CS & IT ENGINEERING

COMPUTER NETWORKS

IPv4 Addressing

Lecture No-01

By- Ankit Doyla Sir

Topics to be covered

- Introduction to IPv4

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(9-12 Marks)

IPv4 Addressing (*)

1. Introduction to IP Addressing
2. Classful Addressing
3. Types of communication
4. * Subnetting [Cat-1 to Cat 10]
5. Classless Addressing
6. Subnetting in CIDR
7. Supernetting
8. Supernetting in CIDR

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Error Control *

1. Simple Parity
2. 2D Parity
3. Checksum
4. * CRC
5. * Hamming Code

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Flow control at Data link layer

1. Delay in Computer Network
2. Stop & wait
3. Go Back –N (GB-N)
4. Selective Repeat (SR)

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Internet Protocol Version 4(IPv4) *

1. IPv4 Header
2. Fragmentation in IPv4

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Transport Layer Protocol (TCP)

1. TCP Header
2. Wrap Around Time
3. Connection Establishment Phase
4. Data Transfer Phase
5. Connection Termination Phase
6. TCP state transition diagram
7. Flags in TCP
8. Flow control in TCP
9. Error Control in TCP
10. TCP timer management
11. Congestion control in TCP
12. Traffic Shaping

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User Datagram Protocol (UDP)

1. UDP Header
2. Why we need UDP
3. TCP vs UDP

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Media Access Control *

1. ALOHA *
2. CSMA
3. CSMA/CD *
4. CSMA/CA
5. Reservation
6. Polling
7. Token passing
8. FDMA
9. TDMA *
10. CDMA

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Routing Protocol

1. Shortest Path
2. Flooding
3. Distance vector Routing
4. Link State Routing

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Switching

1. Circuit Switching
2. Packet Switching
3. Virtual Circuit Switching
4. Datagram Switching

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Application Layer Protocol

1. DNS
2. SMTP
3. FTP
4. HTTP
5. Email

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Basics of IP Support Protocol *

1. ARP
2. RARP
3. DHCP
4. ICMP

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OSI and TCP/IP Protocol Stack

1. OSI Model
2. Functions of OSI Layers
3. TCP/IP Model

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Miscellaneous

1. Network Address Translation(NAT)
2. Ethernet Bridging

Books

1. Behrouz A. Forouzan → 5th E
2. Andrew S. Tanenbaum → 6th E
3. Kurose and Ross → 8th E

9PM - 11PM

Mon - Friday

THANK YOU GW
SOLDIERS !