COMP210: Interfaces & Interaction

1: Human-Centred Design(HCI)

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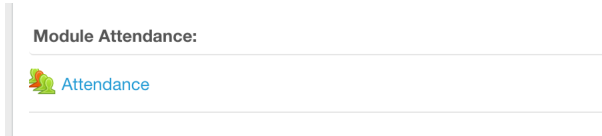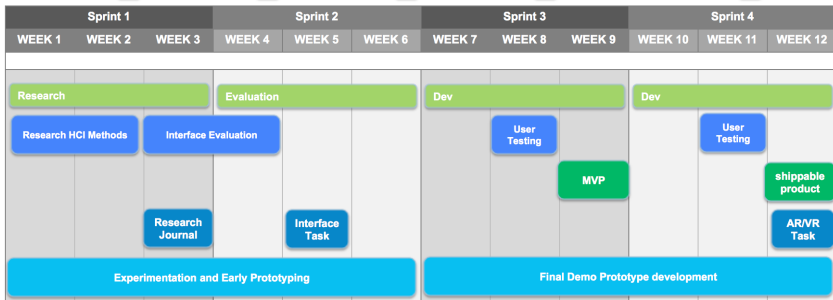
Module Attendance:

 Attendance

Module Roadmap

COMP210 Interfaces & Interaction

STUDY BLOCK 1

STATUS KEY █ Sprint Goal █ Waypoint █ Dev Work █ Assignment Deadline █ Research

Sprint 1			Sprint 2			Sprint 3			Sprint 4		
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12

Research			Evaluation			Dev			Dev		
Research HCI Methods		Interface Evaluation					User Testing			User Testing	
								MVP			shippable product
		Research Journal		Interface Task							AR/VR Task
Experimentation and Early Prototyping						Final Demo Prototype development					

Assignment Briefs

- **Produce** a journal detailing your research into HCI research
- **Evaluate** an existing screen-based game interface
- **Design** and **develop** an interface that incorporates either AR or VR

Learning Outcomes

- ▶ **Explain**
- ▶ **Discuss**
- ▶ **List**

Human-Computer Interaction

"If we didn't have people, everything would work so much better" Donald A. Norman

what is HCI?

HCl is the study of the relationship between people and technology

Figure: Cyborg Neil Harbisson with his antenna implant

A Little Bit of History

- Commonly understood that HCI formally acknowledged as a field of study in1982
- driven by the shift from secure cool room computers to personal computer - Apple 2 IBM PC Commodore
- In essence, non-engineers having access to computers
- Early computers were pretty daunting to non-engineers
- HCI was born from the shift from specialist users to day-to-day use by non-engineers

Ivan Sutherland

Ivan Sutherland Sketchpad Demo

Figure: Youtube link for Sketchpad demo filmed in the early 60s

More recently...

Early 90s HCI blew up as the internet and web went mainstream and there was an explosion of new interface and communication methods

Other Notable Shifts:

Fixed computers<2004>portable devices

Authored content<2004>user generated content

NOW

Tech Buzzword Bingo!

- ▸ Mobile
- ▸ Multitouch
- ▸ Gestures and natural computing
- ▸ Sensors
- ▸ Embedded
- ▸ Wearables
- ▸ Sustainability
- ▸ Big Data
- ▸ Social computing
- ▸ Accessibility
- ▸ Mixed Reality

Lets begin with the principle that all artificial things are designed.

Who is doing the designing?

Are you doing any design?

HCI - A Crash Course

Do not...

- ► Presume prior knowledge of the audience
- ► Especially, if they are a similar demographic to you
- ► Expecting people to read the instructions
- ► Blaming the user for errors
- ► Getting frustrated with the user for unpredictable behaviour

HCI is complex because...

- ▶ Borrow methods from other fields
- ▶ Create standards derived from other fields
- ▶ Involves Humans

If HCI is the study of the relationship between people and technology what fields might that span?

- Computer Science (duh)
- Sociology
- Psychology
- Communication
- Human factors engineering
- Industrial engineering
- rehabilitation engineering
- and many more.

HCI Research

"*HCI research requires both rigorous methods and relevance*"

- Donald A. Norman

We use it to influence interface design, development process, user training, and public policy.

Generally, to improve our relationship with computers.

What can be considered HCI contributions?

- ▶ Empirical
- ▶ Artefact
- ▶ Methodological
- ▶ Dataset
- ▶ Survey
- ▶ Opinion
- ▶ theoretical

We are mostly interested in empirical

These are Exciting Times

- ► Tools are much better now
- ► Eye tracking, sensors (EMG EEG)
- ► Access to the masses - mechanical Turk, social networks, large amounts of generated content to analyse
- ► Automation - AI machine learning, neural networks