Presentation 1

• Links to presentation(s) and code(s) on GitHub

Presentation:
https://github.com/arvindkrishna87/STAT390_LegalAid_Fall2025/blob/main/Presentations/Time%20Trends%20analysis/TimeTrends_9Oct_Jasmine.pdf

Code: I only used the AllCallsData import code provided in GitHub and added one line below at the end to convert “Start Time” into Central Daylight Time –

```
df_main["Start time"] = df_main["Start time"].dt.tz_convert("America/Chicago").dt.tz_localize(None)
```

• What did you do?

I explored the average call duration using data in the All Calls Dataset, visualizing how the call duration varies throughout hours in a day and throughout days in a week.

• How does it help the project?

The average call duration is an important metric for improving the phone call system, since it provides an indirect measure of the complexity or the difficulty of the tasks handled by the calls. By looking at how the average call duration changes over time, we can understand both LegalAid’s operational schedule and callers' behavior. For example, if the average call duration for inbound calls in the afternoon is longer than that in the morning, it indicates that callers tend to inquire about more complex issues in the afternoon. Similarly, if the average call duration for outbound calls in work days is longer than that at weekends, it could suggest that LegalAid staff tend to tackle more time-consuming issues through Monday to Friday. We can discover whether there’s misalignment between the organization’s schedule and callers’ expectations by examining the average call duration of inbound and outbound calls.

• Issues faced (if any)

While I used the “Direction” column to determine if a call is inbound or outbound, this column alone cannot show if the calls are truly inbound or outbound, since it only indicates whether a call originates or terminates at LegalAid. I need to also take the “PSTN vendor name” column into consideration, looking at the values for both columns and removing the internal calls to avoid confusion.

• Attempts to resolve issues (if any)

To distinguish between inbound and outbound calls, I will first sort the observations by start time and then correlation ID, and always refer to the first rows for observations with the same correlation ID. If “PSTN vendor name” shows “CallTower” and “Direction” is “Terminating”, the call should be an inbound call; If “PSTN vendor name” shows “CallTower” and “Direction” is “Originating”, the call should be an outbound call.

Otherwise, if “PSTN vendor name” is “NA” and the “Direction” is either “Terminating” or “Originating”, the call is an internal call. I will follow the steps to visualize the average call duration again.

• Next steps
Assuming that the inbound and outbound calls have been correctly identified, I plan to investigate average call duration in the following directions:

- Identify if specific phone menus or call/client types are associated with the time periods showing higher average call duration
- Examine caller wait times during periods with higher average call durations to assess potential understaffing during peak hours
- Evaluate whether call timing influences case outcomes
- Assess if periods with long average call duration are seasonal or constantly recurring

• References (Mention if you built up on someone else’s work)

Presentation 2
• Links to presentation(s) and code(s) on GitHub
• What did you do?
• How does it help the project?
• Issues faced (if any)
• Attempts to resolve issues (if any)
• Issues resolved (if any)
• Next steps
• References (Mention if you built up on someone else’s work)

Presentation 3
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