

COMP3027J

Software Architecture

Usability and its Tactics

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Faculty of Computer Science, BJUT

Data Mining & Security Lab (DMS Lab)



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Outline

1. The Meaning of Usability
2. Tactics to Improve Usability
3. Summary of Quality Attributes



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The Meaning of Usability

Concerns

- Reduce the difficulty for users to use the software.

Various Aspects

- How to facilitate user onboarding?
- How to improve user efficiency in using the software?
- How to minimize the impact of user errors?
- How to adapt the software to user needs?
- How to enhance user confidence and comfort?



The Meaning of Usability - Scenarios

Sources of Stimulus

- End users.

Stimulus

- End users wish to learn how to use the system, improve system usage efficiency, reduce errors...



The Meaning of Usability - Scenarios

Artifacts

- The entire system.

Environment

- The system is either in running or configuration.

The Meaning of Usability - Scenarios

Response

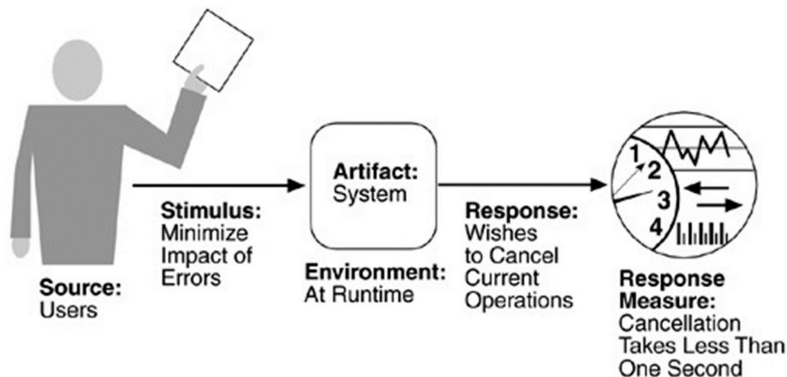
- The system responds to user requests.

Response Measurement

- Time taken by users to complete tasks.
- Number of errors made by users.
- User satisfaction.
- Success rate of user operations.



Usability Scenario Example



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Tactics to Improve Usability - Overview

Objective

- To make it easy for users.

用户的
请求

提升
易用性的
策略

给予用户适当的
反馈和支持

Direction 1: Runtime Tactics

Direction 2: Design-time Tactics



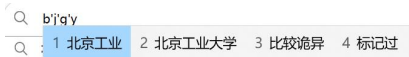
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Tactics to Improve Usability

-Runtime Tactics

System Anticipates User Tasks

- Input method predictions, search engine suggestions.

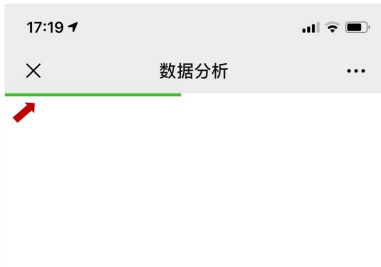


Tactics to Improve Usability

-Runtime Tactics

System Provides Appropriate Feedback to Users

- Notify remaining time for copying files, progress of web page loading.



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Tactics to Improve Usability

-Runtime Tactics

System Provides Consistent Experience to Users

- Mouse DPI adjustment to accommodate different resolutions.

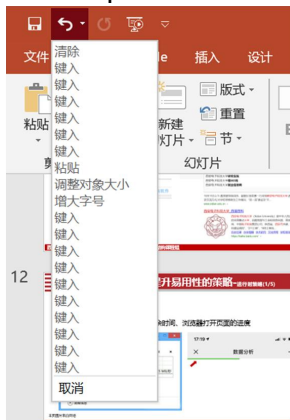


Tactics to Improve Usability

-Design-time Tactics

Support Undo Operations

- Minimize the impact of accidental operations.



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Tactics to Improve Usability

-Design-time Tactics

Isolate the User Interface from Other Parts of the System

- MVC pattern.
- Support independent modification of the user interface (even allowing users to modify the interface themselves).



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Thank you!



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