

Lab 2: Requirements & Specifications

Team Gold – KnowTime

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1 Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) is to outline and describe the requirements for the development of the KnowTime system. This document serves as a guideline for all stakeholders, including developers, testers, and users, to understand the expectations, functionalities, and goals of the KnowTime product.

1.2 Scope

KnowTime is a comprehensive time management and study support solution tailored for students who struggle with organization, time management, and productivity. The main objective of KnowTime is to help students navigate the challenges of academic life by providing customized tools, such as a Pomodoro timer, grade tracker, progress tracking, and community support. This document provides an overview of the main features and goals of the project, as well as detailed information on how these features will be implemented to improve academic success, as discussed in Lab 1.

1.3 Definitions, Acronyms, and Abbreviations

- **KnowTime:** The name of the product that provides a comprehensive academic support platform.
- **Pomodoro Timer:** A time management tool using intervals of focused work followed by breaks to enhance productivity.
- **Grade Tracker:** A feature that allows users to input their grades and track their progress visually.
- **RWP:** Real World Product.
- **Canvas/Blackboard:** Academic learning management systems integrated into KnowTime.

1.4 References

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1.5 Overview

The rest of this SRS document is structured as follows:

- **Section 2:** Describes the overall product, including its perspective, key features, user characteristics, constraints, and assumptions.
- **Section 3:** Contains the detailed functional requirements of the KnowTime system.
- **Section 4:** Lists non-functional requirements, including usability, reliability, and performance.
- **Section 5:** Appendices and supporting documentation.

2 Overall Description

2.1 Product Perspective

KnowTime is being developed as an integrated academic support tool tailored for university students struggling with effective time management and productivity. KnowTime aims to provide tools such as the Pomodoro timer, grade tracking, community forums, and calendar imports to address common student challenges, like keeping track of deadlines, managing tasks, and dealing with stress. KnowTime is designed to integrate seamlessly with platforms like Canvas, helping students improve academic performance and mental well-being.

2.2 Product Functions

The main functions of the KnowTime software include:

- **Pomodoro Timer & Customizable Study Sessions:** A timer based on the Pomodoro technique that allows users to set study sessions and break intervals to maintain productivity.
- **Grade Tracker:** Enables students to input grades, visualize academic progress, and identify areas of improvement through graphs.
- **Progress and Task Tracking:** Allows users to monitor their tasks and manage workload.
- **Points System:** Users earn points for completed study sessions, which can be redeemed for fun rewards.
- **Calendar Integration:** Students can import academic schedules and deadlines from platforms like Canvas and Blackboard.
- **Community Forum:** A platform where students can connect, share tips, and get academic advice.

- **Study Plan Generation:** Automated study plans based on student schedules, customized to improve study consistency.
- **Mental Health Resources:** Provides direct access to academic and mental health support resources.

2.3 User Characteristics

- **Students:** Primary users who use the system to manage study schedules, track academic progress, and connect with peers.
- **Administrators:** System administrators responsible for managing the platform, adding features, and ensuring the reliability of the KnowTime system.

2.4 Constraints

N/A.

2.5 Assumptions and Dependencies

N/A.

3 Specific Requirements

3.1 External Interface Requirements

3.1.1 Software Interfaces

N/A

3.1.2 Hardware Interfaces

N/A

3.2 System Features

3.2.1 Account Management

A-1

O: Chen, M1: Ramirez, M2: Chen

The system shall automatically link and synchronize task information, such as associated courses, grades, tags, and recorded time across the calendar, task board, and timer modules on the backend.

A-2

O: Chen, M1: Ramirez, M2: Chen, M3: Ramirez

Upon signup, the system shall:

- Capture essential student information, including username, email, phone number, and password.
- The system shall ensure data integrity through regular validation and secure storage practices, minimizing risks associated with data breaches.
- Support robust account management by organizing user data to streamline future updates, profile management and access control.

A-3

O: Munoz, M1: Ramirez

The system shall allow students to sign in with their email and password.

A-4

O: Keating, M1: Ramirez

The system shall allow students to delete all their data immediately upon request with a confirmation to ensure accidental data deletion does not occur.

3.2.2 Social Networking**SN-1**

O: Shanks

The system shall allow students to add friends to their friends list.

SN-2

O: Ramierz

The system shall allow students to block other students.

SN-3

O: Ramirez, M1: Munoz

The system shall allow students to send direct messages to students on their friends list.

SN-4**O: Ramirez**

The system shall send notifications to students who receive a direct message.

3.2.3 Pomodoro Timer**PT-1****O: Ramirez**

The system shall allow students to customize the length of pomodoro timer intervals, in minutes and seconds. The following functional requirements shall be met:

- Short break intervals for the customized timer shall be restricted between 5 and 15 minutes.
- Study session intervals for the customized timer shall be restricted between 20 and 90 minutes.
- Long break intervals for the customized timer shall be restricted between 20 and 60 minutes.
- Short, long, and study time intervals shall be customized independently from one another.

PT-2**O: Ramirez, M1: Keating**

The customized timer shall follow the classic Pomodoro format, consisting of 4 study session intervals, each followed by a short break interval, with 1 long break interval after 4 sessions.

PT-3**O: Ramirez**

The system shall allow students to manually enter the duration of their study sessions in cases where the pomodoro timer was not used.

PT-4**O: Keating, M1: Ramirez**

The system shall provide a list of tasks to select from before a timer is started to associate the study session with the selected task.

PT-5

O: Keating, M1: Ramirez

The system shall record the length of study sessions of the selected associated task.

3.2.4 Task Tracking and Progress**T-1****O: Mercado, M1: Ramirez, M2: Keating**

The system shall track student progress based on completed study sessions, completed tasks, and grades.

T-2**O: Ramirez**

The system shall create a visualization using student assignment and corresponding timed study session information.

T-3**O: Ramirez, M1: Pinder**

The system shall allow students to create, delete, and modify tags on the task board.

T-4**O: Ramirez, M1: Pinder**

The system shall allow students to move selected tasks to their preferred status. (New, In Progress, Completed, On-Hold)

T-5**O: Pinder**

The system shall allow students to generate tasks in the task board based on their assignments from their classes.

3.2.5 Grade Tracker**G-1****O: Chen, M1: Ramirez, M2: Keating**

The system shall visually display student grades and study information as a graph over a chosen period, such as weeks, months, or semesters.

G-2

O: Ramirez

The system shall allow students to manually enter grades.

G-3

O: Catlett, M1: Ramirez

The system shall allow students to mark assignments as “ignored” from grading.

G-4

O: Catlett, M1: Ramirez

The system shall allow students to include or exclude specific classes from showing on the grade tracker visualization.

3.2.6 Points System

P-1

O: Mercado, M1: Ramirez

The system shall reward students with 1 point for every 5 minutes of a study session.

P-2

O: Ramirez, M1: Catlett, M2: Ramirez

The system shall allow students to unlock avatars as they collect points.

P-3

O: Catlett

At least one Jayden Daniel’s related avatar shall be available to unlock.

P-4

O: Catlett, M1: Ramirez

Points shall be automatically added to a student’s profile as the student achieves various accomplishments such as completing study sessions, entering grades, or creating tags.

3.2.7 Calendar

C-1

O: Mercado, M1: Ramirez

The system shall provide an integrated calendar with optional reminders to notify students of upcoming deadlines.

C-2

O: Catlett, M1: Ramirez

The system shall display the calendar in the month format.

C-3

O: Catlett, M1: Ramirez

The system shall provide an option to add a task to the calendar.

C-4

O: Ramirez

The system shall allow students to delete tasks from the calendar.

C-5

O: Ramirez, M1: Pinder

The system shall allow students to navigate to their Canvas class assignment page when selecting a task on the calendar.

3.2.8 Study Plan**SP-1**

O: Shanks, M1: Ramirez

The system shall allow students to modify the generated study plan.

SP-2

O: Shanks, M1: Ramirez

The system shall generate a study plan that considers factors that are entered by the student. These factors shall include:

- assignment due dates,
- exam dates,
- and student availability.

SP-3

O: Shanks, M1: Ramirez

The system shall analyze time spent on similarly tagged tasks to generate study plans.

SP-4**O: Ramirez**

The system shall enforce break times in the study plan after study sessions.

3.2.9 Community Forum**F-1****O: Munoz**

The system shall allow students to create a thread on the community forum.

F-2**O: Munoz**

The system shall allow students to reply to discussion threads on the community forum.

F-3**O: Mercado, M1: Ramirez**

The system shall allow students to upvote or downvote posts in the community forums.

F-4**O: Mercado, M1: Ramirez**

The system shall affect the visibility of posts. The following functional requirements shall be met:

- The system shall flag posts with 10 downvotes for review by moderators to determine whether content is harmful, misleading, or violates KnowTime's community guidelines to decide whether it is necessary to hide content.
- The system shall allow students to sort threads, by newest, oldest, and most upvoted threads.

F-5**O: Keating**

The student shall be able to delete forum posts without deleting any other data.

3.2.10 Academic and Mental Health Resources**R-1****O: Shanks, M1: Ramirez**

The system shall provide students information on mental health and academic resources.

R-2

O: Shanks, M1: Ramirez

The system shall provide academic resources that will consist of links to external sites.

R-3

O: Shanks, M1: Ramirez

The system shall provide mental health resources that shall consist of phone numbers to mental health hotlines.

R-4

O: Catlett

The resources page shall link to at least one ODU resource and one non-ODU resource pertaining to academic and mental health resources.