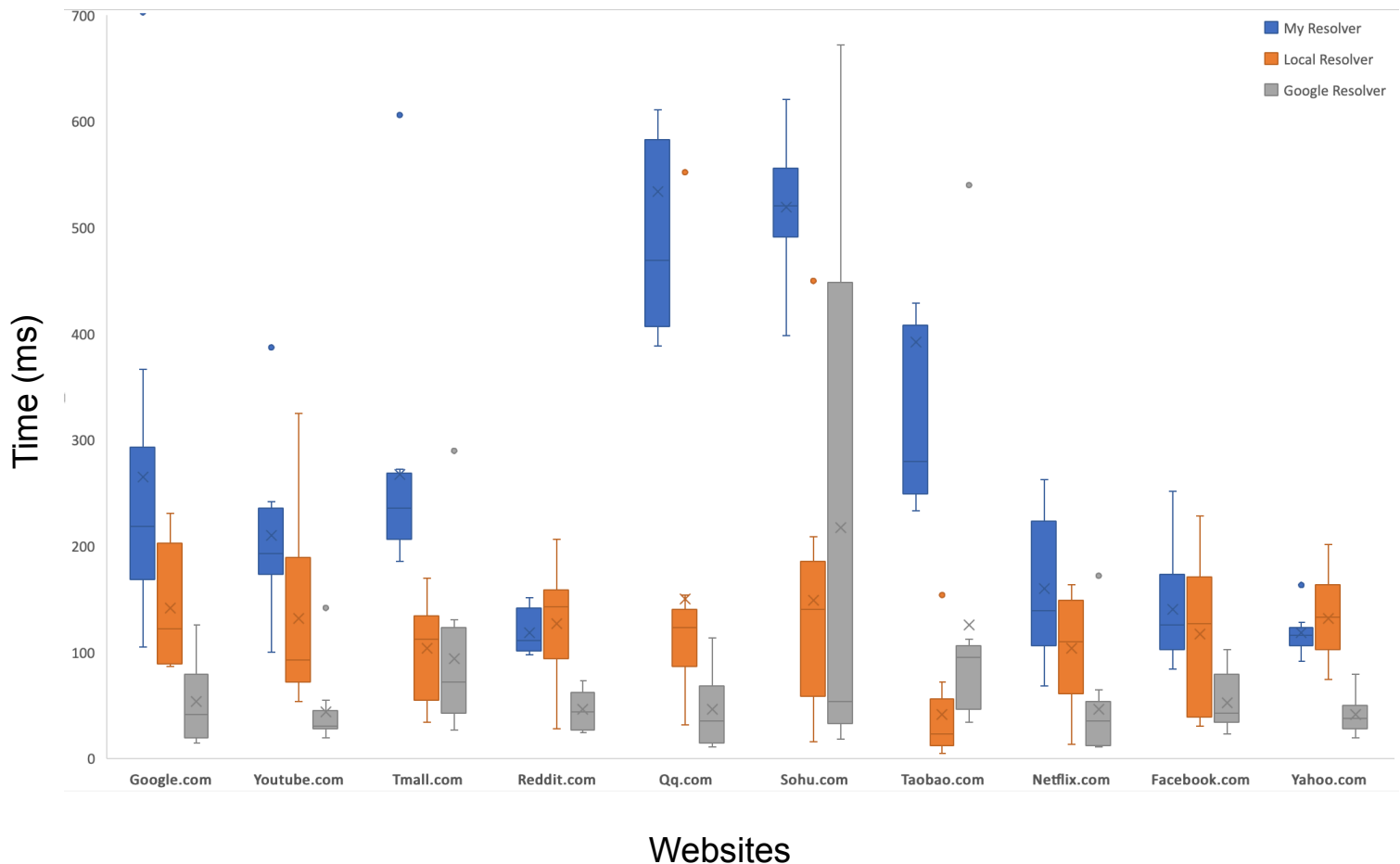# Comparison between my resolver, local resolver and the google dns resolver

This graph shows that my dns resolver is the slowest amongst the three. This can be due to the lack of caching and other sophisticated optimizations that google and local resolvers acquire which ultimately improve their efficiency.

Query Time

The local and google dns resolvers are pretty similar but it can be seen that the google dns resolver is the fastest and this is probably because it has more in-cache. IP addresses to previously requested domain names have been stored in local cache and within its TTL do not need to be resolved again if requested. Since the google resolver has a greater number of users compared to the local resolver, it contains much more cache.

Location and being in closer proximity to the servers can affect the query time also. Google and local resolvers have servers all around the world and route requests based on location to improve response time whereas I have not implemented these protocols in my basic resolver. It can also be inferred from the graph that my resolver has an unpredictable query time with a larger range, whereas the google and local resolvers mostly have around the same average time to resolve an ip address.

My DNS Resolver

	Google.com	Youtube.com	Tmall.com	Reddit.com	Qq.com	Sohu.com	Taobao.com	Netflix.com	Facebook.com	Yahoo.com
1	169	185	268	101	573	465	239	130	84	163
2	199	176	238	110	1033	517	429	103	170	92
3	230	164	237	141	409	621	275	118	98	128
4	105	242	235	151	401	563	284	262	127	104
5	169	234	186	98	462	398	1242	253	125	114
6	367	200	230	145	388	521	252	68	252	113
7	217	228	213	112	476	532	401	214	104	121
8	269	180	188	109	531	553	307	198	109	122
9	703	100	606	118	611	500	254	108	185	107
10	221	387	272	101	456	519	233	149	145	117
Average	264.9	209.6	267.3	118.6	534	518.9	391.6	160.3	139.9	118.1
Minimum	105	100	186	98	388	398	233	68	98	92
25thPercentile	176.5	177	217.25	103	420.75	504.25	252.5	110.5	105.25	108.5
Median	225.5	204.8	236	115	469	520	295.5	154.65	133.45	115.5
75thPercentile	259.25	232.5	260.5	135.25	562.5	547.75	377.5	210	163.75	121.75
Maximim	703	387	606	151	1033	621	1242	262	252	163

Local Resolver

	Google.com	Youtube.com	Tmall.com	Reddit.com	Qq.com	Sohu.com	Taobao.com	Netflix.com	Facebook.com	Yahoo.com
1	231	325	154	111	552	138	51	69	162	139
2	120	72	127	142	99	450	13	100	72	162
3	158	95	108	162	154	65	21	35	32	102
4	203	54	117	45	128	58	15	148	131	74
5	125	233	46	28	103	173	11	94	30	102
6	119	76	106	158	136	16	25	146	42	167
7	86	90	170	151	132	209	5	13	151	126
8	89	175	34	206	119	58	49	163	228	102
9	88	123	117	127	50	177	72	119	198	146
10	203	70	58	143	32	143	154	153	124	201
Average	142.2	131.3	103.7	127.3	150.5	148.7	41.6	104	117	132.1
Minimum	86	54	46	28	99	16	5	13	30	74
25thPercentile	96.5	73	70	115	100	59.75	13.5	75.25	49.5	102
Median	122.5	92.5	107	142.5	123.5	145.85	23	111.5	120.5	129.05
75thPercentile	191.75	162	124.5	156.25	135	176	50.5	147.5	159.25	158
Maximim	231	325	170	206	552	450	154	163	228	201

Google Resolver

	Google.com	Youtube.com	Tmall.com	Reddit.com	Qq.com	Sohu.com	Taobao.com	Netflix.com	Facebook.com	Yahoo.com
1	15	31	131	60	109	409	540	50	78	38
2	32	28	98	45	49	18	105	29	37	19
3	123	30	68	39	25	672	112	12	82	38
4	60	37	121	73	15	566	84	64	39	31
5	29	55	290	58	37	31	34	29	23	38
6	65	41	31	67	11	305	100	172	47	67
7	20	142	77	27	55	46	50	12	35	79
8	51	19	27	43	33	33	93	11	102	19
9	126	30	48	24	113	61	97	45	53	41
10	20	27	46	26	13	34	37	41	33	44
Average	54.1	44	93.7	46.2	46	217.5	125.2	46.5	52.9	41.4
Minimum	15	19	27	24	11	18	34	11	23	19
25thPercentile	22.25	28.5	46.5	30	17.5	33.25	58.5	16.25	35.5	32.75
Median	52.55	33.5	72.5	44	35	53.5	95	35	43	39.5
75thPercentile	63.75	40	115.25	59.5	53.5	383	103.75	48.75	71.75	43.25
Maximum	126	142	290	73	113	672	540	172	102	79