How DNS works ?

- **What is an IP Address ?**
  - An IP is a unique numeric label that is assigned to a device or server that is connect to the internet.
  - In simple terms, it helps to locate a device on the internet.

- **What is a Domain name ?**
  - Its a humane readable/friendly name by which we can connect to a server on the internet.

- **DNS**
  - It helps to translate the domain name to the IP address.

- **How ?**
  - **Recursive :**
    1. Stub Resolver checks Local Cache [System]

One DNS Record has below main information:

Record Name: contains domain name or sub-domain name

CNAME Record:
- Canonical Name, is used to ALIAS one domain to another (subdomain only)
- example: ***www.conceptandcoding.com*** and ***blog.conceptandcoding.com*** is an alias of conceptandcoding.com

A (Host) Record : Address record maps a record name to an IP Address.

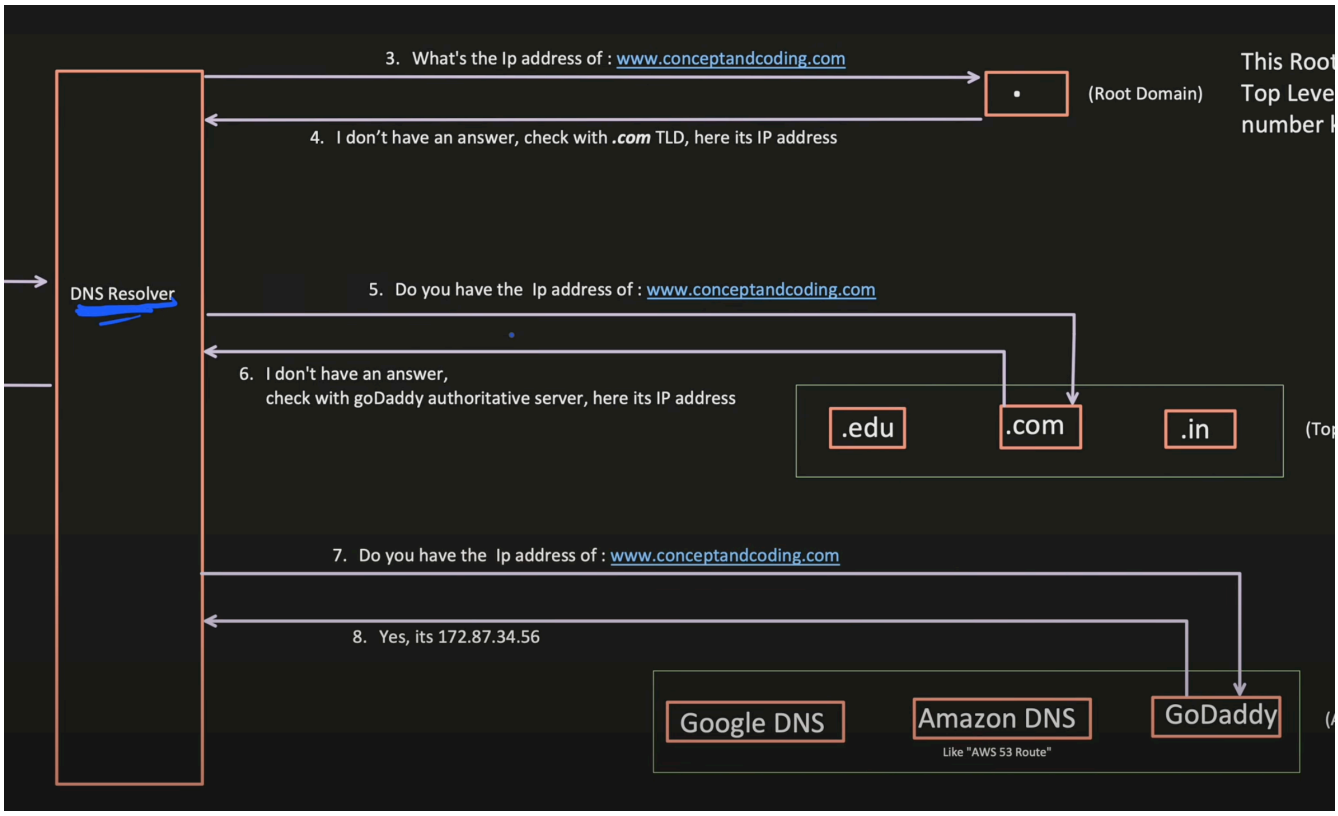
Example:

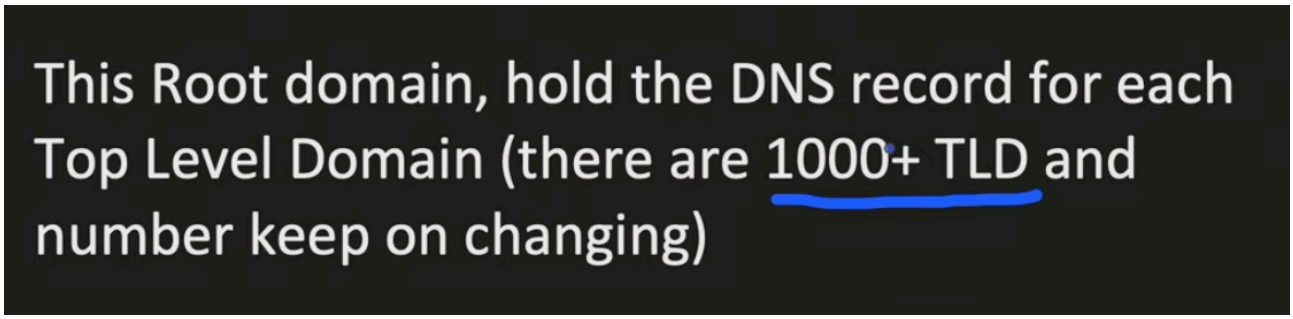
Record Name: @
Type: 1
A(Host): 194.45.32.21

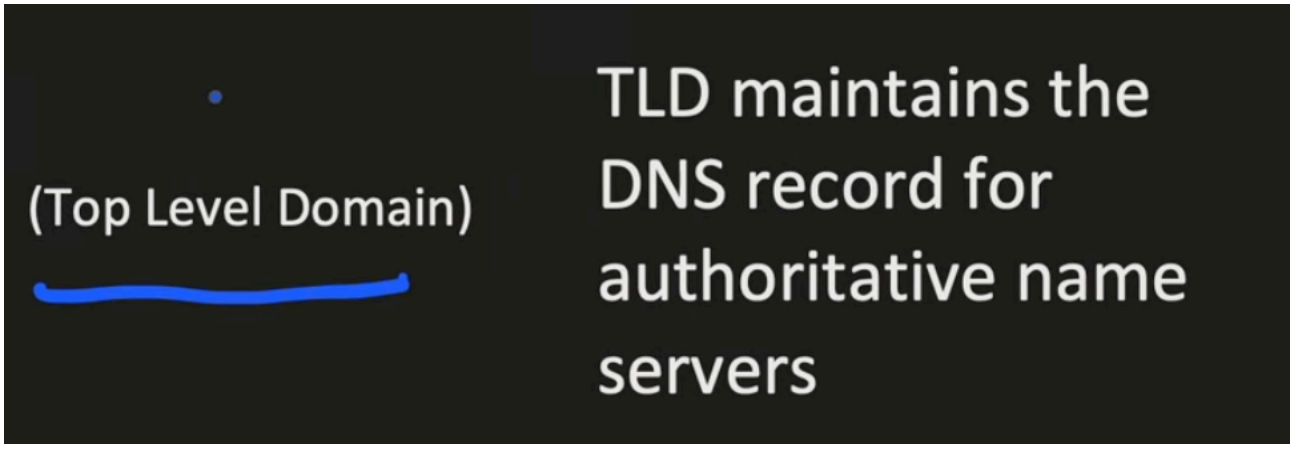
Record Name: www
Type: 5
CNAME Record: conceptandcoding.com.

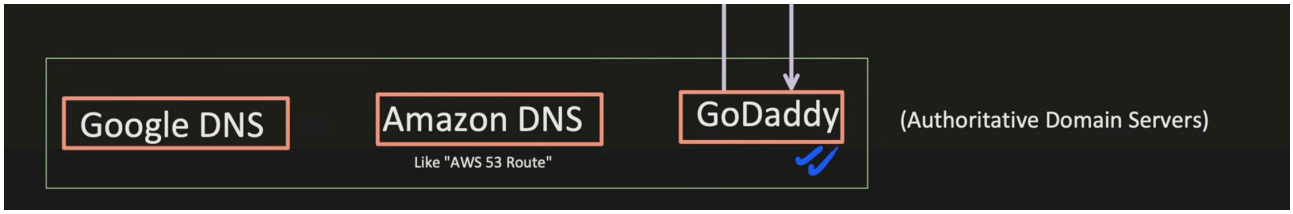
2. If IP is not found, then we search on the DNS resolver, that is provided by the Internet Service Provider[ISP] or we can get that from google DNS Resolver[8.8.8.8]

- At DNS Resolver level, it firstly check its cache.
- If not found then it goes to the root level of the domain name









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

When user apply for any domain like 'conceptandcoding.com'

GoDaddy(Registrar) communicate with respective TLD registry.

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

- **Iterative**

Here the DNS Resolver doesn't take all the pain and have the recursive calls to different systems, here we have a DNS Client who takes all the responsibility and get the IP address.