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CS 352: Internet Technology
Assignment 7
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Note:

We assume that all domains begin with an alphabetical character. Domains can be alphanumeric but the first character must be a letter.

Compiling Instructions:

make clean (run again to clean up after testing)
make all
make run (to run with default port of 1112 and host-file of hosts.txt)

Test Cases:

Sample Test Case # 1:

dns-server 65536

Result: invalid port number

Sample Test Case # 2:

dns-server 1022

Result: invalid port number

Sample Test Case # 3:

dns-server xyz.txt

Result: file does not exist

Sample Test Case # 4:

dns-server .txt 1025

Result: invalid file name

Sample Test Case # 5:

dns-server 1025

DNS Header: www.pk.org.com

Result: format error (code 1)

Sample Test Case # 6:

dns-server 1025

DNS Header: www.shashankseeram.com

Result: not implemented error (code 4) (returned for erroneous opcode value)

Sample Test Case # 7:

dns-server 1025

DNS Header: test.name
[Success!]

Result: Returns an answer record with name to address mapping (test.name 1.0.0.1)

Sample Test Case # 8:

dns-server 1025

DNS Header: cs.rutgers.edu
[Success!]

Result: Returns an answer record with name to address mapping (cs.rutgers.edu 128.6.4.2)

Sample Test Case # 9:

dns-server hosts.txt

DNS Header: ibm.com
[Success!]

Result: Returns an answer record with name to address mapping (ibm.com 128.42.38.1)

Sample Test Case # 10:

dns-server hosts.txt

DNS Header: www.google.com
[Success!]

Result: Returns an answer record with name to address mapping (www.google.com 10.0.0.137)

Sample Test Case # 11:

dns-server hosts.txt

DNS Header: www.yahoo.com
[Success!]

Result: Returns a packet without an answer record because it does not exist in the host file (rcode 3)

Sample Test Case # 12:

dns-server hosts.txt

DNS Header: ibm.com
[Success!]

Result: Returns an answer record with name to address mapping (ibm.com 128.42.38.1)