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## [Data Structure Interview Questions](#)

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#### **Q1. [What is meant by Object Oriented Programming – OOP?](#)**

Object-oriented programming (OOP) is a computer programming technique that organizes software design around data, or objects, rather than functions and logic. An object can be defined as a data field that has some unique attributes and behavior.

#### **Q2. [What is meant by Structural Programming?](#)**

Structured Programming can be defined as a programming Approach in which the program is made as a single structure. Lines or blocks of codes are written and executed in a sequential manner such as one instruction after the other.

#### **Q3. [What is meant by Class?](#)**

A **class** is the most important part of object-oriented programming which is used for the purpose of creating objects. It is defined as the template of similar types of objects consists of a declaration and a definition. The class consists of the state and behaviour of an object that belongs to it.

#### **Q4. [What is meant by Object?](#)**

An **Object** is a part of object-oriented programming, which is basically a single instance of a class that has similar characteristics. An object can be a combination of variables, functions, and data structures such that it can be created any time from the same class type.

### Q5. What is meant by Method?

Method is defined as the block of code that is specifically defined for a specific task.

### Q6. What is meant by Attribute?

**Attributes** are a specific value that is used to denote the characteristics of an object. Basically, these are the variables stored in an instance or class. An attribute is generally a property of a property and can be also considered as metadata.

### Q7. What is meant by Data Hiding/Encapsulation?

Encapsulation refers to the winding of data into a single unit that is known as a class, while Data hiding is the process of hiding data from unauthentic and unauthorized access.

### Q8. What is meant by Inheritance?

**Inheritance** is the ability of a class to inherit the characteristics and properties of another class. This is one of the most significant features of the object-oriented programming language. There are mainly three modes of inheritance public, protected and private and two types of classes: subclass(the one which inherits) and the base or the superclass(from which inheritance is done). And there are five ways in which inheritance can be done.

### Q9. What is meant by Polymorphism?

**Polymorphism** in object-oriented programming is the capability by which an object is able to take on numerous different forms. Polymorphism is used mainly when a reference to a child class object is made by a parent class. In Java, each and every object can be polymorphic since they can all pass the IS-A test easily. This is because an object is said to be polymorphic when it can successfully pass the IS-A test.

### Q10. What is meant by Final Class?

A Final class is defined as a class that can not be inherited further. All Methods of a final class are final, can not be redefined further, and must not be declared as final in the class definition.

### Q11. What is meant by Abstract Class?

An **abstract class** is a class that is declared with an abstract keyword. It consists of both abstract methods and non-abstract methods. It is used to function as a base class so that it can be extended by a subclass to create a full implementation.

### Q12. What is meant by Interface?

An **interface** is a shared boundary across which more than one separate component of a system exchange information. In Java, an interface is an abstract type that is used to specify a behavior that classes must implement.

### Q13. What is meant by Design Patterns – DP?

A design pattern is a general repeatable solution for every task in the software design phase of software engineering. A design pattern is a structure to solve a task.

### Q14. What is meant by Data Structures – DS?

Data Structure can be defined as the structure for a group of data elements that provides an efficient way of storing and organizing data in Software engineering. For instance, Arrays, Linked List, Stack, Queue, etc

### Q15. What is meant by main method?

The main method is a method for software from which the execution of the software starts. Every block of a code called by it.

### Q16. What is the difference between class & structure?

The class supports inheritance whereas structure does not support inheritance. Class is private by default whereas structure is public.

### Q17. What is the difference between class & object?

The difference between class and object can be stated as a **class** is the most important part of object-oriented programming which is used for the purpose of creating objects. It is defined as the template of similar types of

objects consists of a declaration and a definition. The class consists of the state and behavior of objects that belong to it. A class can be created for similar types of objects. Whereas an **object** is a part of object-oriented programming, which is basically a single instance of a class that has similar characteristics. An object can be a combination of variables, functions, and data structures such that it can be created any time from the same class type. An object is only an instance of a class.

### Q18. What is the difference between super class & sub class?

A subclass is a class that derives from the class which is known as the Superclass.

### Q19. What is the difference between interface & abstract class?

#### Abstract class

(1) Abstract class can contain abstract and non-abstract methods that should be declared with the abstract keyword.

(2) Abstract class **doesn't support multiple inheritances.**

(3) Abstract class **can contain final, non-final, static, and non-static variables.**

(4) Abstract class **can provide the implementation of the interface.**

(5) An **abstract class** can be extended by using the "extends" keyword.

(6) **For instance,**

```
public abstract class Shape{
public abstract void draw();
}
```

#### Interface

The interface should be declared with the interface keyword. It can contain **only abstract** methods.

**The interfacesupports multiple inheritances.**

The interface contains **only static and final variables.**

Interface **can't provide the implementation of the abstract class.**

An **interface** can be implemented by using the "implements" keyword.

**Example:**

```
public interface Drawable{
void draw();
}
```

### Q20. Give few difference between constructor and method?

#### Constructor

(1) Constructor should not return any value.

(2) Constructors are invoked implicitly.

(3) The name of the Constructor should be same as the class name.

(4) Constructor is declared with construct keyword.

#### Method

Method should return a value.

Methods are invoked explicitly.

Method name should be different.

Method should be declared with method name.

### Q21. What is the difference between stored procedure & function?

#### Function

(1) Function should return a value.

#### Stored Procedure

Stored procedure may or may not return a value.

- (2) Function should be declared by using fun keyword. Stored Procedure may not require fun keyword.
- (3) Functions can have only input parameters. Procedures can have input or output parameters.
- (4) Functions can be called from Procedure. Procedures cannot be called from a Function..

**Q22. What is the difference between overriding & overloading?**

When there are different methods in one class that have the same name but distinct parameters, overloading takes place. What happens at the time of overriding is that the methods have the same name as well as the same parameters. But one method here will belong to the parent class the other will belong to the child class. Also, these two are different types of concept as well, where overriding is the run-time type and the overloading is the compile-time type.

**Q23. What is the difference between Conversation & Casting?**

**Casting**

- (1) Casting is the process to convert one data type to another data type by using casting operator.
- (2) Casting can be applied to compatible data types as well as incompatible data types..
- (3) Casting is also known as Type casting.
- (4) Type casting is done during programming.

**Conversion**

- Conversion is process to convert a datatype into another data type automatically by compiler.
- Conversion can only be applied to compatible datatypes.
- Conversion is also known as Type Conversion.
- Type conversion is done at the compile time.

**Q24. What is the difference between private & public & friendly classes?**

Public containers would be Visible to all classes, Friendly variables would be Visible to the only same package, while Private containers would be Visible only to the container to which they belong.

**Q25. What is the difference between form & report?**

Forms are visual representations that are basically used to take user's Input or information, while Reports are gathered the information for a task that is generally shown as an output.

**Q26. What is the difference between normal report & matrix report?**

Normal report is represented as a document whereas a matrix report is represented in tabular format.

**Q27. What is the difference between variable & constant?**

Both are the containers that are used to store a value. Variables are temporary whereas constants are permanent. The value of a variable may be changed during the execution but the value of constant is always fixed according to its declaration.

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