

Welcome to the Protocols Lecture



The session will start shortly...



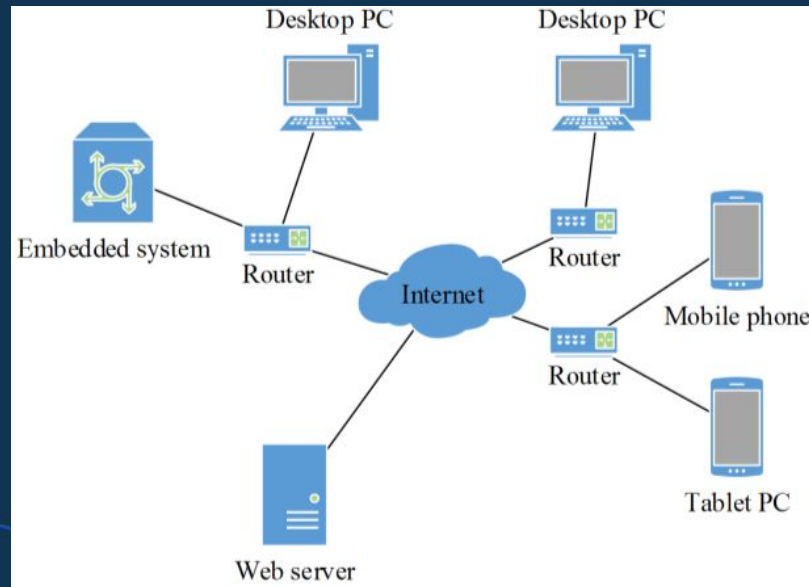
Johannesburg Team Housekeeping

- Please be mindful and respectful to everyone in this supportive learning environment. Mutual respect and tolerance are fundamental values we uphold.
- There are no bad or silly questions—feel free to ask anything! You can ask Sashlin or myself questions at any time, regardless of the situation. Even if you find yourself in a dire situation—like stuck in quicksand—you're still welcome to ask us a question (though we recommend calling or shouting first!).
- A few additional reminders for onsite behavior:
 - Keep shared spaces tidy—clean up after yourself in the break areas.
 - Please mute your devices during sessions to minimize distractions.
 - Avoid making personal phone calls in common areas—use designated quiet zones if you need to step away.
- Additionally, please remember to put any dishes in the sink before 2 p.m., as Lizbeth will have already finished for the day. If you're feeling unwell, kindly inform Ingrid or myself via email.

Learning Objectives

- ❖ Introduction to Networking
- ❖ Network Protocols Overview
- ❖ Common Network Protocols
- ❖ System Architecture Overview
- ❖ Types of System Architectures

Introduction to Network Protocols and System Architecture



What is a Network ?

- ❖ A **network** is a group of computers and devices connected to share information.
- ❖ Networks allow us to communicate, share files, and access the internet.

What are Network Protocols ?

Network Protocols = Backbone of Internet

- ❖ **Protocols** are rules that define how data is transmitted over a network.
- ❖ They ensure that devices communicate in a standard way, like speaking the same language.
- ❖ Examples of protocols:
 - **HTTP**
 - **TCP/IP**
 - **FTP.**

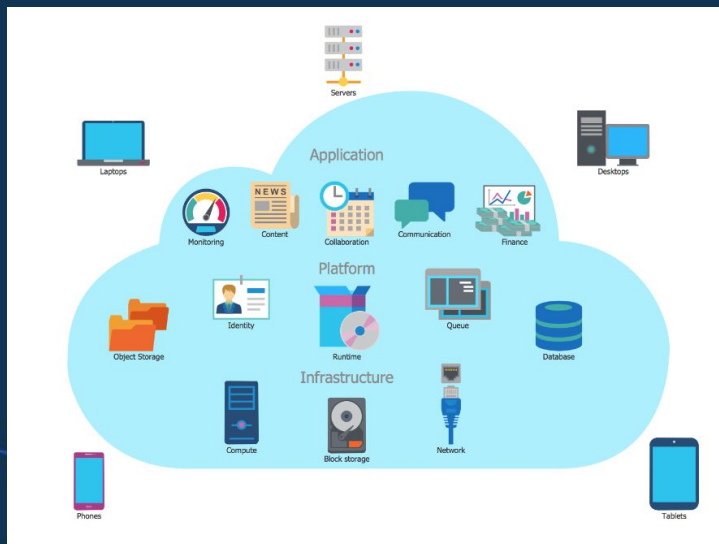
Common Network Protocols

- ❖ **HTTP (HyperText Transfer Protocol):**
 - Used for websites.
- ❖ **TCP/IP (Transmission Control Protocol/Internet Protocol):**
 - Ensures data is sent and received.
- ❖ **FTP (File Transfer Protocol):**
 - Transfers files between computers.

System Architecture

What is System Architecture?

- ❖ **System architecture** defines the structure of a system, including hardware and software components.
- ❖ It's like a blueprint for how computers process, store, and retrieve information.

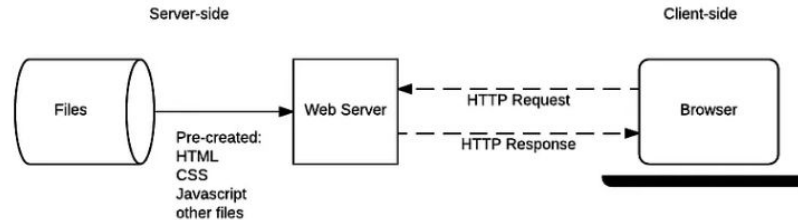


Types of System Architecture

- ❖ **Monolithic Architecture:**
 - A single system that handles everything.
- ❖ **Client-Server Architecture:**
 - Splits tasks between clients (users) and servers (hosts).
- ❖ **Distributed Architecture:**
 - Several systems work together to perform tasks.

Client-Server Architecture in Action

- The client requests data from the server.
- The server processes the request and sends back the data.



HTTP Methods Overview

HTTP (Hypertext Transfer Protocol): allows web browsers to interact with servers.

➤ Common Methods:

- GET
- POST
- PUT
- DELETE

❖ Different HTTP methods define how data is requested or sent.

GET Method

GET: Retrieving Data

- ❖ **GET** requests retrieve data from the server (e.g., loading a webpage).
- ❖ It asks the server for information and waits for a response.
- ❖ **Example:** Visiting a website loads the webpage using GET.

POST Method

POST: Sending Data

- ❖ **POST:** requests send data to the server (e.g., submitting a form).
- ❖ It sends information that the server processes and responds to.
- ❖ **Example:** Signing up for an account online uses POST to submit your data.

PUT Method

PUT: Updating Data

- ❖ **PUT** requests update existing data on the server (e.g., updating your profile picture).
- ❖ It sends new information to replace old data.
- ❖ **Example:** a browser replacing an old file with a new one.

DELETE Method

DELETE: Removing Data

- ❖ **DELETE** requests remove data from the server (e.g., deleting a comment).
- ❖ It tells the server to delete the specified resource.
- ❖ **Example:** Like throwing away an old document that's no longer needed.

Recap & Takeaways

- ❖ **Network:** A group of devices communicating with each other.
- ❖ **Protocols:** The rules for communication (e.g., HTTP, TCP/IP).
- ❖ **HTTP Methods:** Different ways data is sent or retrieved (GET, POST, PUT, DELETE).
- ❖ **System Architecture:** How computers are designed to work together.

CoGrammar

Q & A SECTION

**Please use this time to ask
any questions relating to the
topic, should you have any.**

**Thank you for
attending**

