

CS 411W Lab 2 Requirements & Specifications

Team Gold – KnowTime

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## **1 Introduction**

### **1.1 The Societal Problem**

- Students struggle with time management and with managing their workload.
- Students struggling without a community of support can experience feelings of burnout, lack of motivation, and being overwhelmed.
- Share statistics of people and students struggling with time management in their lives and while in college
- Effects of lack of time management includes loss of sleep, procrastination, decreasing academic performance, and the possibility of dropping out.

### **1.2 The Solution**

- KnowTime will help students develop study habits and time management skills while also helping students stay focused, engaged, and focused. Features that will help accomplish this include:
  - Pomodoro timer with Customizable Study Sessions
  - Study Plan
  - Grade Tracker
  - Progress and Task Tracker
  - Points System
  - Community Forum
  - Calendar with reminders

### **1.3 Definitions, Acronyms, and Abbreviations**

- Pomodoro Timer: A study technique involving timed work and break sessions.
- Grade Tracker: A feature for monitoring academic performance over time.
- Study Plan: A personalized schedule generated based on user inputs.

## **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**

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**

- Progress Tracking overtime
- Keep students tasks updated

#### **Points System**

- Earn points for completed sessions
- Unlock fun avatars with points

#### **Grade Tracker**

- Students should input and monitor grades overtime
- The grades will be displayed with KNOWNTIME graphing system

#### **Import School Calendars**

- Import calendar from Canvas
- Import calendar from Blackboard

#### **Calendar with Reminders**

- Receive reminders for study sessions
- Receive reminders for assignments

#### **Community Forum**

- Chat with other people who have similar struggles
- Seek for advice from other

### **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

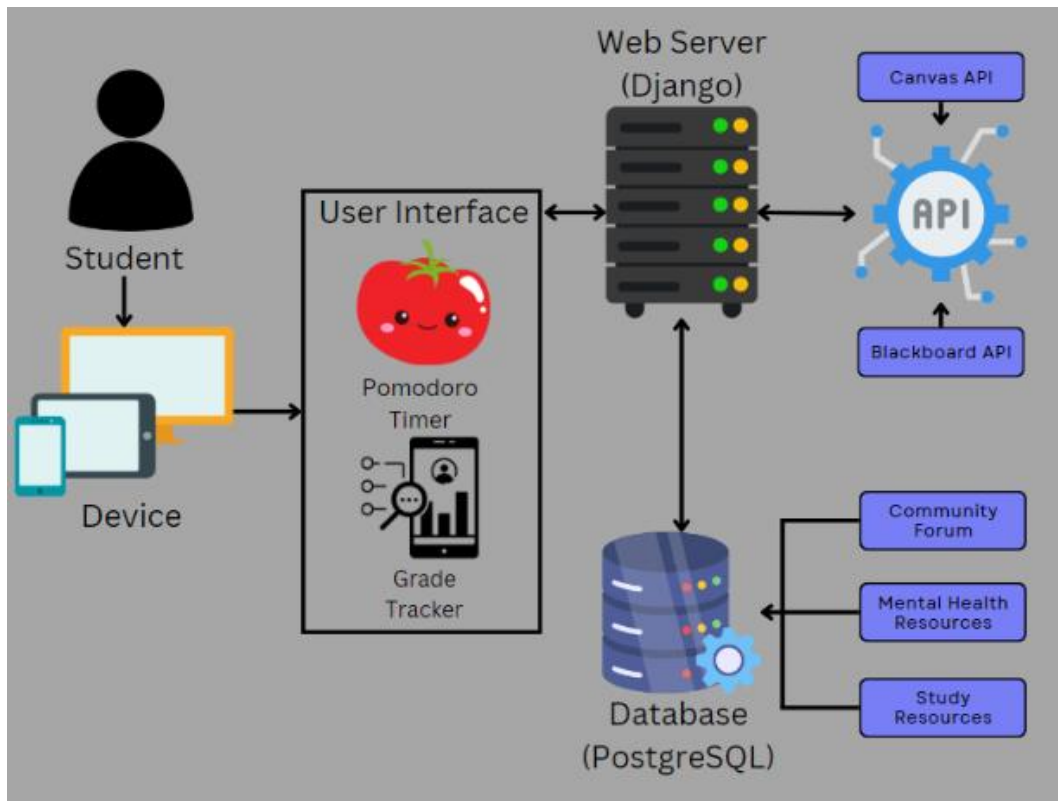


Figure 1: KnowTime MFCD

### 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**

### **4.1 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.

### **4.2 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).

### **4.3 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.

#### **4.4 Tasks**

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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