

Week 0 Assignment : Basic Understanding of Internet, Networking & Tools basic

Task 1 : Using ChatGPT as your learning Assistant

Scenario: You're new to DevOps and will frequently encounter technical questions. ChatGPT can be your learning companion.

Act as a professional Network engineer and teach me the concept of protocol in networking with simple real life example. treat me as a 10th grade student.

Alright, let's keep this simple but still professional — like I'm explaining to a smart 10th grader who might end up running a huge network someday.

What is a Protocol in Networking?

In networking, a **protocol** is like an **agreed set of rules** that two devices follow to talk to each other. It decides **how the data should be structured, sent, received, and understood** so both sides can communicate without confusion.

Real-Life Example: Postal Mail 📬

Imagine you want to send a letter to your friend in another city:

- 1. Common Language** — You both agree to write in English so you can understand each other.
(In networking: Language = Protocol format)
- 2. Address Format** — You must write the recipient's name, house number, city, and postal code in a standard way.
(In networking: IP addressing)
- 3. Envelopes** — You put the letter in an envelope to protect it during delivery.
(In networking: Data is put into a "packet")
- 4. Postal Service Rules** — The post office has fixed rules for pickup, transport, and delivery.
(In networking: Rules for sending/receiving data)

If you don't follow these rules, your letter may get lost or never delivered.

Networking Version

When two computers communicate:

- They agree on a protocol (like **HTTP, FTP, TCP, UDP**).
- Data is packaged in a specific format.
- Each packet includes **addresses**, just like your letter.
- The protocol makes sure data arrives correctly, in order, and without confusion.

A Simple Analogy with People Talking

- **Language** = Protocol (English, Nepali, Hindi — but for computers it's HTTP, FTP, etc.)
- **Tone & Grammar** = Data format rules
- **Taking Turns** = Flow control in networking
- **Saying "I got it"** = Acknowledgment messages in protocols like TCP

✓ Key takeaway:

Protocols are **rulebooks** that make sure all devices in a network can communicate clearly and reliably — just like humans need a common language and rules for conversation or mail delivery.

Task 2 : Internet and Networking

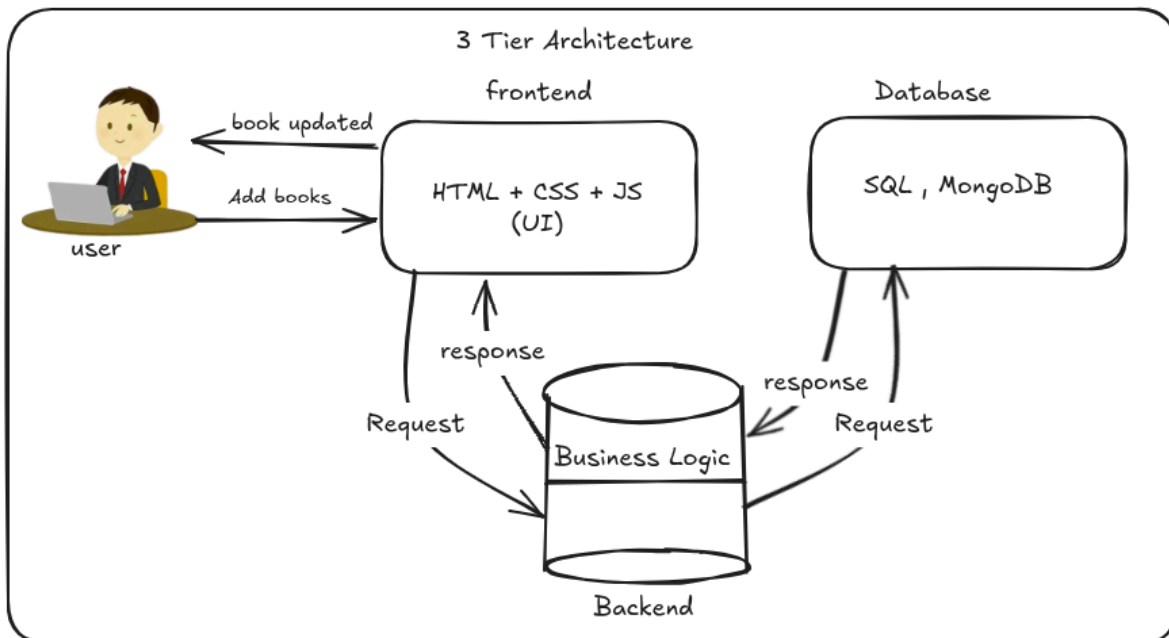
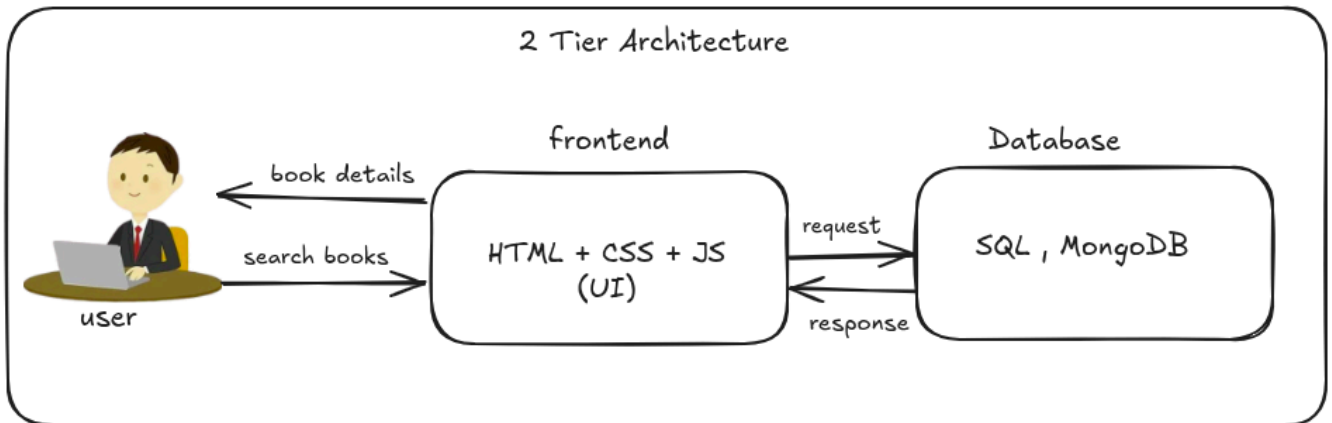
Scenario: Your friend is launching an online bookstore named "EpicReads." He asked you to explain how users globally can access his website hosted in Finland.

When someone in the USA accesses a website hosted in Finland, their browser first uses **DNS** to translate the website's domain into the server's **IP address** in Finland. Using the **TCP/IP** protocol suite, the browser sends data packets across the internet. The internet uses **packet switching**, meaning the data is broken into small packets, each taking the most efficient route through routers and switches until they reach the Finland server. Once connected, **TCP** ensures reliable delivery and correct ordering of packets. The **HTTP** or **HTTPS** protocol defines how the browser requests the web page and how the server responds. If **HTTPS** is used, the connection is encrypted for security. The server sends the webpage in packets, which are reassembled by the user's device, and the browser displays the site.

Task 3 : Application Architecture & Stack

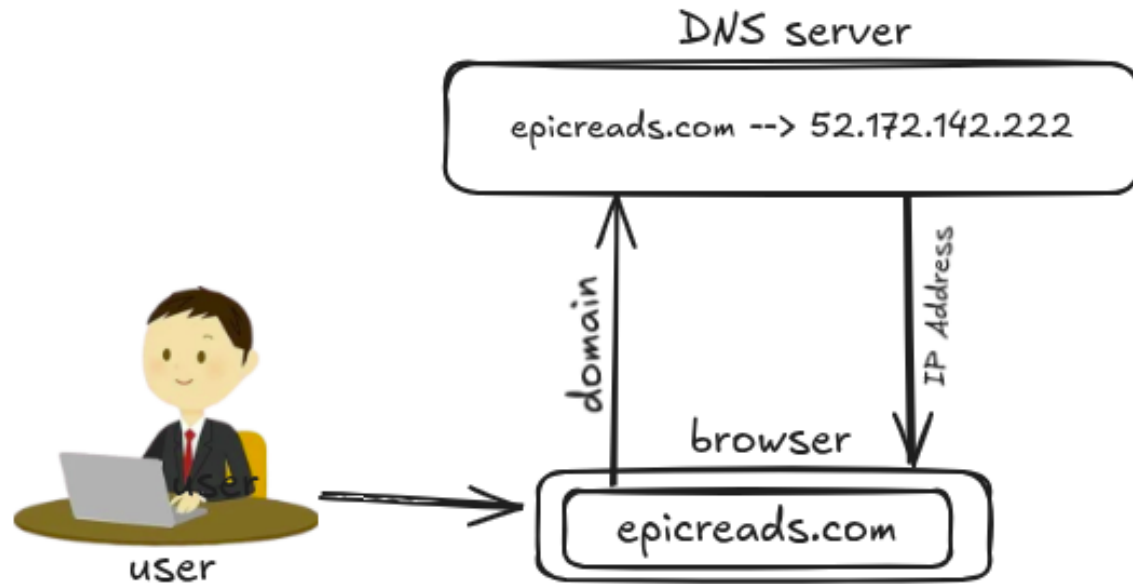
Scenario: EpicReads bookstore has two app versions:

- Two-tier app (Frontend & Database)
- Three-tier app (Frontend, Backend & Database)



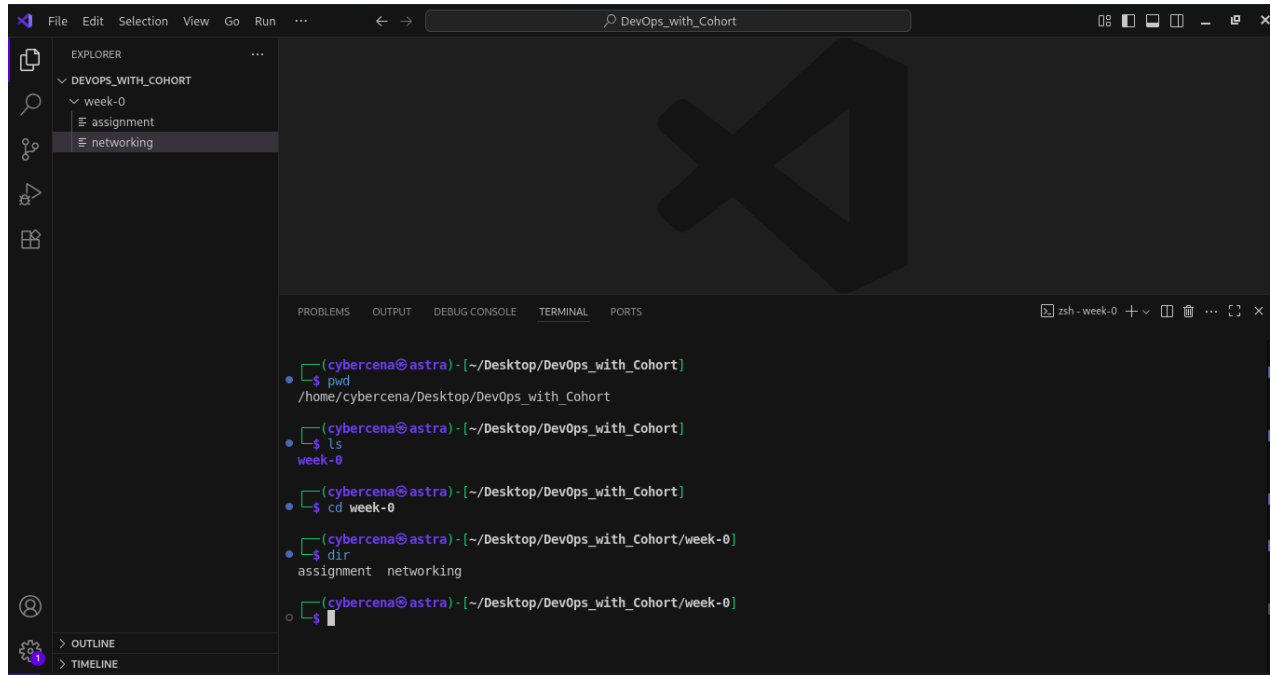
Task 4 : Domain Name and DNS (Basic concepts)

Scenario : Your friend's bookstore, EpicReads, is accessible via an IP address (52.172.142.222) at port 3000. He purchased the domain epicreads.com.



DNS stands for Domain Name System. It is a phonebook for the internet; it converts the domain name into an IP address and an IP address into a domain name. Internet devices don't understand domain names; they only understand IP addresses. DNS helps to resolve the domain name with its respective IP address. We can directly access the site using the IP address and the port on which the HTTP service is running. But if we have a domain name, we can also point the IP address and service to that domain. We need to update A records to point a specific IP to a domain name. There are different DNS record types for different purposes, for example, we can use CNAME to create a subdomain and to point to a different site. We can update DNS records using the panel provided by the hosting provider.

Task 5 : Visual Studio Code Setup (Hands on)



Task 6 : Publish your Assignment as a Linkedin post

https://www.linkedin.com/posts/cybercena_week0assignment-activity-7360338755477499907-aQUp?utm_source=share&utm_medium=member_desktop&rcm=ACoAADeQ-LwBuhxwW8n20i_vBqM-aZqo0pG0oaY