CS169: Lab4_Exercise1 Hints

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HINTS

In order to finish your Lab4_exercise1, I will suggest you finish Lab3_exercise2 first. If you still feel difficulty with Lab3_exercise2, you can try this optional exercise. Hope it can fill your gap to nail these Labs.

Besides, as I mentioned before, three APs are connected with each other with wire. Therefore you can use either pointTopoint or CSMA to connect them. In general, there will be three subnets. One subnet includes these three APs(A,B,C). One subset includes AP_A and some wireless stations(nodes1). The third subset includes AP_B and some other wireless stations(nodes2). Lab4_exercise1 asks you to make a node in nodes1 communicate with a node in nodes2. These two nodes cannot be AP (A or B or C).

Please sent your codes with your topology to my email before next Lab. You can draw the topology and take a picture, or whatever ways you like.

OPTIONAL SIMPLE EXERCISE

As some students suggested, I give this optional exercise to help you have a sense that how global routings works.

Assume you have two nodes(node 0 and node 1) connected by point to point link.(just as first example in ns3 did)
1. Create a third node (node 2), and set it up with an internet stack.
2. Create a point to point link from node 1 to node 2 (you can use the same helper for this as the existing link).
3. The devices on this new link need addresses. Assign addresses on this link. For routing to work, you will need to assign addresses from a different network prefix than the existing link.
4. Create a new echo server and client, install the client on node 0 and the server on node 2, and set up the necessary parameters for communication. You may want to change the existing client and server to use a different port number (instead of 9) as well.
5. Modify the echo clients to send five packets each, instead of the single packet they currently do.
6. Since we have more than just a single link, we need to set up routing. This can be done with the line: Ipv4GlobalRoutingHelper::PopulateRoutingTables();. Put this line in your code just before the Simulator::Run() command.
Solution codes will be posted on the homepage soon.

**IF YOU WANT TO PRACTICE MORE**

For the students who want to practice more, you can try to modify your Lab2_exercise2 codes. By adding the sixth step (last section) in your Lab2_exercise2 codes, every nodes at that topology can communicate with each other. Try to create a client and a server at the edge of the topology and make them communicate with each other.