Important Interview Questions

OOPS , DBMS, OS, CN, HR

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In this PDF, you will find basic interview questions that are asked in almost every technical interview, covering topics such as OOPS, DBMS, OS, CN, and HR interview questions.

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OOPs Interview Questions

Object-oriented programming (OOPs) is a programming paradigm that is based on the concept of objects rather than just functions and procedures. It is the most popular methodology among developers.

Nowadays tech giants demanding and hiring who has expertise in **object- oriented** approaches and patterns and conducting interviews for the same. The advantage of hiring such candidates is that they can also learn other OOP languages easily as per organization requirements. Since, going through the section, you can increase your chance to get hire by companies if you have well prepared for **OOPs interview questions**.

In this section, we have collected some commonly asked **OOPs interview questions** for both fresher and experienced. It can help you to crack the interview to get your dream job.

1) What do you understand by OOP?

OOP stands for object-oriented programming. It is a programming paradigm that revolves around the object rather than function and procedure. In other words, it is an approach for developing applications that emphasize on objects. An object is a real word entity that contains data and code. It allows binding data and code together.

2) Name any seven widely used OOP languages.

There are various OOP languages but the most widely used are:

- o Python
- o Java
- o Go
- o Dart
- o C++
- o C#
- o Ruby

## 3) What is the purpose of using OOPs concepts?

The aim of OOP is to implement real-world entities like inheritance, hiding, polymorphism in programming. The main purpose of OOP is to bind together the data and the functions that operate on them so that no other part of the code can access this data except that function.

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4) What are the four main features of OOPs?

The OOP has the following four features:

- o Inheritance
- o Encapsulation
- o Polymorphism
- o Data Abstraction
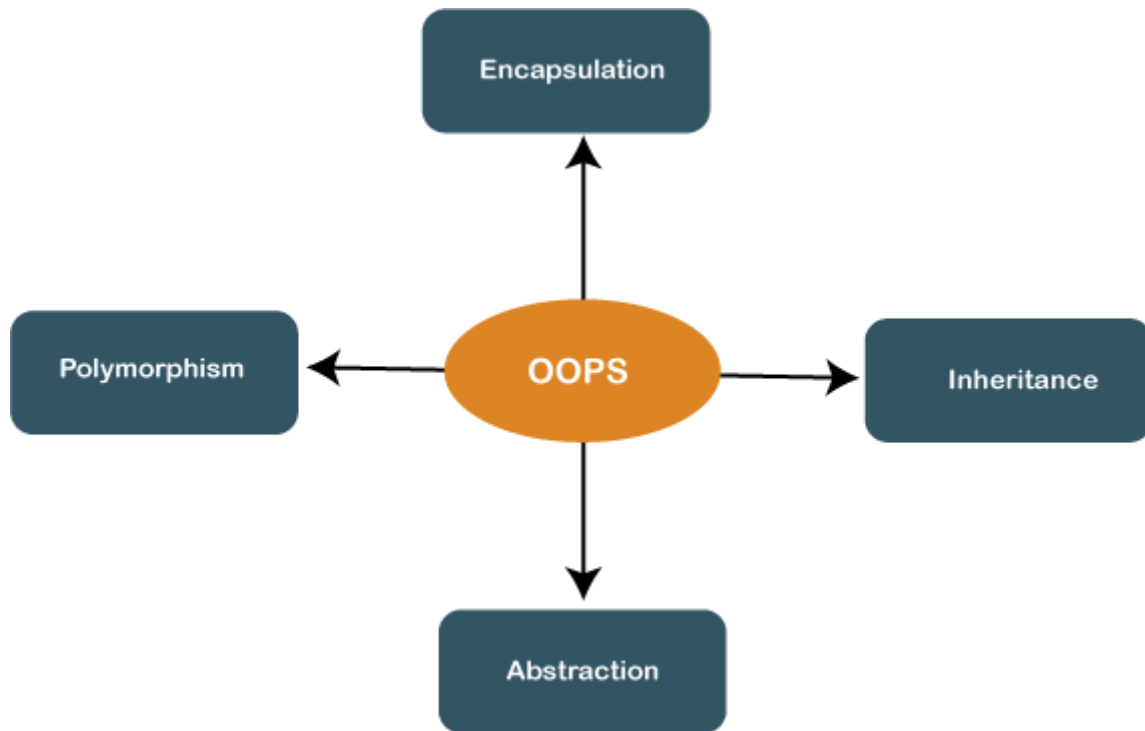
5) Why OOP is so popular?

OOPs, programming paradigm is considered as a better style of programming. Not only it helps in writing a complex piece of code easily, but it also allows users to handle and maintain them easily as well. Not only that, the main pillar of OOPs - Data Abstraction, Encapsulation, Inheritance, and Polymorphism, makes it easy for programmers to solve complex scenarios. As a result of these, OOPs is so popular.

6) What are the advantages and disadvantages of OOP?

Advantages of OOP

- It follows a bottom-up approach.
- It models the real word well.
- It allows us the reusability of code.
- Avoids unnecessary data exposure to the user by using the abstraction.
- OOP forces the designers to have a long and extensive design phase that results in better design and fewer flaws.
- Decompose a complex problem into smaller chunks.

- o Programmer are able to reach their goals faster.
- o Minimizes the complexity.
- o Easy redesign and extension of code that does not affect the other functionality.

Disadvantages of OOP

- o Proper planning is required.
- o Program design is tricky.
- o Programmer should be well skilled.
- o Classes tend to be overly generalized.

7) What are the limitations of OOPs?

- o Requires intensive testing processes.
- o Solving problems takes more time as compared to Procedure Oriented Programming.
- o The size of the programs created using this approach may become larger than the programs written using the procedure-oriented programming approach.
- o Software developed using this approach requires a substantial amount of pre-work and planning.
- o OOP code is difficult to understand if you do not have the corresponding class documentation.
- o In certain scenarios, these programs can consume a large amount of memory.
- o Not suitable for small problems.
- o Takes more time to solve problems.

8) What are the differences between object-oriented programming and structural programming?

Object-oriented Programming	Structural Programming
It follows a bottom-up approach.	It follows a top-down approach.

It provides data hiding.	Data hiding is not allowed.
It is used to solve complex problems.	It is used to solve moderate problems.
It allows reusability of code that reduces redundancy of code.	Reusability of code is not allowed.
It is based on objects rather than functions and procedures.	It provides a logical structure to a program in which the program is divided into functions.
It provides more security as it has a data hiding feature.	It provides less security as it does not support the data hiding feature.
More abstraction more flexibility.	Less abstraction less flexibility.
It focuses on data.	It focuses on the process or logical structure.

9) What do you understand by pure object-oriented language? Why Java is not a pure object-oriented programming language?

The programming language is called pure object-oriented language that treats everything inside the program as an object. The primitive types are not supported by the pure OOPs language. There are some other features that must satisfy by a pure object-oriented language:

- Encapsulation
- Inheritance
- Polymorphism
- Abstraction
- All predefined types are objects
- All user-defined types are objects
- All operations performed on objects must be only through methods exposed to the objects.

Java is not a pure object-oriented programming language because pre-defined data types in Java are not treated as objects. Hence, it is not an object-oriented language.

10) What do you understand by class and object? Also, give example.

Class: A class is a blueprint or template of an object. It is a user-defined data type. Inside a class, we define variables, constants, member functions, and other functionality. It does not consume memory at run time. Note that classes are not considered as a data structure. It is a logical entity. It is the best example of data binding.

Object: An object is a real-world entity that has attributes, behavior, and properties. It is referred to as an instance of the class. It contains member functions, variables that we have defined in the class. It occupies space in the memory. Different objects have different states or attributes, and behaviors.

The following figure best illustrates the class and object.
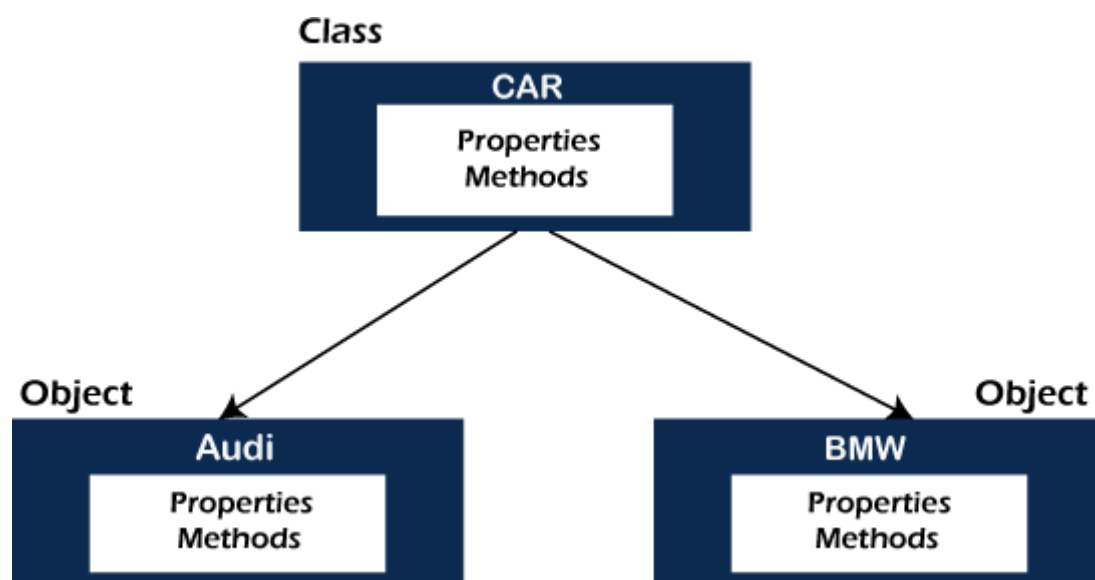
Class	Object
It is a logical entity.	It is a real-world entity.
It is conceptual.	It is real.
It binds data and methods together into a single unit.	It is just like a variable of a class.
It does not occupy space in the memory.	It occupies space in the memory.
It is a data type that represents the blueprint of an object.	It is an instance of the class.
It is declared once.	Multiple objects can be declared as and when required.
It uses the keyword class when declared.	It uses the new keyword to create an object.
A class can exist without any object.	Objects cannot exist without a class.

11) What are the differences between class and object?

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12) What are the key differences between class and structure?

Class	Structure
Class is a group of common objects that shares common properties.	The structure is a collection of different data types.
It deals with data members and member functions.	It deals with data members only.
It supports inheritance.	It does not support inheritance.
Member variables cannot be initialized directly.	Member variables can be initialized directly.
It is of type reference.	It is of a type value.
It's members are private by default.	It's members are public by default.
The keyword class defines a class.	The keyword struct defines a structure.
An instance of a class is an object.	An instance of a structure is a structure variable.

Useful while dealing with the complex data structure.	Useful while dealing with the small data structure.

13) What is the concept of access specifiers when should we use these?

In OOPs language, **access specifiers** are reserved keyword that is used to set the accessibility of the classes, methods and other members of the class. It is also known as **access modifiers**. It includes **public, private,** and **protected**. There is some other access specifier that is language-specific. Such as Java has another access specifier **default**. These access specifiers play a vital role in achieving one of the major functions of OOP, i.e. encapsulation. The following table depicts the accessibility.

Specifiers	Within Same Class	In Derived Class	Outside the Class
Private	Yes	No	No
Protected	Yes	Yes	No
Public	Yes	Yes	Yes

14) What are the manipulators in OOP and how it works?

Manipulators are helping functions. It is used to manipulate or modify the input or output stream. The modification is possible by using the **insertion** (<<) and **extraction** (>>) operators. Note that the modification of input or output stream does not mean to change the values of variables. There are two types of manipulators with **arguments** or **without arguments.**

The example of manipulators that do not have arguments is **endl, ws, flush,** etc. Manipulators with arguments are **setw(val), setfill(c), setbase(val), setiosflags(flag).** Some other manipulators are **showpos, fixed, scientific, hex, dec, oct,** etc.

15) What are the rules for creating a constructor?

- o   It cannot have a return type.
- o   It must have the same name as the Class name.
- o   It cannot be marked as static.
- o   It cannot be marked as abstract.
- o   It cannot be overridden.
- o   It cannot be final.

16) What are the differences between the constructor and the method in Java?

Constructor	Method
Constructor has the same name as the class name.	The method name and class name are not the same.
It is a special type of method that is used to initialize an object of its class.	It is a set of instructions that can be invoked at any point in a program.
It creates an instance of a class.	It is used to execute Java code.
It is invoked implicitly when we create an object of the class.	It gets executed when we explicitly called it.
It cannot be inherited by the subclass.	It can be inherited by the subclass.
It does not have any return type.	It must have a return type.
It cannot be overridden in Java.	It can be overridden in Java.
It cannot be declared as static.	It can be declared as static.
Java compiler automatically provides a default constructor.	Java compiler does not provide any method by default.

17) How does procedural programming be different from OOP

Procedural Oriented Programming	Object-Oriented Programming
It is based on functions.	It is based on real-world objects.
It follows a top-down approach.	It follows a bottom-up approach.
It is less secure because there is no proper way to hide data.	It provides more security.
Data is visible to the whole program.	It encapsulates the data.
Reuse of code is not allowed.	The code can be reused.
Modification and extension of code are not easy.	We can easily modify and extend code.
Examples of POP are C, VB, FORTRAN, Pascal, etc.	Examples of OOPs are C++, Java, C#, .NET, etc.

differ?

18) What are the differences between error and exception?

Basis of Comparison	Exception	Error
Recoverable/ Irrecoverable	Exception can be recovered by using the try-catch block.	An error cannot be recovered.
Type	It can be classified into two categories i.e. checked and unchecked.	All errors in Java are unchecked.
Occurrence	It occurs at compile time or run time.	It occurs at run time.
Package	It belongs to java.lang.Exception package.	It belongs to java.lang.Error package.
Known or unknown	Only checked exceptions are known to the compiler.	Errors will not be known to the compiler.

Causes	It is mainly caused by the application itself.	It is mostly caused by the environment in which the application is running.
Example	**Checked Exceptions:** SQLException, IOException **Unchecked Exceptions:** ArrayIndexOutOfBoundException, NullPointerException, ArithmaticException	Java.lang.StackOverFlow, java.lang.OutOfMemoryError

19) What are the characteristics of an abstract class?

An abstract class is a class that is declared as abstract. It cannot be instantiated and is always used as a base class. The characteristics of an abstract class are as follows:

- o Instantiation of an abstract class is not allowed. It must be inherited.
- o An abstract class can have both abstract and non-abstract methods.
- o An abstract class must have at least one abstract method.
- o You must declare at least one abstract method in the abstract class.
- o It is always public.
- o It is declared using the **abstract**

The purpose of an abstract class is to provide a common definition of the base class that multiple derived classes can share.

20) Is it possible for a class to inherit the constructor of its base class?

No, a class cannot inherit the constructor of its base class.

## 21) Identify which OOPs concept should be used in the following scenario?

A group of 5 friends, one boy never gives any contribution when the group goes for the outing. Suddenly a beautiful girl joins the same group. The boy who never contributes is now spending a lot of money for the group.

Runtime Polymorphism

22) What is composition?

Composition is one of the vital concepts in OOP. It describes a class that references one or more objects of other classes in instance variables. It allows us to model a has-a association between objects. We can find such relationships in the real world. For example, a car has an engine. the following figure depicts the same
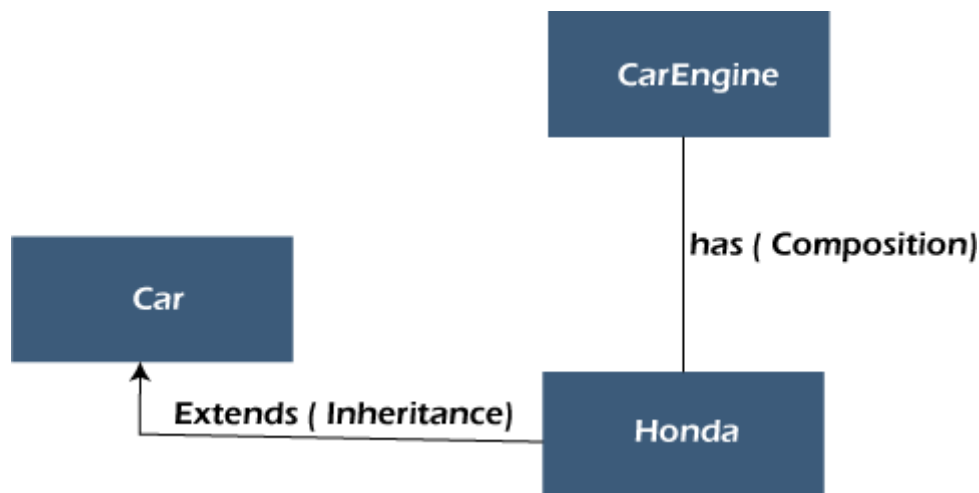
The main benefits of composition are:

- o   Reuse existing code
- o   Design clean APIs
- o   Change the implementation of a class used in a composition without adapting any external clients.

23) What are the differences between copy constructor and assignment operator?

The copy constructor and the assignment operator (=) both are used to initialize one object using another object. The main difference between the two is that the copy constructor allocates separate memory to both objects i.e. existing object and newly created object while the assignment operator does not allocate new memory for the newly created object. It uses the reference variable that points to the previous memory block (where an old object is located).

Syntax of Copy Constructor

1. class_name (**const** class_name &obj)
2. {
3. //body
4. }

Syntax of Assignment Operator

1. class_name obj1, obj2;
2. obj1=obj2;

Copy Constructor	Assignment Operator
It is an overloaded constructor.	It is an operator.
It creates a new object as a copy of an existing object.	It assigns the value of one object to another object both of which already exist.
The copy constructor is used when a new object is created with some existing object.	It is used when we want to assign an existing object to a new object.
Both the objects use separate memory locations.	Both objects share the same memory but use the two different reference variables that point to the same location.
If no copy constructor is defined in the class, the compiler provides one.	If the assignment operator is not overloaded then the bitwise copy will be made.

24) What is the difference between Composition and Inheritance?

Inheritance means an object inheriting reusable properties of the base class. Compositions mean that an object holds other objects. In Inheritance, there is only one object in memory (derived object) whereas, in Composition, the parent object holds references of all composed objects. From a design perspective, inheritance is "is a" relationship among objects whereas Composition is "has a" relationship among objects.
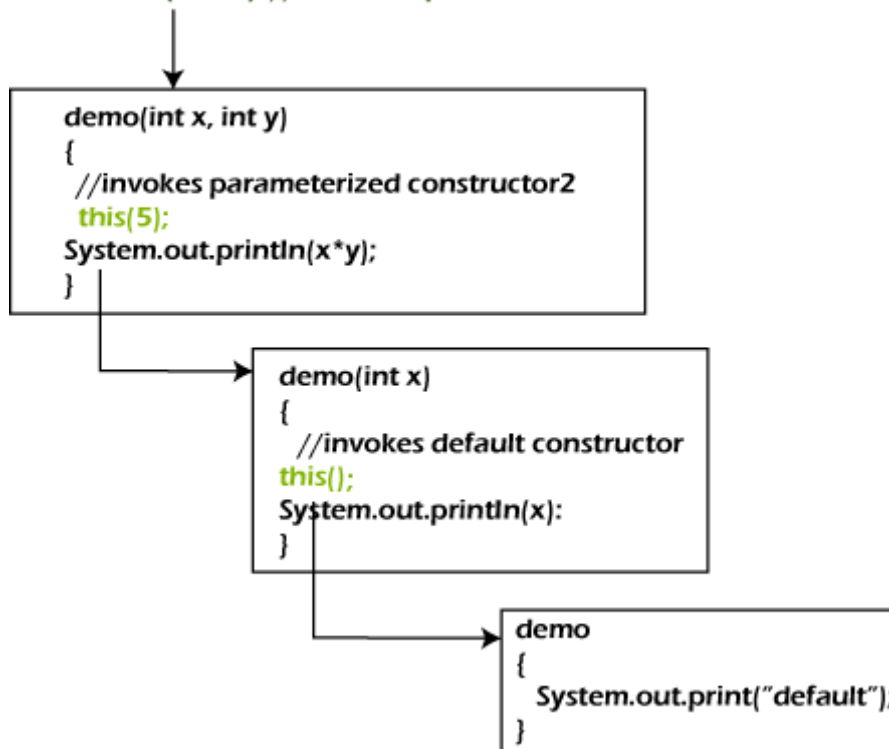
Composition vs Inheritance

Building

"is a "
(inheritance)

"has a "
(composition)

House

Kitchen

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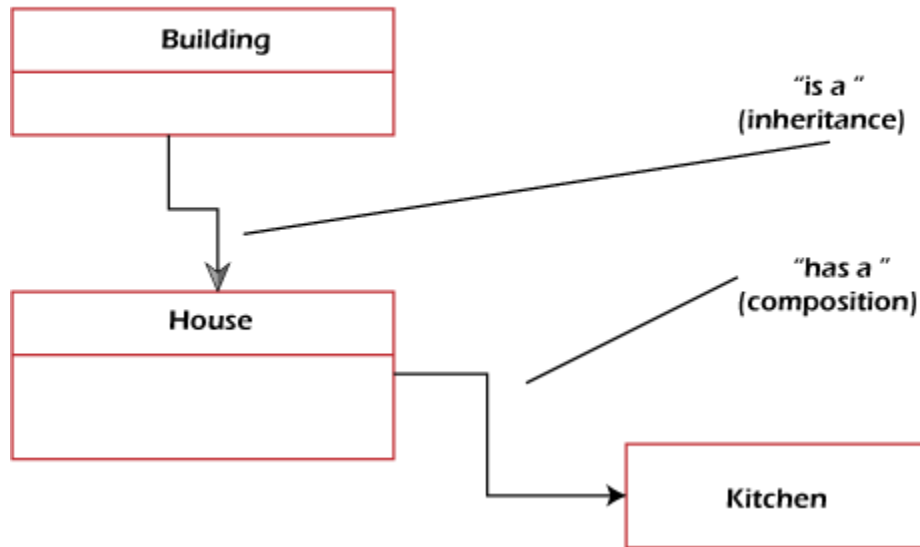
25) What is constructor chaining?

In OOPs, constructor chaining is a sequence of invoking constructors (of the same class) upon initializing an object. It is used when we want to invoke a number of constructors, one after another by using only an instance. In other words, if a class has more than one constructor (overloaded) and one of them tries to invoke another constructor, this process is known as constructor chaining. In C++, it is known as constructor delegation and it is present from C++ 11.

```
new demo(8, 10); // invokes parameterized constructor 3

demo(int x, int y)
{
 //invokes parameterized constructor2
 this(5);
System.out.println(x*y);
}

        demo(int x)
        {
         //invokes default constructor
         this();
        System.out.println(x):
        }

                demo
                {
                 System.out.print("default");
                }
```

26) What are the limitations of inheritance?

- The main disadvantage of using inheritance is two classes get tightly coupled. That means one cannot be used independently of the other. If a method or aggregate is deleted in the Super Class, we have to refactor using that method in SubClass.

- Inherited functions work slower compared to normal functions.

- Need careful implementation otherwise leads to improper solutions.

27) What are the differences between Inheritance and Polymorphism?

Inheritance	Polymorphism
Inheritance is one in which a derived class inherits the already existing class's features.	Polymorphism is one that you can define in different forms.
It refers to using the structure and behavior of a superclass in a subclass.	It refers to changing the behavior of a superclass in the subclass.
It is required in order to achieve polymorphism.	In order to achieve polymorphism, inherence is not required.
It is applied to classes.	It is applied to functions and methods.
It can be single, hybrid, multiple, hierarchical, multipath, and multilevel inheritance.	There are two types of polymorphism compile time and run time.
It supports code reusability and reduces lines of code.	It allows the object to decide which form of the function to be invoked at run-time (overriding) and compile-time (overloading).

28) What is Coupling in OOP and why it is helpful?

In programming, separation of concerns is known as **coupling**. It means that an object cannot directly change or modify the state or behavior of other objects. It defines how closely two objects are connected together. There are two types of coupling, **loose** coupling, and **tight** coupling.

Objects that are independent of one another and do not directly modify the state of other objects is called loosely coupled. Loose coupling makes the code more flexible, changeable, and easier to work with.

Objects that depend on other objects and can modify the states of other objects are called tightly coupled. It creates conditions where modifying the code of one object also requires changing the code of other objects. The reuse of code is difficult in tight coupling because we cannot separate the code.

Since using loose coupling is always a good habit.

29) Name the operators that cannot be overload.

1. Scope Resolution Operator (::)
2. Ternary Operator (? :)
3. Member Access or Dot Operator (.)
4. Pointer to Member Operator (.*)
5. sizeof operator

30) What is the difference between new and override?

The new modifier instructs the compiler to use the new implementation instead of the base class function. Whereas, Override modifier helps to override the base class function.

virtual: indicates that a method may be overridden by an inheritor

override: Overrides the functionality of a virtual method in a base class, providing different functionality.

new: Hides the original method (which doesn't have to be virtual), providing different functionality. This should only be used where it is absolutely necessary.

When you hide a method, you can still access the original method by upcasting to the base class. This is useful in some scenarios, but dangerous.

31) Explain overloading and overriding with example?

Overloading

Overloading is a concept in OOP when two or more methods in a class with the same name but the method signature is different. It is also known as **compile-time polymorphism**. For example, in the following code snippet, the method **add()** is an overloaded method.

1. **public class** Sum
2. {
3. **int** a, b, c;

```
4.  public int add();
5.  {
6.  c=a+b;
7.  return c;
8.  }
9.  add(int a, int b);
10. {
11. //logic
12. }
13. add(int a, int b, int c);
14. {
15. //logic
16. }
17. add(double a, double b, double c);
18. {
19. //logic
20. }
21. //statements
22. }
```
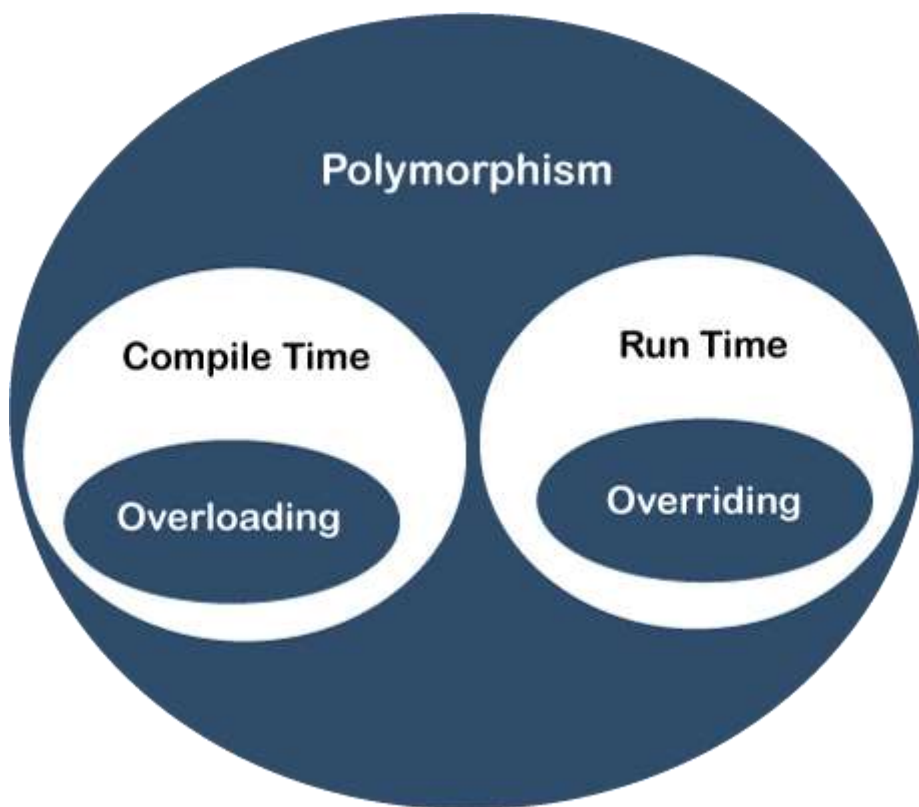
Overriding

If a method with the same method signature is presented in both child and parent class is known as method **overriding**. The methods must have the same number of parameters and the same type of parameter. It overrides the value of the parent class method. It is also known as **runtime polymorphism**. For example, consider the following program.

```
1. class Dog
2. {
3. public void bark()
4. {
5. System.out.println("woof ");
6. }
7. }
8. class Hound extends Dog
9. {
10. public void sniff()
11. {
```

```
12. System.out.println("sniff ");
13. }
14. //overrides the method bark() of the Dog class
15. public void bark()
16. {
17. System.out.println("bowl");
18. }
19. }
20. public class OverridingExample
21. {
22. public static void main(String args[])
23. {
24. Dog dog = new Hound();
25. //invokes the bark() method of the Hound class
26. dog.bark();
27. }
28. }
```

32) What is Cohesion in OOP?

In OOP, **cohesion** refers to the degree to which the elements inside a module belong together. It measures the strength of the relationship between the module and data. In short, cohesion represents the clarity of the responsibilities of a module. It is often contrasted with coupling.

It focuses on a how single module or class is intended. Higher the cohesiveness of the module or class, better is the object-oriented design.

Module A

Module B

------- Coupling
——— Cohesion
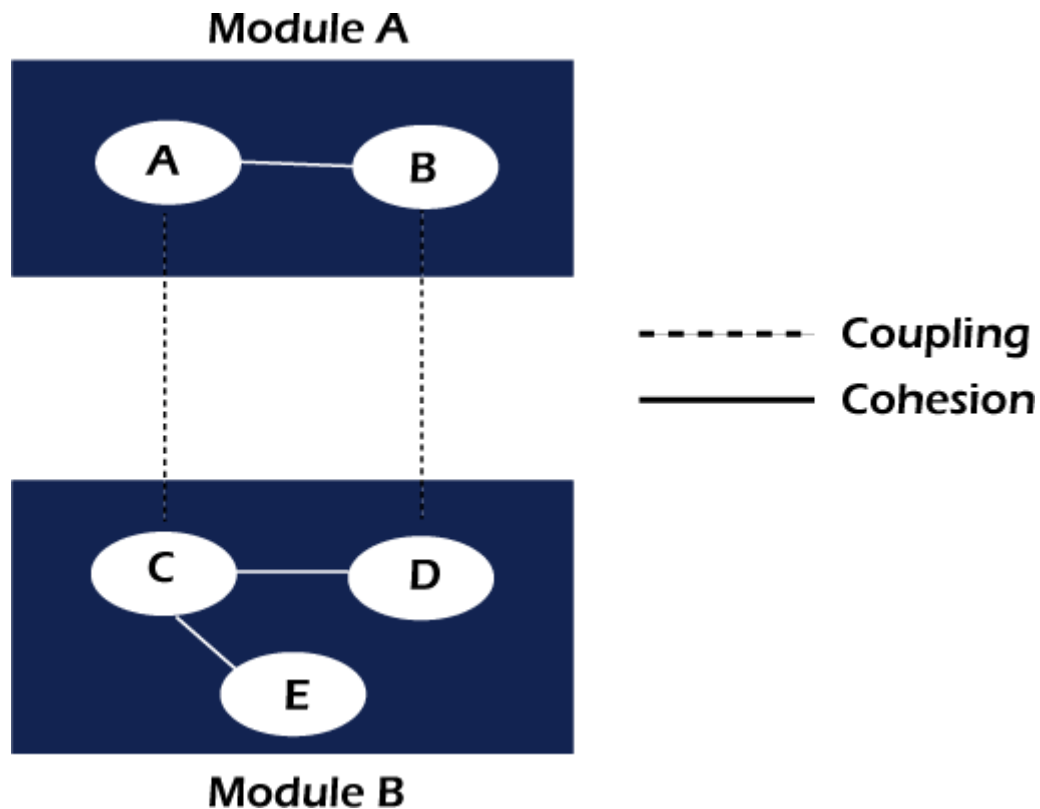
There are two types of cohesion, i.e. **High** and **Low**.

- o High cohesion is associated with several required qualities of software including **robustness, reliability**, and **understandability**.
- o Low cohesion is associated with unwanted qualities such as being difficult to **maintain, test, reuse,** or even **understand**.

High cohesion often associates with loose coupling and vice versa.

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33) Give a real-world example of polymorphism?

The general meaning of Polymorphism is one that has different forms. The best real-world example of polymorphism is a **person** that plays different roles at different palaces or situations.

- o At home a person can play the role of father, husband, and son.
- o At the office the same person plays the role of boss or employee.
- o In public transport, he plays the role of passenger.
- o In the hospital, he can play the role of doctor or patient.

o At the shop, he plays the role of customer.
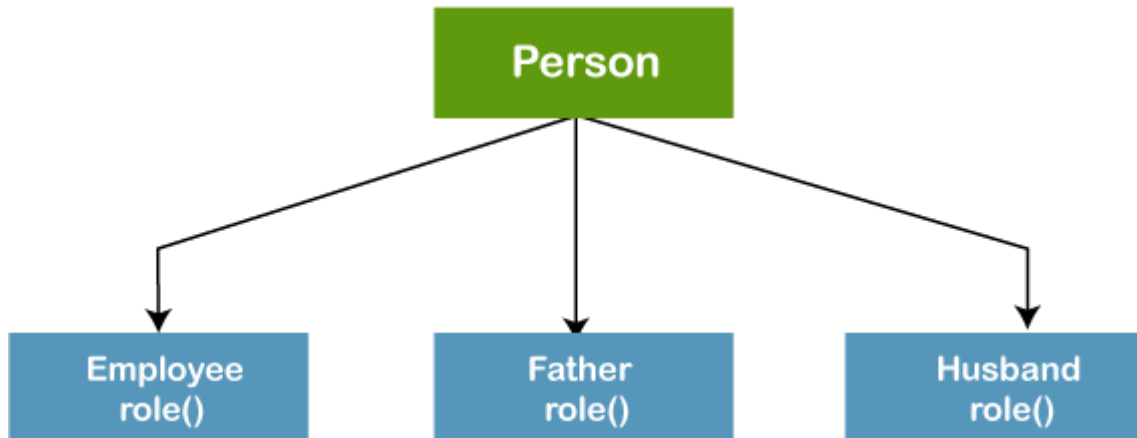
Hence, the same person possesses different behavior in different situations. It is called polymorphism.

34) What is the difference between a base class and a superclass?

The base class is the root class- the most generalized class. At the same time, the superclass is the immediate parent class from which the other class inherits.

35) What is data abstraction and how can we achieve data abstraction?

It is one of the most important features of OOP. It allows us to show only essential data or information to the user and hides the implementation details from the user. A real-world example of abstraction is driving a car. When we drive a car, we do not need to know how the engine works (implementation) we only know how ECG works.

There are two ways to achieve data abstraction

o Abstract class
o Abstract method

36) What are the levels of data abstraction?

There are **three** levels of data abstraction:

- o **Physical Level:** It is the lowest level of data abstraction. It shows how the data is actually stored in memory.

- o **Logical Level:** It includes the information that is actually stored in the database in the form of tables. It also stores the relationship among the data entities in relatively simple structures. At this level, the information available to the user at the view level is unknown.

- o **View Level:** It is the highest level of data abstraction. The actual database is visible to the user. It exists to ease the availability of the database by an individual user.
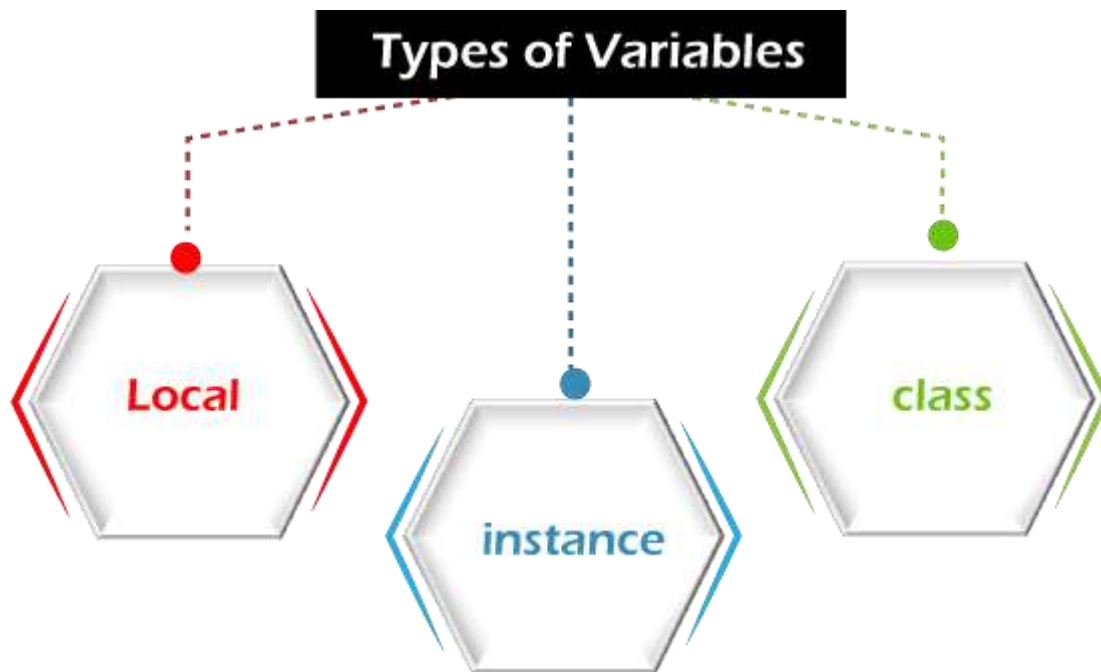

Levels of data abstraction

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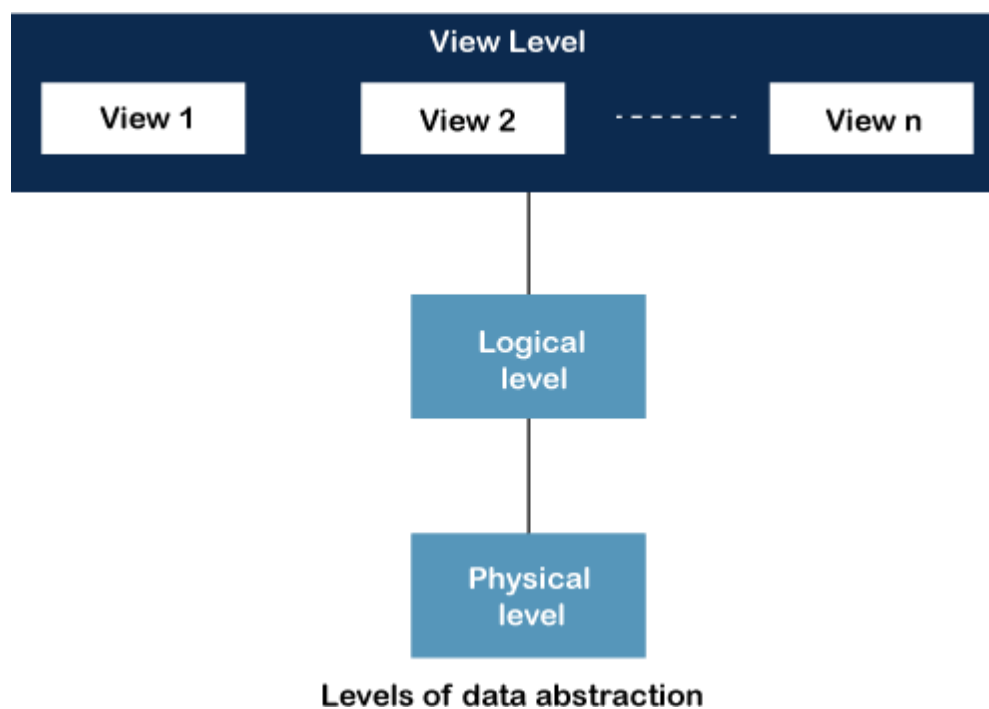
37) What are the types of variables in OOP?

There are three types of variables:

Instance Variable: It is an object-level variable. It should be declared inside a class but must be outside a method, block, and constructor. It is created when an object is created by using the new keyword. It can be accessed directly by calling the variable name inside the class.

Static Variable: It is a class-level variable. It is declared with keyword **static** inside a class but must be outside of the method, block, and constructor. It stores in static memory. Its visibility is the same as the instance variable. The default value of a static variable is the same as the instance variable. It can be accessed by calling the **class_name.variable_name**.

Local Variable: It is a method-level variable. It can be declared in method, constructor, or block. Note that the use of an access modifier is not allowed with local variables. It is visible only to the method, block, and constructor in which it is declared. Internally, it is implemented at the stack level. It must be declared and initialized before use.

Another type of variable is used in object-oriented programming is the **reference** variable.

Reference Variable: It is a variable that points to an object of the class. It points to the location of the object that is stored in the memory.

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38) Is it possible to overload a constructor?

Yes, the constructors can be overloaded by changing the number of arguments accepted by the constructor or by changing the data type of the parameters. For example:

1. **public class** Demo
2. {
3. Demo()
4. {
5. //logic
6. }
7. Demo(String str) //overloaded constructor
8. {
9. //logic
10. }
11. Demo(**double** d) //overloaded constructor
12. {
13. //logic
14. }
15. //statements
16. }

---

39) Can we overload the main() method in Java also give an example?

Yes, we can also overload the main() method in Java. Any number of main() methods can be defined in the class, but the method signature must be different. Consider the following code.

1. **class** OverloadMain
2. {
3. **public static void** main(**int** a) //overloaded main method
4. {
5. System.out.println(a);
6. }
7. **public static void** main(String args[])
8. {
9. System.out.println("main method invoked");
10. main(6);

```
11. }
12. }
```

40) Consider the following scenario:

If a class Demo has a static block and a main() method. A print statement is presented in both. The question is which one will first execute, static block or the main() method, and why?

JVM first executes the static block on a priority basis. It means JVM first goes to static block even before it looks for the main() method in the program. After that main() method will be executed.

```
1.  class Demo
2.  {
3.  static            //static block
4.  {
5.  System.out.println("Static block");
6.  }
7.  public static void main(String args[])  //static method
8.  {
9.  System.out.println("Static method");
10. }
11. }
```

DBMS Interview Questions

A list of top frequently asked DBMS interview questions and answers are given below.

1) What is DBMS?

DBMS is a collection of programs that facilitates users to create and maintain a database. In other words, DBMS provides us an interface or tool for performing different operations such as the creation of a database, inserting data into it, deleting data from it, updating the data, etc. DBMS is a software in which data is stored in a more secure way as compared to the file-based system. Using DBMS, we can overcome many problems such as- data redundancy, data inconsistency, easy access, more organized and understandable, and so on. There is the name of some popularDatabase Management System- MySQL, Oracle, SQL Server, Amazon simple DB(Cloud-based), etc.

Working of DBMS is defined in the figure below.
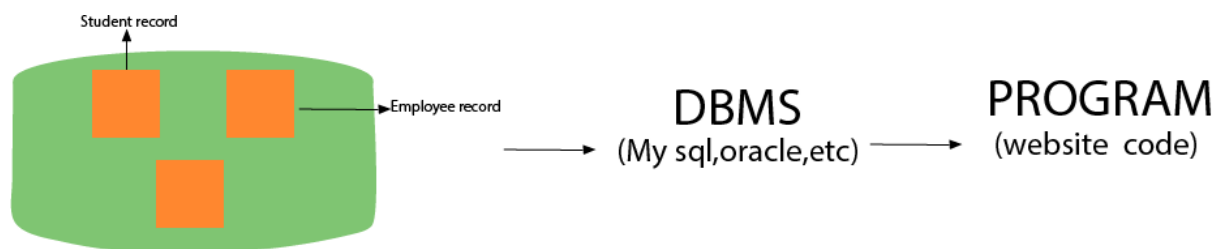
2) What is a database?

A Database is a logical, consistent and organized collection of data that it can easily be accessed, managed and updated. Databases, also known as electronic databases are structured to provide the facility of creation, insertion, updating of the data efficiently and are stored in the form of a file or set of files, on the magnetic disk, tapes and another sort of secondary devices. Database mostly consists of the objects (tables), and tables include of the records and fields. Fields are the basic units of data storage, which contain the information about a particular aspect or attribute of the entity described by the database. DBMS is used for extraction of data from the database in the form of the queries.

3) What is a database system?

The collection of database and DBMS software together is known as a database system. Through the database system, we can perform many activities such as-

The data can be stored in the database with ease, and there are no issues of data redundancy and data inconsistency.

The data will be extracted from the database using DBMS software whenever required. So, the combination of database and DBMS software enables one to store, retrieve and access data with considerate accuracy and security.

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4) What are the advantages of DBMS?

- Redundancy control
- Restriction for unauthorized access
- Provides multiple user interfaces
- Provides backup and recovery
- Enforces integrity constraints
- Ensure data consistency
- Easy accessibility
- Easy data extraction and data processing due to the use of queries

---

5) What is a checkpoint in DBMS?

The Checkpoint is a type of mechanism where all the previous logs are removed from the system and permanently stored in the storage disk.

There are two ways which can help the DBMS in recovering and maintaining the ACID properties, and they are- maintaining the log of each transaction and maintaining shadow pages. So, when it comes to log based recovery system, checkpoints come into existence. Checkpoints are those points to which the database engine can recover after a crash as a specified minimal point from where the transaction log record can be used to recover all the committed data up to the point of the crash.

---

6) When does checkpoint occur in DBMS?

A checkpoint is like a snapshot of the DBMS state. Using checkpoints, the DBMS can reduce the amount of work to be done during a restart in the event of subsequent crashes. Checkpoints are used for the recovery of the database after the system crash. Checkpoints are used in the log-based recovery system. When due to a system crash we need to restart the system then at that point we use checkpoints. So that, we don't have to perform the transactions from the very starting.

7) What do you mean by transparent DBMS?

The transparent DBMS is a type of DBMS which keeps its physical structure hidden from users. Physical structure or physical storage structure implies to the memory manager of the DBMS, and it describes how the data stored on disk.

8) What are the unary operations in Relational Algebra?

PROJECTION and SELECTION are the unary operations in relational algebra. Unary operations are those operations which use single operands. Unary operations are SELECTION, PROJECTION, and RENAME.

As in SELECTION relational operators are used for example - =,<=,>=, etc.

9) What is RDBMS?

RDBMS stands for Relational Database Management Systems. It is used to maintain the data records and indices in tables. RDBMS is the form of DBMS which uses the structure to identify and access data concerning the other piece of data in the database. RDBMS is the system that enables you to perform different operations such as- update, insert, delete, manipulate and administer a relational database withminimal difficulties. Most of the time RDBMS use SQL language because it is easily understandable and is used for often.

10) How many types of database languages are?

There are four types of database languages:

- **Data Definition Language (DDL)** e.g., CREATE, ALTER, DROP, TRUNCATE, RENAME, etc. All these commands are used for updating the data that?s why they are known as Data Definition Language.
- **Data Manipulation Language (DML)** e.g., SELECT, UPDATE, INSERT, DELETE, etc. These commands are used for the manipulation of already updated data that's why they are the part of Data Manipulation Language.
- **DATA Control Language (DCL)** e.g., GRANT and REVOKE. These commands are used for giving and removing the user access on the database. So, they are the part of Data Control Language.
- **Transaction Control Language (TCL)** e.g., COMMIT, ROLLBACK, and SAVEPOINT. These are the commands used for managing transactions in the database. TCL is used for managing the changes made by DML.

Database language implies the queries that are used for the update, modify and manipulate the data.

11) What do you understand by Data Model?

The Data model is specified as a collection of conceptual tools for describing data, data relationships, data semantics and constraints. These models are used to describe the relationship between the entities and their attributes.

There is the number of data models:

- Hierarchical data model
- network model
- relational model
- Entity-Relationship model and so on.

12) Define a Relation Schema and a Relation.

A Relation Schema is specified as a set of attributes. It is also known as table schema. It defines what the name of the table is. Relation schema is known as the blueprint with the help of which we can explain that how the data is organized into tables. This blueprint contains no data.

A relation is specified as a set of tuples. A relation is the set of related attributes with identifying key attributes

See this example:

Let r be the relation which contains set tuples (t1, t2, t3, ..., tn). Each tuple is an ordered list of n-values t=(v1,v2,....., vn).

---

13) What is a degree of Relation?

The degree of relation is a number of attribute of its relation schema. A degree of relation is also known as Cardinality it is defined as the number of occurrence of one entity which is connected to the number of occurrence of other entity. There are three degree of relation they are one-to-one(1:1), one-to-many(1:M), many-to-one(M:M).

---

14) What is the Relationship?

The Relationship is defined as an association among two or more entities. There are three type of relationships in DBMS-

One-To-One: Here one record of any object can be related to one record of another object.

One-To-Many (many-to-one): Here one record of any object can be related to many records of other object and vice versa.

Many-to-many: Here more than one records of an object can be related to n number of records of another object.

---

15) What are the disadvantages of file processing systems?

- Inconsistent
- Not secure
- Data redundancy
- Difficult in accessing data
- Data isolation

- Data integrity

- o Concurrent access is not possible
- o Limited data sharing
- o Atomicity problem

16) What is data abstraction in DBMS?

Data abstraction in DBMS is a process of hiding irrelevant details from users. Because database systems are made of complex data structures so, it makes accessible the user interaction with the database.

For example: We know that most of the users prefer those systems which have a simple GUI that means no complex processing. So, to keep the user tuned and for making the access to the data easy, it is necessary to do data abstraction. In addition to it, data abstraction divides the system in different layers to make the work specified and well defined.

17) What are the three levels of data abstraction?

Following are three levels of data abstraction:

Physical level: It is the lowest level of abstraction. It describes how data are stored.

Logical level: It is the next higher level of abstraction. It describes what data are stored in the database and what the relationship among those data is.

View level: It is the highest level of data abstraction. It describes only part of the entire database.

For example- User interacts with the system using the GUI and fill the required details, but the user doesn't have any idea how the data is being used. So, the abstraction level is entirely high in VIEW LEVEL.

Then, the next level is for PROGRAMMERS as in this level the fields and records are visible and the programmers have the knowledge of this layer. So, the level of abstraction here is a little low in VIEW LEVEL.

And lastly, physical level in which storage blocks are described.

18) What is DDL (Data Definition Language)?

Data Definition Language (DDL) is a standard for commands which defines the different structures in a database. Most commonly DDL statements are CREATE, ALTER, and DROP. These commands are used for updating data into the database.

---

19) What is DML (Data Manipulation Language)?

Data Manipulation Language (DML) is a language that enables the user to access or manipulate data as organized by the appropriate data model. For example- SELECT, UPDATE, INSERT, DELETE.

There is two type of DML:

Procedural DML or Low level DML: It requires a user to specify what data are needed and how to get those data.

Non-Procedural DML or High level DML: It requires a user to specify what data are needed without specifying how to get those data.

---

20) Explain the functionality of DML Compiler.

The DML Compiler translates DML statements in a query language that the query evaluation engine can understand. DML Compiler is required because the DML is the family of syntax element which is very similar to the other programming language which requires compilation. So, it is essential to compile the code in the language which query evaluation engine can understand and then work on those queries with proper output.

---

21) What is Relational Algebra?

Relational Algebra is a Procedural Query Language which contains a set of operations that take one or two relations as input and produce a new relationship. Relational algebra is the basic set of operations for the relational model. The decisive point of relational algebra is that it is similar to the algebra which operates on the number.

There are few fundamental operations of relational algebra:

- select

- project
- set difference
- union
- rename,etc.

---

22) What is Relational Calculus?

Relational Calculus is a Non-procedural Query Language which uses mathematical predicate calculus instead of algebra. Relational calculus doesn't work on mathematics fundamentals such as algebra, differential, integration, etc. That's why it is also known as predicate calculus.

There is two type of relational calculus:

- Tuple relational calculus
- Domain relational calculus

---

23) What do you understand by query optimization?

The term query optimization specifies an efficient execution plan for evaluating a query that has the least estimated cost. The concept of query optimization came into the frame when there were a number of methods, and algorithms existed for the same task then the question arose that which one is more efficient and the process of determining the efficient way is known as query optimization.

There are many benefits of query optimization:

- It reduces the time and space complexity.
- More queries can be performed as due to optimization every query comparatively takes less time.
- User satisfaction as it will provide output fast

---

24) What do you mean by durability in DBMS?

Once the DBMS informs the user that a transaction has completed successfully, its effect should persist even if the system crashes before all its changes are reflected on

disk. This property is called durability. Durability ensures that once the transaction is committed into the database, it will be stored in the non-volatile memory and after that system failure cannot affect that data anymore.

---

25) What is normalization?

Normalization is a process of analysing the given relation schemas according to their functional dependencies. It is used to minimize redundancy and also used to minimize insertion, deletion and update distractions. Normalization is considered as an essential process as it is used to avoid data redundancy, insertion anomaly, updation anomaly, deletion anomaly.

There most commonly used normal forms are:

- o First Normal Form(1NF)
- o Second Normal Form(2NF)
- o Third Normal Form(3NF)
- o Boyce & Codd Normal Form(BCNF)

---

26) What is Denormalization?

Denormalization is the process of boosting up database performance and adding of redundant data which helps to get rid of complex data. Denormalization is a part of database optimization technique. This process is used to avoid the use of complex and costly joins. Denormalization doesn't refer to the thought of not to normalize instead of that denormalization takes place after normalization. In this process, firstly the redundancy of the data will be removed using normalization process than through denormalization process we will add redundant data as per the requirement so that we can easily avoid the costly joins.

---

27) What is functional Dependency?

Functional Dependency is the starting point of normalization. It exists when a relation between two attributes allow you to determine the corresponding attribute's value uniquely. The functional dependency is also known as database dependency and defines as the relationship which occurs when one attribute in a relation uniquely

determines another attribute. It is written as A->B which means B is functionally dependent on A.

28) What is the E-R model?

E-R model is a short name for the Entity-Relationship model. This model is based on the real world. It contains necessary objects (known as entities) and the relationship among these objects. Here the primary objects are the entity, attribute of that entity, relationship set, an attribute of that relationship set can be mapped in the form of E-R diagram.

In E-R diagram, entities are represented by rectangles, relationships are represented by diamonds, attributes are the characteristics of entities and represented by ellipses, and data flow is represented through a straight line.

29) What is an entity?

The Entity is a set of attributes in a database. An entity can be a real-world object which physically exists in this world. All the entities have their attribute which in the real world considered as the characteristics of the object.

For example: In the employee database of a company, the employee, department, and the designation can be considered as the entities. These entities have some characteristics which will be the attributes of the corresponding entity.

30) What is an Entity type?

An entity type is specified as a collection of entities, having the same attributes. Entity type typically corresponds to one or several related tables in the database. A characteristic or trait which defines or uniquely identifies the entity is called entity type.

For example, a student has student_id, department, and course as its characteristics.

31) What is an Entity set?

The entity set specifies the collection of all entities of a particular entity type in the database. An entity set is known as the set of all the entities which share the same properties.

For example, a set of people, a set of students, a set of companies, etc.

---

32) What is an Extension of entity type?

An extension of an entity type is specified as a collection of entities of a particular entity type that are grouped into an entity set.

---

33) What is Weak Entity set?

An entity set that doesn't have sufficient attributes to form a primary key is referred to as a weak entity set. The member of a weak entity set is known as a subordinate entity. Weak entity set does not have a primary key, but we need a mean to differentiate among all those entries in the entity set that depend on one particular strong entity set.

---

34) What is an attribute?

An attribute refers to a database component. It is used to describe the property of an entity. An attribute can be defined as the characteristics of the entity. Entities can be uniquely identified using the attributes. Attributes represent the instances in the row of the database.

For example: If a student is an entity in the table then age will be the attribute of that student.

---

35) What are the integrity rules in DBMS?

Data integrity is one significant aspect while maintaining the database. So, data integrity is enforced in the database system by imposing a series of rules. Those set of integrity is known as the integrity rules.

There are two integrity rules in DBMS:

Entity Integrity: It specifies that "Primary key cannot have a NULL value."

Referential Integrity: It specifies that "Foreign Key can be either a NULL value or should be the Primary Key value of other relation

---

36) What do you mean by extension and intension?

Extension: The Extension is the number of tuples present in a table at any instance. It changes as the tuples are created, updated and destroyed. The actual data in the database change quite frequently. So, the data in the database at a particular moment in time is known as extension or database state or snapshot. It is time dependent.

Intension: Intension is also known as Data Schema and defined as the description of the database, which is specified during database design and is expected to remain unchanged. The Intension is a constant value that gives the name, structure of tables and the constraints laid on it.

---

37) What is System R? How many of its two major subsystems?

System R was designed and developed from 1974 to 1979 at IBM San Jose Research Centre. System R is the first implementation of SQL, which is the standard relational data query language, and it was also the first to demonstrate that RDBMS could provide better transaction processing performance. It is a prototype which is formed to show that it is possible to build a Relational System that can be used in a real-life environment to solve real-life problems.

Following are two major subsystems of System R:

- Research Storage
- System Relational Data System

---

38) What is Data Independence?

Data independence specifies that "the application is independent of the storage structure and access strategy of data." It makes you able to modify the schema definition at one level without altering the schema definition in the next higher level.

It makes you able to modify the schema definition in one level should not affect the schema definition in the next higher level.

There are two types of Data Independence:

Physical Data Independence: Physical data is the data stored in the database. It is in the bit-format. Modification in physical level should not affect the logical level.

For example: If we want to manipulate the data inside any table that should not change the format of the table.

Logical Data Independence: Logical data in the data about the database. It basically defines the structure. Such as tables stored in the database. Modification in logical level should not affect the view level.

For example: If we need to modify the format of any table, that modification should not affect the data inside it.

NOTE: Logical Data Independence is more difficult to achieve.

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39) What are the three levels of data abstraction?

Following are three levels of data abstraction:

Physical level: It is the lowest level of abstraction. It describes how data are stored.

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View level: It is the highest level of data abstraction. It describes only part of the entire database.

For example- User interact with the system using the GUI and fill the required details, but the user doesn't have any idea how the data is being used. So, the abstraction level is absolutely high in VIEW LEVEL.

Then, the next level is for PROGRAMMERS as in this level the fields and records are visible and the programmer has the knowledge of this layer. So, the level of abstraction here is a little low in VIEW LEVEL.

And lastly, physical level in which storage blocks are described.

---

40) What is Join?

The Join operation is one of the most useful activities in relational algebra. It is most commonly used way to combine information from two or more relations. A Join is always performed on the basis of the same or related column. Most complex queries of SQL involve JOIN command.

There are following types of join:

- o Inner joins: Inner join is of 3 categories. They are:
  - o Theta join
  - o Natural join
  - o Equi join
- o Outer joins: Outer join have three types. They are:
  - o Left outer join
  - o Right outer join
  - o Full outer join

41) What is 1NF?

1NF is the **First Normal Form**. It is the simplest type of normalization that you can implement in a database. The primary objectives of 1NF are to:

- o Every column must have atomic (single value)
- o To Remove duplicate columns from the same table
- o Create separate tables for each group of related data and identify each row with a unique column

42) What is 2NF?

2NF is the **Second Normal Form**. A table is said to be 2NF if it follows the following conditions:

- o The table is in 1NF, i.e., firstly it is necessary that the table should follow the rules of 1NF.

o   Every non-prime attribute is fully functionally dependent on the primary key, i.e., every non-key attribute should be dependent on the primary key in such a way that if any key element is deleted, then even the non_key element will still be saved in the database.

43) What is 3NF?

3NF stands for **Third Normal Form**. A database is called in 3NF if it satisfies the following conditions:

o   It is in second normal form.

o   There is no transitive functional dependency.

o   For example: X->Z

      Where:

X->Y

Y   does   not   ->   X
Y->Z so, X->Z

44) What is BCNF?

BCMF stands for **Boyce-Codd Normal Form**. It is an advanced version of 3NF, so it is also referred to as 3.5NF. BCNF is stricter than 3NF.

A table complies with BCNF if it satisfies the following conditions:

o   It is in 3NF.

o   For every functional dependency X->Y, X should be the super key of the table. It merely means that X cannot be a non-prime attribute if Y is a prime attribute.

45) Explain ACID properties

ACID properties are some basic rules, which has to be satisfied by every transaction to preserve the integrity. These properties and rules are:

ATOMICITY: Atomicity is more generally known as ?all or nothing rule.' Which implies all are considered as one unit, and they either run to completion or not executed at all.

CONSISTENCY: This property refers to the uniformity of the data. Consistency implies that the database is consistent before and after the transaction.

ISOLATION: This property states that the number of the transaction can be executed concurrently without leading to the inconsistency of the database state.

DURABILITY: This property ensures that once the transaction is committed it will be stored in the non-volatile memory and system crash can also not affect it anymore.

---

46) What is stored procedure?

A stored procedure is a group of SQL statements that have been created and stored in the database. The stored procedure increases the reusability as here the code or the procedure is stored into the system and used again and again that makes the work easy, takes less time in processing and decreases the complexity of the system. So, if you have a code which you need to use again and again then save that code and call that code whenever it is required.

---

47) What is the difference between a DELETE command and TRUNCATE command?

DELETE command: DELETE command is used to delete rows from a table based on the condition that we provide in a WHERE clause.

- o DELETE command delete only those rows which are specified with the WHERE clause.
- o DELETE command can be rolled back.
- o DELETE command maintain a log, that's why it is slow.
- o DELETE use row lock while performing DELETE function.

TRUNCATE command: TRUNCATE command is used to remove all rows (complete data) from a table. It is similar to the DELETE command with no WHERE clause.

- o The TRUNCATE command removes all the rows from the table.
- o The TRUNCATE command cannot be rolled back.

- The TRUNCATE command doesn't maintain a log. That's why it is fast.
- TRUNCATE use table log while performing the TRUNCATE function.

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48) What is 2-Tier architecture?

The **2-Tier architecture** is the same as basic client-server. In the two-tier architecture, applications on the client end can directly communicate with the database at the server side.

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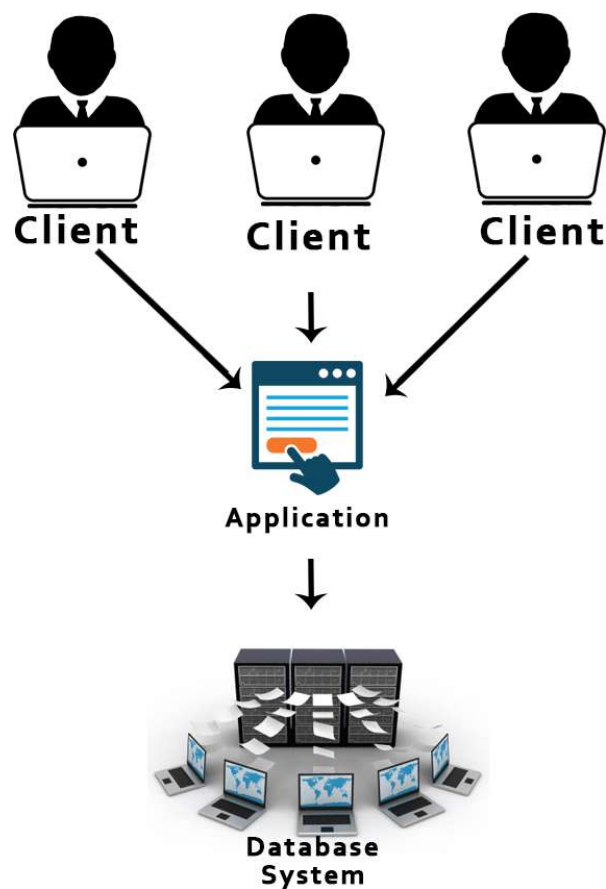
49) What is the 3-Tier architecture?

The 3-Tier architecture contains another layer between the client and server. Introduction of 3-tier architecture is for the ease of the users as it provides the GUI, which, make the system secure and much more accessible. In this architecture, the application on the client-end interacts with an application on the server which further communicates with the database system.
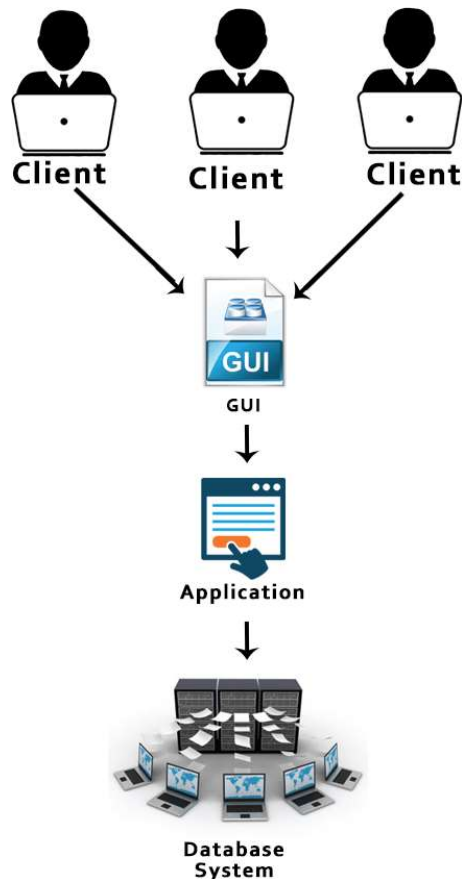
50) How do you communicate with an RDBMS?

You have to use Structured Query Language (SQL) to communicate with the RDBMS. Using queries of SQL, we can give the input to the database and then after processing of the queries database will provide us the required output.

51) What is the difference between a shared lock and exclusive lock?

Shared lock: Shared lock is required for reading a data item. In the shared lock, many transactions may hold a lock on the same data item. When more than one transaction is allowed to read the data items then that is known as the shared lock.

Exclusive lock: When any transaction is about to perform the write operation, then the lock on the data item is an exclusive lock. Because, if we allow more than one transaction then that will lead to the inconsistency in the database.

52) Describe the types of keys?

There are following types of keys:

Primary key: The Primary key is an attribute in a table that can uniquely identify each record in a table. It is compulsory for every table.

Candidate key: The Candidate key is an attribute or set of an attribute which can uniquely identify a tuple. The Primary key can be selected from these attributes.

Super key: The Super key is a set of attributes which can uniquely identify a tuple. Super key is a superset of the candidate key.

Foreign key: The Foreign key is a primary key from one table, which has a relationship with another table. It acts as a cross-reference between tables.

Operating System Interview Question

A list of top frequently asked **Operating System interview questions** and answers are given below.

1) What is an operating system?

The operating system is a software program that facilitates computer hardware to communicate and operate with the computer software. It is the most important part of acomputer system without it computer is just like a box.

---

2) What is the main purpose of an operating system?

There are two main purposes of an operating system:

- It is designed to make sure that a computer system performs well by managing its computational activities.
- It provides an environment for the development and execution of programs.

---

3) What are the different operating systems?

- Batched operating systems
- Distributed operating systems
- Timesharing operating systems
- Multi-programmed operating systems
- Real-time operating systems

---

4) What is a socket?

A socket is used to make connection between two applications. Endpoints of the connectionare called socket.

5) What is a real-time system?

Real-time system is used in the case when rigid-time requirements have been placed on theoperation of a processor. It contains a well defined and fixed time constraints.

6) What is kernel?

Kernel is the core and most important part of a computer operating system which providesbasic services for all parts of the OS.

7) What is monolithic kernel?

A monolithic kernel is a kernel which includes all operating system code is in singleexecutable image.

8) What do you mean by a process?

An executing program is known as process. There are two types of processes:

- o Operating System Processes
- o User Processes

9) What are the different states of a process?

A list of different states of process:

- o New Process
- o Running Process
- o Waiting Process
- o Ready Process
- o Terminated Process

10) What is the difference between micro kernel and macro kernel?

Micro kernel: micro kernel is the kernel which runs minimal performance affecting servicesfor operating system. In micro kernel operating system all other operations are performed by processor.

Macro Kernel: Macro Kernel is a combination of micro and monolithic kernel.

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11) What is the concept of reentrancy?

It is a very useful memory saving technique that is used for multi-programmed time sharingsystems. It provides functionality that multiple users can share a single copy of program during the same period.

It has two key aspects:

- o The program code cannot modify itself.
- o The local data for each user process must be stored separately.

---

12) What is the difference between process and program?

A program while running or executing is known as a process.

---

13) What is the use of paging in operating system?

Paging is used to solve the external fragmentation problem in operating system. Thistechnique ensures that the data you need is available as quickly as possible.

---

14) What is the concept of demand paging?

Demand paging specifies that if an area of memory is not currently being used, it is swappedto disk to make room for an application's need.

15) What is the advantage of a multiprocessor system?

As many as processors are increased, you will get the considerable increment in throughput.It is cost effective also because they can share resources. So, the overall reliability increases.

16) What is virtual memory?

Virtual memory is a very useful memory management technique which enables processes toexecute outside of memory. This technique is especially used when an executing program cannot fit in the physical memory.

---

17) What is thrashing?

Thrashing is a phenomenon in virtual memory scheme when the processor spends most of itstime in swapping pages, rather than executing instructions.

---

18) What are the four necessary and sufficient conditions behind the deadlock?

These are the 4 conditions:

1) **Mutual Exclusion Condition**: It specifies that the resources involved are non-sharable.

2) **Hold and Wait Condition**: It specifies that there must be a process that is holding a resource already allocated to it while waiting for additional resource that are currently being held by other processes.

3) **No-Preemptive Condition**: Resources cannot be taken away while they are being used by processes.

4) **Circular Wait Condition**: It is an explanation of the second condition. It specifies that the processes in the system form a circular list or a chain where each process in the chain is waiting for a resource held by next process in the chain.

---

19) What is a thread?

A thread is a basic unit of CPU utilization. It consists of a thread ID, program counter,register set and a stack.

---

20) What is FCFS?

FCFS stands for First Come, First Served. It is a type of scheduling algorithm. In this scheme, if a process requests the CPU first, it is allocated to the CPU first. Its implementationis managed by a FIFO queue.

21) What is SMP?

SMP stands for Symmetric MultiProcessing. It is the most common type of multiple processor system. In SMP, each processor runs an identical copy of the operating system, andthese copies communicate with one another when required.

22) What is RAID? What are the different RAID levels?

RAID stands for Redundant Array of Independent Disks. It is used to store the same dataredundantly to improve the overall performance.

Following are the different RAID levels:

RAID 0 - Stripped Disk Array without fault

toleranceRAID 1 - Mirroring and duplexing

RAID 2 - Memory-style error-correcting

codesRAID 3 - Bit-interleaved Parity

RAID 4 - Block-interleaved Parity

RAID 5 - Block-interleaved distributed

ParityRAID 6 - P+Q Redundancy

23) What is deadlock? Explain.

Deadlock is a specific situation or condition where two processes are waiting for each otherto complete so that they can start. But this situation causes hang for both of them.

24) Which are the necessary conditions to achieve a deadlock?

There are 4 necessary conditions to achieve a deadlock:

- o **Mutual Exclusion:** At least one resource must be held in a non-sharable mode. If any other process requests this resource, then that process must wait for the resource to be released.

- **Hold and Wait:** A process must be simultaneously holding at least one resource and waiting for at least one resource that is currently being held by some other process.
- **No preemption:** Once a process is holding a resource (i.e. once its request has been granted), then that resource cannot be taken away from that process until the process voluntarily releases it.
- **Circular Wait:** A set of processes { P0, P1, P2, . . ., PN } must exist such that every P[i] is waiting for P[(i + 1) % (N + 1)].

Note: This condition implies the hold-and-wait condition, but it is easier to deal with the conditions if the four are considered separately.

25) What is Banker's algorithm?

Banker's algorithm is used to avoid deadlock. It is the one of deadlock-avoidance method. Itis named as Banker's algorithm on the banking system where bank never allocates available cash in such a manner that it can no longer satisfy the requirements of all of its customers.

26) What is the difference between logical address space and physical address space?

Logical address space specifies the address that is generated by CPU. On the other handphysical address space specifies the address that is seen by the memory unit.

27) What is fragmentation?

Fragmentation is a phenomenon of memory wastage. It reduces the capacity and performancebecause space is used inefficiently.

28) How many types of fragmentation occur in Operating

System?

There are two types of fragmentation:

- o **Internal fragmentation**: It is occurred when we deal with the systems that have fixed size allocation units.

- **External fragmentation**: It is occurred when we deal with systems that have variable-size allocation units.

---

29) What is spooling?

Spooling is a process in which data is temporarily gathered to be used and executed by a device, program or the system. It is associated with printing. When different applications send output to the printer at the same time, spooling keeps these all jobs into a disk file andqueues them accordingly to the printer.

---

30) What is the difference between internal commands and external commands?

Internal commands are the built-in part of the operating system while external commands arethe separate file programs that are stored in a separate folder or directory.

---

31) What is semaphore?

Semaphore is a protected variable or abstract data type that is used to lock the resource beingused. The value of the semaphore indicates the status of a common resource.

There are two types of semaphore:

- Binary semaphores
- Counting semaphores

---

32) What is a binary Semaphore?

Binary semaphore takes only 0 and 1 as value and used to implement mutual exclusion andsynchronize concurrent processes.

33) What is Belady's Anomaly?

Belady's Anomaly is also called FIFO anomaly. Usually, on increasing the number of framesallocated to a process virtual memory, the process execution is faster, because fewer page faults occur. Sometimes, the reverse happens, i.e., the execution time increases even when

more frames are allocated to the process. This is Belady's Anomaly. This is true for certainpage reference patterns.

34) What is starvation in Operating System?

Starvation is Resource management problem. In this problem, a waiting process does not getthe resources it needs for a long time because the resources are being allocated to other processes.

35) What is aging in Operating System?

Aging is a technique used to avoid the starvation in resource scheduling system.

36) What are the advantages of multithreaded programming?

A list of advantages of multithreaded programming:

- o   Enhance the responsiveness to the users.
- o   Resource sharing within the process.
- o   Economical
- o   Completely utilize the multiprocessing architecture.

37) What is the difference between logical and physical address space?

Logical address specifies the address which is generated by the CPU whereas physicaladdress specifies to the address which is seen by the memory unit.

After fragmentation

38) What are overlays?

Overlays makes a process to be larger than the amount of memory allocated to it. It ensuresthat only important instructions and data at any given time are kept in memory.

39) When does trashing occur?

Thrashing specifies an instance of high paging activity. This happens when it isspending more time paging instead of executing.

Networking Interview Questions

A list of top frequently asked **networking interview questions** and answers are given below

1) What is the network?

- A network is a set of devices that are connected with a physical media link. In a network, two or more nodes are connected by a physical link or two or more networks are connected by one or more nodes.
- A network is a collection of devices connected to each other to allow the sharing of data.
- Example of a network is an internet. An internet connects the millions of people across the world.

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2) What do you mean by network topology?

Network topology specifies the layout of a computer network. It shows how devices and cables are connected to each other. The types of topologies are:

Bus:

Bus
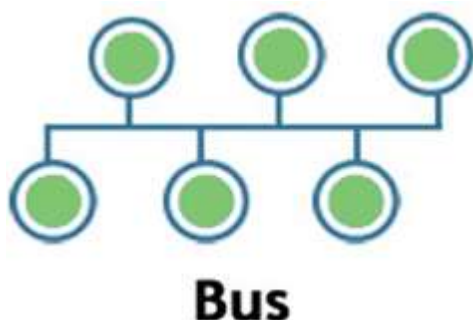
- Bus topology is a network topology in which all the nodes are connected to a single cable known as a central cable or bus.
- It acts as a shared communication medium, i.e., if any device wants to send the data to other devices, then it will send the data over the bus which in turn sends the data to all the attached devices.

- Bus topology is useful for a small number of devices. As if the bus is damaged then the whole network fails.

Star:

Star

- Star topology is a network topology in which all the nodes are connected to a single device known as a central device.
- Star topology requires more cable compared to other topologies. Therefore, it is more robust as a failure in one cable will only disconnect a specific computer connected to this cable.
- If the central device is damaged, then the whole network fails.
- Star topology is very easy to install, manage and troubleshoot.
- Star topology is commonly used in office and home networks.

Ring
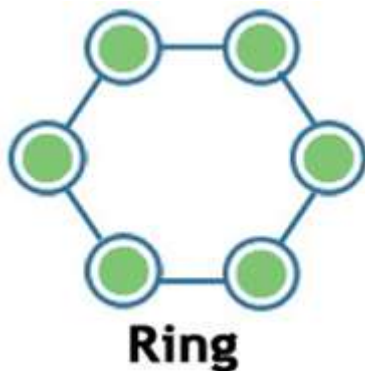
Ring

- Ring topology is a network topology in which nodes are exactly connected to two or more nodes and thus, forming a single continuous path for the transmission.

- It does not need any central server to control the connectivity among the nodes.
- If the single node is damaged, then the whole network fails.
- Ring topology is very rarely used as it is expensive, difficult to install and manage.
- Examples of Ring topology are SONET network, SDH network, etc.

Mesh
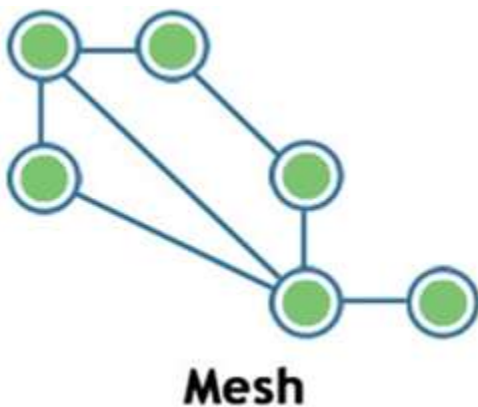
Mesh

- Mesh topology is a network topology in which all the nodes are individually connected to other nodes.
- It does not need any central switch or hub to control the connectivity among the nodes.
- Mesh topology is categorized into two parts:
  - **Fully connected mesh topology**: In this topology, all the nodes are connected to each other.
  - **Partially connected mesh topology**: In this topology, all the nodes are not connected to each other.
- It is a robust as a failure in one cable will only disconnect the specified computer connected to this cable.
- Mesh topology is rarely used as installation and configuration are difficult when connectivity gets more.
- Cabling cost is high as it requires bulk wiring.

Tree

Tree

- Tree topology is a combination of star and bus topology. It is also known as the expanded star topology.

- In tree topology, all the star networks are connected to a single bus.

- Ethernet protocol is used in this topology.

- In this, the whole network is divided into segments known as star networks which can be easily maintained. If one segment is damaged, but there is no effect on other segments.

- Tree topology depends on the "main bus," and if it breaks, then the whole network gets damaged.

Hybrid

- A hybrid topology is a combination of different topologies to form a resulting topology.

- If star topology is connected with another star topology, then it remains star topology. If star topology is connected with different topology, then it becomes a Hybrid topology.

- It provides flexibility as it can be implemented in a different network environment.

- The weakness of a topology is ignored, and only strength will be taken into consideration.

3) What are the advantages of Distributed Processing?

A list of advantages of distributed processing:

- Secure
- Support Encapsulation

- Distributed database
- Faster Problem solving
- Security through redundancy
- Collaborative Processing

---

4) What is the criteria to check the network reliability?

Network reliability: Network reliability means the ability of the network to carry out the desired operation through a network such as communication through a network.

Network reliability plays a significant role in the network functionality. The network monitoring systems and devices are the essential requirements for making the network reliable.The network monitoring system identifies the problems that are occurred in the network while the network devices ensure that data should reach the appropriate destination.

The reliability of a network can be measured by the following factors:

- **Downtime**: The downtime is defined as the required time to recover.
- **Failure Frequency**: It is the frequency when it fails to work the way it is intended.
- **Catastrophe**: It indicates that the network has been attacked by some unexpected event such as fire, earthquake.

---

5) Which are the different factors that affect the security of a network?

There are mainly two security affecting factors:

- Unauthorized Access
- Viruses

---

6) Which are the different factors that affect the reliability of a network?

The following factors affect the reliability of a network:

- o Frequency of failure
- o Recovery time of a network after a failure

---

7) Which are the different factors that affect the performance of a network?

The following factors affect the performance of a network:

- o Large number of users
- o Transmission medium types
- o Hardware
- o Software

---

8) What makes a network effective and efficient?

There are mainly two criteria which make a network effective and efficient:

- o **Performance:** : performance can be measured in many ways like transmit time and response time.
- o **Reliability:** reliability is measured by frequency of failure.
- o **Robustness:** robustness specifies the quality or condition of being strong and in good condition.
- o **Security:** It specifies how to protect data from unauthorized access and viruses.

---

9) What is bandwidth?

Every signal has a limit of upper range frequency and lower range frequency. The range of limit of network between its upper and lower frequency is called bandwidth.

---

10) What is a node and link?

A network is a connection setup of two or more computers directly connected by some

physical mediums like optical fiber or coaxial cable. This physical medium of

connection is known as a link, and the computers that it is connected are known as nodes.

---

11) What is a gateway? Is there any difference between a gateway and router?

A node that is connected to two or more networks is commonly known as a gateway. It is also known as a router. It is used to forward messages from one network to another. **Both the gateway and router regulate the traffic in the network**.

Differences between gateway and router:

A router sends the data between two similar networks while gateway sends the data between two dissimilar networks.

---

12) What is DNS?

DNS is an acronym stands for Domain Name System.

- DNS was introduced by Paul Mockapetris and Jon Postel in 1983.
- It is a naming system for all the resources over the internet which includes physical nodes and applications. It is used to locate to resource easily over a network.
- DNS is an internet which maps the domain names to their associated IP addresses.
- Without DNS, users must know the IP address of the web page that you wanted to access.

Working of DNS:

If you want to visit the website of "javaTpoint", then the user will type "https://www.javatpoint.com

" into the address bar of the web browser. Once the domain name is entered, then the domain name system will translate the domain name into the IP address which can be easily interpreted bythe computer. Using the IP address, the computer can locate the web page requested by the user.

---

13) What is DNS forwarder?

- A forwarder is used with DNS server when it receives DNS queries that cannot be resolved quickly. So it forwards those requests to external DNS servers for resolution.
- A DNS server which is configured as a forwarder will behave differently than the DNS server which is not configured as a forwarder.
    - **Following are the ways that the DNS server behaves when it is configured as aforwarder**:
- When the DNS server receives the query, then it resolves the query by using a cache.
- If the DNS server is not able to resolve the query, then it forwards the query to another DNS server.
- If the forwarder is not available, then it will try to resolve the query by using root hint.

---

14) What is NIC?

- NIC stands for Network Interface Card. It is a peripheral card attached to the PC to connect to a network. Every NIC has its own MAC address that identifies the PC on the network.
- It provides a wireless connection to a local area network.
- NICs were mainly used in desktop computers.

---

15) What is the meaning of 10Base-T?

It is used to specify data transfer rate. In 10Base-T, 10 specify the data transfer rate, i.e., 10Mbps. The word Base specifies the baseband as opposed to broadband. T specifies the type of the cable which is a twisted pair.

---

16) What is NOS in computer networking?

- NOS stands for Network Operating System. It is specialized software which is used to provide network connectivity to a computer to make communication possible with other computers and connected devices.

- o NOS is the software which allows the device to communicate, share files with other devices.

- o The first network operating system was Novel NetWare released in 1983. Some other examples of NOS are Windows 2000, Windows XP, Linux, etc.

---

17) What are the different types of networks?

Networks can be divided on the basis of area of distribution. For example:

- o **PAN (Personal Area Network)**: Its range limit is up to 10 meters. It is created for personal use. Generally, personal devices are connected to this network. For example computers, telephones, fax, printers, etc.

- o **LAN (Local Area Network)**: It is used for a small geographical location like office, hospital, school, etc.

- o **HAN (House Area Network)**: It is actually a LAN that is used within a house and used to connect homely devices like personal computers, phones, printers, etc.

- o **CAN (Campus Area Network)**: It is a connection of devices within a campus area which links to other departments of the organization within the same campus.

- o **MAN (Metropolitan Area Network)**: It is used to connect the devices which span to large cities like metropolitan cities over a wide geographical area.

- o **WAN (Wide Area Network)**: It is used over a wide geographical location that may range to connect cities and countries.

- o **GAN (Global Area Network)**: It uses satellites to connect devices over global are.

---

18) What is POP3?

POP3 stands for Post Office Protocol version3. POP is responsible for accessing the mail service on a client machine. POP3 works on two models such as Delete mode and Keep mode.

---

19) What do you understand by MAC address?

MAC stands for Media Access Control. It is the address of the device at the Media Access Control Layer of Network Architecture. It is a unique address means no two devices can have same MAC addresses.

---

20) What is IP address?

IP address is a unique 32 bit software address of a computer in a network system.

---

21) What is private IP address?

There are three ranges of IP addresses that have been reserved for IP addresses. They are not valid for use on the internet. If you want to access internet on these private IPs, you must have to use proxy server or NAT server.

---

22) What is public IP address?

A public IP address is an address taken by the Internet Service Provider which facilitates you to communication on the internet.

---

23) What is APIPA?

APIPA is an acronym stands for Automatic Private IP Addressing. This feature is generally found in Microsoft operating system.

---

24) What is the full form of ADS?

- o   ADS stands for Active Directory Structure.
- o   ADS is a microsoft technology used to manage the computers and other devices.
- o   ADS allows the network administrators to manage the domains, users and objects within the network.
- o   ADS consists of three main tiers:
  - o   **Domain**: Users that use the same database will be grouped into a single

domain.

- o **Tree**: Multiple domains can be grouped into a single tree.
- o **Forest**: Multiple trees can be grouped into a single forest.

---

25) What is RAID?

RAID is a method to provide Fault Tolerance by using multiple Hard Disc Drives.

---

26) What is anonymous FTP?

Anonymous FTP is used to grant users access to files in public servers. Users which are allowed access to data in these servers do not need to identify themselves, but instead log in as an anonymous guest.

---

27) What is protocol?

A protocol is a set of rules which is used to govern all the aspects of information communication.

---

28) What are the main elements of a protocol?

The main elements of a protocol are:

- o **Syntax**: It specifies the structure or format of the data. It also specifies the order in which they are presented.
- o **Semantics**: It specifies the meaning of each section of bits.
- o **Timing**: Timing specifies two characteristics: When data should be sent and how fast it can be sent.

---

29 What is the Domain Name System?

There are two types of client/server programs. First is directly used by the users and the second supports application programs.

The Domain Name System is the second type supporting program that is used by other programs such as to find the IP address of an e-mail recipient.

30) What is link?

A link is connectivity between two devices which includes the cables and protocols used in order to make communication between devices.

31) How many layers are in OSI reference model?

OSI reference model: OSI reference model is an ISO standard which defines a networking framework for implementing the protocols in seven layers. These seven layers can be grouped into three categories:

- o **Network layer**: Layer 1, Layer 2 and layer 3 are the network layers.
- o **Transport layer**: Layer 4 is a transport layer.
- o **Application layer**. Layer 5, Layer 6 and Layer 7 are the application layers.

There are 7 layers in the OSI reference model.

1. Physical Layer

- o It is the lowest layer of the OSI reference model.
- o It is used for the transmission of an unstructured raw bit stream over a physical medium.
- o Physical layer transmits the data either in the form of electrical/optical or mechanical form.
- o The physical layer is mainly used for the physical connection between the devices, and such physical connection can be made by using twisted-pair cable, fibre-optic or wireless transmission media.

2. DataLink Layer

- o It is used for transferring the data from one node to another node.
- o It receives the data from the network layer and converts the data into data frames and then attach the physical address to these frames which are sent to the physical layer.

o It enables the error-free transfer of data from one node to another node.
**Functions of Data-link layer:**
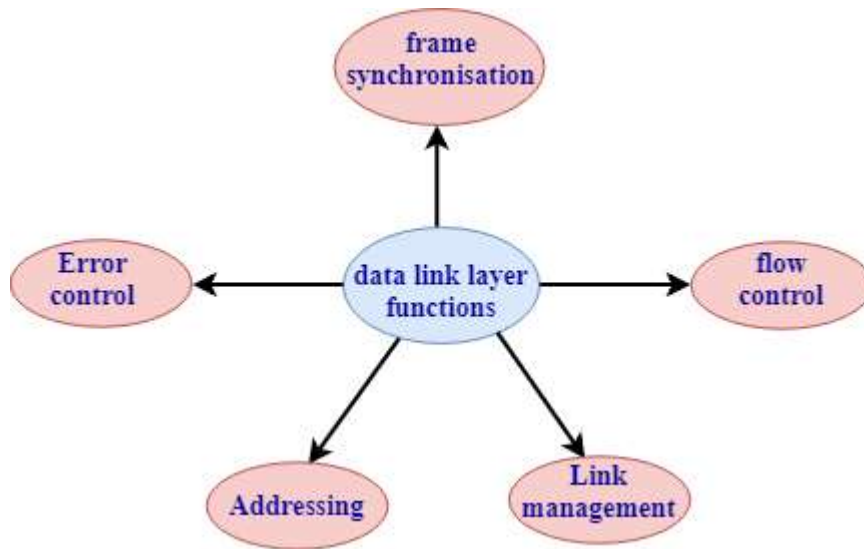
o **Frame synchronization**: Data-link layer converts the data into frames, and it ensures that the destination must recognize the starting and ending of each frame.

o **Flow control**: Data-link layer controls the data flow within the network.

o **Error control**: It detects and corrects the error occurred during the transmission from source to destination.

o **Addressing**: Data-link layer attach the physical address with the data frames so that the individual machines can be easily identified.

o **Link management**: Data-link layer manages the initiation, maintenance and, termination of the link between the source and destination for the effective exchange of data.

3. Network Layer

o Network layer converts the logical address into the physical address.

o It provides the routing concept means it determines the best route for the packet to travel from source to the destination.
Functions of network layer:
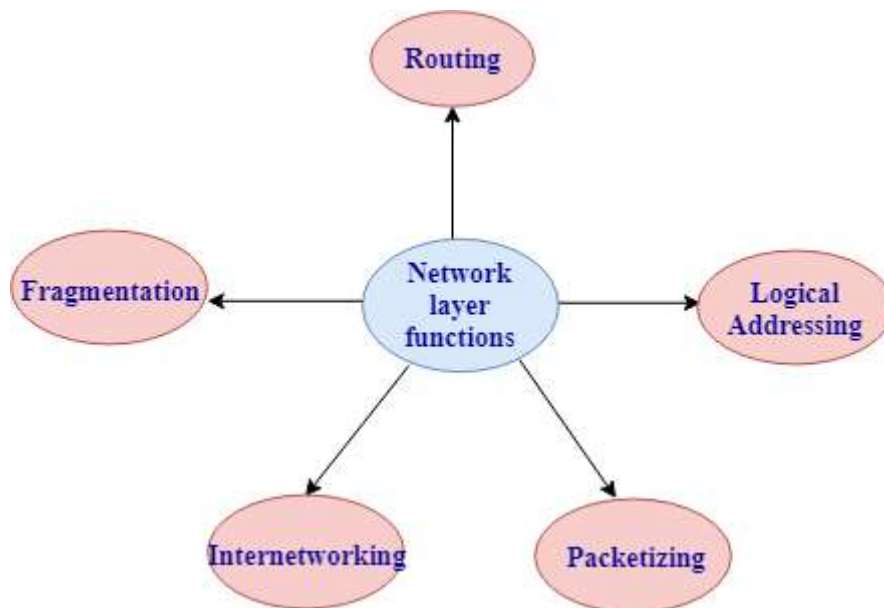
- o **Routing**: The network layer determines the best route from source to destination. This function is known as routing.

- o **Logical addressing**: The network layer defines the addressing scheme to identify each device uniquely.

- o **Packetizing**: The network layer receives the data from the upper layer and converts the data into packets. This process is known as packetizing.

- o **Internetworking**: The network layer provides the logical connection between the different types of networks for forming a bigger network.

- o **Fragmentation**: It is a process of dividing the packets into the fragments.

4. Transport Layer

- o It delivers the message through the network and provides error checking so that no error occurs during the transfer of data.

  - o **It provides two kinds of services**:

  - o **Connection-oriented transmission**: In this transmission, the receiver sends the acknowledgement to the sender after the packet has been received.

  - o **Connectionless transmission**: In this transmission, the receiver does not send the acknowledgement to the sender.

5. Session Layer

- o The main responsibility of the session layer is beginning, maintaining and ending the communication between the devices.

- o Session layer also reports the error coming from the upper layers.

- o Session layer establishes and maintains the session between the two users.

6. Presentation Layer

- o The presentation layer is also known as a Translation layer as it translates the data from one format to another format.
- o At the sender side, this layer translates the data format used by the application layer to the common format and at the receiver side, this layer translates the common format into a format used by the application layer. **Functions of presentation layer:**
  - o Character code translation
  - o Data conversion
  - o Data compression
  - o Data encryption

7. Application Layer

- o Application layer enables the user to access the network.
- o It is the topmost layer of the OSI reference model.
- o Application layer protocols are file transfer protocol, simple mail transfer protocol, domain name system, etc.
- o The most widely used application protocol is HTTP(Hypertext transfer protocol). A user sends the request for the web page using HTTP.

---

32) What is the usage of OSI physical layer?

The OSI physical layer is used to convert data bits into electrical signals and vice versa. On this layer, network devices and cable types are considered and setup.

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33) Explain the functionality of OSI session layer?

OSI session layer provides the protocols and means for two devices on the network to communicate with each other by holding a session. This layer is responsible for setting up the session, managing information exchange during the session, and tear-down process upon termination of the session.

34) What is the maximum length allowed for a UTP cable?

The maximum length of UTP cable is 90 to 100 meters.

35) What is RIP?

- o RIP stands for Routing Information Protocol. It is accessed by the routers to send data from one network to another.
- o RIP is a dynamic protocol which is used to find the best route from source to the destination over a network by using the hop count algorithm.
- o Routers use this protocol to exchange the network topology information.
- o This protocol can be used by small or medium-sized networks.

36) What do you understand by TCP/IP?

TCP/IP is short for Transmission Control Protocol /Internet protocol. It is a set of protocol layers that is designed for exchanging data on different types of networks.

37) What is netstat?

The "netstat" is a command line utility program. It gives useful information about the current TCP/IP setting of a connection.

38) What do you understand by ping command?

The "ping" is a utility program that allows you to check the connectivity between the network devices. You can ping devices using its IP address or name.

39) What is Sneakernet?

Sneakernet is the earliest form of networking where the data is physically transported using removable media.

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40) Explain the peer-peer process.

The processes on each machine that communicate at a given layer are called peer-peer process.

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41) What is a congested switch?

A switch receives packets faster than the shared link. It can accommodate and stores in its memory, for an extended period of time, then the switch will eventually run out of buffer space, and some packets will have to be dropped. This state is called a congested state.

---

42) What is multiplexing in networking?

In Networking, multiplexing is the set of techniques that is used to allow the simultaneous transmission of multiple signals across a single data link.

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43) What are the advantages of address sharing?

Address sharing provides security benefit instead of routing. That's because host PCs on the Internet can only see the public IP address of the external interface on the computer that provides address translation and not the private IP addresses on the internal network.

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44) What is RSA Algorithm?

RSA is short for Rivest-Shamir-Adleman algorithm. It is mostly used for public key encryption.

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45) How many layers are in TCP/IP?

There are basic 4 layers in TCP/IP:

1. Application Layer
2. Transport Layer
3. Internet Layer
4. Network Layer

46) What is the difference between TCP/IP model and the OSI model?

Following are the differences between the TCP/IP model and OSI model:

TCP/IP model	OSI model
Full form of TCP is transmission control protocol.	Full form of OSI is Open System Interconnection.
TCP/IP has 4 layers.	OSI has 7 layers.
TCP/IP is more reliable than the OSI model.	OSI model is less reliable as compared to the TCP/IP model.
TCP/IP model uses horizontal approach.	OSI model uses vertical approach.
TCP/IP model uses both session and presentation layer in the application layer.	OSI Reference model uses separate session and presentation layers.
TCP/IP model developed the protocols first and then model.	OSI model developed the model first and then protocols.
In Network layer, TCP/IP model supports only connectionless communication.	In the Network layer, the OSI model supports both connection-oriented and connectionless communication.
TCP/IP model is a protocol dependent.	OSI model is a protocol independent.

47) What is the difference between domain and workgroup?

Workgroup	Domain
A workgroup is a peer-to-peer computer network.	A domain is a Client/Server network.
A Workgroup can consist of maximum 10 computers.	A domain can consist up to 2000 computers.
Every user can manage the resources individually on their PCs.	There is one administrator to administer the domain and resources.
All the computers must be on the same local area network.	The computer can be on any network or anywhere in the world.
Each computer must be changed manually.	Any change made to the computer will reflect the change in all the computers.

HR Interview Questions | Common InterviewQuestions

A list of frequently asked **HR interview questions** or **Common interview questions** or **Job interview questions** and answers are given below.

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1) Tell me about yourself?

This is the most famous question for an interviewer and also most difficult to answer this question for the candidate. This question puts all the pressure on the candidate, and the interviewer relax.

You should alert enough to answer this question. You should start with an easy and confident tone and answer in a proper manner. It should not be scripted. Always remember, you are not giving the interview to a robot so your articulation, your pronunciation of each word should be clear and confident.

A good way:

Analyze your interviewer interests.

Express your most important accomplishments first.

Possible Answer 1

"Good morning/afternoon/evening" sir/mam.

First of all, thank you for giving me this opportunity to introduce myself.

My name is Ajeet Kumar.

As far as my education qualification is concerned, I have done MBA with finance stream from Srivenkateswara university in Emerald's P. G. College, Tirupathi, in the year of 2014.

I had completed B.tech from N.I.T Jaipur in 2012.

As far as concerned my family, I belong to a middle-class family. My father is a Businessman, and my Mother is a homemaker. My brother is preparing for civil services.

I am good in programming languages C, C++, and Java and very much interested in HTML,CSS, ASP. Net and SQL.

My strength is self-confidence, positive attitude, hard

work.My weakness is: I can easily believe every one.

Possible Answer 2

"Good morning/afternoon/evening" sir/mam, it's my pleasure to introduce myself. I amAnshika Bansal. I belong to Meerut. I have done my B.Tech in CSE from Lovely Professional University.

While coming to my family members, there are 4 members including me. My father is a doctor, and any mother is a teacher. My younger sister will appear her 12th CBSE board exam this year.

Now coming to me, I am sweet smart, confident, and hardworking person. I am a cool hearted person, so usually see every difficulty with a positive side and keep myself alwayssmiling which makes me stronger even more.

I can carry out any task assigned to me without hesitation.

My hobbies are dancing, Internet surfing, playing Chess, listening to music, watching thenews channel. In my spare time, I like to read news on my phone and traveling to my hometown.

Thank you for giving this opportunity to introduce myself.

Possible Answer 3

"Good morning/afternoon/evening" sir/mam, it's my pleasure to introduce myself. I am Anshika Bansal. I belong to Meerut. I have done my B.Tech in CSE from Lovely Professional University.

I am carrying 5 years of experience at top Wall Street Companies. In my recent company, I led the development of an award-winning new trading platform. I can survive in a fast-paced environment.

Now I am looking for a chance to apply my technical expertize and my creative

---

2) Why are you applying for this job? (or)

Why this role attract you?

By this question, the interviewer wants to know that:

- o   If you fully understand what the job entails
- o   How well you might match their requirement
- o   What appeals to you most about this job

Before answering this question, take your own time an answer in the way that convinces the interviewer. Explain your qualities according to the above-stated points.

Possible Answer 1

I have applied for this vacancy because it is an excellent match for my skills and experience. This role is exactly the sort of role I am currently targeting, and I am confident I will be able to make a major contribution.

Possible Answer 2

Sir, it's a great privilege to work in a reputed company like yours. When I read about your requirement, I found that my skills are matching with them. Through this role, I can show my technical skills to contribute to the company growth.

3) Would you like to work overtime or odd hours?

You should become very honest to answer this question. Don't tell a lie or compromise to get the job only. If you don't have any problem, you can answer like this:

> I know that in the company being asked to work for an extended number of hours comes with a good reason, so I am ok with it. It an extra effort means I am doing something for the company, I'll be happy to do it.

---

4) What is more important to you: the money or the work?

This is a very tricky question. The work should always be more important than the money. This frame of mind is good for you(at least at the time of interview).

Possible Answer 1

> "Money is always important, but the work is most important for me."

Possible Answer 2

> "I would say that work is more important. If we work and achieve Company goals then obviously money would follow. I believe work to be prior."

Possible Answer 3

> "Work is more important for me. Working just for money may not be fulfilled if I don't feel satisfied with my job. My work makes me stay productive, and money would naturally come along well."

Possible Answer 4

> "I think money probably matters to me about as much as it does to anyone. It's vital and necessary for us to live and prosper but, at the same time, it's not my single most important driving force. I believe that money is rewarded for work."

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5) What do you know about this organization?

You should fully aware of that organization where you are going for an interview, so check the history, present structure and working style of that organization. Check the company's website, Facebook, Twitter, Google+, LinkedIn pages to gather the information.

Possible Answer 1

We all know that it is one of the fastest growing infrastructure company in India. The facilities provided to the employee is best. People feel proud to be the part of your company as the company provides full support to their employees in professional front. The working environment of this company is decent. It has crossed the branches

Possible Answer 2

We all know that this company is India's no.1 company for development. I was delighted to see on your company website that your employees are talking about how great it is to work for your company. Now these days, so many people seem to hate the company where they work for one reason or another. It's great to see that your employees are proud to talk about how much they love their company and jobs.

6) Why did you leave your last job?

You should be very careful with this question. Avoid trashing other employers and making a statement like **"I need more money".** Instead of this, you can say that:

Sir, it's a career move. I have learned a lot from my last job, but now I am looking for new challenges to broaden my horizons and to gain a new skill-set.

7) Why should we hire you?

Tell your qualifications and highlight that points which makes you unique.

Possible Answer 1

"I believe that everyone starts with a beginning, I need a platform to prove my abilities and skills.I think your company is the right place to explore my abilities. I need to be a part of your growth.I will do my level best."

Possible Answer 2

"As a fresher, I need a platform to prove my ability. If I will be a part of your company, I'll put my effort and strength to uplift your company. None is born with experience, and if you hire me, I will get professional experience through your company."

Possible Answer 3

"Sir, as I am a fresher, I have theoretical knowledge, but I need a platform where I can implement my knowledge in the practical field. I am ensuring you that I will put all my efforts for the good progress of the organization. As a fresher, I have no preset mind regarding work culture in an organization, and this will help me to adapt the working culture of your company very easily. Being punctual and regular, I can finish the work

Possible Answer 4

"I have a good experience in that particular field (field of your specialization), and I think my talents will be a big contribution to the continuing pursuit of excellence of

---

8) What are your salary expectations?

Don't ask your salary in exact numbers, instead of this show your commitment to the job itself.

Possible Answer 1

I am more interested in the role than the pay, and I expect to be paid appropriate money for this role based on my experience. As you also know that the high cost of

Possible Answer 2

As I am fresher, Salary is not an issue for me. Learning and gaining experience is my major priority. As your company is one of the most reputed company, I just accept the salary offered by you is the best in the industry.

Possible Answer 3

As of now, I haven't thought much about it. I am more focused on learning the requirements for this position that I am applying for.

---

9) Assume you are hired, then how long would you expect to work for us?

Possible Answer 1

"I will do my best for the growth of your company as long as I have the career growth, job satisfaction, respect and a healthy environment, then I don't need to

Possible Answer 2

"I will work with the company as long as my presence benefits the company and I get ample opportunity to grow and develop both professionally and monetarily."

Possible Answer 3

"Everyone looks for a bright future, healthy work environment, good salary, job satisfaction and I am pretty sure that your company gives such things, so I don't need

Possible Answer 4

"I will work with the company as long as my presence benefits both the company and mine in parallel. So your company gains good results, and I can be in a good

---

10) How would you rate yourself on a scale of 1 to 10?

Possible Answer 1

I will rate myself 8 out of 10 because I would never like to think that there should be a room left for putting in more efforts. That thought will create an interest in learning the things. Thank you very much for giving me this wonderful opportunity.

Possible Answer 2

I will answer this question based on some parameters. As far as hard work is concerned, I will rate myself as 8 because there should always be a scope to increase our skills which will create an interest in learning the things. When it comes to creativity, I would like to rate myself as 9. In the past, I have designed banners and brochures which were appreciated by the clients. To talk about patience, I will tag myself with 6 because I am an entry-level professional. Same as personal life, even professional life needs more experience for more patience. That is probably why in most companies, senior

11) What are your achievements in life?

This question may also be asked that what are your biggest achievements? Or what are you most proud of?

You should discuss only work-related achievements. Try to pick a recent achievement.

Possible Answer 1

"My greatest achievement so far in my career would probably be winning the Manager of the Year award last year."

Possible Answer 2

"My biggest accomplishment is overcoming my fear of failure. It gives me a complete sense of living and makes me more confident."

Possible Answer 3

"I experienced my greatest achievement when I worked as a website manager for an entertainment outlet. My team was under pressure and the website was struggling at the time, and I was tasked with forming a strategy to increase traffic.

12) What is your objective in life?

Your answer should be realistic and practical.

Possible Answer 1

"My short-term goal is to work in a reputed organization like yours where I can enhance my technical skills and knowledge.

My long-term goal is to see the company at a topmost position where I am one of the people responsible for that."

Possible Answer 2

"My goal is to become a successful person and make my family proud of me."

13) What are your strengths?

You should always remember that even if your strength is not business related, find a way to relate it to work. Tell your positive points related to the job.

Possible Answer 1

My main strengths are the ability to use my initiative to take on challenges. I am always proactive at what I do, and that keeps my mind stimulated and focused.

Possible Answer 2

My greatest strengths would be my *intelligence* and *thoughtfulness*. I believe that in every work environment you need to process every step and be detailed in your work.

Possible Answer 3

My *time management* skills are excellent, and I'm organized, efficient, and take pride in excelling at my work.

Possible Answer 4

I always understand the value of time, and I am always able to innovate. I listen to advice from others.

Possible Answer 5

My greatest strength is my ability to focus on my work. I'm not easily distracted, and this means that my performance is very high.

Possible Answer 6

My biggest strength is my *Confidence*. Apart from that, I am *Hardworking, self-motivated* with a positive attitude towards my career and my life. If I have a problem, then I think its an opportunity for me to express my ability.

---

14) What are your weaknesses?

Everyone has weaknesses so while answering this question don't spend so much time on this. This question is generally asked to know how honest you are with yourself. State one or two minor weaknesses and try to relate it works. (avoid saying "I work too hard" it is a very common answer). Don't pretend you don't have weaknesses and don't avoid answering the question.

Possible Answer 1

You can say, "I used to be very disorganized, always forgetting assignments and birthdays. But I managed to work out a computerized system of to-do lists and reminders that keep me on top of everything."

Possible Answer 2

"I am a straightforward person, and I cannot say no when someone asks me for help."

---

15) What are your hobbies?

It totally depends on you what you like and what hobbies do you have but always justify your answer.

For Example:

My hobbies are dancing, Internet surfing, playing Chess, listening to music, watching the news channel. In my spare time, I like to read news on my phone and traveling to my hometown. Thank you for giving this opportunity to introduce myself.

16) Explain, how would you be an asset to this organization?

While answering this question, don't merely say that you are hard working, dedicated, punctual, etc. because these are not assets, these are the responsibility that management wants. Off course these are positive words and has a lot of meaning for you as well as for the company. Actually, these qualities make you an asset for the company after getting experience.

Possible Answer 1

"To become an asset for an organization, we have to punctual, dedicated, quickly adapt of the environment and positive working attitude I have all of these qualities so I will prove an asset for this company."

Possible Answer 2

"As I'm a fresher, I'll be passionate about my work, and if given a chance I'll be ready to expose myself into different sectors of work into the industry, and would be faithful to the company always."

Possible Answer 3

"My skill in XYZ company is outstanding. I have earned a lot of certificates and awards from my past employers. As an employee, I can handle pressure with ease and can work with minimal supervision."

17) Would you lie for the company?

You should answer this question in a very diplomatic manner.

Possible Answer 1

"It depends on the situation if my lie creates a positive impact on the company and It was useful for many people, then I will lie."

Possible Answer 2

"Probably I would say no for a lie. But if condition persists that my lie will help thousands of persons and it is not giving any impact to other persons, then I will agree with the lie. My one lie results lot of success and happiness without hurting others

18) Are you applying for other jobs also?

This question has a very specific purpose. The interviewer wants to know that if the candidate admits that he has applied to other places or gives a canned answer. Or what the candidate think about their company.

You should never claim that you did not apply to other company. Despite this, you can say that -

As you know, I would like to work as a software developer. Beyond your company, I have also applied to XYZ company and ABC company. This answer is more specific.

19) How do you get to know about our company?

The interviewer should not lie while answering such questions. Because an interviewer is a brilliant person and they can detect it if you are lying.

For Example

I get to know about your company from several online websites.

20) What does success mean to you?

Possible Answer 1

If I feel I am making a difference working with a team of people to make a more profitable company. It is a success for me.

Possible Answer 2

If I put a smile on someone face and make him happy, it is a success for me.

21) Describe yourself in one word?

This question is asked to the candidate to judge how spontaneous and explaining he is. If he uses a word, he must be able to explain that word and also represent himself according to that word.

These are some positive words. You can use it but be sure that you are judging with the word.

Original, genuine, logical, incredible, focused, curious, active, quick, balanced,

22) What is the difference between confidence and overconfidence?

Confidence is based on facts and knowledge, and overconfidence is based on speculation. There is a small difference between confidence and overconfidence. Yes, I can do this work is self-confidence. But only I can do this work is overconfidence.

Or you can say that: confidence is an internal belief that I am a right person for this job and overconfidence is thought that I am only the right person for this job.

23) What is the difference between smart work and hard work?

The difference between smart work and hard work are as follows:

Smart work and hard work are related to each other. Without being a hard worker, we can't be a smart worker. Smart work comes from the hard work. That means everyone has to specialize in his work to become a smart worker. So, all of us have to do hard work to achieve smart work.

So hard work increases your accuracy, and smart work increases accuracy as well as

24) Just imagine that you have enough money to retire right now. Would you?

If your answer is YES, you are surely get FAILED.

You can say that:

"No sir, I don't think so. I am a professional, and I love my work, so there is no question to leave my work. Yes, it may be that I would take a break to spend quality

25) Don't you think that you are overqualified for this position?

This is trick of the interviewer to trap you and judge how boasting you are?

So, be alert to answer this question and don't even hint to the interviewer that you are overqualified although you are.

This is a good answer:

"I think I am qualified for this post because I am just a beginner and have lots more to learn. I think qualification is not only a matter of theoretical knowledge or results; it also depends on practical knowledge and learning. When I get practical knowledge, I will consider myself just a well-qualified not overqualified. Because learning never

26) Do you have any blind spot?

It is a trick question. So don't specify your actual weaknesses. Instead of this try to show you are very team oriented

For example:

"I would say everyone has blind spots and I would too that's why I believe in teamwork because when you are a team, you can point out the blind spots of other people, and they will also do the same for you."

Note: "don't admit failure as a blind spot. Failure is not a blind spot."

27) How do you handle stress, pressure, and anxiety?

It is a typical interview question asked to judge how you handle the job stress and pressure.

Possible Answer 1

I believe in working in a planned way and finishing my work regularly. I always react to situations, rather than to stress. In this way, I handle the situation and don't take the

Possible Answer 2

I go to the gym regularly and do work out. In this way, I remove my stress. I believe that physical exercise is a great stress reducer.

28) What is the disappointment in your life?

This question is asked to judge, what type of situations make you uncomfortable and disappointed. While answering this question, don't just say your disappointment. Instead of this, you should include what you learn from that incident.

Possible Answer 1:

"The greatest disappointment in my life so far as when my laptop had stolen, and I had lost all my important data. I remember that I had to work hard for the next 10 days to redo all my work to make sure to submit on time."

Possible Answer 2: If you did not face any disappointment in your life

"Sir, I don't feel that I have faced such type of situation."

29) What makes you angry?

You should always answer this question in a manner that suits both your personality and management too.

"Sir, I am not a short-tempered person, but I feel a bit of annoyance when someone disturbs me

in my work without a genuine reason. Although I am an even-tempered person, when

30) What was the most difficult decision you have made in your past life?

This question is asked to judge your decision-making capabilities. The interviewer wants to know, how you take a decision in tough times.

Possible Answer 1

After completing my graduation, the toughest decision is whether to go for higher studies or do a job. Then I chose the job because getting trained is better than educated and it was also the demand of that time.

Possible Answer 2

My toughest decision was to take admission in B.tech. I belong to a middle-class family, and my father was not in favor of taking admission, but I convinced him, and

Possible Answer 3

Before some time when I had to choose between joining a group of employees protesting some issue, and staying away from the issue. I ended up being a mediator between our immediate supervisor and employees, and I am glad I made that decision because it all ended well and without further conflicts in the company.

---

31) How did you know about this position/ vacancy?

Just tell the source from where you got the information about this post. If the interviewer asks, what you know about this position or what appeals you most in this position?

Then you can add:

I have carefully studied both the job description and the person specification, so I am fully aware of the duties and responsibilities of this role.

---

32) What gets you up in the morning?

It is my promise that gets up me in the morning. My promise is to learn something new and someone in need. It provides me the satisfaction that I am making a difference in someone life.

---

33) What is your favorite book?

This question is asked to judge your taste about reading books. The interviewer wants to know what types of book you like. Would you fit for the company culture?

Answer this question according to your sense, your knowledge about the book. Only named the books you have really read. You should choose something from a reputable author that your interviewer has probably heard of.

---

34) As you said, internet surfing is your hobby. Which site do you surf mostly?

This is your choice that which sites you surf most, but while answering this question always refers to sites which are relevant to your field of job. Don't take the name of social networking sites or other irrelevant sites.

---

35) What was the biggest mistake of your life?

At the time of answering this question, you should choose a story containing not too many mistakes. It should be real.

Talk about the mistake, but it is also important to convince the interviewer that you never make the same mistake again.

For example:

I think the worst mistake I ever made at work was in my first ever job - five years ago now. A more senior member of the team seemed to take an instant dislike to me from the start, and one day she was particularly unpleasant to me in front of several colleagues.

Later on, I was talking to one of those colleagues who was, I thought, attempting to console me. Angry and hurt, I foolishly vented my feelings and told her what I thought of the lady in question. I was naturally shocked to find out that she went on to tell everyone what I had said and this certainly didn't help my relationship with the team member who was causing me problems.

it was nothing personal; she just resented the fact that a friend of hers had also been interviewed for my position and had been turned down. Once we had got matters out into the air, her behavior changed, and we got on quite well after that. However, I certainly learned a lot from experience. I learned that careful communication is vital in managing interpersonal relationships and that if I have a problem with someone, it's always best to talk it over with them rather than with someone else.

36) Do you have any reference?

This question has just two answers, YES or NO. If you know anyone from that company, say YES, otherwise NO.

37) How do you deal with an angry or irritated customer?

Possible Answer 1

I would try to find out exactly what the problem was, and evaluate if there was something I could do to make it right.

Possible Answer 2

I would ask the customer to explain his problem and carefully listen to him. After that, I do my best to solve his problem. If that problem is not regarding my work area, I spoke to someone who could help him immediately.

38) How do you deal with an angry or irritated customer?

Possible Answer 1

I would try to find out exactly what the problem was, and evaluate if there was something I could do to make it right.

Possible Answer 2

I would ask the customer to explain his problem and carefully listen to him. After that, I do my best to solve his problem. If that problem is not regarding my work area, I spoke to someone who could help him immediately.

39) What is your greatest fear?

Possible Answer 1

Before some time, public speaking has been a challenge for me. I was very nervous and hesitate while giving any presentation, so I started taking public speaking seminars to improve it. Now, I still get nervous before pitches, but I have learned how to remain

Possible Answer 2

As you know that I have never worked in my life and this is my first job, my inexperience is my weakness. But I beg to differ. I am confident and a fast learner. I assure you that I will perform my job without carrying any pre-conceived notions regarding how I feel.

40) Explain the difference between group and team?

The difference between group and team are as follows:

There is only one difference between the group and the team. That is unity. Any set of people who stand together without any purpose or goal can be called as Group. Whereas, when more than 2 people work towards a common goal, can be called as a Team. For example: If you assign work to a group, then the work will be divided between the members and each member will work out their part, without any coordination with the other members of the group. On the other hand, if you assign a project to a team, they will collectively take the responsibility and work together with

41) What will you do if you don't get this position?

Possible Answer 1

I have high hopes that I will be selected. In case if I will not select, I will continue to look for another job in the same field that will fit my schedule and goals.

Possible Answer 2

If I don't get this job, I will use this experience to reflect my weakness and try my best to improve on them for the future opportunities along the way.

42) What is the success for you?

Success refers to the accomplishment of an aim or purpose.

43) Would you like to relocate or travel for the company?

Firstly, you need to understand the purpose of this question. The fresher candidate does not say *YES* at once. This will only show your desperation to this job. You can answer like this:

Possible Answer 1

I will definitely consider traveling if the opportunity is appropriate, rewarding and feasible. I don't think that I will have any problem with the traveling involved.

Possible Answer 2

Yes, as part of growing up. I used to travel a lot as my father is an ex-serviceman hence occasionally he used to be posted throughout the country. Though I would prefer my city as it is my birthplace and all my friends and relatives are there, but at the same time, I am ok with relocating.

44) What makes you happy?

I feel happy when I accomplished my task. I also feel happy when I achieved my goals. Holiday with my family and friends also makes me happy.

45) Is there anything which makes you different from other candidates?

It is good to start with a disclaimer that you are not aware of the strengths of the other candidate. Also, you sure that some impressive candidates apply for this position.

Possible Answer 1

Although, I am not familiar with the others whom you are interviewing for this position. I am sure many talented people applying for the job. But because of my background and the problem- solving skills, I considered myself to be a strong candidate for this

Possible Answer 2

I understand that success is not always guaranteed but there is still hope, and I never lose the faith, whether I succeed or not. I think this power makes me stand alone

Possible Answer 3

I have exceptional organizational skills. In my last job, I created a project which was termed as quite creative by the clients. I think my technical skills make me stand

46) Describe the three things that are most important for you in a job?

Possible Answer 1

According to me, Honesty, Loyalty, and determination to achieve my team's target are the three important things in a job.

Possible Answer 2

According to me, Professionalism, growth and a healthy work-life balance are the three important things in a job.

47) What are your expectations from the company?

Though this answer is objective and can be different for different persons, but you should be positive in your thoughts and do not say many things about the company which gives the interviewer an illusion that you are exaggerating. In short, be realistic and precise.

For Example

I have always wanted to work with an organization which provides a very comfortable and homelike work environment. I would like to work in the company where I can get the opportunity to learn and enhance my skill to become a better professional in the

48) On a scale of one to ten, rate me as an interviewer?

Possible Answer 1

Sir, I'm not in the position to rate you as an interviewer. Anyway, I'm not going to disappoint you. As an interviewer you've fulfilled your job, So, I can give you 10 out of 10. But I'll give you 9/10 as there should always be a scope to increase our skills which will create an interest in learning the things. Thank you very much for giving me this

Possible Answer 2

Thank you for giving me such an opportunity, but for sure I am not the person to rate you. As it is obvious that your position is highly reputed and you have been chosen to undergo this process that shows your excellence at this place, but still I have to answer this question so honestly, it would be 9/10 as no one is perfect and we always leave

49) Who is your role model? What have you incorporated into your life from him/her?

You should think of people who embody the qualities that you most admire.

For Example

The role model of my life is my mother. Whenever I am down my mother helps me to push my limits, and she always keeps me on the track. She was scolding me

wrong. She is everything for me, I still got inspired from her, how she manages every problem in every situation.

---

50) Do you have any questions for me?

It's your turn now. If you get such an opportunity, you may ask questions like that:

Possible Answer 1

> Thank you for giving me this opportunity. After my overall performance till now if I got selected what I need to improve and if I'm not selected how can I succeed further. Can you give any advice sir?

Possible Answer 2

> First of all thank you very much, for being so much polite & friendly to me throughout the session, that I can express myself so easily. Can you please tell me that what are the qualities you are expecting from fresher like us & I want to know, if am selected, then what should I improve before I join your company, if I am not selected, your opinion

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