ClockWork
Time Estimation

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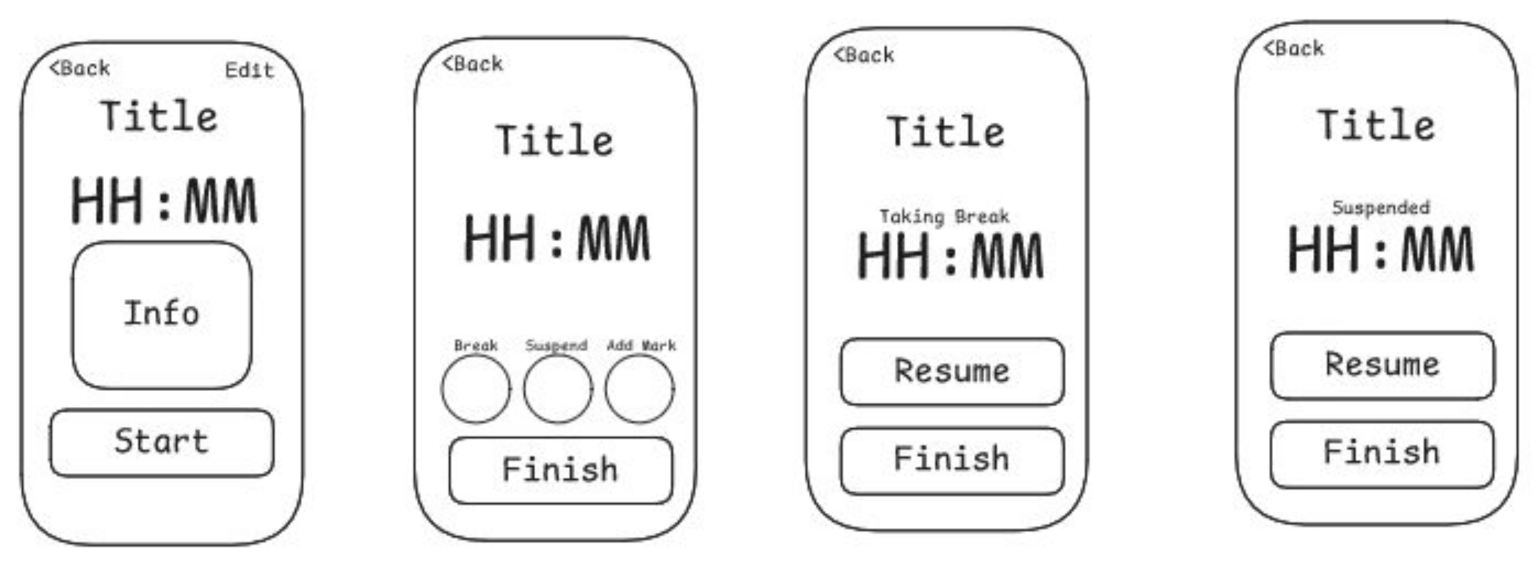
Task: UI Design

Design UI for:

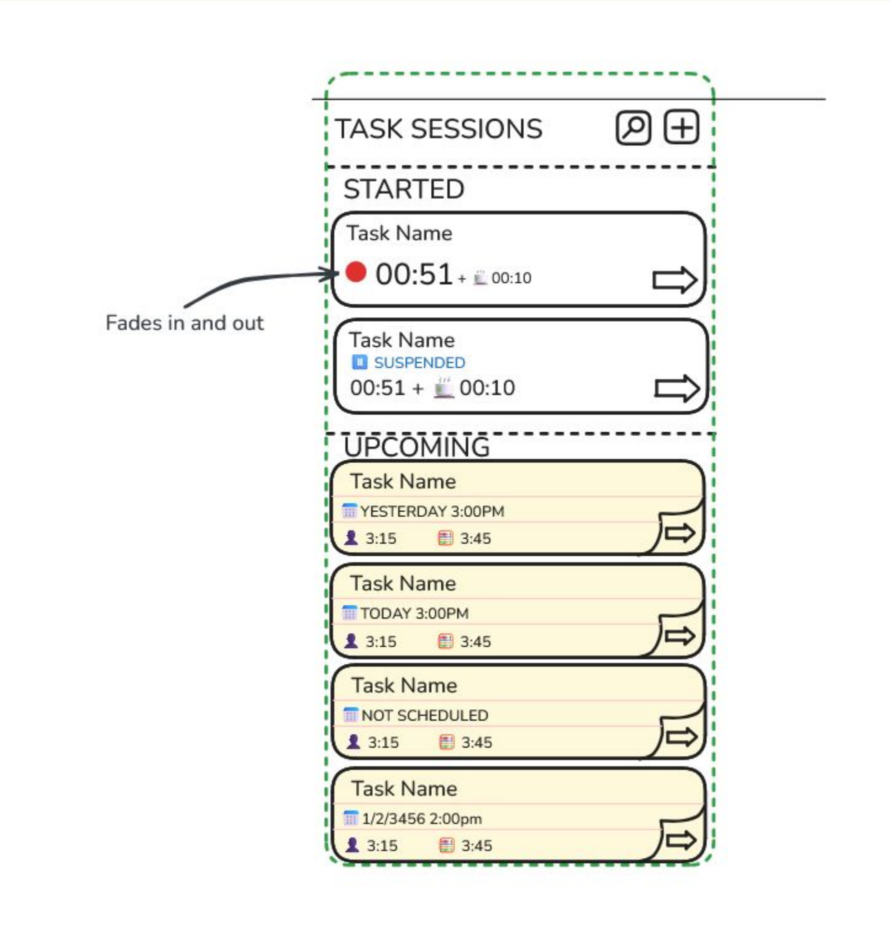
- Task Session Timer Page
- Task Session List Page
- Task Session Complete Page

Unify interface between Android and iOS apps

Task Session Timer Page

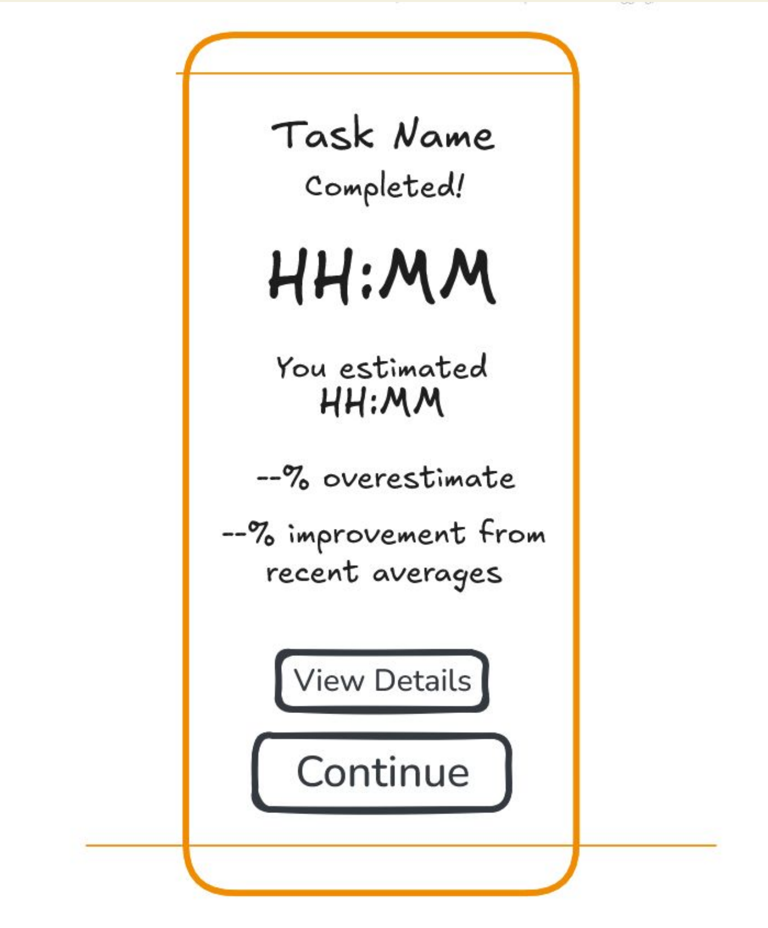


Task Session List Page



Fades in and out

Task Session Complete Page



Task Name

Completed!

HH:MM

You estimated

HH:MM

--% overestimate

--% improvement from recent averages

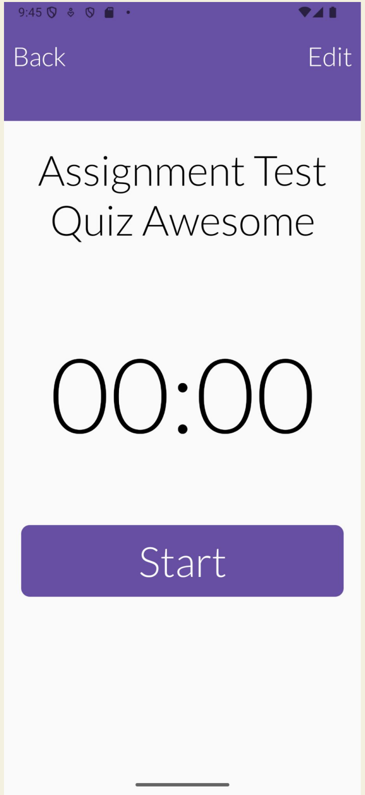
Task: UI Implementation

Implement UI for:

- Task Session Timer Page
- Task Session List Page
- Task Session Complete Page

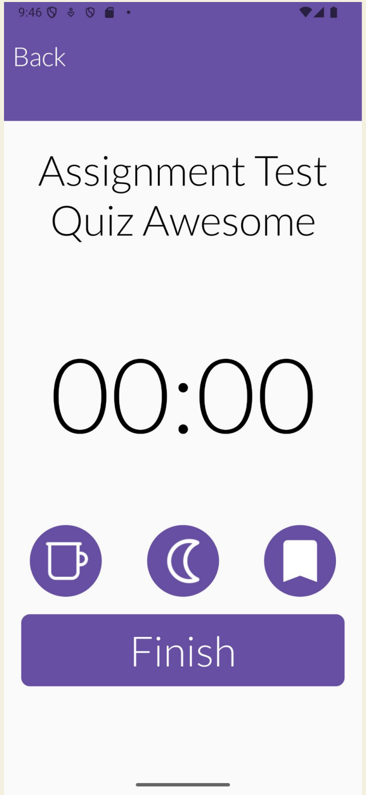
In the Android app.

Task Session Timer Page, prototype



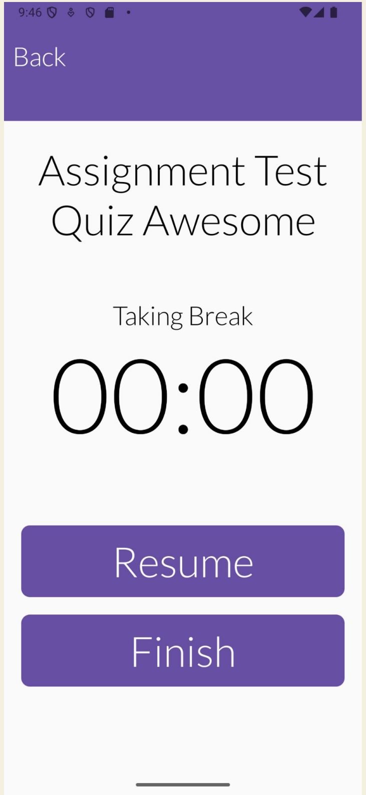
Assignment Test Quiz Awesome

00:00



Assignment Test Quiz Awesome

00:00

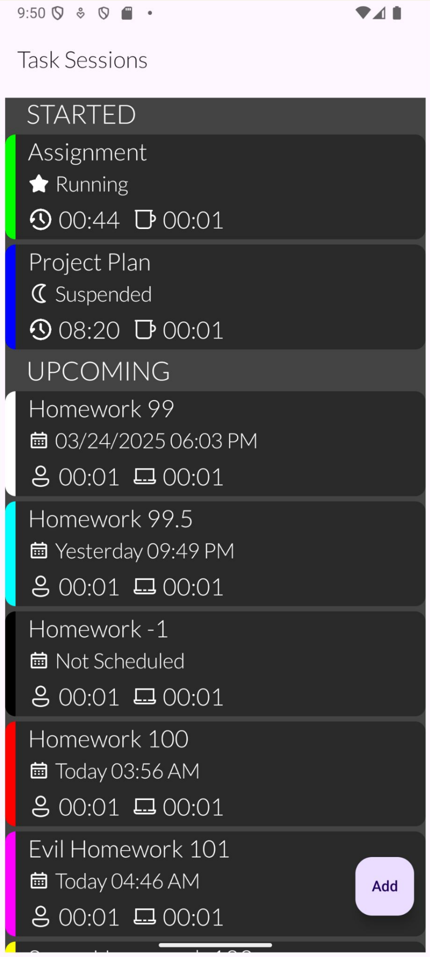


Assignment Test Quiz Awesome

Taking Break

00:00

Task Session List Page, prototype



9:50

Task Sessions

STARTED

Assignment
★ Running
00:44 00:01

Project Plan
☾ Suspended
08:20 00:01

UPCOMING

Homework 99
03/24/2025 06:03 PM
00:01 00:01

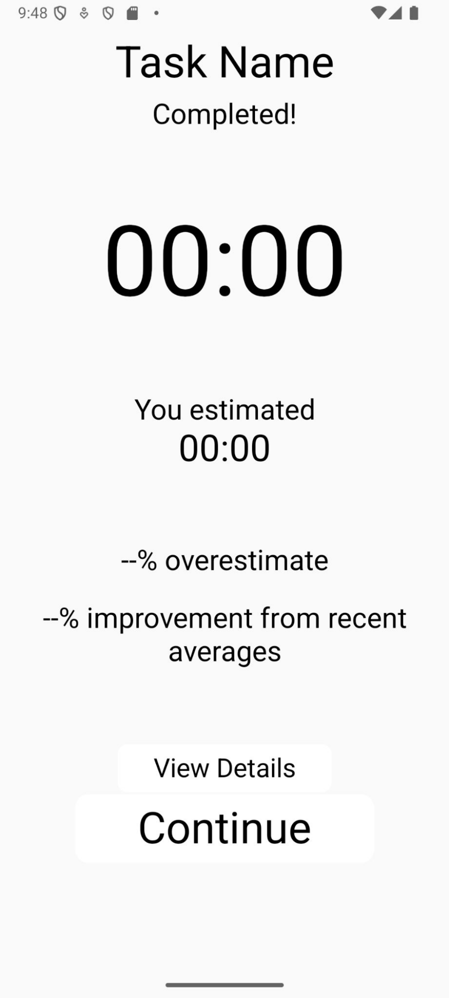
Homework 99.5
Yesterday 09:49 PM
00:01 00:01

Homework -1
Not Scheduled
00:01 00:01

Homework 100
Today 03:56 AM
00:01 00:01

Evil Homework 101
Today 04:46 AM
00:01 00:01

Task Session Complete Page, prototype



9:48

Task Name

Completed!

00:00

You estimated
00:00

--% overestimate

--% improvement from recent averages

Task: Implement Timer Logic

- Increment minutes & hours
- Start
- Stop
- Pause

Video Demonstration

Task: Algorithmic Time Estimation

- Exponential smoothing formula for estimating the time it will take a user to complete a task:
  - $T_{new} = [\alpha T_{prev\_estimate} + (1 - \alpha) T_{last\_time}] * (difficulty / 3)$

- Prioritizes more recent data

- Difficulty acts as a multiplier for estimated time

- Refined through testing + user data

Task: Explore User Progress Evaluation

- Compare user estimates to actual times

- Within profile, user will be notified of consistent patterns in the differences between past estimates and actual times for a task
  - Ex: If user often underestimates certain task by 30 minutes, this will be reflected within the user profile

- Account for outliers (forgot to turn timer off, variation in tasks)

M2 Task Matrix (1)

Task	Completion %	Anthony	Christian	Peter	Pierson	To do
1. Design Task Session List UI	60%	0%	0%	60%	40%	Completed session list (postponed until profile implementation)
2. Implement Task Session List UI in Swift	0%	0%	0%	0%	0%	
3. Implement Task Session List UI in Kotlin	60%	0%	0%	0%	100%	Completed session list (postponed until profile implementation)
4. Design Task Session Timer UI	90%	0%	0%	80%	20%	Task information page to be elaborated
5. Implement Task Session Timer UI in Swift	0%	0%	0%	0%	0%	

M2 Task Matrix (2)

6. Implement Task Session Timer UI in Kotlin	60%	0%	0%	80%	20%	Initial info display
7. Design (Initial) Task Session Completion UI	100%	0%	0%	80%	20%	
8. Implement (Initial) Task Session Completion UI in Swift	0%	0%	0%	0%	0%	
9. Implement (Initial) Task Session Completion UI in Kotlin	100%	0%	100%	0%	0%	Save timer, %over-estimate, %improv
10. Implement Session Data Serialization and Persistence in Kotlin	0%	0%	0%	0%	0%	Next Milestone

M2 Task Matrix (3)

11. Implement Session Timer in Kotlin	60%	0%	0%	100%	0%	Add suspend and mark functionality
12. Explore how the app interprets user data to make estimations and tracks progress	80%	100%	0%	0%	0%	Test and refine model
13. Explore how the app treats user estimations	80%	100%	0%	0%	0%	Test and refine model

Milestone 3 (Apr...)

- Cohesion between and functionality of session, timer, and completion pages
- Implement Session Data Serialization and Persistence in Kotlin
- Implement New Task Session UI in Kotlin
- Implement user progression evaluation in Kotlin
- Implement task time estimation in Kotlin

Milestone 3

Task	Anthony	Christian	Peter	Pierson
1. Cohesion between and functionality of session, timer, and completion pages	0%	20%	0%	80%
2. Implement Session Data Serialization and Persistence in Kotlin	0%	0%	100%	0%
3. Implement New Task Session UI in Kotlin	0%	100%	0%	0%
4. Implement user progression evaluation in Kotlin	60%	0%	0%	40%
5. Implement task time estimation in Kotlin	60%	0%	0%	40%