

Data Communication

BLM3051

Furkan ÇAKMAK



Lecture Information Form - Weekly Subjects

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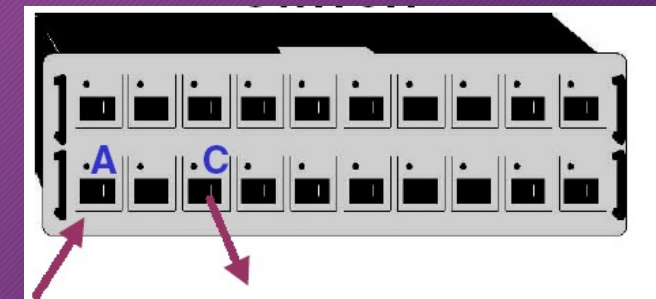
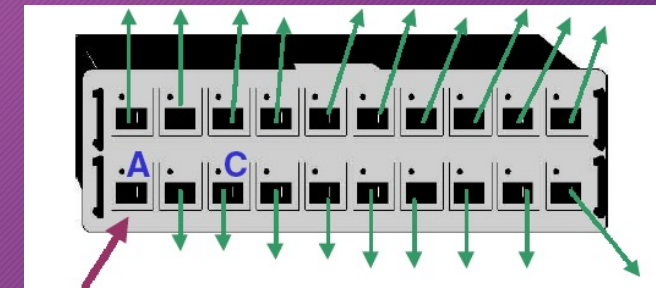
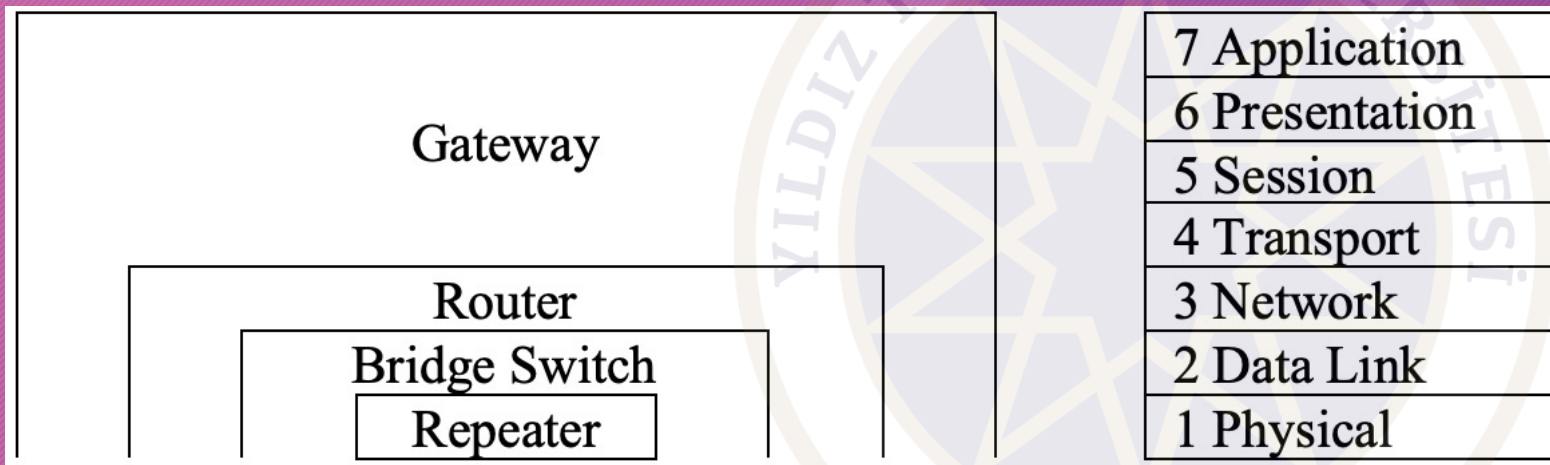
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Week	Date	Subjects
1	04.10.2021	Introduction to Data Communication Standards Used on Data Communication, Architectural models
2	11.10.2021	OSI Reference Model , Layers and Their Functions
3	18.10.2021	Signaling and Signal Encoding
4	25.10.2021	Parallel and Serial Transmission, Communication Media and Their Technical Specs.
5	01.11.2021	Multiplexing (TDM, FDM), Error Detection and Error Correction Techniques
6	08.11.2021	Data Link Control Techniques, Flow Control
7	15.11.2021	Asynchronous and Synchronous Data Link Protocols (BSC, HDLC)
8	22.11.2021	Arasınan 1
9	29.11.2021	Synchronous and Asynchronous Data Link Protocols
10	06.12.2021	LAN Technologies Continued, IEEE 802.4, 802.5
11	13.12.2021	LAN Technologies Continued, IEEE 802.11
12	20.12.2021	Connectionless and Connection Oriented Services, Switching
13	27.12.2021	Communications Equipment's, TCP/IP Model, Security Issues
14	03.01.2021	Research Presentation - Wide Area Networking Technologies (X.25, ISDN, FR, ATM, xDSL.)

Devices

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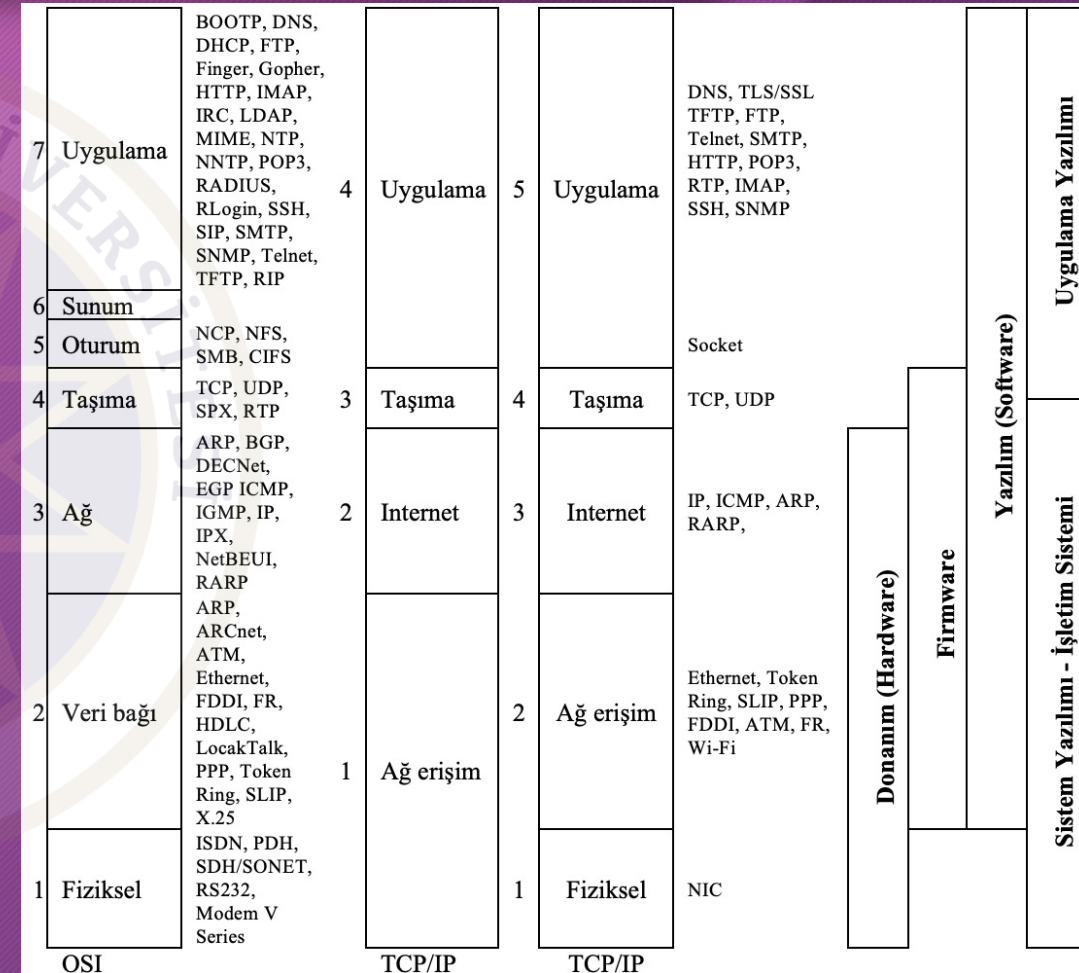
VLAN

- VLAN (Virtual LAN)
 - Port Based / Static / Layer 1 VLAN
 - MAC Based / Dynamic / Layer 2 VLAN
- Trunking
- Why VLAN?
 - Başarım
 - Sanal çalışma grupları oluşumu
 - Yönetimdeki kolaylık/sadelik
 - Maliyet
 - Güvenlik



TCP/IP Modeli

- TCP (Transmission Control Protocol)
 - Connection Oriented
- UDP (User Datagram Protocol)
 - Connectioless



TCP/IP Modeli (Con't)

Adres Sınıfı	Adres – İkili sayı sistemindeki gösterimi	Adres aralığı	Maske	Ağ Sayısı	Konak Sayısı
A Sınıfı	0XXXXXXXX.XXXXXXXXX.XXXXXXXXX.XXXXXXXXX	0.0.0.0-127.255.255.255	255.0.0.0	128	16.777.214
B Sınıfı	10XXXXXXXX.XXXXXXXXX.XXXXXXXXX.XXXXXXXXX	128.0.0.0-191.255.255.255	255.255.0.0	16.384	65.534
C Sınıfı	110XXXXXX.XXXXXXXXX.XXXXXXXXX.XXXXXXXXX	192.0.0.0-223.255.255.255	255.255.255.0	2.097.152	254
D Sınıfı	111XXXXXX.XXXXXXXXX.XXXXXXXXX.XXXXXXXXX	224.0.0.0-239.255.255.255			Multicast.
E Sınıfı	1111XXXXX.XXXXXXXXX.XXXXXXXXX.XXXXXXXXX	240.0.0.0-255.255.255.255			Ayrılmıştır.

Port Number	Protokol Name
20,21	FTP (File Transfer Protocol)
23	Telnet
25	SMTP (Simple Mail Transfer Protocol)
80	HTTP (HiperText Transfer Protocol)
110	POP (Post Office Protocol)

- Subnet
 - 255.255.255.0 (11111111.11111111.11111111.00000000B)
 - 255.255.255.192 (11111111.11111111.11111111.11000000B)
- NAT (Network Address Translation)
- DNS (Domain Name System)

Network Security

- Ağ güvenliğinin önemli yönleri:
 - Veri bütünlüğü (data integrity)
 - Verinin kullanılabilirliği (data availability)
 - Veri mahremiyeti ve gizliliği: (data privacy and confidentiality)
- Güvenlik mekanizmaları
 - Şifreleme (Enchipherment)
 - Sayısal imza (Digital Signature)
 - Erişim kontrolü (Access Control)
 - Kimlik doğrulama (Authentication)
 - Trafik dolgusu (Traffic Padding)
 - Rotalama kontrolü (Routing Control)
 - Notere kaydettirme (Notarization)

Thank you for your listening.

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