Week 2 Reflection

This week, the lectures focused on **network security and encryption**, providing a deeper understanding of how data travels over networks and how it can be secured. Key topics included the **network stack, IP addressing, PGP, IPSec, and SSL**.

What I Learned

- I gained a better understanding of the **network stack** and how each layer contributes to data transmission and security.
- Learning about **IP addresses** clarified how devices are uniquely identified on networks and how routing works.
- **PGP (Pretty Good Privacy)** taught me the importance of end-to-end encryption for secure communication, including the use of public and private keys.
- **IPSec** highlighted how secure tunnels can protect data at the network layer, ensuring confidentiality and integrity.
- **SSL (Secure Sockets Layer)** explained how secure connections are established between clients and servers, which is essential for web security.

Challenges Faced

- Understanding the differences between encryption at different layers (PGP at the application layer vs. IPSec at the network layer) was initially confusing.
- Grasping how certificates and public-key infrastructure work in SSL required careful attention to detail.

Reflection and Personal Growth

- This week reinforced the importance of **layered security** and how multiple protocols work together to protect data.
- I realized that network security is not just about encryption, but also about **ensuring proper configuration and trust** at every layer of communication.
- The lectures helped me appreciate the complexity behind seemingly simple actions like browsing a website or sending an email securely.

Next Steps

- I plan to **review network stack layers** and their security functions through diagrams and practice questions.

- I will explore **hands-on exercises with PGP, IPSec, and SSL** to understand how encryption is implemented in real-world applications.

- I aim to **connect these concepts with previous lessons on CIA and OSI security** to see the bigger picture of overall system security.