

Final Project Report: Habit Tracker by Apperture Laboratories

...

CSE 210

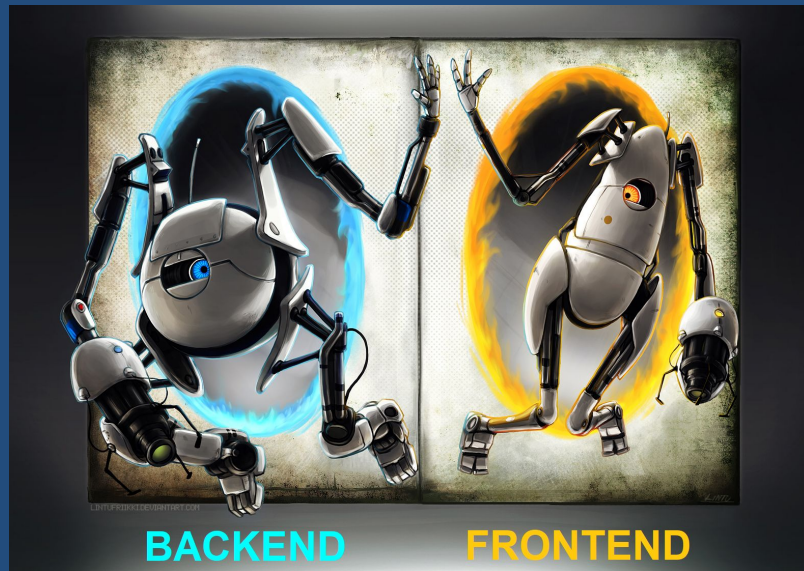


Overview

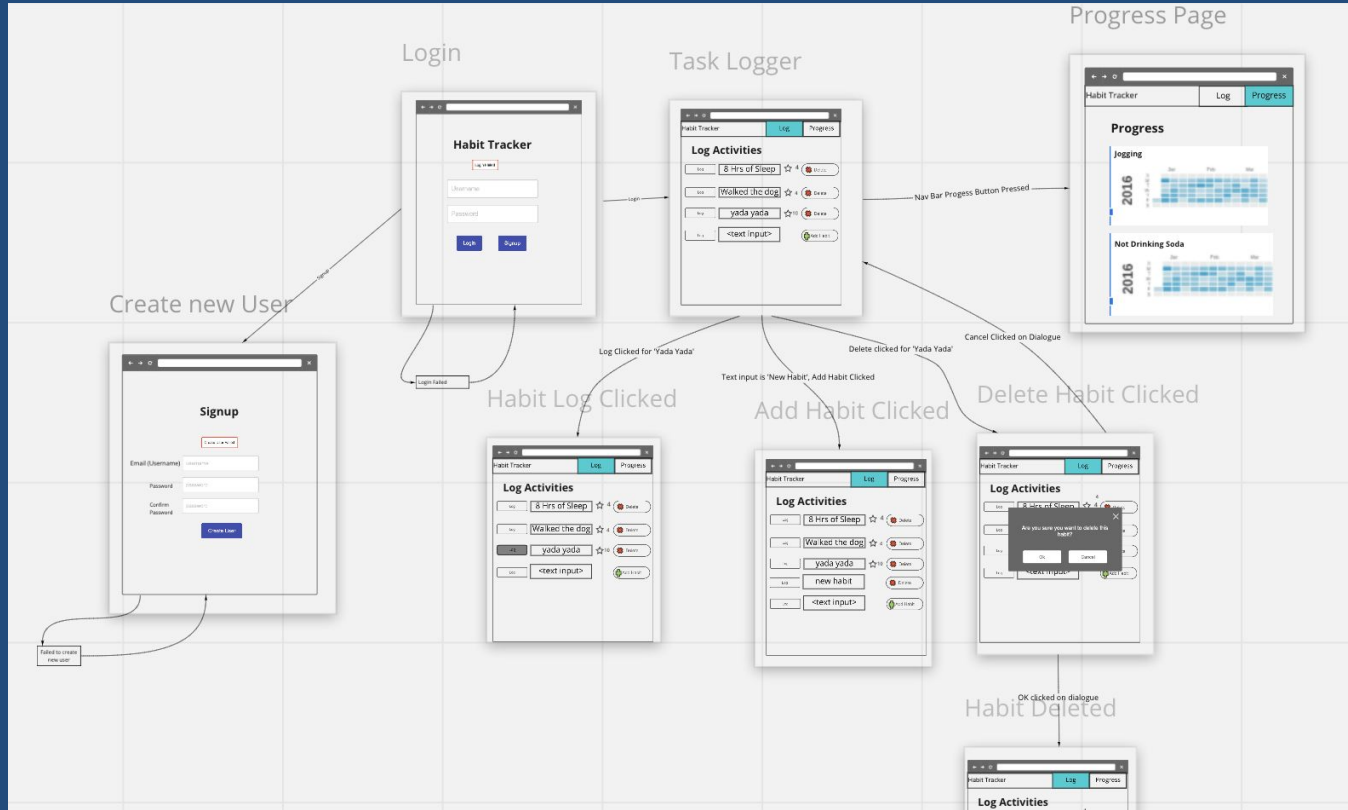
- Introduction to our Team
- Our Final Architecture
- Process & Ceremonies
- CI Pipeline - Testing, Code Coverage, and Documentation
- UI - Before and After
- App Demo
- Retrospectives - The Good
- Retrospectives - The Bad
- Proposed Undergraduate Schedule Overview
- Q&A

Apperture Labs - A Trusted Friend in Science

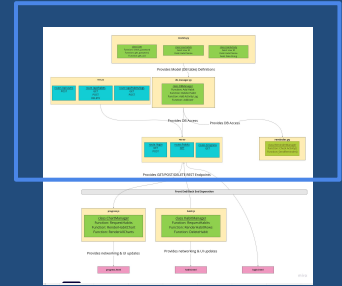
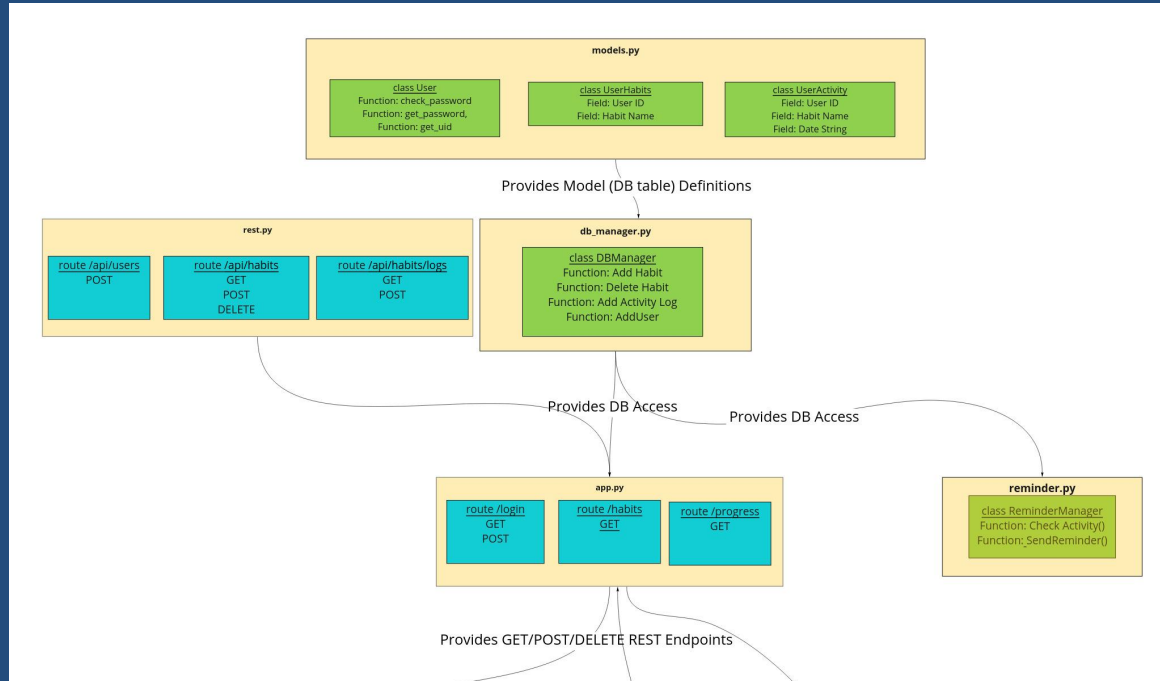
- Developed relationships and a rapport
- Communication was excellent, everyone was accountable
- Division of labor was a strength
 - **Daniel** - client habit logging, creation & deletion
 - **Jared** - Database manager, CI Pipeline
 - **Fan** - REST API endpoint behavior
 - **Li** - testing (end-to-end)
 - **Ted** - client progress visual, scrum master, spokesperson
 - **Mary Anne** - frontend HTML
 - **Zhongdao** - user management



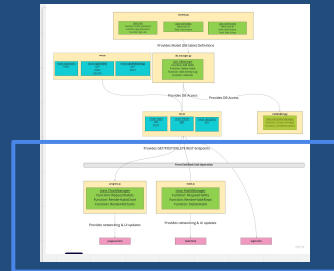
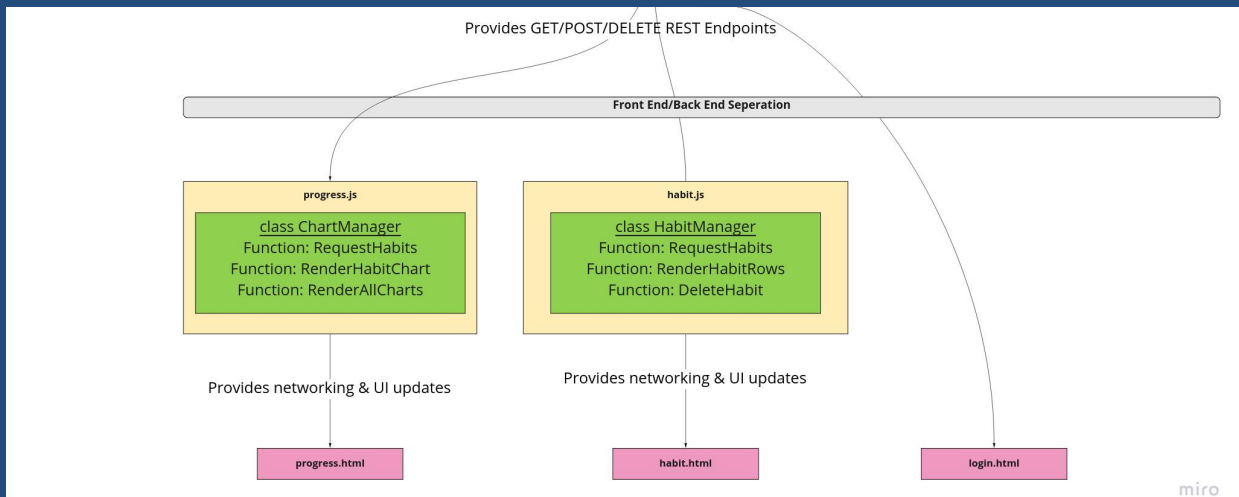
Architecture - Wireframes



Our Architecture - Back End Diagram



Our Architecture - Front End Diagram

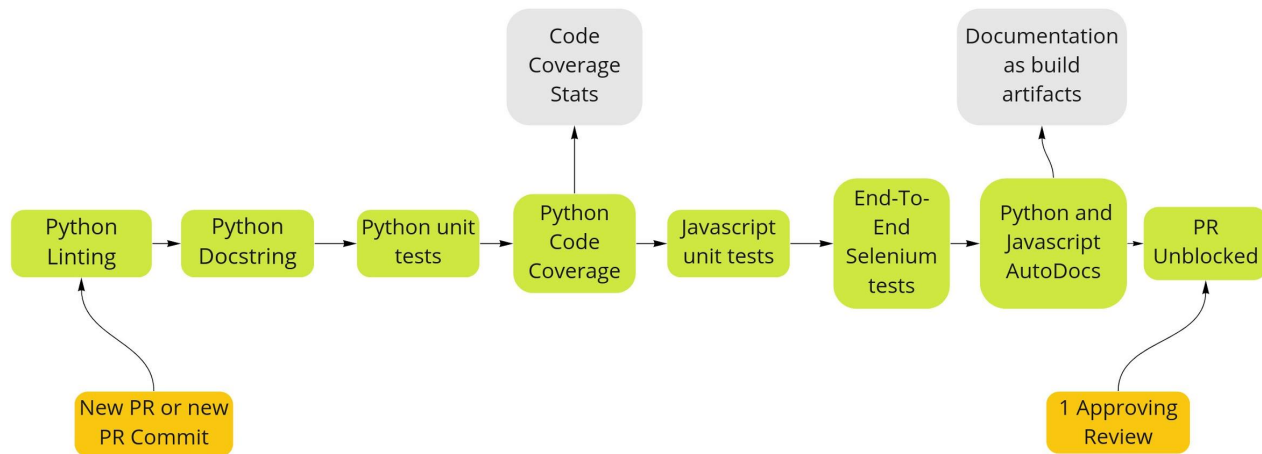


Process, Tools, & Ceremonies

- 4x Meetings per Week
 - 3 shorter, stand-up type meetings
 - 1 longer, more robust meeting
 - Sprint planning, Retrospectives, Iteration Review (informal)
- Tools we used throughout
 - Slack
 - Zoom
 - GitHub
 - Google Docs & Slides
- Tools that faded
 - Clubhouse
 - StatusHero




Execution - CI Pipeline with Github Actions






miro


Execution - CI Pipeline with Github Actions


Add more commits by pushing to the `python-code-cov` branch on `tschelbs18/210habit`.

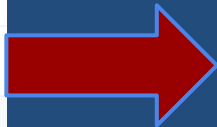
 **Review required**
At least 1 approving review is required by reviewers with write access. [Learn more.](#)


 **Some checks haven't completed yet**
2 in progress checks


-  **Python application / build (pull_request)** In progress — This check has started...
-  **Python application / build (push)** In progress — This check has started...



 **Merging is blocked**
Merging can be performed automatically with 1 approving review.


Merge pull request  You can also open this in GitHub Desktop or view command line instructions.




 **Review required**
At least 1 approving review is required by reviewers with write access. [Learn more.](#)


 **All checks have failed**
2 failing checks





-  **Python application / build (pull_request)** Failing after 8m — build
-  **Python application / build (push)** Failing after 7m — build


 **Merging is blocked**
Merging can be performed automatically with 1 approving review.




 **Review required**
At least 1 approving review is required by reviewers with write access. [Learn more.](#)

 **All checks have passed**
2 successful checks

-   **Python application / build (pull_request)** Successful in 6m
-   **Python application / build (push)** Successful in 5m

 **Merging is blocked**
Merging can be performed automatically with 1 approving review.

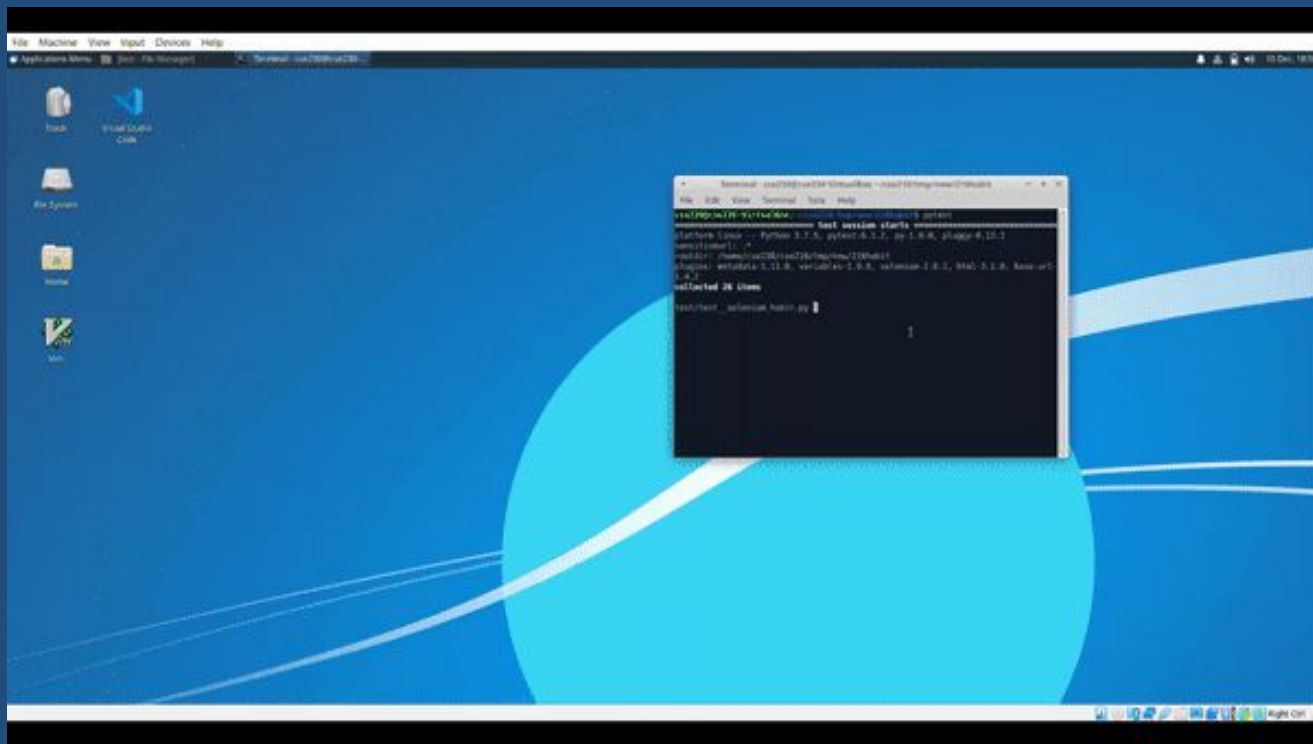
Merge pull request  or view [command line instructions.](#)

Execution - Unit Testing with Pytest and Jest

```
C:\Users\dkoohmarey\Documents\GitHub\210habit>
```

```
C:\Users\dkoohmarey\Documents\GitHub\210habit>jest  
st --verbose
```

Execution - End-To-End Testing with Selenium



Execution - Documentation

```
def add_activity(self, activity):  
    """Add a new activity log for a given user and habit.  
  
    :param activity UserActivity: activity to add  
    :return Result: operation result, Ok or Err  
    """
```



```
/**  
 * Updates the user's habit log on the server with the given habit.  
 * @logHabit  
 * @param {string} habit - the name of the habit to log  
 */  
logHabit(habit)
```



Execution - Documentation

README.md

210habit Python application passing Jest Tests passing

Habit and Activity Tracker Web App for CSE210

Getting Started

Note: We recommend using Chrome as the browser for using this application for the best experience

1. Install Python 3
2. Initialize a virtual environment (this will keep installed files within the virtual environment, not affecting the global python libraries) in the 210 habit branch root directory

```
python -m venv env
```

Note: this may hang for a few seconds

3. Activate your virtual environment On Windows: `env\scripts\activate` On Mac: `source env/bin/activate`
4. Install the required modules into your virtual environment `pip install -r requirements.txt`
5. Test the application `pytest --ignore=test/test_selenium_habit.py --ignore=test/test_selenium_login.py`

Note: we ignore running end-to-end tests by default as they require the chromedriver to be setup on your local machine, however they are run by the repo CLI

6. Run the server `python app.py`
7. Verify the server is working in your browser, visit 127.0.0.1:5000.

REST API

Return the habits associated with that user

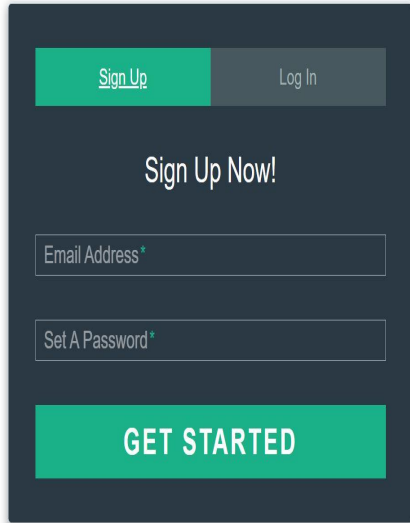
GET /api/habits

Response: 200 OK on success {"habits": ["Jogging", "not drinking soda"]}

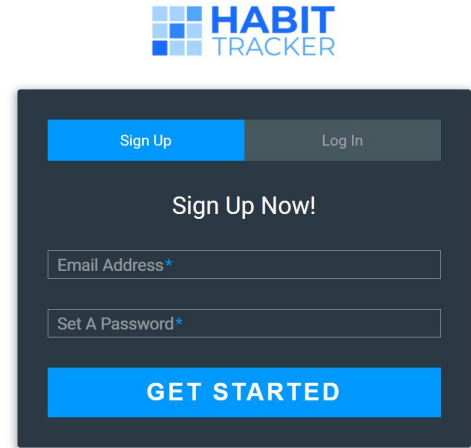
How to run it if
you just pulled the
repo?



UI - Before & After: Login/Register



Before UI design for login/register. The form is dark gray with a green 'Sign Up' button and a gray 'Log In' button. The text 'Sign Up Now!' is centered. Below are input fields for 'Email Address*' and 'Set A Password*'. A large green 'GET STARTED' button is at the bottom.



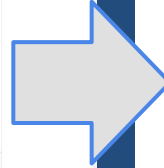
After UI design for login/register. The form is dark gray with a blue 'Sign Up' button and a gray 'Log In' button. The text 'Sign Up Now!' is centered. Below are input fields for 'Email Address*' and 'Set A Password*'. A large blue 'GET STARTED' button is at the bottom.



UI - Before & After: Habits Log

Habit Tracker LOG PROGRESS

Log Habit			
Log Habit	Habit	Streak	Delete Habit
<input checked="" type="checkbox"/> Log	Running	13	<input type="button" value="Delete Habit"/>
<input checked="" type="checkbox"/> Log	Working Out	7	<input type="button" value="Delete Habit"/>
<input checked="" type="checkbox"/> Log	Eating Vegetables	2	<input type="button" value="Delete Habit"/>
Powered By ZingGrid			
<input type="text" value="Enter new habit..."/>		<input type="button" value="Create New Habit"/>	



 HABIL
TRACKER

HABIT LOG

PROGRESS

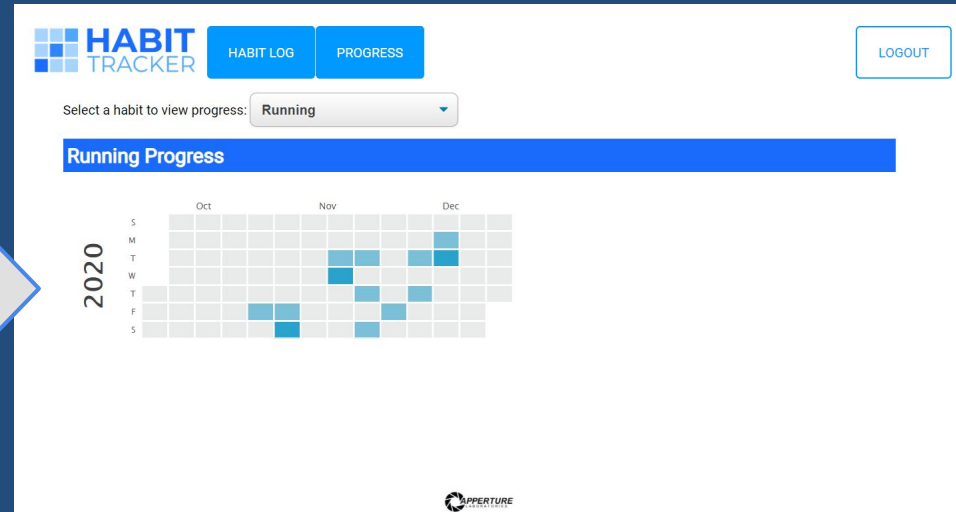
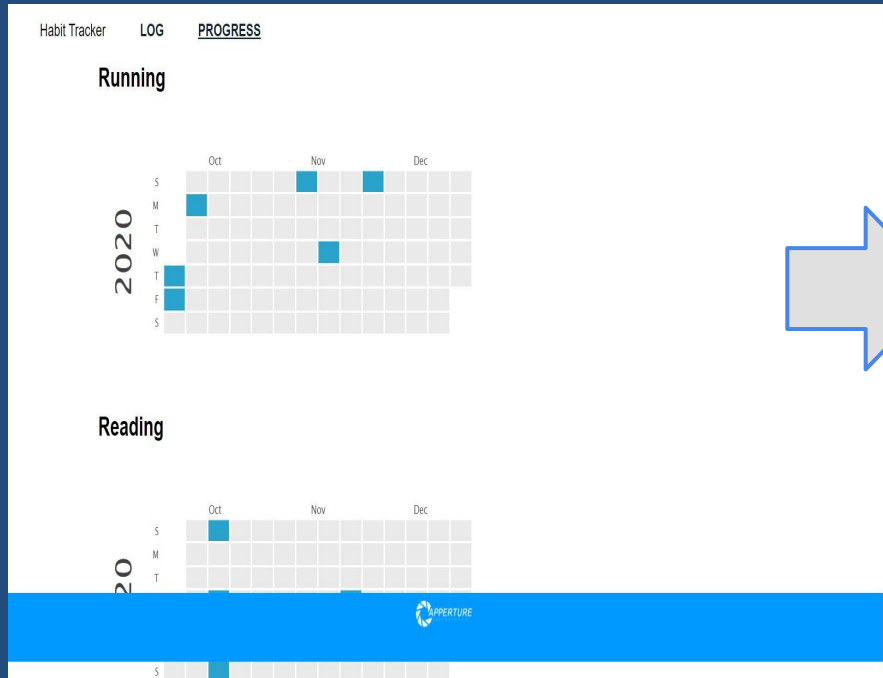
LOGOUT

Log Habit

Log Habit	Habit	Streak	Delete Habit
<input checked="" type="checkbox"/> Log	Running	13	<input type="button" value="Delete Habit"/>
<input checked="" type="checkbox"/> Log	Working Out	7	<input type="button" value="Delete Habit"/>
<input checked="" type="checkbox"/> Log	Eating Vegetables	2	<input type="button" value="Delete Habit"/>
Rows1-5of5			
Powered By ZingGrid			
<input type="text" value="Enter new habit..."/>		<input type="button" value="Create New Habit"/>	



UI - Before & After: Progress Visual



Demo

Browser window showing the Habit Tracker login page. The address bar displays "127.0.0.1:5000". The page features the Habit Tracker logo and a central sign-up form.

Sign Up Log In

Sign Up Now!

demo@habitracker.com*

***** *

GET STARTED

APERTURE
LABORATORIES

Lessons Learned (What Worked)

- Communication
 - 3x stand up and one longer meeting every week
 - Divide the work smoothly
- Division of work based on feature themes, classes and files
 - Parallel development
 - Easy to integration
- CI pipeline
 - Unified code style; Detailed comments
 - Catch bugs in early stage
- Tools:
 - Slack / Zoom / Miro / Github / Plan Poker

Lessons Learned (The Hard Way)

- Swagger file: Everyone knows how to use the endpoints
- JavaScript Frameworks > Vanilla JS
- Session management & authentication: A risky unknown
- UX: Don't forget about the end user

What we would do differently (top 3)

1. Design all code with testing in mind
2. Spend more time on the spec with regards to solidifying REST endpoints (defining payload, behavior, testing, etc.)
3. Focus on the user experience more

<u>DESIGNER</u>	<u>WHAT THEY ARE RESPONSIBLE FOR</u>
UI	ELEMENTS OF THE INTERFACE THAT THE USER ENCOUNTERS
UX	THE USER'S EXPERIENCE OF USING THE INTERFACE TO ACHIEVE GOALS
UZ	THE PSYCHOLOGICAL ROOTS OF THE USER'S MOTIVATION FOR SEEKING OUT THE INTERACTION
U α	THE USER'S SELF-ACTUALIZATION
U Ω	THE ARC OF THE USER'S LIFE
U ∞	LIFE'S EXPERIENCE OF TIME
U●	THE ARC OF THE MORAL UNIVERSE

xkcd.com/2141/

Proposed Undergrad Schedule

- Week 1: Collaboration
 - Form your team and download tools
- Week 2: User Stories
 - Mock up initial UI
- Week 3: Web Dev
 - Get started with Flask
- Week 4: Build CI Pipeline
 - GitHub Actions
- Week 5: Connect DB
 - Templating + CRUD
- Week 6: Front End Pages
 - Forms and inputs
- Week 7: Testing
 - Pytest & Selenium
- Week 8: UI Polish
 - Design + CSS
- Week 9: Security
 - Ensure server side validation present
- Week 10: Deploying
 - Heroku

Any Questions?