Communicating with the User Interface and About Menus GUIs

ITEP 414: SYSTEM ADMINISTRATION AND MAINTENANCE

The User Interface

- The User Interface (UI) is the system that helps users communicate with the computer system and/or the application system.
- The user interface (UI) is the point of human-computer interaction and communication in a device.
- User Interface (UI) Design focuses on anticipating what users might need to do and ensuring that the interface has elements that are easy to access, understand, and use to facilitate those actions.
- UI brings together concepts from **interaction design, visual design, and information architecture**.

User Interface Design Objectives

- To design a better user interface, use the following objectives:
  - Effectiveness is achieved through the design of interfaces that allow the user to access the system in a way that is congruent with their individual needs.
  - Efficiency as demonstrated through interfaces that increase speed of data entry, and reduce errors.

User Interface Design Objectives

- Further interface design objectives
  - User consideration as demonstrated in designing suitable interfaces, and providing appropriate feedback to users from the system.
  - Generating usable queries.
  - Productivity as shown through following sound principles of design for user interfaces and workspaces.

Components of the User Interface

- The user interface has two main components
  - Presentation language, which is the computer-to-human part of the transaction.
  - Action language that characterizes the human-to-computer portion.

Types of User Interfaces

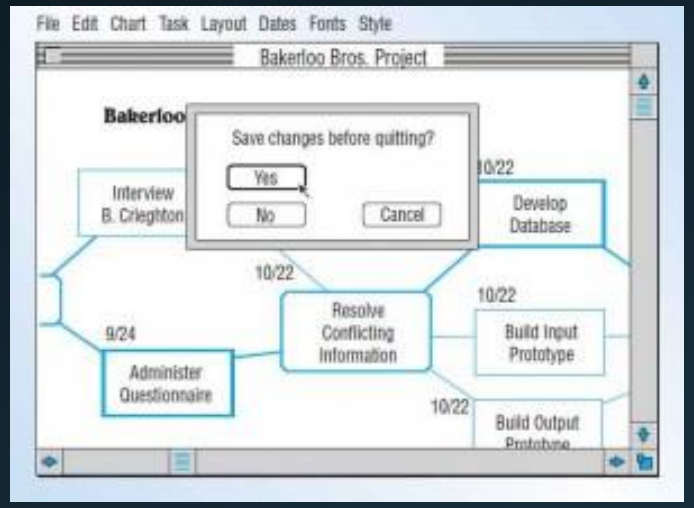
- There are several types of user interfaces:
  - Natural-language interfaces
  - Question-and-answer interfaces
  - A menu interface
  - Form-fill interfaces
  - Command-language interfaces
  - Graphical User Interfaces (GUIs)

Natural-Language User Interfaces

- Natural-language interfaces permit users to interact with the computer in their everyday or "natural" language.

Question-and-Answer User Interfaces

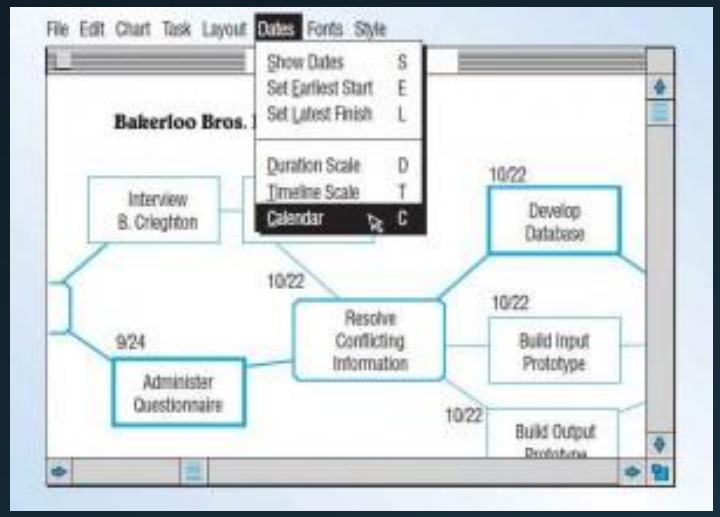
- The computer displays a question for the user on the screen.
- The user enters an answer via the keyboard.
- The computer acts on that input information in a preprogrammed manner.
- New users may find the question-and-answer interface most comfortable.



Dialog Box

Menu User Interface

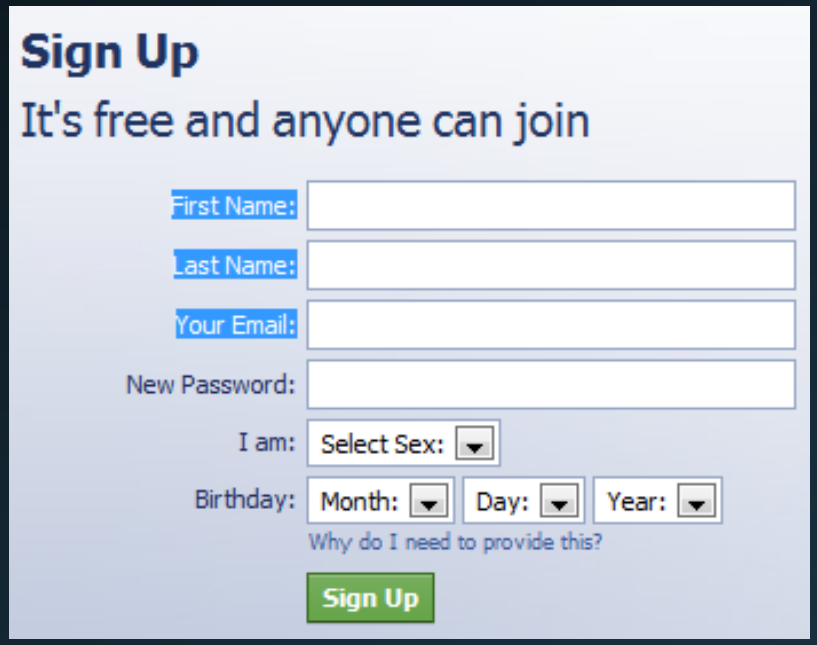
- A menu interface, which provides the user with an onscreen list of available selections.
- A nested menu is a menu which can be reached through another menu. (Menus under a Menu)
- The advantages of nested menus are:
  - Nested menus give a less cluttered screen
  - Nested menus eliminate menu options which do not interest a user
  - Nested menus allow users to move quickly through the program



Full-down Menu

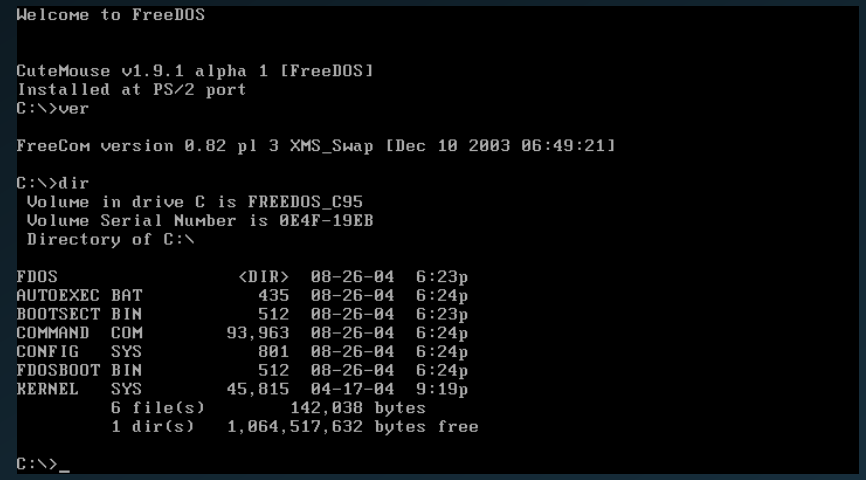
Form-Fill User Interfaces

- Form-fill interfaces are onscreen forms displaying fields containing data items or parameters that need to be communicated to the user.
- Form-fill interfaces may be implemented using the Web.



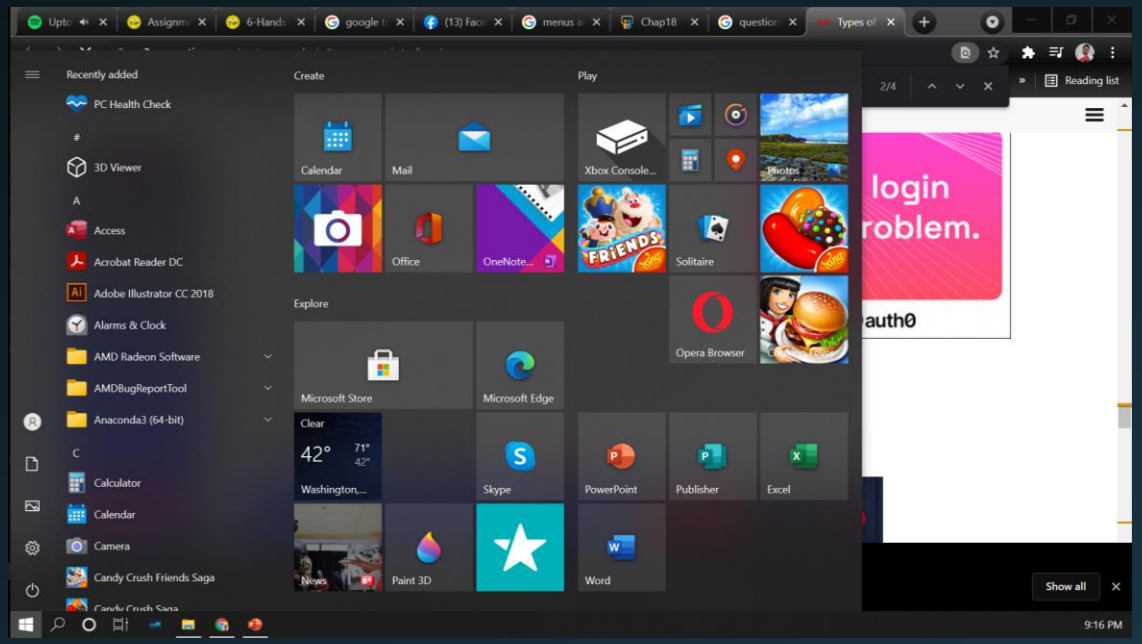
Command-Language User Interfaces

- Command-language interfaces are more popular than the Form-Fill User Interfaces.
- Allow the user to control the application with a series of keystrokes, commands, phrases, or some sequence of these.



Graphical User Interface (GUI)

- The main menu is always on the screen.
- The main menu uses single words.
- The main menu should have secondary menus grouped into similar features.



Dialog

- Dialog is the communication between a person and the computer.
- Three key points to be considered
  - Meaningful communication
  - Minimal user action
  - Standard operation and consistency

Communication

- Communication means that the user understands the information that is being presented.
- Users with less skill require a greater amount of communication.
- Provide easy-to-use help screens.

Minimal User Action

- Minimal user action is achieved by:
  - Entering codes instead of code meanings.
  - Enter only data that are not stored on files.
  - Not requiring users to enter editing characters.
  - Supplying default values on entry screens.
  - Providing inquiry programs with short entry fields.

Standard Operation

- Keeping header and footer information in the same locations for all screens.
- Using the same keystrokes to exit a program and cancel a transaction.
- Using a standard key for obtaining help.
- Standardized use of icons when using graphical user interface screens.
- Consistent use of terminology within a screen or Web site.
- Providing a consistent way to navigate through the dialog.
- Consistent font alignment, size, and color on a Web page.

Voice or Speech Recognition

- Voice or speech recognition systems are developing rapidly.
- There are two different types of voice recognition:
  - Continuous speech systems, allowing for dictation.
  - Speaker independence, so people can enter commands or words at a given workstation.

Evaluating User Interfaces

- The five useful standards in evaluating the interfaces are:
  - The training period for users should be acceptably short
  - Users early in their training should be able to enter commands without thinking about them or referring to a help menu or manual.
  - The interface should be "all-in-one" so that errors are few, and those that do occur are not occurring because of poor design.
  - The time necessary for users and the system to bounce back from errors should be short.
  - Infrequent users should be able to relearn the system quickly.

Feedback

- All systems require feedback in order to monitor and change behavior by
  - Comparing current behavior with predetermined goals.
  - Giving back information describing the gap between actual and intended performance.

Program Help

- Program help comes in a variety of ways:
  - Pressing a function key, such as F1
  - A GUI pull-down menu
  - Context-sensitive help, specific to the operation being performed
  - Iconic help, obtained when a cursor is left over an icon for a few seconds
  - Wizards, which provide a series of questions and answers when trying to perform an operation
  - Telephone help desks provided by the software manufacturer
  - Software forums on nationwide bulletin boards

Ecommerce Dialog

- Extra considerations are needed when developing e-commerce Websites
- Feedback needs to be solicited from customers, using either of two methods:
  - Launch the user's email program
  - Create a blank feedback template with a submit button labeled "feedback"

References

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- indeed.com
- usability.gov
- w3computing.com