declaration.

We can pass multiple values by declaring multiple arguments separated by ,(comma).

What is returning values?

It is the concept of sending values from called method back to calling method.

We can return a value with below 3-Steps,

- i) Declare return type based on the value to be returned.
- ii) Return a compatible value using return keyword.
- iii) Capture returned value inside the calling method.

What are identifiers?

Any name that is given by a programmer is called as an identifier.

Generally programmer is responsible for providing the following names.

- a) Classnames
- b) Methodnames
- c) Variablenames

Rules for Identifiers,

- i) Identifier names should always begin with alphabets
- ii) Numbers are allowed but not as the first character.
- iii) Special Characters "\$" and "\_" is allowed but not recommended.
- iv) Keywords cannot be used as Identifiers.
- v) Blank spaces are not allowed.

What is an Array?

An array is a finite set of homogeneous values.

We can create an array in 2 ways,

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- i) Using Dimensions
  - ii) Using Array Initializers

In dimensions approach we can create an array by providing the datatype and size of the array.

```
Datatype[] variableName=new Datatype[int size]
```

In array initializers approach we create an array by providing the datatype and actual values.

```
Datatype[] variableName={value1,value2,value3,.....value-n};
```