Designing Interface and Dialogue
Designing Interface And Dialog

- Interface design focuses on how information is provided to and from users.
- Dialog design focuses on sequencing of interface display.
- The design of interface and dialogues is the process of defining the manner in which human and computers exchange information.
- Similar to designing f&r, the process of designing i&d is user focused activity (prototyping methodology of iterative collecting information, constructing, assessing usability, and making refinements).
- To design usable i&d you must answer the same who, what, when, where and how.
- Design specification had 3 section, narrative overview, sample design and testing & usability assessment.
Design Specification

1. Narrative overview
   a. Interface/Dialogue Name
   b. User characteristics
   c. Task characteristics
   d. System characteristics

2. Interface/Dialogue Design
   a. Form/Report Design
   b. Dialogue sequence diagram and Narrative Description

3. Testing and Usability Assessment
   a. Testing objective
   b. Testing procedure
   c. Testing result
      i. Time to learn
      ii. Speed performance
      iii. Rate of errors
      iv. Retention overtime
      v. User satisfaction and other perceptions
Methods of Interacting

- **Command Language Interaction**, a human computer interaction method where users enter explicit statements into a system to invoke operations
- **Menu Interaction**, a human computer interaction method where a list of system options is provided and a specific command is invoke by user selection of menu option (positioning menus: pop up & drop down)
- **Form Interaction**, a highly intuitive human computer interaction method where data field are formatted in a manner similar to paper based form
- **Object Based Interaction (through use of icon)**, a human computer interaction method where symbols are used to represent commands or function
- **Natural Language Interaction**, a human computer interaction method where by inputs to and outputs form a computer based application are in conventional speaking language such as English.
## Guidelines for Menu Design

| Wording                          | • Each menu should have a meaningful title  
|                                 | • Command verb should clearly & specially describe information  
|                                 | • Menu item should be displayed in mixed case letters and unambiguous interpretation  
| Organization                    | • A consistent organizing principle should be used that related\s to the task the intended user perform  
| Length                          | • The number of menu choices should not exceed the length of screen  
|                                 | • Submenu should be used to breakup exceedingly long menus  
| Selection                       | • Selection and entry methods should be consistent and reflect the size of the application and sophistication of the user  
|                                 | • How the user is to select each option and the consequences of each option should be clear  
| Highlighting                    | • Highlighting should be minimized and use only to convey selected options or unavailable option  

Common Devices For Interacting With An IS

- Keyboard
- Mouse
- Joystick
- Trackball
- Touch screen
- Light pen
- Graphical tablet
- Voice
Design Layout

- Header information
- Sequence and time related information
- Instruction or formatting information
- Body or data detail
- Total or data summary
- Authorization or signatures
- Comments
Data Entry Screen Functional Capabilities

• **Cursor control capabilities**
  – Move the cursor forward to the next data field
  – Move the cursor backward to the previous data field
  – Move the cursor to the first, last, or some other designed data field
  – Move the cursor for/backward one character in a field

• **Editing capabilities**
  – Delete the character to the left of the cursor
  – Delete the character under the cursor
  – Delete the whole field
  – Delete data from the whole form (empty the form)

• **Exit capabilities**
  – Transit the screen to the application program
  – Move to the another screen/form
  – Confirm the saving of edits or go to another screen/form

• **Help capabilities**
  – Go help on data field
  – Go help on a full screen/form
Guidelines For Structuring Data Entry Field

• Entry : never require data that are already online or that can be computed
• Default : always provide default values when appropriate
• Units : make clear the type of data units requested for entry
• Replacement: use character replacement when appropriate
• Captioning : always place a caption adjacent to fields
• Format : provide formatting examples when appropriate
• Justify : automatically justify data entry
• Help : provide context sensitive help when appropriate
## Validation Test & Technique to Enhance The Validity

<table>
<thead>
<tr>
<th>Validation Test</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class or composition</td>
<td>Test to assure that the data are of proper type (numeric etc)</td>
</tr>
<tr>
<td>Combination</td>
<td>Test to see if the value combination of two or more data fields are appropriate or make sense</td>
</tr>
<tr>
<td>Expected values</td>
<td>Test to see if data is what is expected</td>
</tr>
<tr>
<td>Missing data</td>
<td>Test for existence of data item in all fields of a record</td>
</tr>
<tr>
<td>Pictures/templates</td>
<td>Test to assure that data conform to a standard format</td>
</tr>
<tr>
<td>Range</td>
<td>Test to assure data are within proper range of values</td>
</tr>
<tr>
<td>Reasonableness</td>
<td>Test to assure data are reasonable for situation</td>
</tr>
<tr>
<td>Self checking digits</td>
<td>Test where an extra digit is added to a numeric field in which its value is derived using a standard formula</td>
</tr>
<tr>
<td>Size</td>
<td>Test for too few or too many character</td>
</tr>
<tr>
<td>Values</td>
<td>Test to make sure values come from set of standard values</td>
</tr>
</tbody>
</table>
Providing Feedback & Help

• **System feedback can consist of three types:**
  1. Status information, e.q. “Please wait while ..
  2. Prompting cues, e.q. Enter the Customer AccNumber (123-45-6):
  3. Error and warning messages, e.q. “No customer record found…

• **Guideline for designing usable help:**
  1. Simplicity, use short, simple wording, complete sentence
  2. Organize, use lists to break information into manageable pieces
  3. Show , provide expl. of proper use and the outcomes of such use

• **Types of help:**
  Help on: -help -concepts -procedures -messages -menu
  -function keys -commands -words
Designing Dialogue

- A Dialogue is the sequence in which information is displayed to and obtained from a user.
- As designer the role is to select the most appropriate interaction methods and devices and to define the condition under which information is displayed to and obtained from a user.
- Three major step to deigning dialogue:
  1. Designing the dialogue sequence
  2. Building a prototype
  3. Assessing usability
- For a dialogue to have high usability, it must be consistent in form, function, and style.
Guidelines for the Design of Human Computer Dialogues

- Consistency
- Shortcuts and Sequence
- Feedback
- Closure
- Error handling
- Reversal
- Control
- Ease
Designing the dialogue sequence

• For typical dialogue between user and the customer information system for obtaining this information might proceed:
  1. Request to view individual customer information
  2. Specify the customer of interest
  3. Select the year to date transaction summary display
  4. Review customer information
  5. Leave system

• Dialogue diagramming is a formal method for designing and representing human computer dialogues using box and line diagram

• The three section of the box are used:
  – Top: contains a unique display ref. number
  – Middle: contains the name or description of the display
  – Bottom: contain display ref. number that can be accessed from the current display
Designing Interfaces and Dialogues in Graphical Environments

• Two rules repeatedly emerge as comprising the first step to becoming an effective GUI designer:
  1. Become an expert user of the GUI environment
  2. Understand the available resources and how they can be used.

• Common properties of Windows and forms in GUI environment that can be active or inactive:
  - Modality
  - Resizable
  - Movable
  - Minimize
  - Maximize
  - System menu
Common Errors when designing the interface and dialogues of website

- Opening new browser window
- Breaking or slowing down the back button
- Complex URLs
- Orphan pages
- Scrolling navigation pages
- Lack of navigation support
- Hidden links
- Links that don’t provide enough information
- Buttons that provide no click feedback