Universiti Malaysia PAHANG
Engineering • Technology • Creativity

Graphical User Interface

Chapter One – Part 1

Human Computer Interaction & Graphical User Interface

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Chapter Description

- Aims
    - To define the GUI and HCI concepts
    - To explore the Background of GUI
    - To explore and learn the Philosophy of GUI

- Expected Outcomes
    – Understand the difference between the GUI and HCI.
    – Able to understand the background and philosophy of GUI
    .

- References
1. Wilbert O. Galitz, The Essential Guide to User Interface Design: An Introduction to GUI Design Principles and Techniques, John Wiley & Sons Inc, 2007.
2. Jenifer Tidwell, Designing Interfaces, O'Reilly, 2011
3. Jeff Johnson, Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules , Morgan Kaufman Publisher, 2010

Imagine the future...

○ Tell your imagination about the scenario?

○ Would you like to have an experience to shopping on the wall?

https://www.youtube.com/watch?v=7uCWRAgN51A

○ And use your mobile smart device to pay.
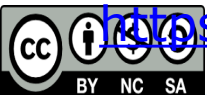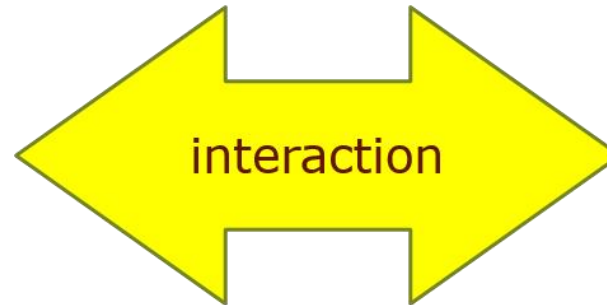
QR Code Shopping at the Subway Station

This virtual grocery store with products labelled with QR (Quick Response) Codes in a subway station in Seoul, South Korea was the origin of the QR Code shopping walls that are beginning to appear in bus shelters and stations everywhere.

https://www.youtube.com/watch?v=h7HnR02kJxY

Definition of HCI

interaction

○ Human-computer interaction is a discipline concerned with the **design**, **evaluation** and **implementation** of interactive computing systems for human use and with the study of major phenomena surrounding them.

ACM SIGCHI Curricula for Human-Computer Interaction

Definition of HCI

"Study of interaction between people (users) and computers"

-Wikipedia-

Definition of HCI

"Understanding and improving how people interact with technology. Its goal is to improve the ease-of-use of existing products and explore new paradigms in using computers."

-IBM-

Definition of HCI

"Studying how people interacted with technology. They then redesigned software (and computers) to improve the '*computing experience*' – boosting productivity."

-iconlogoc.com-

Definition of HCI

"Is the study of interaction between people and computers. It is an interdisciplinary field, connecting computer science with many other disciplines such as psychology, sociology and the arts"

-Springer-

Easy Definition for HCI

HCI (human-computer interaction) is the study of how people interact with computers .

Why

to what extent computers are or are not developed for successful interaction with human beings.

Components

Components

Users

An appreciation of the way people's sensory systems **(sight, hearing, touch)** relay information is vital.

Also, different users form **different conceptions or mental models** about their interactions and have different ways of learning and keeping knowledge and.

In addition, **cultural and national** differences play a part.

Computer

Any technology

○ desktop computers, to large scale computer systems.

○ For example, if we were discussing the design of a Website, then the Website itself would be referred to as "the computer".

○ Devices such as mobile phones or Tablets can also be considered to be "computers".

Interaction

HCI attempts to ensure that they both get on with each other and interact successfully

Aim to design

usable system

apply what you know about humans and computers, and consult with likely users throughout the design process.

find a balance between what would be ideal for the users and what is feasible in reality.

What is HCI?

HUMAN → actions → MACHINE

HUMAN → GOALS

MACHINE → functions → GOALS
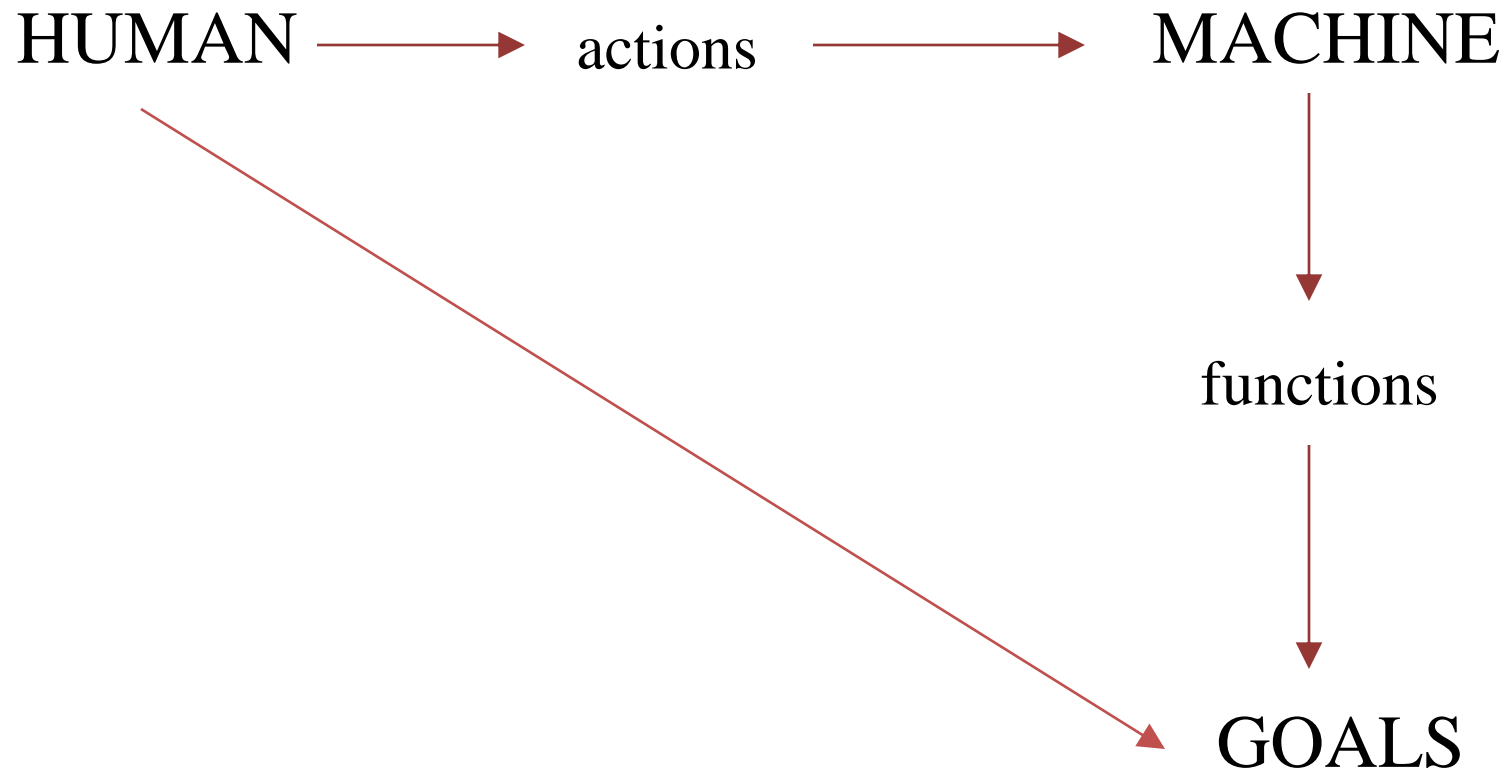
WHY HCI ?

- Improve the ease-of-use of existing products and explore new paradigms in using computers – **IBM**

- Redesigned software (and computers) to improve the '*computing experience*' – boosting productivity – **iconlogic.com**

HOW HCI..

○ Design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them –
The Association for Computing Machinery

Association..

○ It is an interdisciplinary field, connecting computer science with many other disciplines such as psychology, sociology and the arts– **Springer**

"Securing of user satisfaction !!"

"understand usability"

The Goals of HCI : Summary

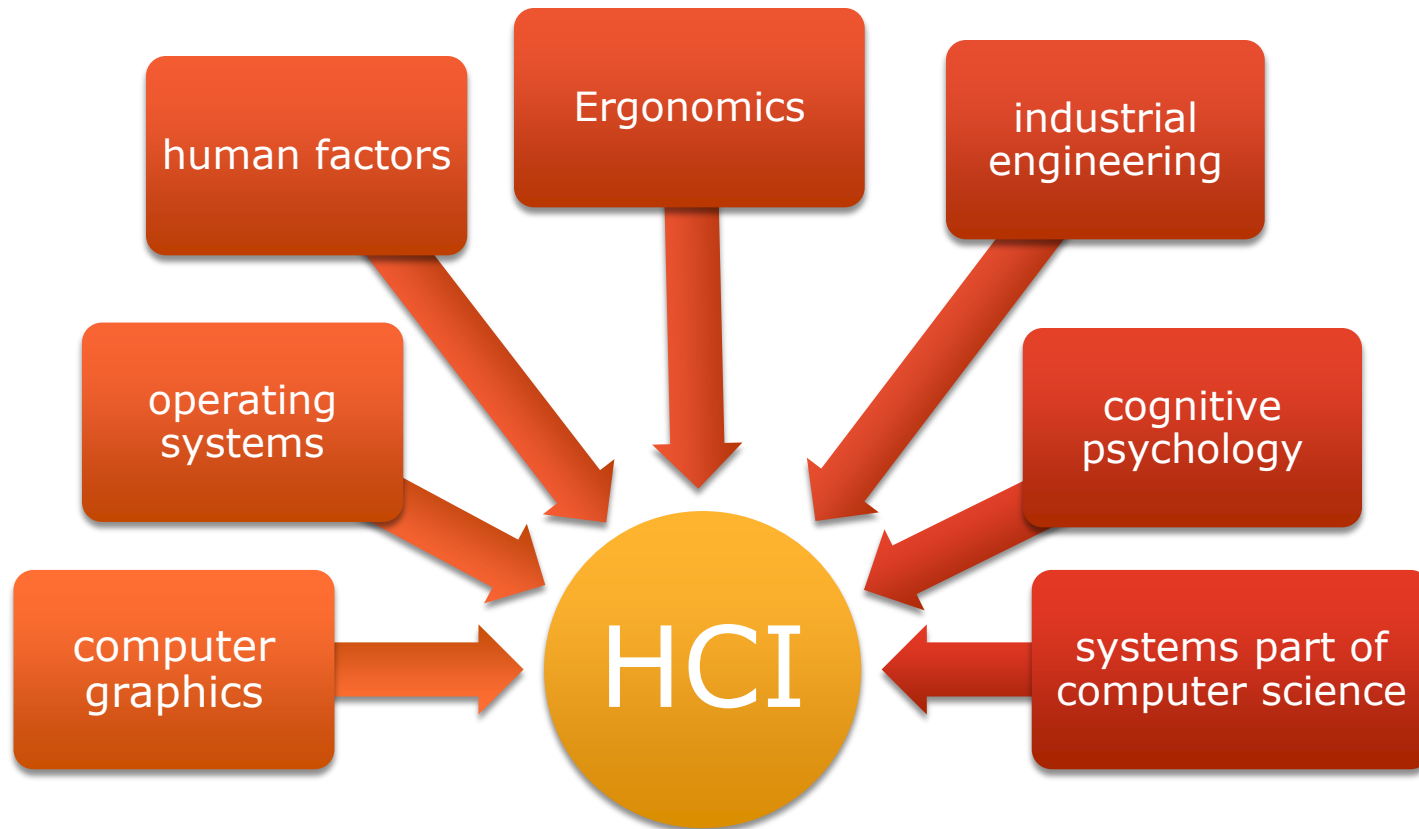**Produce usable and safe systems, as well as functional systems.**

In order o produce computer systems with good usability, developers must attempt to:

- understand the factors that determine how people use technology
- develop tools and techniques to enable building suitable systems
- achieve efficient, effective, and safe interaction
- put people first.

Background of HCI

- From a computer science perspective, the focus is on interaction and specifically on interaction between one or more humans and one or more computational machines.

- Human-computer interaction is concerned with:-

  - the joint **performance of tasks** by humans and machines;

  - the structure of **communication** between human and machine;

  - human capabilities to **use** machines (including the learn ability of interfaces);

  - **algorithms** and programming of the interface itself;

  - **engineering** concerns that arise in designing and building interfaces;

  - the process of specification, design, and implementation of interfaces;

  - and **design** trade-offs.

Computer Science

Q And A