

HUMAN COMPUTER INTERACTION

System Analysis and Design

Introduction

Forms and Reports

Formatting

Usability

Design of Interfaces
and Dialogues

Review of Bad UI

LEARNING OBJECTIVES

- ✓ Understand the Design of Forms and Reports.
- ✓ Understand Formatting.
- ✓ Understand Usability.
- ✓ Understand the Design of Interfaces and Dialogues.
- ✓ Understand Impact of Poor User Interface Choices

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WHY AUDIT

- ✓ If the user interface is poorly designed, it can:
 - ✓ Severely restrict the user's ability to use the system
 - ✓ Cause confusion and frustration
 - ✓ Cause difficulty in learning how to use the system
 - ✓ Cause misunderstanding of what the system is doing and of what the user should do
 - ✓ Cause errors
 - ✓ Cause difficulties in using the system to successfully complete tasks



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HUMAN-COMPUTER INTERFACE (HCI)

- ✓ Programmable, or software, interface which enable an end-user (i.e. the person using the computer) to
 - ✓ Access and interact with a computer application system
 - ✓ Make use of the facilities and functions which it provides
 - ✓ Carry out the tasks for which the system has been designed

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FORMATTING

- ✓ Structuring the presentation of information in a meaningful, and easy to navigate fashion.

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USABILITY

- ✓ The extent to which an end-user is able to carry out required tasks successfully, and without difficulty using the computer application system



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INTERFACES AND DIALOGUES

- ✓ Focuses on applying the principles from Forms and Reports on the specific user interaction screens

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BAD USER INTERFACE (UI)

✓ There are many examples of poor UI. We will focus on a few exemplars.

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FORMS AND REPORTS

- ✓ The difference between a form and a report
- ✓ Forms typically display information for a single instance of data
- ✓ Reports typically display multiple sets of data

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FORMS AND REPORTS

✓ Fundamental Questions to ask:

- ✓ Who will use this
- ✓ What is the purpose
- ✓ When is this needed and used
- ✓ Where is the form used or seen (Web, Mobile, Printed...)
- ✓ How many people need to use or view

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FORMATTING

- ✓ Fundamental Principle is that properly formatted displays and documents are better:
 - ✓ More effective
 - ✓ More efficient
 - ✓ Better received
 - ✓ Fewer misunderstandings or errors

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FORMATTING GUIDELINES

✓ Meaningful Titles

- ✓ Clear and Specific titles describing content and use of forms or report
- ✓ Revision date or code so users can know if they have the latest information
- ✓ Current date (Date form or report was generated)
- ✓ Valid Date

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FORMATTING GUIDELINES

✓ Meaningful Information

- ✓ Only needed information should be displayed (Think Google Landing Screen)
- ✓ Information provided in usable manner
 - ✓ Shouldn't need to copy into a spreadsheet and manipulate

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FORMATTING GUIDELINES

- ✓ **Balance of Layout**
 - ✓ Information should be balanced on screen or page
 - ✓ Adequate spacing and Margins
 - ✓ Data and Entry fields clearly labeled
 - ✓ Sufficiently sized fonts (or compliance to browser scaling)

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FORMATTING GUIDELINES

- ✓ **Design for Easy Navigation**
 - ✓ Clearly show how to move forward and backward
 - ✓ Clearly show where you are (page 1 of 3)
 - ✓ Notify user when final page is reached

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FORMATTING GUIDELINES

- ✓ **Color Benefits**
 - ✓ Soothes or Strikes the Eye
 - ✓ Accents an uninteresting Display
 - ✓ Facilitates subtle distinctions in data
 - ✓ Emphasizes logical organization of data
 - ✓ Draws attention to warnings
 - ✓ Evokes more emotional reactions

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FORMATTING GUIDELINES

- ✓ Color Problems
 - ✓ Color pairings may wash out **EXAMPLE**
 - ✓ Color fidelity may degrade on different displays (Printed vs Screen vs Projector)

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FORMATTING GUIDELINES

- ✓ Final Caution on Color
- ✓ Managers and Executives instinctively react to **RED**, **YELLOW**, and **GREEN**
- ✓ These colors should only be used when trying to convey that red items require **action**, yellow items require **watching**, and green items do **not require attention**

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USABILITY

- ✓ Usability typically refers to:
 - ✓ Speed
 - ✓ Accuracy
 - ✓ Satisfaction
 - ✓ Accessibility

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USABILITY

✓ Guidelines for Usability

✓ Consistency

✓ Organization

✓ Clarity

✓ Format

✓ Flexibility

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USABILITY

- ✓ Measures of Usability
 - ✓ Learnability
 - ✓ Efficiency
 - ✓ Error Rate

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USABILITY

- ✓ **Accessibility**
 - ✓ Does the application support visually impaired or limited hand movement users
- ✓ **Visually Impaired**
 - ✓ Text to speech options
 - ✓ Extreme zoom
- ✓ **Limited hand movement**
 - ✓ Proper use of the [TAB] key to move around fields
 - ✓ Eye motion capture

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INTERFACE AND DIALOGUE

- ✓ Guidance from Forms and Reports still applies
- ✓ Interface and Dialogue is an extension of the same principles

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INTERFACE AND DIALOGUE

✓ Guidelines

✓ Consistency

✓ Shortcuts

✓ Feedback

✓ Closure

✓ Error Handling

✓ Reversal (Think Undo and Redo)

✓ Control

✓ Ease

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INTERFACE AND DIALOGUE

✓ Common Properties of Graphic Interfaces

- ✓ Modality – Can't move to next option until current is populated
- ✓ Resizable
- ✓ Movable
- ✓ Maximize
- ✓ Minimize
- ✓ System Menus – This can be abused if implemented poorly

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EXAMPLES OF BAD UI

- ✓ <https://userinyerface.com/>
- ✓ <https://www.mockplus.com/blog/post/bad-ui-design-examples>
- ✓ <https://webdesignledger.com/best-examples-worst-ui-designs/>
- ✓ <https://cs.stanford.edu/people/eroberts/cs201/projects/2010-11/PsychologyOfTrust/ui3.html>
- ✓ <https://www.mockplus.com/blog/post/bad-web-design>

SUMMARY

In this unit you learned how to:

- ✓ Design Forms and Reports.
- ✓ Understand Formatting.
- ✓ Understand Usability.
- ✓ Understand the Design of Interfaces and Dialogues.
- ✓ Understand Impact of Poor User Interface Choices