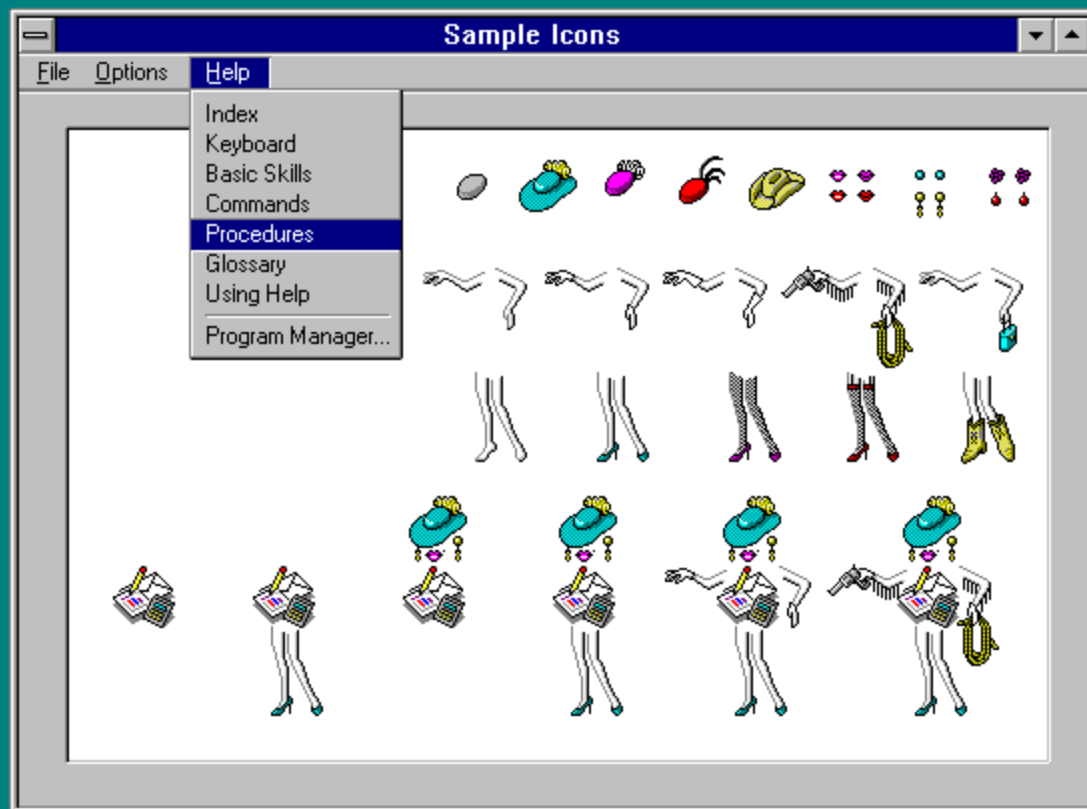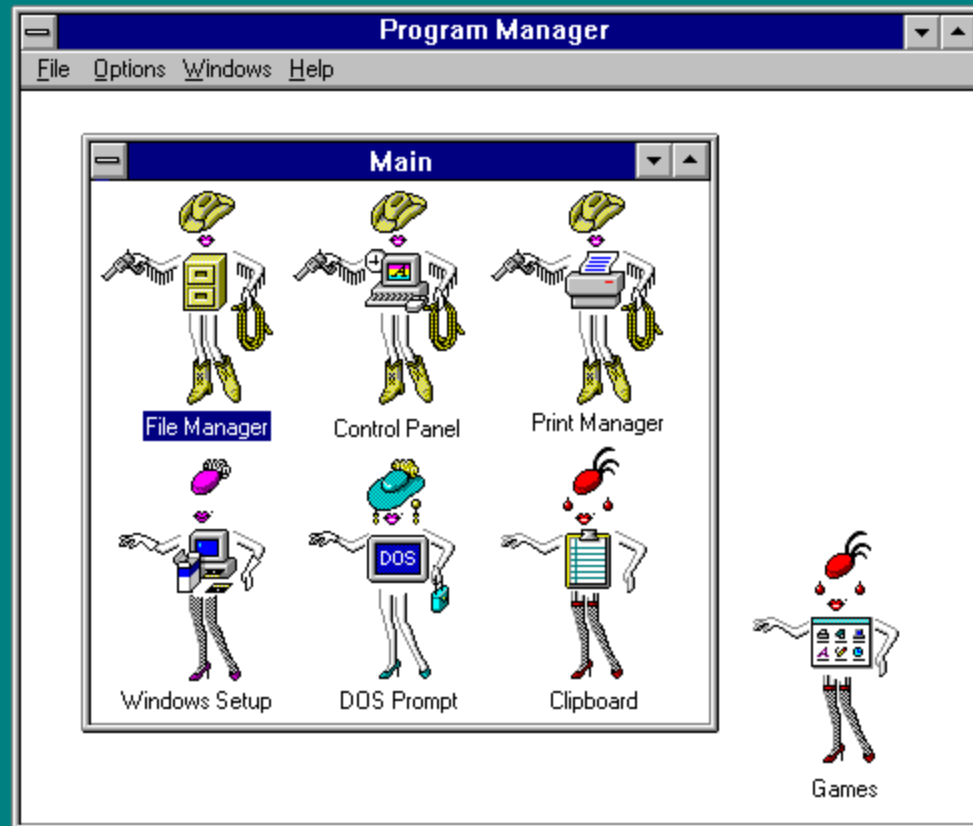**Microsoft**®

# The Art of
# Visual Interface Design

**Virginia Howlett**
**Director of Visual Interface Design**
**Microsoft Corporation**

# Summary of the next hour

- **User interface design process**

- **What graphic and product designers contribute**

- **Recommendations for color, icons, and visual presentation**
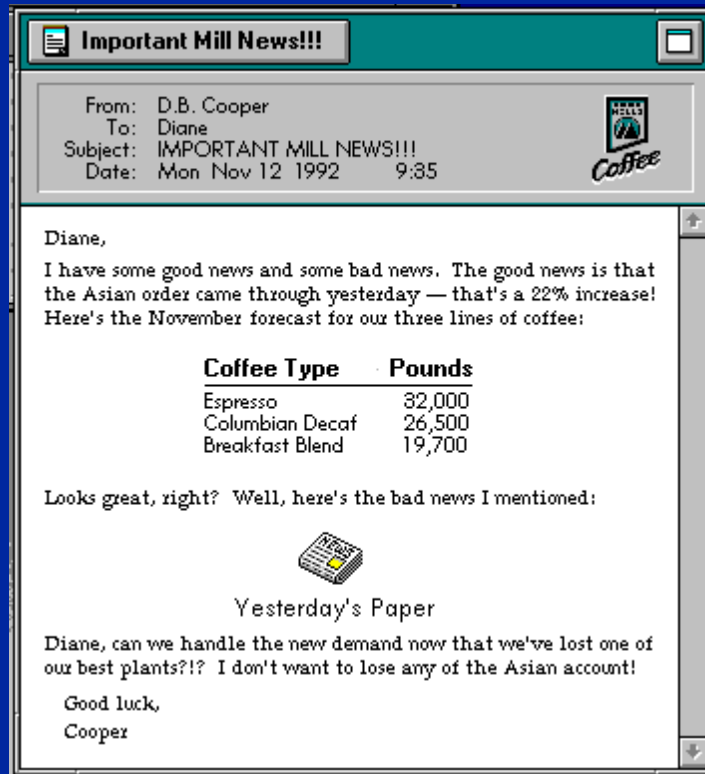
Cool" graphics are ...

"Like lipstick on a bulldog!"

(Norm Cox)

"Good design can improve your product's usability and marketability."

(Virginia Howlett)

# Take Advantage Of

- Principles of graphic information design and visual perception

- Human factors and user needs

- Communication and interaction styles and paradigms

- Standards for consistency

# Important Mill News!!!

From: D.B. Cooper
To: Diane
Subject: IMPORTANT MILL NEWS!!!
Date: Mon Nov 12 1992    9:35

Diane,

I have some good news and some bad news. The good news is that the Asian order came through yesterday — that's a 22% increase! Here's the November forecast for our three lines of coffee:

| Coffee Type | Pounds |
|---|---|
| Espresso | 32,000 |
| Columbian Decaf | 26,500 |
| Breakfast Blend | 19,700 |

Looks great, right?  Well, here's the bad news I mentioned:

Yesterday's Paper

Diane, can we handle the new demand now that we've lost one of our best plants?!?  I don't want to lose any of the Asian account!

Good luck,

Cooper

u   **Product design must be integrated into the development process <u>early</u>**

# Product development process

- u **The idea or technology**

- u **Contextual inquiry - go out and talk to users**

- u **Prototype - on paper, bitmaps, later: VB code**

- u **Usability test & iterate the design**

- u **Write code**

## Product development team

**From the beginning:   !!**

- u  **Product manager/ui designer**

- u  **Product designer & graphic artists**

- u  **Usability specialists**

- u  **Software development engineers**

- u  **Prototyper**

# Take Advantage of:  Graphic Design

Metaphor

Shape

Color

Font

Placement

Emphasis

=  Visual
Communication

**Take Advantage of:**

**Psychology and Perception**

- Fonts
- Color effects
- Color confusion
- Reading order

- Cultural bias
- How people see
- How people organize information

# The Twin Hill Times

"All the News That's Fit"

## Coffee Plant Fire Costs Millions

**By Virginia Dreger Malamud**

Seattle WA — A mysterious three alarm fire destroyed the Twin Hills roaster yesterday after it raged through all twelve floors of the Grauman Building. "This is the worst disaster to hit Twin Hills since the Racoon Lodge fire in 1959" said Tony Snodgrass, President of the Twin Hills Coffee Corporation. "Fortunately, no injuries were sustained during this disaster."

Damages to the plant and inventory of raw coffee beans could run as high as $10 million dollars, according to fire department estimates.

The cause of the fire is under investigation, though deputy Tandy Howlett of the Twin Hills Fire Department say arson is suspected. It appears that something in the basement floor ignited the blaze.
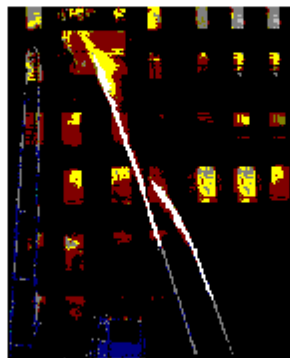
Employees of the Twin Hills roaster say that smoke began appearing in the stairwells around 10am yesterday

[ Continue… ]

## Workers Being Moved to Other Plants to Meet Current Orders

**By Alison Ho and John Trower**

Due to the need to fulfill current orders, the Twin Hills Coffee Corporation is temporarily re-locating employees from the Twin Hills area to other plants in the Northwest for the next several months.

The company anticipates sending most of the Twin Hills workers to the Walla Walla plant, with smaller numbers going to the Okanagan Hills and Columbia River plants.

The Twin Hills facility was responsible for 25% of the production of Twin Hills Coffee.

Much of the roasted coffee was sold to overseas markets, according to Lisa Laney, Twin Hills Vice President of

[ Continue… ]
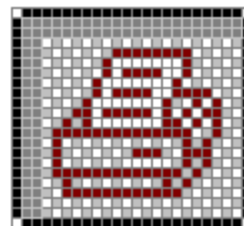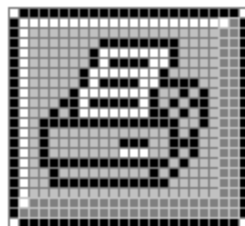
NiceShot!

Keep Clean

VTRスタジオ

写真スタジオ

デザイン室

企1部倉庫

# Affordances

- u  **A well designed interface affords correct use**

- u  **We process visual information much faster than verbal**

Press Alt + B for bold text. | At | Ln | Col 1

# Some recommendations

Standards

Color

Icons

Graphics

Visual Organization

# Standards

**"TheWindows Interface - An Application Design Guide"**
**- MS Press**

**"The Visual Design Guide"**
**- online, included in VB**

## Color

- Has emotional properties
- Always attracts the eye
- Communicates relatedness
- Color coding can be slow
- Be aware of color blindness and color confusion

## Color Is Emotional

- Motivates
- Also distracts and degrades usability
- Advice:
    - Let the user pick the color
    - Use color schemes as well
    - Provide conservative defaults
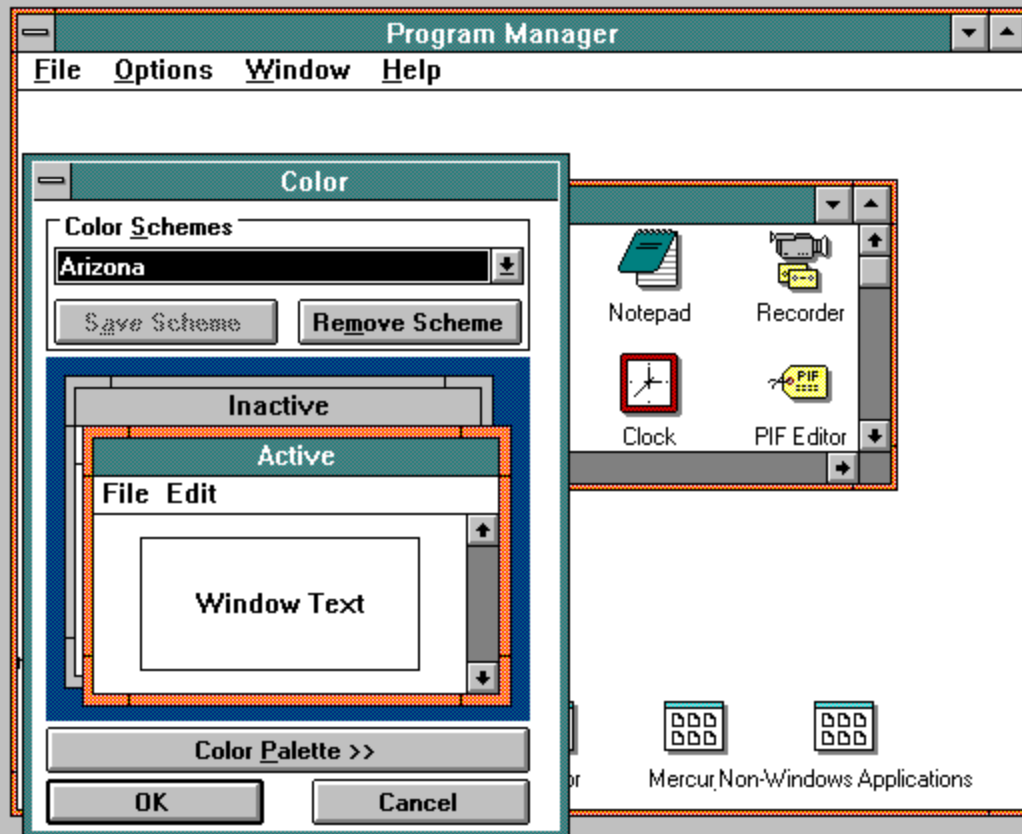
## Color Attracts the Eye

**Too much color makes the eye bounce all around for a circus effect**

- u **Use a small number of colors**

- u **Use color to direct attention**
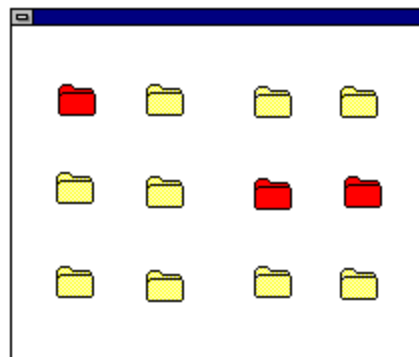
- u **Use color to communicate**

- u **Use less bright colors**
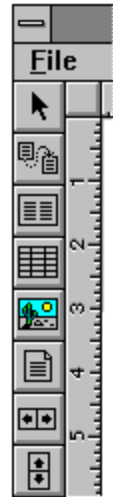
# Color Communicates Relatedness

u **All the blue things will seem related, all the red things, etc.**

u **Use color for relating and layering information**

## Color Coding Is Slow

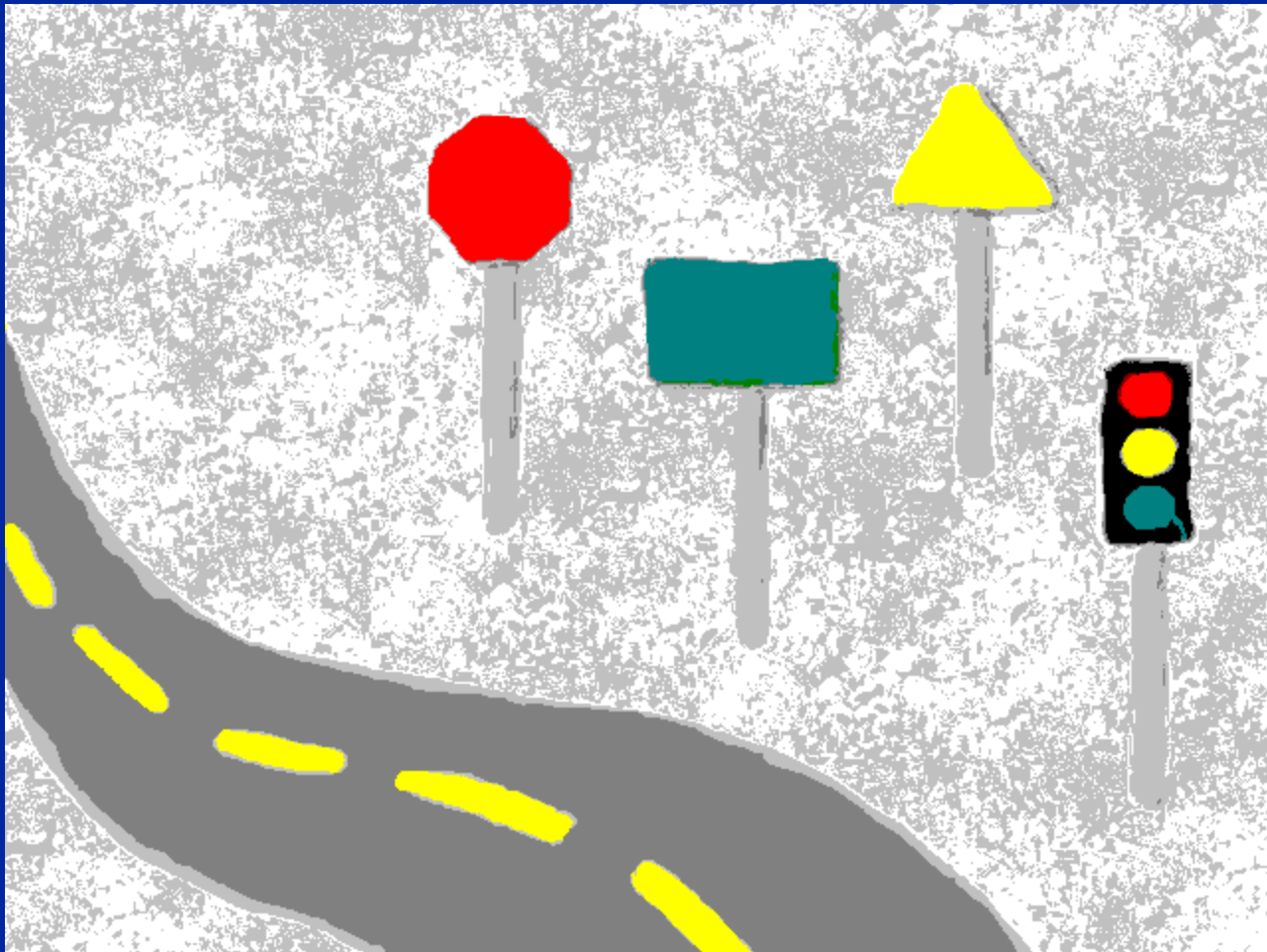**We are slow to associate a color with  a meaning**

    **u Use minimal color coding**

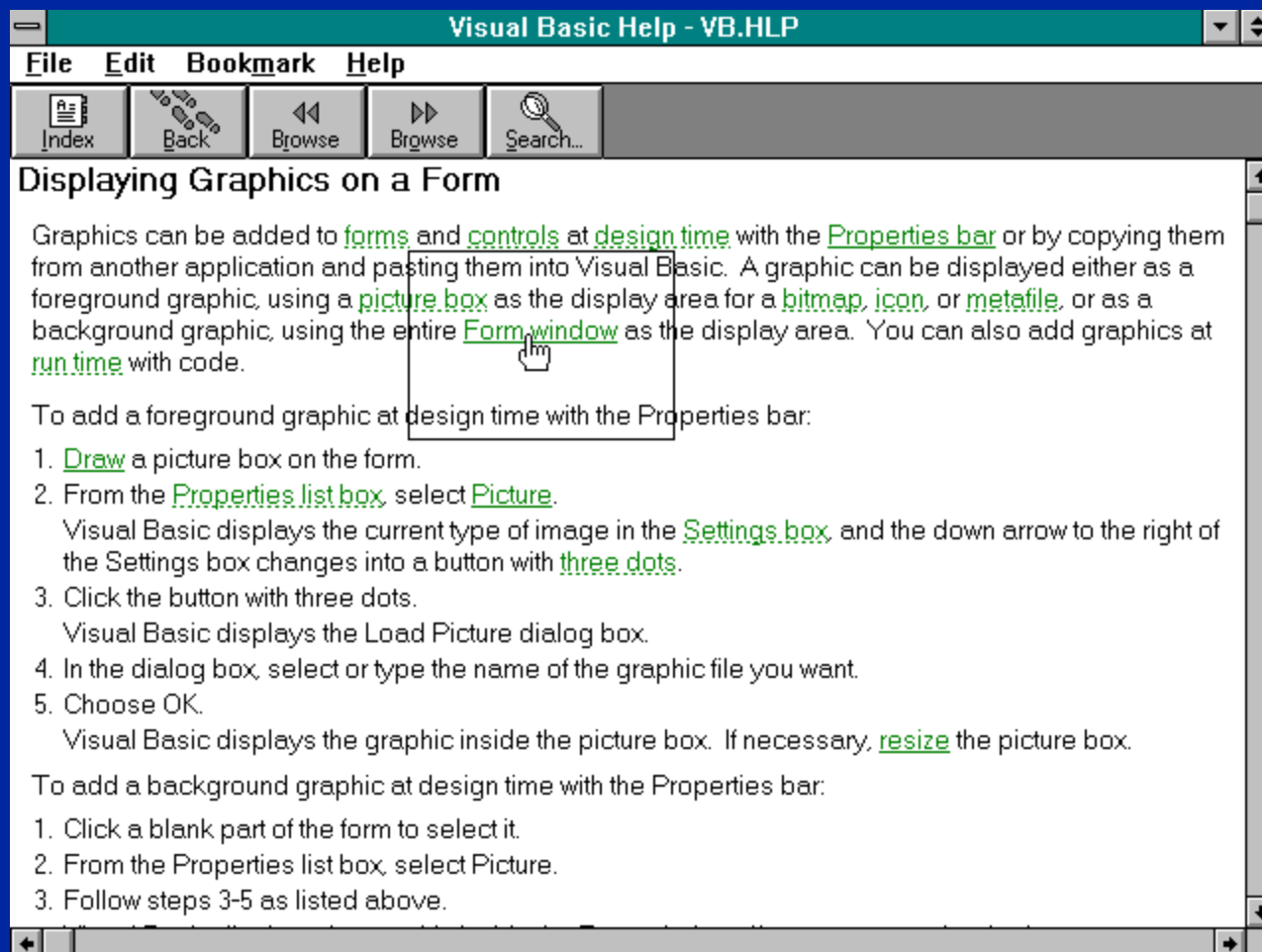    **u Where possible associate it**

    **with the real world:**
    **Red = stop, Green = go**

# Color Blindness and Color Confusion

u **Almost 10% of the male population has some form of color confusion**

u **Use color as a redundant cue**

u **Never rely solely on color to communicate information**

**File**    **Edit**    **Bookmark**    **Help**

| Index | Back | Browse | Browse | Search... |

# Displaying Graphics on a Form

Graphics can be added to forms and controls at design time with the Properties bar or by copying them from another application and pasting them into Visual Basic. A graphic can be displayed either as a foreground graphic, using a picture box as the display area for a bitmap, icon, or metafile, or as a background graphic, using the entire Form window as the display area. You can also add graphics at run time with code.

To add a foreground graphic at design time with the Properties bar:

1. Draw a picture box on the form.
2. From the Properties list box, select Picture.
   Visual Basic displays the current type of image in the Settings box, and the down arrow to the right of the Settings box changes into a button with three dots.
3. Click the button with three dots.
   Visual Basic displays the Load Picture dialog box.
4. In the dialog box, select or type the name of the graphic file you want.
5. Choose OK.
   Visual Basic displays the graphic inside the picture box. If necessary, resize the picture box.

To add a background graphic at design time with the Properties bar:

1. Click a blank part of the form to select it.
2. From the Properties list box, select Picture.
3. Follow steps 3-5 as listed above.

**Icons**

u **What are they?**

u **What kind of icons communicate?**

u **The dilemma between:**

- **Icons that are recognizable**

- **Icons that are easily remembered**

# Icons - What Are They?

- u **They are not the same as interface graphics**

- u **Icons represent a program or file - an object in the system**

- u **They have both a graphic and a title (for a reason!)**
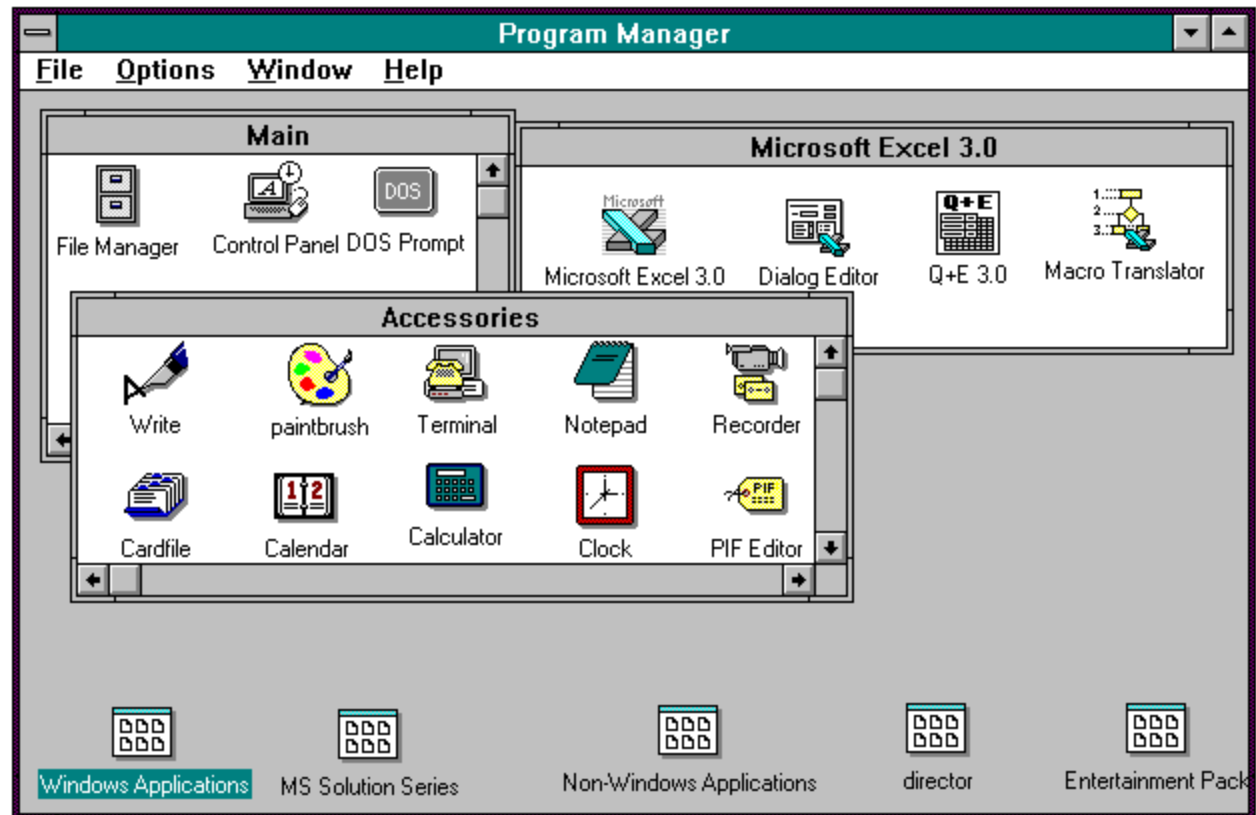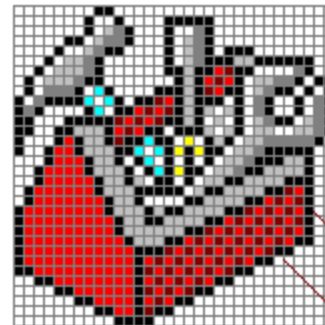
# What Kind of Icons Communicate?

- u **Not abstract symbols!**

- u **People like realistic, illustrative icons**

- u **People like simple icons**

# Icons - The Dilemmas

- Recognition vs. remembering

- Simple real world object

- For an abstract concept, a simple object is better than a symbol

- Icon design is an art that takes practice and talent!

## Designing Icons

- Use perspective

- Just the minimum of detail is better

- Use color to enhance recognition, not as decoration

- Start with black and white

- Realistic, illustrative

Icon Design
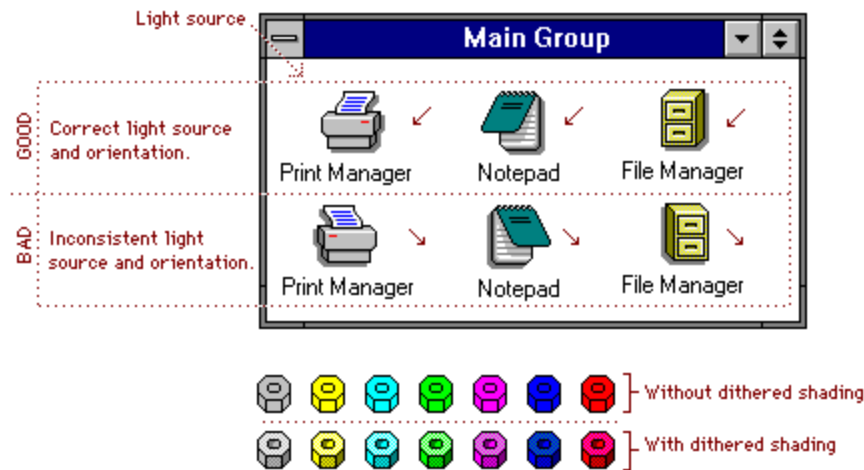
Accessories

Write | Paintbrush | Terminal | Notepad | Recorder
Cardfile | Calendar | Calculator | Clock | PIF Editor

Windows Applications

Microsoft Excel | Microsoft Word | Microsoft Project
Microsoft PowerPoint | Microsoft Mail

## Interface Graphics

- u Buttons, toolboxes, navigation symbols

- u Use no color or very minimal color

- u Will be learned, can be more abstract

- u Recall is more important than recognition

- u Usability test!

File   Edit   Formula   Format   Data   Options   Macro   Window   Help

Normal

Normal   MS Sans Serif   10

A1

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
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| 13 | | | | | | | | | |

Ready
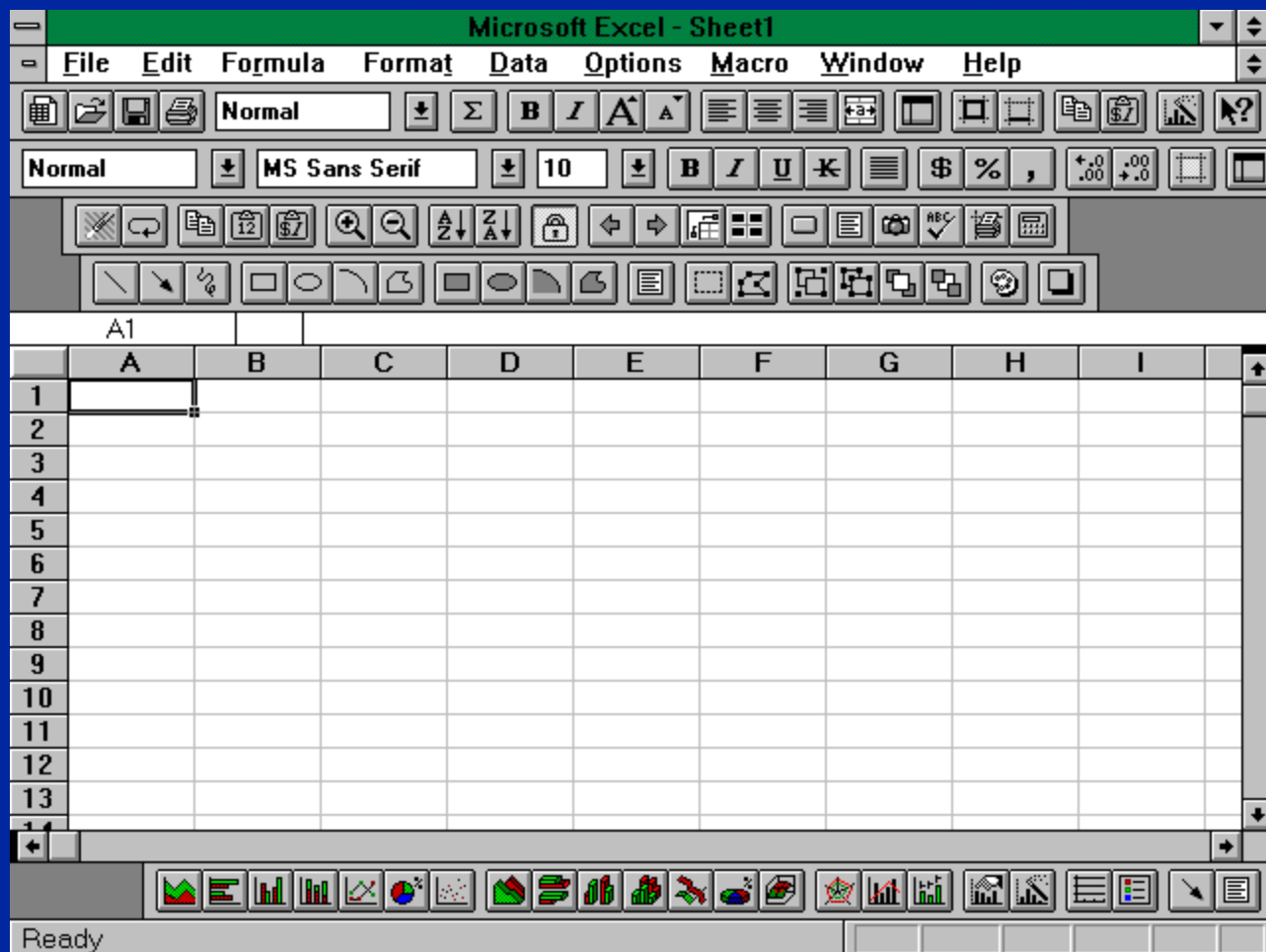
# Toolbar button states

- **Up**

- **Mouse down**

- **Selected option**

- **Inactive**

Up State

Down (Pressed-in) State

Inactive State

(scale 5:1)
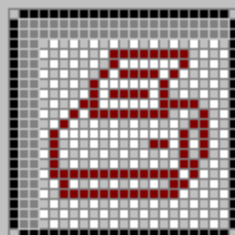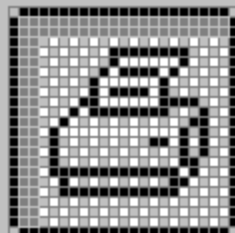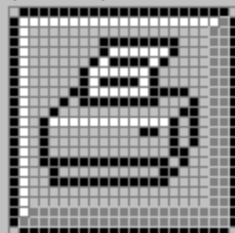
Up State

Down State

Inactive State

## Visual Organization

- Visual processing arc (where the eye moves)

- Use hierarchies and layering

- Use three dimensions instead of lines

- Don't overuse 3-D!
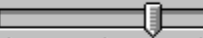
- Use visual samples and tasteful graphics

## Calendar

File  Edit  View  Show  Alarm  Options  Help

| 12:09 PM | Thursday, May 09 1991 |
|---|---|

| 7:00 AM | |
| 8:00 | Group meeting 5/1022 |
| 9:00 | work on Barney produ |
| 10:00 | |
| 11:00 | finish intro screen and |
| 12:00 PM | Lunch with Betsy |
| 1:00 | Review Lanman spec |
| 2:00 | |
| 3:00 | Meeting with Virginia ( |
| 4:00 | |
| 5:00 | |

## Calendar - (Untitled)

File  Edit  View  Show  Alarm  Options  Help

| 6:59 PM | ← → | Wednesday, January 29, 1992 |
|---|---|---|

| 7:00 AM | |
|---|---|
| 8:00 | |
| 9:00 | |
| 10:00 | |
| 11:00 | |
| 12:00 PM | |
| 1:00 | |
| 2:00 | |
| 3:00 | |
| 4:00 | |
| 5:00 | |

# MouseControl

## Size

Small
Medium
Large

Pointer Growth ☒

### Trigger Speed
Slow ———————[slider]——— Fast

### Duration
Short ——[slider]————————— Long

## Color

Normal
Reverse
Transparent

## Mouse Trails

☒ Enabled

### Length
Short —[slider]————————— Long

## Extra Points

☒ Magnify      ☐ Snap-to
☒ Screen Wrap  ☐ Locate

OK
Cancel
Reset

Orientation...
Sensitivity...

Help

Meet the Mouse

## Summary

- **Add a designer to your team <u>early</u>**

- **Use color carefully**

- **Usability and good design sell better than cool and flashy**

- **Your taste and the user's taste are different!**