CSE421 LAB PROJECT TOPIC
Institutes and Schools of Brac University

You have been assigned by Brac University to build a network between 5 of its institutes which are :
i) **School of Data and Sciences** - has 2 branches : CSE(3000) and MNS(500)
ii) **School of Engineering** - has 1 branch : EEE(200)
iii) **Brac Institute of Languages (BIL)** - has 1 branch : BIL(1000)
iv) **Brac Business School (BBS)** - has 1 branch : BBS(2000)
v) **School of Humanities and Social Sciences (SHSS)** - has 1 branch : SHSS(120)
*The numbers in brackets () specify the population size in the branch

While creating the network infrastructure there are certain restrictions and rules that you need to follow:

- Use a router to represent each institute.
- The *School of Data and Sciences* is physically connected to the *School of Engineering* and *BIL*. *BIL* is further physically connected to *BBS* and *SHSS*. There is also a physical connection between *BBS* and *SHSS*.
- Choose an appropriate network address and create subnets to assign to each of the branches with the least amount of waste.
- Servers and default gateways should be manually configured.
- Use 2 end devices in each branch to represent the whole population.
- The CSE department owns 1 DHCP server and 1 DNS server. All the hosts from all the branches rely upon these servers to obtain their IP addresses and resolve hostnames.
- BBS and SHSS need to be configured with Static Routing but the rest of the branches will be configured using Dynamic Routing.
- BBS and SHSS must always be able to communicate with each other even if their primary link is down.
- All the missing routing entries in BIL are forwarded towards the School of Data and Sciences.
- BIL owns a Web server and anyone from any branch can access their website which displays “We offer English, Bangla, German, Chinese, French, Arabic and Spanish” when they type “www.bil.com” in their browsers.
- You need to be able to ping each branch from another after all the setups are complete.

Deliverables

- The network mentioned above should be implemented in packet tracer, with necessary devices and full configuration.
- After completion you should be able to test the conditions imposed.

- You will have to submit the followings:
    - Network topology diagram with proper labels
    - The configuration commands of all the routers that you have implemented.
    - VLSM tree
    - IP address table