

# DNS (Domain Name System)

IP address?

- IP address is a unique numerical label assigned to each server or device connected to a internet.
- In simple terms, it helps 1 device to locate another device on internet.

Domain Name?

Human readable / friendly address used to identify a server or device in the internet.  
like - google.com, amazon.com etc

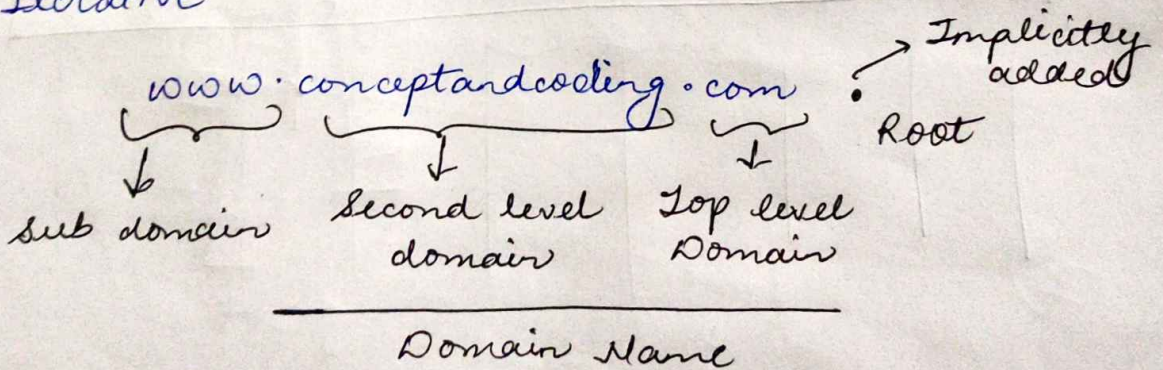
DNS

Helps to translate domain name into IP addresses.

But How?

There are 2 Approaches -

1. Recursive
2. Iterative



FQDN (Fully Qualified Domain Name)

(I) Recursive Approach

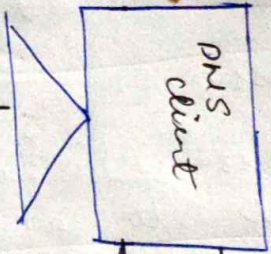
\* At every system, OS level there is a DNS client already (Stub Resolver).



10.10.10.10:conceptandcoding.com

Step Receiver

2. No record found in local cache, Pass the DNS Query to Receiver



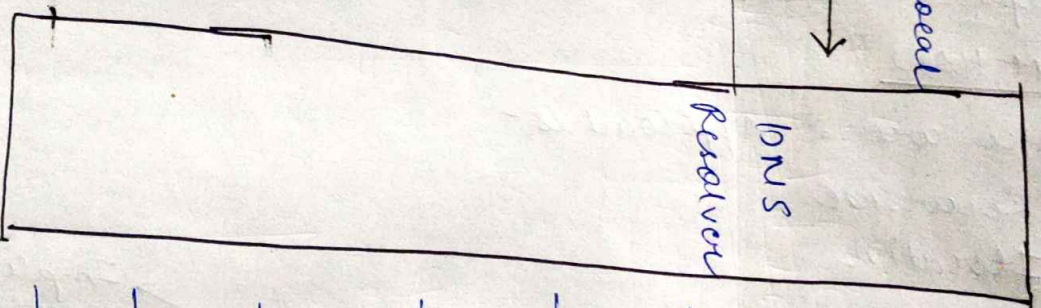
3. Here is the IP add:

172.16.17.34.56

1  
check local cache

(Does I have an IP address of it)  
using command -

ipconfig / displaydns in client





One DNS Record has below main information -

1. Record Name:

contain domain name or sub domain name.

2. CNAME Record:

Canonical Name, used to ALIAS one domain to other (subdomain only).

eg -

www.conceptandcoding.com and  
blog.conceptandcoding.com is an alias of  
conceptandcoding.com

3. A (Host) Record:

Address record maps a record name  
to an IP address.

Example -

① Record Name - @ (Internally considered as  
Type - 1 (A Record) domain name).  
A (Host) - 194.45.32.21

②

Record Name - www

Type - 5 (CNAME)

CNAME - conceptandcoding.com

CNAME → CNAME → CNAME → @

Note - DNS Resolver provided by ISP or we have  
to find add. of DNS server.



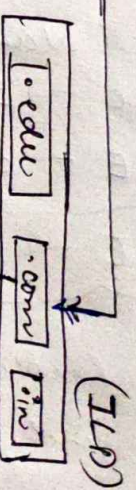
3. What's the IP add. of www.conceptandcoding.com

(Root domain)

4. I don't have ans, ask with .com, there is an IP add.

Root DNS Record for each Top level Domain.

5. IP add. of www.conceptandcoding.com



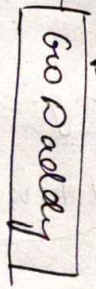
6. I don't have an answer

7. Ask with goDaddy authoritative server, here is IP add.

TLD maintains the DNS Record for authoritative name servers

8. Do you have IP address?

9. Yes its 172-87-34-158



ask its own cache

\* DNS Resolver will pick the Root which is nearer to user



Spring Boot course

(Youtube)

Framework of Java -

~~Spring, Spring Boot~~

~~Struts~~

~~hibernate~~

~~Quarkus~~

~~Microsat~~

Q) When user apply for any domain like

'conceptandcoding.com'.

How TLD knows that 'conceptandcoding.com' belongs to 'GoDaddy' authoritative server?

Ans - GoDaddy (Registrar) communicate with TLD Registry.

- com Registry (Verisign maintain it) receives the Request + name servers of the GoDaddy which will be used to resolve the domain request for 'conceptandcoding.com'

# DNS Zone