SIT202– Computer Networks and Communication

Task 6.2C My DNS Server

This is a Credit Task

As you are targeting above the pass grade, you will be expected to gain deeper understanding of the topics we cover in this unit, going above and beyond in your learning journey. For this credit task, **you will be extending the DNS server pseudo code you developed in Task 5.2C to develop a DNS server** using Python and **build a client program to test its functionalities.**

Task Requirement

Present evidence that you have been able to develop the DNS server according to the instructions provided. You need to submit your summary and reflections on your learning & evidence to OnTrack.

Task Instruction

For this task, you will build a *mimic* DNS server using Python and test it with a client program. However, you **are not allowed to use Python existing DNS modules/libraries such as dnspython and dns.resolver.**

Your **DNS server** must have the following features and functionality.

- As you have learnt in Module 2, DNS uses UDP as the transport layer protocol.
- Uses the query and response messages.
- Capable of supporting two types of resource records, A and CNAME.
- Capable of supporting Hostname-to-IP-address translation and host aliasing.
- The server displays a message on the terminal when it is started to indicate it is running.

You must also build a **client program to test the DNS server**. The client program must fulfill the following as a complete test for the server.

- The client program is providing the hostname /alias name in the terminal and send a DNS query to the server.
- The client process must display the response received from the server in the terminal.
- The client program also prompts the user to check whether the user would like to continue with another DNS query or not.

To build the mimic DNS server with the specified requirements, you can follow the pseudo code you designed in Task 5.2C. To build the client program to test the server adhering to the above-mentioned requirements, you can follow the following steps.

- Client setup by creating a UDP socket/ client.
- Query generation– in the client.
- Response handling in the client.

Task Submission Instruction

You need to submit the following files to OnTrack:

1. A pdf demonstrating the evidence that you have successfully developed a DNS server, and summary and reflection on your learning.
2. Python code: Server program
3. Python code: Client program