



مشروع الطرق المؤدية إلى التعليم العالي  
مركز تطوير الدراسات العليا والبحوث  
كلية الهندسة – جامعة القاهرة



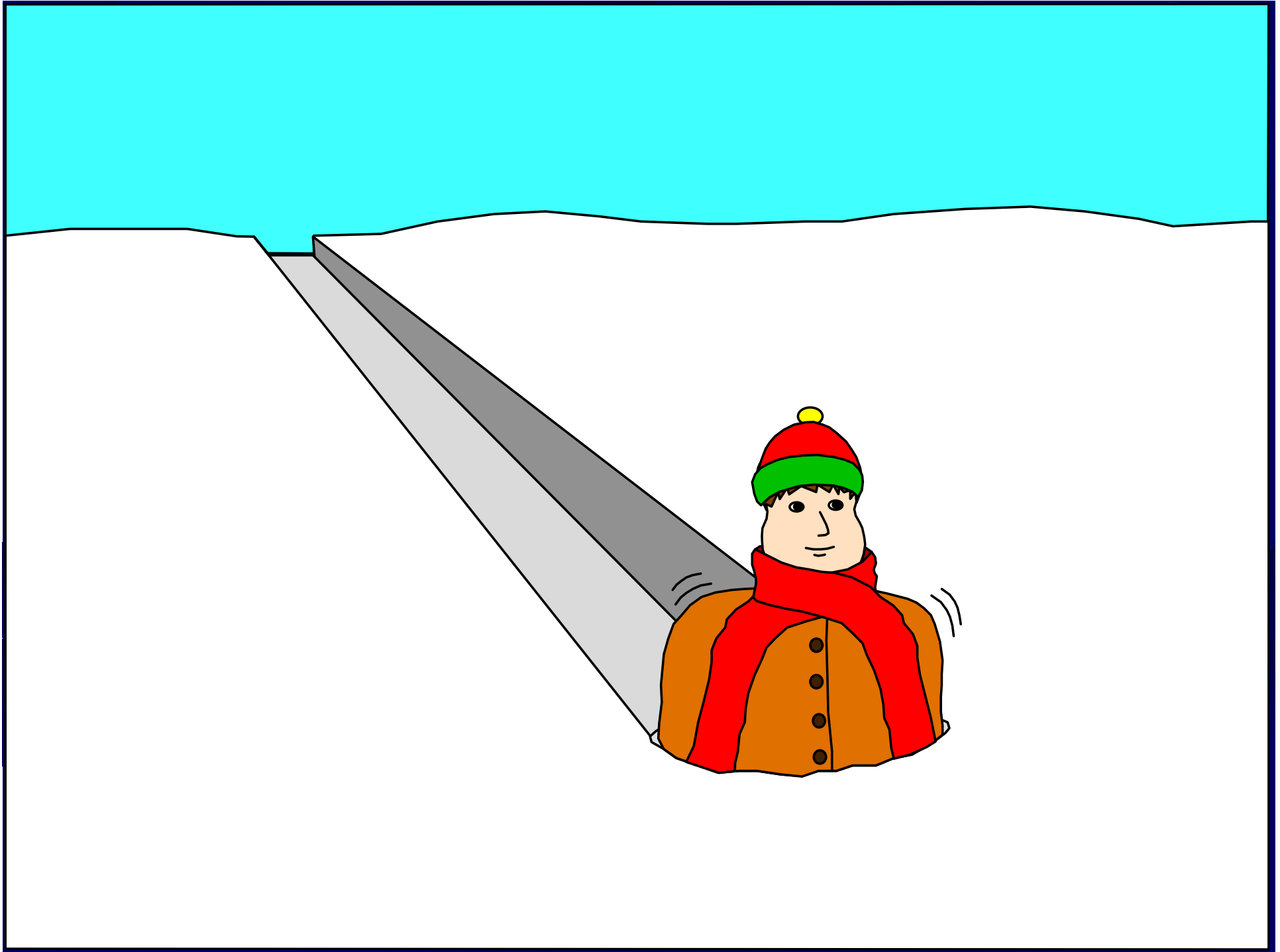
Cairo University

# Effective Design of Visual Aids

## A Case Study: Small Projects



**By: Mr. Hassan Moussa Abdo**







# Objectives

- Practice-oriented guidelines and key rules to design effective visual aids
- Teaching and training purposes
- Focuses on designing PowerPoint presentations

# Today's Topics

- **Importance of Visual Aids**
- **Types and occasions for visual aids**
- **Designing Visual Aids**
  - **Key Rules for an Effective Design**
- **Using Visual Aids**
- **Avoiding Problems during the Presentation**
- **A Case Study**

# The Importance of Visual Aids

- **We use visual aids because they:**
  - Clarify and simplify material
  - Emphasize some points
  - Illustrate some complicated passages:  
by pictures, sound or animation.

# The Importance of Visual Aids

(continued)

- Help visual learners
- Add audience's participation and engagement
- Save time
- Serve as an outline for the trainees



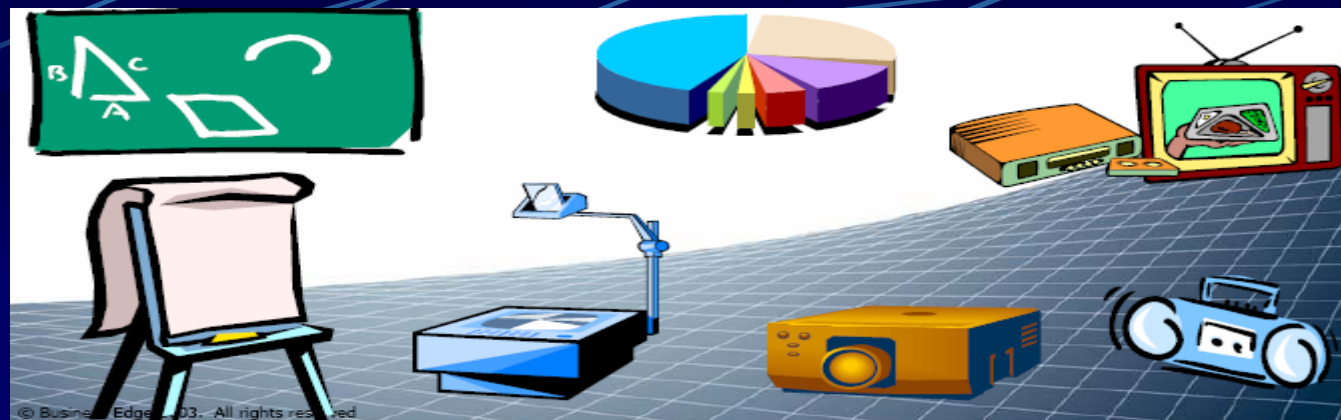
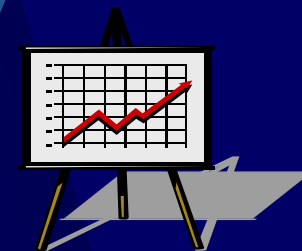
# Occasions for Visual Aids

- Occasions for presentations include:
  - Teaching & Training
  - Business Meetings
  - Academic conferences and seminars
  - Presenting a Project or Research
  - Telling a Story, drawing a slide (for kids)

# Other Purpose of Using Visual Aids

- Visual aids support your ideas and improve audience
- Visual aids add variety to your presentation

# Types of Visual Aids



# Types of Visual Aids

- **There are numerous ways, which include:**
  - Black- or white boards and pens
  - Projector and transparencies
  - Flip charts
  - Colored paper and glue and pens, to create flow charts

# Types of Visual Aids

There are numerous ways, which include: (continued)

- PowerPoint Presentations
- Video tapes about certain topics
- Video recording

# Flip Charts/Posters

- **Advantages:**

- easy and inexpensive to make and update
- portable and transportable
- left in view of the audience
- good for interaction with the audience

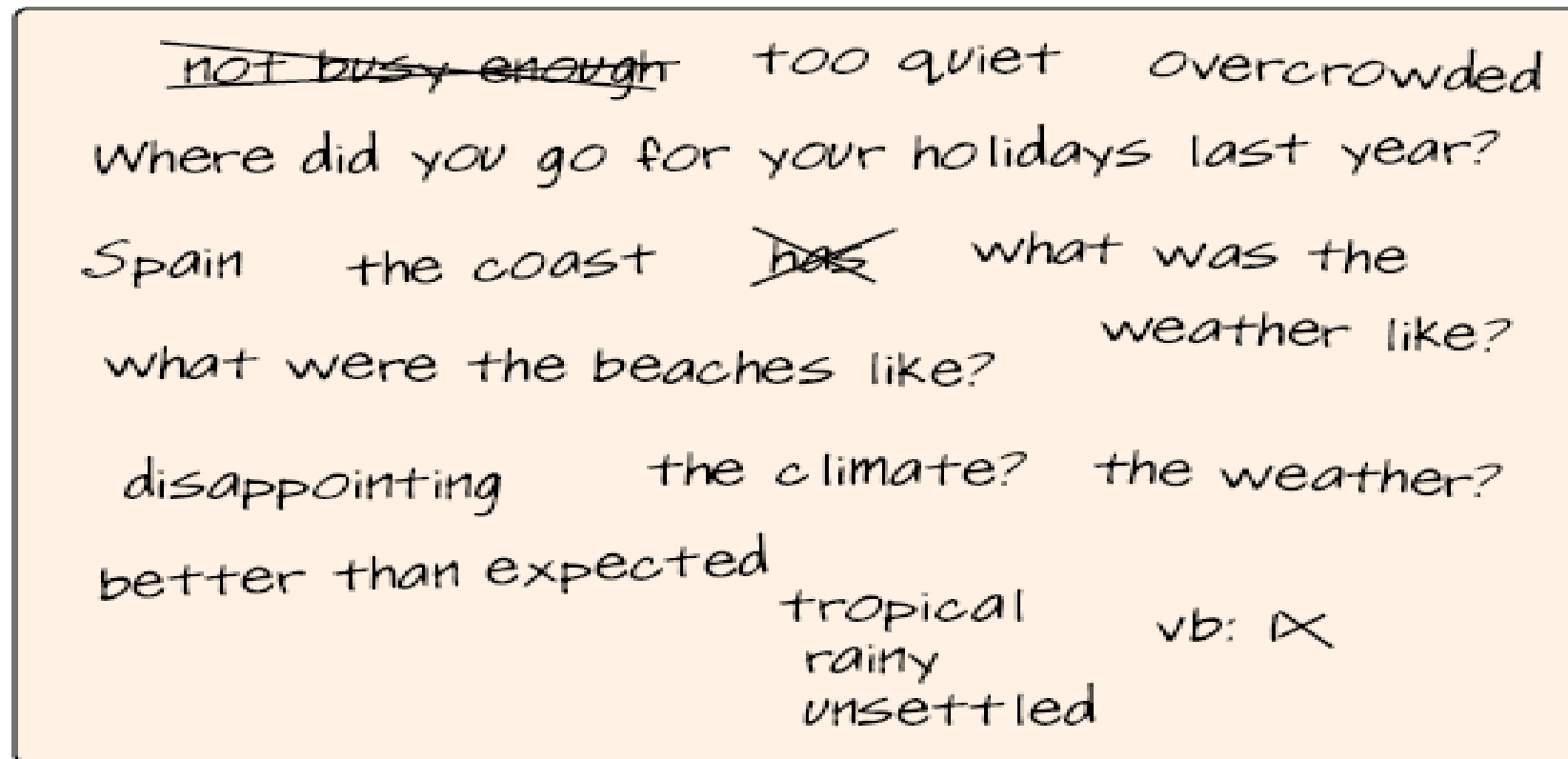
- **Disadvantages:**

- unsuitable for large groups
- anxiety-provoking for facilitator with poor handwriting or poor spelling

# Sample

## Good and bad use of the board

Fig. 1 Untidy and badly organised board



# Sample

Fig. 2 Well presented and organised board

Monday 10th February      Holiday impressions

What	was	the food the climate	like?
	were	the people the facilities	

new words

unspoilt  
overcrowded

tropical  
disappointing  
unsettled

**Practice**  
Ask about last year's holiday  
the place/the accommodation ...



# Slides

## ● Advantages:

- professional in appearance
- good for large groups

## ● Disadvantages:

- formal and impersonal
- shown in the dark
- not good for discussion and interaction
- more difficult to update than other visual aids
- require special equipment

# Videos

- **Advantages:**

- professional in appearance
- good for large or small groups

- **Disadvantages:**

- more expensive than other visual aids
- requires special equipment
- not good for discussion and interaction
- require accurate cueing

# Overhead Transparencies

## ● Advantages:

- good for large groups
- easy to create
- easy to transport
- open to interaction with groups
- easy to update



## ● Disadvantages:

- Black and white
- Loss the quality slides with time

# Using a data projector



## Advantages

- offers additional possibilities (animations etc.)
- good for large or small groups
- easy to get carried away with technology



## Disadvantages

- setting-up time (audience fidgets)
- hard to do real-time editing (e.g. skip slides) smoothly
- resolution can be a problem if projector only 800x600



# Computer Projections (e.g., PowerPoint™)

## ● **Advantages:**

- professional in appearance
- good for large or small group
- easy to integrate with classroom discussion
- animated
- up-to-date technology
- easy to update

# Computer Projections (e.g., PowerPoint™)

## ● **Disadvantages:**

- require special equipment/facilities
- require initial training to create
- require time to create
- require basic graphics/composition skills

# Guidelines for Using Visual Aids

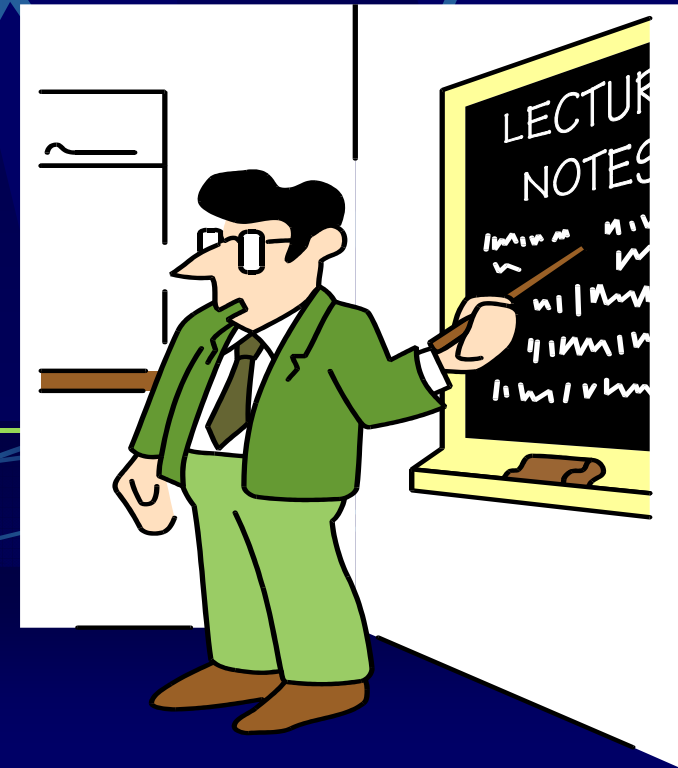
- Make It Easy to See
- Keep It Simple
- Make It Consistent with Objective
- Maintain Eye Contact

# More Guidelines for Using Visual Aids

- Don't Pass Items Around
- No Dangerous or Illegal Aids
- Avoid Using Live Animals
- Prepare for Problems (Have Backups)



# Using Visual Aids



# 1) Use visuals to help your audience

## USE THEM TO

- Focus the audience's attention
- Reinforce key components
- Maintain interest
- Visualize complex concepts
- Aid the audience's comprehension
- Increase retention

# 1) Use visuals to help your audience

## DON'T USE THEM TO

- Bad Impress your audience
- Limit interaction with your audience
- Present simple ideas that are easily stated verbally
- Information overload

## 2) Interact with your audience

- Do not get "Slide wiped"
- Do not directly read from visual aids
- Visual aids are **for your audience**
- Position screens diagonally of the class, you remain the center
- Don't stand in front of the projector's light (glare, heat, distraction)

# Using visual aids



## DO

- use layout to emphasize main points
- present graphs, diagrams and pictures
- check for Font legibility
- use a pointer to help audience navigate around slide

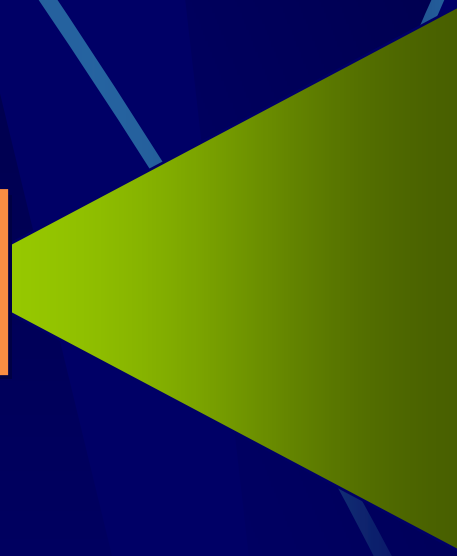
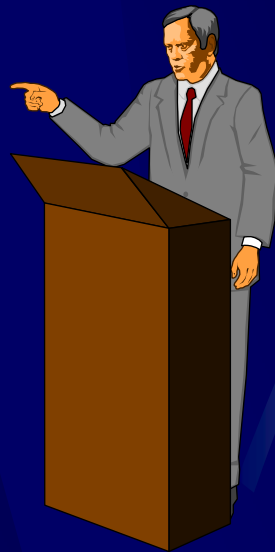
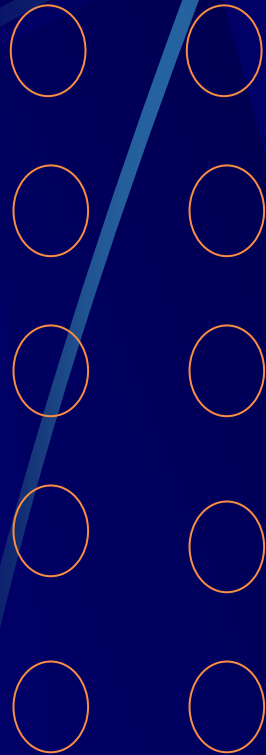
# Using visual aids



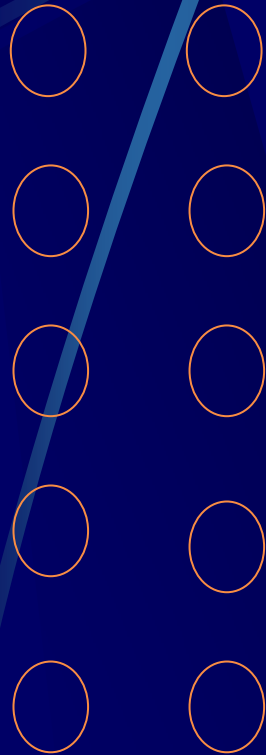
## DON'T

- copy your script on to transparencies!
- present large tables of data (impossible to assimilate)
- expect audience to read 12-pt type or graphs with 20 lines on
- spend all your time looking at screen instead of audience
- stand in front of screen, or between OHP and screen

This speaker is competing  
with the visual aid



Screen at 45° angle to audience  
gives speaker center stage



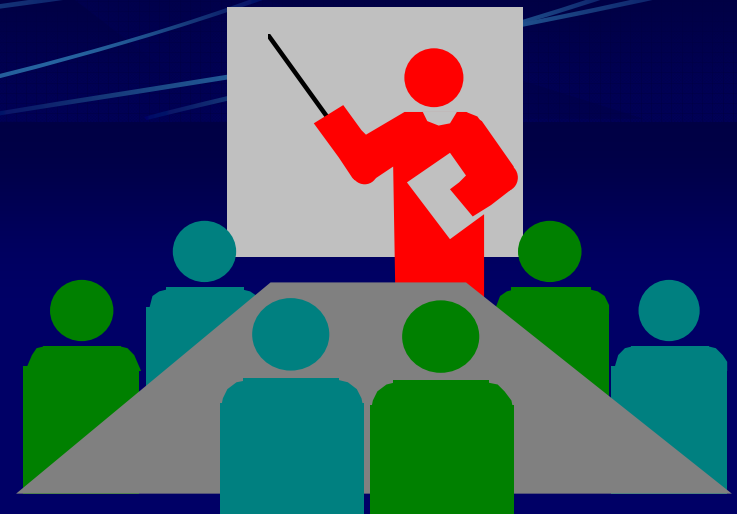


# Variety of Audiovisual Aids

- Most often you will be using PowerPoint
- But there is a danger ...



# Creating Effective Visual Aids



# Constructing Effective Visual Aids

- Never use confusing abbreviations
- The use of periods at the end of the bullets is not necessary
- Select complimentary colors; avoid color clashes
- Use fonts like "Sans Serif" or "Times New Roman"

# Constructing Effective Visual Aids

	<b>Transparencies</b>	<b>Slides</b>	<b>Hand- outs</b>
<b>Title</b>	36 pt	48 pt	24 pt
<b>Subtitles</b>	28 pt	36 pt	20 pt
<b>Body</b>	24 pt	28 pt	16-18 pt

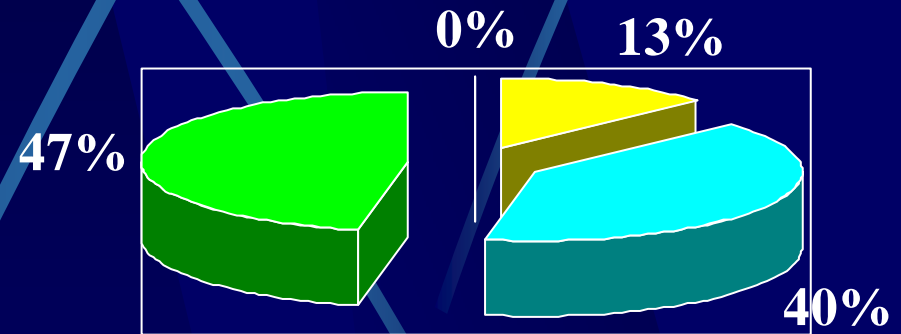
# Additional Guidelines for Text

- Use only 4-6 lines of text per VA
- Use phrases, not full sentences
- Use Upper Case and Lower Case for ease of reading
- Limit lines to no more than 40 characters

# Construction of Graphs

- Present one graph per slide
- Limit the amount of numbers or figures
- No more than 3 curves or horizontal bar lines per graph

## Reading Comprehension in English



Excellent

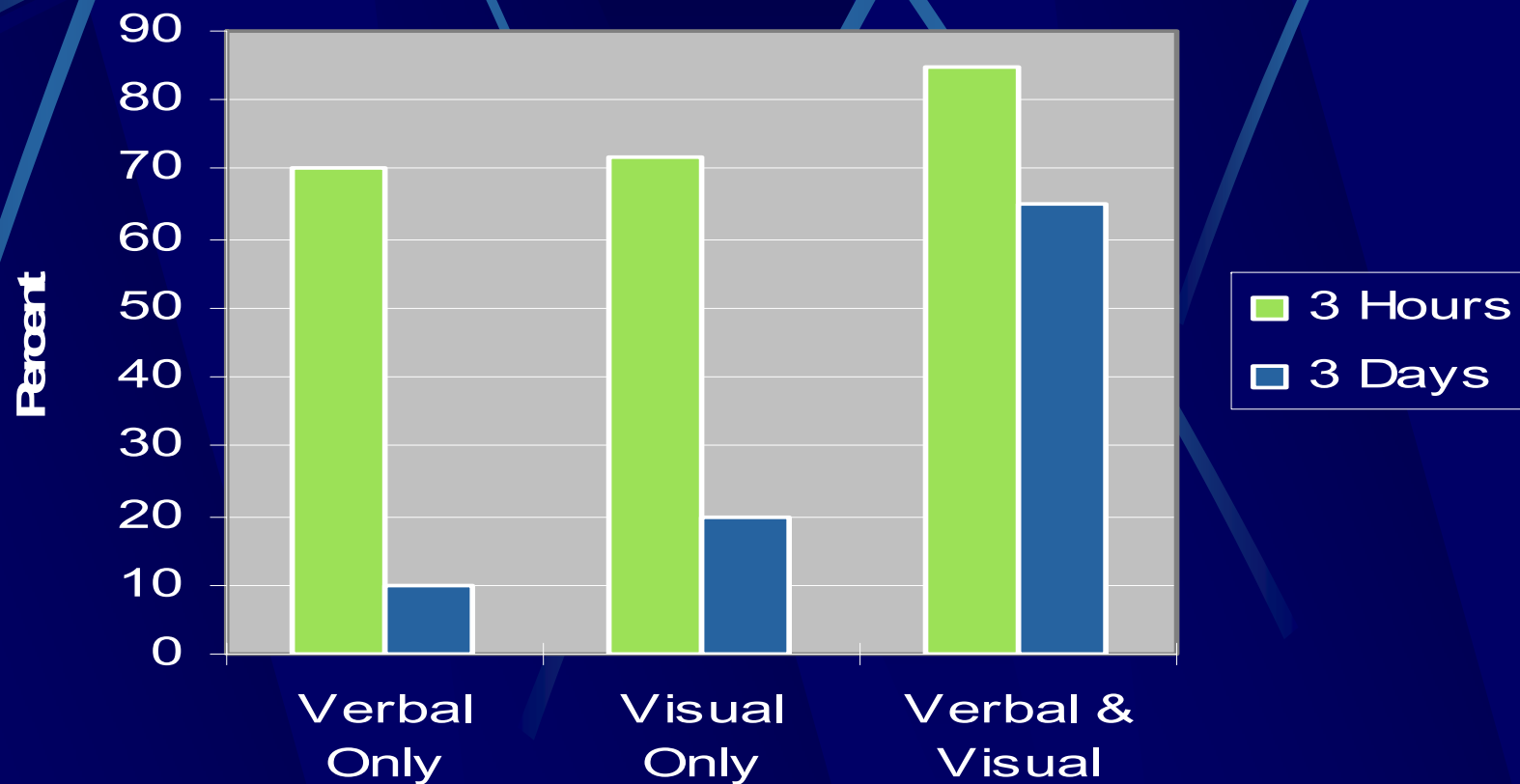
Good

Fair

Deficient

# Memory and Visual Aids

## Percent of Speech Remembered After...



*Zayas-Baya, 1977*

# Select and Develop Visual Aids



Assess Resources

Assess Skills

Assess Audience



# Design Rules for Visual Aids - Size

The font size of  
the word  
below is  
written in 48  
pt.

Word Art

72 PT

60 PT

44 PT

36 PT

32 PT

28 PT

24 PT

18 PT

14 PT

# Design Rules for Visual Aids - Color

## **Blue and Yellow**

**Are Contrasting but Harmonious Colors**



**Effective and Ineffective Color Combinations**

## **Blue and Purple**

**Are Neither Contrasting nor Harmonious Colors**

# Design Rules for Visual Aids - Typeface

## Font Types

### Serif

**Poster**  
**Bodoni**  
**Garamond**  
**Americana**

### Sans Serif

**Abadi**  
**Herald**  
**Denmark**  
**Garrison Sans**

### Script

*Quill*  
*Kaufmann*  
*Mariah*  
*Kunstler Script*

### Decorative

*Pablo*  
*Curly*  
**PAPER CLIP**  
**Stars and Stripes**

# Design Rules for Visual Aids

## - Contrast

*Wedding...*

is a formal serif typeface which commonly used for weddings, diplomas, and certificates. It can be used sparingly to provide a flourish.

**Boulder...**

**is a dense and heavy san serif typeface which can be used to get attention and make a dramatic point.**

*Curly...*

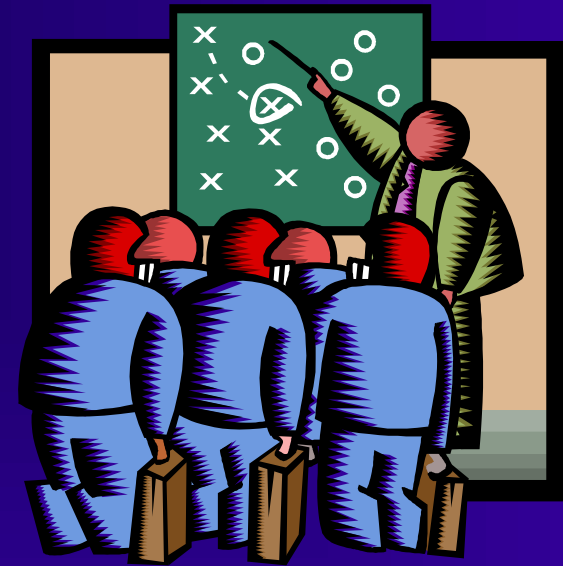
is whimsical and lighthearted. It is a decorative typeface which could be used to make a humorous point.

# Design Rules for Visual Aids

## - Clip Art

### Searching the Internet

- ☒ Why go online?
  - What's there?
  - How do you find it?
- ☒ How do you get online?
  - Choosing an ISP.
  - Local or national providers?



# Design Rules for Visual Aids - Information

Too  
Little

## Graphics Programs

- ↖ Begin
- ↖ Develop
- ↖ Enter
- ↖ Design



# Design Rules for Visual Aids - Information

## How to Use Microsoft's PowerPoint™ Graphics Program

- **Begin with an idea which will form the basis of your presentation**
- **Develop an outline of all The main points and subpoints**
- **Enter the outline in the program's outlining feature**
- **Design “slides” with either custom or stock backgrounds, clip art, and text color**

Too  
Much



# Design Rules for Visual Aids - Information

## Using Microsoft's PowerPoint™

- ↖ **Begin with an idea**
- ↖ **Develop an outline**
- ↖ **Enter outline in the program**
- ↖ **Design “slides”**

Enough

*“Putting the  
pieces  
together”*

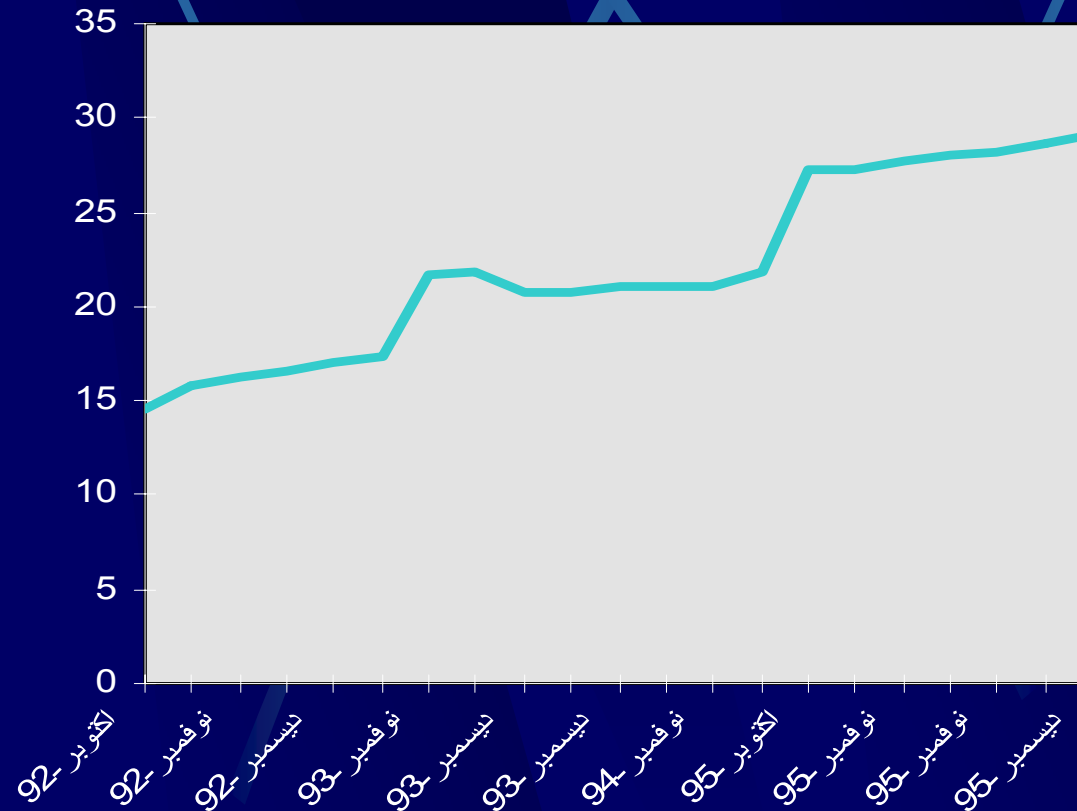




# Design Rules for Graphs

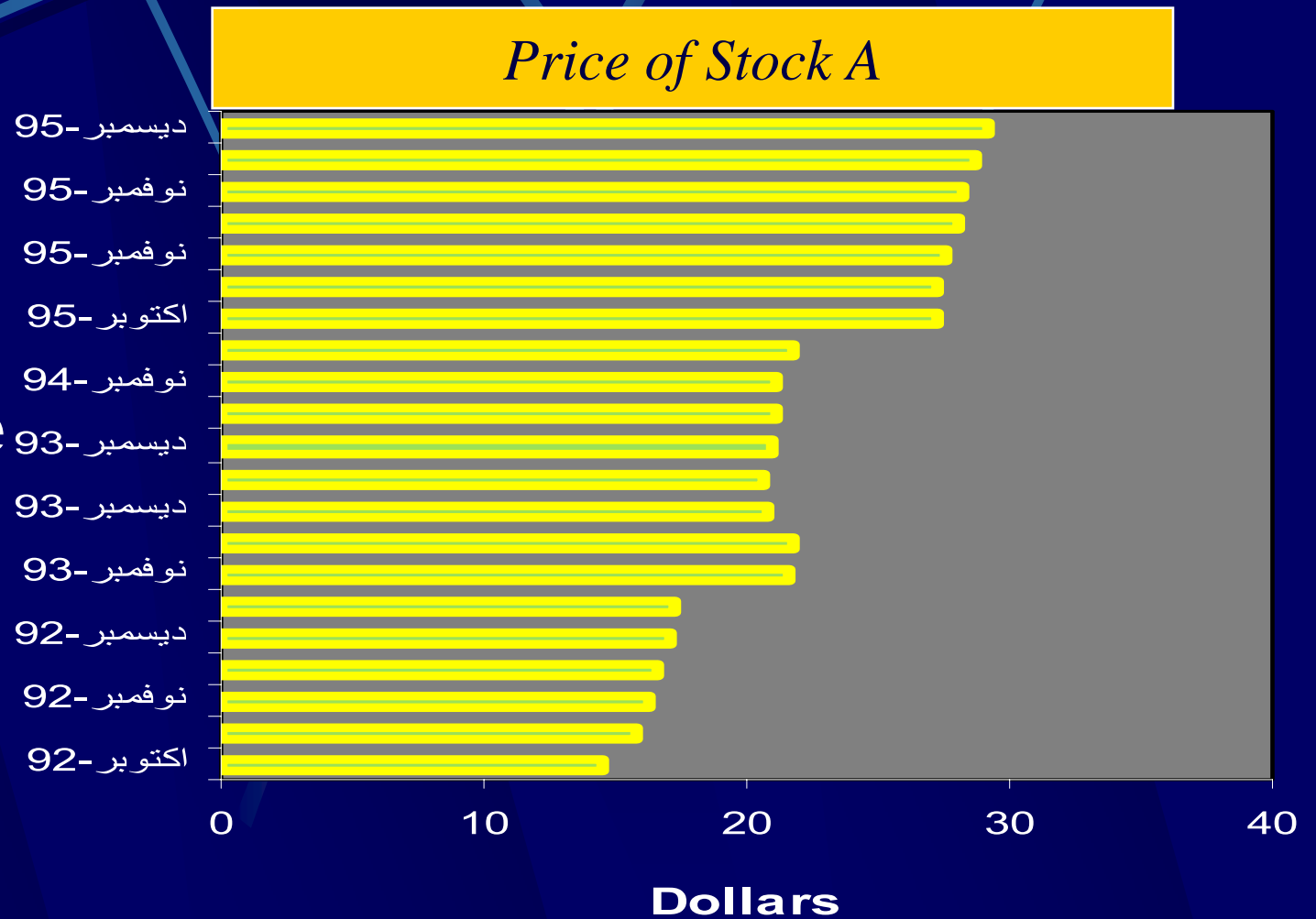
*Price of Stock A*

Effective Dollars



# Design Rules for Graphs

Ineffective



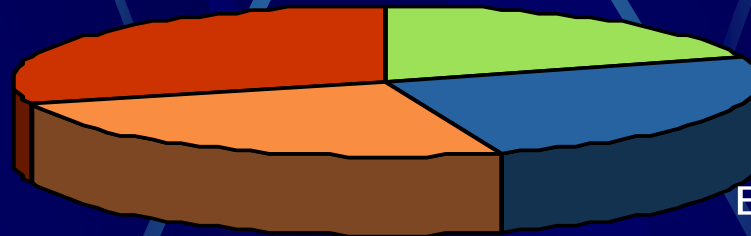
# Design Rules for Graphs

## Ideal Porfolio - New Investor

Effective

Large Stock  
Funds  
30%

Overseas  
Funds  
20%

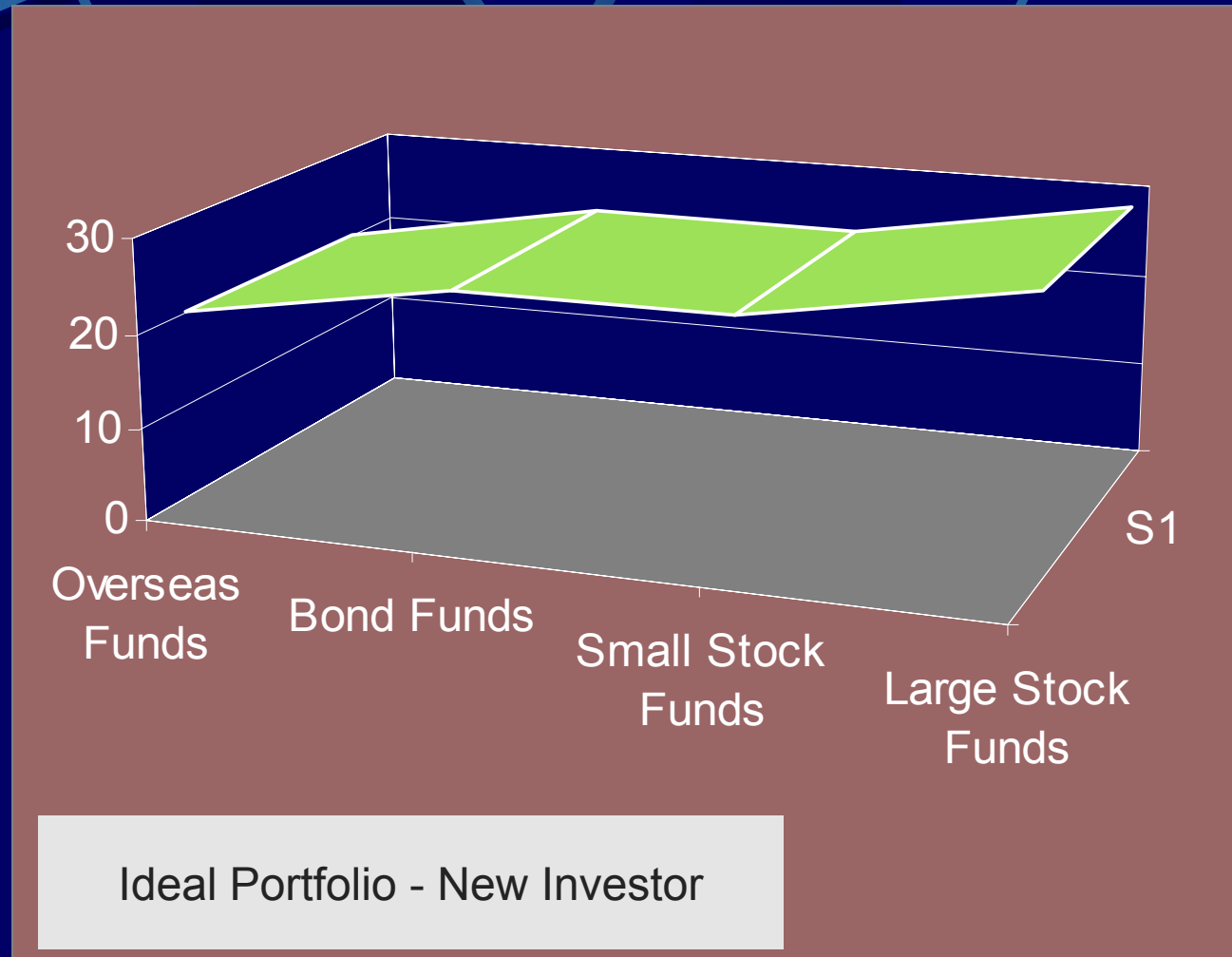


Small Stock  
Funds  
25%

Bond Funds  
25%

# Design Rules for Graphs

Ineffective



# Tips for Presenting Visual Aids

- Avoid using the chalkboard
- Display VA's where listeners can see them
- Avoid passing VA's among the audience
- **Talk to your audience, not to your visual aid !!!**
- Explain visual aids clearly and concisely
- Practice with visual aid when rehearsing speech

# Before proceeding to design

## MATERIAL

- Prepare the material into a logical sequence
- Break the flowing text into small units
- Skip some passages or phrase

# Before proceeding to design

## ROOM

- Check the room, computer & screen that will be used
- Check lines of sight to your visual aids from all parts of the seating area
- Check PowerPoint versions

# Creating the Presentation



## Make it BIG

- If it looks too big on the computer, it's the perfect size



## Keep it SIMPLE

- Present the main idea of each concept



# Creating the Presentation

## Make it CLEAR

- Choose an appropriate font, font size, and color

## Be CONSISTENT

- Use a logical sequence and one format

# Preparing Effective PowerPoint Slides

- Use visuals sparingly
- Rule 7 X 7
  - Use no more than 7 lines of text per slide
  - Use no more than 7 words per line of text
- Restrict the contents of tables and graphs
- Keep uniformity in font style, font size, and bullets

# Fonts

- **SIZE DOES MATTER**

- you are not writing a manuscript...





• *But bigger doesn't always mean better*

- **Font style is as important as size**
- Sans serif fonts (such as Arial) are easier to read

# Use style

- Some fonts can be difficult to read
- Even when you increase the size
- Test before you commit!
- ***“Trimmings” can also blur your message***
- Instead of changing fonts, change bullets
- **DO NOT USE “ALL CAPS”**

# Bulleting items

- Vary the size, shape and color of the bullets
  -  125 % larger than text, complimentary color
  -  150 % larger than text, complimentary color
  -  variation on a theme!
- ➔ Bullets can make your slides personal
-  Choose bullets that fit your topic

# Tabular formats

- Tables are best when precise numbers are needed
- Use a maximum of six lines or columns
- Use abbreviations
- Column titles should be horizontal
- Encase the table in a box
- Only have one number per cell
- Use percentages instead of a number or count, unless % is misleading (such as small sample size)

# Color suggestions

- PowerPoint looks best with:

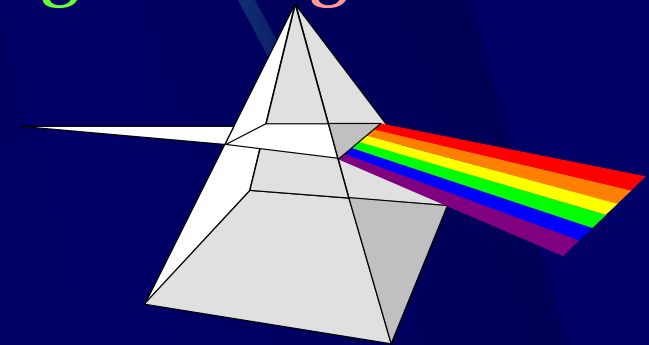
- medium colored backgrounds
- light text

- Overheads look best with:

- Light background
- Dark text

- Consider the fact of **COLORBLINDNESS**

- Use blue, orange or yellow
- Do not use red and green together



# CAUTION!

- ▼ Do not use busy backgrounds
- ▼ Color becomes more critical
- ▼ You can be creative and still be clear
- ▼ Experiment!!!





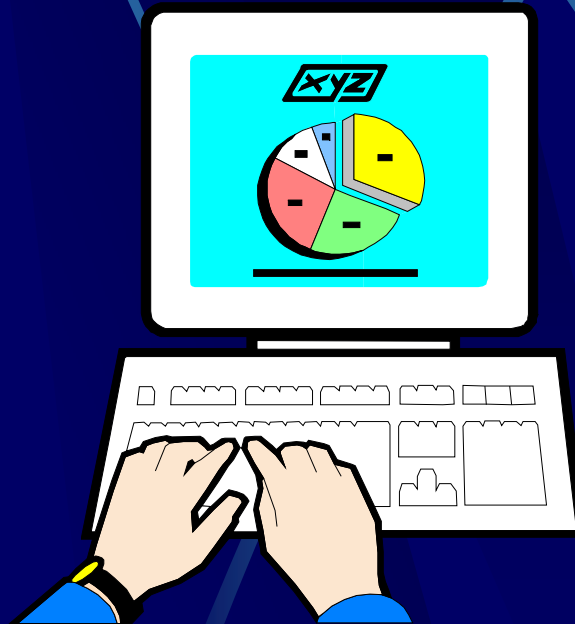
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# Creating Effective PowerPoint Presentations

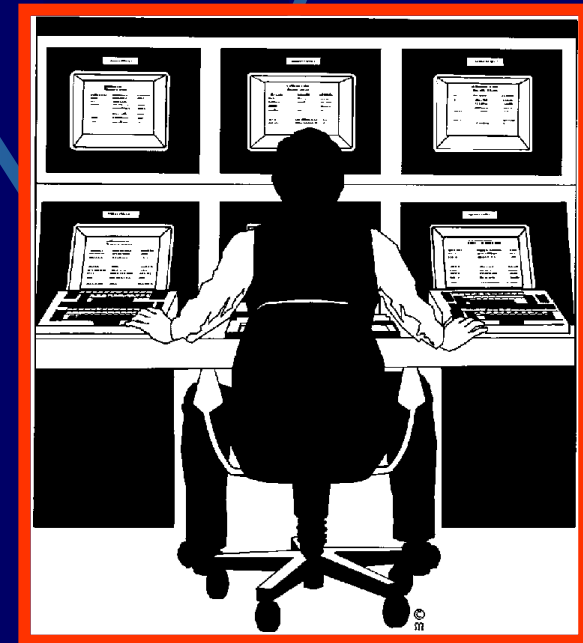
# Selecting the Visual Aid Medium



**Handouts**



**Computer  
Presentations**



**Multimedia**

# Selecting the Visual Aid Medium

- **Handouts** - an easy and inexpensive way to create visuals.
- ▼ **Computer Presentations** - easy to create and alter. They can be used as transparencies or computer generated onscreen presentations.
- ▼ **Multimedia** - combines use of text, graphics, video, and audio.

# Creating the Design

**Formatting your visuals consider:**

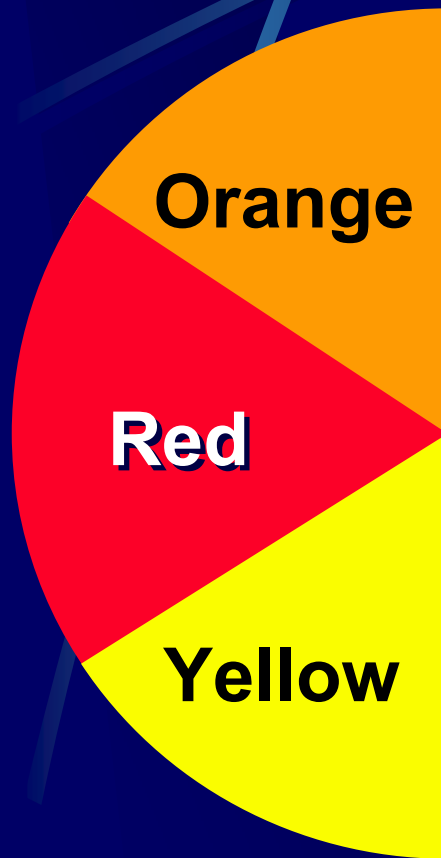
**Color  
Format**

**Balance**

**Readability**

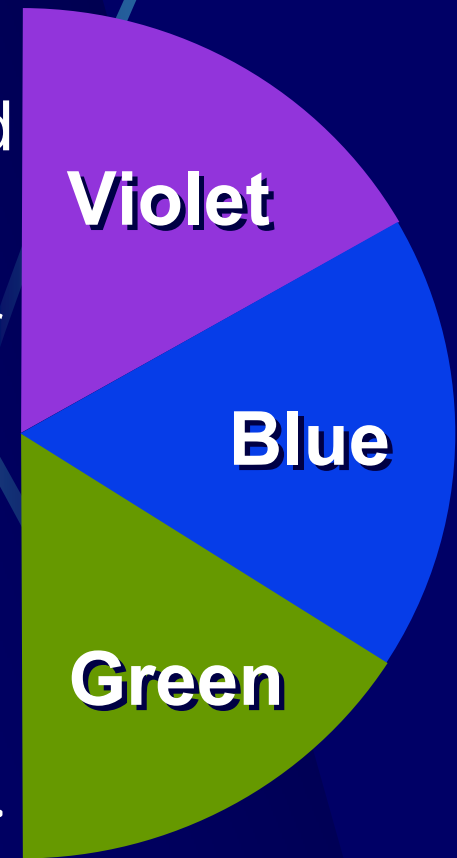
**Warm colors come forward off the page and are very dominant.**

## Warm & Cool Colors



Reds, oranges, and yellows are warm colors and should be used to indicate strength, energy, and action. Use warm colors for titles and text.

Violets, blues, and greens, are cool colors and are appropriate for background colors because they generate feelings of relaxation and passiveness.



**Cool colors recede and make very good backgrounds.**

# Format & Balance

- **Format** - the shape and size of your visual.
- **Balance** - the arrangement of elements on your visual.

# Readability

44 point font size (**bold**)

30 point font size (**bold**)

24 point font size (**bold**)

18 point font size (**bold**)

12 point font size (**bold**)

**Too Small**

**Larger is Better!**

Using Special Effects

Animation or Motion

Sound



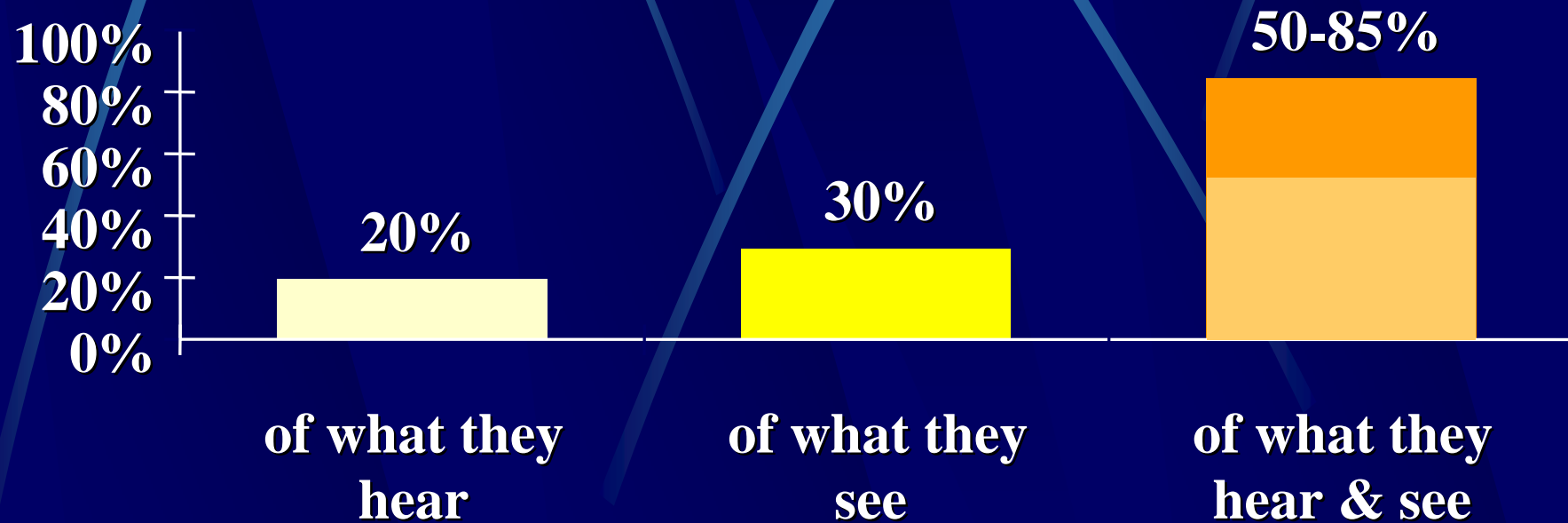
# Choosing the Appropriate Diagram

- Bar Graphs
- Flow Charts
- Line Graphs
- Maps
- Organization Charts
- Pie Charts
- Tables

# Bar Graph

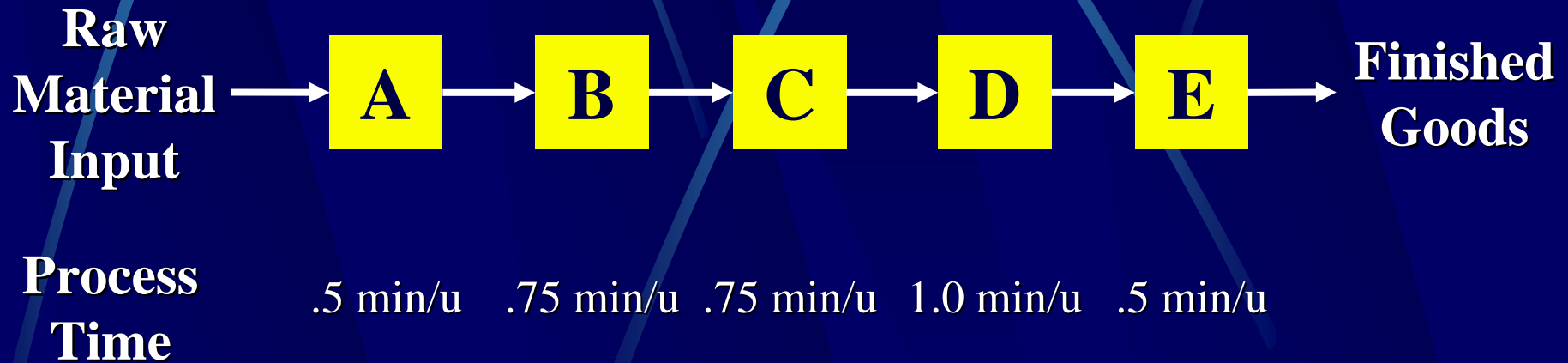
## Retention Rates

People remember:



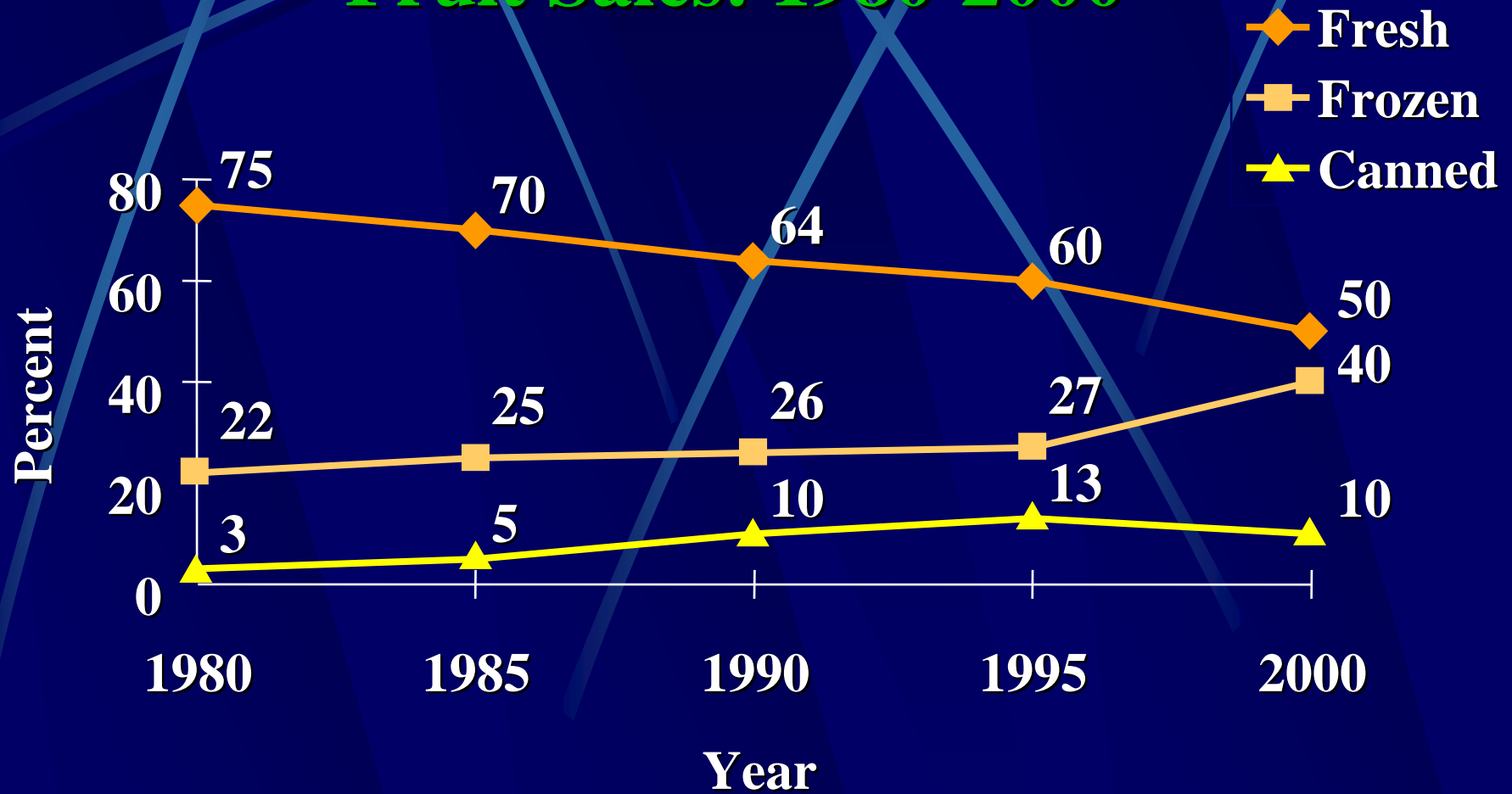
# Flow Chart

## Five Process Steps

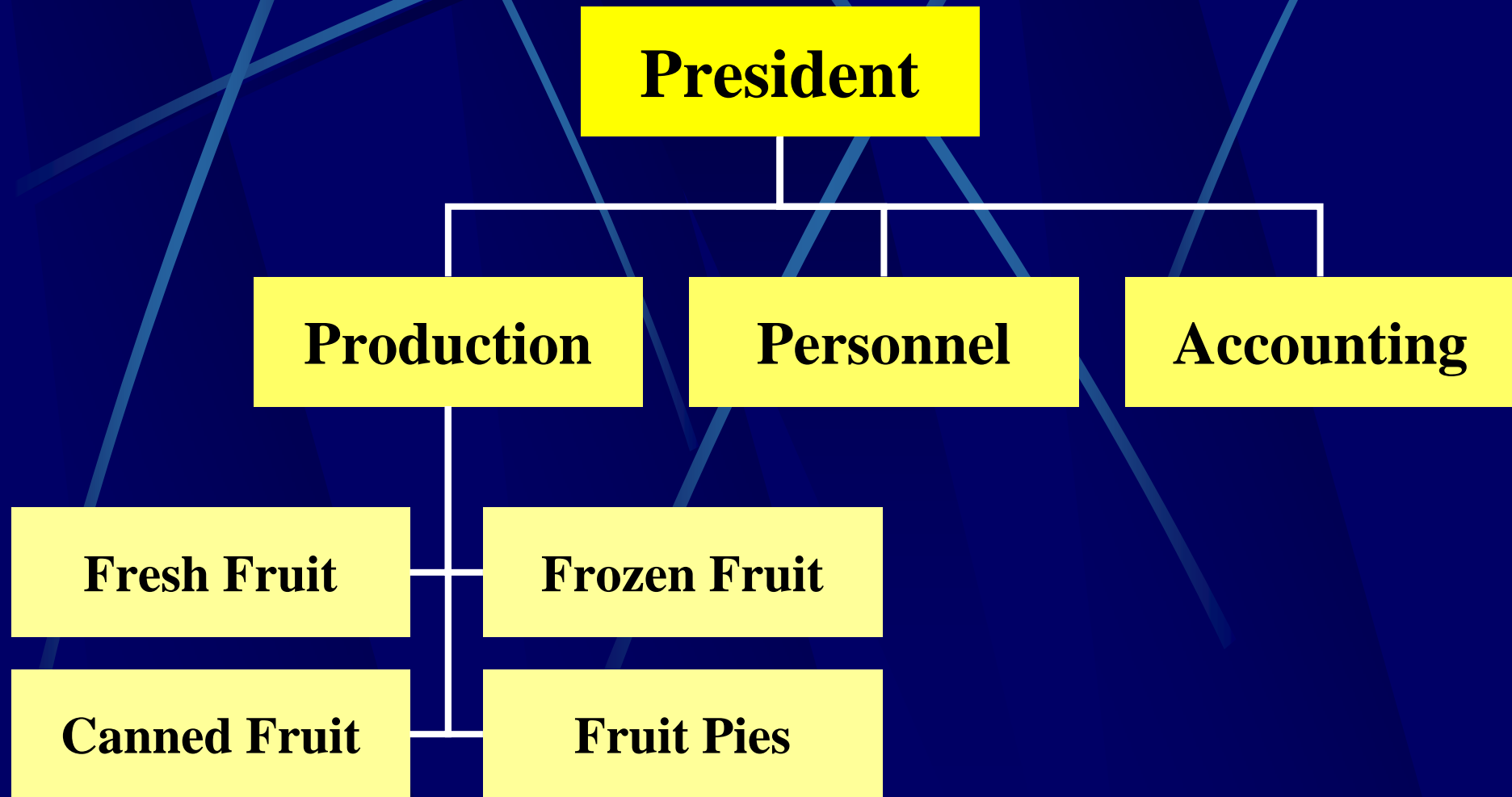


# Line Graph

## Fruit Sales: 1980-2000

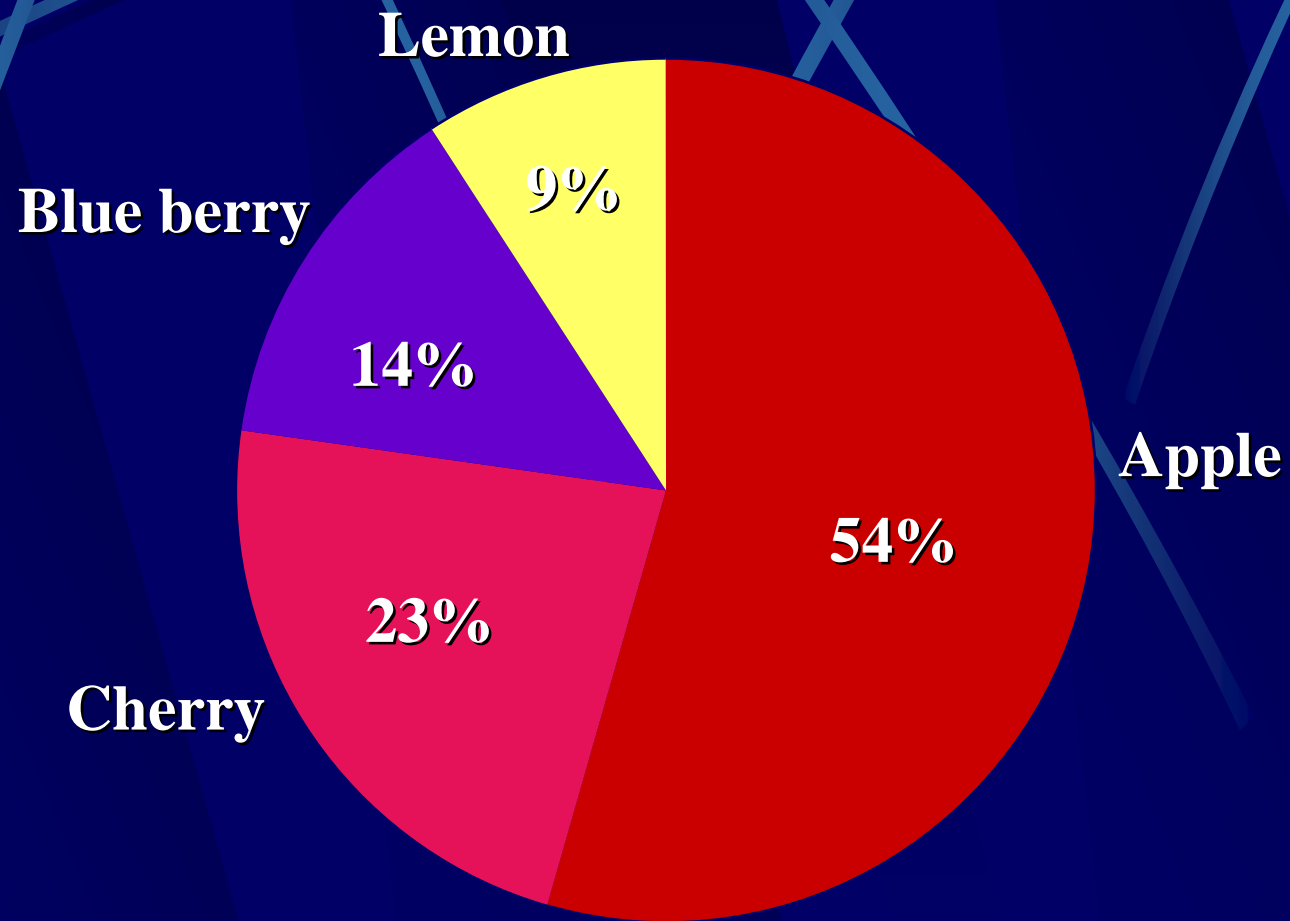


# Organizational Chart



# Pie Chart

## 2007 Sales

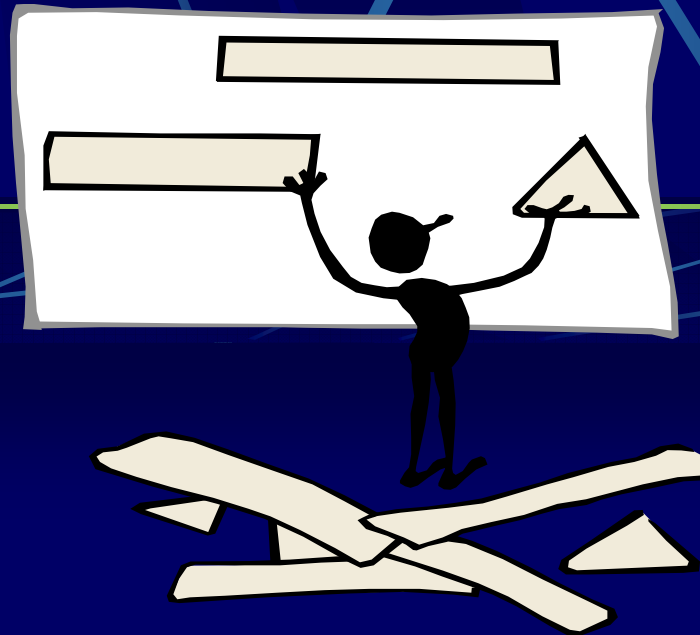


# Table

## 2007 Sales

<b>Fruit Flavor</b>	<b>Apple</b>	<b>Cherry</b>	<b>Blue berry</b>	<b>Lemon</b>
<b>Total</b>	<b>5400</b>	<b>2300</b>	<b>1400</b>	<b>900</b>
<b>Percentage</b>	<b>54</b>	<b>23</b>	<b>14</b>	<b>9</b>

# The Art of PowerPoint





# Before proceeding to design

## MATERIAL

- Prepare the material into a logical sequence
- Break the flowing text into small units
- Skip some passages or phrase

# Before proceeding to design

## ROOM

- Check the room, computer & screen that will be used
- Check lines of sight to your visual aids from all parts of the seating area
- Check PowerPoint versions

# Components of a Presentation

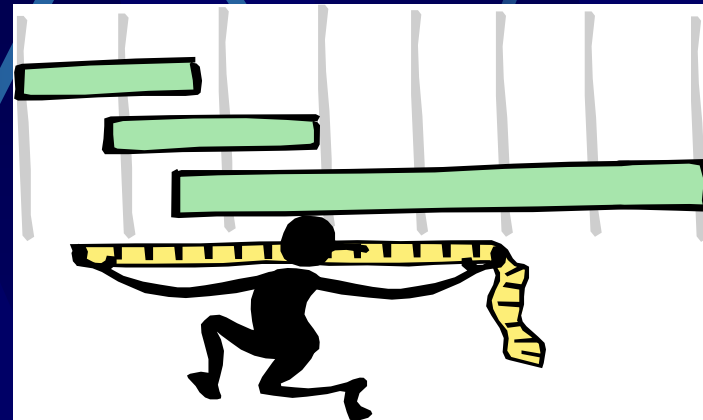
- **All presentations must have:**
  - **An introduction**
    - Tell them what you are going to tell them
  - **A body**
    - Tell them
  - **A conclusion**
    - Tell them what you told them
- Often, you will also need to include time for questions and answers at the end

# A possible structure for your presentation

- Title/author/affiliation/ logo (1 slide)
- Goals of the material (1 slide)
- Outline (1 slide)
- Body of Material (not less than 5 slides)
- Summary (1 slide)
- Bibliography (Sources) (0-1 slides)
- Acknowledgments (0-1 slides)
- Thank the Audience (1 slide)

# Integrate Your Slides

- Place the graphic in an appropriate location.
- Introduce it.
- Explain it.
- Make it visible.
- Make sure people can see what you want them to see.



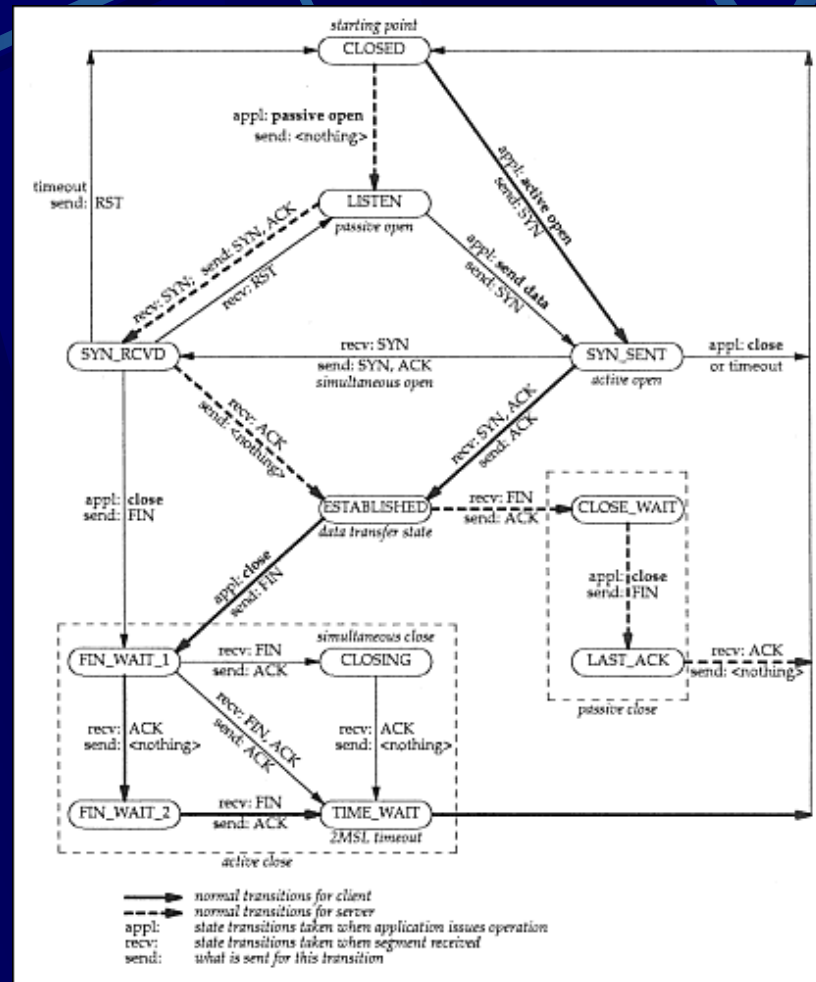
# Integrate Your Slides (2)

- Maintain eye contact.
- Don't talk to the screen
- Don't read slides word by word to the audience.
- Don't point out mistakes or poorly designed graphics.
- Just get to the point!

# Rules of Slide Design

- Keep it short and simple.
- Use graphics.
- Choose appropriate fonts.
- Use a template.
- Use bullets.
- Make Sure You're Grammar is Correct

# Avoid using PowerPoint for small and intricate diagrams



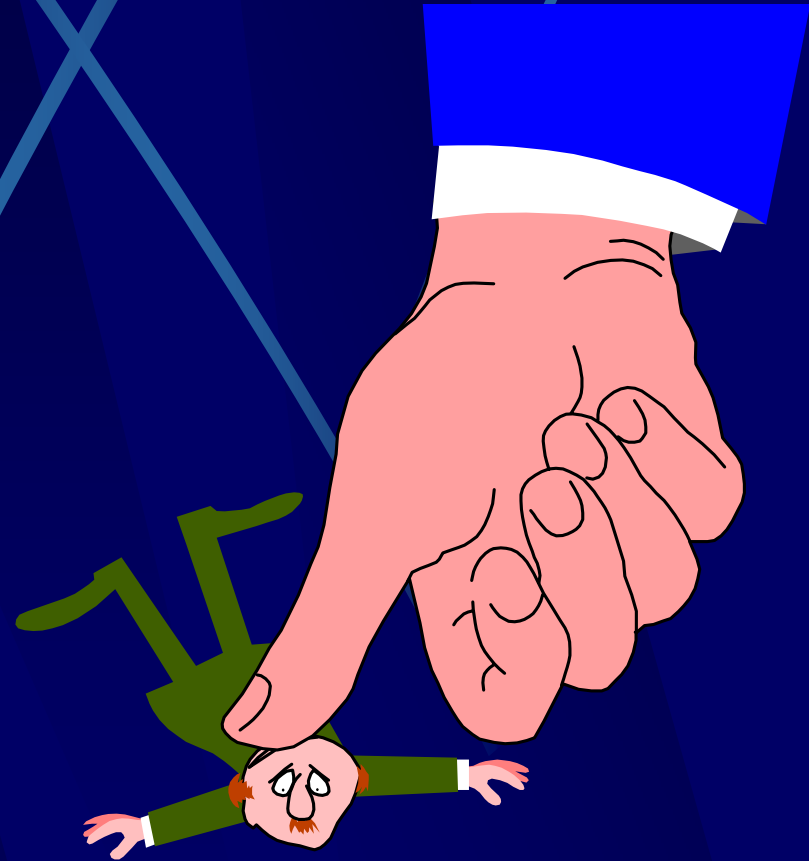
*This would be better given as a handout.*



# Use Clip Art to Keep Interest



The text can be placed here on the left, and the picture on the right



# Keep It Simple (Text)

Instructional Technology:

A complex integrated process involving people, procedures, ideas, devices, and organization, for analyzing problems and

devising  
evaluating

**Too detailed !**

solutions to those problems in situations in which learning is purposive and controlled

# Keep It Simple (Text)

Instructional Technology:

A process

involving people and tools

for solutions

to problems in learning

**Much Simpler**

# Falling Leaves Observed

	Christchurch	Dunedin	Wellington
January	11,532,234	14,123,654	3,034,564
February	1,078,456	12,345,567	16,128,234
March	17,234,778	6,567,123	16,034,786
April	16,098,897	10,870,954	7,940,096
May			4,856,456
June			4,123,656
July			8,885,786
August	8,674,234	18,107,110	17,230,095
September	4,032,045	18,923,239	9,950,498
October	2,608,096	9,945,890	5,596,096
November	5,864,034	478,023	6,678,125
December	12,234,123	9,532,111	3,045,654

**Too detailed !**

# Falling Leaves in Millions

In 10 <sup>6</sup>	Christchurch	Dunedin	Wellington
January	11	14	3
February	1	12	16
March	17	6	16
April	11	10	7
May	11	10	14
June	11	10	4
July	8	15	18
August	8	18	17
September	4	18	9
October	2	9	5
November	5	0	6
December	12	9	3

**Much Simpler**

# Falling Leaves



# Falling Leaves





# Keep It Simple (Graphics)

- Art work may distract your audience
- Artistry does not substitute for content





# Make It Clear (Complement)

- Use contrasting colors
- Light on dark vs dark on light
- Use complementary colors

These colors do not complement

# Background

- **Avoid backgrounds that are distracting or difficult to read from.**
- **Always be consistent with the background that you use.**

# Make It Clear (Complement)

- Use contrasting colors
- Light on dark vs dark on light
- Use complementary colors

These colors complement

# Small Projects Course

## A Case Study



# Consistent and balanced layout

- Color scheme:
  - Dark blue on white background
  - Purpose: to keep lights on, maintain eye contact
- Each file covered a chapter
- Three files, which had an identical layout to maintain unity



# Make slides easy to read

- Main Points only
- Use colored bullets to indicate order of ideas



## تعريف المشروعات الصغيرة



يمكن تعريف المشروع على أنه صغير، إذا توفرت فيه الخصائص التالية:

- أن يتراوح عدد العمالة به من ٥ إلى ١٥.
- أن يكون المديرون هم أصحاب المشروع "سمة غالبة".
- أن تكون الملكية لفرد أو مجموعة صغيرة.
- أن يمارس المشروع عمله في منطقة محلية.
- أن يتسم المشروع بصغر الحجم ومحدودية النشاط.

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# Make slides easy to read (2)

- Used tables to show information in a concise form
- Used colors to give certain meaning
- **Red**  
for Title
- **Green**  
for Subtitle



نماذج ناجحة لمشروعات صغيرة

جدول يوضح: أهم العوامل التي تهدد المشروعات الصغيرة

Harold P. Welsch	W. Gibb Dyer	Sharon Nelton	م
ادعاء أسباب خارجية لتفشل.	عدم القدرة علي التفكير الاستراتيجي.	عدم المعرفة بكيفية إدارة وتشغيل المشروع.	١
ضعف التخطيط	ضعف شبكة الأعمال بين موارد المشروع.	تصور في التعامل مع الغير.	٢
عدم توازن المعلومات المناسبة.	ضعف علاقات التضامن مع الغير.	ضعف التمويل وإدارة الأموال.	٣
ضعف التوجيه بالسوق.	عدم القدرة علي مواجهة الضغوط.	النمو السريع بدون تحكم.	٤
التفشل في التفويض.	عدم التوازن في حياة رائد الأعمال.	نقص التخطيط الاستراتيجي.	٥

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# What pictures can I use?

Emphasize  
meaning, by  
related pictures

The slide features the Cairo University logo in the top left and the university's crest in the top right. The main title is written in red Arabic script: "الإجراءات اللازمة لإنشاء مشروع صغير" (The necessary procedures for creating a small project). Below the title, there are six icons connected by a red line, illustrating a workflow: 1. A person sitting at a desk with a computer. 2. A person writing on a flipchart. 3. A person holding a document. 4. A person sitting at a desk with a computer. 5. A person sitting at a desk with a computer. 6. A person sitting at a desk with a computer. A small number '7' is visible in the bottom left corner of the slide.



# What pictures can I use? (2)



Use certain clip arts to indicate Class activities

# Should I use animation or not?

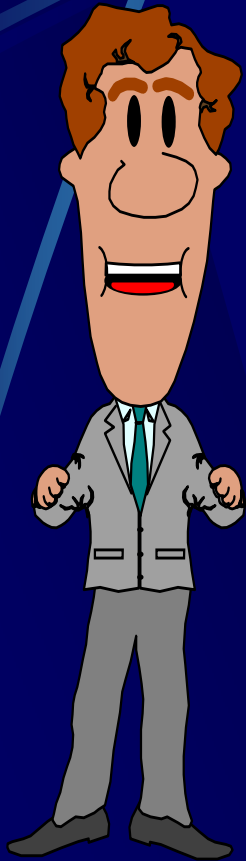
- Generally, minimal animation
- Sometimes, in flowcharts to clarify the process
- To focus the audience's attention

# Personal Appearance



- Long sleeves
- 2 - 3 colors
- Avoid bright reds, oranges, blacks and whites
- Avoid jewelry that sparkles or dangles
- Simple makeup

# Personal Appearance



- Suits - dark blue, gray or black
- Tie that compliments your eyes and face
- Shoes appropriate and well shined
- Hair, beard well groomed

# Top Ten Mistakes

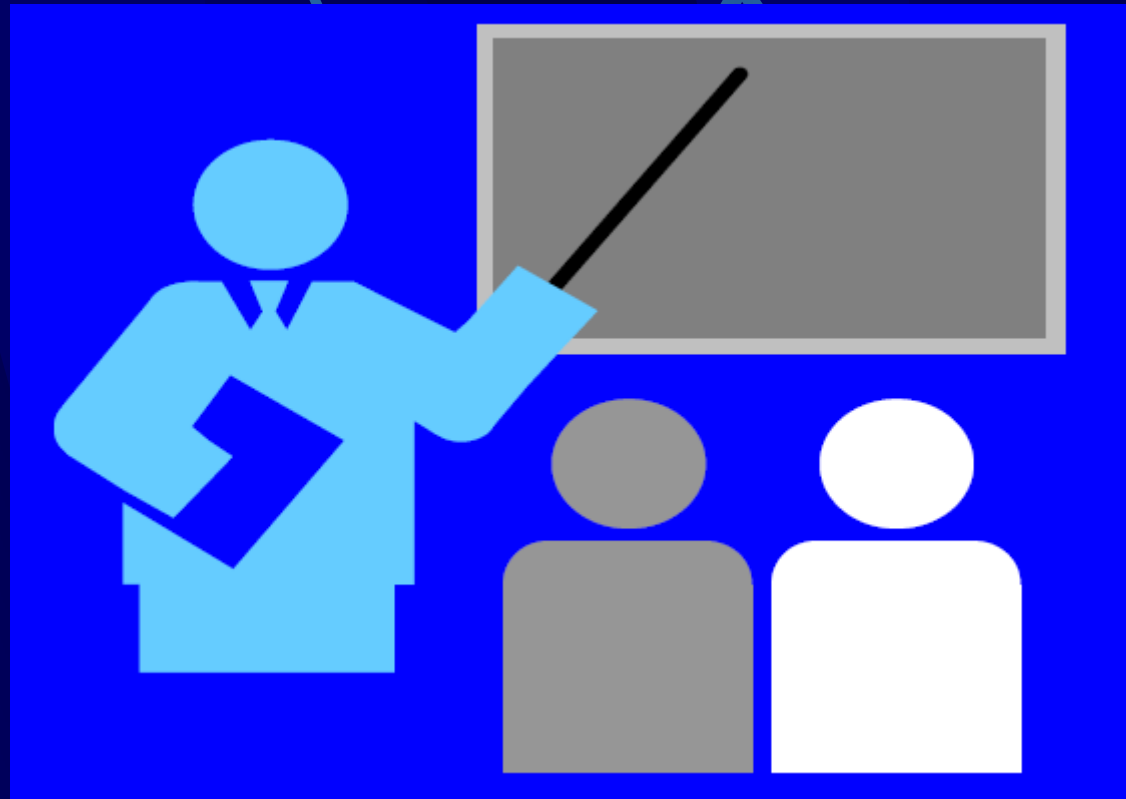
- No preparation
- No presentation objectives
- Mediocre first impression
- Lack good visuals
- Ineffective closing
- No eye contact
- Lack of enthusiasm
- Lack of facial expression
- Staying in one place
- No audience involvement

# PowerPoint Summary

- Generally, no more than six (6) words per line and no more than six (6) lines per slide
- One or two concepts per slide
- Keep text fonts and effects simple, clean
- Avoid background patterns
- Limit use of animation and special effects
- ALWAYS include an "end slide"

**Remember...**

***You are the presentation--the visuals are not.***



# Summary

- **Set level appropriate to your audience**
  - explain motivation, significance, specialist terms
- **Focus on main points**
  - have a clear “take-home message” and emphasise it
- **Have a clear structure**
  - introduction, body, conclusion
- **Maintain eye contact with audience**
  - minimise time spent looking at notes, screen, etc.
- **Use visual aids**
  - graphical wherever possible  
(1 picture = 1000 words!)



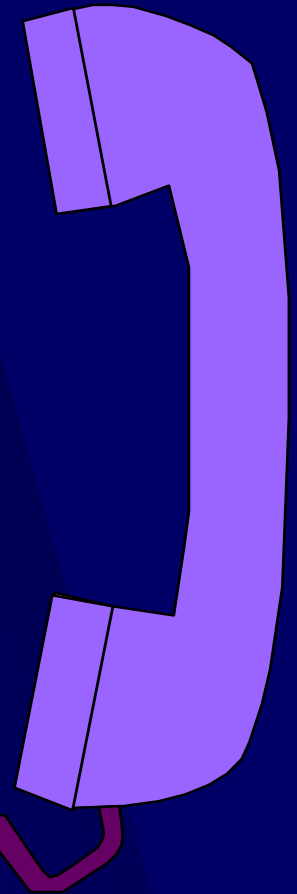
# Any Questions ??...!!

- Your questions are welcome



# Contact Information

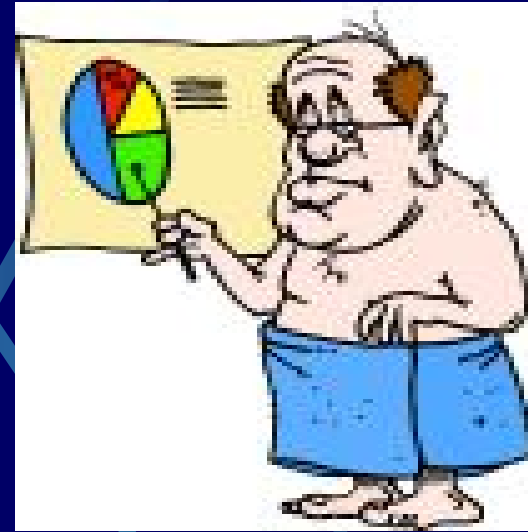
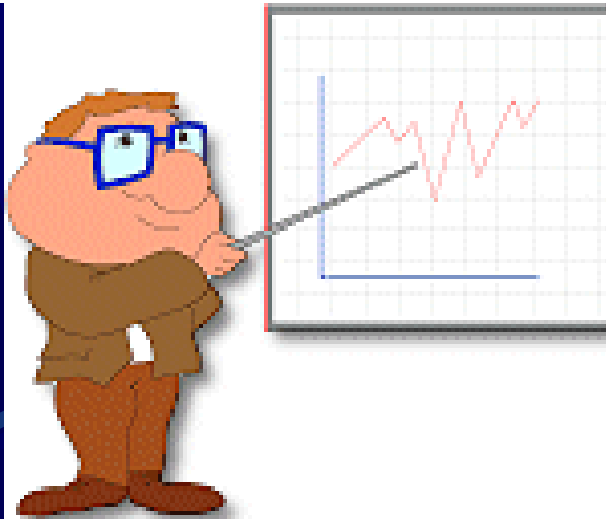
- **Mr. Hassan Abdo**
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- **Or:** Hansmosa@Gmail.com





Cairo University

Thank you for your attention



# Questions/Comments



