1. Dataset

We randomly picked up 1000 domain(may increase in the future) in the open-DNS databases to be our simulation domains. We then use pydig to get its IP address. And use pycurl to set up TCP connections and get their response time. We then write a DNS client and do recursive loop up domain inside the client and then set up tcp\_connections

1. Steps
   1. Select the domains

We randomly select 1000 domain from the OPEN-DNS

Some domain names are shown below

Text

Description automatically generated with medium confidence

* 1. Build up a DNS recursive client

We choose python dns to implement a DNS client. Our client is able to get A and NAME records.

For natural

* 1. Simulation

For every TCP connections, we just evaluate the time of getting DNS records both in DNS resolver and in DNS clients.

1. Drawbacks
2. We need real world data so far our experiments just use existed domain names, however, the real world contains many other situation so that we need more real world data
3. Make our recursive server able to collect AAAA records
4. Add more machine to do our experiments to get the