Motivation

- It is clear that humans are more complex than computer systems, and their motivations and behaviors are more difficult to measure and characterize. It is clear too that the information access is a complex activity.

- Thus, the user interface of an information access system should aid in the understanding and expression of information needs. It should also help users formulate their queries, select among available information sources, understand search results, and keep track of the progress of their search.
Introduction

- In information systems, the layout of information is very important.

- There are many ways to arrange the information in a screen and each different system do it in a distinct way.

- The user interface designer must make decisions about how to arrange various kinds of information on the computer screen and how to structure the possible sequences of interactions.
Interfaces for String Matching
The ‘find’ operation

How Does The SuperBook Document Browser Work

The **SuperBook System** has two parts: a preprocessor and a browser. The SuperBook preprocessor transforms text files from popular word processing **systems**. It is also “SGML Friendly”, able to accept several common SGML (ISO 8 Standard) DTD’s now, and offering a migration path to full native SGML support for any DTD in 1994.

The SuperBook browser is a user interface with features designed and tested through rigorous usability experiments by the world’s leading researchers in Human Information Processing and Information Science. These features have been widely imitated, but only the SuperBook browser has been scientifically demonstrated in published studies to beat the prior page.

The SuperBook browser designs range from multi-window workstations and PC's to ASCII terminals. It can package information. It can package text, while its true client-server architecture extends to support other networks.

*Return to SuperBook Overview*
Interfaces for String Matching

The ‘find’ function
Interfaces for String Matching
A common problem
Interfaces for String Matching
Solutions for a common problem

Solutions:

- erases the current result set as soon as the new query is typed;
- brings up a new window for every new query;
- ‘stacks’ the queries and results lists in a compact format and allows the user to move back and forth among the stacked up prior searches.
Interfaces for String Matching Functionality

- Trying to augmented the functionality, simple interfaces should:
  - have a spell-checking function that suggests alternatives for query terms that have low frequency in the collection;
  - suggest thesaurus terms associated with the query terms at the time the query terms are entered (a form of query preview).
Window Management

- How to lay out the various choices and information displays within the interfaces?

- Traditional bibliographic search systems use TTY-based command-line interfaces or menus.

  Problem:
  - the user must remember the context.

- In modern graphical interfaces, the windowing system can be used to divide functionality into different, simultaneously displayed views.
Window Management

- When arranging information within windows, the designer must choose between:
  - a monolithic display;
  - tiled windows;
  - overlapping windows.
Window Management
Monolithic Interface

- Advantages:
  - organization of the various options;
  - simultaneous visibility of all information;
  - features are placed in familiar positions, making them easier to find.

- Disadvantages:
  - works best if occupying the full viewing screen;
  - the number of views is limited by the amount of room available on the screen.
Window Management
A problem

- A problem for any information access interface is an inherent limit in how many kinds of information can be shown at once.
- Information access systems must always reserve room for a text display area, and this must take up a significant proportion of screen space in order for the text to be legible.
- For legibility reasons, it is difficult to compress many of the information displays needed for an information access system.
Tiled Windows
Window Management
Overlapping windows

- **Advantage:**
  - provides flexibility in arrangement.

- **Disadvantage:**
  - it can quickly lead to a crowded, disorganized display.

Researchers have observed that much user activity is characterized by movement from one set of functionally related windows to another.
Window Management

Multiple Virtual Workspace

- System developed by Henderson and Card.
- Objective: to make easier for user to move between multiple virtual workspace (notion defined by Bannon et al.).
- The system uses a 3D spatial metaphor, where each workspace is a ‘room’, and users transition between workspaces by ‘moving’ through virtual doors. By ‘travelling’ from one room to the next, users can change from one work context to another.
Window Management
Elastic Windows

- It is an extension to the workspace or rooms notion to the organization of 2D tiled windows.

- Main idea: make the transition easier from one task to another, by adjusting how much of the screen real estate is consumed by the current role.

- The user can resize the windows, but all the information still fit on the screen without overlap.
Example Systems
Information Access Interfaces

- The InfoGrid Layout: typical example of a monolithic layout.

- The SuperBook Layout

- The DLITE Interface: makes a number of interesting design choices.

- The SketchTrieve Interface: description of information access as an informal process.
The InfoGrid Layout

It is for retaining documents of interest

A graphical history of earlier interactions
The SuperBook Layout

The SuperBook Document Browser Features

- **Dynamic "Fisheye" Table of Contents** - Automatically generates a dynamic "fisheye view" which helps preserve user's orientation.

- **Context-Guided Search** - Automatically posts query "hits" next to the topic headings in the Table of Contents—quickly directing searches.

- **Rich Indexing** - Automatically indexes every occurrence of every word in documents.

- **Tailored Text Displays** - Dynamically formats and highlights text in response to user's search terms.

- **Thumbnails Inline Graphics**

- **Annotation** - Add keywords or notes which are instantly indexed.

- **HyperText Functions** - Shows graphics with a click; jumps to occurrences of search terms; links within and across documents.

- **Multimedia** - Links to animations, video and other media and applications.

- **Pop-Up Graphics**
The DLITE Interface
The SketchTrieve Interface
Examples of Poor Use of Overlapping Windows

- Sometimes conversion from a command-line-based interface to a graphical display can cause problems:
  - when designers make a ‘literal’ transformation from a TTY interface to a graphical interface.

- Consequences:
  - LEXIS-NEXIS interface: the interface does not retain window context when the user switches from one function to another.
The layout of an interface is very important because it is made for the users.

The designers must try to put on the screen the main information of the system, and avoid to show a lot of it making the interface not good for the users.

The designers must think about font design, screen space, user need information and others things that can improve the quality of the interface.