Ahmed Irtija (920742338)
Python: dnsReader.py

In your report, you will also describe how you created the DNS packet and how you parsed the response.

Our script performs a DNS query for the domain "tmz.com" and then makes an HTTP request to the IP addresses found.

1. DNS Query (query function):

- We first create a DNS query packet for the domain "tmz.com". The packet includes a transaction ID (1234), flags (set to 0 for a standard query), one question (the domain name), and the query type and class (type A, class IN). We then use struct.pack to properly format each part of the packet into binary format.

2. Sending the DNS Query:

- The query is then sent to a list of root DNS servers (root_records) using UDP on port 53. The script waits for a response from each server with a timeout of 10 seconds. Once a response is received, the script measures the time taken and prints it.

3. Parsing the DNS Response (unpack function):

- We then parse the received DNS response packet. The function extracts the number of questions, answers, authority, and additional records. We then iterate through these sections, extracting IP addresses.

4. HTTP Request (httpRequest function):

- After resolving the IP addresses, the script makes an HTTP GET request to each IP. It measures the time taken to establish a TCP connection and the time taken for the HTTP round-trip. The HTTP response and timing information are printed.

The script first queries the root DNS servers to get the TLD (Top-Level Domain) server for "tmz.com". Then it queries the TLD server to get the authoritative DNS server. Finally, it queries the authoritative DNS server for the actual IP addresses of "tmz.com". The Round-Trip Times (RTTs) for each of these DNS queries are calculated and printed. An HTTP request is made to the resolved IP addresses, and the RTT for the HTTP request is calculated and printed.