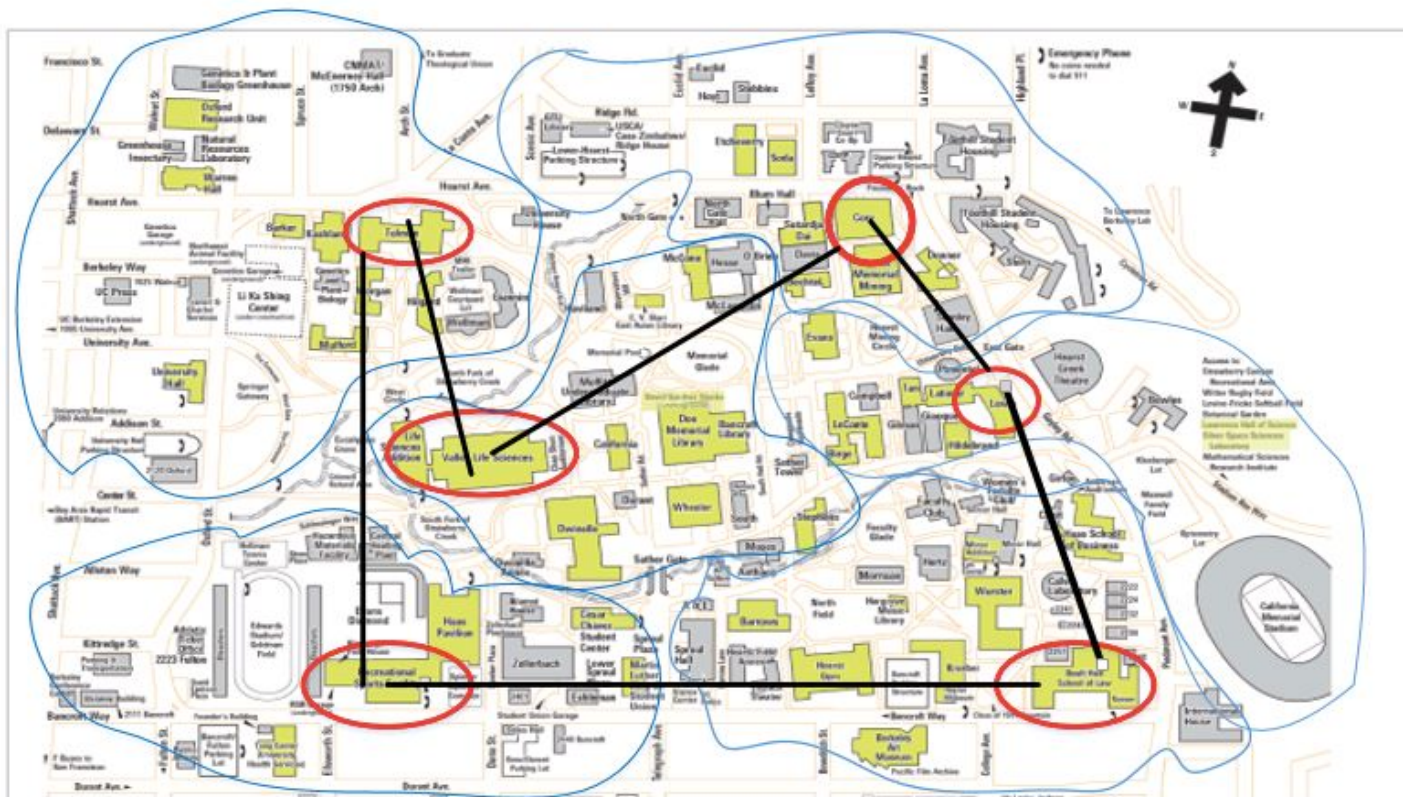


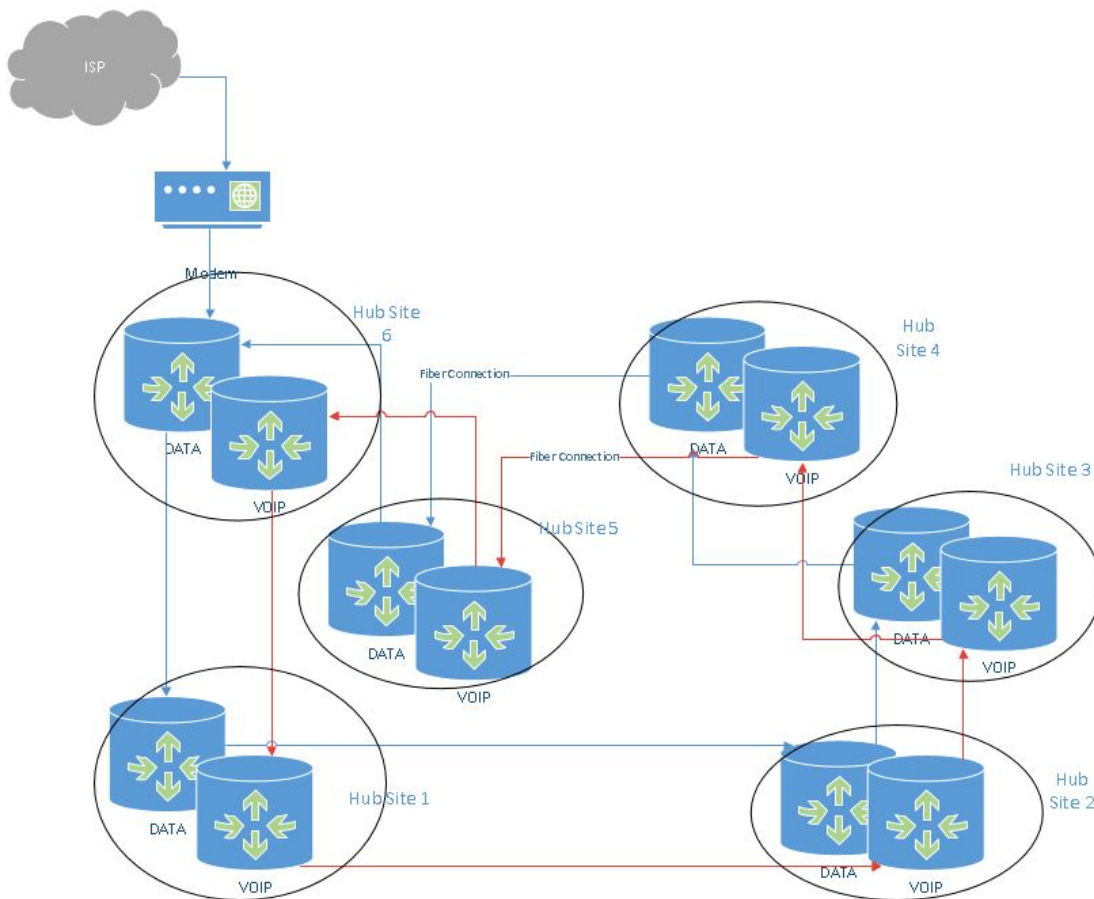
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HW 4 Writeup  
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I used a partial mesh topology for maximum coverage, I chose this topology because I have 6 hub sites, and did not need the interconnectedness of a ring or full mesh topology. I tried to avoid major waterways and went alongside roads to ensure easier implementation (map doc. also attached). Each hub site has a balanced number of buildings connected to it for faster connectivity and efficiency.



Cont.

My logical network site shows the connections between my hubs. There are two routers at each hub, one for data and one for VOIP, which are interconnected and then connect to each building on the network. The red is for VOIP fiber connections, the blue is for data fiber connections. The ISP connects to hub site 6, Tolman building, because it is easily accessible at the North West corner via a main road. I have included the number of ports per router for the data router and Voip router that routes to each building. The data router needs two ports per building(one for wired and one for wireless connectivity), the Voip router needs 1 port per building.



#### Hub Sites:

- 1) Rec Sports Facility- 19 buildings, **data ports:** 38 ports, **voip ports:** 19
- 2)Baush Hall, 20 buildings, **data ports:** 40 ports, **voip ports:** 20
- 3) Lewis Building- 10 buildings, **data ports:** 20, **voip ports:** 10
- 4) Cory Building - 22 buildings, **data ports:** 44, **voip port :** 22
- 5) Valley Life Sciences - 18 buildings, **data ports:** 36, **voip ports :** 18
- 6) Tolman Building- 21 buildings, **data ports:** 42, **voip ports:** 21

My typical building diagram includes all the necessary IT resources for the university. I have two routers, one for data and one for VOIP, that are connected to hub site routers via a fiber connection. The data connection has two switches- one for wired and one for wireless. Connected to the wired switches are computers, printers, and the servers. Connected to the wireless switch I have wireless access points for laptops, tablets, and wireless printers(if the university chooses to implement these). I then have a separate router/ switch for VOIP, which I have connected the phones too.

