ILLINOIS INSTITUTE OF TECHNOLOGY

CS487 - SOFTWARE ENGINEERING I

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A TEAM ANALYSIS REPORT ON

TIME MANAGEMENT AND PRODUCTIVITY MAXIMIZER APPLICATION

"HawkVision Scheduler"

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SECTION 1: SUMMARY

SECTION 1.1: THE PROBLEM

In today's fast-paced world, students juggle more responsibilities than ever. Balancing academics, personal life, and social commitments has become increasingly difficult. The constant demands and distractions make it hard to stay focused and productive, leading to a growing struggle in managing time effectively.
The challenges that students face are numerous, these include:

- Overload of tasks: Sometimes students have a load of assignments, projects, and examinations, and they always fail in prioritizing them properly.
- Poor Time Management: Most of the students do not know how to manage every moment effectively and either fall into the whirlpool of procrastination or burnout.
- Spotty Productivity: It is very challenging to maintain consistent productivity in the face of digital media distractions and social engagements.
- Lack of Motivation: Generally, without any reward or motivation system, students seldom appear to be motivated enough to finish the work on time or to work on enhancing their time-management capabilities.

These challenges subsequently result in missed deadlines, poor academic performances, and increased stress levels. Students need a remedy that would help them balance these responsibilities, keep them motivated, yet allow the student to improve continuously.

SECTION 1.2: THE SOLUTION

The "***HawkVision Scheduler***" application takes the following various aims of students into consideration while being designed:

OBJECTIVES

1. Time Management: Assist students in prioritizing and managing deadlines.
2. Boost Your Productivity: Be more focused, be productive consistently with smart tracking and personalized insights.
3. Reward to Motivate: Follow up with concrete rewards and feedback to reinforce good time-management behavior.
4. Continuous Learning: Adapt to the user's behavior and preference, for better recommendation with time.

KEY FEATURES

1. User Login & Permission: Secure login for the students to have a personalized dashboard where they can set and keep track of goals.

2. Task Prioritization & Deadline Management: The bot will check tasks and deadlines to make some suggestions about when and how to be done.

3. Focus Sessions Tracking: Some integrations with focus timers, like that of Pomodoro, will track your productivity and give you tips based on patterns of your use.

4. Calendar & To-Do List Integration: Seamlessly integrate with several popular calendars and to-do lists, such as Google Calendar, for all your schedules in one easy-to-access place.

5. Personalized Productivity Tips: This will also enable the bot to give tips and reminders to users, personalized about their working habits, to help them strive for productivity.

6. Rewards System: A system in which, through completing the task on time or maintaining focus, such as streaks, points, or badges, there is a reward involved.

7. Self-Assessment & Feedback: A user can rate his productivity, and his feedback will help tune the bot's future recommendations on the same.

SECTION 2: USER CATEGORY

SECTION 2.1: STUDENTS

Student users are the primary target audience for the application. These are generally high school and college students who often bear a regularly heavy load of academic activities in terms of assignments, projects, and examinations. It should thus help them in task prioritization, deadline management, and enforcement of consistent productivity. Similarly, students can also be assisted with personalized insights and tips in line with their working habits, which will help them in focus and with time management. Besides, the rewards system motivates and keeps students active to do the work in due time.

SECTION 2.2: TEACHERS/ADVISORS

Teachers and academic advisors interact with the application to monitor and support their students' productivity and academic progress. They cannot use all features directly, but they can overview some performance reports and insights on how well each student is doing in managing his/her tasks. This application allows teachers to provide feedback or suggestions for improvement based on these reports. It will also be easy for the academic advisors to help the students in setting realistic goals, and such guidance will be provided to keep the student's academic priorities and progress in mind. This helps form a supportive ecosystem that furthers learning outcomes.

SECTION 2.3: PARENTS/GUARDIANS

Parents also interact with the application to keep themselves updated regarding the academic productivity and time management of their child. Though they may not interact directly with the tasks or deadlines, they can see periodic reports themselves, showing their child's focus, task completion, and rewards earned. By doing so, parents can encourage and motivate these kids to meet deadlines and set their priorities in order. Moreover, the reward system can be used by the parents to further create an incentive in academic progress and responsibility by jointly developing an approach in performance improvements.

SECTION 2.4: SYSTEM ADMINISTRATORS

The system administrators hold the technical maintenance and management of the application. They provide secure access to all users through safe log-in procedures and permission management for users. They also carry out the smooth integration of the application with tools, including calendars and task management systems, ensuring that users face minimum disruptions. They are also responsible for ensuring that the overall system performs to the highest standards through periodic updating of software, monitoring bugs, and guaranteeing that measures related to the privacy and security of data are correctly followed on the whole platform.

SECTION 3: REQUIREMENTS

SECTION 3.1: FUNCTIONAL REQUIREMENTS

Requirement ID	Area	Functional Requirement
FR-1	**User Sign-In and Authorization**	
FR-1.1	User Sign-In and Authorization	The system shall allow new users to sign up with email and password or social media accounts.
FR-1.2		The system shall allow existing users to securely sign in using their registered credentials.
FR-1.3		The system shall provide password recovery options through email for users who forget their credentials.
FR-2	**User Dashboard**	
FR-2.1	User Dashboard	The system shall display an overview of pending tasks, completed tasks, and upcoming deadlines on the user's personalized dashboard.
FR-2.2		The system shall allow users to customize their dashboard layout by adding or removing widgets (e.g., task overview, focus timer).
FR-2.3		The system shall show recent productivity statistics and allow users to view detailed reports on focus sessions.
FR-3	**Task Prioritization & Deadline Management**	
FR-3.1	Task Prioritization	The system shall allow users to input and edit tasks, setting priorities based on deadlines and importance.
FR-3.2	Deadline Management	The system shall notify users of upcoming deadlines and offer rescheduling options based on task urgency.
FR-4	**Focus Sessions Tracking & Productivity Tips**	
FR-4.1	Focus Sessions Tracking	The system shall allow users to initiate focus sessions using a timer (e.g., Pomodoro) and track productivity during these sessions.
FR-4.2		The system shall generate personalized productivity tips based on user focus session data and patterns.
FR-5	**Calendar & To-Do List Integration**	

FR-5.1	Calendar Integration	The system shall synchronize with external calendar applications (e.g., Google Calendar) to integrate deadlines and appointments.
FR-5.2	To-Do List Integration	The system shall integrate with to-do list applications, allowing users to sync task lists across platforms.
FR-6	**Rewards System**	
FR-6.1	Rewards System	The system shall reward users with badges, points, or streaks for completing tasks on time or maintaining focus sessions.
FR-6.2		The system shall allow users to redeem points for personalized items like notebooks, event tickets, or discount coupons.
FR-6.3		Users shall have the option to donate points towards charitable causes as part of the reward system.
FR-6.4		The system shall maintain a reward catalog where users can browse available items and redeem points.
FR-7	**Self-Assessment & Feedback**	
FR-7.1	Self-Assessment	The system shall allow users to provide feedback on their productivity after completing focus sessions or tasks.
FR-7.2	Feedback	The system shall analyze feedback to improve future recommendations and productivity tips for users.

SECTION 3.2: NON-FUNCTIONAL REQUIREMENTS

Requirement ID	Area	Non-Functional Requirement
NFR_1.1	Performance	The bot should respond to user inputs within 1 second to ensure a seamless user experience.
NFR_1.2		Task updates and productivity tips should be processed in under 500 milliseconds.
NFR_1.3		All features should load within 3 seconds, even on slower network connections.
NFR_2.1	Usability	95% of users should rate the bot interface as "easy to navigate" in user feedback surveys.
NFR_2.2		The help section should achieve a usability score of at least 4.5 out of 5 in user satisfaction surveys.
NFR_2.3		Common actions, like setting tasks, should require no more than 2 steps.
NFR_4.1	Reliability	Ensure app uptime is at least 99.95% to provide consistent availability for students.
NFR_4.2		Implement daily data backups with an RTO of less than 30 minutes to ensure

		data integrity and availability.
NFR_5.1	Security	Encrypt all user data with AES-256 encryption both in transit and at rest to protect privacy and confidentiality.
NFR_5.2		Conduct semi-annual security audits, addressing critical vulnerabilities within 15 days of discovery.
NFR_6.1	Adaptability	Release updates with new features or improvements at least every two months to keep the system current and responsive to user needs.
NFR_6.2		Ensure the system can update user preferences within 3 seconds of modification to provide a responsive experience.
NFR_8.1	Self-Evaluation	Achieve an accuracy rate of at least 85% in assessing decision-making capabilities compared to manual evaluations by users for continuous improvement efforts.