1.Tell us about the features of client/server.

It’s the communication between a client and server through internet, client sends the request. And Server accepts the request and sends the response to the client

2.What is a Web server in a client server environment

A web server is a software and hardware that uses HTTP and other protocols to respond to the requests send by the clients through internet. A web server stores, process and deliver the website content to the clients

3. What is the role of the presentation layer

Presentation layer is the UI interface layer were user can send a request and can receive the response

4. They say this architecture is secure, how is it done in your opinion

Yes 3 –Tier architecture is safe because it consist of 3 layers presentation layer, application layer, and the data base layer, if someone tries to attack us they will be attacking via the presentation layer and they won’t be getting access to the database layer and cannot access the data. Also we can setup firewall between each and every layers If a hacker tries to break in to the database he need to crack many firewalls which lies in between these tiers. So Three Tier Client – Server Architecture is more secure

5.What is a Database Server in a client server environment

Database server is the system which helps storing and retrieving data’s in a database a database server provides the data requested by an application server on behalf of a client

6.What are Super servers in client server environments

Super server is a server process that monitors the arrival of client requests and starts the appropriate server service. A super-server starts other servers when needed, normally with access to them checked by a TCP wrapper. It uses very few resources when in idle state.

7. Explain 2-Tier and 3-Tier architecture

2-Tier architecture

It is a Client-Server Architecture Two-tier architecture consists of two layers : Client Tier and Database (Data Tier) It is easy to build and maintain Two-tier architecture runs slower It is less secured as client can communicate with database directly. It results in performance loss whenever the users increase rapidly.

3 -Tier architecture

In three-tier, the application logic or process resides in the middle-tier, it is separated from the data and the user interface Three-tier architecture consists of three layers : Client Layer, Business Layer and Data Layer It is complex to build and maintain It is secured as client is not allowed to communicate with database directly

8. What is a File server

A **file server** is a central **server** instance in a computer network that enables connected clients to access the **server's** storage capacities

SOA & MicroServices

1. What are the main benefits of SOA?

SOA, or service-oriented architecture, defines a way to make software components reusable via service interfaces. It’s the communication of two applications via the help of ESB .The main benefit of SOA is that if we need to change an application we don’t need to change the entire collection of applications we just need to change the chunk which we need

2. How can you achieve loose coupling in SOA

The concept of [loose coupling](https://en.wikipedia.org/wiki/Loose_coupling) within [SOA](https://en.wikipedia.org/wiki/Service-oriented_architecture) is directly influenced by the object-oriented design  whereby the objective is to reduce coupling between classes in order to foster an environment where both the classes, although somehow related to each other, can be changed in a manner that such a change does not break the existing relationship,

3. Are web services and SOA the same

Web services define a web technology that can be used to build applications that can send /receive messages using SOPA over HTTP. However, SOA is an architectural model for implementing loosely coupled service based applications.

4. What is a reusable service

Service or resource which we can use throughout the project

5. What are the disadvantages of SOA

**Extra overload:** In SOA, all inputs are validated before it is sent to the service. If you are using multiple services then it will overload your system with extra computation.

**High cost:** SOA is costly in terms of human resource, development, and technology.

**High bandwidth server:** As some web service sends and receives messages and information frequently so it easily reaches a million requests per day. So it involves a high-speed server with a lot of data bandwidth to run a web service.

6. What is ESB and where does it fit in

An enterprise service bus (ESB) refers to software architecture that allows for the integration of enterprise applications and services, such as middleware infrastructure platforms.  It provides the connections between applications that need to communicate with one another.

7. In SOA do we need to build a system from scratch?

No. we don’t need to build a system from scratch in SOA. We can integrate existing system in SOA

8. What is the most important skill needed to adopt SOA? Technical or cultural?

Cultural skill. SOA require people to think of business and technology differently.

9. List down the advantages of Micro services Architecture.

* Each micro services can be deployed independently.
* We can assign specific micro services to specific groups so one group can focus only on one service
* Micro services are independently scalable
* If a specific micro service fails, we can isolate that failure to that particular service which prevent other services from failing.

10. How does Microservice Architecture work

In Microservice architecture, we can isolate software functionality into multiple independent modules that are responsible to perform defined tasks. These modules communicate each other through APIs.

11. What are the pros and cons of Micro service Architecture

Pros : - Greater agility, Better scalability, Faster development cycles, have better fault tolerance

Cons : -Harder to test, Harder to maintain Doesn’t work without proper corporate culture

13. What is the difference between Monolithic, SOA and Micro services

Architecture?

SOA : - SOA breaks up the components required for applications into separate service modules that communicate with one another to meet specific business objectives. Each module is considerably smaller than a monolithic application, and can be deployed to serve different purposes in an enterprise.

Microservices : - its services are more fine-grained, and function independently of each other. Therefore, if one of the services fail within an application, the app will continue to function since each service has a distinct purpose. The services in micro services communicate via [application programming interfaces (APIs)](https://www.talend.com/resources/what-is-an-api/)

Monolithic : - A monolithic architecture is the traditional unified model for the design of a software program. Monolithic, in this context, means composed all in one piece

14. What are the challenges you face while working Microservice Architectures?

**Managing Microservices: -** As the number of microservices increases, managing them gets more challenging.

**Monitoring:** - The traditional forms of monitoring and diagnostics will not align well with microservices

**Fault-Tolerance:-** It is important that individual services do not bring down the overall system.

**Testing** :- is much more complex in a micro services environment owing to the different services, their integration and interdependencies.

15. What are the characteristics of Micro services

The micro service architectural style is an approach to developing a single application as a suite of small services, each running in its own process and communicating with lightweight mechanisms. These services are built around business capabilities and independently deployable by fully automated deployment machinery.