CS 411 Lab 1 Collaborative Outline

Team Gold – KnowTime

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# 1 Introduction

## 1.1    The Societal Problem

The statistics speak volumes: a significant proportion of students grapple with the intricacies of time management, with many experiencing its detrimental effects firsthand. From sleep deprivation to plummeting grades, the consequences of poor time management are far-reaching and profound. Left unchecked, these challenges can spiral into a cycle of stress, procrastination, and ultimately, academic underachievement.

## 1.2    The Solution

Enter KnowTime—a comprehensive solution designed to equip students with the tools they need to conquer their time management woes. At its core, KnowTime isn't just about ticking off tasks; it's about fostering a culture of productivity, accountability, and support. With a myriad of innovative features, KnowTime empowers students to take control of their schedules, stay focused, and ultimately, thrive in their academic pursuits.

# 2 KnowTime Product Description

A virtual companion dedicated to guiding students through the maze of academic life. That's KnowTime—a versatile web application packed with features to streamline organization, enhance focus, and foster a sense of community. With its sleek interface and seamless integration, KnowTime is poised to revolutionize the way students approach their studies.

## 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 timer that can be adjusted to meet the demands of the kids. Students use the Pomodoro timer technique to set out certain times for study and breaks. A lengthier break is taken by the student after four study sessions.

**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

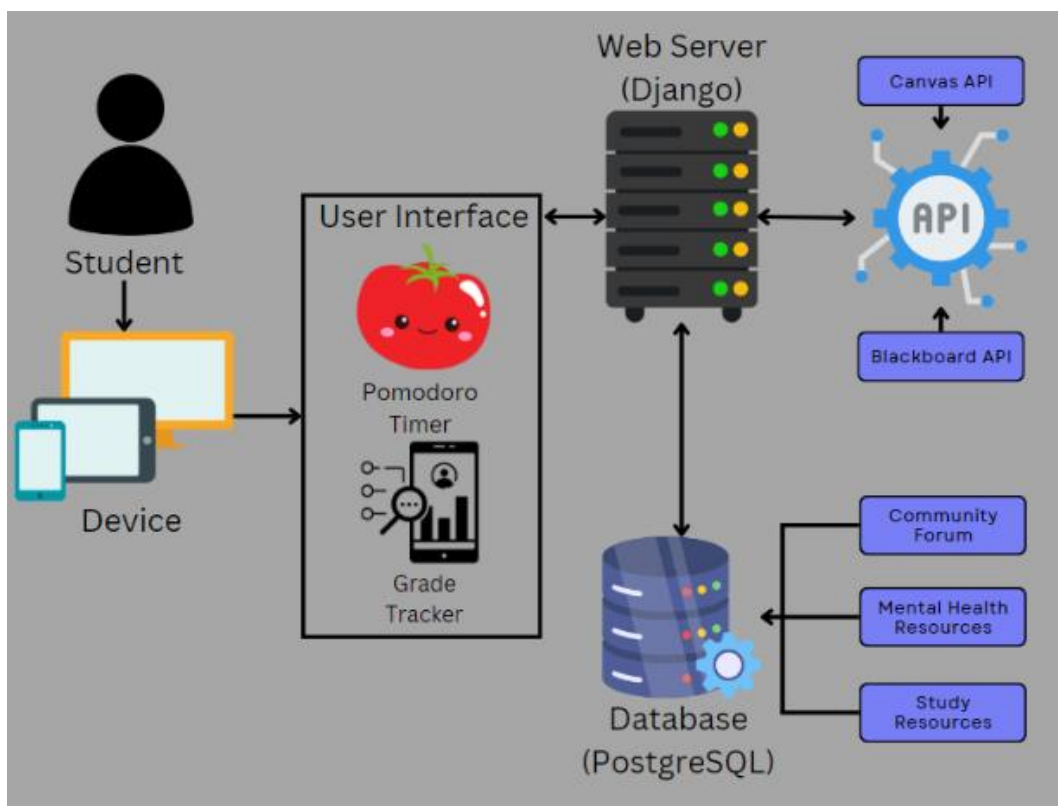- Web Server: Django

- 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:** Grades entered by the user will be used to track grades. It will review their grades and study time, which can be input by the student or created automatically if the assignment was finished on the internet during a study session. After that, a graph comparing the amount of time spent studying and the grade they obtained will be produced. This graph can also be filtered by tags for added convenience. Students will be able to see a specific class in order to assess their own performance. The learner will establish an objective for the grade and track their development over time.

**Pomodoro Timer:** Francesco Cirillo invented the Pomodoro timer technique in the 1980s while attending college. The student uses this strategy by setting a timer for twenty-five minutes to do a task. The student works for another twenty-five minutes after the timer goes off, followed by a five-minute break. The learner takes a fifteen to thirty-minute break following four sessions (Scroggs 2022).

**Study Plan:** Based on variables the student enters, a study plan will be developed. Dates of assignments and exams, as well as times when the student indicates they are busy, are a few examples of data entered that will be taken into account. Study schedules also account for the

amount of time spent on assignments with comparable tags and the necessity of breaks in between.

**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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