ACM SIG Cybersecurity

Intro Meeting
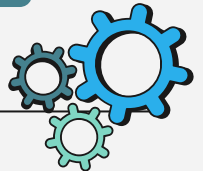
we'll get started in a bit :)

ACM Discord
(join #sig-cyber-security)

Attendance!!
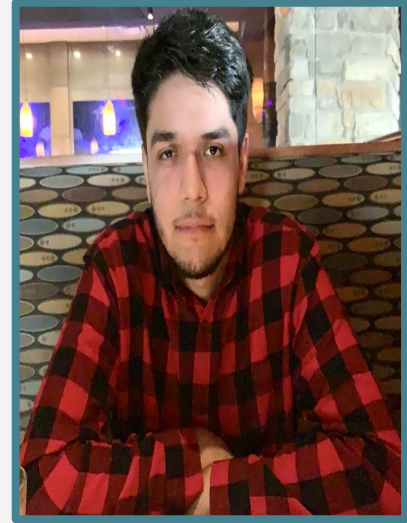**Pls fill out before you leave**

Your SIG Cybersecurity Leads!

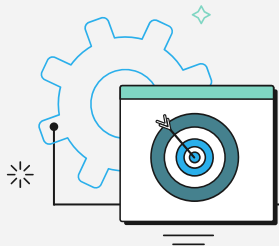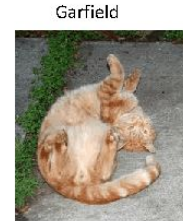**Karina Latasiewicz**

Reagan Caliendo

Jonathan Hernandez

Icebreaker

- Name
- Experience
  - How much do you know about cybersecurity? Nothing is ok :)
- Reason for joining
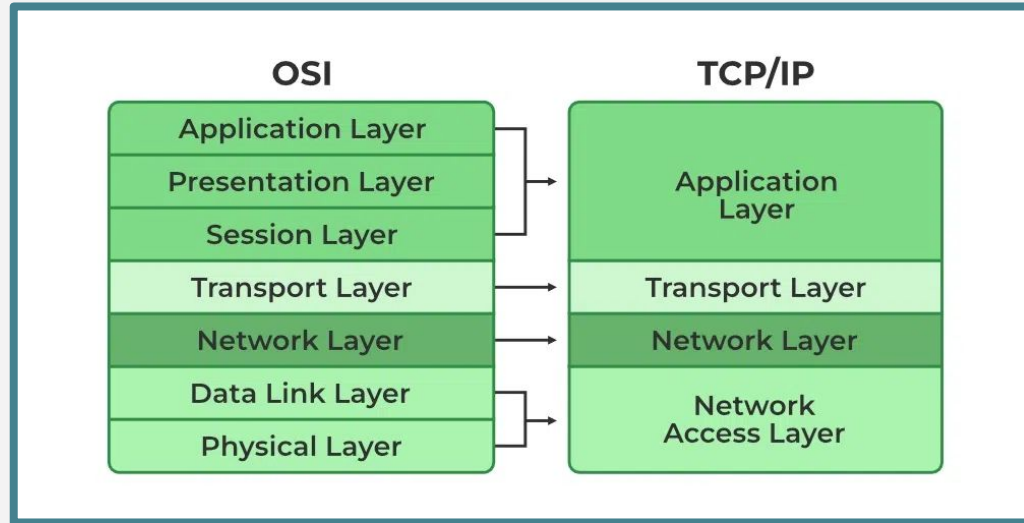 - What do you want to work on with us this semester? Ideas?
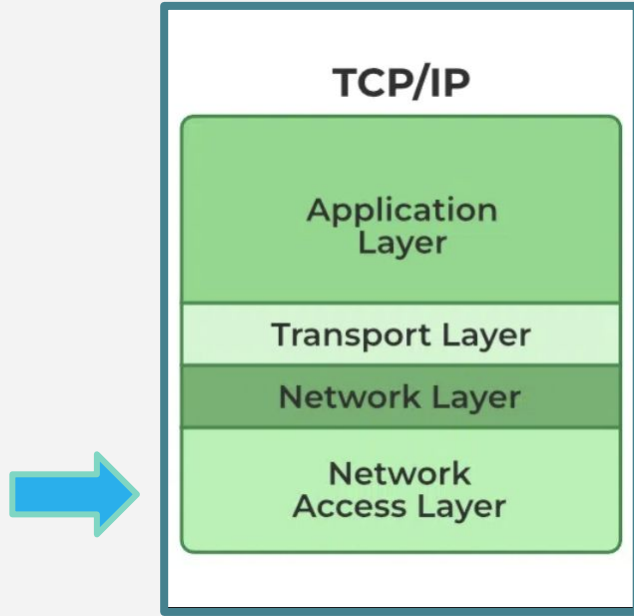

Which cat do you feel like?

Networking Basics

Old OSI Model vs New TCP/IP Model
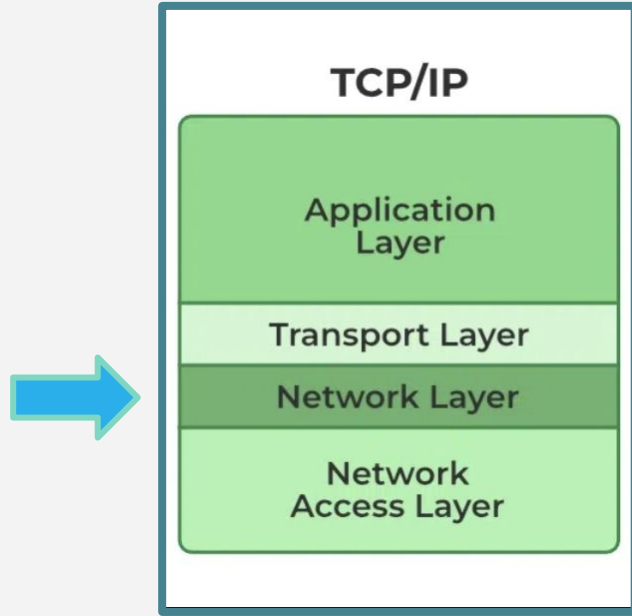

We will focus on the TCP/IP Model

Network Access Layer

TCP/IP

- Application Layer
- Transport Layer
- Network Layer
- Network Access Layer

- **Responsibilities**
  - **Transmits Data**
  - **Requesting Connection**

Network Layer

TCP/IP

Application Layer

Transport Layer

Network Layer

Network Access Layer

- **Responsible for logical transmission of data over the network**
- **Main Protocols**
  - **IP: Delivers packets from source to destination.**
    - **IPv4 and IPv6**
  - **ICMP: Provides hosts with information about network problems.**
  - **ARP: Finds hardware address of host.**

Transport Layer

TCP/IP

Application Layer

Transport Layer

Network Layer

Network Access Layer
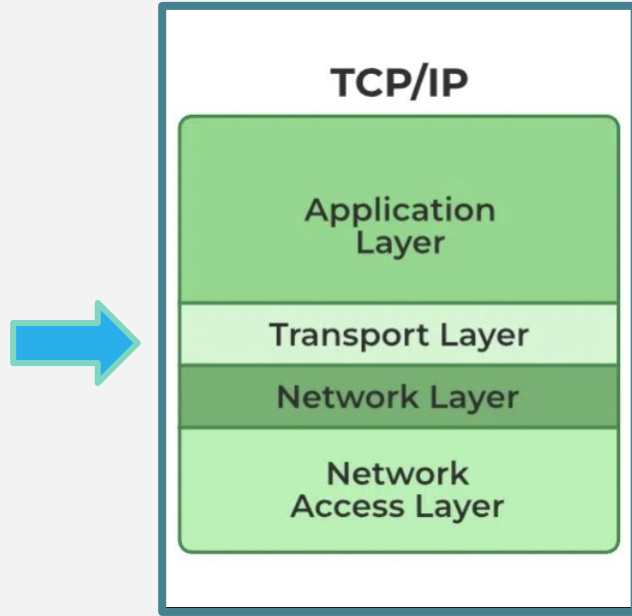
- **Responsibilities**
  - **Data arrives in order and without error**
- **Protocols**
  - **TCP: Three Way Handshake, more secure**
  - **UDP: Smaller data transmitted to avoid establishing and validating data**

Application Layer

TCP/IP

- Application Layer
- Transport Layer
- Network Layer
- Network Access Layer
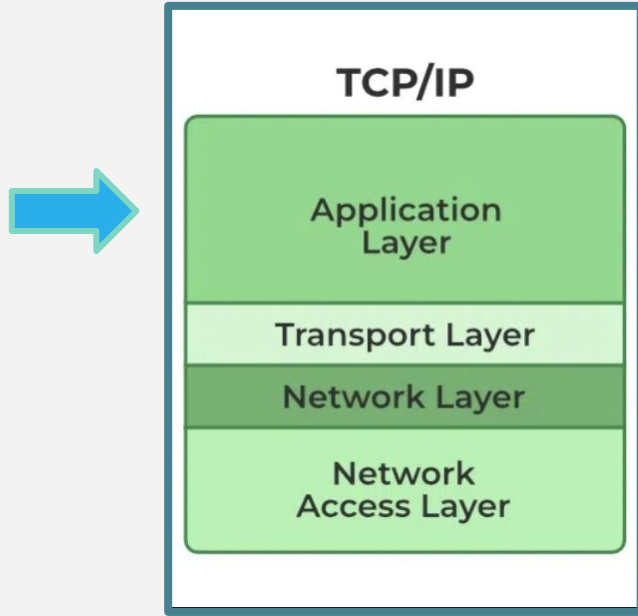
- **Responsibilities**
  - **End-to-End Communication**
  - **Error-Free Delivery**
- **Protocols**
  - **HTTP and HTTPS**
  - **SSH**
  - **NTP**

Firewalls

- **Filtering Packets**
- **Inspections**
- **Deep Packet Inspection**
- **TCP Handshake Verification**

Discussion! What should we do..?

Ideas from Google Form

- Cyberforce/CTF challenges
- Penetration testing
- Bug Bounties
- How do professionals prevent attacks
- Security conference discussions
- CORS
- SHA 256
- CyberForce ?

Resources:

tryhackme.com
hackerone.com
https://cyberdefenders.org/
https://images.app.goo.gl/Hmf8V18ZCd2eCjB2A
https://www.geeksforgeeks.org/tcp-ip-model/
https://images.app.goo.gl/ohiWzc3o6FoiBYwW7
https://www.fortinet.com/resources/cyberglossary/how-does-a-firewall-work
https://www.geeksforgeeks.org/tcp-3-way-handshake-process/

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