Cyber Security

S.MANJUSHA

KALLAM HARANADHA REDDY INSTITUTE OF TECHNOLOGY

208X1A4241

Introduction to Cybersecurity

- Cybersecurity is the practice of safeguarding systems, networks, and programs from digital attacks.
- These attacks can take various forms, such as attempting to access, alter, or destroy sensitive information, extorting money through ransomware, or disrupting normal business processes
- Cybersecurity professionals deal with a wide range of threats, including malware, phishing, denial-of-service attacks, and more.

Different types of cyber security attacks

- Malware
- Dos Attacks
- Phishing
- Man-in-the Middle
- SQL Injection
- DNS Tunneling ETC…

Networking TCP and OSI model

TCP/IP Model:

- The **Transmission Control Protocol/Internet Protocol (TCP/IP)** model is a practical and widely used framework for network communication.

Layers:

- Physical Layer
- Network Layer
- Transport Layer
- Application Layer

Networking TCP and OSI model

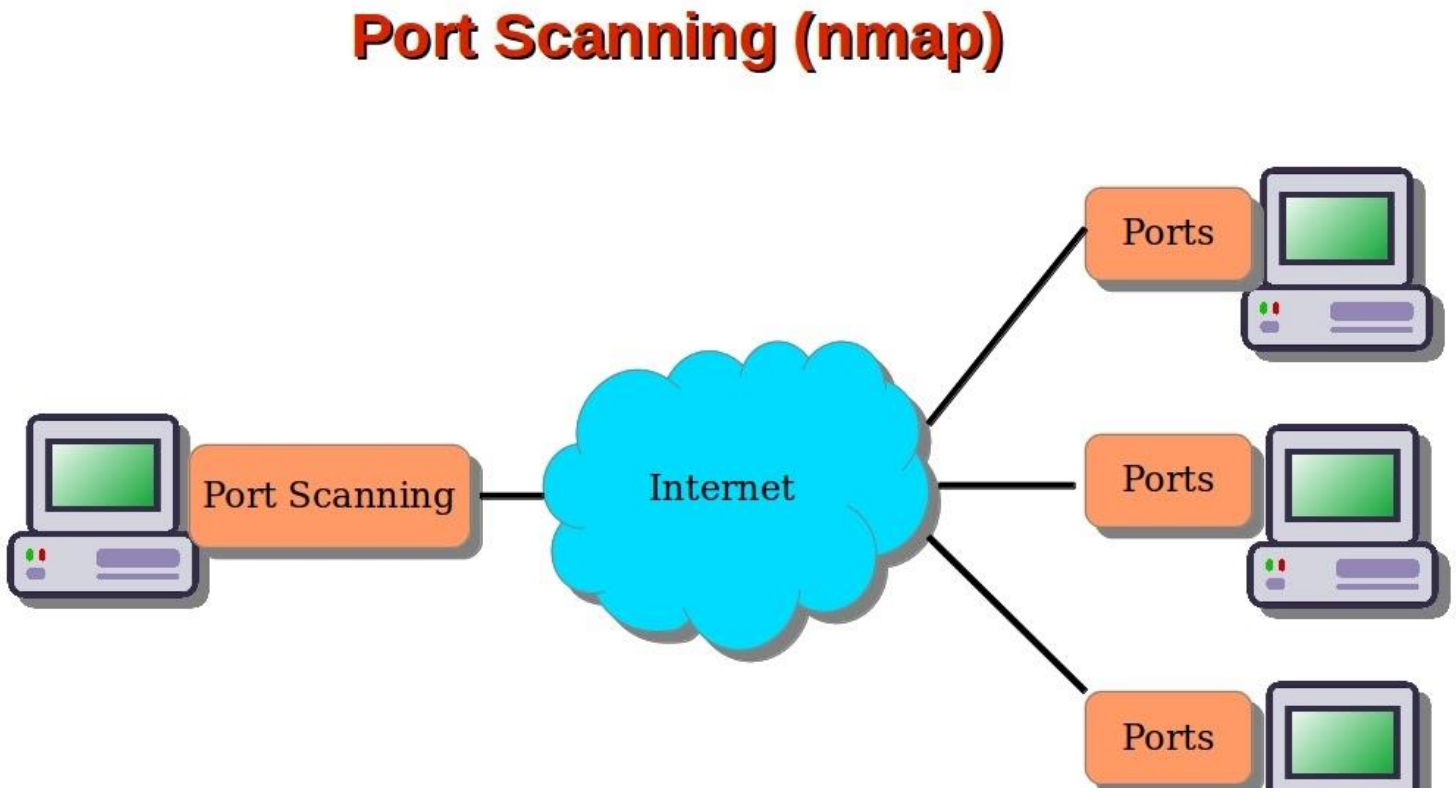
OSI Model:

The **Open Systems Interconnection (OSI)** model is a generic, protocol-independent framework that describes all forms of network communication.

Layers:

- **Physical Layer**
- **Data Link Layer**
- **Network Layer**
- **Transport Layer**
- **Session Layer**
- **Presentation Layer**
- **Application Layer**

Ports


Port Scanning (nmap)
Port Scanning
Internet
Ports
Ports
Ports

Ports

Well-Known Ports

Service	Port	Function
HTTP	80	Web traffic
HTTPS	443	Secure web traffic
FTP	20, 21	File transfer
DNS	53	Name resolution
SMTP	25	Internet mail
POP3	110	Post Office Protocol (POP) mailbox
IMAP	143	Internet Message Access Protocol (IMAP) Mailbox
Telnet	23	Remote login
SSH	22	Secure remote logn

Protocols

- Secure Sockets Layer (SSL) Protocol.
- Transport Layer Security (TLS) Protocol.
- Secure Hyper-Text Transfer Protocol (SHTTP).
- Secure Electronic Transaction (SET) Protocol.
- Internet Protocol Security (IPSec).
- Virtual Private Network (VPN).

These protocols work together to ensure the confidentiality, integrity, and availability of data.

Introduction to Python in Cyber Security

- Python is a powerful programming language widely used in the field of cybersecurity. Here are some key points about Python in cybersecurity:

1.Foundational Concepts

2. Automation and Efficiency

3.Cybersecurity Applications etc..

Introduction to Python in Cyber Security

- **Foundational Concepts:**
- Python is a high-level language known for its readability and concise syntax.
- It supports various data types, including strings, lists, dictionaries, and sets.
- Variables, conditional statements, loops, and functions are fundamental concepts in Python.
- **Automation and Efficiency**:
- Python's automation capabilities are crucial for cybersecurity professionals.
- It allows you to automate repetitive tasks, such as scanning, data extraction, and reporting.
- By writing custom Python scripts, you can streamline processes and save time.

Introduction to Python in Cyber Security

- **Cybersecurity Applications**:
- **Reconnaissance**: Python can automate reconnaissance tasks, gathering information about target systems.
- **Network Scanning**: Use Python to scan networks, identify vulnerabilities, and discover open ports.
- **Credential Access**: Python scripts can help crack passwords or manipulate credentials.
- **Command-and-Control**: Establish

Thank you!