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Information Systems  
Analysis

Topic 12:  
*Design or Evaluate an Interface with Regard  
to the Requirements and Characteristics of  
its Users*

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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.2

Scope and Coverage

*This topic will cover:*

- Interface design that addresses the requirements and characteristics of an interface user
- An evaluation of interface design principles and whether these principles address the requirements and characteristics of the interface



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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.3

Learning Outcomes

*By the end of this topic students will be able to:*

- Design an interface that addresses the requirements and characteristics of an interface user
- Evaluate and discuss whether interface design principles have been applied to an interface
- Evaluate and discuss whether interface design principles have addressed the requirements and characteristics of an interface user



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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.4

Terminology

- Terminology will be explained in the lecture, seminar and tutorial and you should take notes.
- Ask questions if there is anything that you don't understand.

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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.5

Purpose of Evaluation

- The success of any interactive information system depends on its functionality, performance, reliability and user interface.
- Each one of these factors is important and inefficiency in any one of them can cause a problems in the system as a whole.
- A systems analyst needs to consider each factor when evaluating a user interface.

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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.6

Evaluation of a User Interface - 1

- Can take the form of a user-acceptance test, based on the requirements specification produced by the Systems Analyst
- Also a HCI evaluation assessment that is derived from the User Analysis and Task Analysis (discussed in Topic 11)

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Evaluation of a User Interface - 2

- The following **usability goals** are required to be included in any test of the usability of the interface:
  - free from errors
  - efficient
  - easy to learn
  - easy to recall
  - easy to use

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Evaluation of a User Interface - 3

- The following **user experience goals** are required to be included in any test of the usability of the interface:
  - aesthetically satisfying
  - enjoyable to use
  - motivating
  - engaging
  - reliable

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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.9

Evaluation Methods - 1

- There are a considerable number of methods available for evaluating a human computer interface.
- Some are undertaken by users of the actual system, others by experts or 'evaluators'.
- The following table illustrates the main methods of evaluation and further reference will be made to this in the seminar/private study sessions.

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Evaluation Methods - 2

Empirical Methods (Users)	Informal Evaluations (Non users)
Controlled user tests	Heuristic Evaluation
Physiological data analysis	Cognitive walkthroughs
User walkthrough	Predictive modelling – GOMS
Focus groups	Guidelines review
Structured observations	Consistency inspection
Cooperative evaluations	Critical event analysis
Activity logging	Dialogue Error Analysis
Data logging	Usability testing
Observations	Expert reviews
Questionnaires	
Interviews	

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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.11

Heuristic Evaluation - 1

- Not undertaken by real users
- Undertaken by an evaluator
- An observer answers an evaluator’s questions about the interface or gives advice on using it
- The evaluator states what they don’t like about the interface and their reasons why.

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Heuristic Evaluation - 2

- An evaluator assesses if the following is present:
  - simple language and directions
  - easily recalled
  - consistency
  - feedback
  - clearly marked exits
  - shortcuts
  - clear and relevant error messages
  - lack of errors
  - help features

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Heuristic Evaluation - 3

- However, this method has been criticised for the following reasons:
  - Usability problems are identified but there is not always an explanation of how they are to be improved or corrected.
  - Since the evaluators are not actual users, they may not identify all problems or potential problems with usability.

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Evaluation Documentation

- The following are examples of the type of documents that can be used when undertaking evaluation of a human-computer interface:
  - An Evaluation checklist
  - An Evaluation Assessment

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An Evaluation Checklist

PURPOSE	VALUE
Instruct	Learning
Inform	Accessibility
Entertain	Fun
Enable	Ease of Use

More factors can be added

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Evaluation Assessment

General HCI Assessment	Example
<b>Usability Goals</b>	
Fewer errors	
Efficient	
Easy to learn	
Easy to remember	
Safe to use	
<b>User Experience Goals</b>	
Knowledge base	
Skills base	

More factors can be added

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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.17

Impact of a New or Updated User Interface on an Information System

- The acceptance of a new or updated information system by its users usually depends on their experience with the user interface.
- It is therefore crucial to analyse their requirements and the system's requirements as thoroughly and accurately as possible and produce a specification that documents these needs precisely.
- Evaluation of the interface must be robust to identify and correct any problems.

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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.18

Conclusion

- If an information system's users are satisfied and comfortable with their interface, this can:
  - increase productivity
  - reduce training costs
  - reduce maintenance costs
  - prevent user errors
  - contribute to job satisfaction

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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.19

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Design or Evaluate an Interface with Regard to the Requirements and Characteristics of its Users Topic 12 - 12.20

Topic 12 – Design or Evaluate an Interface with regard to the Requirements and Characteristics of Its Users

Any Questions?

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