

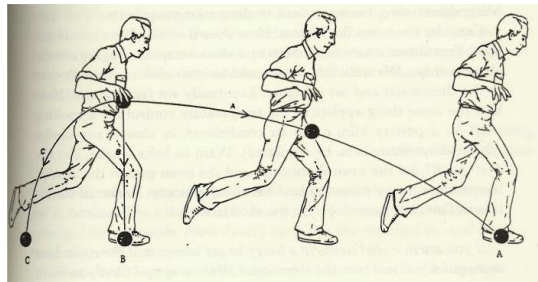
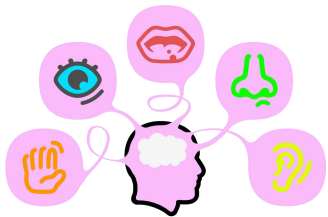
# HCI: What makes HCI design challenging?

Dr Kami Vaniea and Dr Aurora Constantin  
September 2020



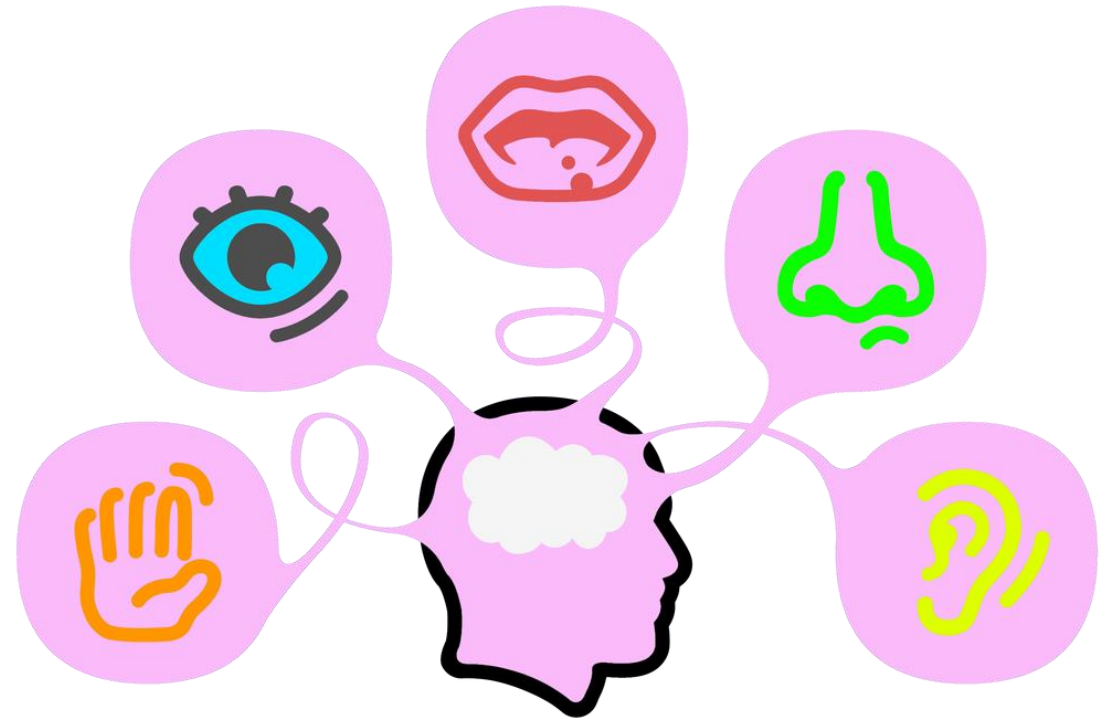
# I'm going to:

- Talk about how your brain works
- What that means for how humans interact with technology.
- The types of skills we are going to teach you in this class that help you use, rather than fight, how all our brains work.



# Your brain can't actually "see" the world

- Your brain is trapped in a skull.
- It has five senses connected to it that feed in data.
- It uses the senses to gather information about the world.
- It uses those senses, along with memory, to construct an understanding of what the world looks like.



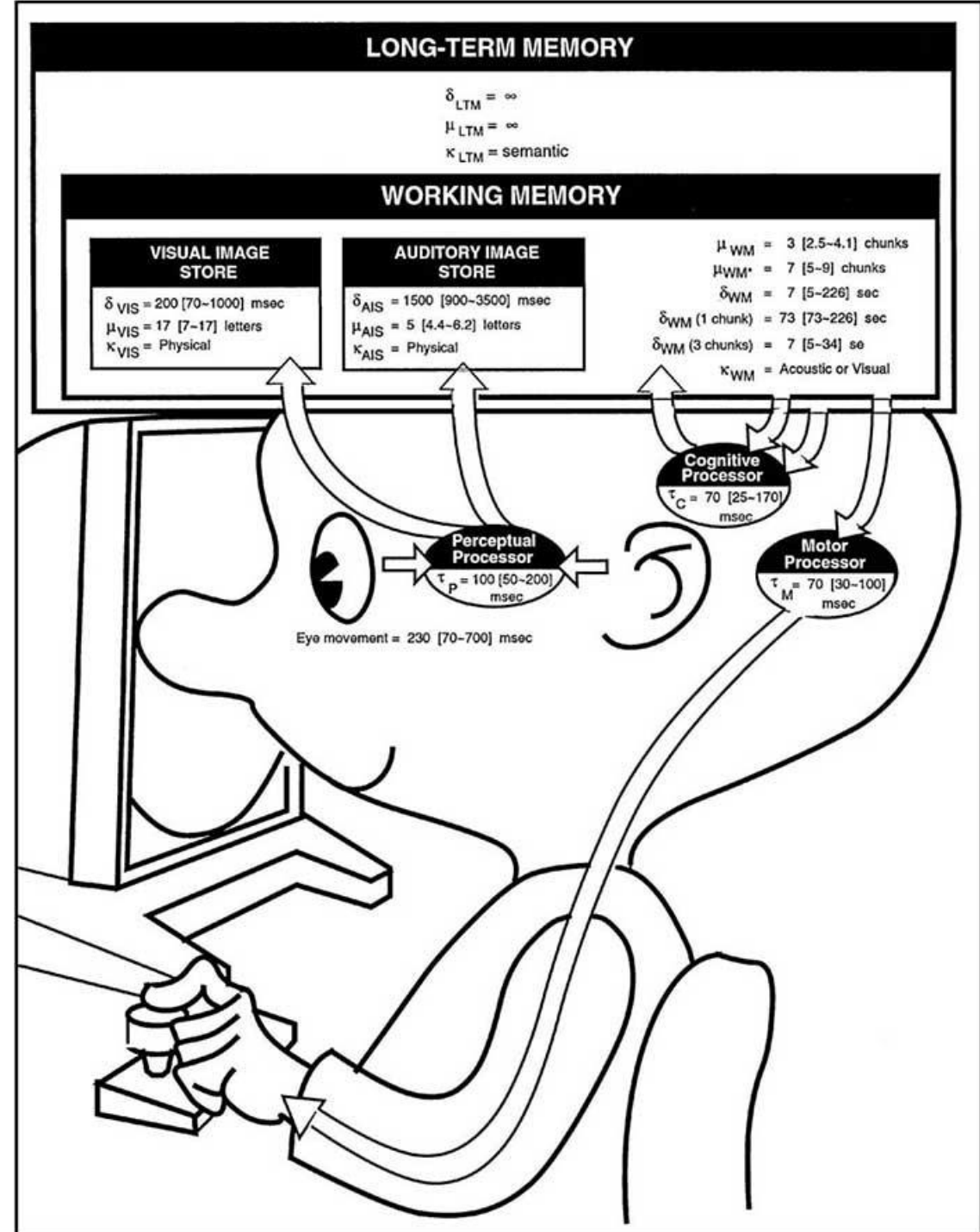
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# Processing data also takes time

- Your brain is very fast, but it cannot process data instantly.
- So it builds a “mental model” that lets it reason about not only the present but also the future.
- This model is strongly biased by past experiences and memories.

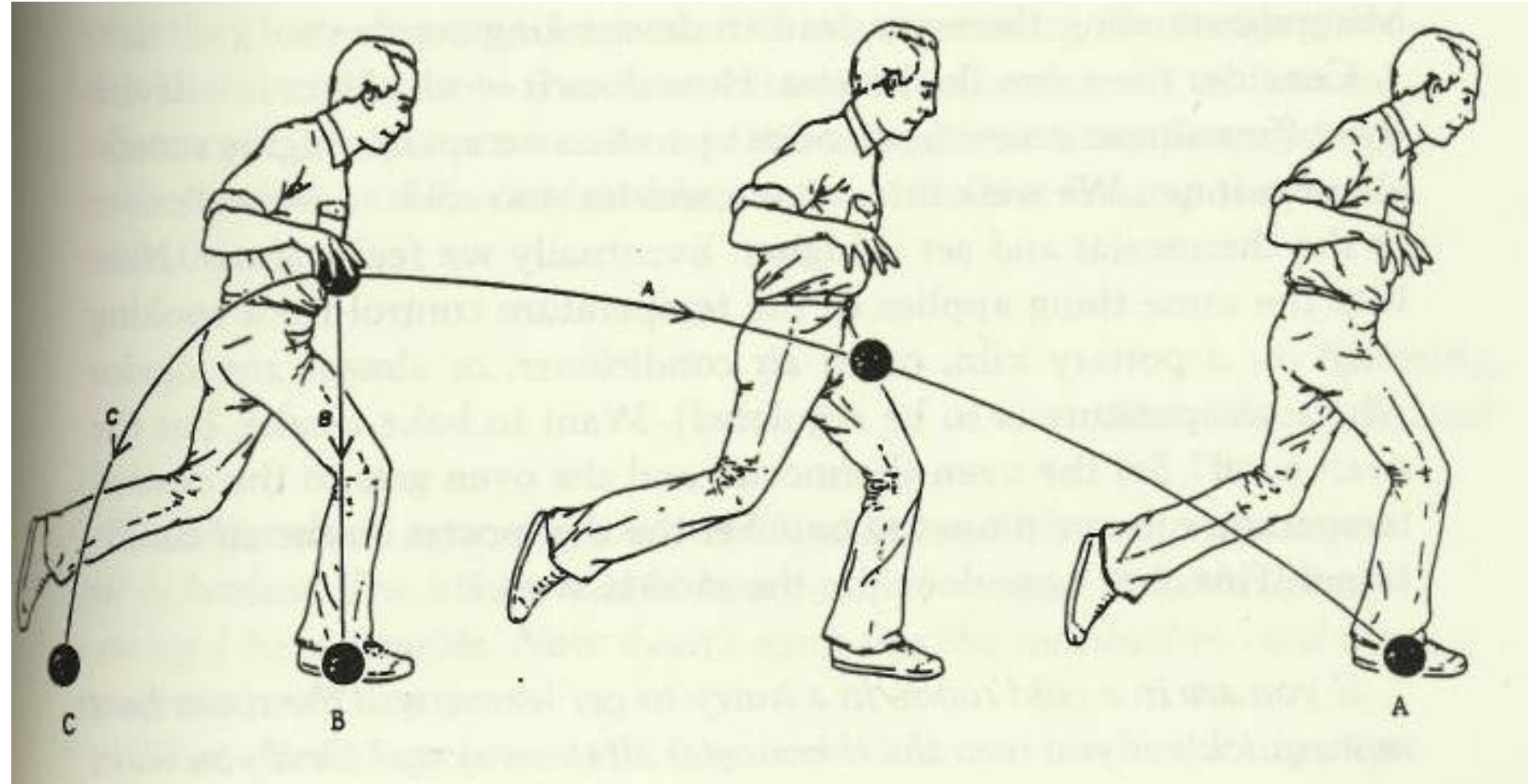






# Mental models:

If the man drops the ball while running, what path will it take?



**Your brain builds models and then uses them to make very fast decisions about the world.**



5

E<sub>1</sub>

**PULL**

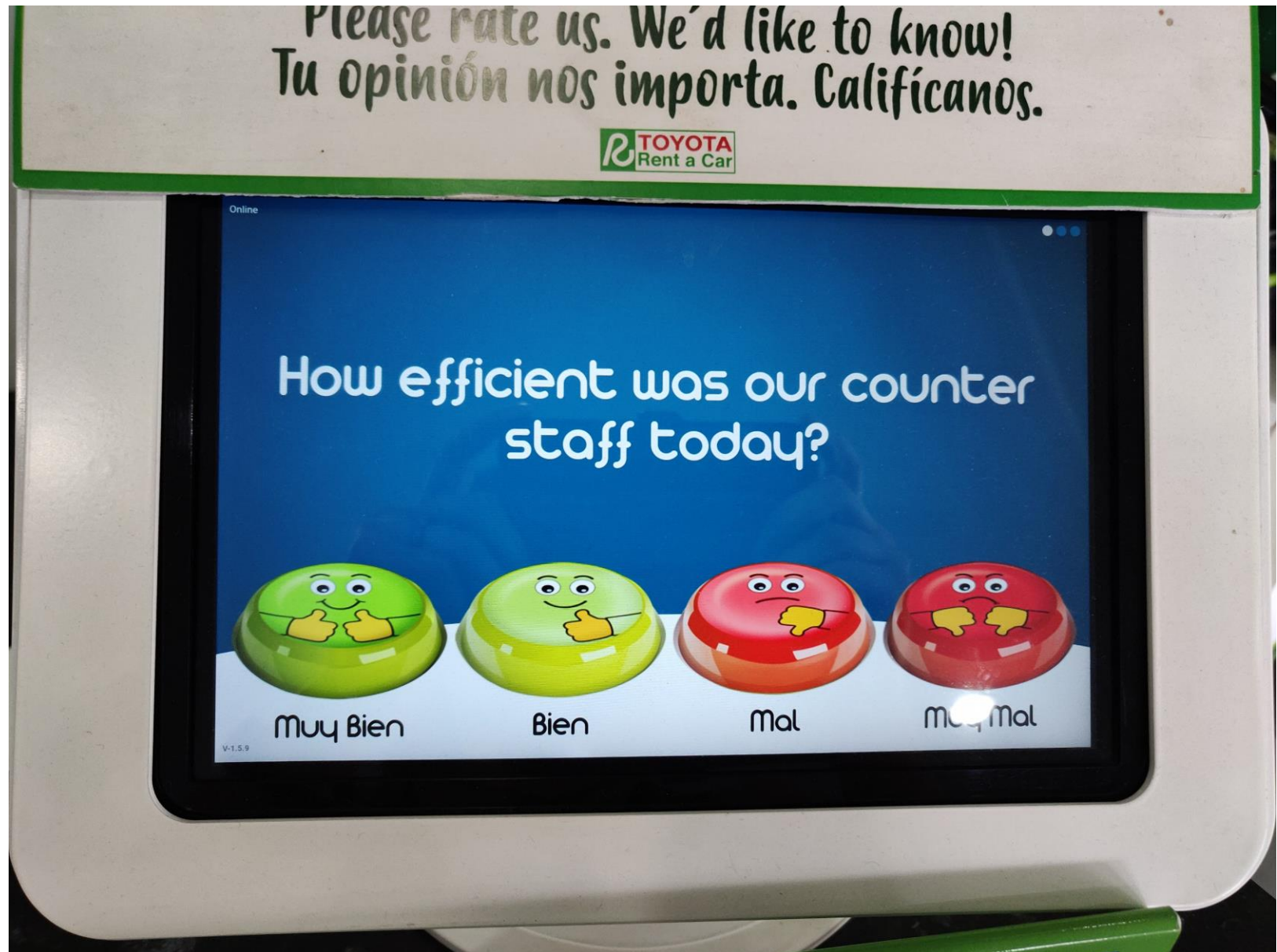
Please push

by  
blend  
CAREERS *Go Grande*

**PUSH**



Good design supports fast thinking and allows users to interact without reading.





Good design supports fast thinking and allows users to interact without reading.

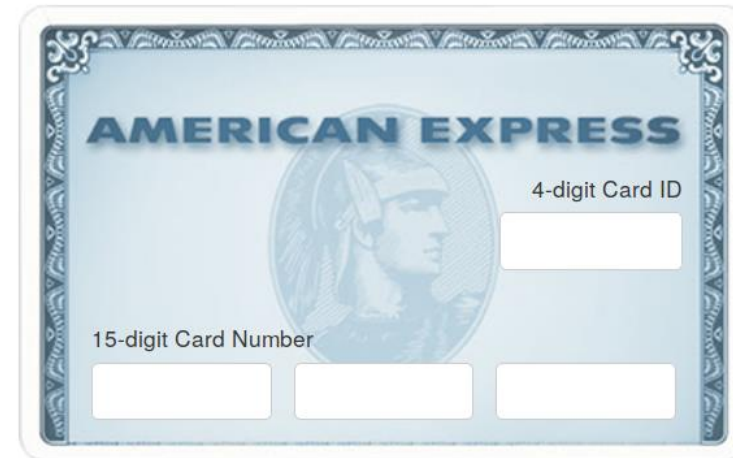
1. Get Started

2. Set Up

3. Finish

Welcome!  
Let's get started

Please enter your Card details to begin.

A graphic of an American Express card is centered on the screen. The card features the 'AMERICAN EXPRESS' logo at the top, a central image of the centurion, and two input fields: a '4-digit Card ID' field and a '15-digit Card Number' field. The card number field is divided into three segments.

AMERICAN EXPRESS

4-digit Card ID

15-digit Card Number

Confirm

**Ok, so we just need to make some designs that support fast thinking. That's easy, piles of apps do it already.**

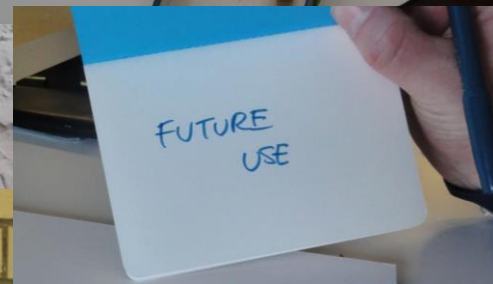
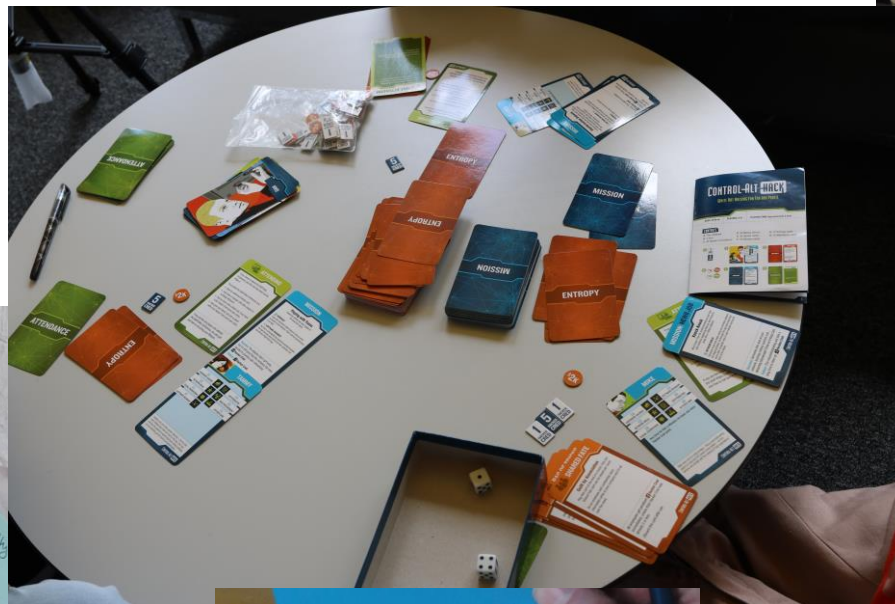
# The problem

- Most people in this class are digital natives.
- Your brains have been trained to process user interfaces FAST.
- Good HCI designers have learned how to:
  - Slow down.
  - Think about how others will process.
  - Think about why something is hard to use.
  - Design so that other people can do fast interaction.

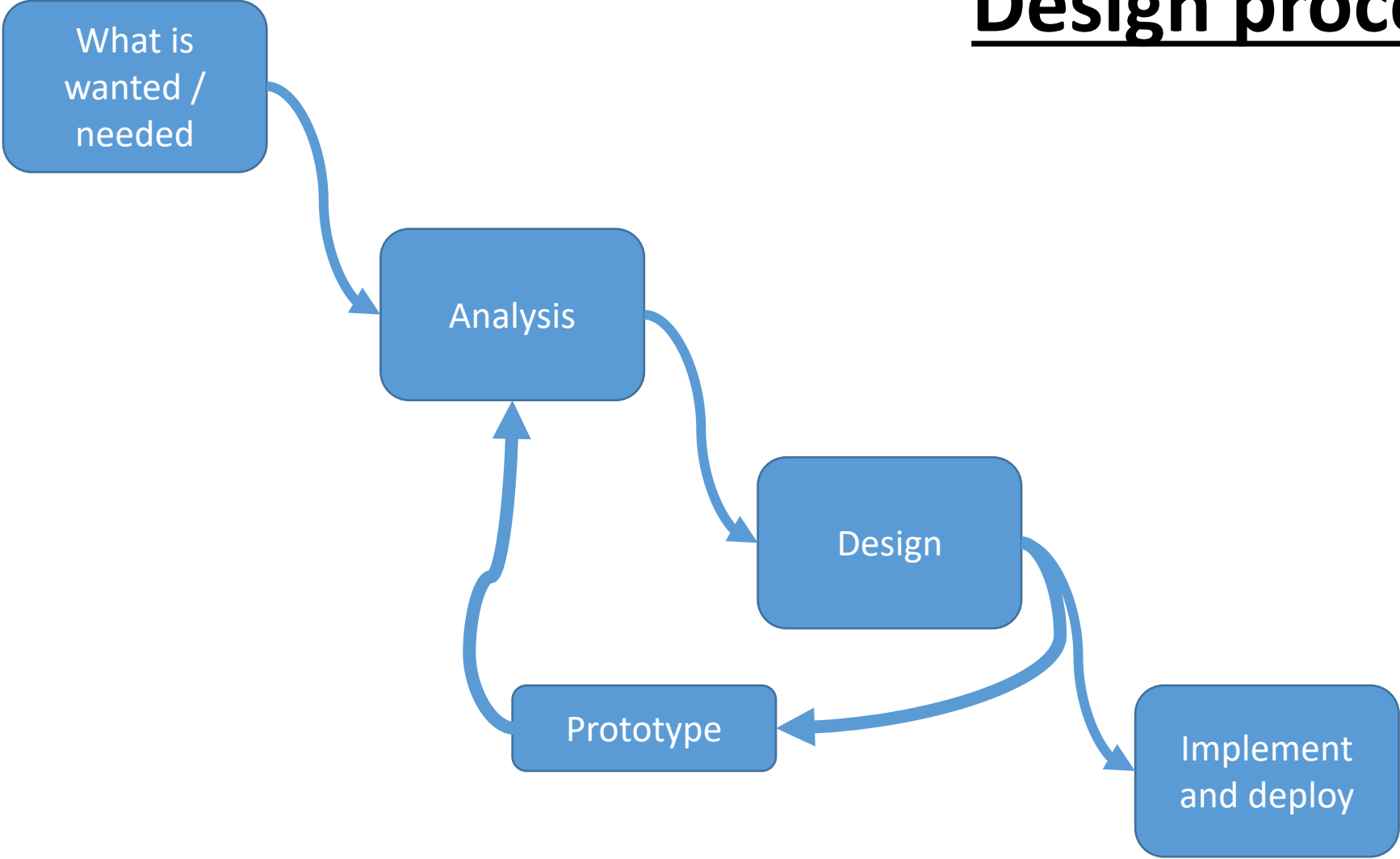




# In this class

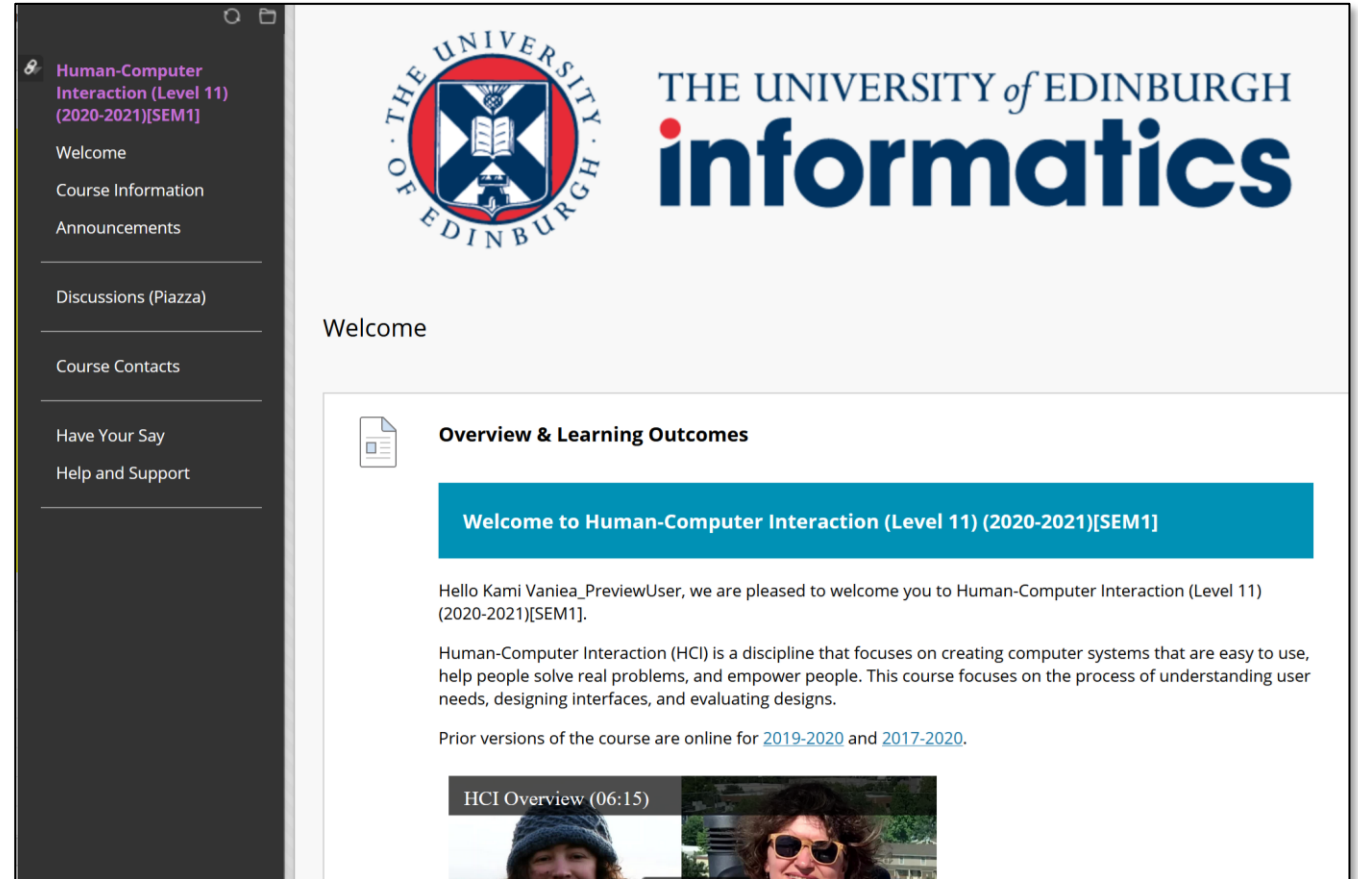


# Design process



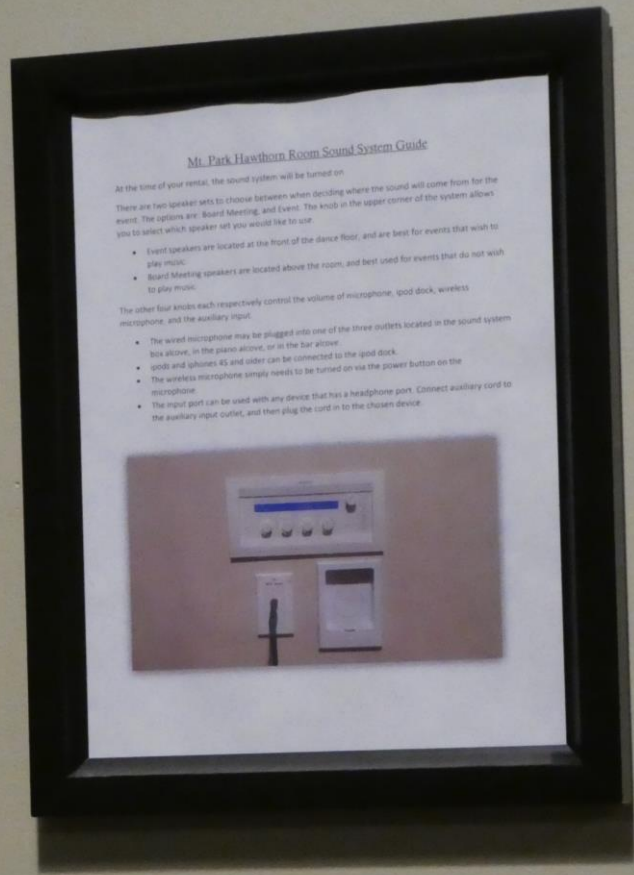
# Class will step through designing a UI

- Design requirements
- Mockups
- Fast feedback
- Evaluation
- UI design
- Refining



The screenshot displays a course landing page for 'Human-Computer Interaction (Level 11) (2020-2021)[SEM1]' at the University of Edinburgh. On the left is a dark sidebar menu with the following items: 'Human-Computer Interaction (Level 11) (2020-2021)[SEM1]', 'Welcome', 'Course Information', 'Announcements', 'Discussions (Piazza)', 'Course Contacts', 'Have Your Say', and 'Help and Support'. The main content area features the University of Edinburgh logo and the 'informatics' brand name. Below this is a 'Welcome' heading and a section titled 'Overview & Learning Outcomes'. A blue banner reads 'Welcome to Human-Computer Interaction (Level 11) (2020-2021)[SEM1]'. The text below the banner reads: 'Hello Kami Vaniea\_PreviewUser, we are pleased to welcome you to Human-Computer Interaction (Level 11) (2020-2021)[SEM1]. Human-Computer Interaction (HCI) is a discipline that focuses on creating computer systems that are easy to use, help people solve real problems, and empower people. This course focuses on the process of understanding user needs, designing interfaces, and evaluating designs. Prior versions of the course are online for [2019-2020](#) and [2017-2020](#).' At the bottom, there is a video player thumbnail for 'HCI Overview (06:15)' showing two people.





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