Definitions and Explanations

Server Definition: A server refers to a physical device, virtual device, or computer program that offers functionality to other programs or devices known as "clients."

Role of a Domain Name: A domain name serves as a textual label to identify Internet resources, including computers, networks, and services, offering an easier-to-remember alternative to numerical IP addresses.

DNS Record for www.foobar.com: The DNS record for "www" in "www.foobar.com" is a 'CNAME' record.

Role of a Web Server: The role of a web server involves storing, processing, and displaying website content (codebase) as well as delivering web pages (primarily HTML and CSS) to users over the HTTP protocol.

Role of an Application Server: An application server generates dynamic content by executing server-side code, such as JSP, Ajax, and PHP.

Role of a Database: The purpose of a database is to systematically and efficiently manage data in an organized manner, enabling easy addition, access, updating, management, and deletion of data.

Server-Computer Communication: The server communicates with the user's computer through the HTTP protocol.

Issues

A. Single Point of Failure (SPOF): Numerous potential single points of failure exist, including having a single server housing only one web server, application server, and database. A single point of failure refers to a component whose failure disrupts the entire system's operation.

B. Downtime During Maintenance: Extended downtime may occur during maintenance, like deploying new code that requires restarting the web server. This extended downtime results from the server's reliance on a single unavailable code base, leading to a negative user experience and traffic loss.

C. Scalability Challenges with High Traffic: The direct domain name pointing to the server lacks a load balancer, hindering the efficient handling of increased traffic loads. This limitation impacts user access to website content, potentially leading to an unsatisfactory user experience.