

## **Summary of Accomplishments**

For sprint 4, our primary goals were to add the gamification aspect, implement reminders on habits, and add analytics for habits.

The baseline for gamification was achieved, users gain exp when completing habits. Starting from 0, they will also level up when reaching specific experience milestones. Every 5 levels, they will also reach a new “discovery” like a planet, and unlock a new rank. The user can then set their rank to any one that they have unlocked as an additional customization.

The reminder system was fully implemented. When creating or editing a habit, users can optionally set a time of day. The system will then send an email notification to the user as a reminder to complete the habit. For weekly habits, the user also will be prompted to add a day of the week (Mon, Tue, Wed, etc.), and monthly habits a day of month (1, 2, 3... 31). The system can use a task scheduler for Windows, or a Cron scheduler for Linux, depending on which operating system is hosting the server.

Users can also choose to customize their profile picture. Upon registering, the user will be given a default picture, and then they can upload a custom one from their local system to use, for more personalization.

For analytics, we finished the baseline features for visualizing progress. A pie chart displays a breakdown of completed and uncompleted habits, organized by daily, weekly, and monthly habits.

## **Challenges and Roadblocks**

A major challenge implementing the reminder system. We initially wanted to use Celery, an open source task queue for Django but it was unnecessarily complicated so we opted to use task scheduler and Cron job instead. Another complication for the reminder system was understanding how time zones, system time, and user time works, and how to write the necessary backend functions. This required plenty of testing to implement properly.

Another major challenge was having the skip button effectively work rather than just acting as a placeholder. It started off by doing nothing and not actively affecting the XP and marking it as skipped. It took consistent effort going back and forth and just trial and error to get the button to effectively mark the habit as skipped for the time being and without affecting anything else, but now it works well, just a little fixes in the upcoming sprint to patch it up a little more.

### **Client/Stakeholder Feedback**

Feedback from the client was positive for the features that were implemented this sprint. The leveling progression system was well received and appreciated to keep the app fun for users. The client mentioned to add achievements or badges, which will be focused on next sprint.

The reminders system was also good, but had a complication for weekly and monthly habits, due to the aforementioned local/user timezone discrepancy. Fortunately, this was actually fixed promptly after the meeting

Similarly the analytics chart wasn't showing properly, but that was because the demoed app wasn't up to date, and a simple pull fixed the issue. There was interest in seeing more detailed trends over time, which leads into one of our final sprint goals.

For the final sprint, we will implement the leaderboard, which shows the global top players with the most experience (and thus levels). For minor goals, we will polish the analytics, gamification, and user interface. If we have time we'll also implement a basic user friends system, and improve habits by introducing skipping, categories, and importance.