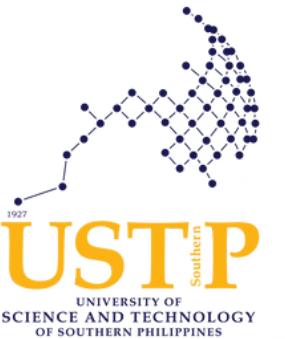


UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES



Human Computer Interaction

WEEK 1

Topics for this Week



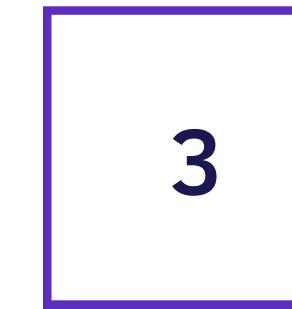
Evolution of HCI

Covers the historical development of human-computer interaction



Why Design for Usability

The importance of prioritizing usability in design



Disciplines of HCI

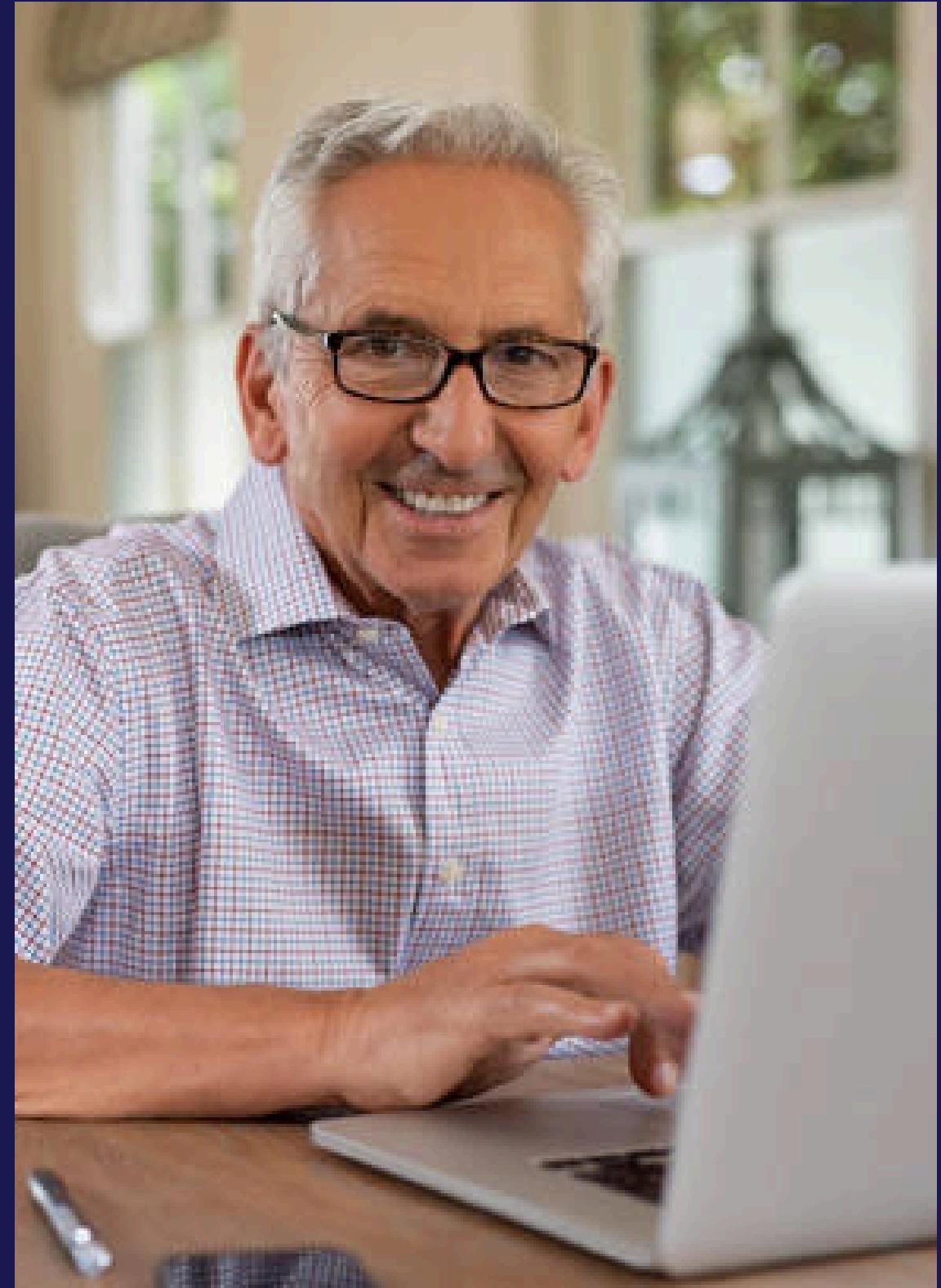
Various fields that contribute to HCI.

What is HCI?

01. What is HCI?

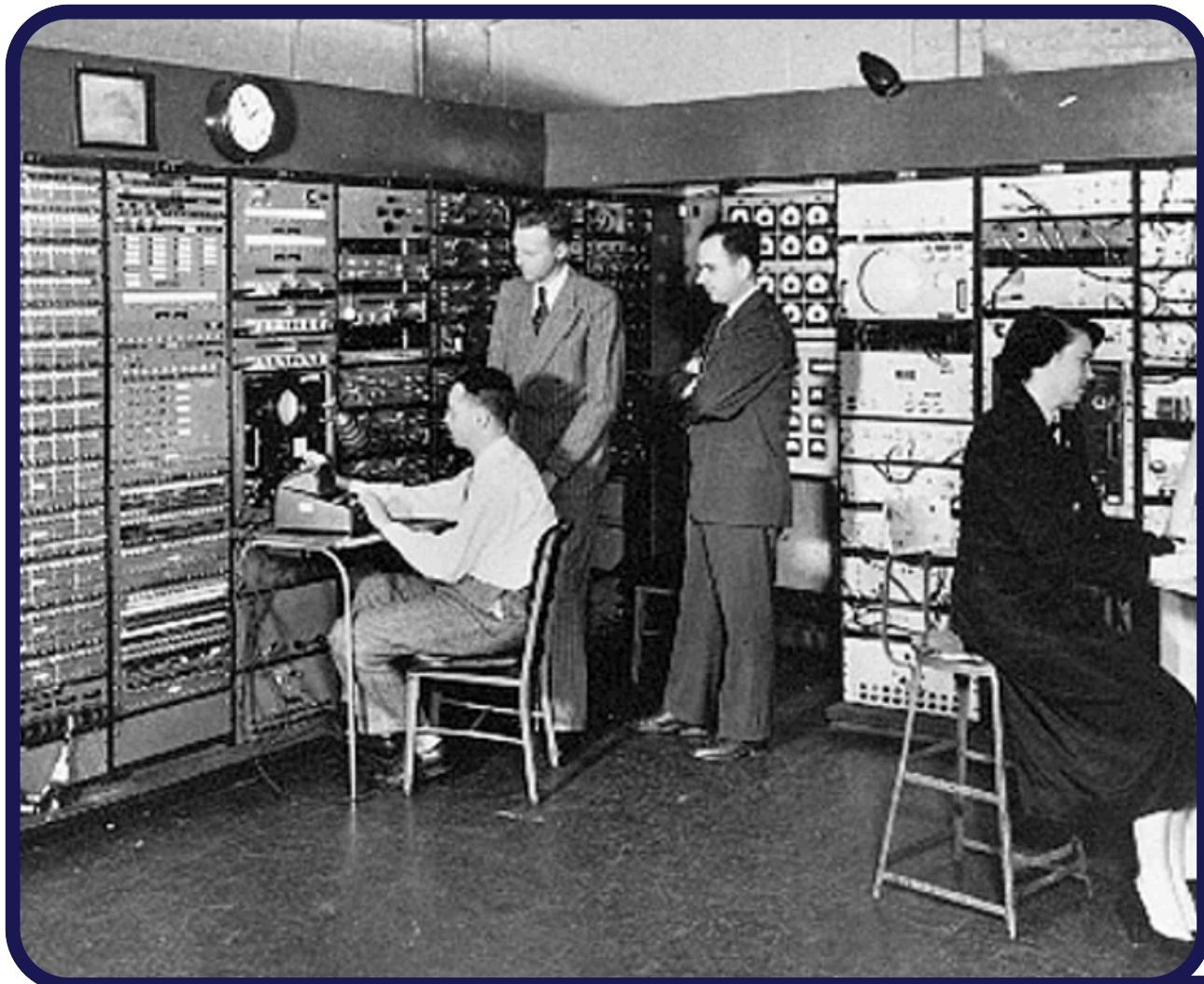
A STUDY ABOUT

- understanding how people interact with computers
- designing computer systems that are easy, efficient, and enjoyable to use.
- create user-centered designs that improve the interaction between humans and computers.



Evolution of HCI

01.



Machinery: The Early Days

- Early machinery designed primarily with functionality in mind, often neglecting usability.

Evolution of HCI

01.



The PC (Personal Computer)

- **1970s-1980s**
- Shifting Focus to Usability
- The arrival of personal computers in the late 20th century marked a significant shift. PCs were designed for general consumers, not just specialists.

Evolution of HCI

01.



The GUI (Graphical User Interface)

- 1980s-1990s
- Making Computers Intuitive
- The Xerox Star 8010 Information System was the first commercial computer with a graphical user interface (GUI)

Evolution of HCI

01.



The Web

- 1990s-Present
- World Wide Web brought another revolution in user interaction.
- The web introduced new usability challenges.

Evolution of HCI

01.



Emerging technologies

- Ubiquitous Computing
- Augmented and Virtual Reality (AR/VR)
- Artificial Intelligence (AI)
- Voice and Gesture Interfaces
- Brain-Computer Interfaces (BCIs)

Why Design for Usability?

Designing For Usability

HERE'S A BREAKDOWN OF THE KEY POINTS WHY WE SHOULD DESIGN FOR USABILITY:

Human Cognitive Psychology

- 1. Perception** - Designing interfaces that are visually clear and uncluttered helps users process information more efficiently.
- 2. Memory** - Interfaces should minimize the cognitive load by not requiring users to remember too much information from one step to the next.
- 3. Attention** - Good design reduces the number of distractions and makes the important information stand out.

02.

Consistency and Standards

- 1. Internal Consistency** - Ensures that similar operations and elements behave the same within the system.
- 2. External Consistency** - Aligns with other systems users are familiar with.

Visibility and Feedback

- 1. Visibility** - Important functions should be visible without the user having to search for them.
- 2. Feedback** - Users need immediate feedback to understand the effect of their actions. This can be in the form of visual, auditory, or haptic responses.

Affordances and Metaphors

- 1. Affordances** - These are clues about how an object should be used. For instance, buttons look pressable. Properly designed affordances guide users intuitively.
- 2. Metaphors** - Using familiar metaphors (like a trash can for deleting files) helps users understand new concepts by relating them to something they already know.

Error Prevention and Recovery

- 1. Prevention** - Provide constraints and suggestions that guide users away from errors.
- 2. Recovery** - Offer clear, helpful error messages and easy ways to undo actions or correct mistakes.

Efficiency and Satisfaction

1. **Efficiency** - Good design enables users to achieve their goals quickly and with minimal effort. This includes optimizing workflows and reducing the number of steps needed to complete tasks.
2. **Satisfaction** - Usability leads to greater user satisfaction. When users find a product easy to use, they are more likely to have a positive experience and continue using it.

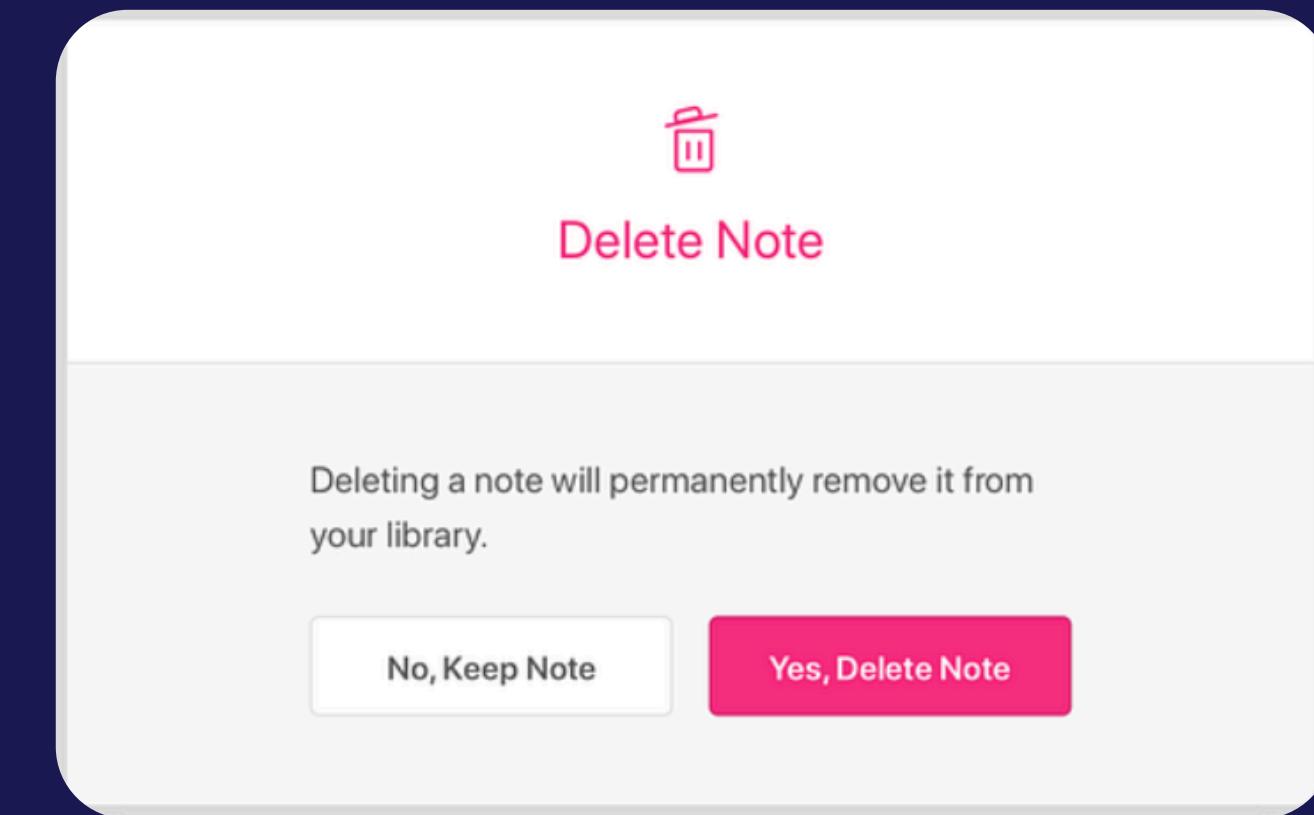
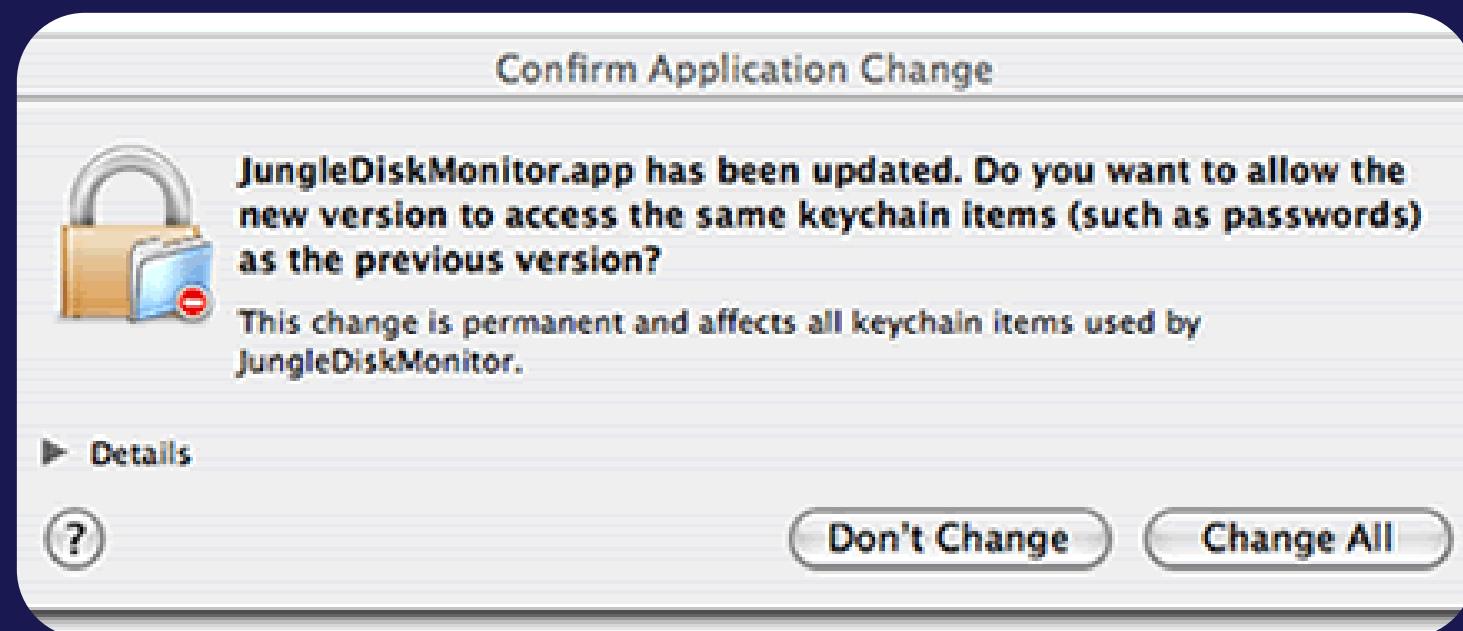
Good and Bad Design

Which of these remotes is easy to understand?



Good and Bad Design

Which Dialog Box has a good design?



03. Disciplines of HCI

The field of HCI draws from a wide range of disciplines. These are the fields that have made significant contributions to HCI.



03.

- **Computer Science**

Provides the technical foundation for designing and developing software and hardware systems.

- **Psychology**

Offers insights into human behavior, cognition, perception, and learning, which are critical for designing user-friendly interfaces.

- **Design**

Focuses on the aesthetic, functional, and usability aspects of user interfaces.

03.

- **Ergonomics and Human Factors**

Studies the physical and psychological interactions between people and systems, ensuring that systems are designed to fit the users' needs.

- **Sociology**

Helps us understand how people interact with technology in their social environments. It looks at how cultural norms, social behaviors, and group dynamics influence the way people use and perceive technology.

- **Language**

Explores how language is used in human-computer interaction, particularly in natural language processing and communication.

03.

- **Cognitive Science**

Studies the mind and its processes, including how people think, learn, and remember.

- **Artificial Intelligence (AI)**

Focuses on creating intelligent systems that can simulate human-like behavior and decision-making.

- **Communication Studies**

- Examines how people convey and interpret information, which is crucial for designing interfaces that facilitate clear communication.

03.

- **Engineering**

Provides the tools and methods for building reliable, efficient, and scalable systems.

- **Ethics and Philosophy**

Addresses the ethical implications of technology use and the philosophical questions surrounding human interaction with machines.

- **Education**

Explores how technology can be designed to support learning and education.

Reference

- Johnson, J. (2010). Designing with the mind in mind: Simple guide to understanding user interface design rules. Morgan Kaufmann.

If you have any questions at all

Don't hesitate to ask.

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