INTRODUCTION

Goal Statement:
We started off our privacy exploration workshop with installing custom skills on Mycroft voice assistant. Smart Home was chosen as our theme; however, we quickly realized that with zero smart devices in the workshop room, the plan is not feasible. So, we focused on the home assistant aspect.

We then transitioned to configuring Alexa: as there was no longer a smart home persona among the provided, we looked at the Dating persona.

Skills Developed and Purpose
Mycroft Packet Captures:
We captured our Mycroft internet activities for around 5 minutes which generated 41 packets. Within those, we tried running our customized skills: Spotify, remember, cocktails, count, and decide. Surprisingly, none of them generated tracking or advertisement packets.

Alexa:
We used Jupyter notebook to streamline our experimentation with the Alexa Skills and advertisements. This involved consistent installation of Skills, automation of Skills interactions, collection of ads, and analysis of advertisement data. Figure 2 and 3 show the comparison between different personas in terms of associated CPMs.

Building Mycroft
Sticking with the Marvel theme, we chose our wake word to be “Hey, Jarvis” hence the “FRIDAY’s Daddy”. Unfortunately, youtube-dl, a critical component in YouTube skill, was taken down so if we were to have more time to debug, we could get it working with Mark VI :)

- Mark I: Installing Mycroft with the shell script while in root privilege ruined the OS image.
- Mark II: With Mycroft’s basic skills working, we tried installing YouTube from a third party github page. However, one implementation broke Mycroft’s core files.
- Mark III: Instead of waiting an hour for Mycroft to install on the Raspberry Pi Legacy Lite OS, we tried installing the preinstalled Picroft OS. We then ran into audio issues where speaker was not detected.
- Mark IV: With the instructed Legacy Lite OS, we were able to set up Mycroft to control Spotify on our laptop speakers with Spotify developer token.
- Mark V: With a new non-legacy system, we achieved a fully working mycroft integration with Raspotify that is able to play music on its own speakers as shown in Figure 1 :)