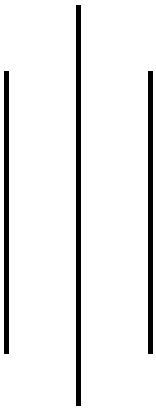
TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
PULCHOWK CAMPUS



A
PROJECT PROPOSAL ON
"COMPUTER NETWORK MINI PROJECT"

SUBMITTED BY
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SUBMITTED TO
DEPARTMENT OF ELECTRONICS & COMPUTER ENGINEERING

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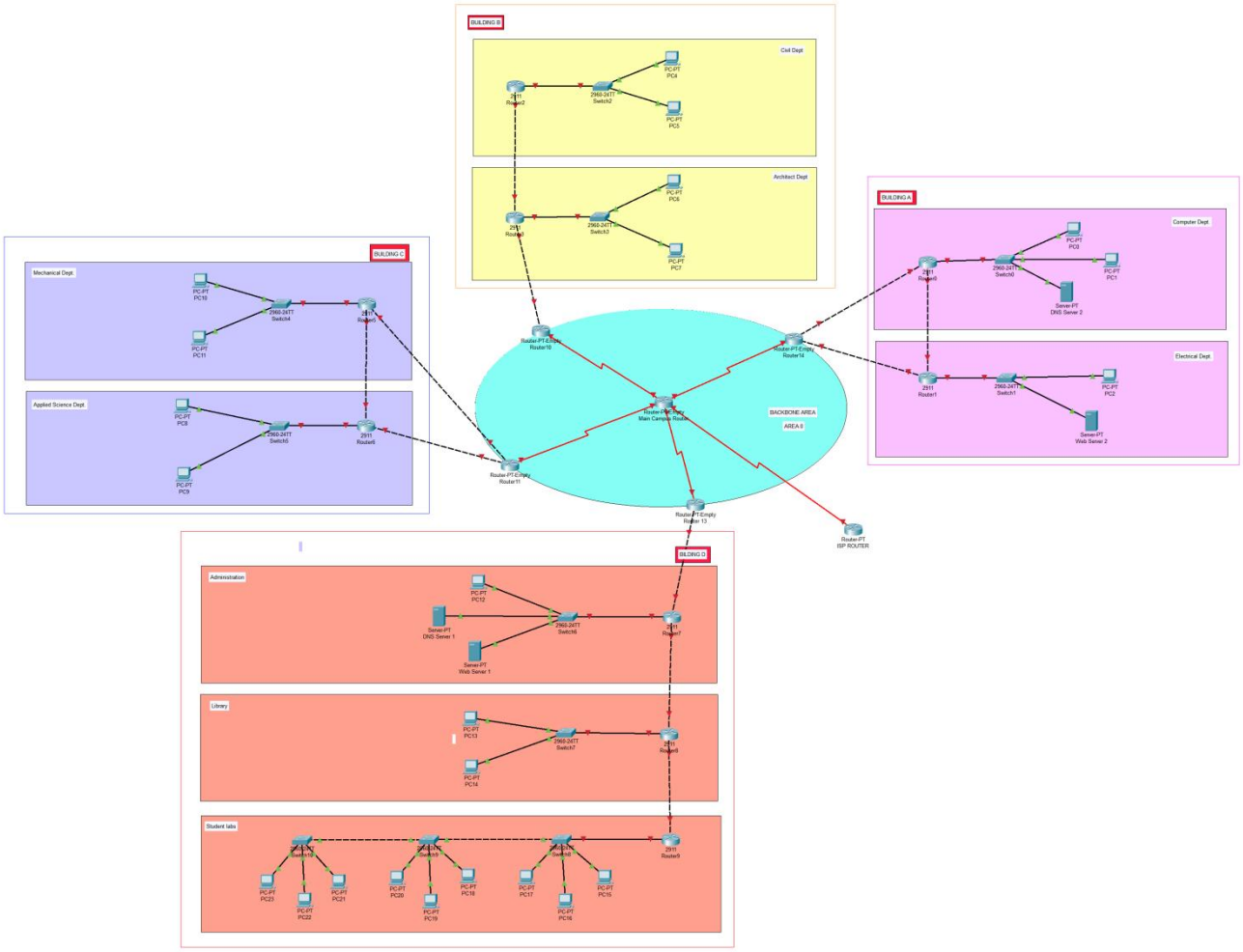
The network topology for XYZ-Engineering College is as below;



Major Network IP Address: **10.0.0.0/22**
Available IP addresses in major network: 1022
Number of IP addresses needed: 540

Subnet Name	No. Of Hosts	Network ID	Subnet Mask	Assignable Range	Broadcast
Students Labs	180	10.0.0.0/24	255.255.255.0	10.0.0.1 - 10.0.0.254	10.0.0.255
Computer	96	10.0.1.0/25	255.255.255.128	10.0.1.1 - 10.0.1.126	10.0.1.127
Library	50	10.0.1.128/26	255.255.255.192	10.0.1.129 - 10.0.1.190	10.0.1.191
Electrical	48	10.0.1.192/26	255.255.255.192	10.0.1.193 - 10.0.1.254	10.0.1.255
Administration	40	10.0.2.0/26	255.255.255.192	10.0.2.1 - 10.0.2.62	10.0.2.63
Applied Science	24	10.0.2.64/27	255.255.255.224	10.0.2.65 - 10.0.2.94	10.0.2.95
Architect	24	10.0.2.96/27	255.255.255.224	10.0.2.97 -	10.0.2.127

				10.0.2.126	
Civil	24	10.0.2.128/27	255.255.255.224	10.0.2.129 - 10.0.2.158	10.0.2.159
Mechanical	24	10.0.2.160/27	255.255.255.224	10.0.2.161 - 10.0.2.190	10.0.2.191
Interface A	2	10.0.2.192/30	255.255.255.252	10.0.2.193 - 10.0.2.194	10.0.2.195
Interface B	2	10.0.2.196/30	255.255.255.252	10.0.2.197 - 10.0.2.198	10.0.2.199
Interface C	2	10.0.2.200/30	255.255.255.252	10.0.2.201 - 10.0.2.202	10.0.2.203
Interface D	2	10.0.2.204/30	255.255.255.252	10.0.2.205 - 10.0.2.206	10.0.2.207
Interface E	2	10.0.2.208/30	255.255.255.252	10.0.2.209 - 10.0.2.210	10.0.2.211
Interface F	2	10.0.2.212/30	255.255.255.252	10.0.2.213 - 10.0.2.214	10.0.2.215
Interface G	2	10.0.2.216/30	255.255.255.252	10.0.2.217 - 10.0.2.218	10.0.2.219
Interface H	2	10.0.2.220/30	255.255.255.252	10.0.2.221 - 10.0.2.222	10.0.2.223
Interface I	2	10.0.2.224/30	255.255.255.252	10.0.2.225 - 10.0.2.226	10.0.2.227
Interface J	2	10.0.2.228/30	255.255.255.252	10.0.2.229 - 10.0.2.230	10.0.2.231
Interface K	2	10.0.2.232/30	255.255.255.252	10.0.2.233 - 10.0.2.234	10.0.2.235
Interface L	2	10.0.2.236/30	255.255.255.252	10.0.2.237 - 10.0.2.238	10.0.2.239
Interface M	2	10.0.2.240/30	255.255.255.252	10.0.2.241 - 10.0.2.242	10.0.2.243
Interface N	2	10.0.2.244/30	255.255.255.252	10.0.2.245 - 10.0.2.246	10.0.2.247
Interface O	2	10.0.2.248/30	255.255.255.252	10.0.2.249 - 10.0.2.250	10.0.2.251
Interface P	2	10.0.2.252/30	255.255.255.252	10.0.2.253 - 10.0.2.254	10.0.2.255

Here, the network "Student Labs" is subdivided to create three VLANs, resulting in the subnetting of the network ID **10.0.0.0/24** into three separate subnetted VLANs.

Subnet Name	**No. Of Hosts**	**Network Id**	**Subnet Mask**	**Assignable Range**	**Broadcast**
Vlan 1	60	10.0.0.0/26	255.255.255.192	10.0.0.1 - 10.0.0.62	10.0.0.63
Vlan 2	60	10.0.0.64/26	255.255.255.192	10.0.0.65 - 10.0.0.126	10.0.0.127
Vlan 3	60	10.0.0.128/26	255.255.255.192	10.0.0.129 - 10.0.0.190	10.0.0.191