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CSE-310

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## Assignment 2: All about DNS

This assignment is implemented in **Python**. There is a total of 4 libraries used:

Import sys

Import time

Import datetime

Import dns.query

The program deals with taking the input via terminal, assuming that user will enter a valid argument, but exception for no argument (value of website) has been handled. Timer object has started as soon as the program executes. Using the web address, a valid query is made by invoking *dns.message.make\_query()* method with the appropriate NS record at first. A file is opened and with 'a' (append permission), and appropriate messages are sent to the file. A root server '198.41.0.4' is used from the provided website. A dns query packet is sent over UDP connection using *dns.query.udp()* to contact the root server. There comes the while loop then, valid IP address is retrieved from the first Name Server, that IP address is then used to send further queries but this time the query is to retrieve A type record. The loop keeps running until valid output is received in the *ANSWERS* column.

After testing of different websites, it is experienced that some websites return their A record in *ADDITIONAL* column instead of *ANSWERS*, while some websites just return AAAA record; moreover, websites like amazon ended up returning another list of Name Server

as a result of second query, possibly due to multiply layering. Successful resulted websites:

[www.yahoo.com](http://www.yahoo.com), [www.google.com](http://www.google.com), [www.cnn.com](http://www.cnn.com), [www.outlook.com](http://www.outlook.com) , *etc.* My implementation

has achieved the goal mentioned in “Bonus question”, hence the A record is obtained as a final answer.

TO RUN THE PROGRAM:

Open the folder where mydig.py file exists

>mydig.py <name of the website>

E.g.

>mydig.py [www.cnn.com](http://www.cnn.com)