

**Lab 2: Requirements & Specifications Sections 1 & 2**

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# 1 Introduction

## 1.1 Purpose

This software requirements specification (SRS) outlines the comprehensive requirements for the web application KnowTime.

## 1.2 Scope

Time management is a common struggle for students worldwide, often leading to burnout, decreased motivation, and even depression. Statistics show that 82% of people face time management issues, with only 20% feeling in control of their workload (Ariella 2022). This can lead to problems like sleep deprivation and poor academic performance due to procrastination.

The KnowTime web application is designed to help students improve their time management and study habits. It includes features like a customizable Pomodoro timer, a study plan, a grade and task tracker, a points-based system to encourage productivity, a community forum, and a calendar with reminders. These tools aim to enhance productivity, reduce academic anxiety, and give students better control over their workload, leading to improved academic performance.

## 1.3 Definitions, Acronyms, and Abbreviations

**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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## **1.5 Overview**

Section 2 of this document describes the KnowTime web application in general terms and discusses topics such as the product's functions and user characteristics.

# **2 Overall Description**

## **2.1 Product Perspective**

KnowTime is a web application designed to help students manage their time and reduce burnout by offering tools like customizable study sessions, task tracking, grade monitoring, and a points system. The platform is accessible across various devices, with features like a Pomodoro timer, a study plan generator, a community forum for peer support, and calendar integration for scheduling. This combination of personalized tools and resources helps students improve their study habits and mental well-being.

Key components include the backend built with Python and Django, a frontend using HTML5/CSS, JavaScript, and Bootstrap 5, and a PostgreSQL database. The project is developed using Visual Studio Code, with GitHub for version control and testing frameworks like PyTest and Jest. Docker is used for deploying the application.

## 2.2 Product Functions

### User Account

- **Authentication:** Secure user login with email and password.
- **Access Control:** Role-based access ensures users have appropriate permissions (e.g., student or admin).

### Integrations

- **Canvas API:** Allows students to import academic schedules, assignments, and deadlines from Canvas into KnowTime.

### Productivity Features

- **Calendar:** A central hub for managing deadlines, study sessions, and personal events with automatic reminders.
- **Pomodoro Timer:** Helps students focus by breaking study sessions into timed intervals with breaks. Customizable to suit individual needs.
- **Grade Tracker:** Students can input and track their grades for various subjects, offering visual progress tracking via graphs.

### Community Features

- **Content Search:** Allows students to search through discussion threads and community posts to find relevant information.
- **Content Removal:** Admins can remove posts that violate guidelines or are flagged.
- **Notifications:** Real-time notifications for new threads, direct messages (DMs), replies, and friend requests.



- **Add/Delete Friends:** Students can connect with peers by sending friend requests and managing their friends list.
- **Report Users:** Option to report users for inappropriate behavior.
- **Flag Inappropriate Content:** Students can flag posts or comments that violate community standards.
- **Hide Flagged Content:** Automatically hides flagged content until reviewed by an admin.
- **Block User:** Students can block others to prevent further interactions and direct messages.

## Messaging and Forums

- **Direct Messaging (DM):** Private messaging between students for quick communication.
- **New Thread Activity Notification:** Students receive notifications when new replies or activity happens on subscribed threads.
- **New DM Notification:** Alerts students when they receive a new private message.
- **Subscribe to Thread:** Allows students to subscribe to threads to receive updates on new posts and replies.
- **Create Discussion Thread:** Students can start new discussion threads within the forums.
- **Reply to Thread:** Students can engage in conversations by replying to threads.
- **View Discussion Thread:** Browse and read existing discussion threads.
- **Upvote/Downvote Thread:** Provides a system for users to show approval or disapproval of discussion threads.

## Study and Well-being Features

- **Study Plan:** Automatically generates a personalized study plan based on deadlines, assignments, and personal schedules to optimize time management.
- **Mental Health Resources:** Provides access to a collection of resources focused on mental health support and well-being.
- **Study Resources:** Offers study aids, tips, and resources to enhance academic performance.

## 2.3 User Characteristics

### Student

- **Description:** The primary end-user of the application. Students are responsible for using KnowTime's features to manage their time, study plans, and academic progress.
- **Permissions:**
  - Access the Pomodoro timer, grade tracker, study plan, and calendar.
  - Participate in the community forum (create threads, reply to posts, upvote/downvote threads).
  - Send and receive direct messages.
  - Add, delete, or block friends.
  - Report and flag inappropriate content.
  - Receive notifications for new threads, direct messages, and activity on subscribed threads.
- **Restrictions:** Cannot remove content or access administrative functions.

### Administrator

- **Description:** Administrators have the highest level of access and control over the system. They manage user roles, content, and all major platform settings, including integrations and app maintenance.
- **Permissions:**

- Remove or edit inappropriate or flagged content in the forums.
  - Review and act on user reports (e.g., suspend users or block inappropriate posts).
  - Manage flagged content and decide whether to reinstate or permanently hide it.
  - Handle user disputes and warnings for community guideline violations.
  - Manage user accounts (create, suspend, delete users, and assign roles).
  - Configure system settings, including API integrations (Canvas).
  - Monitor platform-wide activity, including usage stats and content trends.
  - Oversee feature access and application performance.
  - Access backend settings for the database, web server, and version control.
  - Approve or remove content flagged for higher-level violations or legal concerns.
- **Restrictions:** None, full access to all system aspects.

## 2.4 Constraints

N/A

## 2.5 Assumptions and Dependencies

N/A