Semester 5th | Practical Assignment | Computer Networks (2301CS501)

Date: 06/09/2024

Lab Practical #09:

Study of IP Addressing and sub-netting.

Practical Assignment #09:

- 1. Find default subnet marks, network bits, host bits, hosts per subnet, no of subnets, subnet number, 1st valid IP address, last valid IP address, and broadcast address.
- 8.1.4.5/16 i.

C . 2	The second of
(9) (1	8 1 4 5 7 16
	of the same was a state to the true to the terms of the t
	-) class: A
	-) Default subnet mask :- 255.0.0.0
2	-> Bit Borrowed : 8
	-> Network Bits: 16 into File
	- host bits : 16 - 2 - 10 - 10 - 10 - 10 - 10 - 10 - 10
	-) subnet mask: 255.0.0.01911602 10 011
	→ No. of subnets: 216-2= 65 534
	Lamba Friedo & Tree & Sobred Friedo
	-) subnet number : TP: a subnet mask
	: 8.1.0.0
	in per saminar to
	-) IST valid IP . g. 1. O. ji . bibe 120' 2
	-) Last valid TP: 8: 1: 255. 25401 -
	-> Broadcast Address: 8.1.255.255
	other season of the season of the

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130.4.102.1/24 ii.

(11)	130 . 4 . 102 - 1 / 24	
	Edward Submed wash to 200 estina	1
->	class: B	n I.
->	Default Subnet Mask: 255, 255.0.0	
-2	Bit borrowed 98 of 1866 (man)	
->	Network Bits : 24	i e
->	Host bits: 8 " States in second	*
-	subnet Mask :- 255, 255, 255,0	
->	No. of subnets :- 28 = 256	
->	Hosts per subnet: 28 - 2 = 254	
->	subnet number . If & subnet mask: 130.4	.102.0
->	1st Valid IP: 130.4, 1021)	
->	last valid IP: 130.46-102.254	
->	Broadcast Address: 130, 4. 102,255	

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iii. 199.1.1.1/24

iii) 199	. J.J. 1 / 24		
-> 00	55 ° C		11:
-> de	foult subnet Mask	: 255.255, 255.0	
	Borrowed : 0	son its and its seed	
-) ho	st bits: 8	v · le serious ist	
		$2^{8}-2=254$	
		ed they know	
	13	+ 1-1-1-10 10 014 F	
		Pf Subnet Mask	
	0.6.	0	
	95+ valid TP: 199.	9.7.7.254	
		55 1- 199 1.1.255	
1			

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130.4.102.1/22 iv.

	STATE OF THE STATE
(iv) class: B (130). 4.102. 7/22)
	3.00 0 000 0 001 100
-) & default subnet M	ask : 255,255.0.0
- bites borrowed: 6	7.8
	2
- host bits: 10	of the state of th
- No. of Subnet:	26 = 64
-> Hosts Per subnet	; 210 -2 = 1022
- Subnet number:	IP & subnet Mask
	130: 4:100.0
	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Jat valid JP : 15	30.4.100.1
-) 195t valid IP: 1	30, 4, 103, 284
	55: 130.4.103.255
	is a series of the series of the

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199.1.1.100/27 ٧.

(42)	199. 7.1.100 723
	12. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
.: (-)	C1435: C
	default subnet Mask : 255, 255, 255,0
-)	bit borrowed: 3
->	Network bits: 27
	hosts bit: 5
(= = =)	subnet mask: 255. 255. 255. 224
٠ ــــــــــــــــــــــــــــــــــــ	No. of subnet: 23 = 8 in delai)
	Hosts Per subnet: 25_ 2=30
_ <u>_</u>	subnet number: IP + subnet Mask
1 1 1 1 1	199: 181.96 - 180° 180° 180° 180° 180° 180° 180° 180°
->	JS+ valid IP: 199.1.1.97
	195+ valid TP: 199.1.1. 126
	Bonoad cast IP: 199.1.1.127

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2. A host in a class C network has been assigned an IP address 192.168.17.9. Find the number of addresses in the block, the first address, and the last address.

(2)	A host in a class c Network has been
	Assigned an IP Advess 192. 168. 17.9.
	Find the no. of Adresses in the block, the
140	First Address and the last Address.
	-) here, class; C
	50, host bit =8
	NO, of Address in the block : 28 = 256
	-) cuith valid host : (28-2= 254)
	76+ Address : 192, 168, 17.0
	195+ Address: 192. 168.17.255

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3. An address in a block is given as 185.28.17.9. Find the number of addresses in the block, the first address, and the last address.

_(3	3) An Address in a block is given as	
	185.28.17.9 Find the No. of Addresses	
	in the block, the first Address & the East Address	
	The state of the s	
	Here, class: B	
) so, host Bit : 16	
	A SAL ARBOR CO.	
_	No. of Address in the block : 210 = 6336	
	-) (with valid host): (216-2) = 6534	
	58 - 8 36 2 13 March 100 346504	
	-) 1St Address : 185,28.00	
	-) 195+ Address : 185. 28.258.255	
	production of the company	

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4. A block of addresses is granted to a small organization. We know that one of the addresses is 205.16.37.39/28. What is the first address, last address, number of addresses in a block.

(4)	Ablock of Addresses is granted to a small
. ,	organization . we know that one of the
3.5 1	Add nesses. is 208.16.37.39/28. Condt is
	the first Address, 1964 Address & Number of
	Addresses in a block.
S. D.	to the state of th
	-) Here class: C
. 5	-) -Bit Borro wed: 4
	-) 50, host bit : 4
	-) No. of Addresses in the Block : 24 = 16
	(coith valid hast): (29-2=14)
) 1st Address: 205. [6. 37.82
4) 195t Address: 205. 16. 37.47
	See strates to de
4	as a see a langua var al and an are

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5. Subnet the IP address 216.21.5.0 into 30 hosts in each subnet. Find Class, Default Mask, Bit Borrowed, New subnet mask, No. of Hosts&Subnet, Network Ranges(Subnets).

- 2 O 2 3 MOD 1 3 6 3
3 subnet the IP Adress 216. 21.5. 0 into 30
The state of the s
By Revige of Meal Bubblet Mask, 1901 of hos
L'hill all carried Kom 985 Countre
TO SUBMET ! METOOTIS
Here class ? C
-) default mask : 253. 255. 285.0
) Here, 30 hosts in each subnet means (25-2)
30, host bit = Bid took
Network bit = 27
NETWOYK 017 = 24
50, IP : 216 . 21 . 5 . 0 . 1.27
30, 11 216 210 3.0 121
-) Bit borrowed = 3.31.70
New subnet Mask : 255 255 258 224
-) No. of subnets: 23-8
-) NO. Of nosts Per Subnet: 25-2=30
> Network Ranges (subnets):
⇒ subnet - I = 216. 21.5.0 to 216.21.5.31
-) subnet -2: 210.21.8.32 to 216.21.5.63
and so on upto & subnet.

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6. Subnet the IP address 192.10.20.0 into 52 hosts in each subnet. Find Class, Default Mask, Bit Borrowed, New subnet mask, No. of Hosts&Subnet, Network Ranges(Subnets).

<u>(a)</u>	
	52 hosts in each subnet find class, Default
	mask, Bit Borrowed, new subnet mask, No. of
	hosts & subnet, Network Ranges (subnet).
	-) here, class : C
,	-) default subnet mask : 255. 255. 265.0
	-) Hene, 32 Hosts in each subnet
	Means $32 < (2^{6}-2) \Rightarrow 52 < 62$
2	Megro Je
	50, host bit $5=6$
	-) Bit Borrowed = 2
	-) Network Bits = 26
	-> 50, IP will be 192, 10, 20, 0/26
2 20	
	-) New subnet mask : 255,255, 255,192
	-) No. of subnets: 22 = 4
	=) No. of & valid hosts pen subnet: $2^6-2=62$
	=) Network Ranges (Subnets):
	10 70 70 10 10 10 20 60
	-> subnet -1: 192, 10, 20, 0 to 192, 10, 20, 63
	_) subhet-2: 192. 10.20.64 to 192. 10.20.127
	and so on upto 4 subnets.