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NSLOOKUP

Assignment 3: Computer Networks

The task was to create the nslookup tool using basic sockets, without the help of external libraries. The task was carried out as follows:

1. The input of the sever was taken by the command line input prompt.

2. A socket was created to send and receive the messages. The socket created was UDP.

3. The DNS server ip and the "website" were sent to the function nslookup, along with the created socket.

4. A connection was made by binding the socket to the default port 53.

5. The request was made in the getRequest function, which has the following 3 sections:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HEADER															
ID															
QR	OPCODE				AA	TC	RD	RA	Z			RCODE			
QDCOUNT															
ANCOUNT															
NSCOUNT															
ARCOUNT															
QUESTION															
QNAME															
QTYPE															
QCLASS															

6. The request formed was sent to the server across the socket. Note, that since we are using UDP sockets, upto 512 can be received.

7. The response received was divided into 2 sections:

response[:12] -> header

response[12:] ->body

8. Information such as the number of answers in the response were retrieved from the header and sent to a function which parses the body contents.

9. The body contents are parsed and stored in a data structure which is then sent to be printed. int the print_res.

10. Here the results are printed in a similar fashion to the one when using nslookup.

11. NOTE: In OS such as Darwin, additional packaging is required to convert the structure, as the OS is little-endian.

12. The output is as follows: