Sensing Through Design: Applying Human vs. Computer Senses to Our Capstone Projects

Activity Guide

Instructions

- Write a **reflective and analytical essay** (minimum **800 words**) that connects the concepts of **human and computer senses** with the design and development of your **capstone project**. The goal is to **apply your understanding of HCI sensory principles** to evaluate, improve, or justify aspects of your user interface, features, or interaction flow.

- This reflection is **not theoretical only.** It must tie directly to decisions you've made (or will make) in your ongoing system development.

Essay Structure & Learning Touchpoints

1. Introduction: Where HCI Meets Your Capstone

- Briefly introduce your capstone project—what it is, who it's for, and what problems it solves.
- State why understanding human vs. computer senses matters to your interface or system experience.

Learning Outcome: Recognize relevance of sensory theory in real system implementation

Essay Structure & Learning Touchpoints

2. Human Sensory Considerations in Your UI/UX

- Identify **at least two human senses** (e.g., vision, hearing, touch) and explain how you are considering them in your project:
    - Is your UI visually accessible (e.g., color contrast, layout)?
    - Are you using auditory feedback or visual cues effectively?
    - Are you applying touch interactions (mobile gestures, haptics)?
- Mention any **challenges** your users may face (e.g., accessibility, cognitive load).

Learning Outcome: Apply human-centered sensory design principles to ongoing work

Essay Structure & Learning Touchpoints

3. Computer Sensing in Your System

- Does your project use **any sensors or digital input devices**?
  - (e.g., camera for QR scanning, voice recognition, motion tracking, touchscreen input, etc.)
- Explain what sensory inputs your system is **processing**, how it responds, and how **accurate or responsive** it needs to be.
- Reflect on limitations or possible errors if sensors misinterpret input.

Learning Outcome: Evaluate reliability and interpretation of computer "perception" in system behavior

Essay Structure & Learning Touchpoints

4. HCI Loop: System Interaction Breakdown

- Describe a **key interaction loop** in your project using the HCI loop:
  - Human input → System response → Human feedback
- How do you ensure that this interaction is **clear, smooth, and intuitive**?
- Are there moments where lag, confusing output, or sensory overload might occur?

Learning Outcome: Identify and improve key interaction points using the HCI feedback loop

Essay Structure & Learning Touchpoints

5. Reflection: Sensing, Perception & Empathy in Your System

- Choose one question from your lectures to reflect on:
  - *Can a system understand if it cannot feel?*
  - *Should your system attempt to sense user emotion or context?*

- Consider whether your system's design promotes **user empathy, feedback, or awareness**, especially in terms of sensory limitations.

Learning Outcome: Reflect on ethics, emotion, and inclusivity in system design

Essay Structure & Learning Touchpoints

6. Conclusion: Enhancing Your Capstone Through Senses

- Summarize how your understanding of HCI and sensory design has influenced your project (or will influence it moving forward).

- Share at least **one change or improvement** you plan to make based on what you've learned in this activity.

Learning Outcome: Synthesize HCI sensory principles into concrete development plans

Deliverables

- A minimum of 800-word essay with labeled sections
- Include at least **1 annotated screenshot or UI wireframe** from your actual project to demonstrate sensory design choices
- Submit in **PDF format** along with a separate caption slide to defend in your pre-final consultation

Summarized Criteria

Criteria	Points
Project Integration & Relevance	30 pts
Application of Human/Computer Sensory Concepts	20 pts
HCI Loop Analysis	15 pts
Design Improvement Reflection	15 pts
Clarity, Structure, & Depth	10 pts
Grammar & Visual Support	10 pts