User Interface Design Input Screens

User Interface Design - Purpose

- Show a mock-up to the user and get sign-off approval
- Create a prototype to show a few features (functional requirements) of the application.

Screen Design

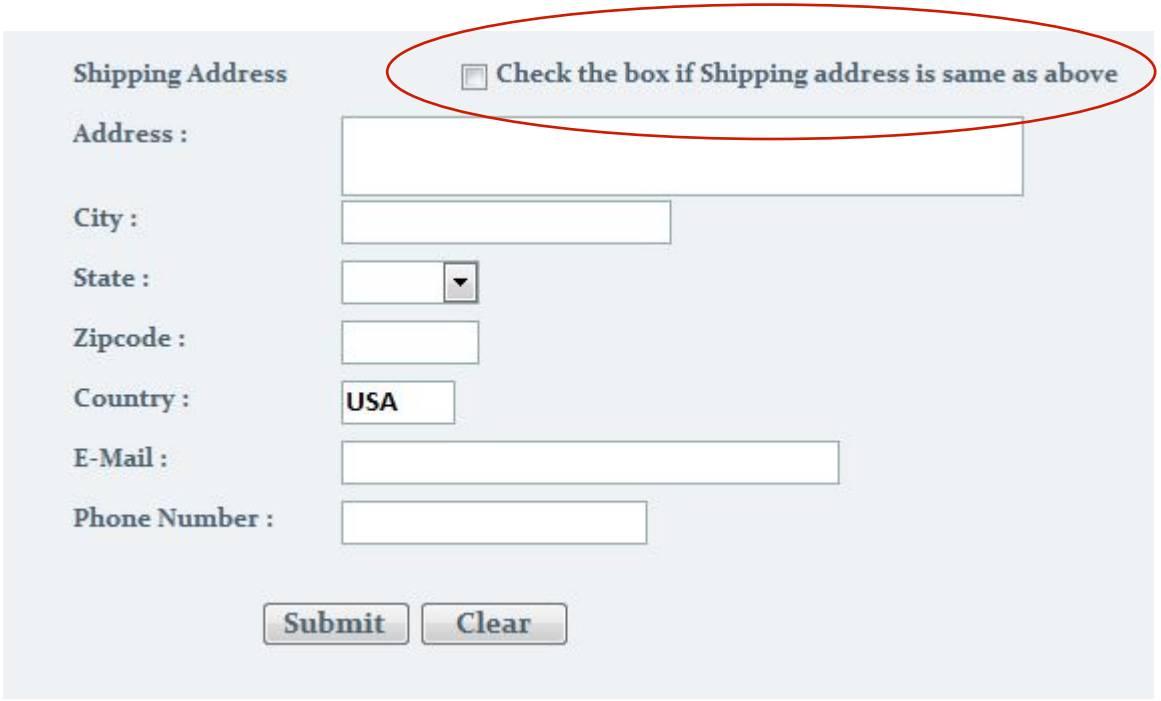
- Hints for designing input screens
  - Provide for some mechanism to backtrack to correct mistakes.
    - Position over field with the mouse and retype.
    - Enter the number of the line, then retype.
    - Tab back to the field and retype.
  - Use check boxes or pull-down combo boxes whenever possible, even for fields with a large number of values, like choosing a city, state, or country.

Screen Design

- Edit the fields as much as possible as they are entered.
  - Check for numeric, allowable range, existing customer number, etc.
  - Display an error message immediately if problems.
- When an action has serious consequences, ask “Are you sure?”
- When appropriate, supply default values so user enters only non-standard data.

Screen Design

- When appropriate, allow the data entry person to duplicate info from previous entry or screen.




```
Private Sub Check33_Click()
If Me!Check33 = True Then
    S_Address = Address
    S_City = City
    S_State = State
    S_Zipcode = Zipcode

    End If
    If Me!Check33 = False Then
    S_Address = ""
    S_City = ""
    S_State = ""
    S_Zipcode = ""
    End If
End Sub
```

Screen Design

- Use consistent terminology in your on-screen instructions.
  - Example: Don't say "Press enter key" in one place, "Hit carriage return" in another.

Screen Design

- Avoid using the mouse for commands when in a touch-typist-friendly application.
- Decide how to terminate field entries, then try to be consistent.
  - Don’t end the entry of one field with the enter key, the next field with the tab key, and the next one by filling the field and letting it skip automatically to the next field.

Screen Design

- Decimal points: always entering them versus never entering them…
  - Entering 123 results in 123.00 and
    1.23 results in 1.23

versus

  - Entering 12300 results in 123.00 and
    123 results in 1.23

Screen Design

- Be careful with the use of color; although it can make screens more appealing, it can also cause serious eyestrain or can be indistinguishable for people with color perception problems.
  - Unless you have done a lot of research into color theory, it's probably best to use a pre-defined color scheme that comes with the interface manager.

Screen Design

- VERY IMPORTANT -- make entry smooth and fast by reducing key strokes and hand movement.

Overview General Design Guidelines (Grading Rubrics)

- Each screen must have a meaningful title
- Comprehensive instructions where appropriate
- Logical grouping and sequencing of fields
- Visually appearing layout of the screen
- Familiar field labels
- Consistent terminology and abbreviations
- Visible space and boundary for data-entry fields

Overview General Design Guidelines (Grading Rubrics)

- Convenient and consistent cursor movement
- Error correction for individual characters and entire fields
- Error prevention where possible
- Error messages for unacceptable values
- Marking of required fields
- Explanatory messages for fields
- Completion signal to support user control

Meaningful Title

- Identify topic and avoid computer terminology
- Align with your use case model
- Use case model: Create Customer Account
- Use “Create Customer Account” for your screen title
- Use Center alignment for title

Comprehensive Instructions

- Describe user's tasks in familiar terminology
- Be brief
- If more information is needed, make a set of help screens available to the novice users.
- Once established grammatical style for instructions, apply that style consistently.

Logical Grouping of Related Fields

- Related fields should be adjacent and should be aligned
- Use blank spaces to separate between groups
- The sequencing should reflect common patterns
  - City should followed by state followed by zip code

Visually Appealing Layout

- Use consistent alignment
  - Field **labels** should be **right-justified** so that the data-entry fields are vertically aligned.
  - Right-justified labels allows the user to concentrate on the entry fields and to ignore the labels.
  - Left-justify displaying text for easy read

Familiar Field Labels

- Common terms should be used.
- If “Home Address” were replaced by “Domicile,” many users would be uncertain or anxious about what to enter.

Consistent Terminology and Abbreviations

- Prepare a list of terms and acceptable abbreviations and use the list diligently.
- Instead of varying between “Address,” “Employee Address,” “ADDR.,” and “Addr.,” stick with one term such as “Address”

Visible Space and Boundaries

- For data-entry fields, users should be able to see the size of the field.
- An appropriate sized box can show the maximum field length in a GUI.

Convenient Cursor Movement

- Provide a way for moving cursor between fields using the keyboard
  - Tab key or
  - Arrow keys
- Maintain consistency

Error Prevention

- Where possible, prevent users from entering incorrect values.
  - In a field requires a positive whole number, do not allow the user to enter letters, minus, or decimal points.

Error Messages for Acceptable Values

- If the user enters unacceptable values, the error messages should indicate permissible values for the field.
  - If the zip code field was entered as 28K21 or 6056, the error message might be “Zip Code must have five digits.”
  - **Do not use system default error messages!**

Immediate Feedback

- Report errors as soon as they are found.
- When feedback can be provided after the entire form has been submitted, the location of the field needing corrections should be made clearly visible.
  - Displaying the **error message in red next to the field**, in addition to the general instructions at the top of the forms.

Required Fields

- Fields that must be filled in, the word “Required” or some other indicator should be visible.
- Group important items near the top of the screen.
- Optional fields should follow required fields, whenever possible.

Field Messages

- If possible, explanatory information about a field or its permissible values should appear in a standard position, such as in a window next to or below the field, whenever the cursor is in the field.

Completion Signal

- Make it CLEAR to the actors what they should SEE or must DO when they are finished filling the fields.
- Ask for a confirmation before they “Submit.”

Navigation

- Navigation must be clear
- Support forward and backward navigation
  - When your design involves multiple sections or screens, use a “Continue” or “Next” button to move to the next screen and a “Back” or “Previous” button to move back.

Summary -- use

- Clear structure
- Grouping related elements together
- Alignment
- Appropriate use of fonts (size and type)
- Scale and minimal colors
- Spell check
- Minimize key strokes
- Easy to use

UI/UX Assignments #4, 5 and 6.

- Develop using MS Access or instructor-approved tool
- Learn to use prototyping tool on your own.
- Inform your instructor in writing (email) by the end of class on March 1st.
  - Tool you plan to use.
  - Names of members if you choose to work in a 2-3 person group.

Q & A