At the end of this lecture you should have some understanding of:

- what are forms and reports
- what are the design guidelines for forms and reports
- how to effectively display text, tables, lists and charts
- how to assess the usability of an interface

Form and report design are key ingredients for successful information systems—especially for users.

Each input data flow to a process will be associated with a form.

Each output data flow from a process will be associated with either a form or a report.

Forms and reports can be paper-based or screen-based.

**Form**
- Business document containing some predefined data and also some areas for other data to be filled in.
- Typically based on one database record.
- Turnaround document produced by a system and then returned with input data.

**Report**
- Business document that contains only predefined data—passive document for reading.
- Typically contains data from many different database records.

**Designing Forms and Reports**

1. Collect initial requirements
   - Who will use the form or report?
   - What is its purpose?
   - When is it needed or used?
   - Where does it need to be delivered?
   - How many people need to use it?

2. Construct initial prototype

3. Users review and evaluate prototype
   - Iterate

**Design Specifications**

- Narrative overview
  - Form name, users, task, system, environment
- Sample design
- Testing and usability assessment
  - User ratings on perceptions of usability dimensions—consistency, sufficiency, accuracy, etc.
Designing Forms and Reports

Formatting Forms and Reports

- **General guidelines:**
  - Meaningful titles
  - clear and specific, revision-no, date
  - Meaningful information
  - needed and useable information
  - Balanced layout
  - spacing, margins, balanced and clearly labelled
  - Easy navigation
  - easy forward/backward moves, current position clear

Poor Form Design

- Vague Title
- No use of different intensity, fonts
- No navigation information
- Difficult to read
- Information packed tightly

Good Form Design

- Clear Title
- Easy to read
- Clear balanced layout
- Intensity differences, boxing, font sizes
- Clear navigation information

Highlighting Information

- Blinking and audible tones
- Colour, intensity, size and font differences
- Reverse video
- Boxing
- Underlining
- Capital letters
- Offsetting

Colour vs No Colour

- **Benefits of colour**
  - strikes the eye, draws attention to warnings
  - accents an uninteresting display
  - facilitates discrimination
- **Problems with colour**
  - colour blindness
  - resolution may degrade
  - printing or conversion to other media may not easily translate

Displaying Text

- Case
  - display text in mixed upper and lower case
- Spacing
  - double spacing if possible, leave line between paragraphs
- Justification
  - left justify with ragged right margin
- Hyphenation
  - do not hyphenate words between lines
- Abbreviations
  - use only when widely understood
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**Designing Forms and Reports**

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### Poor Text Design

- **Vague title**
- **Fixed, upper case text**
- **Single spacing**

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### Good Text Design

- **Clear title**
- **Mixed case text**
- **Spacing between sections**
- **Clear navigation information**

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### Designing Tables and Lists

- **Use meaningful labels**
  - for all rows and columns; relabel after change of page
- **Formatting columns, rows and text**
  - sort in meaningful order
  - place blank row after every 5 lines in long columns
  - be consistent with typefaces and fonts
- **Formatting numeric, textual and alphanumeric data**
  - right justify numeric data, left justify textual data

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### Good Table Design

- **Clear separate column labels**
- **Numeric data right justified**

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### Formatting Information to Avoid Bias

- **Sources of bias to avoid include**
  - providing information that does not match the user’s task
  - providing charts with too many items
  - using columns and highlights improperly
  - providing charts that use improper scaling

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### Bias in Scales of Graphs

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>300</td>
</tr>
<tr>
<td>Second</td>
<td>350</td>
</tr>
<tr>
<td>Third</td>
<td>400</td>
</tr>
<tr>
<td>Fourth</td>
<td>350</td>
</tr>
</tbody>
</table>
Usability typically refers to:
- speed - efficient completion of task
- accuracy - output provides what is expected
- satisfaction - output is liked

Assessing Usability

Consistency - of operation
Efficiency - related to user task
Ease - output self explanatory
Format - consistent format between entry and display
Flexibility - must be convenient to user

General Design Guidelines for Usability

Consistency - of operation
Efficiency - related to user task
Ease - output self explanatory
Format - consistent format between entry and display
Flexibility - must be convenient to user

User
- experience, skills, motivation, education, personality

Task
- time pressures, costs of errors, work duration (fatigue)

Systems
- platform will influence interaction styles and devices

Environment
- social issues and role should be considered

Contextual Issues

Time to learn
Speed of performance
Rate of errors
Retention over time
Subjective satisfaction

Measures of Usability

User
- observation
- interviews
- keystroke capturing
- questionnaires

Collection of Usability data

Usability data can be collected by
- observation
- interviews
- keystroke capturing
- questionnaires

References
