PART C

I used five of the top 25 most popular websites on the internet (found at https://ahrefs.com/blog/most-visited-websites/), queried each one ten times using my mydig tool, Google DNS, and local DNS, and averaged the results.

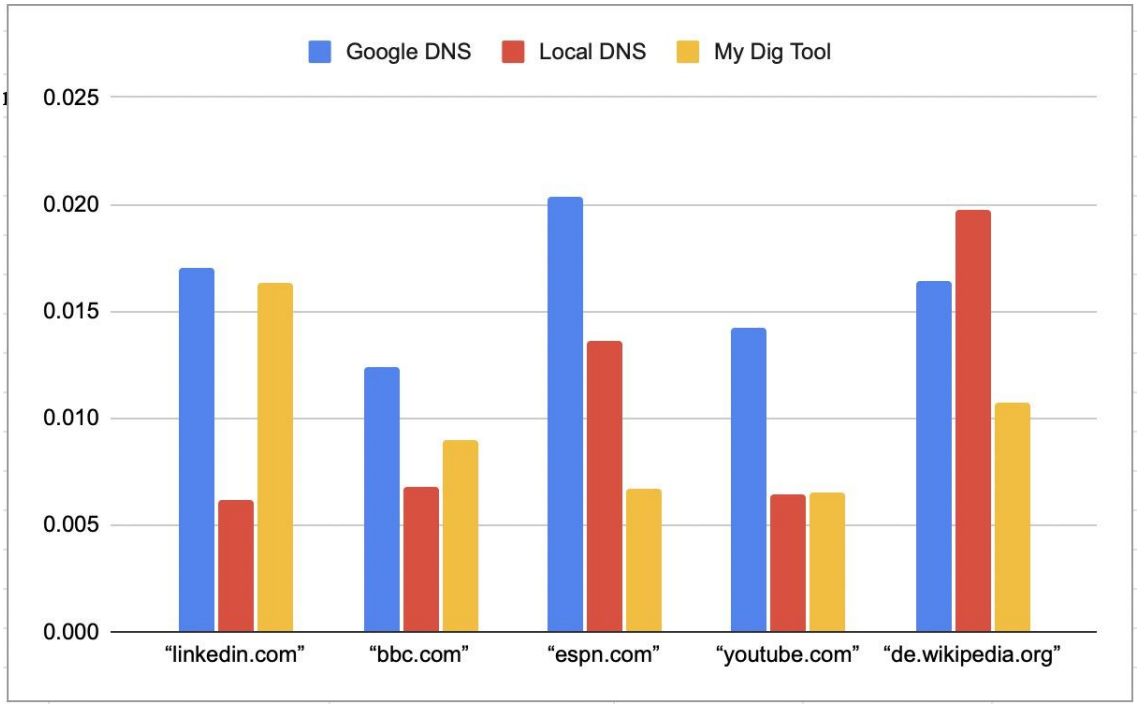
Websites: 'linkedin.com', 'bbc.com', 'espn.com', 'youtube.com', 'de.wikipedia.org'

Average time for Local DNS server (130.245.255.4) (Stony Brook's local DNS):
[0.017027401924133302, 0.012354183197021484, 0.020387840270996094, 0.014232897758483886, 0.01643669605255127]

Average time for Google's public DNS server (8.8.8.8):
[0.006160211563110351, 0.006794524192810058, 0.013604569435119628, 0.006454610824584961, 0.019715118408203124]

Average time for my mydig tool:
[0.0163314760, 0.0089506070, 0.0067161860, 0.0065491930, 0.0107306430]

The graph below compares the typical query times for these 5 websites using each DNS.



The local Stony Brook's DNS is almost on par with Google DNS and even surpassing it in some cases(de.wikipedia.org). But, for certain websites like (linkedin.com and youtube.com) its performance is much better. The reason for this is that it is doubtful that Stony Brook's local DNS would cache its results. Mydig tool takes the most time of them all to resolve since it queries each website independently and doesn't use caching.