

CS 411W Lab 1 Individual Outline

Team Gold – KnowTime

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1 Introduction

Many students struggle with things like burnout and managing their mental health when it comes to studying. A lot of students tend to feel overwhelmed by their courseload and are not aware of the resources or best study methods to prevent things like that from occurring. 82% of people struggle with time management and only 20% believe they are successfully managing their workload (Ariella 2022). By educating people on what is working for others, or showing them the available resources, they can better manage this issue.

KnowTime aims to fix these problems by having a personalized study plan for each user, an easy to manage task system, links to mental health resources, and a community forum for other students to provide tips and tricks for studying. By using these features of the application, the student may be able to improve grades, improve their mental health, and reduce stress and burnout. By having a community forum, this will ensure students know they are not alone in their struggles with studying and either receive tips or be directed to outside mental health resources or university resources. With the personalized study plan, it will aim to understand the students' needs by looking at their schedule outside school, their due dates for school, and provide a unique plan for the student while also taking into account times for breaks so they do not get burnt out. The task management system will allow the user to view everything in one, organized, filterable place and it will be able to estimate how much time the student will need for each task, which can help with the intimidating nature of starting a task. All these features will take into account any feedback given by the user and help to improve their experience.

With an organized, supportive, system for the student, students may see some improvement in the areas they were struggling with that made them want to use the app. This can be different for each student, it may be organization, bad grades, or mental health. KnowTime aims to keep all of these students in mind and their unique struggles and help to ease them with KnowTime's features. KnowTime's goal is to reduce student burnout, stress, and feelings of being overwhelmed so that students can have a more positive and effective study experience.

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

2 KnowTime Product Description

The solution will be a web app with many features to reduce student burnout and increase organization. KnowTime 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

KnowTime 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. The Pomodoro timer technique has a 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 to ensure they do not get burnt out.

Progress and Task Tracking

Students will be able to track their progress in studying by looking at a graph that correlates their time spent studying and improvements in their grades. This may lead to an increase in motivation after seeing their improvements in grades. If no improvements are made, then the application will be able to direct them to resources that may assist them.

Points System

Students will be able to earn points by completing study sessions. These points will allow them to unlock fun avatars.

Grade Tracker

Students will be able to input and monitor grades over time with a graphing system that shows their grades over time. This will also be inputted into the progress graphing system so students may track their progress over time.

Import School Calendars

Students will be able to import calendars from school learning apps such as Canvas and Blackboard. This ease of access will assist students in not missing any assignments and help them keep track of what tasks are coming up next.

Calendar with Reminders

Students will have the ability to opt-in to reminders for tasks that are on their calendars. These reminders can be sent over text or via email.

Community Forum

Students will be able to use the community forum feature to talk with other students who may be having the same issues or may be able to assist them. The community forum will consist of different threads and individual messages within that thread.

Study Plan Generation

Students will have a personalized study plan automatically generated for them by KnowTime. It will take into account the number of tasks they have, the times they have listed as busy on the calendar, the due dates of each task, and allot time for breaks so that the student does not get overwhelmed or burnt out.

Provide Study and Mental Health Resources

- KnowTime will direct students to academic, mental, and academic support.
- The 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.
- The 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)

KnowTime will use a variety of hardware of software to be able to have all of its' features as well as be accessible to as many students as possible.

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

Integration:

Figure 1 shows how students will interact with our application and what that would look like behind the scenes.

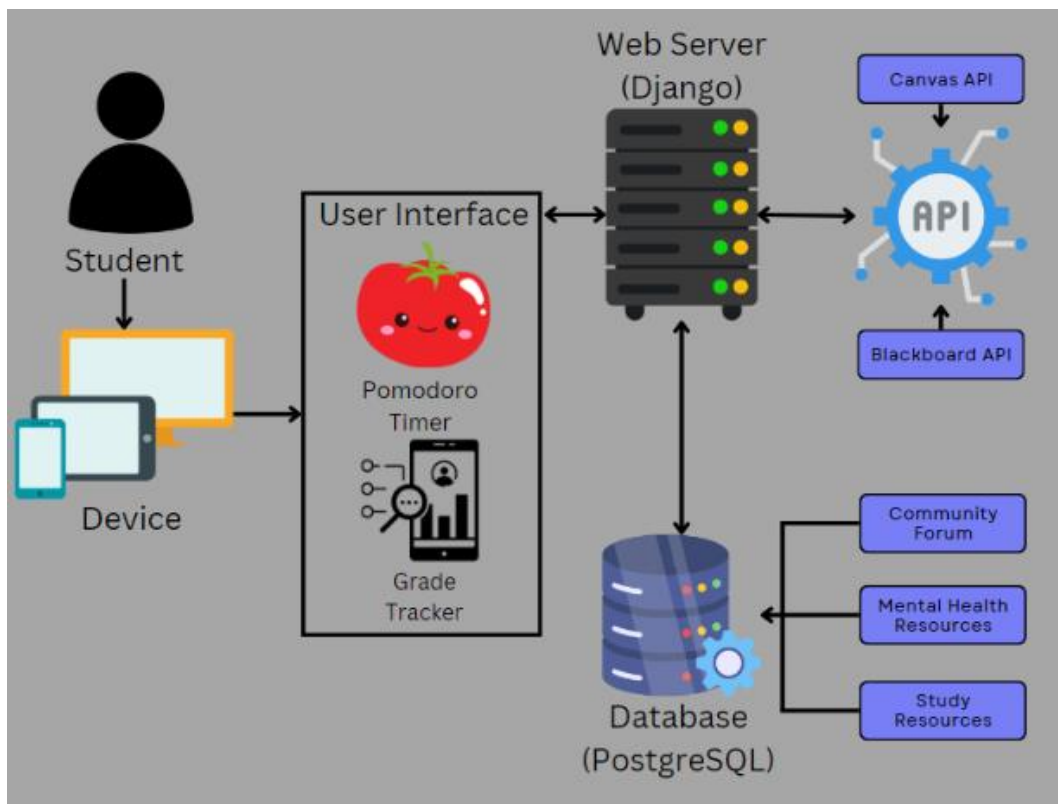


Figure 1: KnowTime MFCD

3 Identification of Case Study

KnowTime is a web application designed to help students who are struggling with time management and provide a supportive environment.

3.1 Who This Is For

This product is for students who struggle with time management and could benefit from a supportive community. 82% of people struggle with time management and Knowtime's goal is aid students with tools and direct them to resources that may help reduce that number.

3.2 Purpose

This tool helps students develop study habits and time management skills while providing a community to support them. By using the Pomodoro timer, calendar, and task tracking, the student will be able to develop good study habits and learn to manage their time effectively. By using task tracking, the student will be able to start getting better estimates on how long tasks will take. Using that and the calendar, they will learn to effectively plan out their time. By using the Pomodoro timer, the student will be using a well-researched technique that can help reduce burnout.

3.3 Who Else Benefits

While KnowTime is primarily made for students, any individuals who are struggling with time management can use the app. The user will still be able to use the calendar, task tracking, and Pomodoro timer, even if it is not for studying. Although they would not use features like grade tracking, this can still be effective for managing time.

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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