**Objective**

Create a basic Intrusion Detection System (IDS) using Python and Scapy to understand IDS concepts.

**Timeline**

Duration: 1 week

**Daily Plan**

**Day 1: Research and Setup**

- Research: Understand basic IDS concepts and functionalities.

- Environment Setup: Install Python, Scapy, and any other necessary libraries.

**Day 2: Network Traffic Capture**

- Implement: Use Scapy to capture network packets.

- Test: Ensure packets are being captured correctly.

**Day 3: Basic Packet Analysis**

- Analyze: Write scripts to analyze captured packets for simple patterns or anomalies.

- Document: Note the types of packets and any unusual activity.

**Day 4: Detection Logic**

- Develop: Implement basic detection logic for common threats (e.g., port scanning).

- Test: Simulate threats and verify detection accuracy.

**Day 5: Alert System**

- Create: Build a simple alert system to notify when suspicious activity is detected.

- Test: Ensure alerts are triggered appropriately.

**Day 6: Review and Refine**

- Review: Go through the code and optimize where possible.

- Refine: Improve detection logic and alert mechanisms based on testing.

**Day 7: Documentation and Reflection**

- Document: Write clear documentation on how the IDS works.

- Reflect: Note lessons learned and areas for improvement for the AI-powered version.

**Key Considerations**

- Scope Management: Keep the project scope minimal to fit the one-week timeline.

- Resource Management: Ensure you have all necessary tools and libraries installed beforehand.

- Risk Management: Identify potential challenges early, such as network access issues or library compatibility.