Milestone 1 (Due: Wed, Apr 10 @ 11pm)

What progress has been made since the proposal and any unexpected challenges you have encountered

- Following the proposal, we implemented a resolver to actively measure and gather DNS records from the Tranco Top 1 Million dataset. To better understand and address IPv6 delegation issues, we initiated a data cleanup process. This effort aligns with the paper's examination of DNS resolution in an IPv6-only context, where it was found that a significant portion of zones could not be resolved due to incomplete DNS delegation chains, highlighting the need for comprehensive IPv6 support across the entire DNS infrastructure.

- We implemented very low-level zoning of the domains and also identified the NSs that are in/out of bailiwick as we had done in Project 2 but the scripts for this will most likely be modified to accommodate for the final resolver version we do end up using.

- Some unexpected challenges that we encountered were figuring out how to store the active dataset from the resolver to make it easy to traverse(some sort of “hierarchy”) that will allow us to determine if a certain domain in the dataset is resolvable via an IPv6-only path.

What tasks remain to be completed, who will complete these, and when they will be completed

- As of now, we need to finalize the resolver such that it properly and manageably collects the necessary data or we must make note of cases that the resolver does not fully account for in its data collection (that is, domains that require more than a set number of recursive calls). We had hoped to have completed this task by the end of milestone 1, along with the actual data collection, but we got stuck here due to unexpected difficulties. Beyond this, as far as milestone 2 tasks are concerned, we need to clean the data and perform the necessary data analysis, then make visuals to go along with these results. We would like to have outlined and begun writing the paper to accompany this.

- Finalizing the resolver and running the data collection will be a group effort, and visuals can be done independently based on who is approaching which part of the data analysis. The same goes for the visuals. We expect the writing to be mostly a group effort, but thankfully this can be done asynchronously as well

How the completed and remaining tasks align with the plan included in your project proposal, and any adjustments you have/will make

- Due to the unexpected challenges we encountered in the process of making/editing a resolver to achieve our goals, we expect to have the resolver issue fixed by Thursday (04/11/24) afternoon, with data being collected at that point. Unfortunately, we have little frame of reference for how much time data collection will take, but we imagine that the analysis can, (and possibly must) be completed in a span of 1 or 2 days. If necessary, we will attempt to address the possibility of stopping data collection early to perform analysis and continue the data collection in the background.