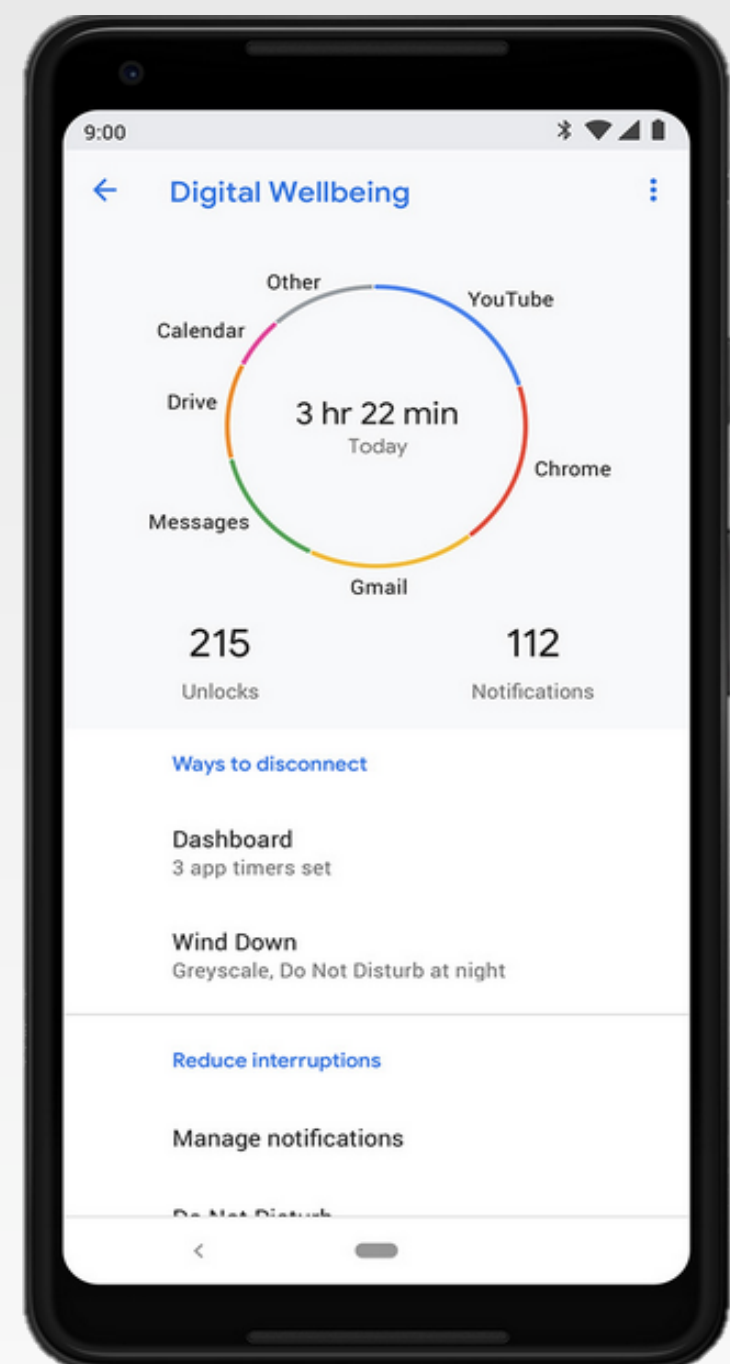


Introduction

- Study shows that most people spend a full quarter of their active hours on their mobile device, limiting productivity and potentially taking a toll on their health.
- We created an Android app that is able to track and visualize phone time usage patterns and statistics to help user establish awareness of how much and in what patterns they use their Android devices.
- For example, the app tracks and visualize phone-level and app-level device usage, the number of times the user picks up the device, notifications from various apps, as well as the how the device usage is distributed in various categories of apps.

Related Work



Google Digital Wellbeing



Apple Screen Time

Screen Time:

- Convoluted navigation
- Overwhelming amount of information on one page.

Digital Wellbeing:

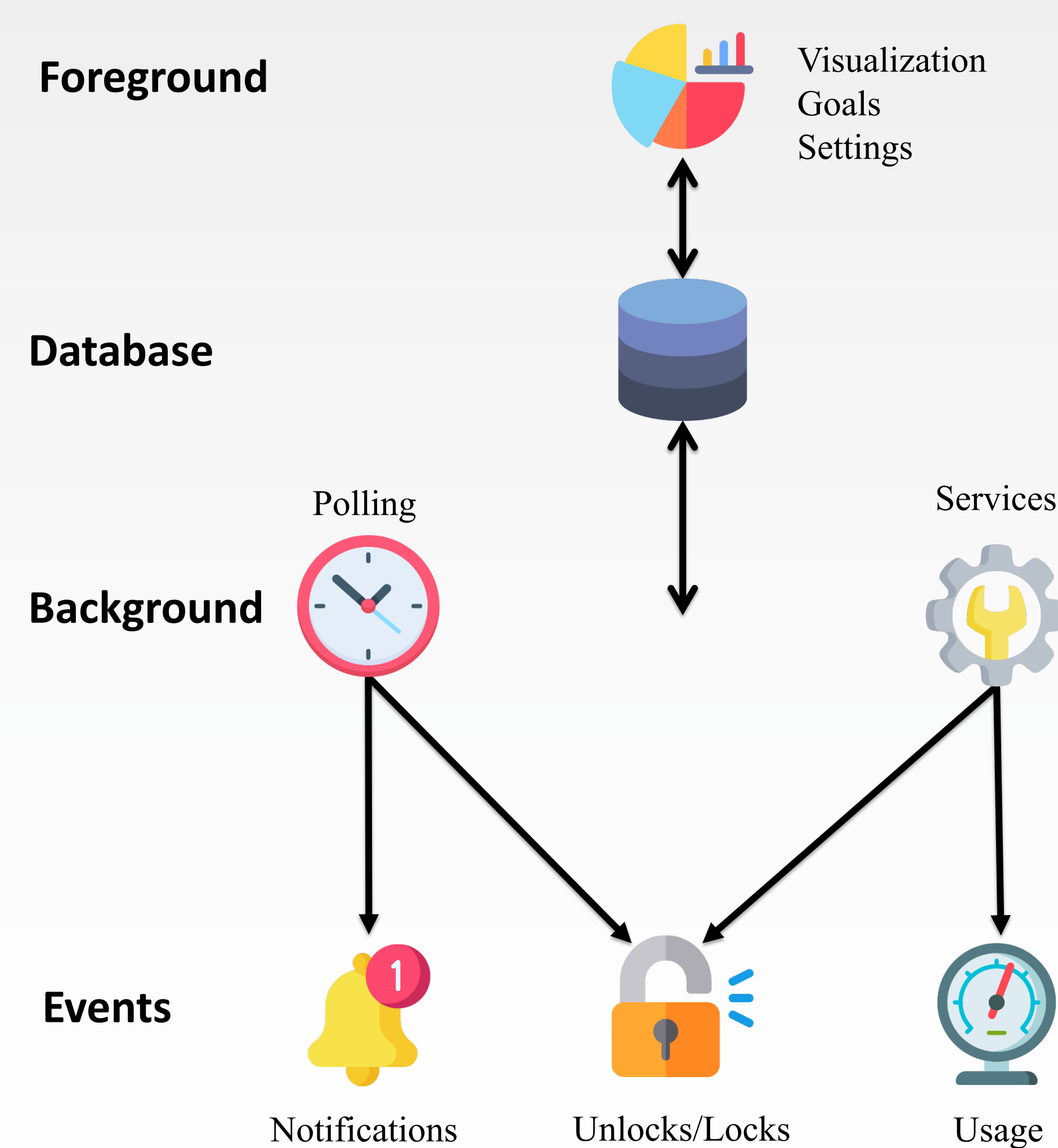
- Not existing until Nov. 2019.
- Dated UI

Our App:

- Material-design
- our app is able to not only track mobile device usage, but also provide screen time goal management and mechanisms to encourage off-device time.

Methods

- We referenced Google's Material Design guidelines to provide a professional user interface. Everything from navigation to our color blocking is intentionally created to provide the best user experience.
- To collect the data we employ various methods. Our Application perpetually polls for changes, uses Android's built in background services to collect usage data and event listeners to trigger our data collection.
- User usage data can get quite expansive, so our app employs a local database that automatically removes old data.



System Architecture

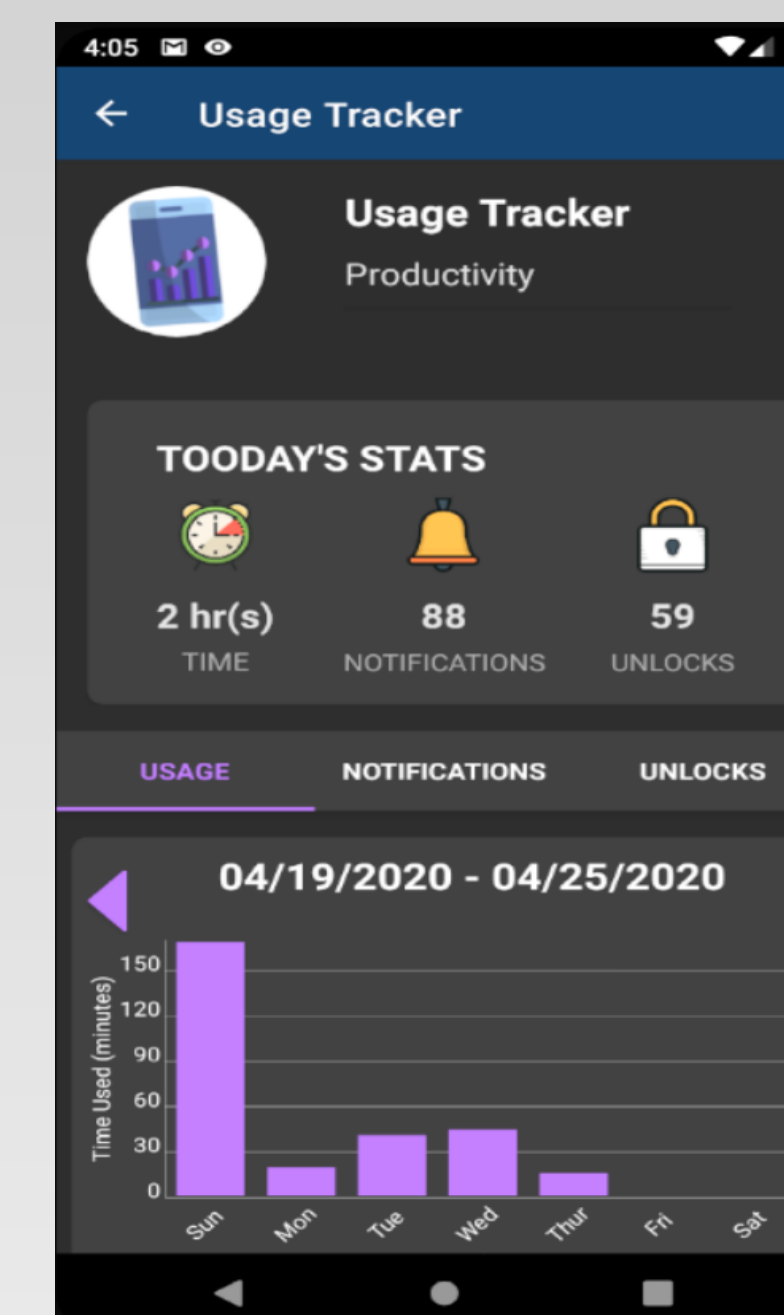
Key Functionalities

- Visualization of usage patterns
- Allows the user to set up usage goals and report how well the goals are met
- Settings

Results

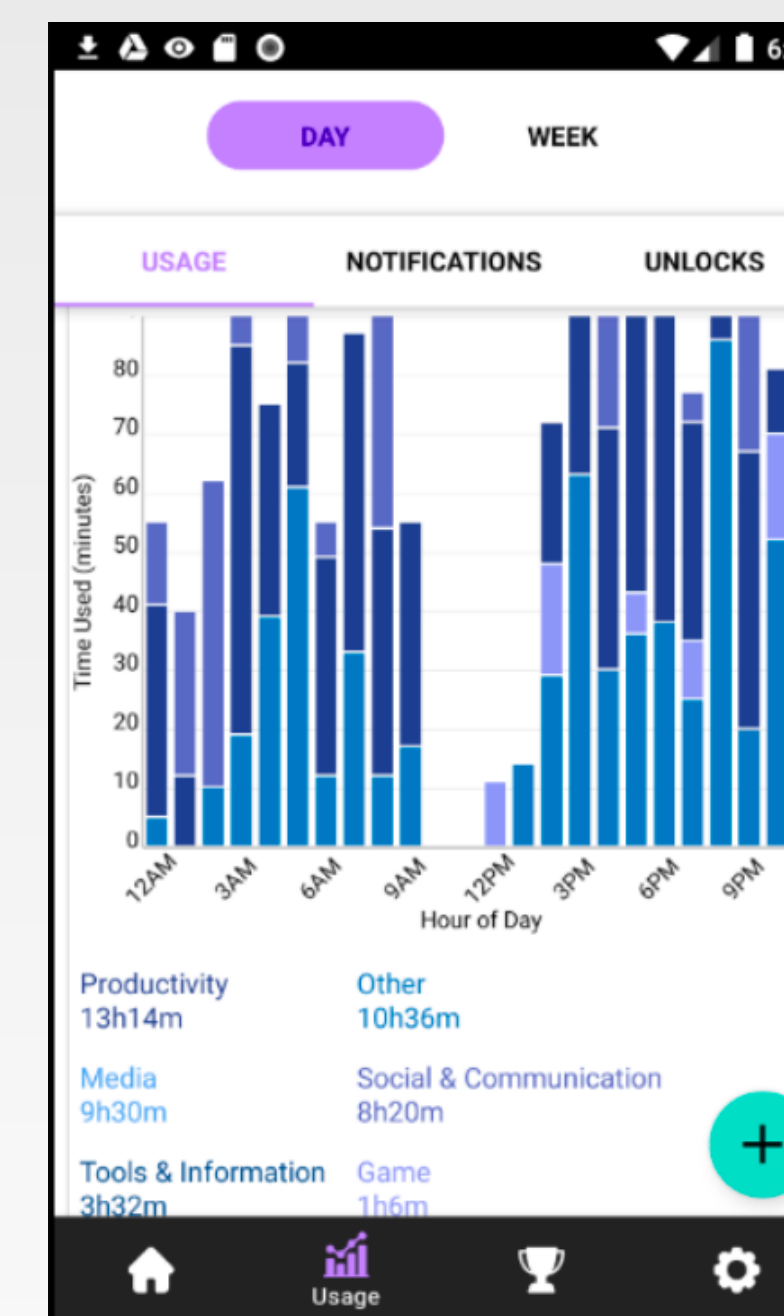
What Does Our App Track?

- Usage
- Pick ups
- Notifications
- First app used after unlock



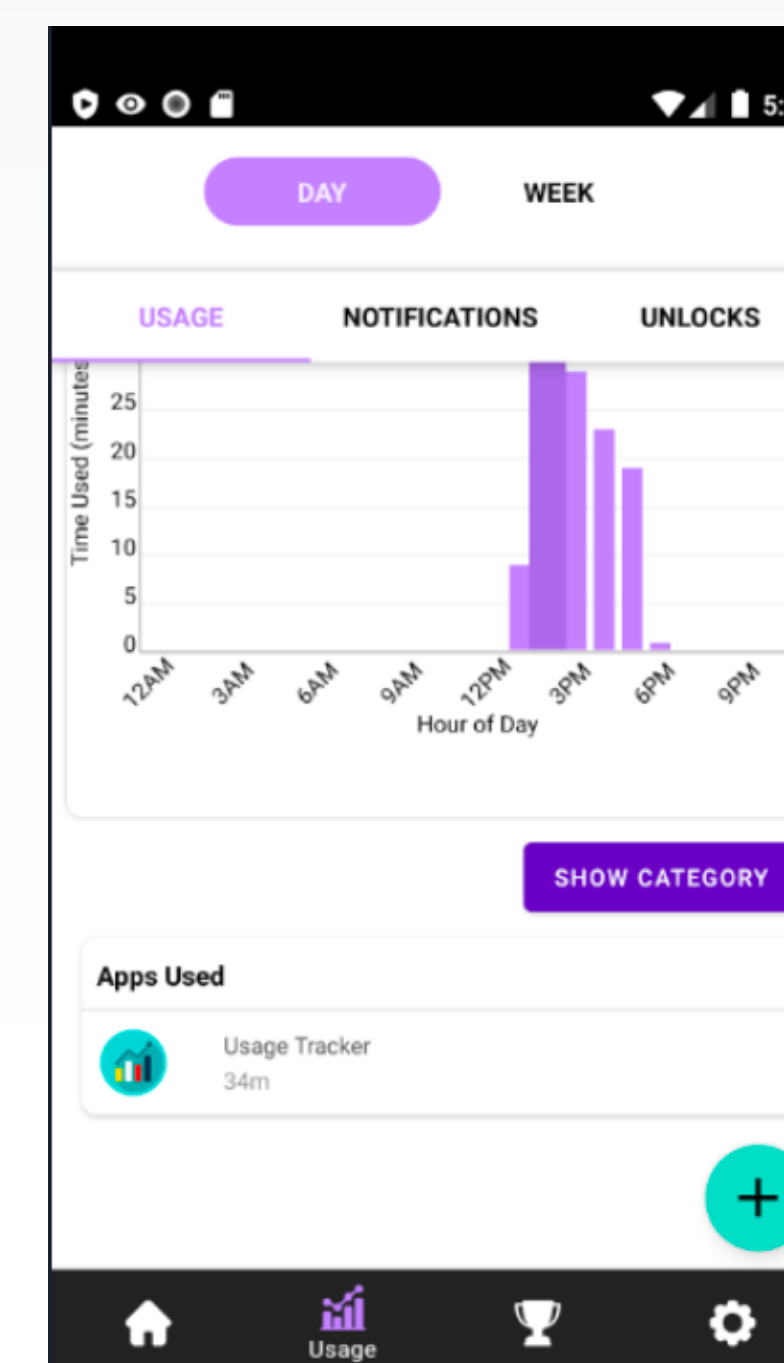
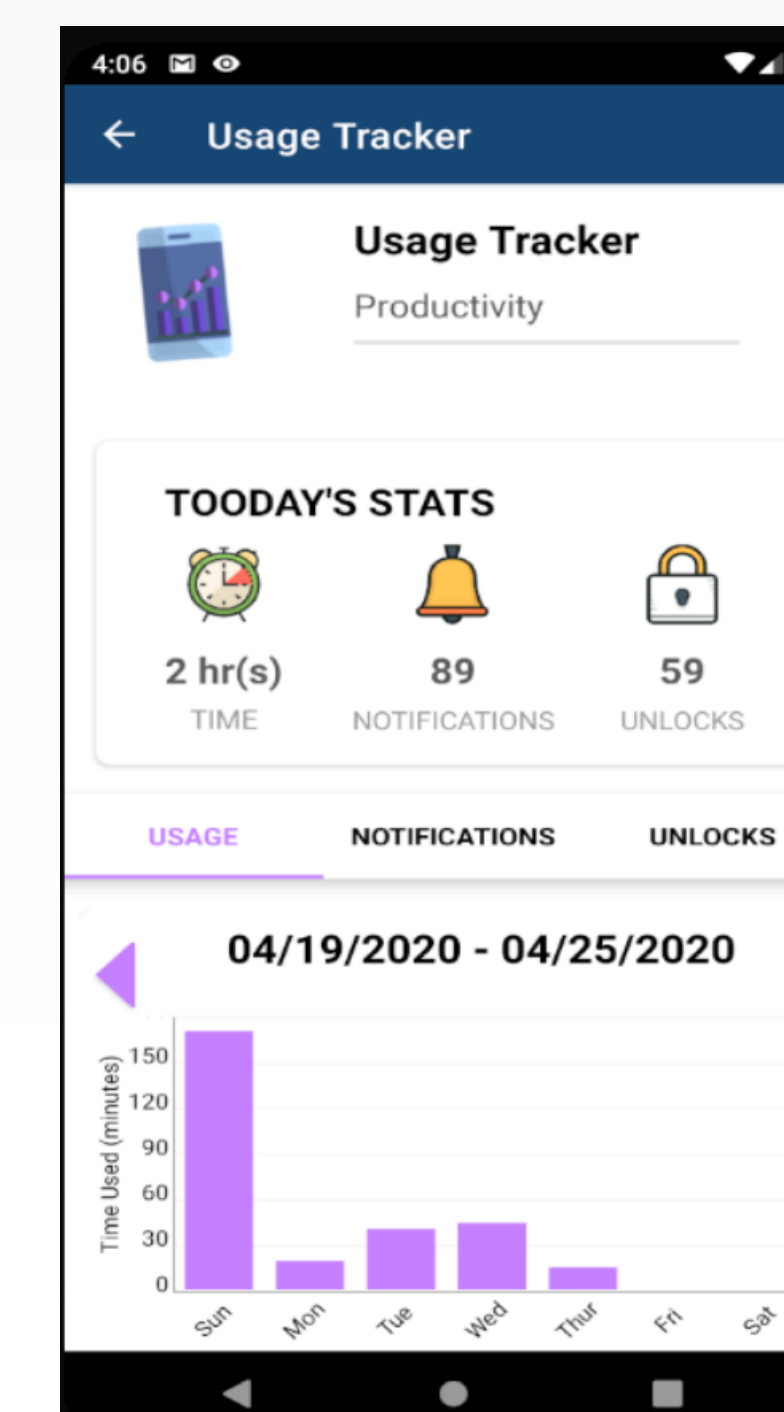
On What Level?

- Individual application
- Categories
- Total Usage



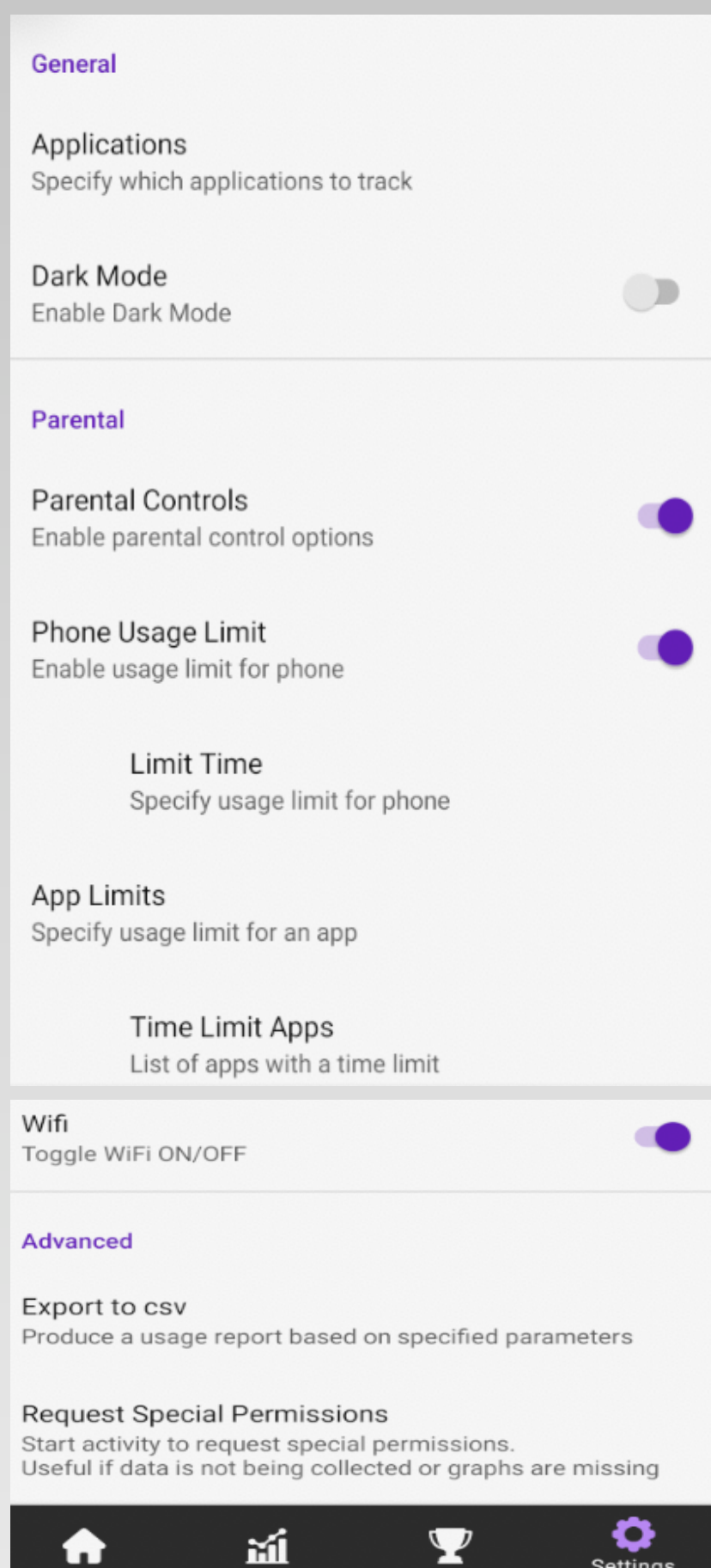
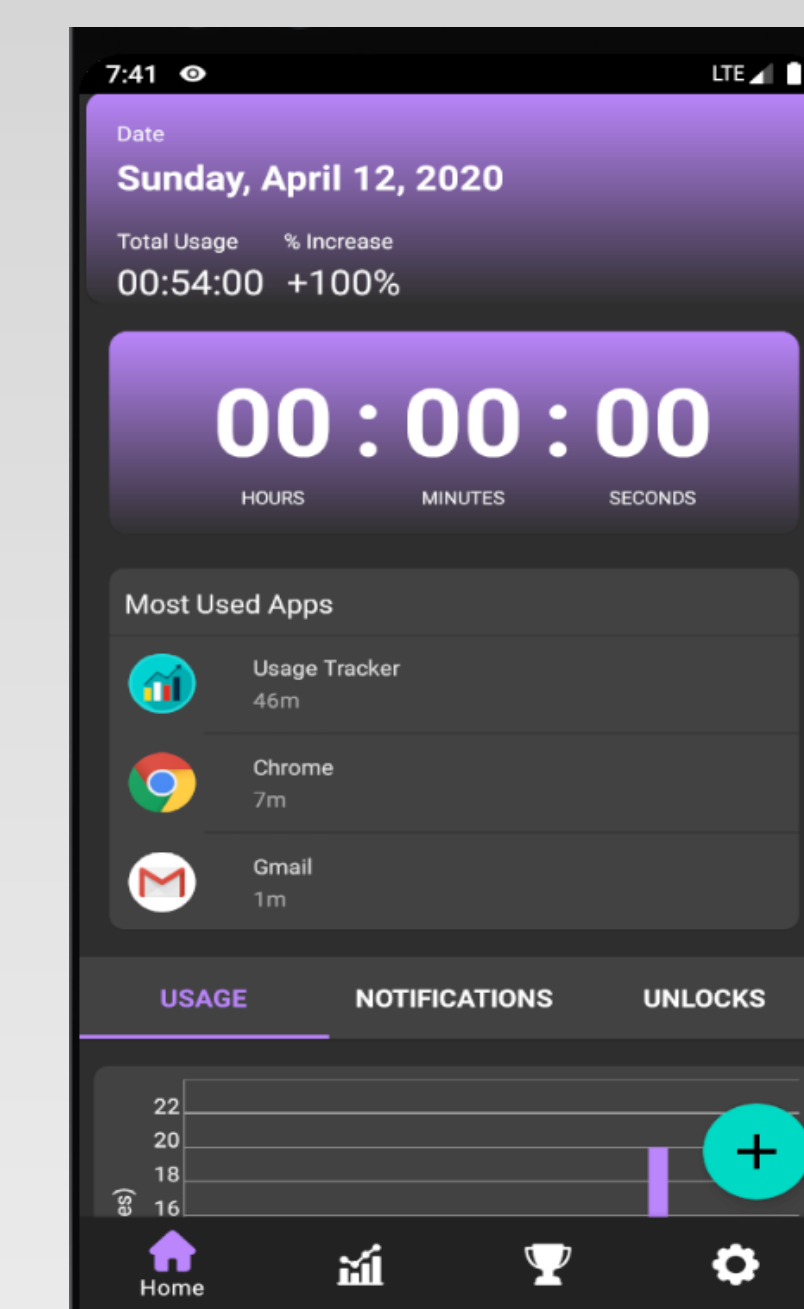
How is Data Congregated?

- Daily
- Weekly



Other Functionalities

- Specify Application to track
- Dark Mode
- Phone/Application limits
- Export data to CSV



Future Work

- Visualization of historical data
- Create a website connected to the app for more comprehensive functionalities, e.g., visualization and analysis.
- Integrate Android's built in UsageStat Service
- More comprehensive parental controls

References

1. <https://material.io/design>
2. <https://github.com/lecho/hellocharts-android>
3. <https://github.com/airbnb/lottie-ios>
4. <https://github.com/DavidPacioianu/InkPageIndicator>
5. <https://github.com/nbnbsp-team/MaterialFilePicker>
6. <http://opencsv.sourceforge.net/>