CS 411W Lab 1 Draft 1

Team Gold – KnowTime

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1 Introduction

1.1   The Societal Problem

Time management remains a significant challenge in both academic and professional settings. According to research, 82% of individuals lack a robust time management system, leading to substantial inefficiencies (Ariella, 2022). In the academic realm, students are particularly vulnerable to these challenges, often experiencing stress and reduced productivity due to poor time management (College Success Plan). Students who struggle with time management are noticeably more likely to drop out than those who do not (College Success Plan). And notably, the average person attempts 13 different time management strategies, demonstrating the ineffectiveness of current solutions (Ariella, 2022). KnowTime aims to solve these problems by providing students with the tools they need to excel in the modern classroom.

1.2   The Solution

KnowTime will address these issues directly by providing a multifaceted application designed to enhance study habits and time management skills. Key features include:

- **Pomodoro Timer with Customizable Study Sessions**: Utilizes the Pomodoro Technique, a proven method for boosting productivity by dividing work into focused intervals, reducing burnout and enhancing mental agility (Alves, 2023).
- **Direct Canvas Integration**: Allows seamless synchronization with class platforms, ensuring that assignments, deadlines, and grades are easily accessible.
- **Grade Tracker**: Offers tools for students to monitor their academic performance continuously.

- **Calendar with Reminders**: Helps students manage deadlines and prepare for upcoming assignments and exams effectively.

By offering plug-and-play studying tools integrated into students' class platforms like Canvas, KnowTime will facilitate a streamlined approach to managing and excelling at academic tasks. By utilizing their time more effectively, students will be enabled to focus more on learning and less on managing logistics.

2 KnowTime Product Description

Our solution will be a web app with many features to reduce student burnout and increase organization. We will have a community forum, calendars, task tracking, grade tracking, a points system, and personalized study plans. All these features should ensure a personalized, helpful experience for each student.

2.1   Key Product Features and Capabilities

General Information

Our web application can be used on multiple platforms and will feature a responsive design to encourage consistent usage.

Pomodoro Timer & Customizable Study Sessions

- A customizable timer that can be modified to fit students' needs. Pomodoro timer technique has student set a desired amount of time to study and an amount of time to take a break. After four study sessions, the student takes a longer break.

Progress and Task Tracking

- Track your progress over time and keep your tasks organized.

Points System

- Earn points for completed sessions to unlock sessions to unlock fun avatars.

Grade Tracker

- Students will be able to input and monitor grades over time with our graphing system.

Import School Calendars

- Import calendars from apps like Canvas or Blackboard

Calendar with Reminders

- Receive reminders about upcoming due dates.

Community Forum

- Chat with other people who have similar struggles or have advice.

Study Plan Generation

- Have a personalized study plan automatically generated for you.

Provide Study and Mental Health Resources

- We will direct students to academic, mental, and academic support.

- Our application is unique because of the inclusion of the community forum to help support students during the semester and the customized study plan generator. The points system helps with focus and motivation as well.

- KnowTime will help students develop study habits and better organize their tasks using the features described.

- Our features accomplish this by helping students be more organized with their tasks. Specifically, the Study Plan Generator takes the students' information and creates a customized study plan that will help them make time to work and ensure they are also relaxing. The community forum and resources will provide support for students to help reduce burnout.

2.2   Major Components (Hardware/Software)

Hardware:

- Desktop Computer

- Database Server

Software:

- Integrated Development Environment (IDE): Visual Studio Code

- Version Control: Git through GitHub

- Backend: Python with Django

- Frontend: HTML5/CSS, JavaScript, and Bootstrap 5

- Testing Frameworks: PyTest and Jest

- Documentation Tool: Pydoc and JSDoc

- Database: PostgreSQL

- Web Server: Django
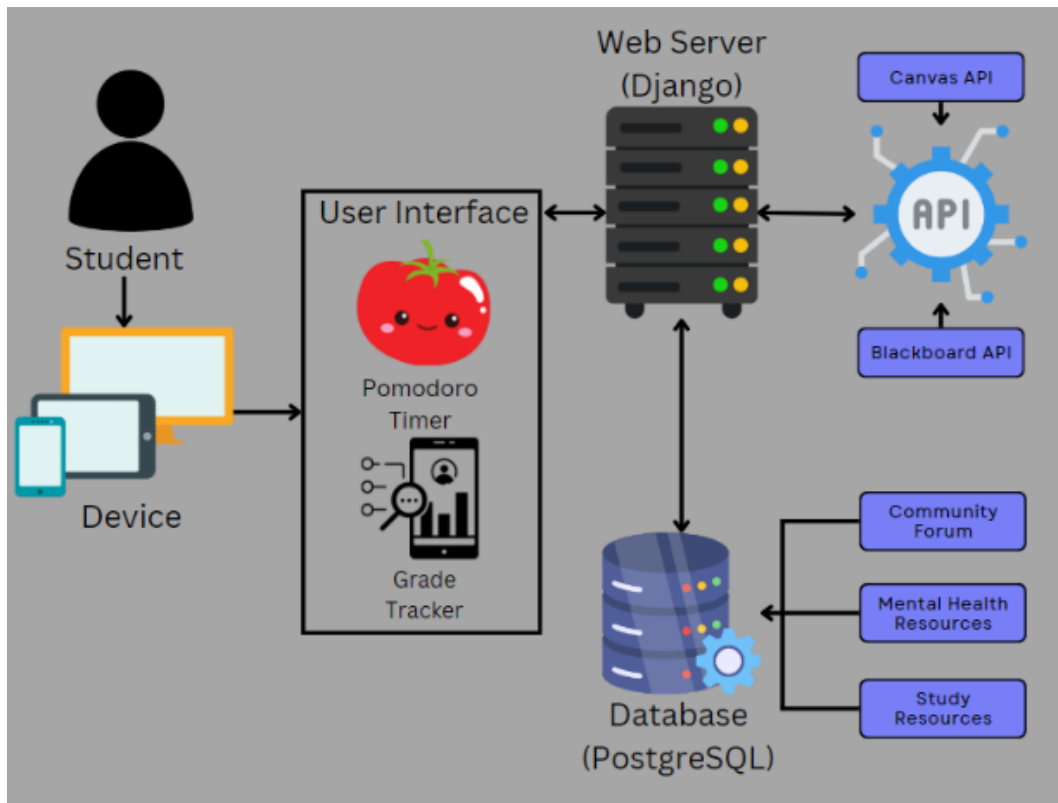
- Operating System: Docker

Figure 1: KnowTme MFCD

3 Identification of Case Study

3.1   Who This Is For

This product is for students who struggle with time management.

3.2   Purpose

This tool helps students develop study habits and time management skills while providing a community to support them.

3.3   Who Else Benefits

Students or other individuals who just want to be more organized.

4 Glossary

Grade Tracker: Grade tracking will be based on user-inputted grades. It will look at their grades, and the time spent studying, which may be entered by the student or automatically generated if the task was completed during a study session within the website.
It will then generate a graph correlating time spent studying with the grade they received. They will also be able to filter this graph by tags. This will allow students to view a particular class to determine how they can improve. The student will set a goal for the grade and view how they are progressing over time.

Pomodoro Timer: The Pomodoro timer technique was created by Francesco Cirillo in the 1980s while he was a university student. To follow this technique, the student sets a timer for 25 minutes to complete a task. Once the timer goes off, the student takes a 5-minute break and then continues to work again for another 25 mins. After four sessions, the student takes a 15–30-minute break (Scroggs 2022).

Study Plan: A study plan will be generated based on various factors that will be entered by the student. Examples of information entered that will be considered are assignment due dates, exam dates, and times that the student has specified they are busy. Study plans also consider time spent on similarly tagged tasks and the need for breaks between tasks.

Task: A Task is any assignment that the student needs to complete, whether that be a homework assignment, an exam, or just making time to study or gather materials. Tasks can have multiple tags and are created by the student in the web application.

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