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We have taken first 5 websites from this reference [Top 100 Most Visited Websites (US and Worldwide) (ahrefs.com)] for these experiments.

Part C:

Experiment 1:

Average DNS resolution using my DNS

youtube.com 58.53128433227539

en.wikipedia.com 328.1604528427124

twitter.com 139.27035331726074

instagram.com 51.91528797149658

amazon.com 101.92008018493652

Experiment 2:

Average DNS resolution using Local DNS

youtube.com 10.947370000000001

en.wikipedia.com 29.71508

twitter.com 9.39307

instagram.com 17.25281

amazon.com 9.37419

Experiment 3:

Average DNS resolution using Google DNS

youtube.com 17.193980000000003

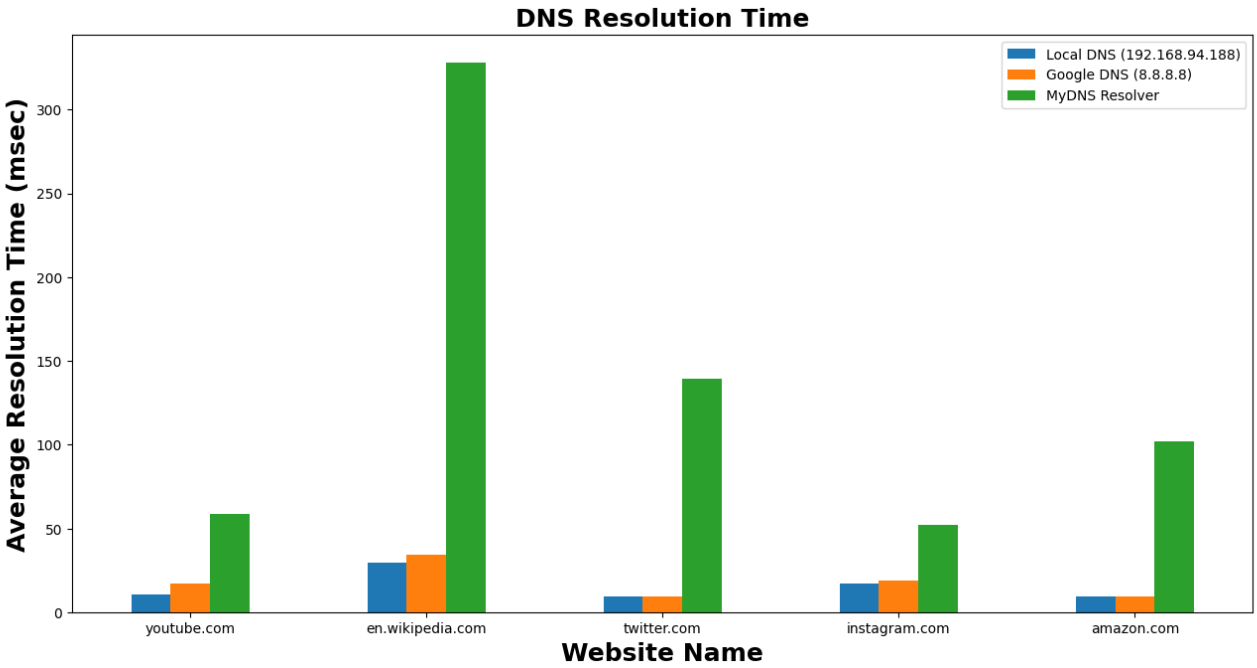
en.wikipedia.com 34.37352

twitter.com 9.37551

instagram.com 18.8509

amazon.com 9.39495

Graph



We can interpret from the bar graph that the local DNS performs the best in terms of DNS resolution speed. Google DNS is second best, and my DNS resolver takes the highest time in comparison to other two.

Local DNS and Google DNS, both have almost comparable DNS resolution speed and far better results in cases of few domains. This might be because of the internal caching in their DNS that helps to fetch the data directly from the DNS server rather than waiting for the domain to get resolved again.

However, my DNS resolver has no such caching feature, and it generates result based on the DNS resolution right from start for repeated requests, which contributes to its slowness. Also, my DNS is using a VPN to prevent the blocking of the request, which also results to lower resolution performance.