Conceptual Questions:

● What are the differences between `==` and `===` in JavaScript?

The == operator performs type coercion. This means it converts the values to the same type before making the comparison. This can lead to unexpected results if you're not careful.

`5 == '5'` evaluates to `true` because `'5'` is converted to the number `5` before the comparison.

The === operator (is Strict Equality Operator)

No Type Coercion: The === operator does not perform type coercion. It compares both the value and the type of the operands. The comparison will only be true if both the value and type are the same.

`5 === '5'` evaluates to `false` because the types are different (`number` vs. `string`).

●What is the purpose of React's `useEffect` hook? Provide an example use case.

The `useEffect` hook in React is used to handle side effects in functional components

One use case it's when you have a web page that needs to display information from an external source, like an API. When the page loads, you want to fetch this data and display it to the user. This is where the `useEffect` hook in React comes in handy.

You can request data from the api right after the component renders while the data is being fetched, you can show a loading message to the user Once the data is successfully fetched, you update the state with the retrieved information, allowing the component to display this data to the user.

● How does Node.js handle asynchronous operations, and why is this beneficial?

Node.js handles asynchronous operations through its non-blocking, event-driven architecture, utilizing a single-threaded event loop to process tasks concurrently without waiting for each to complete. This approach is beneficial as it maximizes efficiency and scalability by allowing Node.js to handle many simultaneous operations without blocking the execution thread. It enhances performance by reducing latency and maintaining responsiveness, even under high loads, and simplifies concurrency management by avoiding the complexities of multi-threaded programming. Ultimately, this results in a more efficient, responsive, and scalable system.

● What is the difference between `getStaticProps` and `getServerSideProps` in Next.js?

`getStaticProps` is used for static generation, fetching data at build time to generate static pages that are served quickly to users and are ideal for content that doesn't change often. In contrast, `getServerSideProps` fetches data on each request, enabling server-side rendering for dynamic content that needs to be updated frequently or personalized per user request. This method ensures that the page is always up-to-date, but it can be slower due to the need for a server-side request on every page load.

● **What is a primary key in PostgreSQL, and why is it important?**

A primary key in PostgreSQL is a unique identifier for a record in a table, ensuring that each row can be uniquely distinguished from others. It is crucial because it enforces data integrity by preventing duplicate entries and ensuring that each record can be efficiently retrieved and related to other tables. By automatically creating an index on the primary key column, PostgreSQL enhances query performance and ensures referential integrity within the database, making it essential for maintaining accurate and consistent data relationships.

● **Describe the steps to deploy a simple Node.js application to Azure App Services.**

To deploy a simple Node.js application we have to create an Azure app service and choose Node.js as the runtime stack and configure other settings as needed. Then we have to go to the deployment center, connect the github repository and select the branch to deploy. We must not forget to set environment variables in the configuration. Finally we have to ensure that the app is running correctly.

● **What is a common benefit of using Azure App Services for hosting applications?**

A common benefit of using Azure App Services for hosting applications is its managed environment that simplifies the deployment, scaling, and management of applications. Azure App Services handles infrastructure management, such as server maintenance and updates, allowing developers to focus on building and deploying their applications. It also provides built-in features like automatic scaling, load balancing, and integrated DevOps support, which enhance application performance and reliability while reducing operational overhead.

● **What is the difference between a WordPress post and a page?**

In WordPress, a post is used for content that is regularly updated and displayed in reverse chronological order, such as blog entries or news articles, often categorized and tagged for easy navigation. A page, on the other hand, is used for static content that remains relatively constant over time, such as an "About Us" or "Contact" page. Posts are part of the blog section and are indexed by categories and tags, while pages are intended for timeless content and are structured into a hierarchy of parent and child pages.