

Lab 1 – KnowTime Description

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1 Introduction

Time management is something students worldwide regularly struggle with when handling their academic workload. Students often feel overwhelmed as they try to balance out their classes with work or other extracurricular activities they may be engaged in. This can lead to burning out, decreased motivation, and sometimes depression. This is reflected in the statistics where 82% of people struggle with time management and only 20% believe they have a good handle on their workload (Ariella 2022). This can cause other issues such as sleep deprivation due to procrastination, which is correlated with poor academic performance.

The web application, KnowTime, is designed to address these issues by offering students practical tools that can help them form better time management and study habits. The features of KnowTime aim to promote productivity and reduce feelings of being overwhelmed by your workload. One of the primary features of KnowTime is a Pomodoro timer with customizable study sessions which will help students with breaking up their study time into manageable intervals. KnowTime also includes a study plan to keep students on track to reach their goals, a grade tracker to monitor their academic performance, and a task tracker to know which tasks they have completed and to keep track of long-term projects. The web app also includes some gamification with the inclusion of a points system that rewards students for completing tasks and maintaining good habits. A community forum is also included to offer students a space to support each other and connect. The last feature of note is a calendar with reminders which will help students stay on schedule with their tasks.

By making use of KnowTime's features, students can develop better time management skills, improve their academic performance, and have more control over their workload.

2 KnowTime Product Description

KnowTime is a web application designed to alleviate student burnout and boost organizational skills. The platform will feature community forums, calendars, task management, grade tracking, a points-based system, and personalized study plans. These tools provide each student with a customized, supportive experience.

2.1 Key Product Features and Capabilities

The application is accessible across various platforms and features a responsive design, encouraging regular use.

Pomodoro Timer & Customizable Study Sessions

- The Pomodoro timer helps students focus by breaking study sessions into timed intervals, followed by breaks, improving concentration.
- Users can customize the timer settings to match their preferred study and break durations, making it adaptable to the individual needs of the student.

Progress and Task Tracking

- KnowTime tracks student progress over time, offering insights into their productivity and academic growth.
- The task tracking feature helps users organize and prioritize assignments, ensuring that all tasks are completed on time.

Points System

- Students earn points by completing study sessions, which encourages good study habits and engagement.
- Points can be used to unlock avatars or other rewards, adding a layer of gamification to help with the student's motivation.

Grade Tracker

- The grade tracker allows students to input and monitor their grades for various subjects and assignments.
- Visual graphing tools provide a clear representation of grade trends, helping users identify strengths and areas for improvement.

Import School Calendars

- Students can import academic schedules from platforms like Canvas and Blackboard directly into KnowTime.
- This feature simplifies organization by centralizing all important dates and deadlines in one place.

Calendar with Reminders

- The integrated calendar helps students organize their tasks, deadlines, and study sessions efficiently.
- Reminders are automatically set to notify students of upcoming deadlines, keeping them on track with their responsibilities.

Community Forum

- The community forum allows students to connect with their peers, share tips, and support each other through academic challenges.
- This feature fosters a sense of community and offers an outlet for collaboration and encouragement.

Study Plan Generation

- KnowTime generates personalized study plans based on a student's assignments, exams, and deadlines, optimizing their time management.
- These plans ensure a balance between study time and relaxation, helping students avoid burnout while staying productive.

Provide Study and Mental Health Resources

- Access helpful academic and mental health resources for support.
- KnowTime stands out by combining a community forum with a customized study plan generator. The points system fosters motivation and focus.
- KnowTime helps students develop better study habits and organize their tasks more efficiently. The Study Plan Generator creates personalized schedules that balance study and relaxation time, while the community forum and resources provide much-needed support to reduce burnout.

2.2 Major Components (Hardware/Software)

Figure 1 showcases the major functional components of this web application, as well as the hardware and software utilized.

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

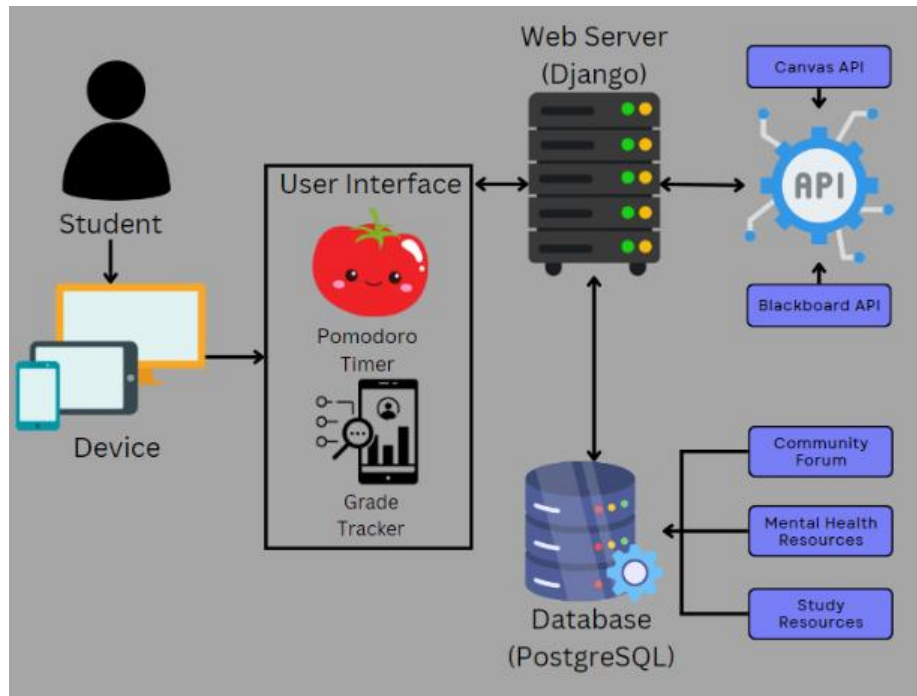


Figure 1: KnowTime MFCD

3 Identification of Case Study

Knowtime is targeted towards students, particularly those in higher education. Students at this level of education often juggle multiple responsibilities such as part-time jobs and their coursework. This web application will help students who are struggling to balance these tasks by enhancing their productivity and helping them reach academic success without overwhelming themselves.

The purpose of Knowtime is to help students develop efficient study habits and manage their academic workload. The web application assists students with setting goals, staying on track with assignments, and avoiding procrastination with tools like the pomodoro timer and personalized study plans. Mental health resources are also included for students in need of support.

Knowtime would be primarily beneficial for students in higher education, however, certain features such as the pomodoro timer could be beneficial for anyone who is studying a topic and would like some help staying focused on their task. The web application would also be

helpful for educators that could recommend the application to their students leading to more timely assignment submissions and improved academic performance.

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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