Task 0:

Definitions and Explanations

What is a server:

A server is a computer or system that provides resources, data, services, or programs to other computers, known as **clients**, over a network. In theory, whenever computers share resources with client machines they are considered servers.

What is the role of the domain name:

A domain name is user-friendly label that translates to numerical **IP** enabling easy access to websites and online resources. it acts as bridge between readable name and **IP addresses**.

What type of DNS record `www` is in `www.foobar.com` :

it is a cname

What is the role of the web server:

The role is to store, process and display website content(**CodeBase**). In addition, its role is to deliver web pages to users (HTML and CSS)over the protocol HTTP.

What is the role of the application server:

The role is to generate dynamic contents by executing server-side code such as JSP, PHP etc...

What is the role of the database:

The role is to manage the data systematically and efficiently In well-organized manner which allows data to be easily **accessed, readable updated and deleted**.

What is the server using to communicate with the computer of the user requesting the website:

The server communicates through **HTTP** protocol.

1 Issues

SPOF (Single Point Of Failure)

There are a lot of single points of failures starting from having one server that contains only one web server. app server and database. A **Single point of failure** is part of system which fails when the entire system stop from working.

Downtime when maintenance needed (like deploying new code web server needs to be restarted)

When we need to run some maintenance checks on any component, they have to be put down or the server has to be turned off. Since there's only one server, the website would be experiencing a downtime.

Cannot scale if too much incoming traffic

It would be hard to scale this infrastructure because one server contains the required components. The server can quickly run out of resources or slow down when it starts receiving a lot of requests.