PART 1: UNDERSTANDING THE PROBLEM DUE DATE: MAY 20, 2025. TIME: 11:59PM
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Data Collection Methodology and Justification: Our understanding of the problem, users, and existing systems is based on data that will be gathered through a survey-based approach, as outlined in our project overview. We plan to conduct two separate surveys: one to confirm the existing pacing problems among students and another to identify desired features and design elements for the application. These surveys will be distributed via online messaging platforms such as Messenger or Discord. This method was chosen for its efficiency in gathering direct feedback on student experiences and preferences. We opted for online surveys because they allow us to reach a target range of 10-20 respondents efficiently, which is suitable for validating the problem and gathering initial requirements for this foundational stage of the project. We did not use other methods like interviews or direct observation at this initial stage, as surveys are sufficient for confirming the prevalence of the problem and collecting broad user input on desired functionalities, without requiring extensive time for in-depth qualitative analysis.

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1. An overview of the problem and a statement of why an interface or system is necessary to solve it. [5 pts] The COVID-19 pandemic initiated a significant change in the educational system in the Philippines, leading to the concept of online classes where students learn in a virtual space. By 2021, this online platform became the primary method for teacher-student interaction. However, as students who have experienced this system, Team TAAL has identified a core issue: students struggle to keep pace with the current demands of their courses. This problem arises because institutional online learning sites may not function effectively, often lacking proper notifications on updates, which forces students to constantly check these sites. This leads to an accumulation of unfinished tasks and an unhealthy amount of stress for the learner. An interface or system is necessary to solve this problem by assisting students in pacing their online class activities through features like log tracking and a quiz maker for review and score checking, thereby mitigating stress and improving organizational skills.

2. A description of the important characteristics of the users of the system. [10 pts] The potential users of this application are students currently undergoing online classes, specifically those in Senior High School to College. These users are immersed in a digital learning environment where their primary interaction with courses happens virtually. A key characteristic of these users is their struggle to maintain academic pace due to issues like a lack of notifications on updates and accumulating unfinished tasks. They are seeking a way to manage their workload more effectively and reduce the stress associated with online learning. Given their student demographic, the design of any assisting system should be simple and easy to understand to ensure broad accessibility and usability.

3. A task analysis consisting of the following items. [30 pts]

a. A description of the important characteristics of the tasks performed by users. [10 pts] Users of the proposed system perform various academic management and review tasks:

- **Progress Checking:** They need to mark activities as complete, incomplete, or in progress to track their personal workload status.
- **Note Creation:** They create "course cliff notes," which function as personal reviewer sheets for their lessons.
- **Quiz Creation and Taking:** Users generate their own review quizzes, choosing from formats like multiple choice, matching type, or word-based answers. They also have the option to add a timer to emulate quiz features found in platforms like Blackboard (BB).
- **Pacing Maintenance:** Ultimately, the users seek to pace themselves and consistently maintain that pacing throughout their online coursework.
- **Information Gathering:** Users are currently tasked with constantly checking institutional sites for updates due to a lack of notifications.

b. A description of important characteristics of the task environment. [10 pts] The task environment is primarily the online class platform, where students learn in a virtual space. Key characteristics of this environment include:

- **Virtual Interaction:** Teacher-student interaction and class attendance occur amidst the pandemic through this online platform.
- **Platform Functionality Issues:** The institutional sites used sometimes do not function as effectively as they should.
- **Lack of Notifications:** A significant issue in this environment is the absence of notifications on updates, contributing to pacing problems.
- **Digital Overload:** Students often find themselves with a "stockpile of unfinished tasks" due to the aforementioned issues.
- **Device Context:** The application's design is intended only for Android phones, implying that the primary access point for students in this environment is a mobile device.

c. A simple structured task analysis of the problem in one of the forms described in the textbook. [10 pts] Let's analyze the problem of "struggling to keep up the pace with the current demands of their courses" using a simple task analysis:

Goal: Successfully keep pace with online course demands

1. **Identify New/Pending Activities** 1.1. Check institutional online platform for updates (Problem: No notifications, requires constant manual checking) 1.2. Identify assignments, quizzes, and deadlines.
2. **Plan and Organize Workload** 2.1. Prioritize tasks. 2.2. Allocate time for each activity. (Problem: Difficulty in accurate pacing due to disorganization)
3. **Execute Activities** 3.1. Complete assignments. 3.2. Prepare for and take quizzes. 3.3. Review course materials.

4. **Track Progress** 4.1. Monitor completed vs. incomplete tasks. (Problem: Lack of integrated tracking leads to a "stockpile of unfinished tasks") 4.2. Identify areas needing more attention.
5. **Experience Outcomes** 5.1. Stay on track academically. 5.2. Manage stress levels. (Problem: Inability to pace leads to "unhealthy amount of stress")

4. An analysis of the existing system, automated or manual, including its strong points and deficiencies. [15 pts] The existing system primarily revolves around the online class platforms provided by educational institutions. These are automated systems designed for content delivery and basic interaction.

- **Strong Points:**
    - **Accessibility:** They allow students to learn in a virtual space, providing safety from the pandemic and remote access to education.
    - **Centralization of Content:** They centralize course materials, assignments, and submission points, making it easier for teachers to disseminate information.
    - **Basic Interaction:** They facilitate fundamental teacher-student interaction and class attendance online.
- **Deficiencies:**
    - **Ineffective Functionality:** The sites used by the institutes sometimes "may not function as effectively as they should be".
    - **Lack of Notifications:** There are significant issues with "no notifications on updates," requiring students to constantly check the sites manually.
    - **Poor Pacing Support:** The platforms do not adequately help students "struggle to keep up the pace with the current demands of their courses". This leads to an accumulation of unfinished tasks.
    - **Stress Inducement:** The aforementioned deficiencies contribute to an "unhealthy amount of stress to the learner".
    - **Limited Personalization:** They lack features for personal progress checking, creating custom "cliff notes," or generating review quizzes tailored to individual study needs.

5. A description of the larger social and technical system in which your design will interject. [15 pts] Our design, SASHA (Student Assisted Studying and Homework Application), will interject into the larger **social and technical system of online education within the Philippines**.

- **Social System:** Socially, SASHA aims to support the **student population** (Senior Highschool to College) who are navigating the unique pressures of online learning. It addresses the pervasive issue of **stress and disorganization** that has become a significant social consequence of the current educational setup. By providing tools for better pacing and review, SASHA seeks to improve students' academic well-being and empower them to take more control over their learning journey. It recognizes that while

institutions provide platforms, there's a social need for a more personalized student-centric assistant to navigate the digital demands.

- **Technical System:** Technically, SASHA will operate as a **mobile application within the Android phone ecosystem**. It will function as a **complementary tool to existing institutional online class platforms**, which are the foundational technical systems for online learning. Our application is designed to "improve the other similar sites or applications" by layering specific functionalities (progress checking, quiz maker, ambient music) that these main platforms currently lack or provide inadequately. This means SASHA interjects to fill a functional gap in the overall educational technology landscape, enhancing the student's interaction with their digital learning environment rather than replacing it.

6. An initial list of usability criteria, or principles, that should be used in the eventual evaluation of your design. Include a high-level description of how you could measure the successful adherence to these principles. [15 pts] The success of the SASHA application will be judged based on how it meets the following conditions, which serve as our usability criteria:

- **Learnability (Ease of Learning):**
    - **Principle:** The user should be able to learn the ins and outs of the app easily. The design is intended to be simple and easy to understand for users.
    - **Measurement:** We can measure this by observing new users' ability to perform core tasks (e.g., marking an activity, creating a simple quiz) within a specified time limit without external help. User interviews or post-task questionnaires can gauge perceived ease of use. A low rate of initial user errors would also indicate good learnability.
- **Aesthetics and Non-Distraction (User Interface Design):**
    - **Principle:** The look and feel of the app's design should not distract the user. The intention is to keep the design as minimal as possible to prevent a cluttered or compressed UI.
    - **Measurement:** This can be assessed through user feedback collected via surveys regarding the visual comfort and focus while using the app. Task completion rates, particularly for complex tasks, could indirectly indicate if the design is hindering concentration. Eye-tracking studies (if resources permit) could identify distracting elements.
- **Efficiency and Convenience (Utility and Value):**
    - **Principle:** The user should find it as convenient as other competitors such as Notion, Quizlet, and StudyBlue. The app's main use is to help students maintain and track their paces.
    - **Measurement:** This will be evaluated through comparative user testing where users perform similar tasks on SASHA and competitor applications, assessing task completion times and efficiency. User satisfaction surveys asking direct

comparisons to existing tools will also be used. The ultimate measure will be if users report that SASHA genuinely helps them "pace themselves and maintain said pacing".

7. A discussion of the implications of what you learned above. Go beyond the usability criteria in this section. [10 pts] The insights gained from understanding the problem, users, and the existing system carry significant implications for our design, extending beyond the outlined usability criteria.

Firstly, the prevalent issue of "unhealthy amount of stress" experienced by students due to pacing problems implies that our design must prioritize **stress reduction** as a core outcome, not just a byproduct of efficiency. This means considering features like ambient music, not as an extra, but as a direct response to a psychological need identified in the user. The application's overall "feel" should be calming and empowering, providing a sense of control rather than adding another layer of digital burden.

Secondly, the identified deficiency in **notifications and the constant manual checking** indicates that the app needs to be highly proactive in alerting users without being intrusive. This implies a need for smart, customizable notification settings and perhaps a clear dashboard that immediately highlights what's due or missing, minimizing the "stockpiling of unfinished tasks". This moves beyond just *being easy to use* to *being actively helpful* in preventing a common student pitfall.

Thirdly, the constraint of being **Android-only** and the decision to prioritize a **minimalist design** for varied screen sizes carries a significant implication for our development strategy. It means we must be highly disciplined in feature selection, focusing only on those functionalities (progress checking, quiz creation, cliff notes) that directly address the core pacing problem without overwhelming the user interface. This commitment to minimalism also means that **accessibility for users with color blindness** needs to be addressed through clear signs and words, rather than relying solely on color-coded cues. This reinforces a user-centered design ethos that aims for broad utility within specific technical constraints.

Finally, the comparison to established competitors like Notion, Quizlet, and StudyBlue implies that SASHA cannot just replicate existing features. The design must offer a **unique value proposition** – its specialized focus on **student pacing and personalized review within the online learning context**. This means a deeper integration of pacing logic and self-assessment tools than general productivity or flashcard apps provide, ensuring SASHA truly becomes the "Student Assisted Studying and Homework Application" it aims to be.