Chan Feedback: Include examples for user requirements, reduce typing for users when making tasks, and explain why we're using certain tools.

Project Title: ClockWork

Team Members:

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Client: Dr. David Luginbuhl CSE Professor & Faculty Advisor

Meeting Dates with Client:

- Meeting 1: Jan 15, 2025

Goal and Motivation: Assist in the estimation of task time cost

Students often have difficulty with time management when faced with multiple tasks across school, work, etc. This is in part due to a poor ability to estimate how much time a certain task will take. Our project seeks to alleviate this by providing a timer students can use to clock how much time they spend on a given task after providing the app with an estimated time of completion. They will then receive feedback based on their estimate and the actual time taken, which is designed to help them develop their ability to estimate the time needed to complete a task and, therefore, improve their time management skills.

Approach (key features of the system):

- User can refine their ability to estimate the time they require to complete tasks
    - User can register tasks to track
        i. Users can choose from preloaded task profiles like "homework", "test", "study" etc
        ii. Users can also input their own custom task profiles specific to their needs
    - User can begin, pause, and end sessions of their registered tasks where they provide a time-cost prediction and time themself as they complete the task
    - User can compare their predicted time with their actual time
    - User can track the accuracy of their estimations over time for all of their registered tasks

    - User can specify task parameters, such as difficulty or category, to link similar tasks together
    - For instance, the user is a CS student and has weekly programming homework. They would register a new task named “Weekly Programming HW” at the beginning of their semester. Each week, they would begin a session of “Weekly Programming HW” and indicate how long they think it will take. The user can pause the session when they take breaks and end when they complete their assignment. Once they have completed two sessions, the app will provide feedback on their estimation and estimate how long each session will take.
- User can view time-cost predictions from the app for registered tasks
    - User can view pessimistic, optimistic, and most likely time-cost predictions
    - User can view time-cost predictions for tasks without time measurements by manipulating measurements for analogous tasks based on user-specified parameters
    - User can view time-cost predictions for tasks without time measurements by decomposing tasks into reusable subtasks
- User can create schedules using time blocks provided by app data for registered tasks
    - User can place tasks on a calendar where each calendar day has a timeline.
    - User can visualize the range of predictions for applicable tasks

Novel features/functionalities:

- The main novel feature of the app is its ability to attempt to gauge and improve a user's time-estimating ability. This feature has not been implemented in other applications, leaving the niche of time estimation open for our application. The timing of task completion is used as a measure of user performance in business management to monitor efficiency. Our application aims to improve user’s time estimation capabilities, thereby allowing them to work more efficiently.

Algorithms and tools: potentially useful algorithms and software tools

- Kotlin
    - Kotlin is interoperable with existing Java code.
    - Kotlin is the preferred language for Android App development.
    - Multiplatform, can run on iOS devices.
- Xcode
    - iOS specific development
- Android Studio
    - Mobile (Android focused) development environment.
    - Software emulation of Android devices for app design and development.

- Apple ActivityKit
    - Putting app controls on the user phone's lock screen

Technical Challenges: Discuss three main CSE-related challenges.

- We plan to use Kotlin for app development, but we do not know anything about Kotlin.
- We plan to develop a mobile app, but we do not know anything about making a mobile app.
- We plan to develop a mobile app for multiple platforms, but we don't know anything about multiplatform apps.

Milestone 1 (Feb 24): itemized tasks:

- Compare and select technical tools for app development
- Provide small mobile demos to begin development process
- Begin further R&D into kotlin and multiplatform deployment
- Compare and select collaboration tools for software development, documents/presentations, communication, task calendar
- Create Requirement Document
- Create Design Document
- Create Test Plan

Milestone 2 (Mar 26): itemized tasks:

- Begin more evolved design for UI
- Implement, test, demo initial app navigation
- Implement, test, demo initial task list
- Implement, test, demo initial task time
- Implement, test, demo initial user time estimations

Milestone 3 (Apr 21): itemized tasks:

- Begin designing extraneous menus
- Implement, test, and demo task parameters
- Implement, test, and demo settings menu
- Implement, test, and demo statistics displays
- Implement, test, and demo initial app time predictions
- Improve implementation of user time estimation feedback
- Improve menu design to be more intuitive

Task Matrix for Milestone 1:

Task	Anthony	Christian	Peter	Pierson
Compare and select Technical Tools	10%	10%	40%	40%
Mobile Demos	20%	20%	20%	40%
Kotlin R&D	25%	25%	25%	25%
Compare and select Collaboration Tools	40%	40%	10%	10%
Requirement Document	25%	25%	25%	25%
Design Document	25%	25%	25%	25%
Test Plan	25%	25%	25%	25%

Approval from Faculty Advisor:

- I have discussed with the team and approved this project plan. I will evaluate the progress and assign a grade for each of the three milestones.
- Signature: _____ Date: _____