Lesson 4: Study Companion

**Lesson 4:1 – Introduction to Computer Networks**

What are Networks?

How do Networks Work?

Network Types

|  |  |  |  |
| --- | --- | --- | --- |
|  | PAN | LAN | WAN |
| Full Name |  |  |  |
| Description |  |  |  |
| Distance |  |  |  |
| Examples |  |  |  |

What is Public Domain?

What is 3rd Party?

What is open network?

What is TCP/IP Protocol?

|  |  |  |  |
| --- | --- | --- | --- |
|  | Bus | Star | Ring |
| Description |  |  |  |
| How does it work? |  |  |  |
| Advantages and/or Disadvantages |  |  |  |
|  | Mesh | Hybrid |  |
| Description |  |  |  |
| How does it work? |  |  |  |
| Advantages and/or Disadvantages |  |  |  |

What are protocols?

Why do networks have protocols?

Why do vendors use protocols?

|  |  |  |
| --- | --- | --- |
|  | Client/Server Model | Peer-to-Peer Model |
| Description |  |  |
| Example |  |  |

Distributed Systems

|  |  |  |  |
| --- | --- | --- | --- |
|  | Cluster Computing | Grid Computing | Cloud Computing |
| Description |  |  |  |
| How does it work? |  |  |  |
| Examples |  |  |  |

**Lesson 4:2: Network Hardware**

What is transmission media?

Transmission Mediums

|  |  |  |
| --- | --- | --- |
|  | UTP | STP |
| Full Name |  |  |
| How does it work? |  |  |
| Length |  |  |
| Advantages and/or Disadvantages |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Coaxial | Fiber-Optic Cable | Wireless Transmission |
| Description |  |  |  |
| How does it work? |  |  |  |
| Length |  |  |  |
| Examples |  |  |  |

Combining Networks

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Repeaters | Bridges | Switches | Routers |
| How does it work? |  |  |  |  |

**Lesson 4:3 – The Architecture of the Internet**

3 Tiers of ISPs

|  |  |  |  |
| --- | --- | --- | --- |
|  | Tier 1 | Teir 2 | Teir 3 |
| Description |  |  |  |
| Distance |  |  |  |
| Examples |  |  |  |

Internet Addressing

* What is IPv4 and IPv6 ?
* Given an example of a IPv4 address.
* What are top level domains?
* What is a DNS?
* What is a domain name?
* How is the DNS system organized?
* What is DNS Resolution?

Internet Applications – Email

What protocols support Email?

What is VoIP?

What is a Softphone?

What is an Analog Telephone?

What is on Demand Streaming?

What is Broadcasting?

What is large-scale streaming services?

URLs

What is a URL?

What does a URL include?

What is the common structure of a URL?

|  |  |  |
| --- | --- | --- |
|  | XML | HTML |
| Full Name |  |  |
| Description |  |  |

**Lesson 4:4 – Network Security & Business Implications**

Malware

What is malicious software?

What is the purpose of malware?

Types of Malwares

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Virus | Worm | Spyware | Phishing |
| Description |  |  |  |  |
| What kind of harm does it create? |  |  |  |  |

Other Types of Attacks

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | DoS Attack | Packet Sniffing | Brutal Force Attack | Dictionary Attack |
| Description |  |  |  |  |
| What kind of harm does it create? |  |  |  |  |

Protection and Risk Management

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Firewall | Proxy Server | Network Auditing Software | Antivirus Software |
| Description |  |  |  |  |
| How does it protect the system? |  |  |  |  |

Key Terms (Coming Soon)