# Chapter 1

## 1.3 Ordering of Screen Data and Content

## 1.4 Screen Navigation and Flow

## 1.5 Visually Pleasing Composition and balance

# Ordering of Screen Data and Content

- Divide information into units that are logical, meaningful, and sensible.
- Organize by the degree interrelationship between data or information.
- Provide an ordering of screen units of information and elements that is prioritized according to the user's expectations and needs.

# Ordering of Screen Data and Content

- Possible ordering schemes include:

— Conventional.

— Sequence of use.

— Frequency of use.

— Function.

— Importance.

— General to specific.

# Ordering of Screen Data and Content

- Form groups that cover all possibilities.
- Ensure that information that must be compared is visible at the same time.
- Ensure that only information relative to the users tasks or needs is presented on the screen.

# Common information ordering schemes

- Conventional
- Sequence of use
- Frequency of use
- Function of use Function or category
- Importance
- General To Specific

# Upper-Left Starting Point

- Provide an obvious starting point in the upper-left corner of the screen.
- This is near the location where visual scanning begins and will permit a left-to-right, top-to-bottom reading of information or text as is common in Western cultures.

# Screen Navigation and Flow

- Provide an ordering of screen information and elements that:

— Is rhythmic, guiding a person's eye through the display.

— Encourages natural movement sequences.

— Minimizes pointer and eye movement distances.

■ Locate the most important and most frequently used elements or controls at the top left.

■ Maintain a top-to-bottom, left-to-right flow.

■ Assist in navigation through a screen by:

— Aligning elements. — Grouping elements. — Using of line borders.

# Screen Navigation and Flow

- Through focus and emphasis, sequentially, direct attention to items that are:
- 1. Critical.  2. Important. 3. Secondary. 4. Peripheral.

■ Tab through window in logical order of displayed information.

■ Locate command buttons at end of the tabbing order sequence.

■ When groups of related information must be broken and displayed on separate screens, provide breaks at logical points in the information flow.

# Screen Navigation and Flow

- In establishing eye movement through a screen, also consider that the eye trends to move sequentially , for example –
  - From dark areas to light areas
  - From big objects to little objects
  - From unusual shapes to common shapes.
  - From highly saturated colors to unsaturated colors.
  - These techniques can be initially used to focus a person's attention

# Screen Navigation and Flow

- Maintain top to bottom, left to right through the screen.
  - This top to bottom orientation is recommended because of –
  - Eye movements between items will be shorter.
  - Control movements between items will be shorter.
  - Groupings are more obvious perceptually.
  - When one's eyes moves away from the screen and then back, it returns to about same place it left, even if it is seeking next item in sequence.

# Visually Pleasing Composition

Provide visually pleasing composition with the following qualities:

— Balance.

— Symmetry.

— Regularity.

— Predictability.

— Sequentially.

— Economy.

— Unity.

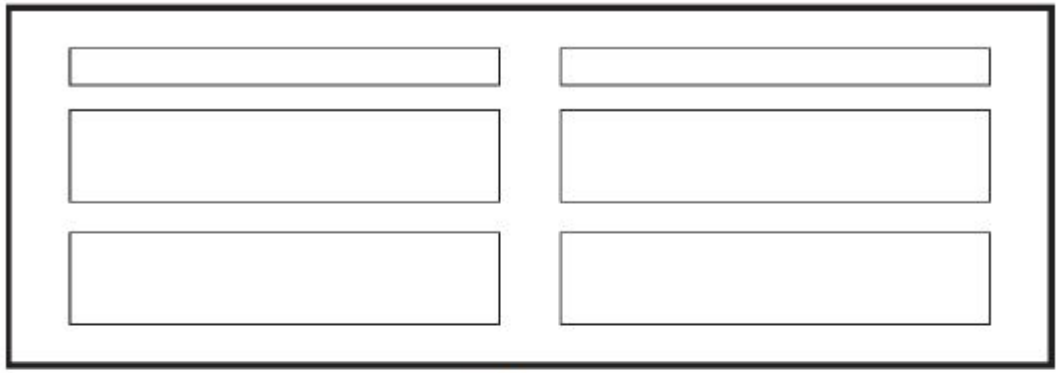
— Proportion.

— Simplicity.

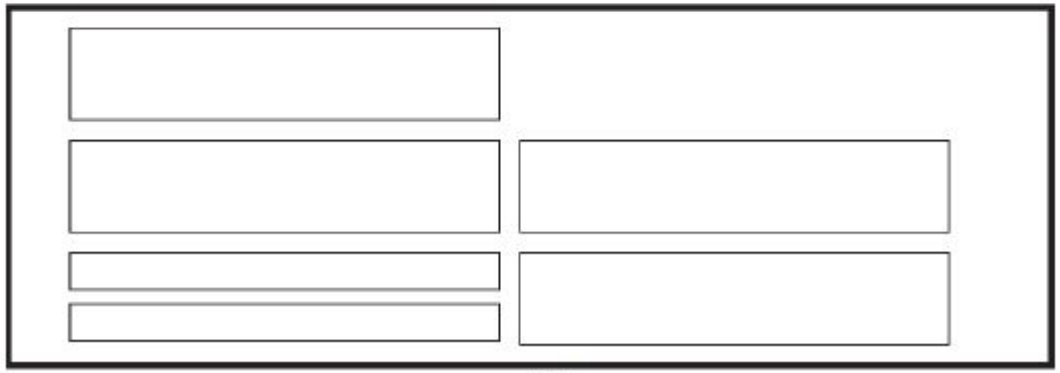
— Groupings.

# Visually Pleasing Composition - Balance

Create screen balance by providing an equal weight of screen elements, left and right, top and bottom.



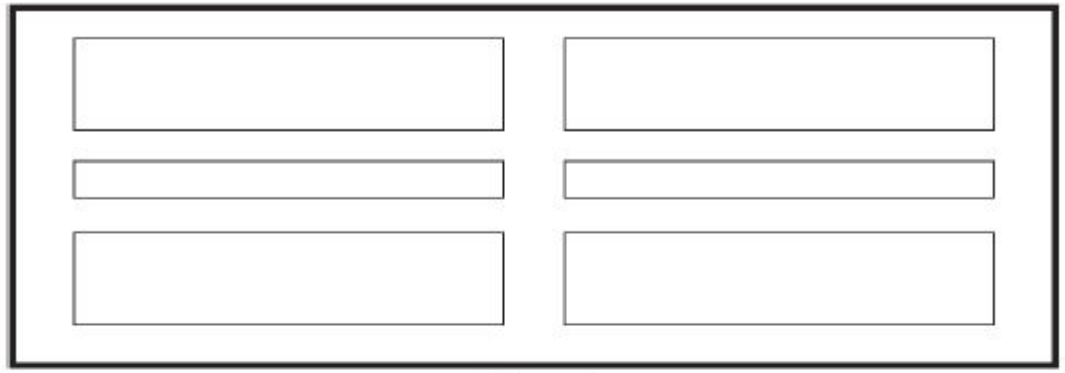
Balance



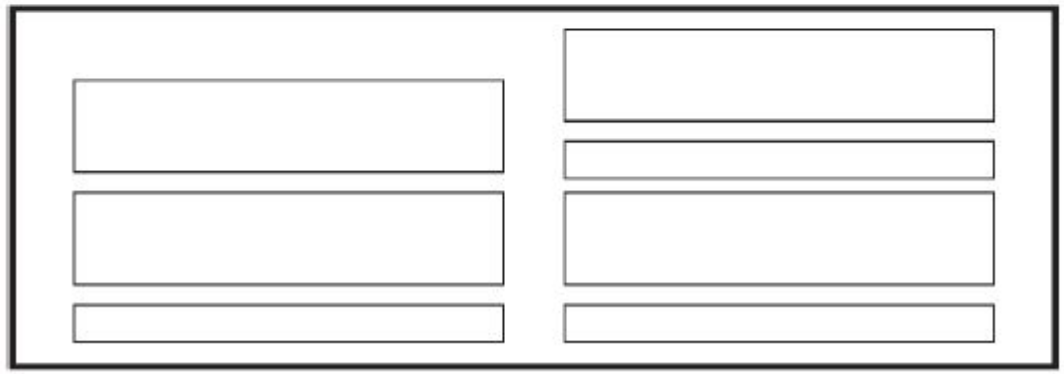
Instability

# Visually Pleasing Composition - Symmetry

Create symmetry by replicating elements left and right of the screen centerline.



Symmetry

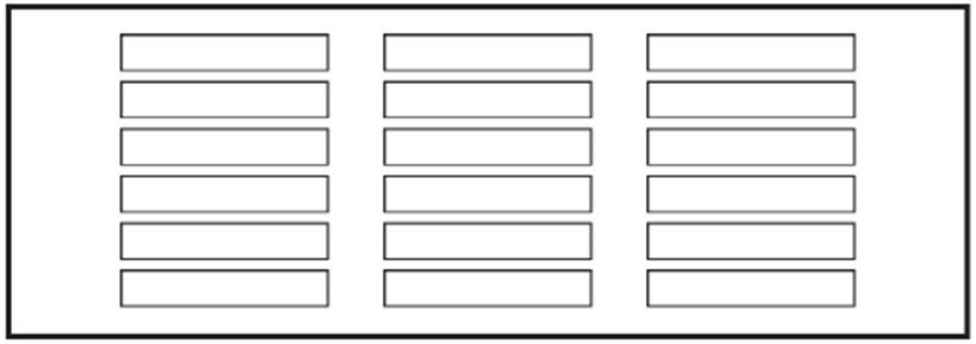


Asymmetry

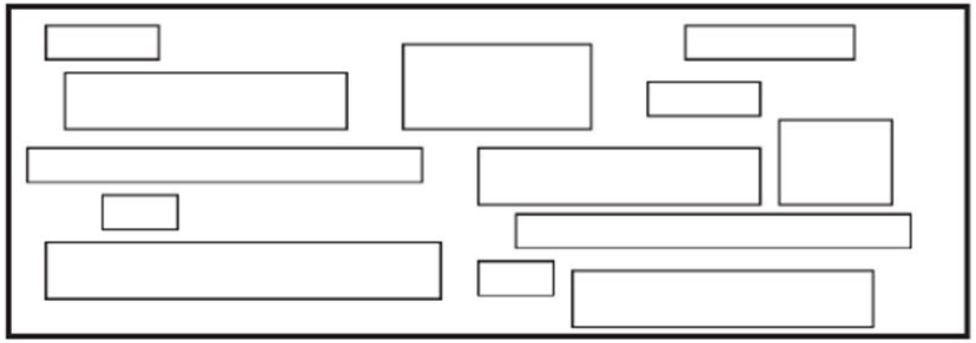
# Visually Pleasing Composition - Regularity

Create regularity by establishing standard and consistently spaced horizontal and vertical alignment points.

Also, use similar element sizes, shapes, colors, and spacing.



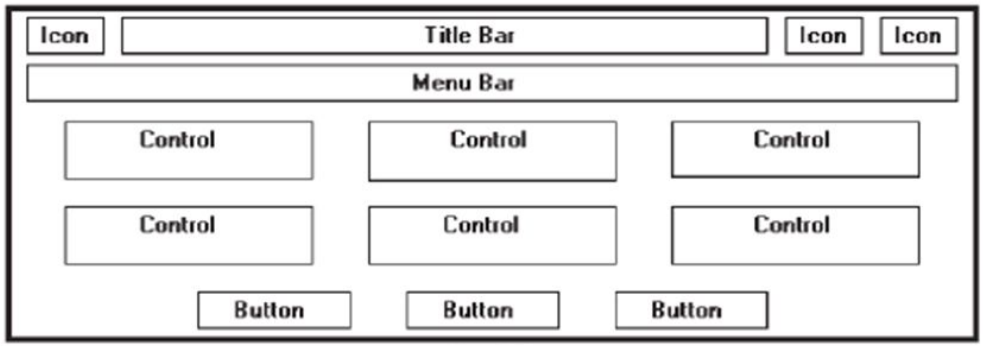
Regularity



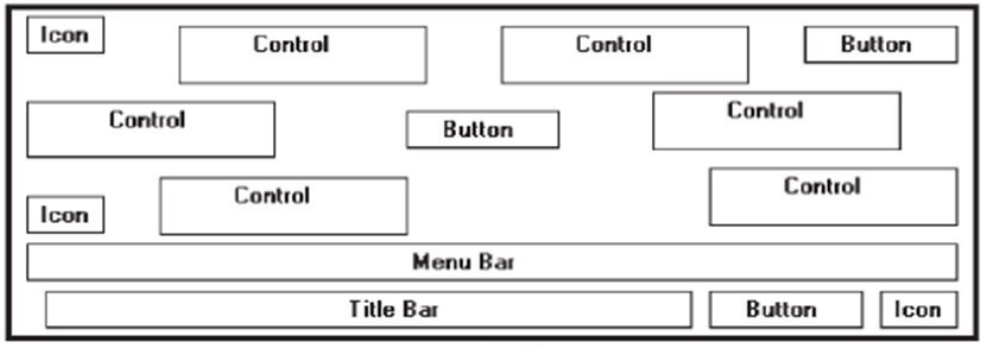
Irregularity

# Visually Pleasing Composition - Predictability

- Create predictability by being consistent and following conventional orders or arrangements.



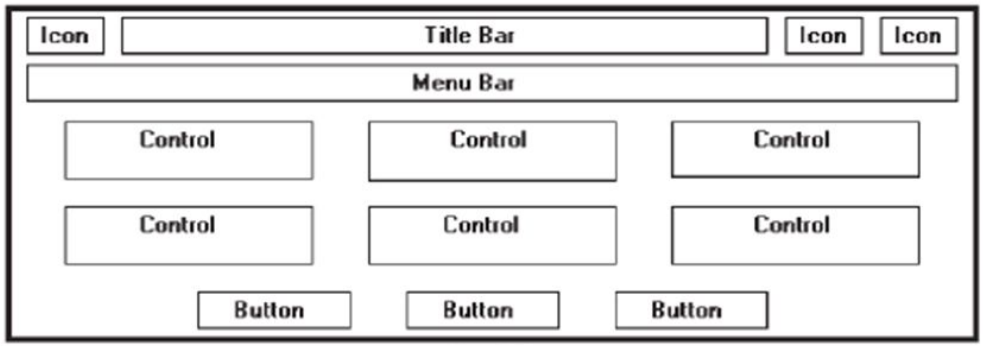

Predictability



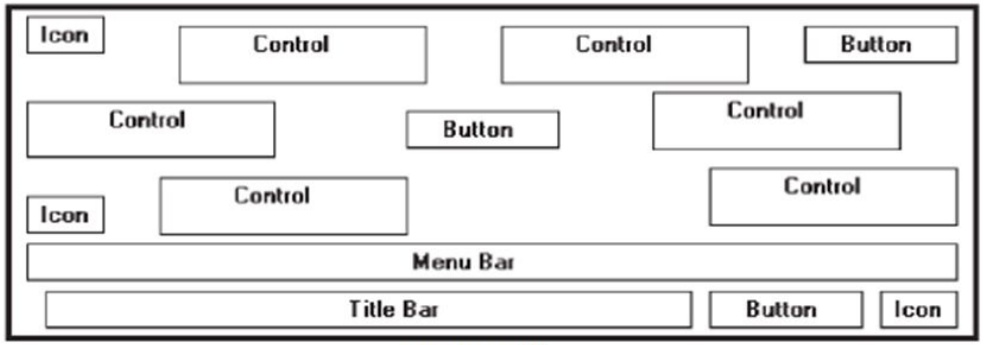

Spontaneity

# Visually Pleasing Composition - Predictability

- Create predictability by being consistent and following conventional orders or arrangements.




Predictability

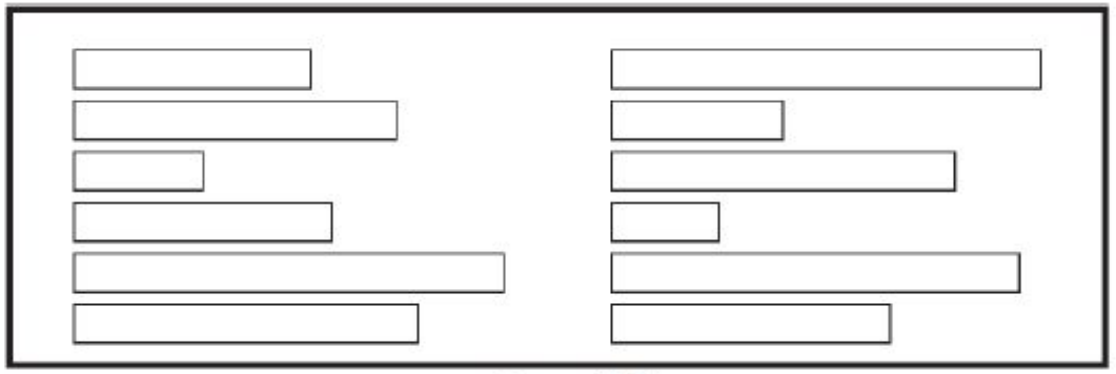



Spontaneity

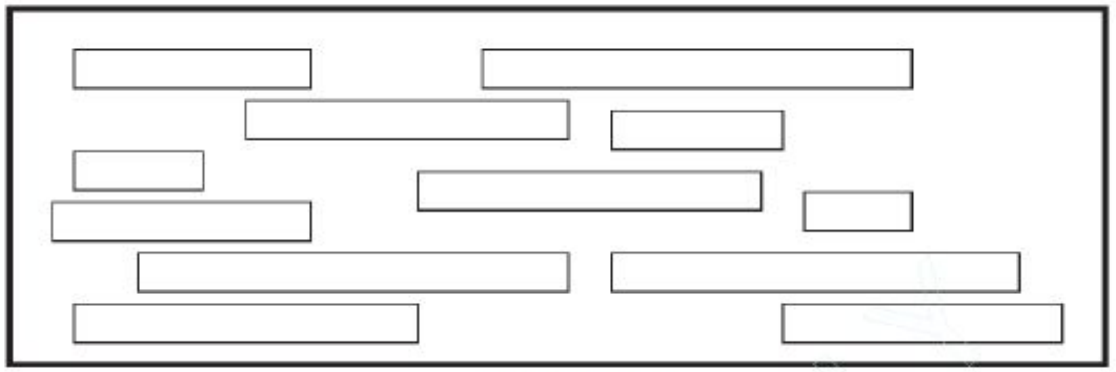
# Visually Pleasing Composition - Sequentiality

- Provide Sequentiality by arranging elements to guide the eye through the screen in an obvious, logical, rhythmic, and efficient manner.
- The eye tends to be attracted to:
  - A brighter element before one less bright.
  - Isolated elements before elements in a group.
  - Graphics before text.
  - Color before black and white.
  - Highly saturated colors before those less saturated.
  - Dark areas before light areas.
  - A big element before a small one.
  - An unusual shape before a usual one.
  - Big objects before little objects.

# Visually Pleasing Composition – Predictability



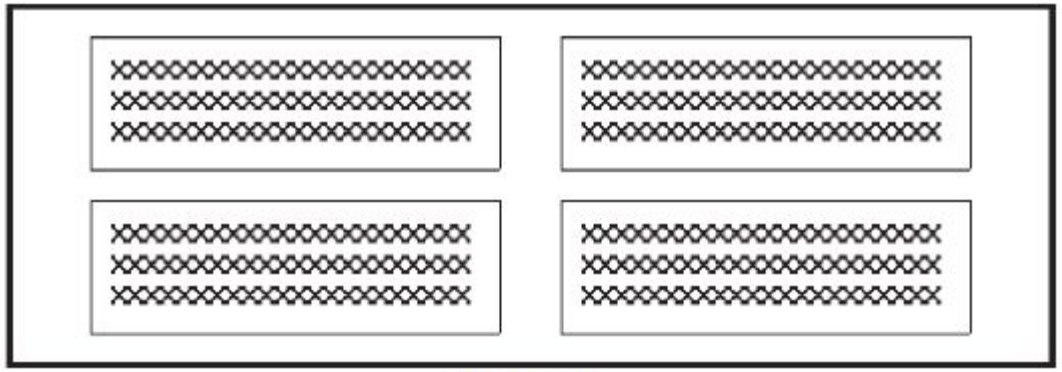
Sequentiality



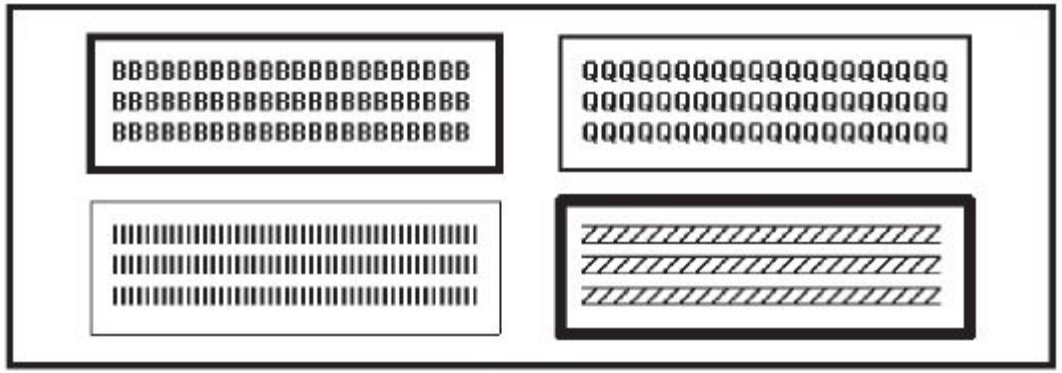
Randomness

# Visually Pleasing Composition – Economy

- Provide economy by using as few styles, display techniques, and colors as possible.



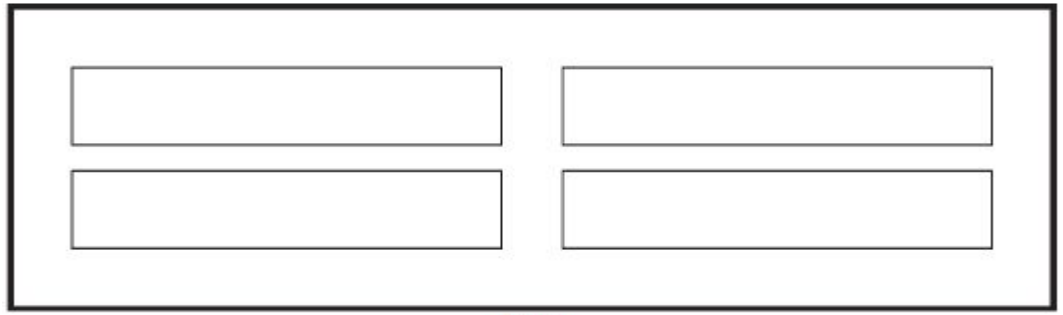
Economy



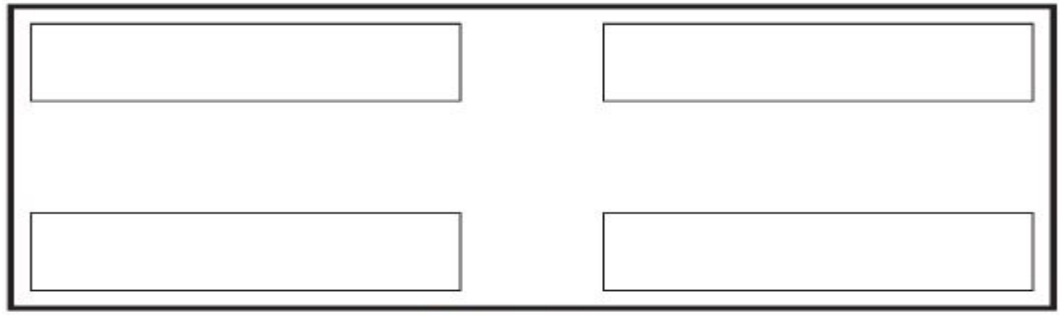
Intricacy

# Visually Pleasing Composition – Unity

- Create unity by:
- — Using similar sizes, shapes, or colors for related information.
- — Leaving less space between elements of a screen than the space left at the margins.



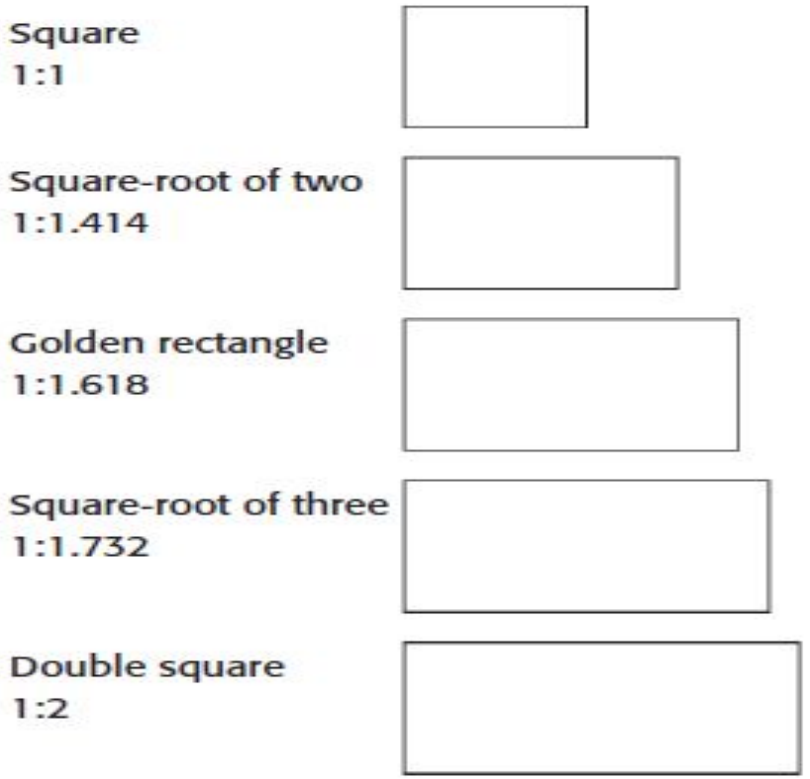
Unity



Fragmentation

# Visually Pleasing Composition – Proportions

Create windows and groupings of data or text with aesthetically pleasing proportions.

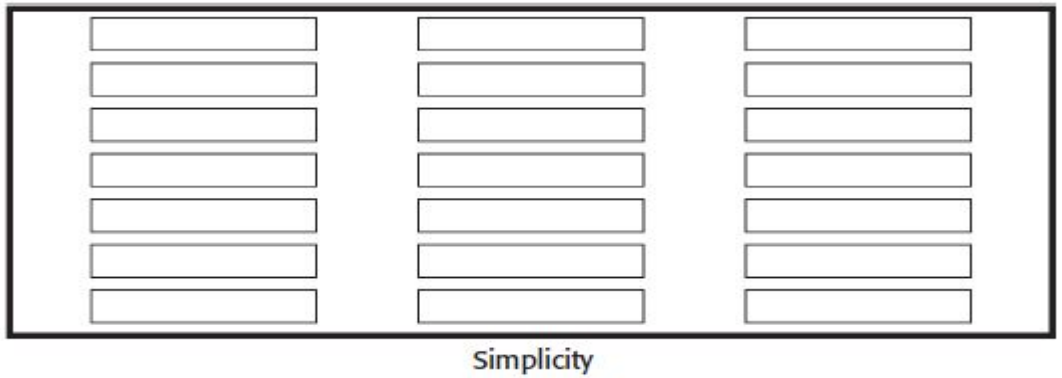


# Visually Pleasing Composition – Simplicity (Complexity)

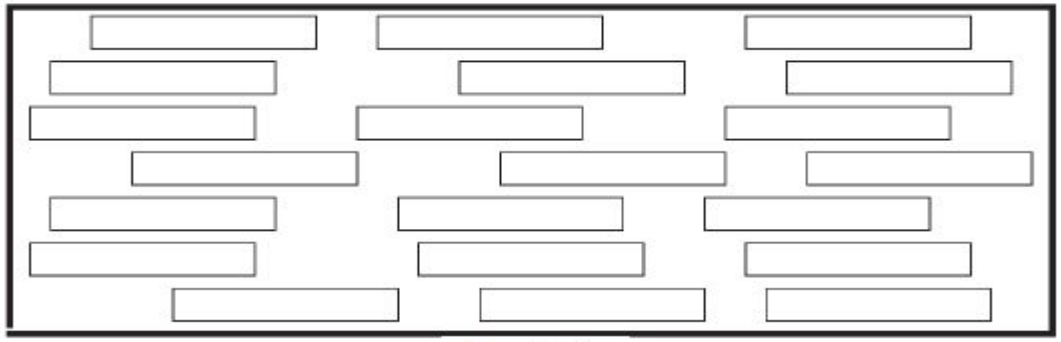
Optimize the number of elements on a screen, within limits of clarity.

Minimize the alignment points, especially horizontal or columnar.

— Provide standard grids of horizontal and vertical lines to position elements.



Simplicity



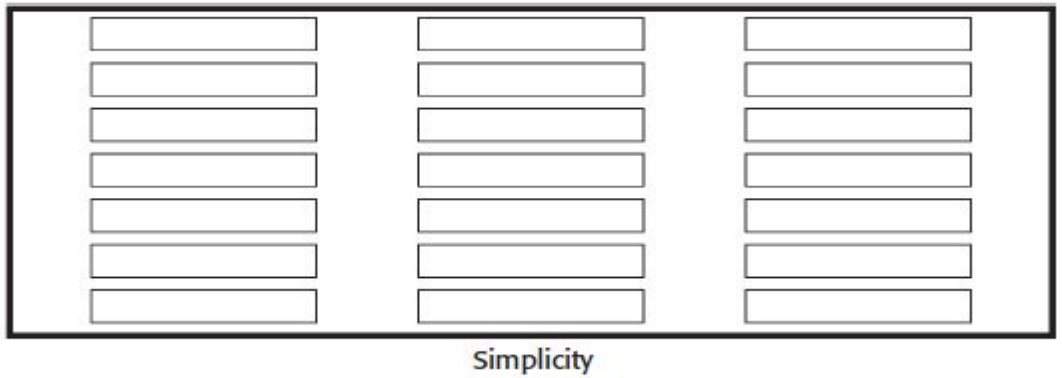
Complexity

# Visually Pleasing Composition – Simplicity (Complexity)

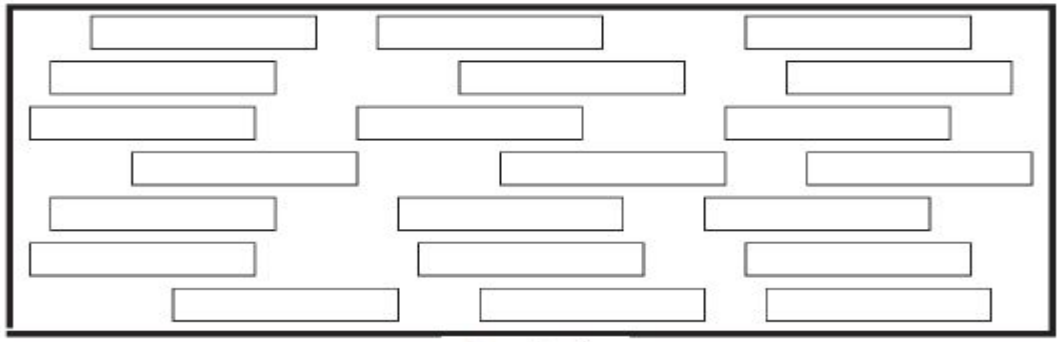
Optimize the number of elements on a screen, within limits of clarity.

Minimize the alignment points, especially horizontal or columnar.

— Provide standard grids of horizontal and vertical lines to position elements.



Simplicity



Complexity

# Point Discussed Till Now

Provide visually pleasing composition with the following qualities:

— Balance.

— Symmetry.

— Regularity.

— Predictability.

— Sequentially.

— Economy.

— Unity.

— Proportion.

— Simplicity.

— Groupings ( CONTINUE IN NEXT LECTURE)

# Groupings

- Provide functional groupings of associated elements.
- Create spatial groupings as closely as possible to five degrees of visual angle
- Evenly space controls within a grouping, allowing 1/8 to 1/4 inch between each.
- Visually reinforce groupings:

  — Provide adequate separation between groupings through liberal use of white space.

  — Provide line borders around groups.
- Provide meaningful titles for each grouping.

# Groupings

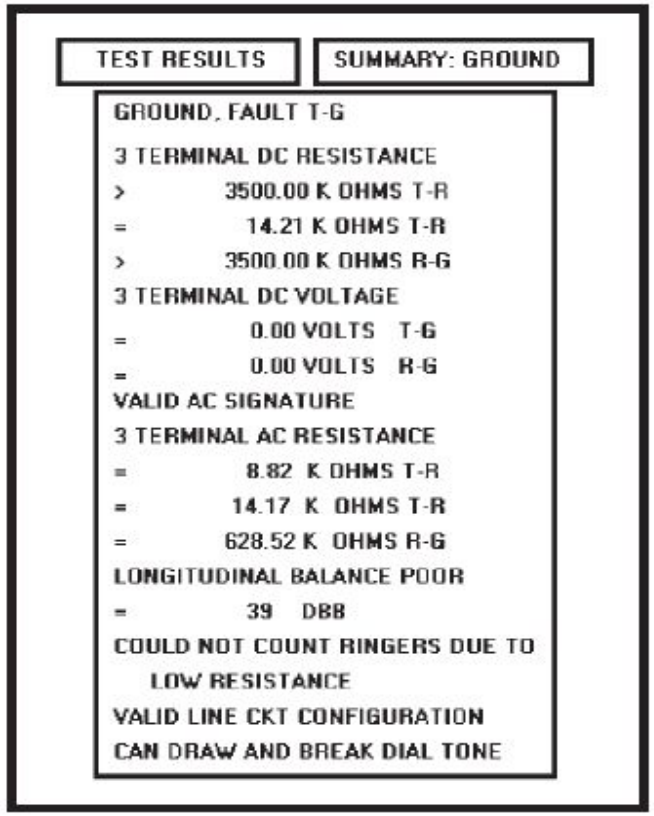



**Figure 3.12** Original screen, from Tullis (1981), with grouping indicated by bold boxes.

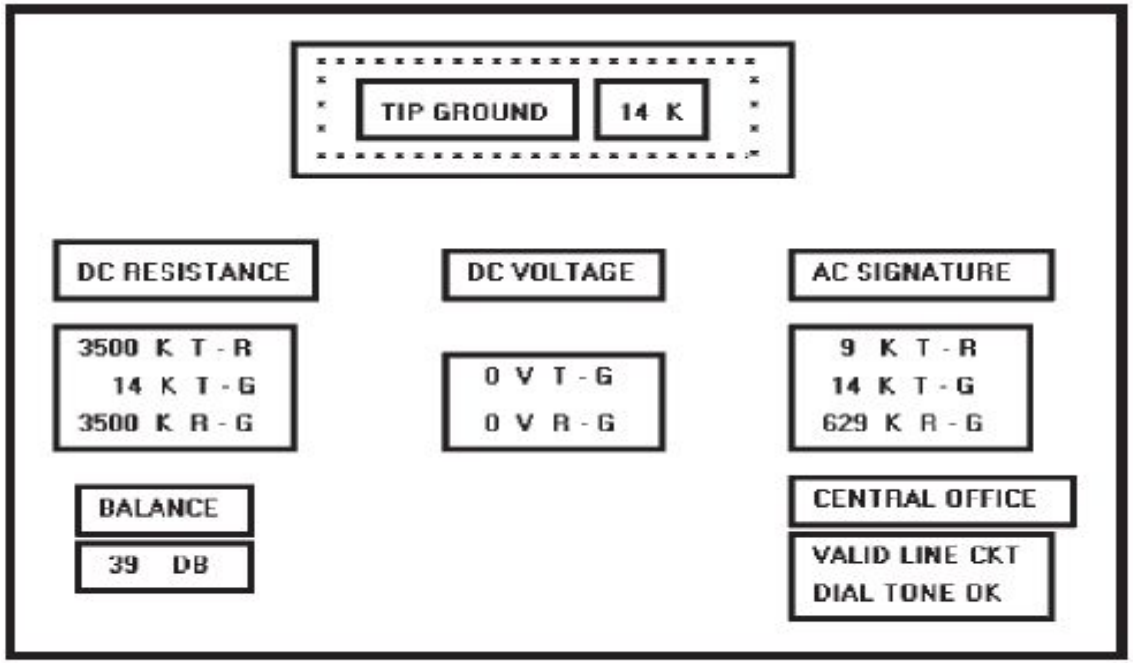



**Figure 3.13** Redesigned screen, from Tullis (1981), with grouping indicated by bold boxes.

# Perceptual Principles and Functional Grouping

- Use visual organization to create functional groupings.
  - — Proximity: 000 000 000
  - — Similarity: AAABBBCCC
  - — Closure: [ ] [ ] [ ]
  - — Matching patterns: >> < >

- Combine visual organization principles in logical ways.

| | | | |
|---|---|---|---|
| — Proximity and similarity: | AAA | BBB | CCC |
| — Proximity and closure: | [ ] | [ ] | [ ] |
| — Matching patterns and closure: | ( ) | < > | { } |
| — Proximity and ordering: | 1234 | 1 | 5 |
| | 5678 | 2 | 6 |
| | | 3 | 7 |
| | | 4 | 8 |

- Avoid visual organization principles that conflict.

| | | | | |
|---|---|---|---|---|
| — Proximity opposing similarity: | AAA | ABB | BBC | CCC |
| — Proximity opposing closure: | ] [ | ] [ | ] [ | |
| — Proximity opposing ordering: | 1357 | 1 | 2 | |
| | 2468 | 3 | 4 | |
| | | 5 | 6 | |
| | | 7 | 8 | |

# Groupings with white Space

- Provide adequate separation between groupings through liberal use of white space.
- For Web pages, carefully consider the trade-off between screen white space and the requirement for page scrolling.

# Groupings using Borders

- Incorporate line borders for:

— Focusing attention on groupings or related information.

— Guiding the eye through a screen.

- Do not exceed three line thicknesses or two line styles on a screen, however.

— Use a standard hierarchy for line presentation.

# Groupings using Borders

- Create lines consistent in height and length.
- Leave sufficient padding space between the information and the surrounding borders.
- For adjacent groupings with borders, whenever possible, align the borders left, right, top, and bottom.
- Use rules and borders sparingly.
- In Web page design:

— Be cautious in using horizontal lines as separators between page sections.

— Reserve horizontal lines for situations in which the difference between adjacent areas must be emphasized.

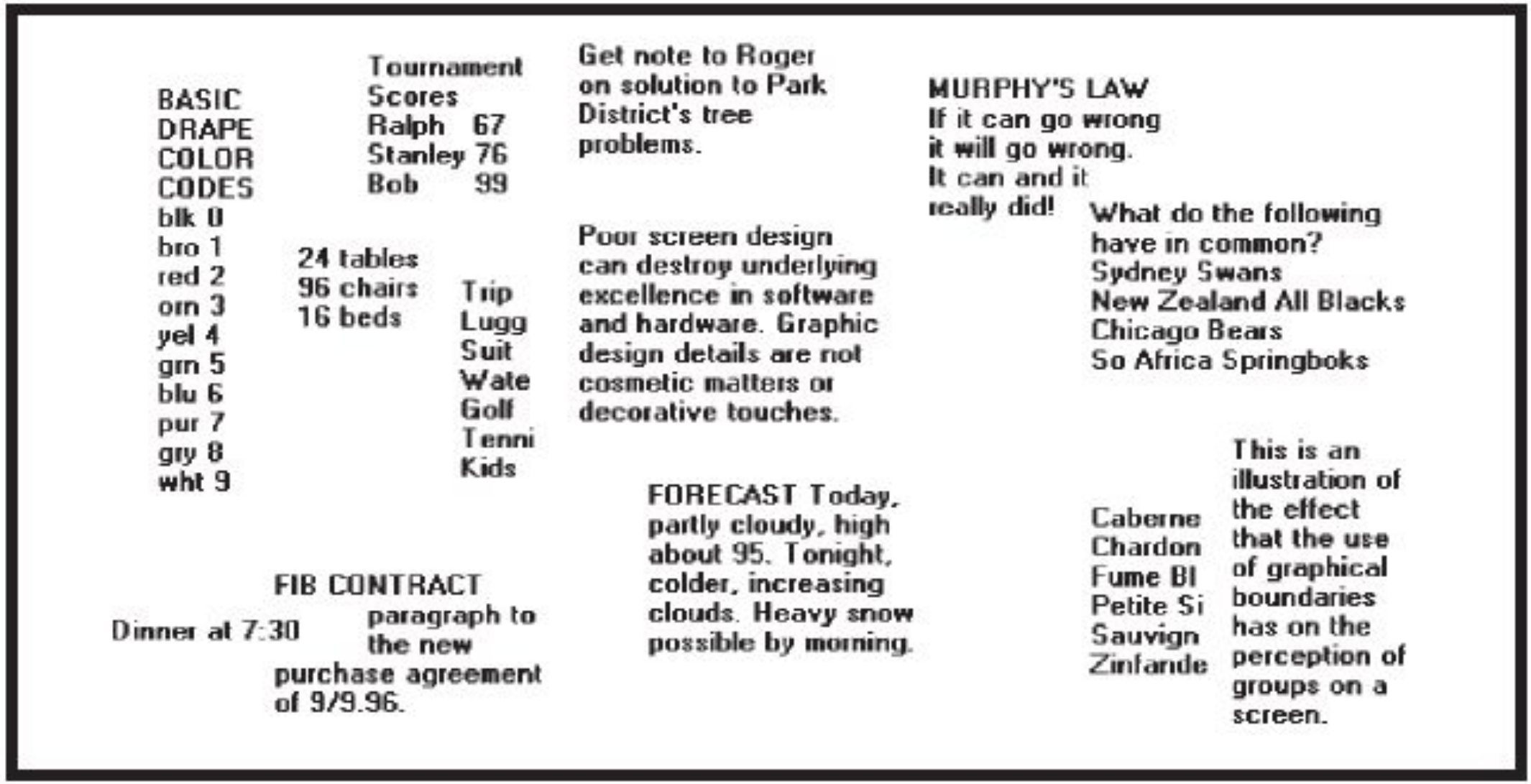



**Figure 3.14** The effect of line or graphical borders. Groupings without borders.

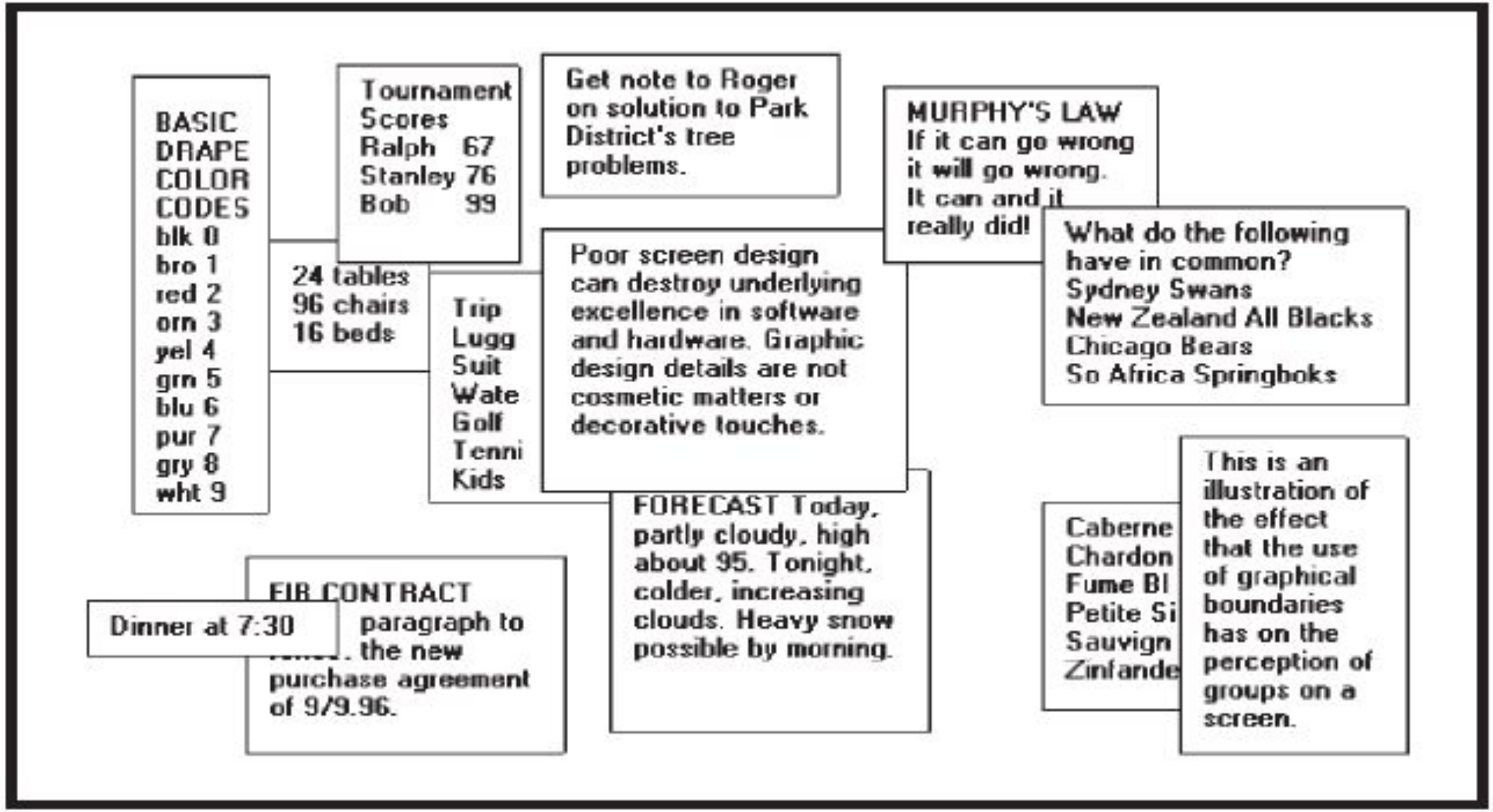



**Figure 3.15** The effect of line or graphical borders. Groupings with borders.

# Groupings using Borders

The background should not have the “emphasis” of the screen component that should be attended to. Consider about a 25 percent gray screening.

Reserve higher contrast or “emphasizing” techniques for screen components to which attention should be drawn.

# Visual Style in Web Page Design

Maintain a consistent and unified visual style throughout the pages of an entire Web site.

Base the visual style on:

— The profile and goals of the Web site owner.

— The profile, tastes, and expectations of the Web site user.

# Screen Navigation and Flow

Provide an ordering of screen information and elements that:

— Is rhythmic, guiding a person's eye through the display.

— Encourages natural movement sequences.

— Minimizes pointer and eye movement distances.

# Screen Navigation and Flow

Locate the most important and most frequently used elements or controls at the top left.

Maintain a top-to-bottom, left-to-right flow.

Assist in navigation through a screen by:

— Aligning elements.

— Grouping elements.

— Using of line borders

# Screen Navigation and Flow

Through focus and emphasis, sequentially, direct attention to items that are:

1. Critical.
2. Important.
3. Secondary.
4. Peripheral.

# Screen Navigation and Flow

- Tab through window in logical order of displayed information.
- Locate command buttons at end of the tabbing order sequence.
- When groups of related information must be broken and displayed on separate screens, provide breaks at logical or natural points in the information flow.

# Experiment List Till now

- To write case study on User Interface
- To write case study on Wireframing/prototype tool
- To write problem definition including personas, usecases