Through The Clouds:
An Introduction to Cloud Computing

Day 2: Projects

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TA: Joaquin Soto

Yale

Today’s Agenda

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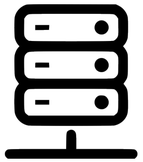
- Networking Basics
- Getting our hands dirty!
  - Simple Ping-Pong Applications
  - [If time permits] Client Registry

Any Lingering Questions from Last Time? :)

Networking Basics

Building your own cloud service

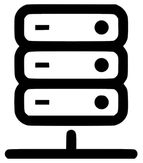


Server

Client

Building your own cloud service

Simple chat service



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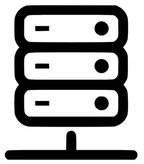
Chat Server



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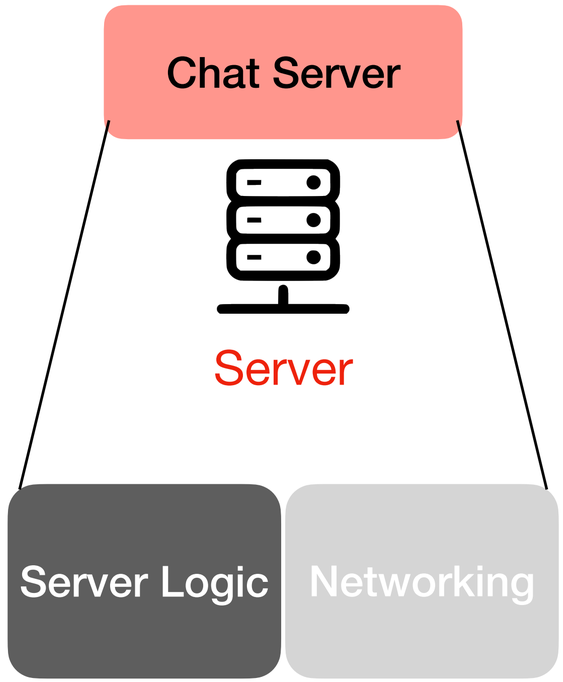

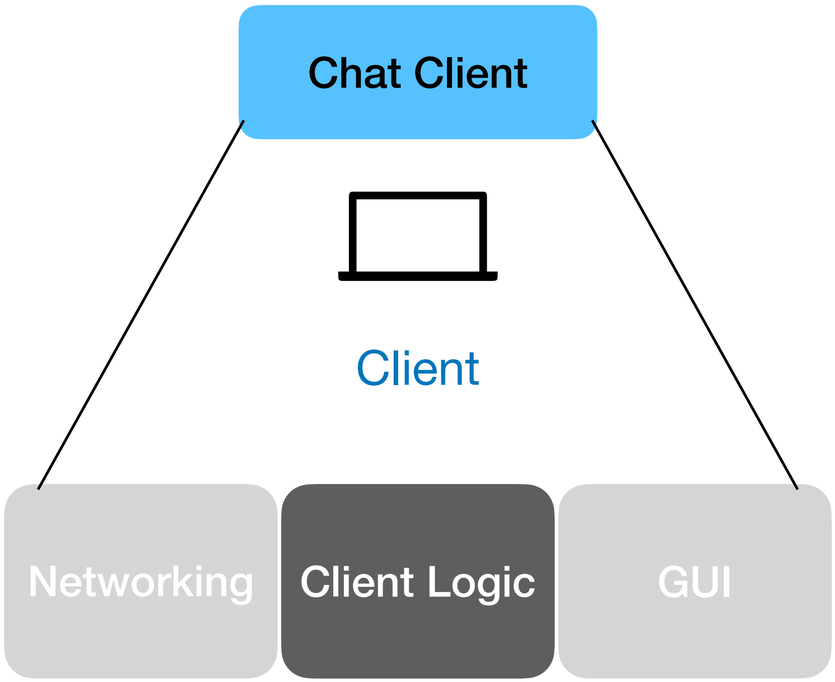

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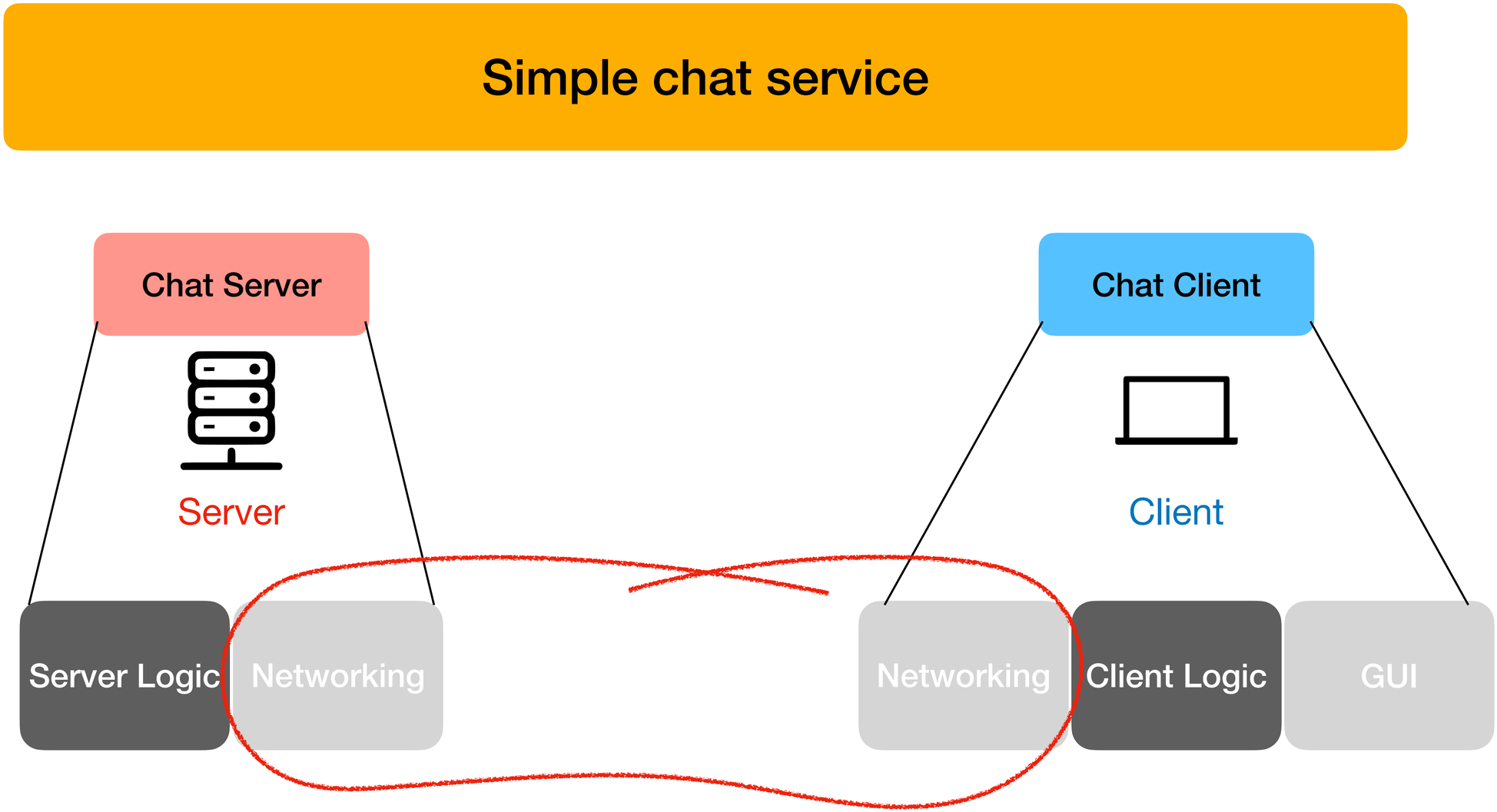
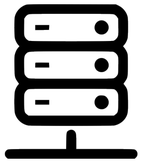


Networking



Server

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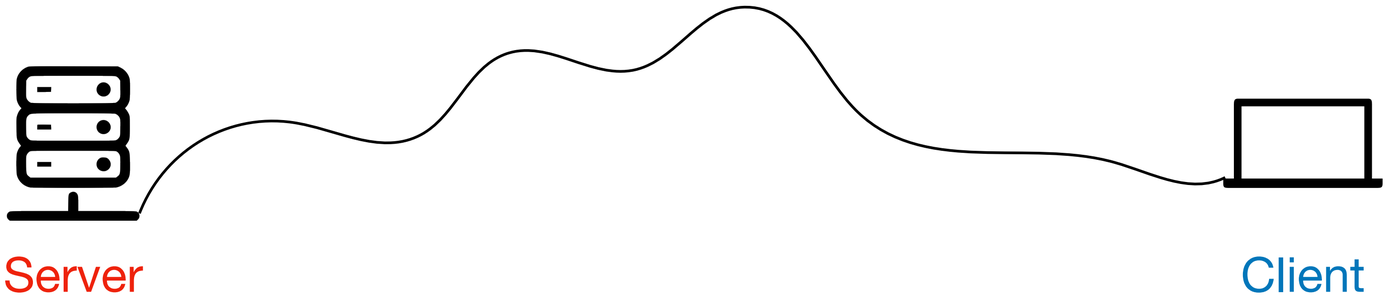

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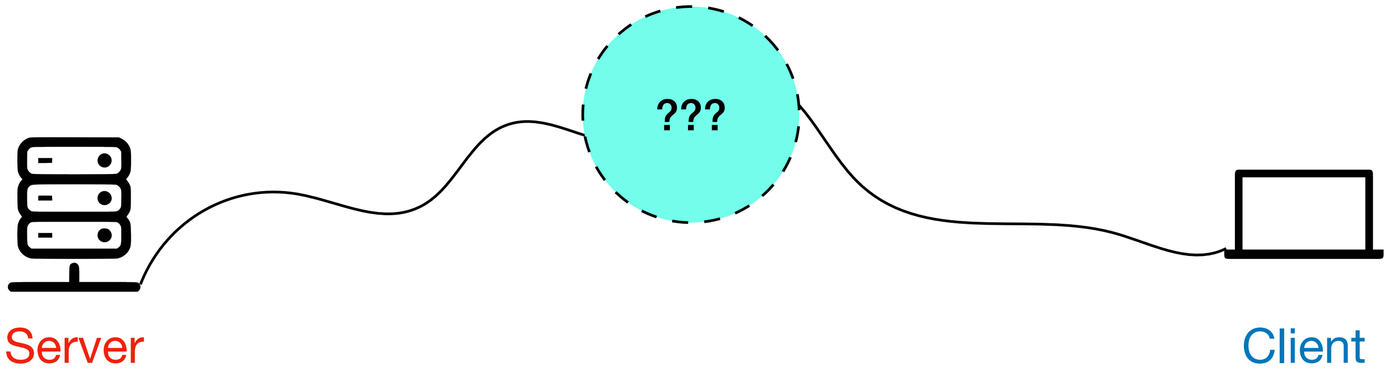

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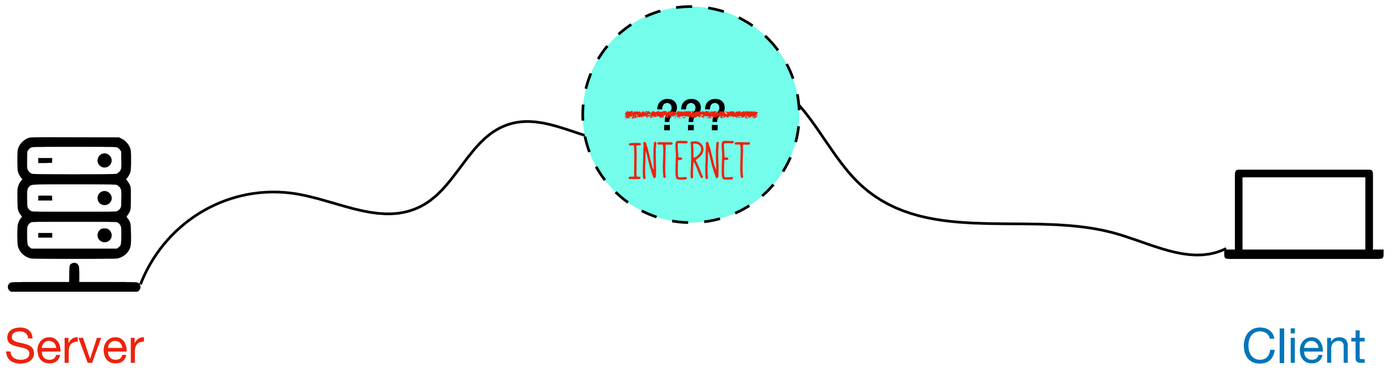

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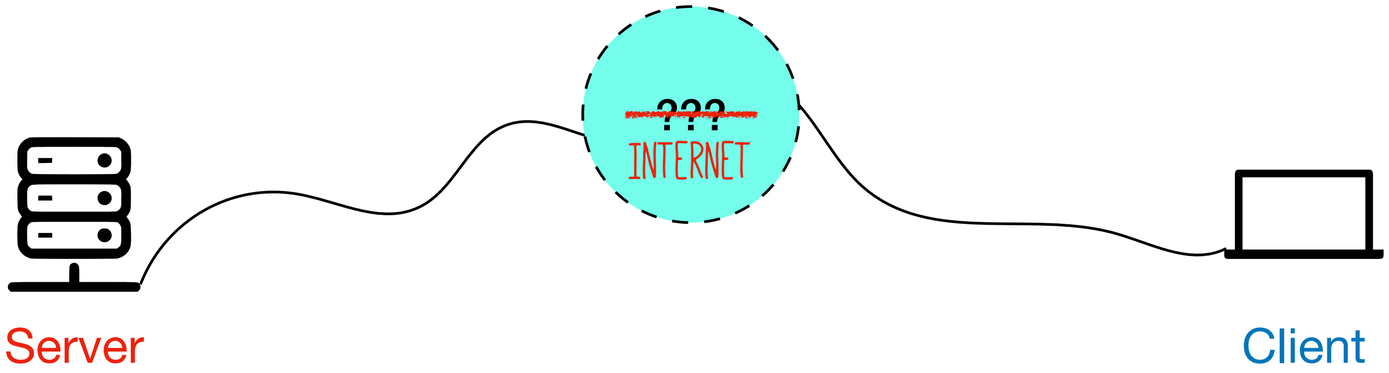
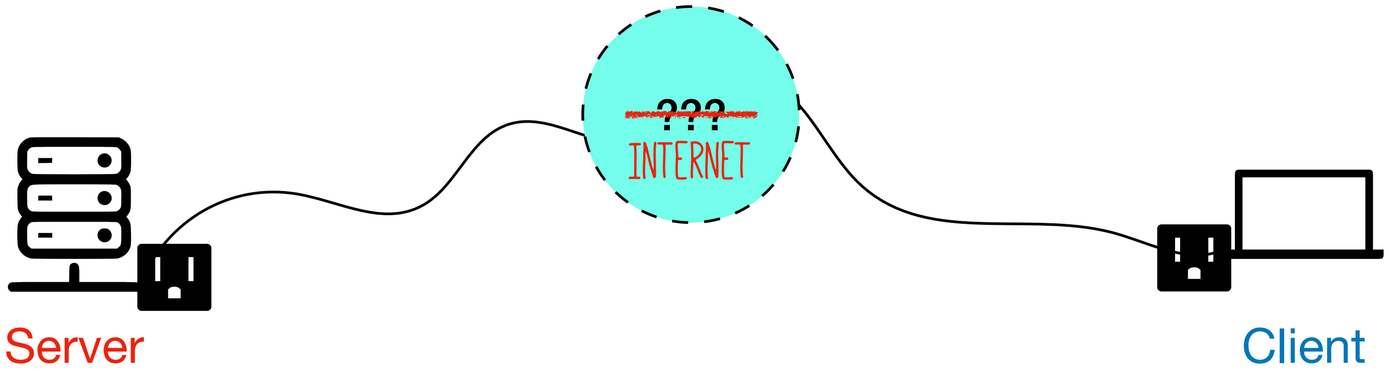


How to communicate over the internet?

Networking



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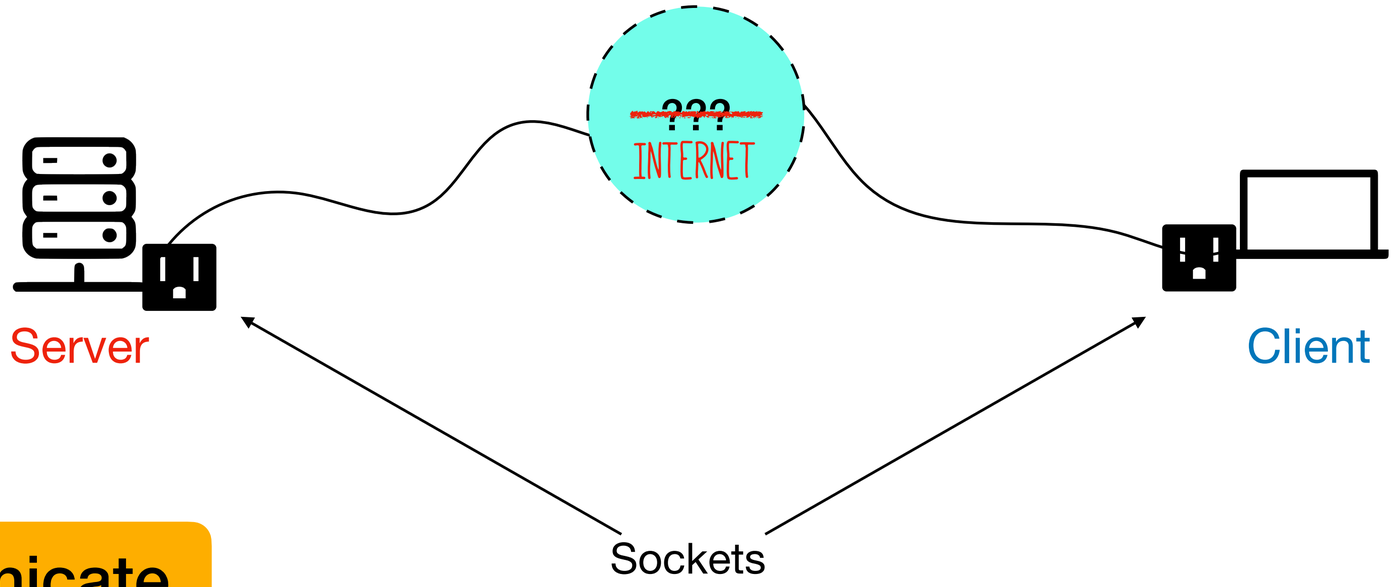

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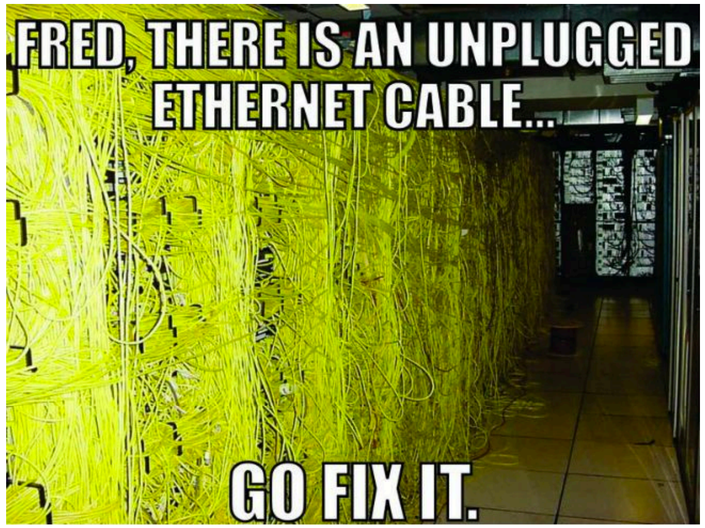

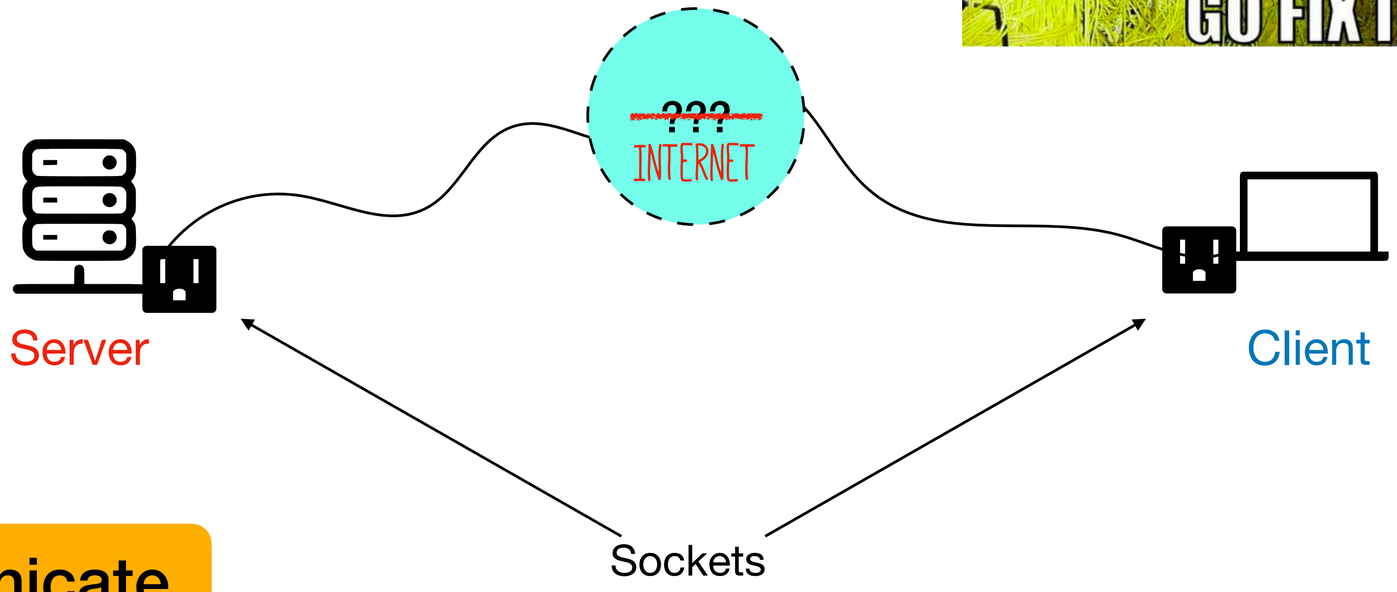

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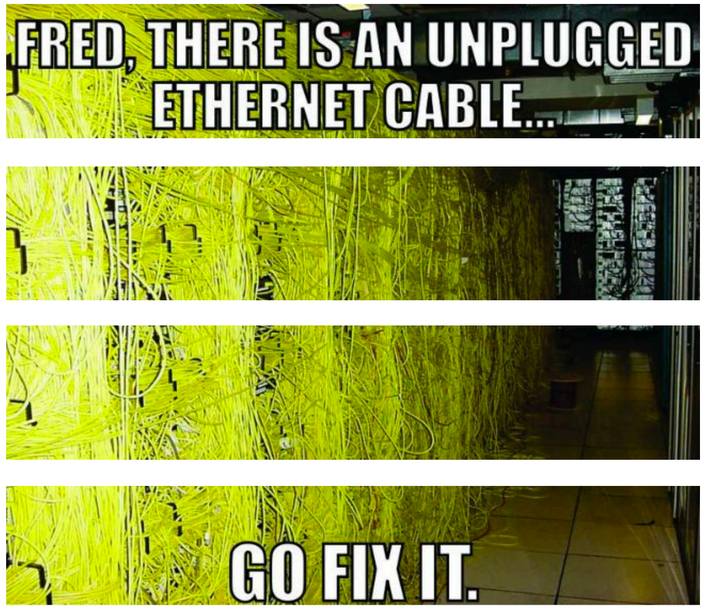

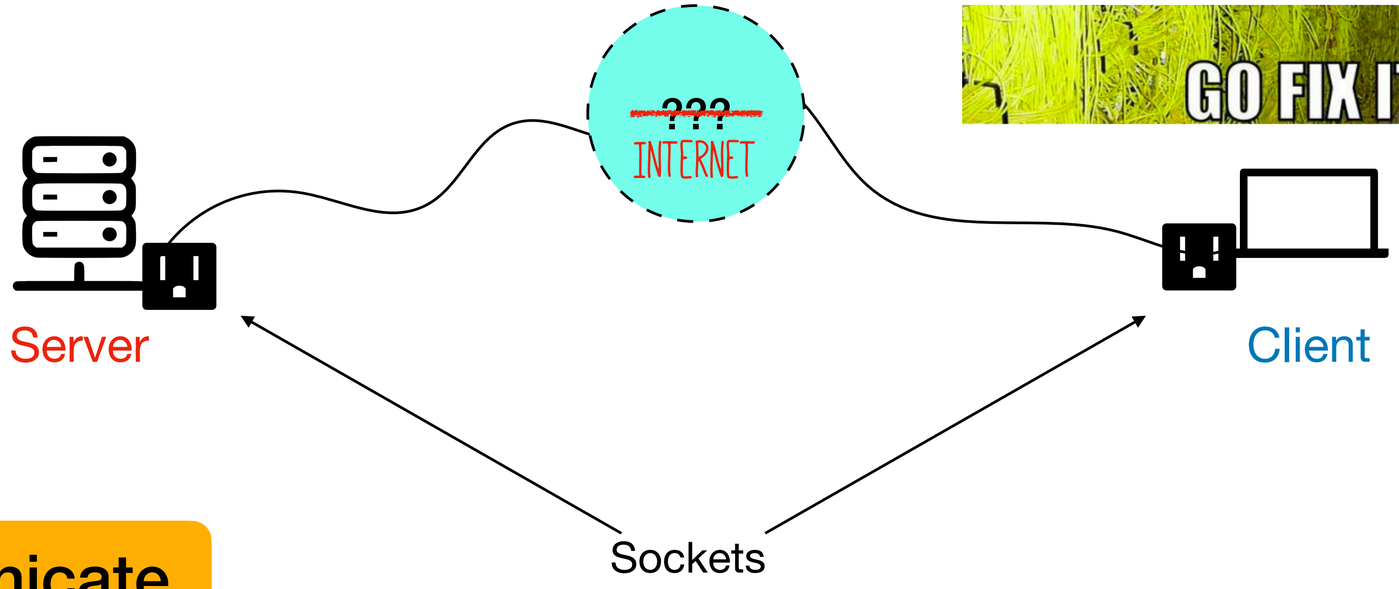

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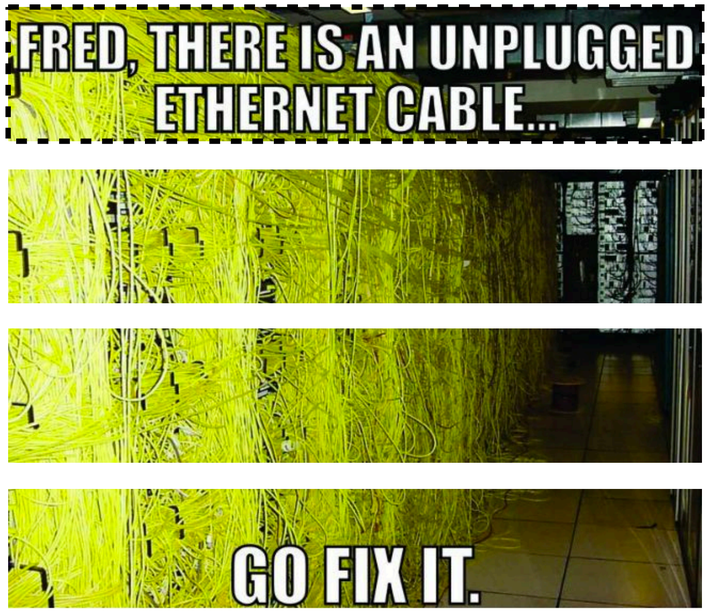
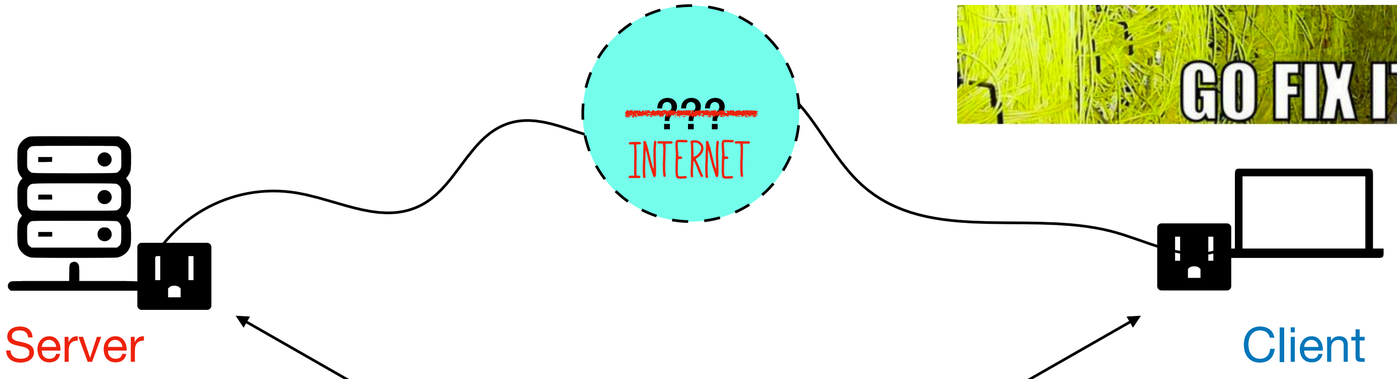
Networking

"Packet"





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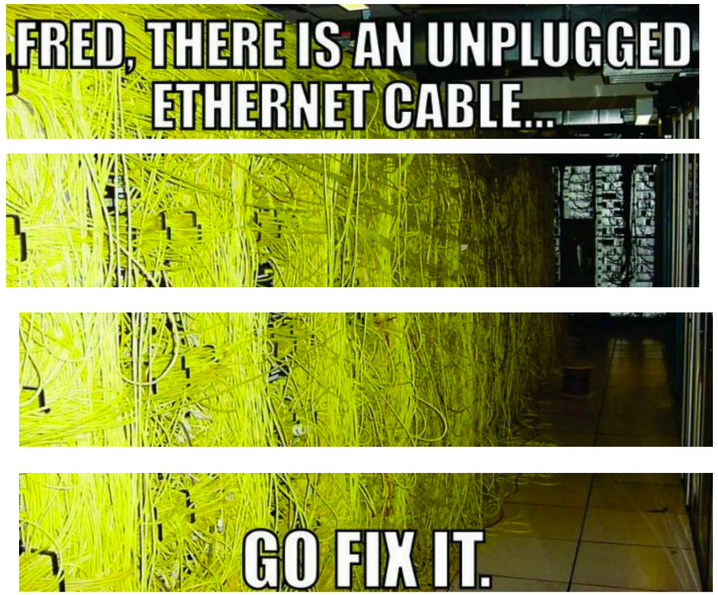

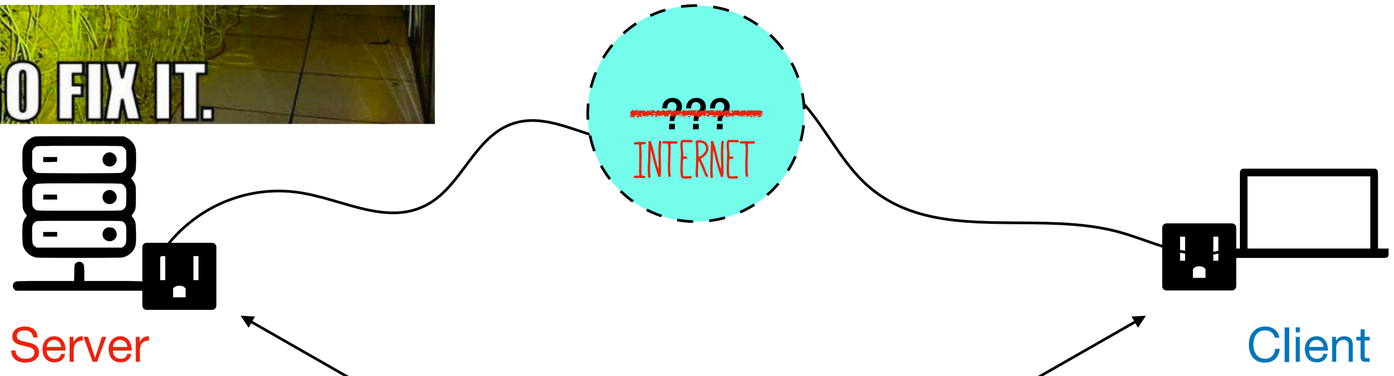

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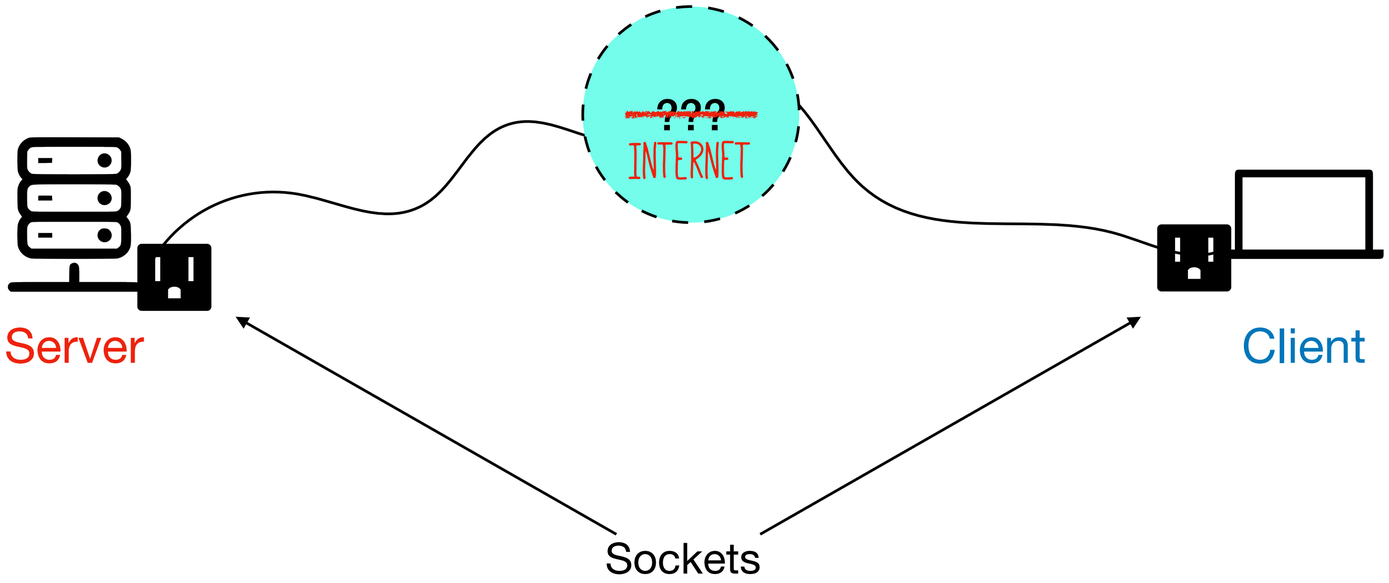

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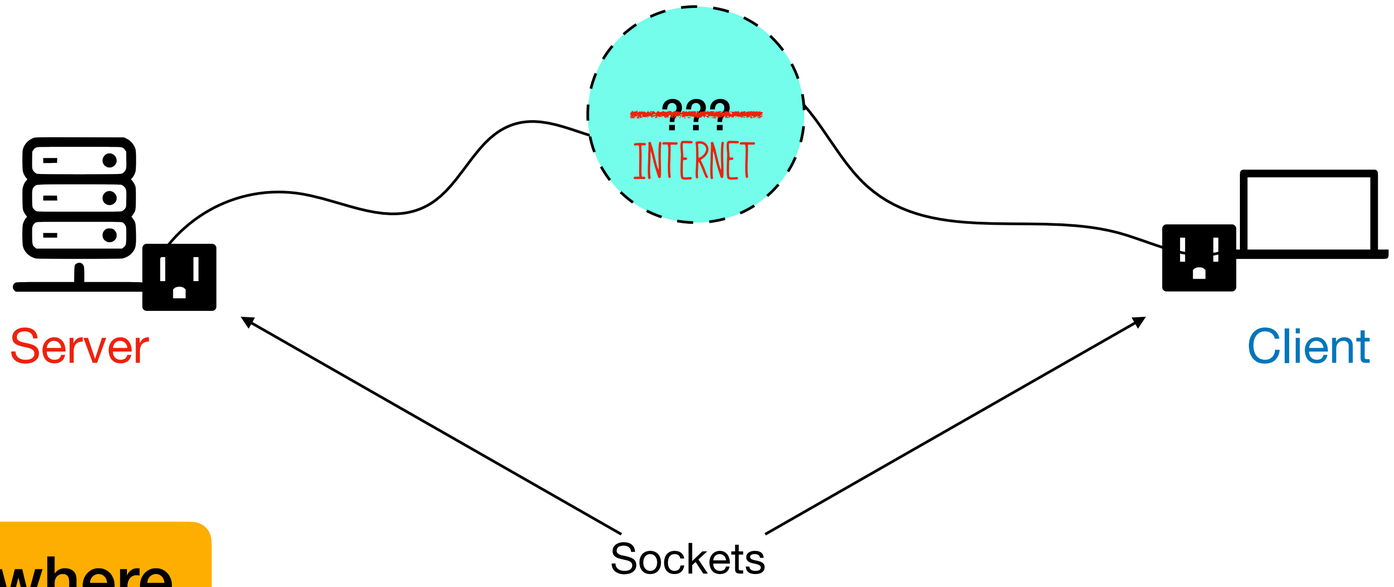
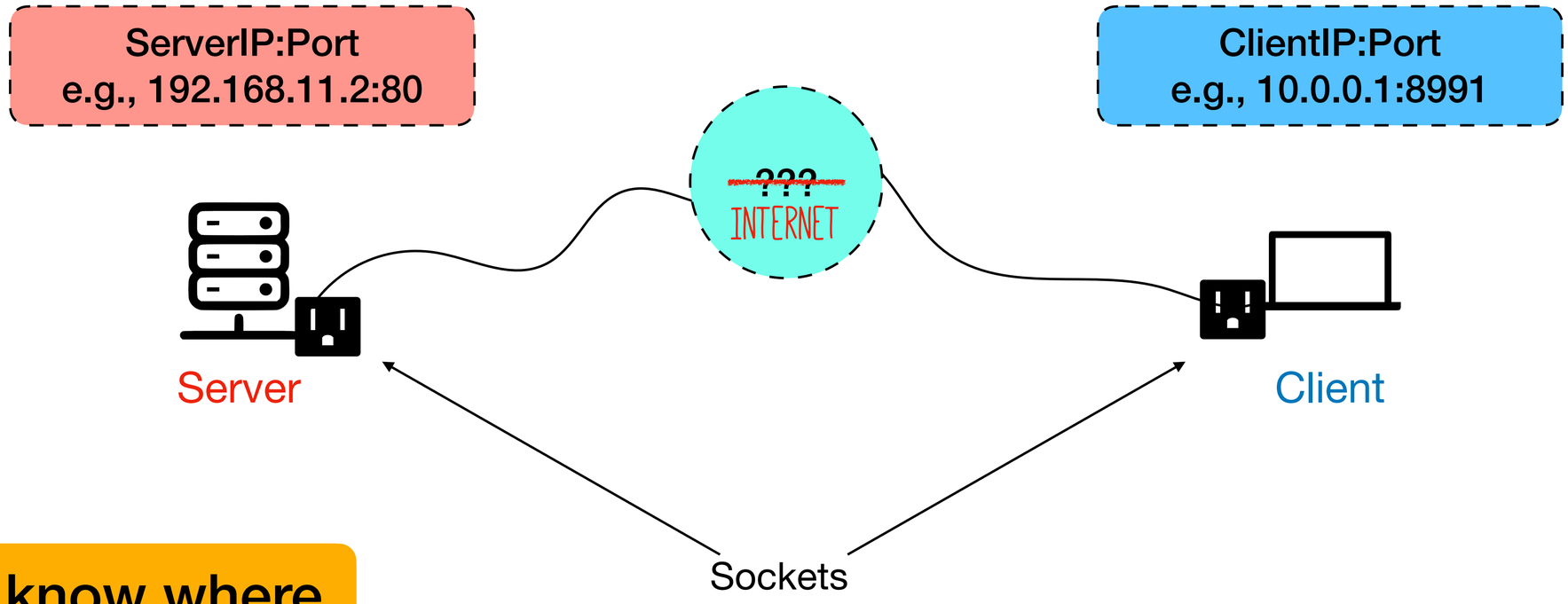


How do I know where the client & server sockets are?

Networking



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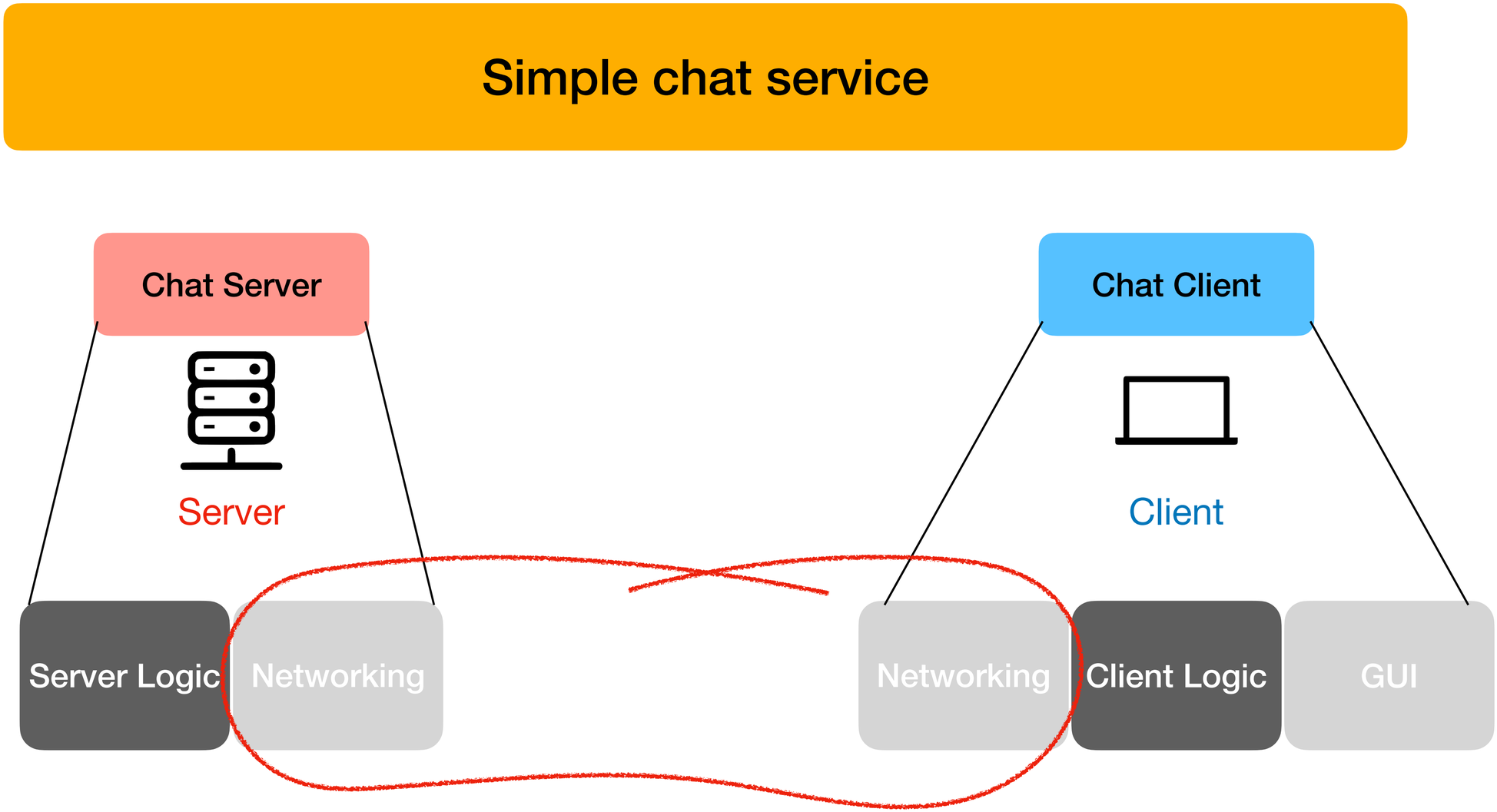

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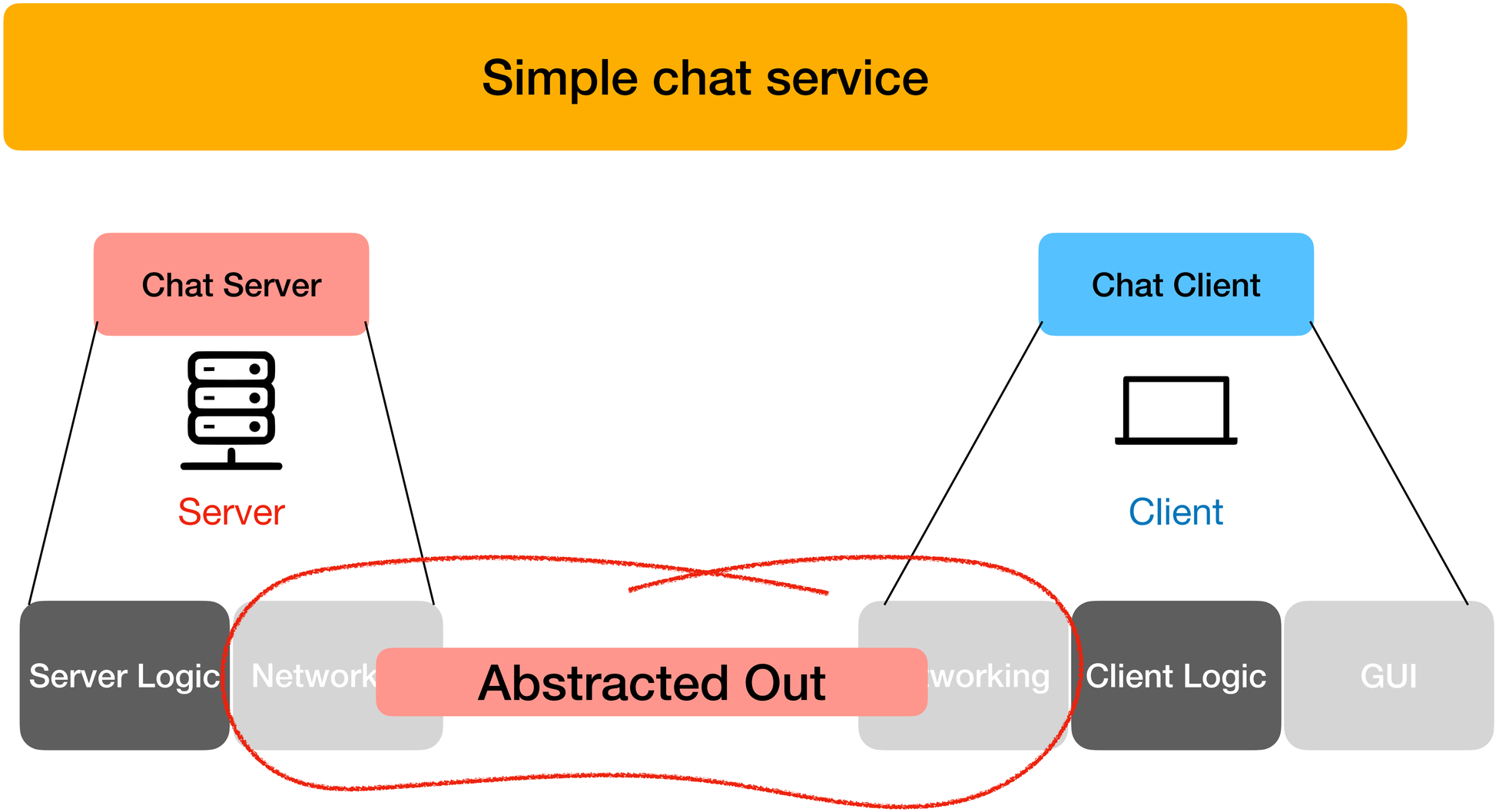

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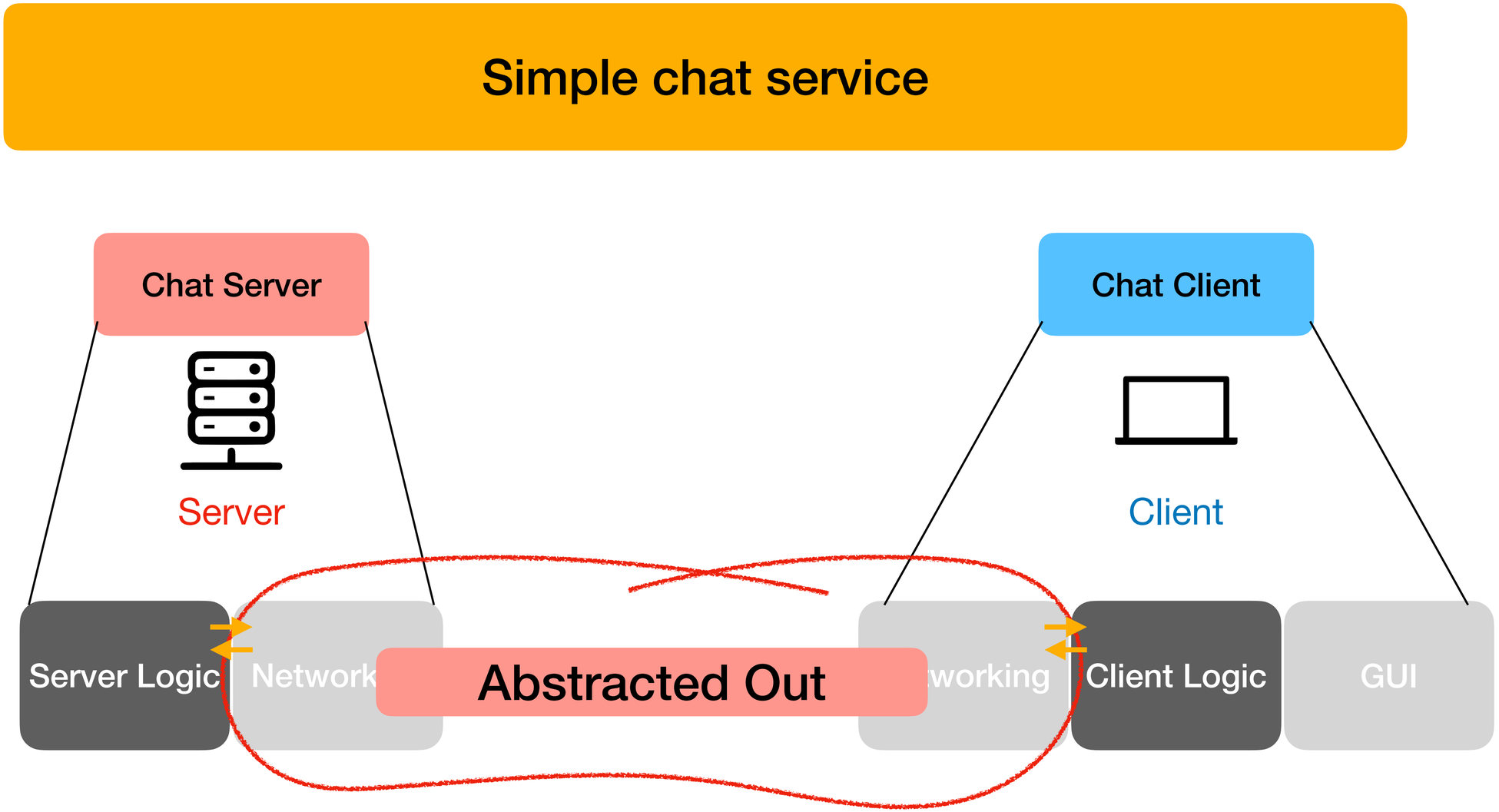

Questions?

Setting up

Getting our hands dirty!

Building Your Chat Application in 4 Simple Steps

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- Ping pong 1: Single Server, Single Client
- Ping pong 2: Single Server, Two Clients
- Client Registry & Login
- Instant Messaging!

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A simple ping-pong application

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How do you do it?

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- The functions you have to edit:
- In client_logic.py:

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async def client_logic(client):
  # your code here
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- In server_logic.py:

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async def server_logic(server, msg):
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Message received by the server (hopefully a “Ping”!)

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await client.send_message(msg)
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Message received by the server (hopefully a “Ping”!)

```
await server.send_message(msg)
```

How do you test it?

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- Open **two** terminals
- Go to the directory where the code resides (`pingpong1`) on both terminals

  `cd /path/to/pingpong1` (on Linux & MacOS)
  `cd \path\to\pingpong1` (on Windows)

- On one terminal, run the server:

  ```
  python3 server.py
  ```

- On the other terminal, run the client:

  ```
  python3 client.py
  ```

Demo & Coding