Luginbuhl's

ClockWork

Software Design Document

Anthony Menendez, Christian Ott, Peter Stelzer, Pierson Hendricks
CSE 4101
1st Semester Senior Design Project
Dr. Chan

Date: 2/21/2025

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose

This software design document describes the early conceptualized internal architecture of ClockWork. Along with this, this document attempts to outline some of the early visual designs for the respective application.

1.2 Scope

The software is intended to be a mobile application designed to improve the users ability to gauge how long a specific task will take. For the scope of this project, we intend for users to utilize the application with Computer Science assignments for college.

1.3 Overview

This document provides a generalized overview of the underlying simple architecture of ClockWork, mostly focussing on our current concept for a user interface.

1.4 Definitions and Acronyms

TTC - Time to Complete (an assignment)

Session - A timed assignment visible on the task board

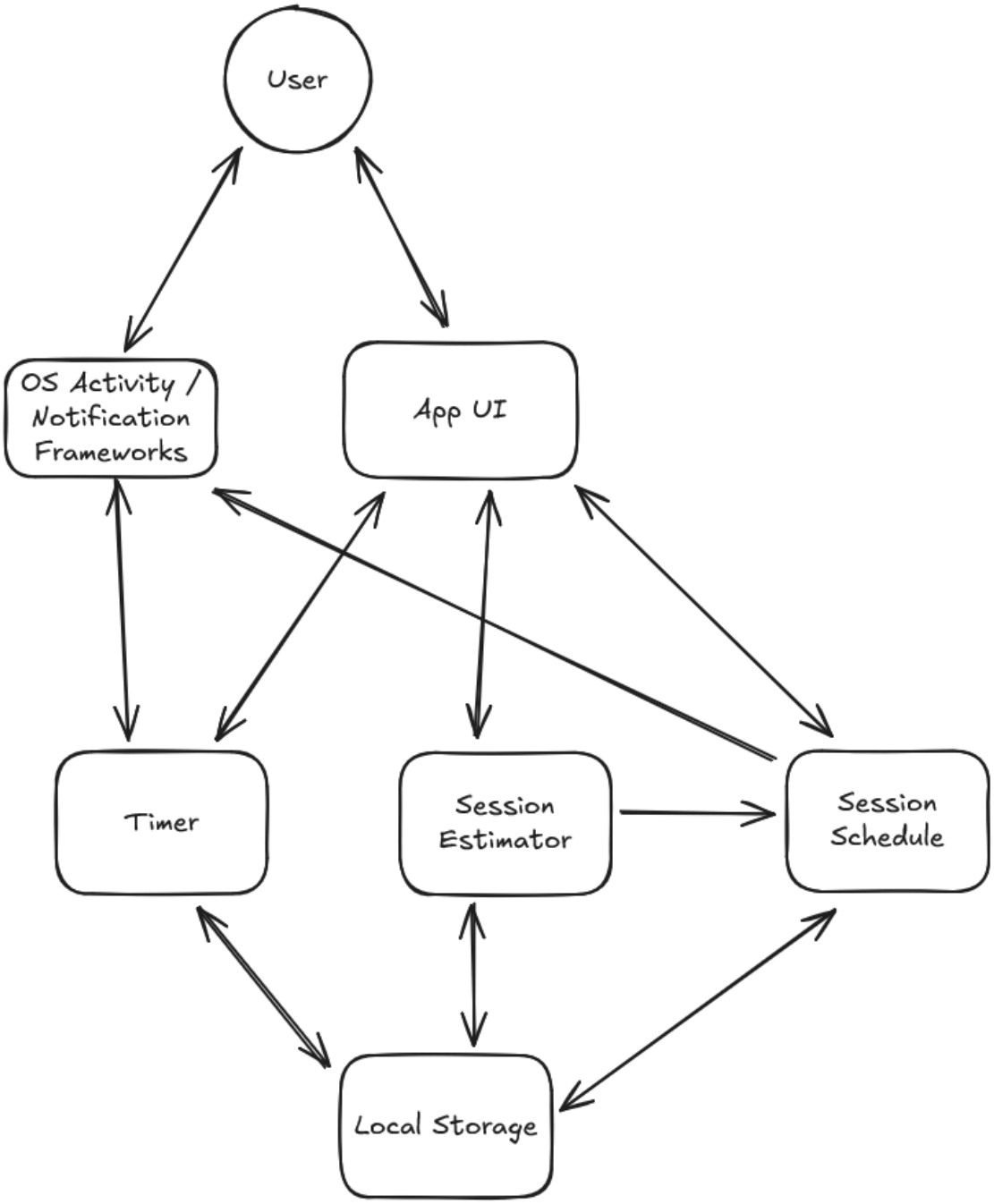
Task Profile - A user-specified profile for similar tasks to be registered

2.0 SYSTEM OVERVIEW

Our application's main goal is to help improve a user's ability to gauge how long an assignment can take. We intend to accomplish this by giving the user's a tool to keep track of their assignments and the time they spend on them. When adding an assignment, the user will attach an assumed TTC. Once complete we will attempt to nudge the user in the right direction based on how poorly or how well they were able to gauge the TTC.

3.0 SYSTEM ARCHITECTURE

3.1 Architectural Design



The architecture is very simple in nature, as we do not wish to harvest user data and would instead much rather allow the user to store their data locally.

3.2 Design Rationale

We believe that the application does not need to harvest user data in order to improve functionality. The application is a tool designed for disciplined users to take advantage of to improve their ability to gauge assignment TTC. All of their data will be stored locally and may be pushed to the cloud via iCloud or Google backups, of which a user may be able to transfer that data between devices for split use, however we will not allow that responsibility to fall on us.

4.0 DATA DESIGN

4.1 Data Description

The data we will store will pertain to particular user sessions as well as task profiles, containing basic historical data and pre-processed hashing data as needed.

5.0 HUMAN INTERFACE DESIGN

5.1 Overview of User Interface

As time goes on we will begin to develop features on top of the already existing prototype, refactoring and changing previously created features, ui, and functionality as deemed necessary.

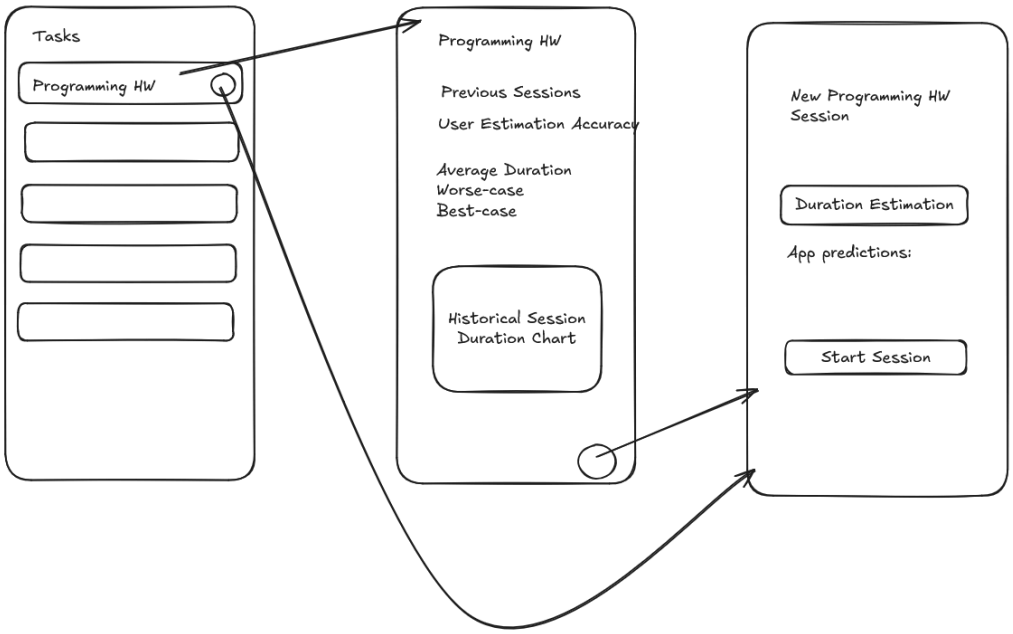
Users will be able to use the application to add assignments as they see fit utilizing the Add button, from there they may insert the necessary information for the assignment and add once complete. After the assignment is added, the user shall utilize the created session to time the respective assignment. As time goes on, the user may pause the timer in various different ways, such that it is as accessible as possible, however the user may only complete the assignment within the app such that we can register the session properly.

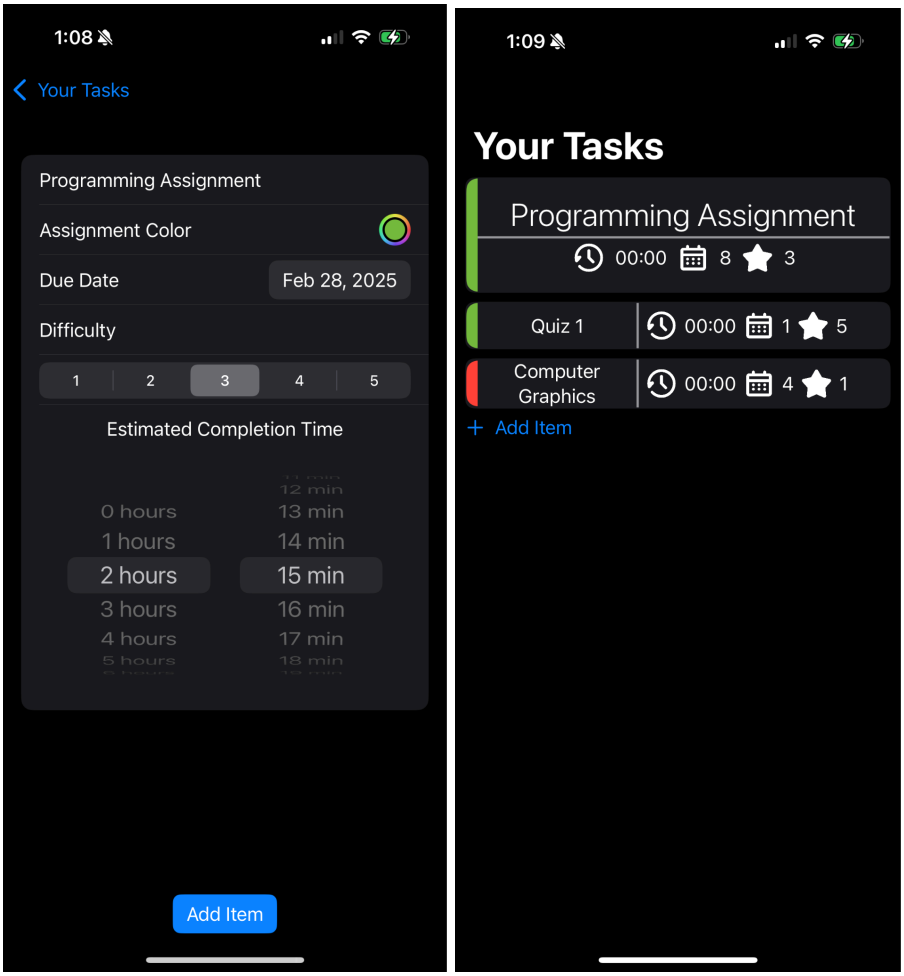
Once complete, the completion will be presented to the user, providing feedback in regards to their perceived performance and difficulty.

This concept is the core loop of the functionality, and making it as seamless as possible is something that will be worked out as we

continue to develop our prototypes, every other feature is merely a branch of this concept.

5.2 Screen Images





Prototype Images Subject to Change

5.3 Screen Objects and Actions

The main task board contains a list of tasks. Of which, once selected, the task will expand into an expanded view, containing more space for the title in-case it couldn't fit in the minimized format. After being expanded, the task may be interacted with to access the timer page.

The timer page will contain the current time spent on the assignment, along with a pause and complete button. The pause button will allow the user to pause the timer and also allow them to start another task. The timer page will also contain additional information regarding the assignment for the user to view. The completion button will register the completed task and remove the session from the task board, providing the user with a completion page.

The completion page will act as a “post-game report” for the user, possibly including some form of exit survey to better understand the results and allow the user to reflect.

From the task board, the user will be able to add an assignment, the form provided will request information regarding the session.