

Language:	Python 3
Basic Version	
Limitations/Issues	Possible Solutions
<p>1. Similar to dig, there's inconsistent output for the same domain Eg. For www.koala.com :</p> <p>DIG'S OUTPUT</p> <pre> hweeee@LAPTOP-QWV30LKC:~/personal\$ dig www.koala.com ; <<>> DiG 9.16.1-Ubuntu <<>> www.koala.com ;; global options: +cmd ;; Got answer: ;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 19967 ;; flags: qr rd ad; QUERY: 1, ANSWER: 5, AUTHORITY: 0, ADDITIONAL: 0 ;; WARNING: recursion requested but not available ;; QUESTION SECTION: ;www.koala.com. IN A ;; ANSWER SECTION: www.koala.com. 0 IN CNAME ditgez5blvpf5.cloudfront.net. ditgez5blvpf5.cloudfront.net. 0 IN A 65.8.33.21 ditgez5blvpf5.cloudfront.net. 0 IN A 65.8.33.66 ditgez5blvpf5.cloudfront.net. 0 IN A 65.8.33.43 ditgez5blvpf5.cloudfront.net. 0 IN A 65.8.33.83 </pre> <pre> hweeee@LAPTOP-QWV30LKC:~/personal\$ dig www.koala.com ; <<>> DiG 9.16.1-Ubuntu <<>> www.koala.com ;; global options: +cmd ;; Got answer: ;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 30322 ;; flags: qr rd ad; QUERY: 1, ANSWER: 5, AUTHORITY: 0, ADDITIONAL: 0 ;; WARNING: recursion requested but not available ;; QUESTION SECTION: ;www.koala.com. IN A ;; ANSWER SECTION: www.koala.com. 0 IN CNAME ditgez5blvpf5.cloudfront.net. ditgez5blvpf5.cloudfront.net. 0 IN A 18.67.111.110 ditgez5blvpf5.cloudfront.net. 0 IN A 18.67.111.90 ditgez5blvpf5.cloudfront.net. 0 IN A 18.67.111.16 ditgez5blvpf5.cloudfront.net. 0 IN A 18.67.111.50 </pre> <p>My resolver output</p> <pre> hweeee@LAPTOP-QWV30LKC:~/personal\$ python3 client.py 127.0.0.1 5300 www.koala.com HEADER TRANSACTION ID: 0x1337 FLAGS: 0x8500 QUESTION SECTION www.koala.com QTYPE: A QCLASS: IN ANSWER SECTION: www.koala.com QTYPE: CNAME QCLASS: IN TTL: 120 DATA LENGTH: 31 IP ADDRESS: ditgez5blvpf5.cloudfront.net ditgez5blvpf5.cloudfront.net QTYPE: A QCLASS: IN TTL: 60 DATA LENGTH: 4 IP ADDRESS: 65.8.33.21 ditgez5blvpf5.cloudfront.net QTYPE: A QCLASS: IN TTL: 60 DATA LENGTH: 4 IP ADDRESS: 65.8.33.66 ditgez5blvpf5.cloudfront.net QTYPE: A QCLASS: IN TTL: 60 DATA LENGTH: 4 IP ADDRESS: 65.8.33.43 ditgez5blvpf5.cloudfront.net QTYPE: A QCLASS: IN TTL: 60 DATA LENGTH: 4 IP ADDRESS: 65.8.33.83 </pre> <pre> hweeee@LAPTOP-QWV30LKC:~/personal\$ python3 client.py 127.0.0.1 5300 www.koala.com HEADER TRANSACTION ID: 0x1337 FLAGS: 0x8500 QUESTION SECTION www.koala.com QTYPE: A QCLASS: IN ANSWER SECTION: www.koala.com QTYPE: CNAME QCLASS: IN TTL: 120 DATA LENGTH: 31 IP ADDRESS: ditgez5blvpf5.cloudfront.net ditgez5blvpf5.cloudfront.net QTYPE: A QCLASS: IN TTL: 60 DATA LENGTH: 4 IP ADDRESS: 65.8.33.66 ditgez5blvpf5.cloudfront.net QTYPE: A QCLASS: IN TTL: 60 DATA LENGTH: 4 IP ADDRESS: 65.8.33.21 ditgez5blvpf5.cloudfront.net QTYPE: A QCLASS: IN TTL: 60 DATA LENGTH: 4 IP ADDRESS: 65.8.33.43 ditgez5blvpf5.cloudfront.net QTYPE: A QCLASS: IN TTL: 60 DATA LENGTH: 4 IP ADDRESS: 65.8.33.83 </pre> <p>2. For some domains with multiple addresses, my implementation sometimes doesn't show all IP addresses. It sometimes even show extra?</p> <ul style="list-style-type: none"> Websites that have issues: www.youtube.com Websites that work ok: www.stanford.edu <p>3. My client can work with a public resolver such as @8.8.8.8 but for domains with multiple addresses it sometimes show extra addresses as well...</p> <p>4. When I want to stop the server, I press ctrl c. It gives an error-</p> <pre> ^CTraceback (most recent call last): File "resolver.py", line 150, in <module> start_server() File "resolver.py", line 23, in start_server dns_query, clientAddress = serverSocket.recvfrom(2048) KeyboardInterrupt </pre>	<p>1. Not sure about this one. Not sure why the regular dig is also providing different results each time. Maybe my implementation is ok...?</p> <p>2 and 3: I suspect there's something wrong with my client. In my client, I request the resolver again every time there is a CNAME in the answer section. Maybe this should be done in the resolver?</p> <p>However, if the client is to be used on public resolvers, it should find the Ips of CNAMEs in the client to avoid missing any IP addresses.</p> <p>Tried fixing this multiple times by resolving the CNAMEs in the resolver but it keeps breaking my code 😞</p>

Enhancement 1:	Error Handling
Limitations/Issues	Possible Solutions
<ul style="list-style-type: none">- Both Error and Time-outs should be ok 😊	

COMP3331/9331 Computer Networks and Applications

Assignment Mark Request for Term 2, 2023

Enhancement 2:		
Limitations/Issues	Possible Solutions	

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Enhancement 3:		
Limitations/Issues	Possible Solutions	