COMP140: Creative Computing Hacking

Interface Design & Evaluation

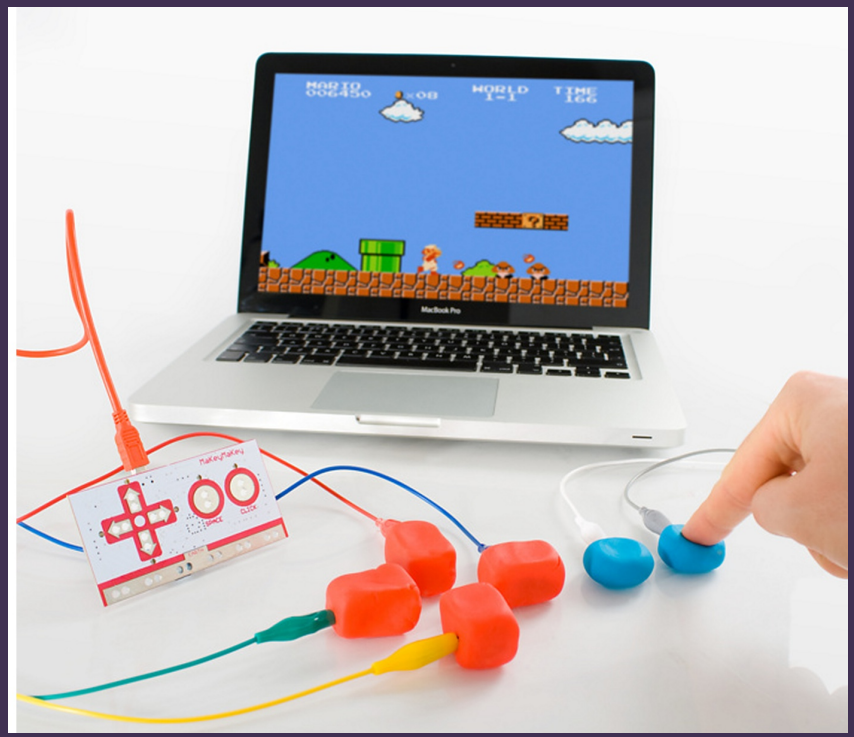
Lecture Objectives

Today's lecture will build upon the practical design of your game controller, focusing on:

- Exploring the nature of input, output, and interaction styles
- Examining the role of prototyping in design
- Practical guidelines on one design evaluation technique: heuristic analysis

This will be followed up by a practical in which you will identify heuristics and apply them to a peer's game interface.

Important Notice



Remember to bring your *Makey Makey* kit and associated materials to these lectures for practical support toward the end of each of these sessions.

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Input, Output, and Interaction Styles

Learning Outcomes

In this section you will learn how to...

- **Explain** the role of input and output in systems design
- **List** and **describe** a variety of input and output devices, giving examples of situations where each may be appropriate
- **Explain** what interaction styles are, while **critically evaluating** their respective advantages and disadvantages
- **Discuss** the role of direct manipulation in interacting with current computer systems

Further Reading

- Shneiderman, B. (1998) *Designing the User Interface: Strategies for Effective Human-Computer Interaction*. 3rd Edition. Addison Wesley.

Input and Output Technologies

- The cognitive approach is currently the dominant framework (or paradigm) for HCI (Perry, 2006).
- Players are characterised as `information processors', in which information undergoes a series of ordered processes in the player's mind.
- This worldview draws a comparison between the human brain and a computer; we can therefore model player activity in the same way that we model computer processing.

Socrative JBYPC3BBY

- In pairs.
- Quietly discuss what you think is meant by the term ‘cognition’ for 2-minutes.
- **Explain** cognition in your own words.

Interaction Styles

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Prototyping

Learning Outcomes

In this section you will learn how to...

- **Explain** the role of prototyping in game interface design
- **Compare** different approaches to prototyping
- **Select** an appropriate prototyping method for particular usability challenges

Further Reading

- Jensen, S. (2002) *The Simplicity Shift*. Cambridge University Press.

The Value of Prototyping

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Searching the Design Space

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Approaches to Prototype Development

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Best Practices and Pitfalls

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Usability Evaluation and Heuristic Analysis

Learning Outcomes

In this section you will learn how to...

- **Explain** what heuristic analysis is
- **Recognise** key heuristics for game interfaces
- **Describe** the application of heuristic analysis to game interfaces

Further Reading

- Nielsen, J. (1993) *Usability Evaluation*. Academic Press.

Usability Evaluation

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Heuristics

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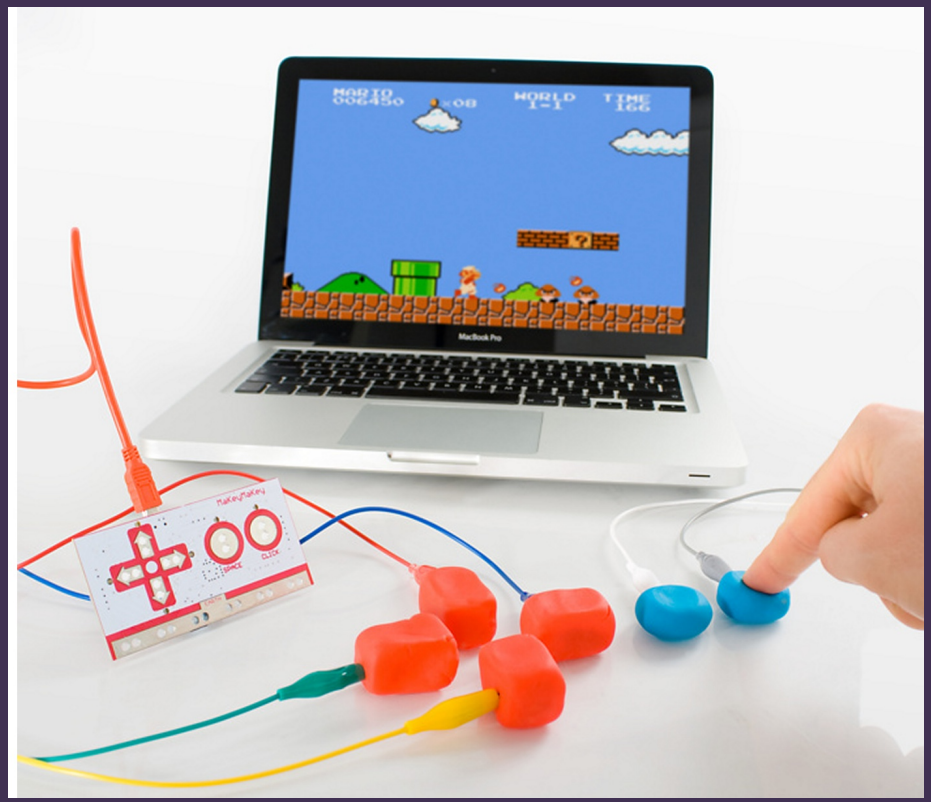
Heuristics

In a simple model of cognition, such as that proposed by Barber (1988), the process of cognition can be described as composing four sequential stages:



Heuristic Analysis Method

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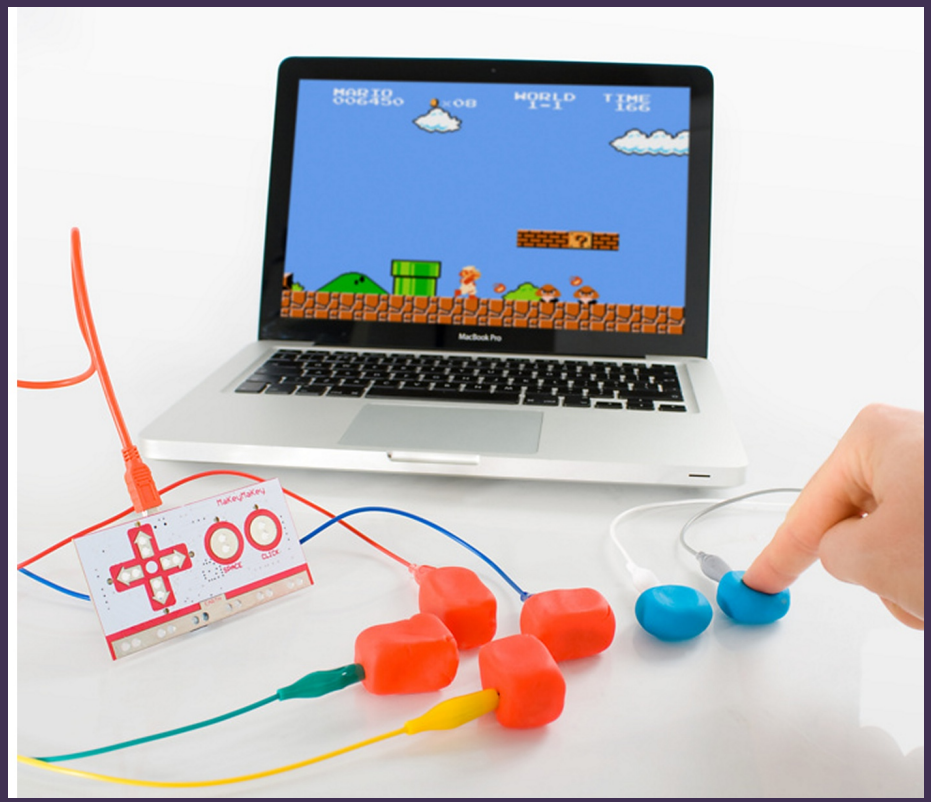

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Practical Activity

Heuristic Analysis Task

- **Review** the heuristics at `https://www.nngroup.com/articles/ten-usability-heuristics/`.
- Self-organise into pairs.
- **setup** your game and novel game controller.
- **Demonstrate** the prototype to a peer.
- **Conduct** a heurstic analysis of your peer's game interface, following the guidence at: `https://www.nngroup.com/articles/how-to-conduct-a-heuristic-evaluation/`

Coursework Progress

- **Prepare** for the final sprint review to take place next week.
- **Develop** the final draft version of the prototype game controller.
- **Ensure** that you are ready to conduct heuristic analyses of your peers' work.