

Online Activity No. 8 and 9: Applying the User-Centred System Design Process

Objective

1. Innovate an existing interactive system and computer technology.
2. Perform and apply UCSD.

Materials

- Personal computer
- Any software for (Computer aided designs) or programming language

Background

Atakan(2006), UCSD is used in the design process. Reasons are evaluated why traditional-technology-focused design processes may result in unusable systems-and the consequences of those unusable or useless systems. This leads directly to a consideration of the different methodologies that go to make up a user-centered system design process.

Procedure

- a.) Identify a scope or agenda
- b.) Format for the document is given below as guide for the designers in the making the output both the document and design.

Chapter I. Introduction

Background of the study

Studying is a vital part of a student's life in school. It allows students to pass and continue school and it also allows them to learn new things. As a student grows older and their education level rises, teaching styles become different. Kindergarten usually teaches with play time. Grade school teaches via interactivity. Highschool is transitioning to a more academic approach. While College is text based and depending on the course some will be more text based and some will be more interactive than other courses.

That said, studying for a test is a long and tedious process in highschool or college. The student has to read and understand the material they have and confirm that they understand it. The amount of reading or studying material varies from subject to subject which makes it more difficult and tiring. Each student has a different studying style, but most of the material they study is based on what the instructor gave them. But having to go through a plethora of topics across different courses can be stressful, especially exams that tend to schedule themselves next to each other in the same week. Without a clear studying strategy a student will be left anxious not knowing if they studied enough for the test or not.

Statement of the problem

1. **There is difficulty in understanding and organizing study materials manually.**
Many students struggle with managing their notes, especially when they are reviewing for multiple subjects. Manually writing, summarizing, and creating quizzes from notes takes a lot of time and effort, which can overwhelm students and affect their learning efficiency.
2. **There is no existing system that automatically generates quizzes based only on the user's notes.**
Current study tools often use pre-made quizzes that may not match what the student needs to study. This results in irrelevant questions that waste time and do not help the student review the exact topics they are learning.
3. **There is limited use of user-centered features in current study apps, which may lead to poor usability.**
Some study apps are hard to use, not visually friendly, or too complex for everyday users. This discourages students from fully using the app and causes frustration instead of helping them learn.

Assumption of the study

Because of the struggle of studying, the team proposes an application as a solution. The application should be able to help the user with studying. The user should be able to test their knowledge with a generated quiz that is based only on the notes that the application has. The app also provides “insights” on the notes to further enhance the user’s understanding of the topic. The proposed solution serves as an assurance to the user that they studied enough. Getting the quiz items correct can be assuring when studying.

Significance of the study

1. College Students
ThinkPal helps students study more efficiently by generating quizzes and summaries based only on their notes, making studying less stressful and more focused.
2. Instructors and Professors
The app supports instructors by helping students come to class more prepared, which improves class participation and performance.
3. Academic Advisors and Program Heads
Improved student performance can reflect positively on academic programs, helping advisors track learning outcomes and success rates.
4. Parents or Guardians
Parents gain confidence knowing their children are using a study tool that supports productive learning habits and academic success.

Chapter II. Research Design

The group should be able to identify here the steps of the design process model used and its corresponding description from the reference book. Aside from it, the researchers should also relate their own experiences and add it into the description of every stage of the design process model.

User – Centered System Design Process

This section discusses the design process model used by the group wherein it is composed of the following stages:

A. Task Analysis

- **Open ThinkPal website**
- **Navigate to dashboard**
- **Click on “Add Note”**
- **Choose either manual notes or pdf import notes**
- **Create notes**
- **Click on Summary**
- **See key points and summary of the note**
- **Click on generate quiz**
- **Navigate to quiz list**
- **Be quizzed on the note**

Provide the hierarchical task analysis of the proposed design based on chosen scope both textual and figure.

B. Requirements Gathering

The team employed the following requirements gathering methods:

1. Observation – through observation the team identified the problems students face regarding self studying.
2. Secondary Research – the team searched from various sources about accounts of students’ problem with studying.

User Requirements:

- Easy to use
- Easy to the eyes
- Minimal design

Functional Requirements:

- Can add/edit notes
- Can add quizzes
- Can generate summary

Data Requirements:

- Can store notes
- Can import pdf
- Can extract key points
- Can generate quizzes

Environmental Requirements:

- Indoor with a PC
- Wi-fi access

Usability Requirements:

- Simple navigation

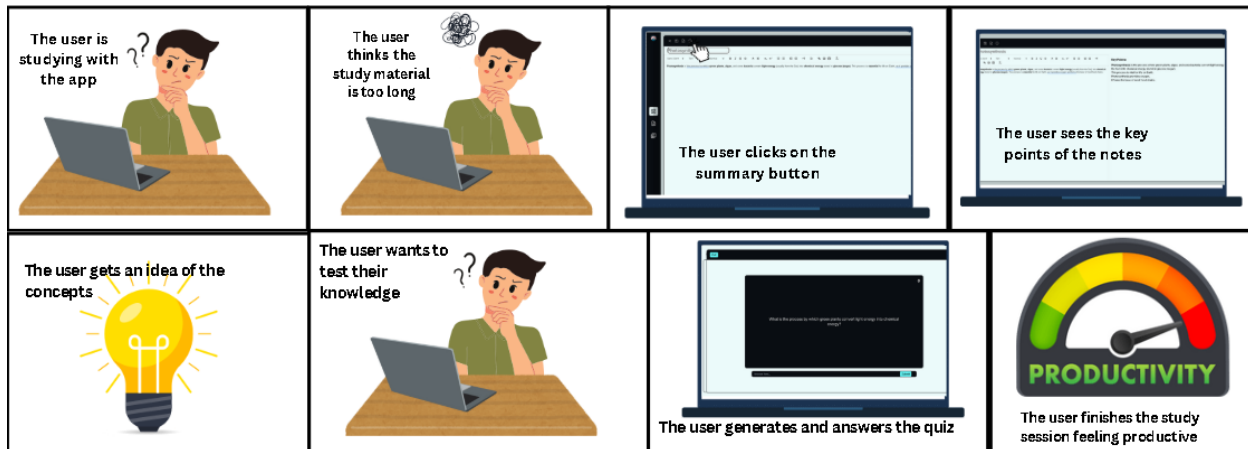
Designer's Requirements:

- Minimalist design
- Interface must be clean and uncluttered

C. Storyboarding and Prototyping

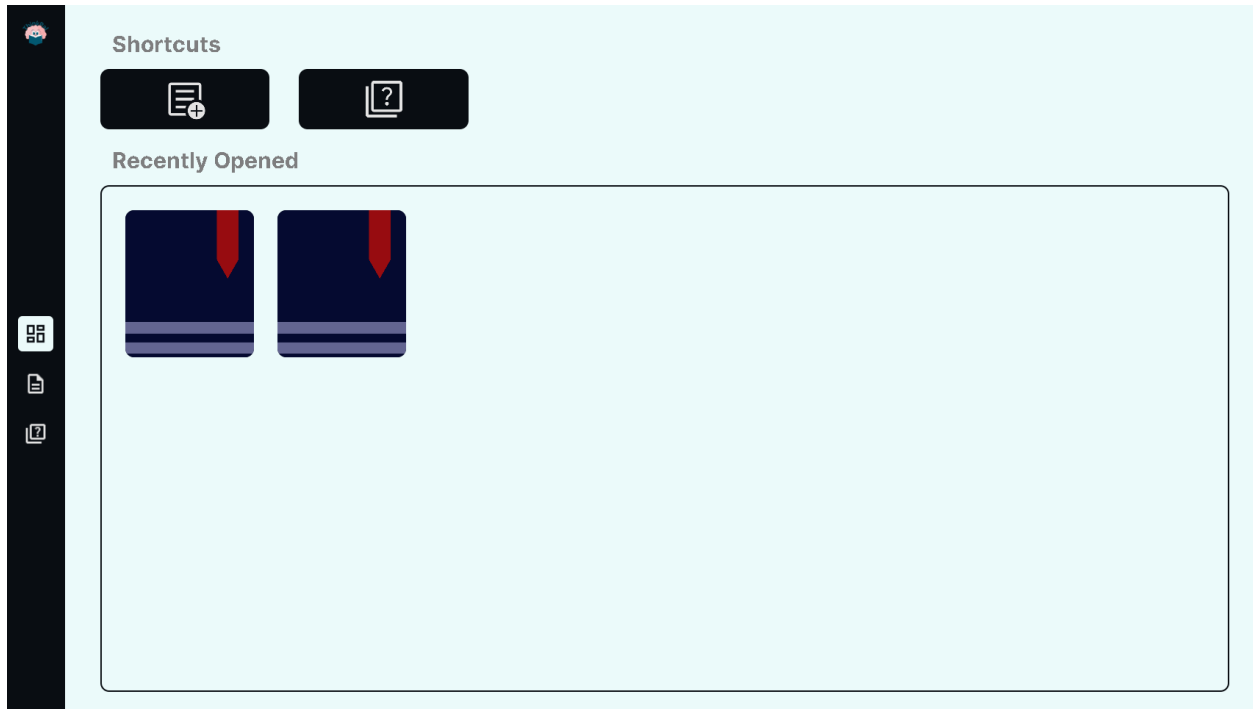
Storyboarding

The storyboard illustrates the user's navigation of the core features of the application. It shows the narrative of a student studying and utilizing the application's features to help their study session.

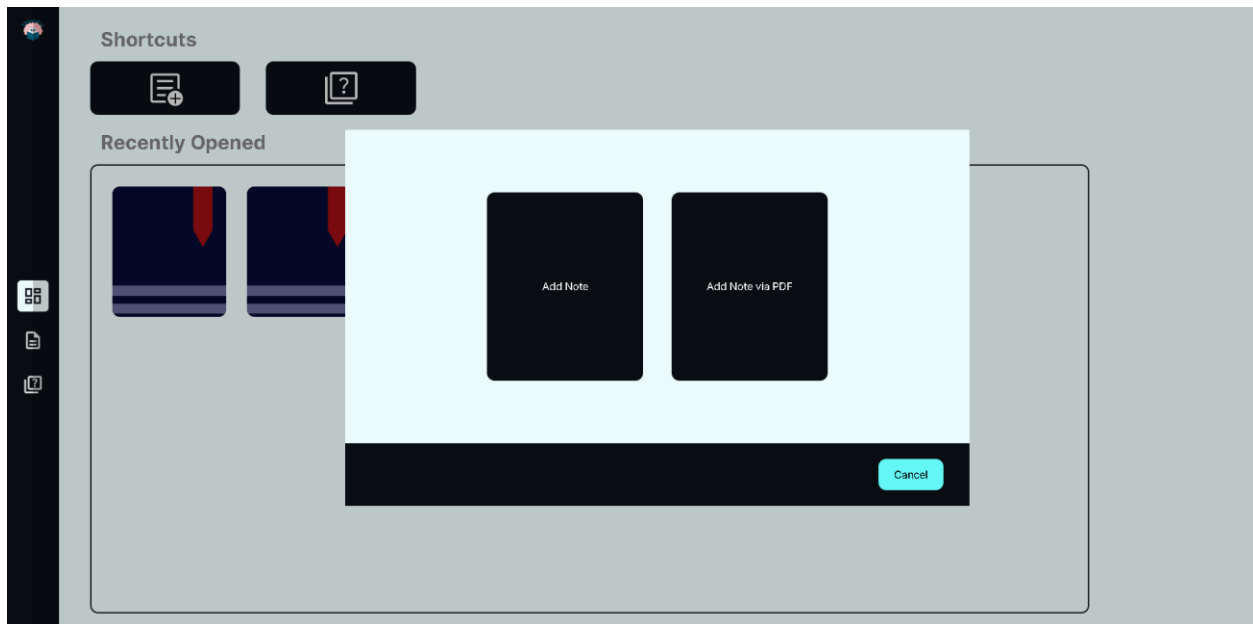


Prototyping

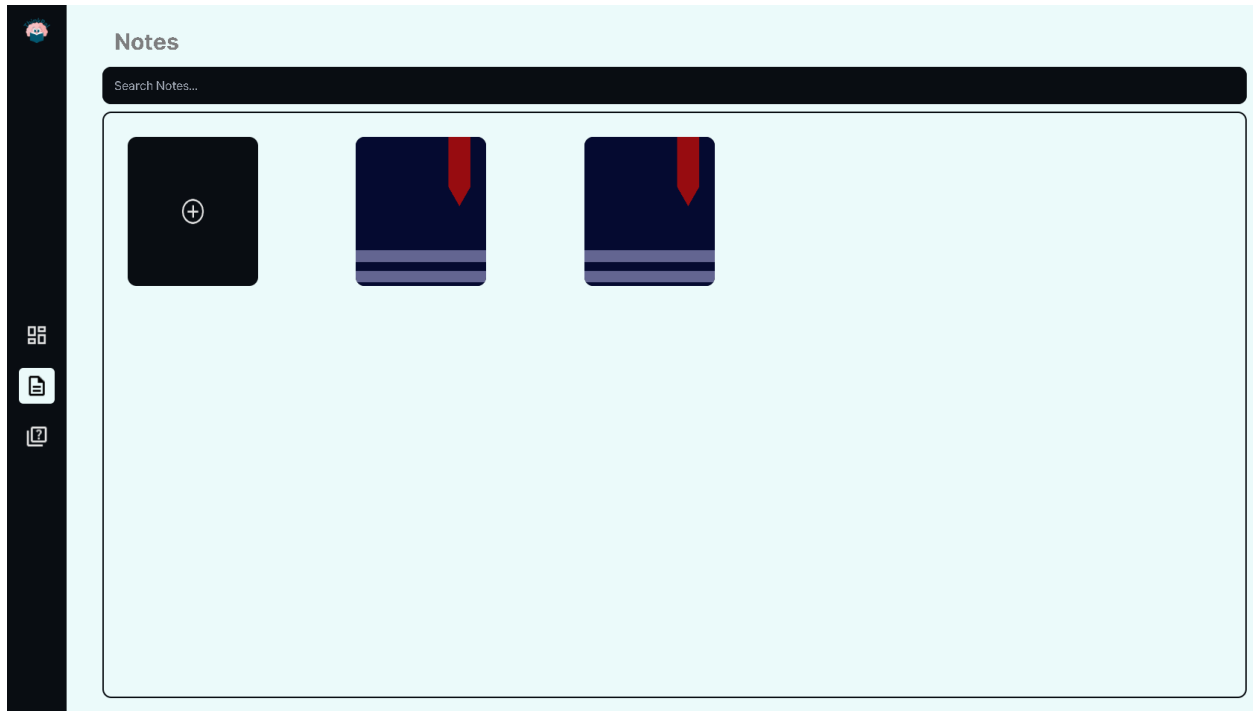
Dashboard – upon launching the app users will be immediately directed to the dashboard where they can see shortcuts for adding notes and the quiz list. Recently opened notes are also shown below if they have any.



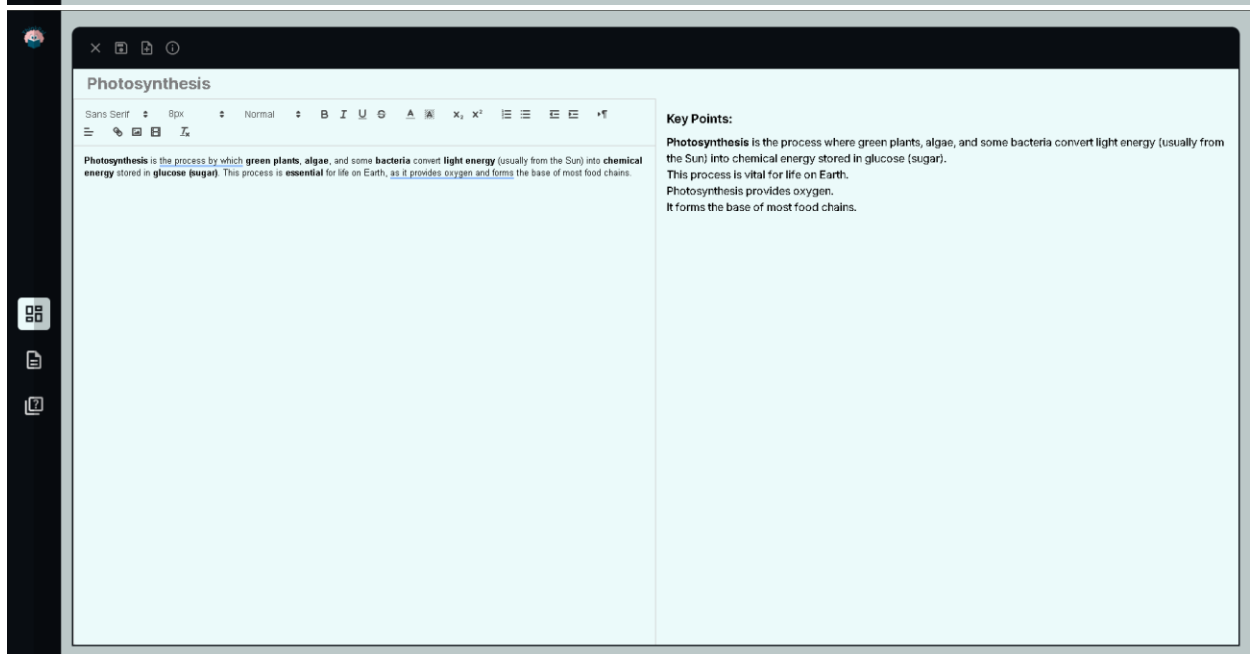
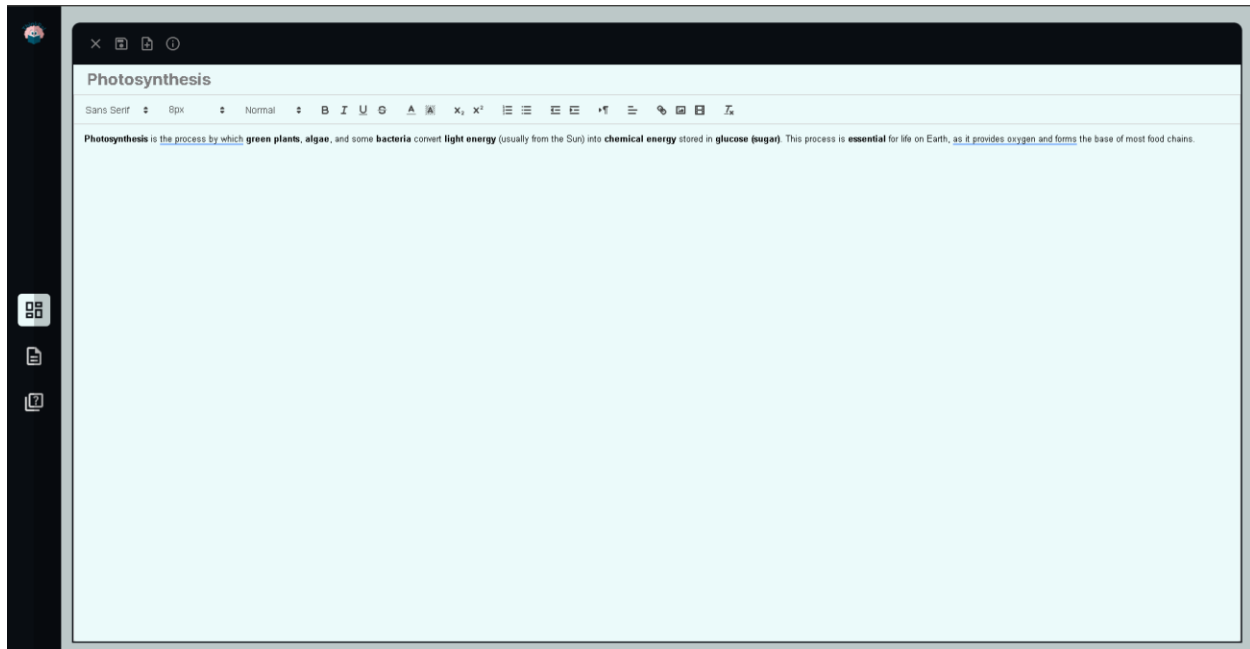
Adding Notes Options modal- if they clicked on the shortcut a modal showing two options add notes or add notes via PDF. This also works the same way in the notes list screen.



Notes List Screen – this is where all the notes are stored the user can search for the notes if they need to.



Text Editor Screen – the user can create notes manually or load in notes from a pdf. If the user clicked on the key points button the second screen will show.



Quiz List Screen – the quiz screen only shows quizzes so there's not much to do in there but click on a few quiz items.



D. Evaluation of prototype

Evaluation Criteria (Based on the 10 heuristics of design evaluation)

Area of Evaluation	5	4	3	2	1
A. Visibility of System Status - The system design provides appropriate feedback like message prompts in response to user actions. - The message prompts are clear, visible and understandable.		x			
		x			
B. Match between the system and the real world - Used words, phrases and concepts according to users' language rather than system oriented words and computer jargons.	x				
C. User control and freedom - The system design provides ways of allowing users to easily "get in" and "get out" if they find themselves in unfamiliar parts of the system.	x				
D. Consistency and Standards - The colors, text, labels, buttons and other elements in the design are uniform from start to finish. - Text and icons are not too small or too big. - Menus and other features of the system are arranged and positioned in a consistent way. (For ex. If your website has navigation buttons on the top under the page title on one page, the users will automatically look there for the same features on other pages.					
	x				
	x				

E. Error Prevention - The system design provides an automatic detection of errors and preventing them to occur in the first place. - Idiot proofing mechanisms are applied	x				
	x				
F. Help users recognize, diagnose and recover from errors - Error messages and the terms used are recognizable, familiar and understandable for the users.		x			
G. Recognition rather than recall - Objects, icons, actions and options are visible for the user. - Objects are labeled well with text and icons that can immediately be spotted by the user and matched with what they want to do.	x				
H. Flexibility and efficiency of use - The system design provides easy to navigate menus. - the system does not make wasteful time of system resources.	x				
I. Aesthetic and minimalist design -Graphics and animations used are not difficult to look at and does not clutter (mess) up the screen. - Information provided is relevant and needed for the system design.			x		
J. Help and Documentation -the system design provides information that can be easily searched and provides help in a set of concrete steps that can easily be followed.		x			

Chapter III. Conclusion and Recommendation

The proposed system addresses the common challenges that students face when organizing their study materials and preparing for examinations. By applying the **User-Centered System Design (UCSD)** approach, the team was able to focus on the needs, preferences, and usability concerns of the intended users; students.

Through the UCSD process, the group was able to identify key problems such as the lack of personalized quiz generators, the difficulty of summarizing extensive notes, and the overall inefficiency of manual studying methods. The resulting prototype offers practical features including notetaking, automatic summarization, and quiz generation, all in a minimalist and user-friendly interface.

The prototype demonstrates the potential to enhance students' study habits, reduce stress during exam periods, and provide a more organized and engaging study experience. Overall, this project emphasizes the importance of designing interactive systems that prioritize user needs to improve both functionality and user satisfaction.

Recommendations:

- Conduct usability testing with a larger group of students to gather more diverse feedback and further improve the system based on real user experiences.
- Incorporate gamification elements such as point systems, badges, or progress trackers to increase user engagement and motivation.
- Develop a mobile application version to provide students with convenient access to study tools anytime and anywhere.
- Integrate accessibility features including text-to-speech, adjustable font sizes, and color contrast options to support users with disabilities.
- Implement enhanced data security measures to ensure that users' personal notes and information are stored safely and protected from unauthorized access.
- Offer customizable quiz settings so users can select question types, difficulty levels, or specific topics for a more tailored learning experience.