Assignment on IP addresses

E/19/166

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i. Class A
   Class B
   Class C
   Class D
   Class E

ii. We can identify the class of an IP address by looking at its first octet.
   - Class A networks has a default subnet mask of 255.0.0.0 and have 0 – 127 as their first octet
   - Class B networks has a default subnet mask of 255.255.0.0 and have 128 – 191 as their first octet
   - Class C networks has a default subnet mask of 255.255.255.0 and have 192 – 223 as their first octet

iii. Class A

iv. 128

v. 2^{24}-2=16777214

vi. The easiest is to sub net on a byte boundary which will mean a subnet mask of 255.255.255.0 This will allocate 8 bits for the subnet and 8 bits for the host. We have to accommodate around 200 hosts which needs 8 bits which we have. We want 4 subnets which require 4 bits, and we have 8 bits.

vii. Using classless addressing, addresses can be allocated more efficiently as network admins get to pick network masks, and in turn, blocks of IP addresses that are the right size for any purpose.

viii. Dec 192 = 11000000 binary, 2 bits of this octet are used for the subnet, add the 24 bits 255.255.255 and now there are 26 bits.
   Therefore, 222.1.1.20/26

ix. Dec 248 = 11111000, 5 bits of this octet are used for the subnet, add 16 bits 255.255., now there are 21 bits.
   Therefore, 135.1.1.25/21

x. Class C address has 8 bits of the host which will give 2^8 – 2 =254 hosts

xi. 254

xii. 192.168.2.0/24

xiii. 192.168.2.255

xiv. 157.2.1.0/24

xv. IP addresses – (192.168.1.1 – 192.168.1.126)
   Network address – 192.168.1.0/24
   Broadcast address – 192.168.1.255