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6001333-3 Human Computer Interaction

Lecture 1 (Week 1)

- What is HCI?
- HCI History
- HCI Objectives
- Why is HCI Important?

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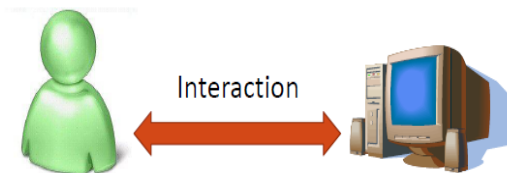
What is HCI?

- Computer / Human Interaction (CHI)
- (Hu)Man Machine Interface (HMI / MMI)
- Covers all aspects of a person using a machine to “do something”
 - Not just GUI design
 - Telephony app for flight information
 - Hardware keys on an MP3 player
- HCI is about **MAKING COMPUTERS USABLE BY HUMANS**



What is HCI?

- So, HCI is a “discipline concerned with the design, evaluation and implementation of *interactive* computer systems for human use, and with the study of the major phenomena surrounding them”. (ACM SIGCHI 92)
- There are three entities in human-computer interaction:
Human.. Computer.. Interaction (Direct/Indirect)





What is HCI?

- Interaction is a “dialogue” between humans and computers, with an aim of exchanging information.
- The interaction between user(s) and application(s) is achieved via an interface – **user interface (UI)**





What is HCI?

- What type of computers? Any type of computer:
- Desktop Computers



- Smart Mobiles

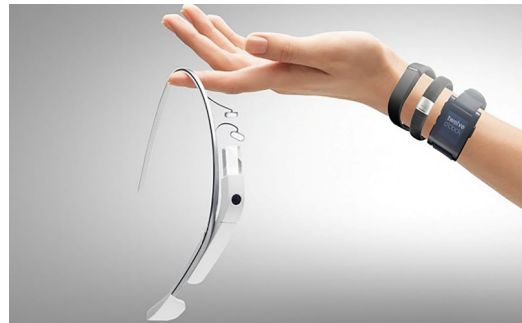




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What is HCI?

- Wearables



- Interactive Workspaces



Human Computer Interaction 6001333-3
Most of these slides adopted from Dr
Obead Alhadreti materials

CS – 383 Summer Term





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HCI History

- The term *human–computer interaction* has only been in widespread use since the early 1980s, but has its roots in more established disciplines.
- The Second World War provided the impetus for studying the interaction between humans and machines, as each side strove to produce more effective weapons systems.



HCI History

- This led to a wave of interest in the area among researchers, and the formation of the *Ergonomics* Research Society in 1949.

Set Up an Ergonomic Workspace

These tips come courtesy of Steve Meagher, from ergonomics consulting firm Site Solutions.



- As computer use became more widespread, an increasing number of researchers specialized in studying the interaction between people and computers, concerning themselves with the physical, psychological and theoretical aspects of this process.



HCI History

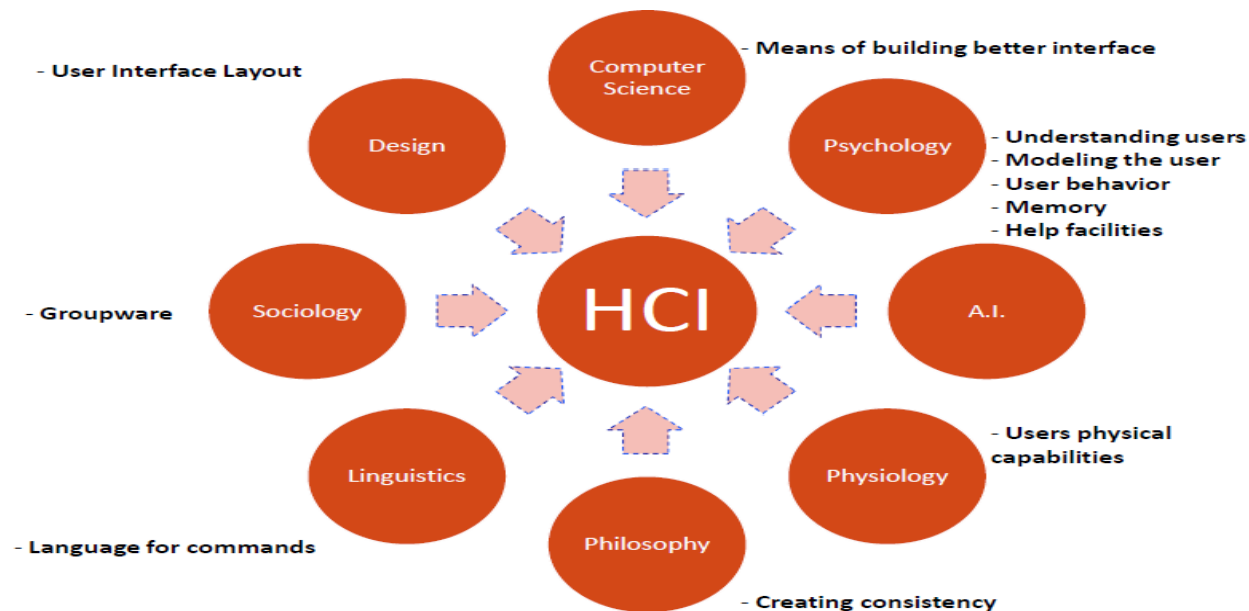
- This research originally went under the name *man–machine interaction*, but *this became human–computer interaction in recognition of the particular interest in computers and the composition of the user population.*
- **HCI terms interchangeably used:**
 - HCI (Human Computer Interaction)
 - MMI (Man Machine Interaction)
 - CHI (Computer Human Interaction)
 - HMI (Human Machine Interaction)



What is HCI?



- HCI is often regarded as the intersection of computer science, behavioral sciences, design and several other fields of study.





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HCI Aim

HCI aims to “develop or improve the safety, utility, effectiveness, efficiency and usability of system that include computers.”

(Interacting with computers, 1989, p3)

Usability ..”ease of use”

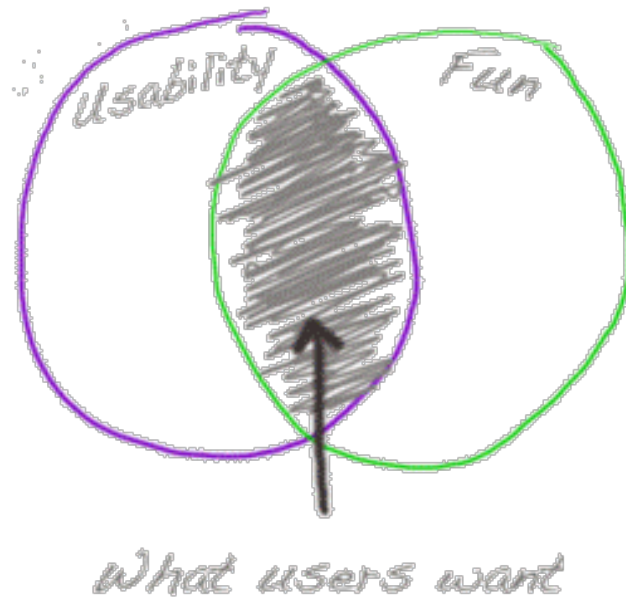
*Effectiveness is...
"Doing the right thing"*

*Efficiency is
"Doing the thing right"*



HCI Objectives

The objectives of HCI are..



To understand **the users** of a given a system.

To select **the best interaction design** for a given purpose.

To determine how the **user interaction and experience** should work and look.

To **evaluate how good** a specific user interaction is.



Why is HCI important?

- **User interfaces are a major component of many computer systems**
 - Up to 50% of all code is user interface code
- **Ever-increasing number of applications**
 - Users' expectations are getting higher
 - People are not willing anymore to spend long times on learning how to use an application
 - If people don't like your application, they dump it



Why is HCI important?

- HCI help development teams to avoid typical frustrations of users



<https://www.youtube.com/watch?v=GzhH900EjgE>

Can't figure out how to do simple things

Many hidden functions



<http://www.youtube.com/watch?v=keMmM3P4BRM>

Operations *outcome not visible*

Can't remember combinations of digits * #

how do we know whether it worked

how can we remember that this option is ON



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Why is HCI important?

- HCI help development teams to avoid fatal errors



A bad design led to a deadly aircraft accident in Leicestershire in 1989.





Why is HCI important?

- **HCI high return on investment**

- “For every dollar spent acquiring a customer, you will spend \$100 dollars reacquiring them after they leave because of bad customer service.” (Mauro New Media 2002)
- “Every \$1 spent on advertising produced \$5 in revenue, while \$1 spent on customer experience improvements yielded more than \$60” (Creative Good, 1999)



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Summary

- What is HCI?
- HCI History
- HCI Objectives
- Why is HCI Important?





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Next lecture

- User-Centered Design
- Understanding and Observing Users





Enjoy the course!

