Course: Cloud and Network Security - C3 – 2025

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Week 3 Assignment 1:

Class Exercise: TryHackMe: DNS In Detail

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Introduction

The purpose of this assignment was to complete the *"DNS in Detail"* module on TryHackMe. The module provides an in-depth understanding of the Domain Name System (DNS), which is an essential service that translates human-readable domain names into IP addresses that computers use to communicate. The lessons covered included:

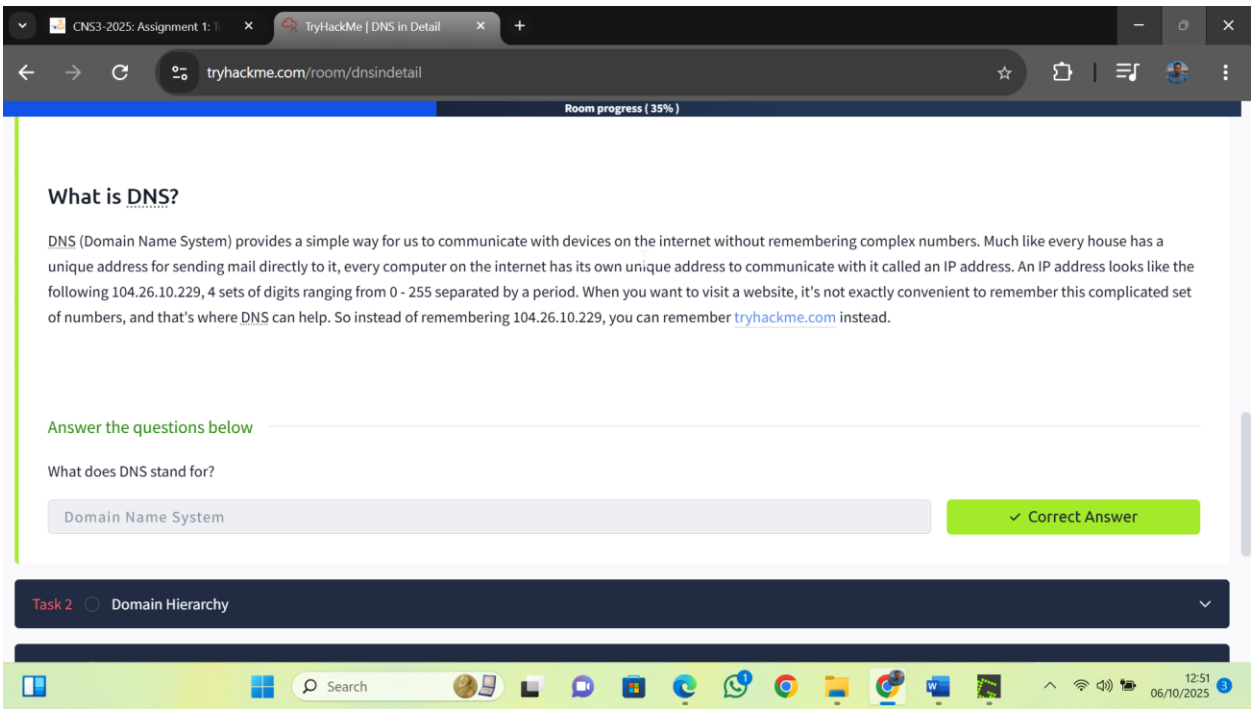
- What DNS is and why it is important.
- The domain hierarchy and how it organizes domain names.
- The different types of DNS records.
- The process of making a DNS request.

This report outlines the steps taken, the answers to the module tasks, and screenshots to demonstrate completion.

Task 1: What is DNS?

Questions

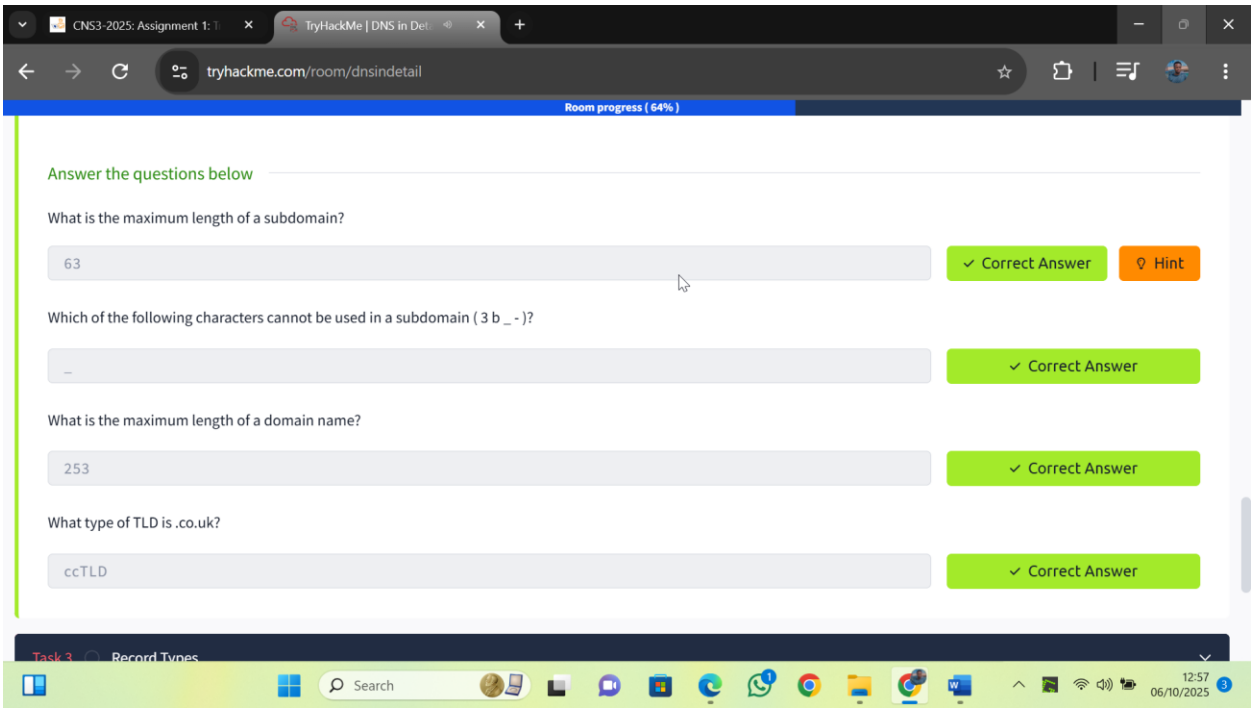
What does DNS stand for? Domain Name System



Task 2: Domain Hierarchy

Questions

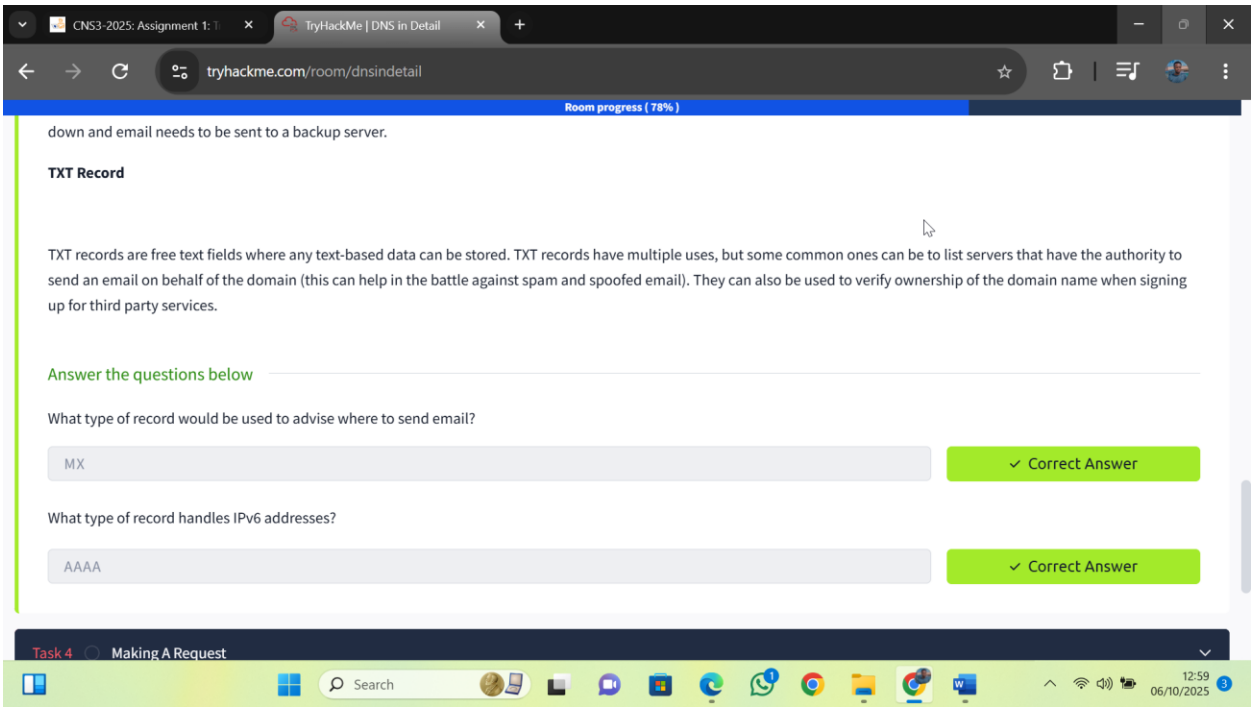
1. What is the maximum length of a subdomain? 63
2. Which of the following characters cannot be used in a subdomain (3 b _ -)? _
3. What is the maximum length of a domain name? 253
4. What type of TLD is.co.uk? ccTLD



Task 3: Record Types

Questions

1. What type of record would be used to advise where to send email? MX
2. What type of record handles IPv6 addresses? AAAA



Task 4: Making a Request

Questions

1. What field specifies how long a DNS record should be cached for? TTL
2. What type of DNS Server is usually provided by your ISP? Recursive

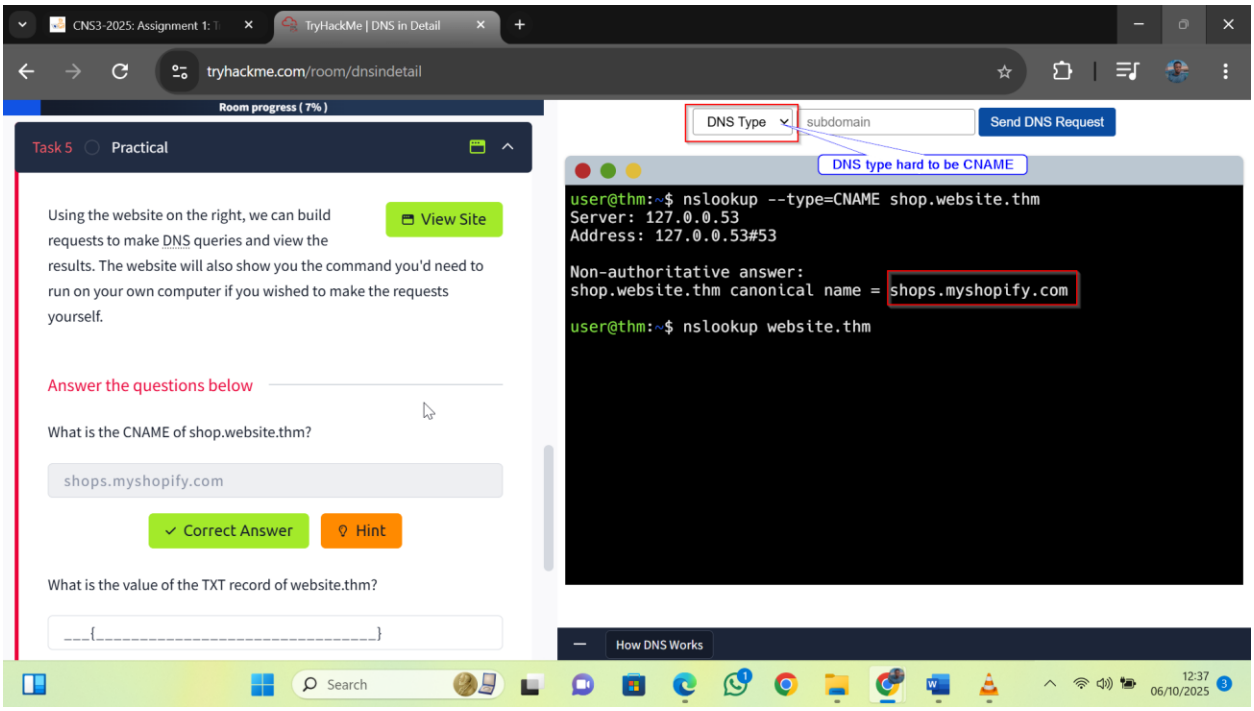
3. What type of server holds all the records for a domain? Authoritative

Task 5: Practical

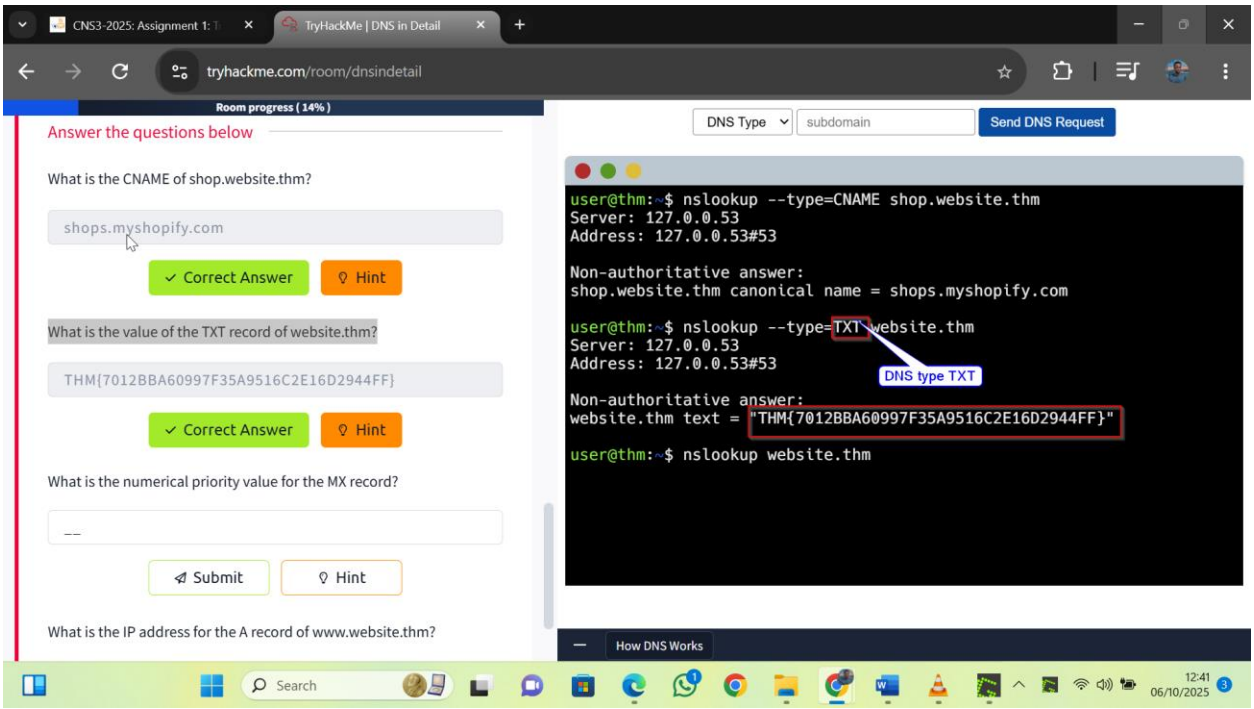
This part involved using the website on the right, which help me to build requests to make DNS queries and view the results. The website also showed me the command I would need to run on my own computer if you wished to make the requests myself.

Questions

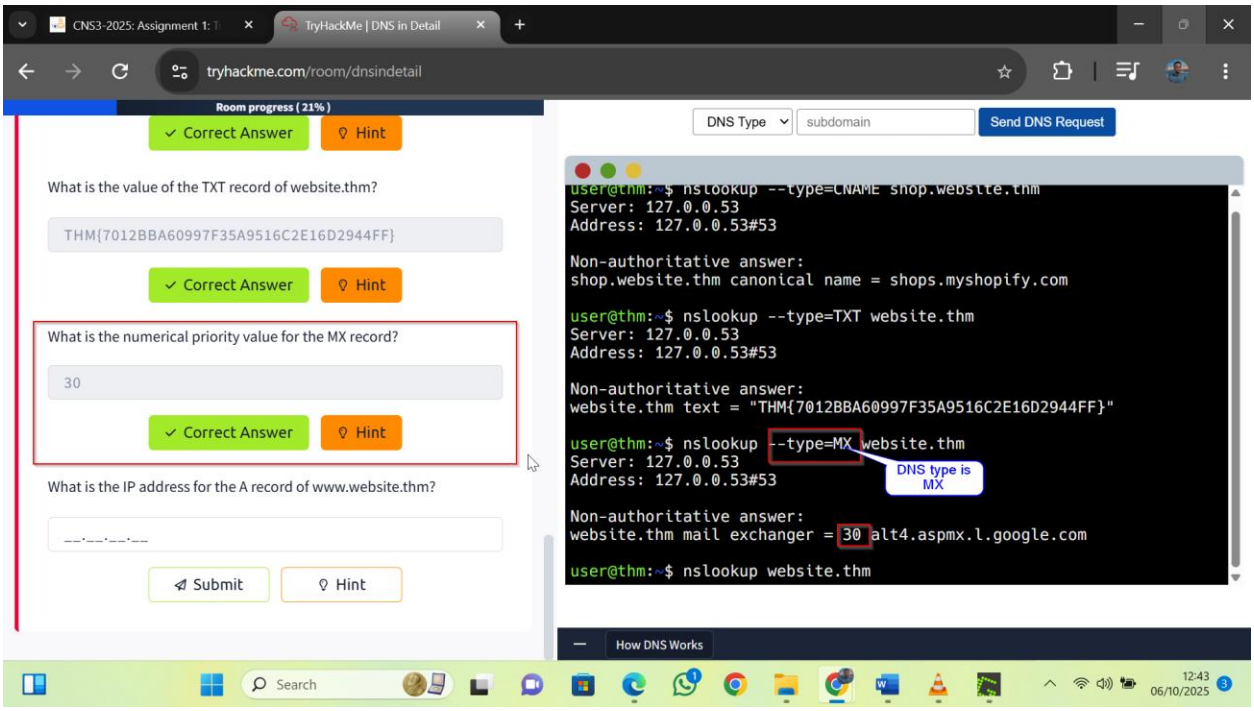
1. What is the CNAME of shop.website.thm? shops.myshopify.com



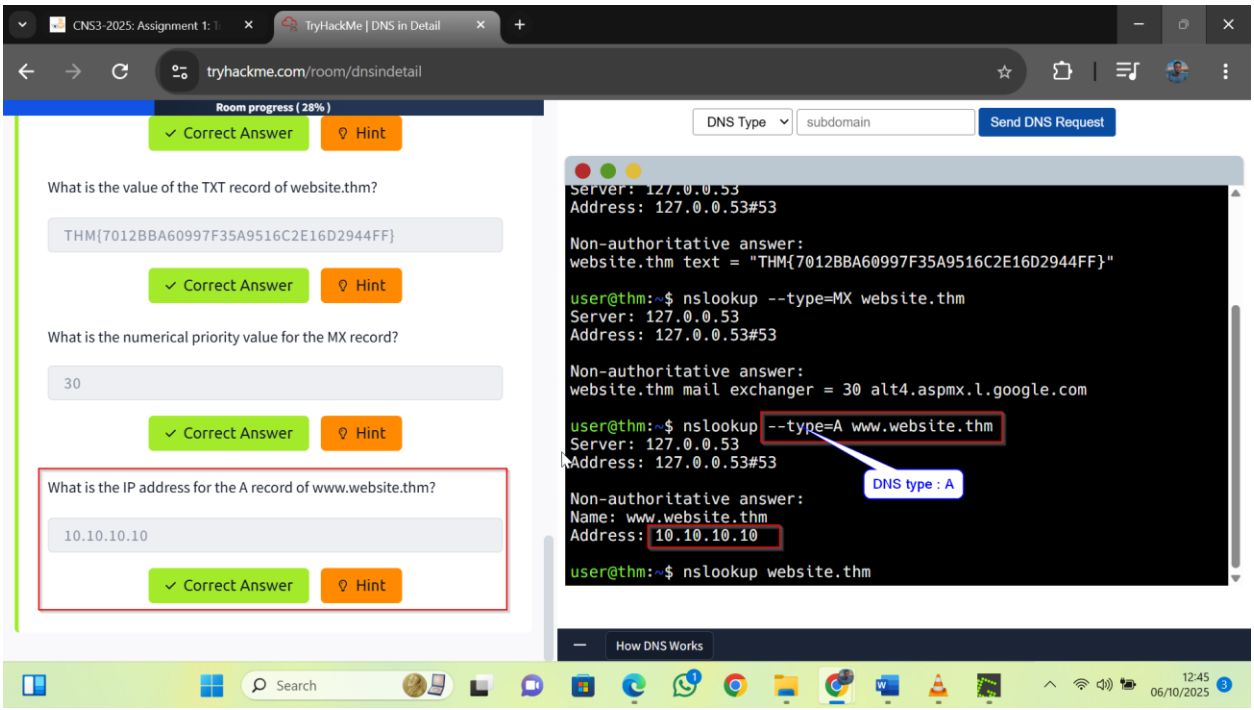
2. What is the value of the TXT record of website.thm?
THM{7012BBA60997F35A9516C2E16D2944FF}



3. What is the numerical priority value for the MX record? 30

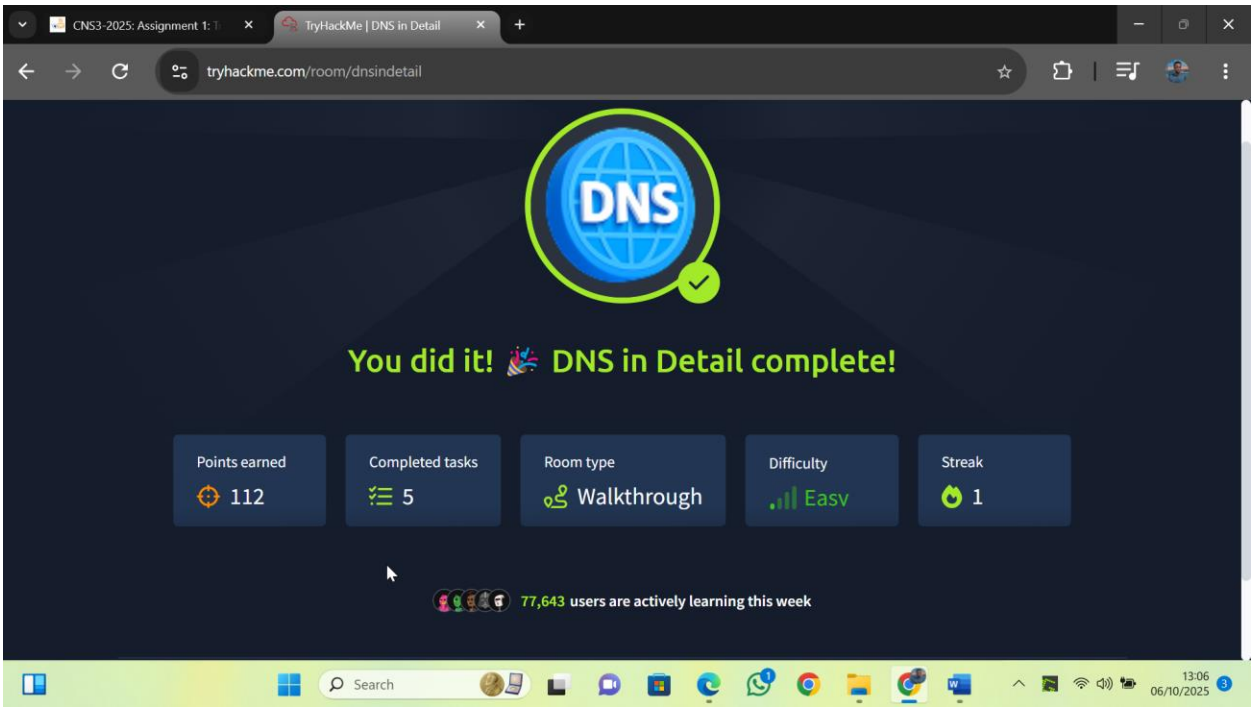


4. What is the IP address for the A record of www.website.thm? 10.10.10.10



Completion image and Link:

https://tryhackme.com/room/dnsindetail?sharerId=686e6806a28457a05c75576c



Conclusion

From this assignment, I gained a deeper understanding of how DNS functions and why it is critical to internet communication. I learned about the hierarchical structure of domain names, how different DNS record types serve various purposes, and how a DNS request is processed from a client to a DNS server.

This hands-on module helped me connect theoretical knowledge with practical application by answering questions and testing my understanding. Overall, the assignment strengthened my foundational knowledge in networking and cybersecurity, and enhanced my ability to use TryHackMe as a practical learning platform.