Assignment 1

Computer Networks 2 (ca304)

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- What challenges did you face in doing the assignment and what were your solutions

During the progression of the networks assignment/project I ran into several issues which needed to be addresses and fixed for my code and project to be able to run. Starting off my biggest issue was getting used to FASTAPI and how to go about assigning values and then using those values in classes and functions to use them for calculations. My solution to this was just by playing around with python and reading up literature online for three hours until I figured out the correct method to use inputs. It took a while however I gained a lot of knowledge which was further used throughout the project.

Another problem I came across was assigning stable values to address such as the broadcast where the last element never changes (E.g. with subnets and with class b, the end of the broadcast value always stays at 255). I found a solution to this by googling how to assign a value to a specific index of an element in a list and then came up with a solution. Here was my solution. This problem was also ran into earlier when having to do the same thing for class C addresses.

```
lastBroadcast = broadcast[-1].split('.')
lastBroadcast[-2] = '255' # assign second
lastBroadcast[-1] = '255' # assign last e
broadcast[-1] = '.'.join(lastBroadcast) #
```

Lastly an issue that really brought the frustration out of me was converting the network mask binary into a network mask decimal. I spent a few hours trying to code a solution however I could not come to a conclusion and then after a bit of researching I found out I could use Struct and socket.inet_ntoa to solve my problems.

```
netMask = socket.inet_ntoa(struct.pack(">I", (0xffffffff << (32 - CIDR)) & 0xffffffff))
```

- What part of your submission are you particularly proud of

To be honest I am proud of all of it. My ip calculator may have been hard coded however I am still proud of it because its what made sense to me, and I didn't feel a need at all to make it super complex as the values never change for the classes.

I am proud of my subnet calculator for the fact that its complete and fully working and in my opinion, it is structured to my standards. There is nothing major to it, just some calculations one if statement for class C and an elif for Class B to differentiate between both.

For the Supernet section I am proud of how I calculated the mask. I tried countless of times to apply different methods although I was unable to come to a solid calculation of a mask. As mentioned

above after getting in stuck in a loop of just googling I found a solution that I have never thought to use and after using that solution and after reaching about it I gained a lot of knowledge. I am proud at the fact of finding something new that I can implement into future code.

- What did you learn from doing the assignment

I learned all about Networks, subnetting, CIDR and super netting. I already knew about each one just from the notes however getting to use those theories as practical's allowed that knowledge to be implanted in my head.

I also got to learn all about FASTAPI and API's in general and using different methods to make calculations especially with lists and dictionaries.

Dictionaries were always a downside to myself but after using them a bit more I got to understand them more in terms of how to use them.

- What did you think of the assignment

For the entirety of the project, I enjoyed it. I don't have any negative comments or remarks in regard to the project whatsoever. The use of FASTAPI, Networks and Python made it refreshing which I love.