CMP 441- Human Computer Interface (Interaction)

This deals with the design of the system with the user class it is intended for

We must be able to answer the question why? So the reason for our interface must be the main priority.

This is a project based course. Where we will be designing the interfaces.

**WHAT IS HCI?**

This is a field of computing concerned with studying how people relate with computers and how to make that interaction better (more natural).

**Skills of an HCI expert**

It deals with the design, execution, *implementation* and evaluation of computer systems that are for human use it deals with everything regarding the computer system and not just the design and development (interface). The central concern of HCI is to develop interactive products that are useable.

**WHY DO WE STUDY HCI?**

* It enhances communication
* It is a useful skill across discipline (Inter disciplinary)

**Good and poor designs**

* Take feedback seriously?
* Identify Your users and the target market
* Product should be designed to support the activities of users.
* Consider who is using, how and where the products are going to be used.
* What kind of activities are people doing when interacting with your products?

Assignment: Design sense +2?

* **Pick a digital product and analyze it.**

The best way to collect information is by

: Questionnaire – Get bulk data

: Interviews – Get individual data

: Observations - See how they do

**Design attributes**

* Interface, metadata,
* Do not always determine the highest end. Sometimes it is the user that determines it.

**November 8, 2024**

Revision: When designing a product, you have to think about your users (Target audience). You need to pay attention to the product design or

**Design Process for HCI**

What are the design process for the people who are using a product? It is very similar to the SDLC every design process, project etc. all have the idea of a cycle.

* Discovering the requirement: this is involved whether you want to create or upgrade a product. The key things are
* Understand the problem
* Understand the user
* Designing alternatives: Think about the different technologies that will be used in the development of the product. The users are the key people and they drive the development of the product. You also have to ask the users for feedback so as to improve your product. Things to think about when designing alternatives
* Efficiency
* Cost (Socio-economic status)
* Prototyping: a limited version of a proposed product which usually doesn’t function as the final product.
* Low fidelity model: look almost like the finished product
* High fidelity model: usually are drawings of the product

They help make decision about the final product during development

* Evaluating the product: After the final product has been released you evaluate it

1. Understanding the problem: usually the problem statement comes with a request. So when we talk about understanding a problem, we want to know the challenges the current users face. We have to ask ourselves some questions such as:
2. Ask further questions to understand the challenge.
3. Ask and understand how the user wants the problem to be solved.
4. Ask about the user’s current experience and how they can improve it
5. Ask what changes will solve the problem of the user.
6. Inquire about the users of the product.

This aspect of design is mostly about design and research.

Task analysis: you have to breakdown the problem’s solution into a hierarchical order and form an algorithm with it. In order to create an automated process, you must conduct a task analysis.

1. See the ways that the problem can be solved. And always remember that the users are the expert
2. Understanding the user: This involves identifying the user’s characteristics that interact with the product.
3. User’s cognition
4. Their level of mental activity and literacy.
5. Skills they possess
6. In what environment will they use the product?
7. The conditions with which they will use the product i.e. weather, hands off etc.
8. Features the user will want to have

Assignment: Design a digital product.

* Think of something that is problematic that you want to solve either about a new thing or an old development.
* Think thoroughly about the problem and the solution you want to deliver
* Use 2 or more data collection methods.

# November 15, 2024

The starting point for discovering anything is to discover the requirements. Without proper discovery, you will design the wrong thing.

The requirement analysis phase is about gathering data,

Data Gathering: it can be qualitative or quantitative

5 Important issues

* Goal setting: why am I collecting the data?
* Identifying participants: to ensure who are going to be the beneficiaries of the product, you have to identify the characteristics of the target audience.
* The relationship between the data collector and the data provider: the relationship between the two ensures the authenticity and the content of the data collected.
* Triangulation: we want to collect data from various point, and use different collection mechanisms like survey + interview or observation.
* Pilot studies: testing out the research in a smaller version to understand the efficiency of the study, to have a feel of the data collection method

Data collection methods

1. Interviews: interview plan, how the interview was carried out,
2. Observation: be invisible, attentive,

# **November 22, 2024**

Weekly agenda will be carried out for each group meeting. each person should have a duty that should be assigned after each meeting

Get topic and get data collection tool, problem statement users, data collection methods, emphasis and create a persona. Wi

Have a draft data collection tool prior to next week meaning have topic, assigned positions,

Data analysis: making sense of data

Data recording

Descriptive statistics and inferential and correlational statistics

Quantitative: relates to the magnitude, can be extracted from qualitative

qualitative nature or reason behind the reason

initial steps: data immersion, cleaning, entry and transcription

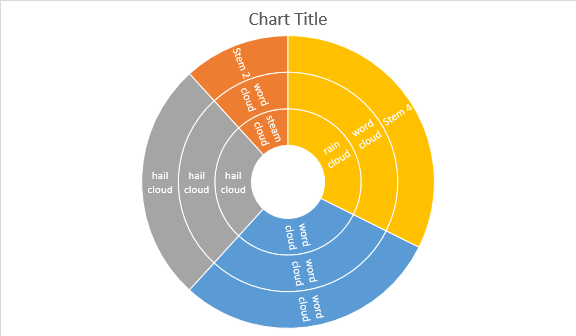
immersion: allows all forms of data (fully unstructured)

cleaning: filtering the wrong data and data types during collection

transcription: dissolving the data into a structure you can use. It is like interpretation of the data,

quantitative analysis: statistical summaries like :- averages, percentages, standard deviation

qualitative analysis: word cloud can be used like a pie chart kind of inference where the more the data relating to that attribute the more the cloud that symbolizes it.

i.e 

when asking question, ask questions only relevant to the design of the product and let it be influenced directly by the users’ use of the product. Ask yourself “*when they answer this question, how will it affect my design*

THE BOOK IS TITLED BASIC INTERACTION DESIGN BY KS SHAP AND

DATA COLLECTION BY 6TH December

SUBMIT ANALYSIS BY 10TH January

FINAL DESIGN BY 31ST January

QUOTE OF THE DAY: MARKS WILL FADE AWAY

# 29th November 2024

Data collection method must be attuned to the users

Core principles of HCI design

1. User centered design (UCD): the users are involved throughout the process.

Research

Align

build

1. Understand users and context
2. Specify user requirements
3. Design solutions
4. Evaluate against requirements
5. Iterate

User needs, goals and tasks

Needs: what the user wants and how the interface can provide such needs

Functional needs

Emotional needs: gives feeling of satisfaction, security

Contextual needs: adaptability with the environment and circumstances

Goals: what do the users want to achieve

End goals

Experience goals

Life goals

Task: how the users go about their work

Task analysis

Importance of understanding the users

1. Alignment with user expectations
2. Prioritization
3. User satisfaction

# Affordance

the property of an object that indicates how it can be used. It usually comes with a signifier which shows the current state of the object and to where the object can be. Signifiers indicate what actions are possible and how to perform them.

Physical and digital affordance

Signifiers importance

* Clarifies
* Reduces errors

Feedback

* Audio visual or tactile