

Cognitive Walkthrough

CS-M49 Lab & Field Work

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Overview

- History & definition
- When it is used
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- Critique
- Summary

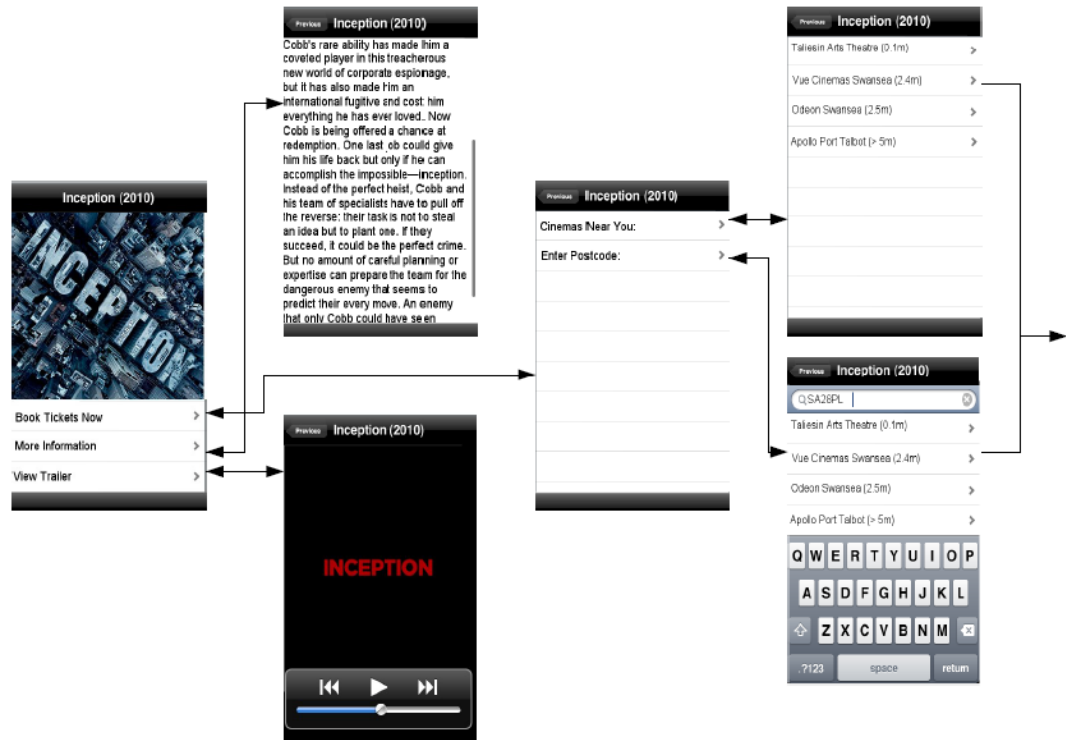
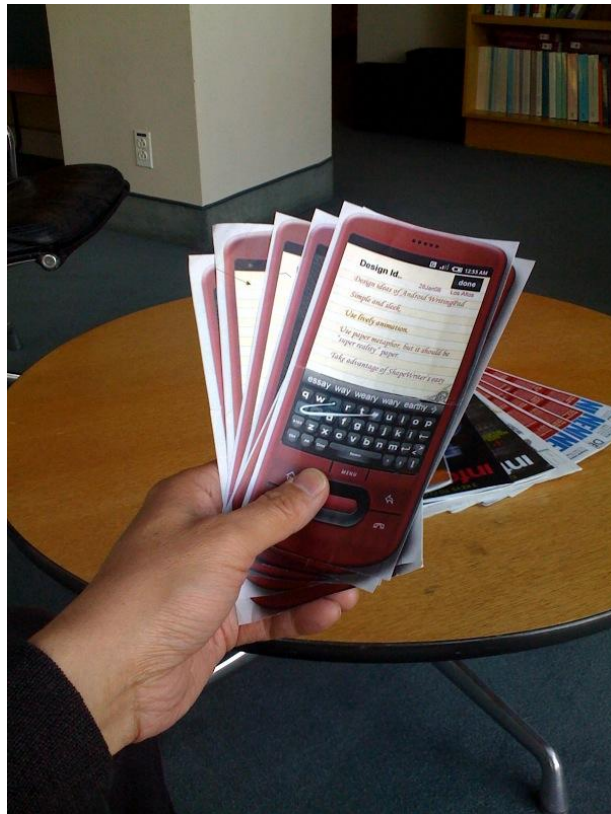
History & Definition

- Developed by Wharton et al in early 90s
- Technically:
 - Usability inspection method used to identify usability issues in a piece of software.
- In other words...
 - Formalized way of imagining people's thoughts & actions when initially using an interface.
- Rationale:
 - Users prefer to learn by use rather than a manual.

When it is used

- More complex version of ‘in your head’ walkthrough of your system
- Performed at early system development
 - Usually on low-fi early prototypes: i.e. paper-based prototypes
- Identify problems with usage of a system early enough to be corrected easily

Low-Fi Prototypes



How To Perform It

- Three inputs necessary to perform CW:
 - A prototype or description of system
 - Task Analysis:
 - Description of the task of the system
 - Complete sequence of actions needed to complete task
 - Set of potential user characters to go through the CW as: User personas
- Attempt to create a story of user using the system: success or failure story

How To Perform It

- Developers walk through the system as the persona, at each action ask four questions:
 - Will the user try to achieve the right effect?
 - Does the user link the action to the final goal
 - Will the user notice that the correct action is available?
 - Can the user physically see the correct button

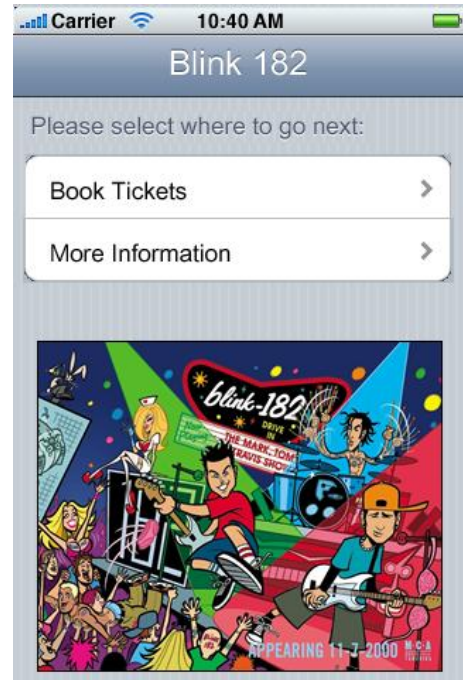
How To Perform It

- Will the user understand that the wanted subtask can be achieved by the action?
 - Does the button lead the user to believe clicking it will help them with their goal: label following
- Does the user get feedback?
 - If the correct action is performed, is the user given feedback on the progress toward the goal
- If walkthrough is ‘success story’, well done!
- If ‘failure story’, analyse why & re-design.

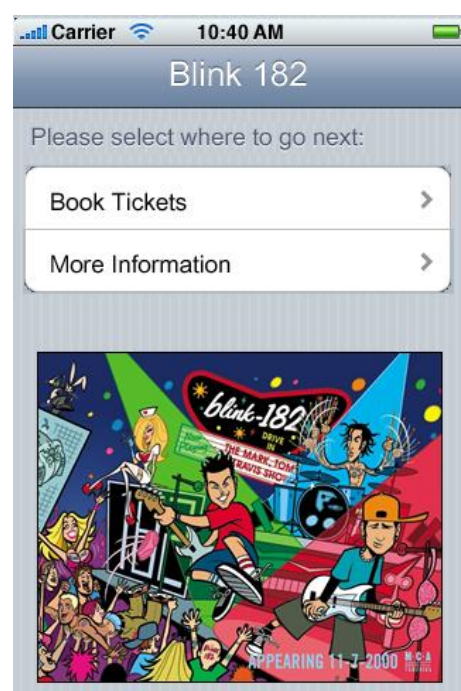
Quick Example

Goal: Book an upper tier ticket for the band.

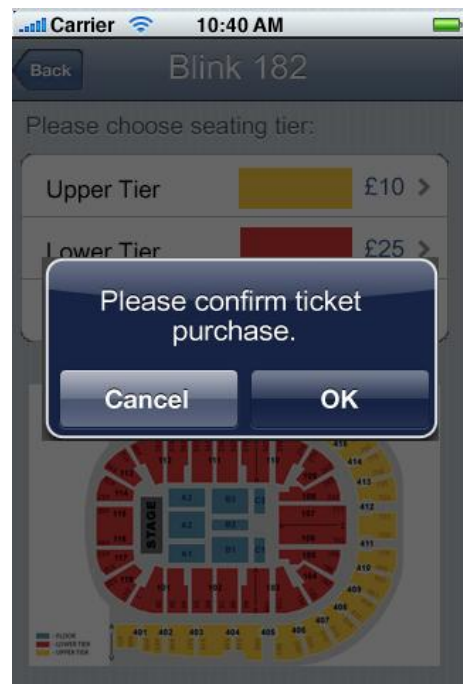
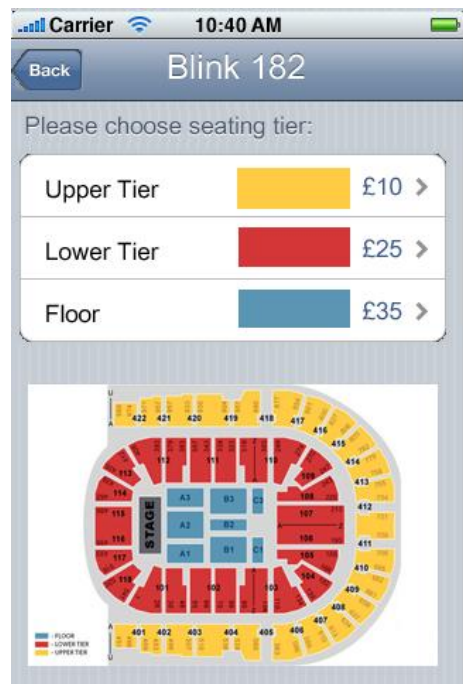
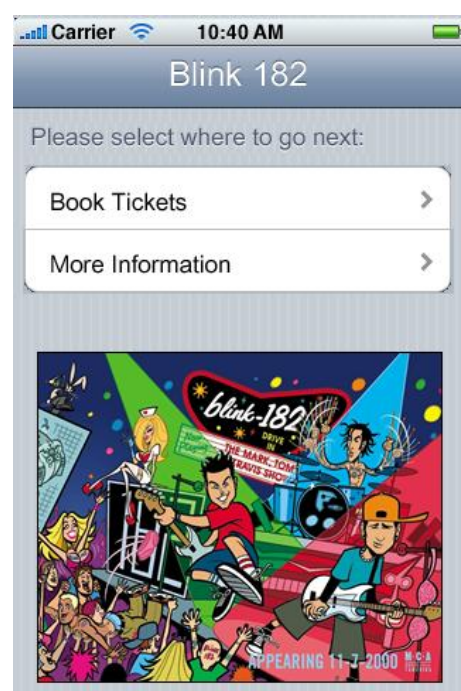
Persona: Music fan, computer novice



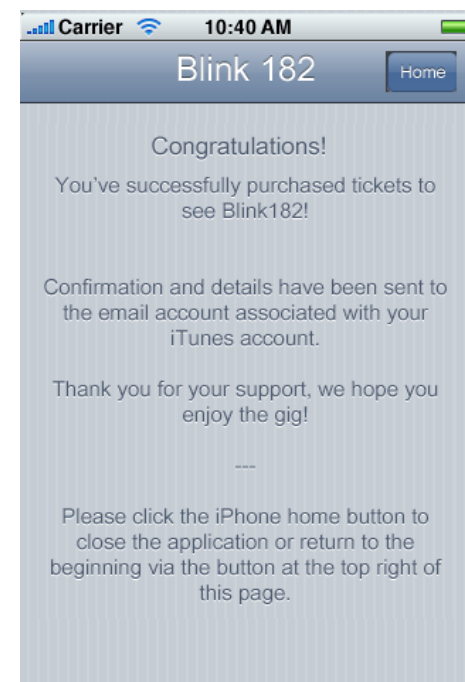
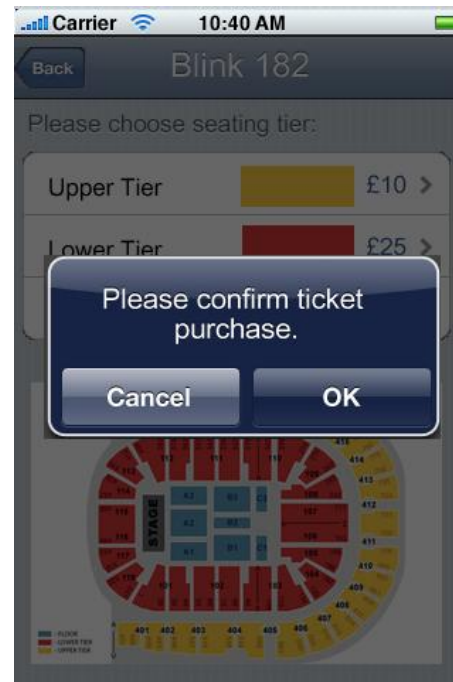
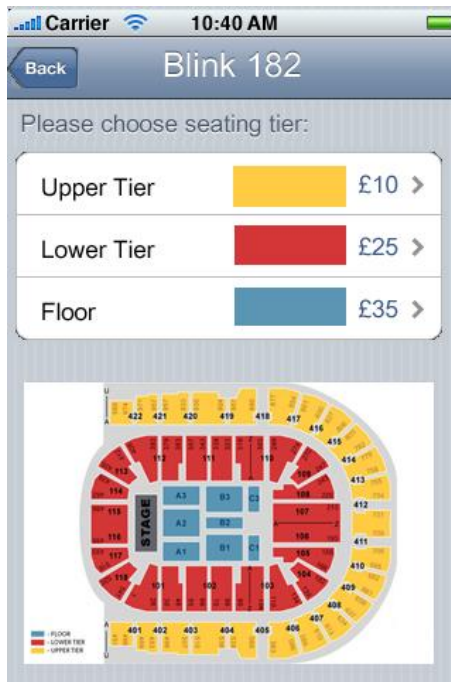
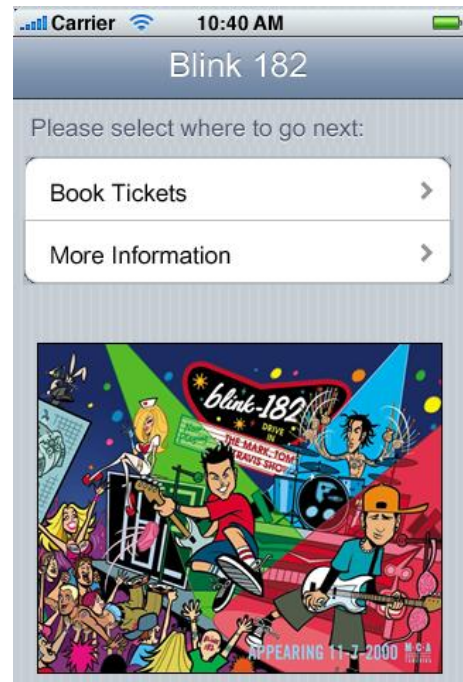
Quick Example



Quick Example



Quick Example



Critique

- Advantages:
 - Generate results quickly & at low cost
 - Able to apply method before any coding has begun

- Disadvantages:
 - Difficult to gather quantitative data
 - Subject to lazy or overly critical developers

Summary

- Method for analysing how potential users use the system
- Low cost & can be done at any time during development
- Papers that perform a cognitive walkthrough:
 - Computer-based drug ordering: evaluation of interaction with a decision-support system [1]
 - Testing a walkthrough methodology for theory-based design of walk-up-and-use interfaces [2]

References

- [1] Clayton Lewis, Peter G. Polson, Cathleen Wharton, and John Rieman. 1990. Testing a walkthrough methodology for theory-based design of walk-up-and-use interfaces. In *Proceedings of the SIGCHI conference on Human factors in computing systems: Empowering people* (CHI '90), Jane Carrasco Chew and John Whiteside (Eds.). ACM, New York, NY, USA, 235-242. DOI=10.1145/97243.97279
<http://doi.acm.org/10.1145/97243.97279>
- [2] 52. Horsky J, Kaufman DR, Patel VL. Computer-based drug ordering: evaluation of interaction with a decision-support system. *Medinfo*. 2004;11(Pt 2):1063–7.