Google Technical Interview Questions

- **What is the difference between a stack and a queue?**

A stack is a data structure that follows the Last In, First Out (LIFO) principle. This means that the last element that is added to the stack is the first element that is removed. A queue is a data structure that follows the First In, First Out (FIFO) principle. This means that the first element that is added to the queue is the first element that is removed.

- **How would you implement a sorting algorithm?**

There are many different sorting algorithms, but some of the most common ones include bubble sort, selection sort, and merge sort. Bubble sort is a simple sorting algorithm that works by repeatedly comparing adjacent elements in an array and swapping them if they are in the wrong order. Selection sort is a sorting algorithm that works by repeatedly finding the smallest element in an array and swapping it with the first element. Merge sort is a sorting algorithm that works by dividing an array in half, sorting each half recursively, and then merging the two sorted halves together.

- **What is Big O notation?**

Big O notation is a way of expressing the time complexity of an algorithm. It is a measure of how the running time of an algorithm grows as the size of the input grows. For example, an algorithm that has a time complexity of O(n) means that the running time of the algorithm grows linearly as the size of the input grows.

- **What is the difference between procedural and object-oriented programming?**

Procedural programming is a programming paradigm that focuses on breaking down a problem into a series of steps. Object-oriented programming is a programming paradigm that focuses on creating objects that represent real-world entities.

- **What are some of the latest trends in technology?**

Some of the latest trends in technology include artificial intelligence, machine learning, cloud computing, and big data. These trends are having a major impact on the tech industry and are creating new opportunities for developers.

Technical Round Interview Questions in Amazon

- **What is the difference between a relational database and a NoSQL database?**

A relational database is a database that stores data in tables. Each table is made up of rows and columns, and the data in each row is related to the data in other rows by the column values. A NoSQL database is a database that does not store data in tables. Instead, NoSQL databases store data in a variety of different ways, such as key-value pairs, documents, or graphs.

- **How would you design a distributed system?**

A distributed system is a system that is made up of multiple computers that are connected together. Distributed systems are often used to handle large amounts of data or to provide high availability. To design a distributed system, you need to consider factors such as scalability, fault tolerance, and performance.

- **What are some of the challenges of cloud computing?**

Cloud computing is a model for delivering computing services over the internet. Cloud computing offers a number of benefits, such as scalability, flexibility, and cost savings. However, there are also some challenges associated with cloud computing, such as security, compliance, and performance.

- **What are some of the latest trends in cloud computing?**

Some of the latest trends in cloud computing include serverless computing, containerization, and microservices. Serverless computing is a cloud computing model where the cloud provider manages the servers and the user only needs to focus on the code. Containerization is a way of packaging and deploying applications in a standardized way. Microservices is an architectural pattern where an application is composed of small, independent services.

- **What are some of the best practices for cloud security?**

Some of the best practices for cloud security include using strong passwords, enabling two-factor authentication, and encrypting data at rest and in transit. You should also regularly review your cloud security settings and make sure that they are up to date.

Freshers Technical Interview Questions Asked by Microsoft

- **What is the difference between a .NET Framework and a .NET Core?**

The .NET Framework is a set of software development tools and libraries that are used to create Windows applications. The .NET Core is a cross-platform version of the .NET Framework that can be used to create applications for Windows, macOS, and Linux.

- **What is the difference between C# and Java?**

C# and Java are both object-oriented programming languages. However, there are some key differences between the two languages. C# is a statically typed language, while Java is a dynamically typed language. C# is also a compiled language, while Java is an interpreted language.

- **What are some of the benefits of using the Microsoft Azure platform?**

The Microsoft Azure platform offers a number of benefits, including:

- Scalability
- Reliability
- Security
- Cost-effectiveness
- A wide range of services
- **What is the difference between Windows and Linux?**

Windows and Linux are both operating systems, but they have different underlying architectures. Windows is a proprietary operating system that is developed by Microsoft. Linux is an open-source operating system that is developed by a community of developers.

- **What is the difference between a web application and a desktop application?**

A web application is an application that is hosted on a web server and accessed through a web browser. A desktop application is an application that is installed on a user's computer and accessed through the user's desktop.