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 why it 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

In today's digital era, many institutions still rely on outdated or poorly designed interactive systems, resulting in inefficiencies and user frustration. Traditional technology-focused design often overlooks user needs, leading to systems that are difficult to use or even abandoned altogether. This project adopts the User-Centered System Design (UCSD) approach to redesign an existing online appointment scheduling system, ensuring it meets the real needs of its users through an iterative, research-backed process.

Statement of the problem

There is a lack of intuitive navigation and real-time feedback in the current online appointment scheduling systems, leading to confusion, delays, and reduced productivity for users. Additionally, the system fails to accommodate accessibility features for differently abled individuals, violating modern usability standards.

Assumption of the study

The redesigned system will introduce a simplified interface, real-time user feedback, customizable accessibility options, and mobile responsiveness. These features are intended to directly address the usability issues identified in the existing system, ensuring an improved experience for all stakeholders.

Significance of the study

- **System Administrators** – Will benefit from a more maintainable and scalable system that reduces support requests.
- **End Users (Students/Staff/Clients)** – Will enjoy a streamlined, frustration-free experience that saves time and improves satisfaction.
- **IT Support Team** – Will spend less time troubleshooting and more time on value-added tasks due to reduced user error.
- **Developers** – Will have a clearer, more structured user feedback loop to improve the system continuously.

Chapter II. Research Design

We followed the UCSD process consisting of several iterative stages:
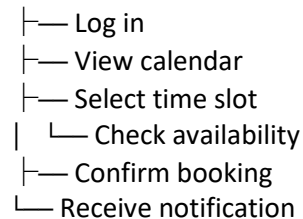
A. Task Analysis

Textual
Description:
The system is used primarily to schedule, manage, and modify appointments. Users typically:
1. Log into the system.
2. View available time slots.
3. Book or modify an appointment.
4. Receive confirmation or notifications.

```
Book Appointment
├── Log in
├── View calendar
├── Select time slot
│    └── Check availability
├── Confirm booking
└── Receive notification
```

B. Requirements Gathering

We utilized the following methods:
- **Interview**: Conducted with 5 users of the current system to uncover pain points and feature requests.
- **Survey/Questionnaire**: Distributed digitally, with 42 responses collected to quantify satisfaction and usability scores.
- **Observation**: Watched users complete key tasks in the system, noting areas of hesitation or failure.

Requirements Summary:

The proposed system must fulfill several categories of requirements to ensure a user-centered, functional, and adaptable design. From the users' perspective, the system should offer easy navigation, clear confirmation messages, and inclusive accessibility features such as screen reader compatibility and adjustable text sizes. Functionally, it should include secure login authentication, calendar integration, and a reliable notification system through email or SMS. The system must also support secure data handling, particularly the storage of user profiles, appointment details, and time slot availability. In terms of environmental adaptability, the design must be responsive across both desktop and mobile platforms and remain operable even in low-bandwidth conditions. To promote usability, tasks should be completed within a short timeframe ideally under three minutes and any error messages should be clearly written and easily understood. Finally, from the designers' standpoint, the system interface should comply with WCAG 2.1 accessibility standards and feature a modular codebase to accommodate future enhancements with ease.

A. **Storyboarding and Prototyping**

Storyboard Description
- **Welcome Screen** – User is greeted with options to log in or register.
- **Login/Register Page** – User enters credentials or signs up with basic information.
- **Home Dashboard** – Displays key functions such as "Start Task," "View History," and "Settings."
- **Task Selection** – User selects a task category to begin a new entry.
- **Input Form** – User fills in required fields with guided prompts and submits data.
- **Confirmation Screen** – System confirms successful submission and shows next steps.
- **Activity Log** – Displays history of user actions and system responses.

Prototype Description (User Manual Format)

· **Login/Register Page** – Fields for email and password with input validation; includes options for password recovery and secure registration.

· **Home Dashboard** – Central hub showing main features such as starting new tasks, accessing recent activity, and managing preferences.

· **Task Input Form** – User-friendly interface with labeled fields, dropdowns, and help tooltips to guide data entry.

· **Confirmation Module** – Displays visual confirmation (e.g., checkmark icon) after successful task submission; includes options to go back or start another task.

· **Activity Log** – A searchable log showing all previous user interactions, timestamps, and action summaries.

· **Settings Panel** – Users can configure system preferences, enable accessibility features, and manage notification settings.

B. **Evaluation of prototype**
   Use heuristic evaluation with format given below. This is the criteria of how the design will be graded

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.	✓				
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.	✓				
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.	✓				
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.	✓				
C. 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	✓				
F. Help users recognize, diagnose and recover from errors **-** Error messages and the terms used are recognizable, familiar and understandable for the users.	✓				
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.	✓				
H. Flexibility and efficiency of use - The system design provides easy to navigate menus. - the system does not make wasteful time of system resources.	✓				
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.	/			
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.	/			

Chapter III. Conclusion and Recommendation

The development of the redesigned online appointment scheduling system demonstrates the effectiveness of applying the User-Centered System Design (UCSD) process in solving real-world usability issues. By identifying key problems such as unintuitive navigation, lack of real-time feedback, and limited accessibility, the group was able to propose and prototype a system that directly addresses these concerns. The new design features a simplified and responsive interface, clear feedback mechanisms, and inclusive accessibility tools creating a more efficient and user-friendly experience. Each phase of the UCSD process, from task analysis to heuristic evaluation, reinforced the importance of involving users throughout the design process and continuously validating their needs.

Recommendation:
Moving forward, the group recommends that regular user testing and feedback sessions be incorporated into the system's development lifecycle to ensure continued relevance and usability. It is also advisable to explore the integration of intelligent features such as AI-driven scheduling suggestions or voice navigation to further enhance user experience. Finally, maintaining adherence to accessibility standards and continuously updating the system based on evolving user needs will help ensure the design remains functional, inclusive, and future proof.