



The DNS resolver that I wrote (mydig.py in blue) has the longest query times of the three methods. My resolver also takes significantly longer to resolve than the other two. This is likely because the other two resolvers have more optimized algorithms and have better hardware, while mine is a software solution. It's no surprise that Google's resolver (in gray) would be very sophisticated, efficient and use the best hardware to the best ability. My local DNS resolver (in orange) would also be able to make best use of my laptop's hardware and be more optimized. Another reason for the significantly faster query times on my local resolver and Google's resolver is that they likely implemented caching, whereas mydig.py did not implement caching at all. For Apple and Microsoft, my local resolver was faster than Google's resolver, but curiously for Instagram, Google's resolver was faster than my local resolver. This could be due to the fact that I don't visit Instagram often and/or because Google cached it better than my local resolver.