

Lab 2: Requirements & Specifications Section 3

Team Gold – KnowTime

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CS 411W

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1 Introduction

1.1 Purpose

1.2 Scope

1.3 Definitions, Acronyms, and Abbreviations

1.4 References

1.5 Overview

2 Overall Description

2.1 Product Perspective

2.2 Product Functions

2.3 User Characteristics

2.4 Constraints

2.5 Assumptions and Dependencies

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:

1. Short break intervals for the customized timer shall be restricted between 5 and 15 minutes.
2. Study session intervals for the customized timer shall be restricted between 20 and 90 minutes.
3. Long break intervals for the customized timer shall be restricted between 20 and 60 minutes.
4. 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, M3: Ramirez, M4: Munoz

The system shall visually display student grades and study time as bar graphs. The following functional requirements shall be met:

1. Students shall be able to select the course or desired assignment from drop-down menus on the graph interface.
2. Students shall enter the study time for the selected assignment or course on the graph interface.
3. Grade percentage and study time shall be represented on the Y-axis of the graph with grade percentage on the left Y-axis and study time on the right Y-axis.
4. Selected assignment name shall be displayed on the X-axis.
5. Grade percentage and study time for the selected assignment shall be displayed in their own independent bars.
6. Students shall be able to see two assignments side by side.

G-2

O: Ramirez, M1: Ramirez

The system shall allow students to manually enter an overall goal for their grades, which shall be represented by a dotted horizontal line on the graph.

G-3

O: Catlett, M1: Ramirez

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

G-4

O: Ramirez

Student grades shall be automatically pulled with the Canvas API.

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:

1. 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.
2. 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.