

Technical Presentations and Teaching



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Background

Good oral communication skills are considered to be a necessary achievement of a college graduate, according to accreditation requirements. To help students achieve these types of skills, a series of lectures were given, over the last two years, to over 200 students in both upper division engineering technology courses and a Freshman Engineering Design (FED) course. These lectures were designed to provide students with information on presentation techniques, and contained topics such as planning a presentation, building the presentation, overcoming fear, and how to make a presentation more interesting.

The material is based on both the author's prior industrial presentation experiences as a marketing executive in various technical companies, as well as observations on errors in presentation methodology that students made in class over the last five years. This paper will review the material presented to these students. While references are made to PowerPoint, this paper is intended to enhance the presentation skills of the students as opposed to their knowledge of a specific computer application. Many of the concepts in this paper can be used with presentations involving overheads. An evaluation sheet that can be used to reinforce the concepts of this paper is also included.

Oral and written communication skills are important for students graduating into today's industrial climate, as well as helping institutions meet accreditation requirements. In a recent advertisement for a development engineer, a major medical instrumentation company listed three qualifications: the first was a BSEE or equivalent, the second was low signal and low-noise analog development experience, and the third qualification was written and verbal communication skills. Companies believe that those with superior communication skills, rather than technological skills, will be the companies on the cutting edge¹.

With today's computer technology, communication to groups of people can be best accomplished using presentation software packages, such as Microsoft PowerPoint®. Effective use of this type of package requires more than just an understanding of how to use the software. What is also needed is an understanding of basic concepts of presentation techniques. These skills are independent of the type of application used, although use of standard word processing applications usually results in poor presentations.

~~Presentation Techniques~~

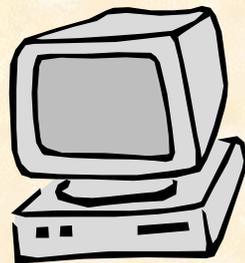
- Anxiety
- Clipart
- Bullets
- Technical Drawings
- Practice
- Speaking
- Numbering pages
- Ending
- Beginning of presentation
- Answering questions
- Other topics
- Still other topics
- Can't stop now
- Running out of space

Another Slide Example

- This is the first bad slide, because it uses all sentences that are greater than one word, and tries to convey the meaning of an entire sentence or paragraph into a few bullets, rather than break the sentences up into bullets and sub-bullets
- If you don't break up the main bullets into sub-bullets, they can overpower you, and it would be very difficult to read these bullets. Because they are difficult, you might not follow the lecturer

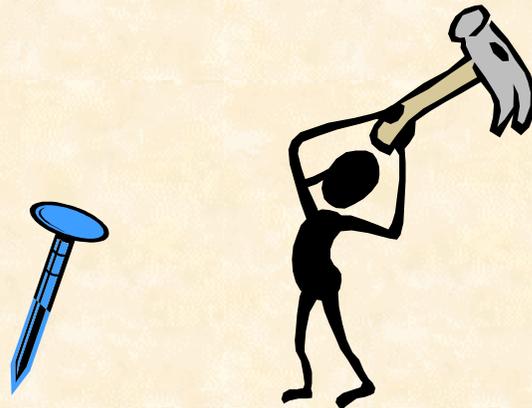
Concept of Talk

- Deals with how to present (How to **apply** the tool)
 - Not how to use PowerPoint features (How to **use** the tool)
 - » Though will see some aspects of PowerPoint
 - Will show you how to create a presentation
 - » How to plan and deliver it



Concept of Talk

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Talk based on prior presentations...

- Over 400 students
 - Freshman Engineering Design (FED) class
 - Engineering Technology classes
 - Graduate biomedical class
- Faculty/business
 - FIE 99 workshop
 - 2001
 - » ASQC Northeast meeting
 - » ASEE workshop
 - Workshops for faculty (NJIT)

Information Sources

- Prior experiences by presenter
 - Over 20 years industrial experience
 - » 7 years in R&D and product development
 - » 13 years in marketing and sales
 - Presentation experiences
 - » Customers, sales training seminars
 - » Board of director's meetings
 - » Technical papers & classes
- Review of mistakes - student and others

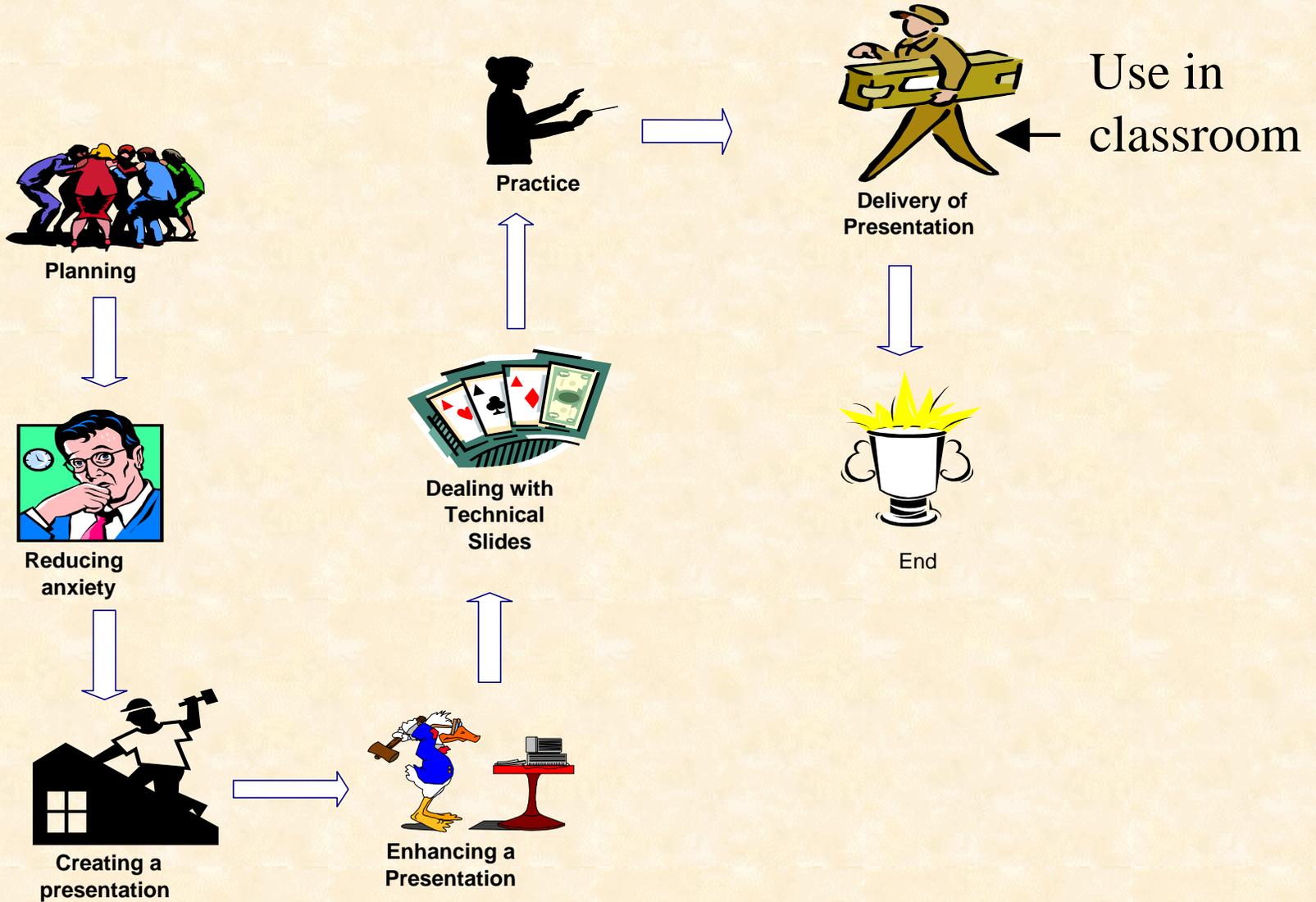
Why this presentation?



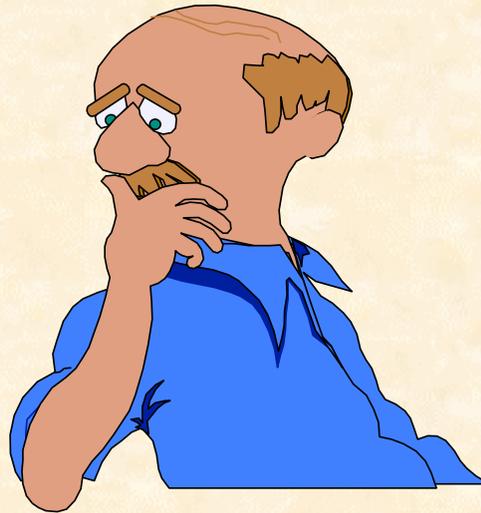
- Utilize presentation technology in classroom
 - Discuss how to best use it (not misuse it)
- Utilize slides for distance learning
 - Start of getting information onto the Internet
- Help students understand good practices in presentation
- Help in conferences

Also faculty meetings

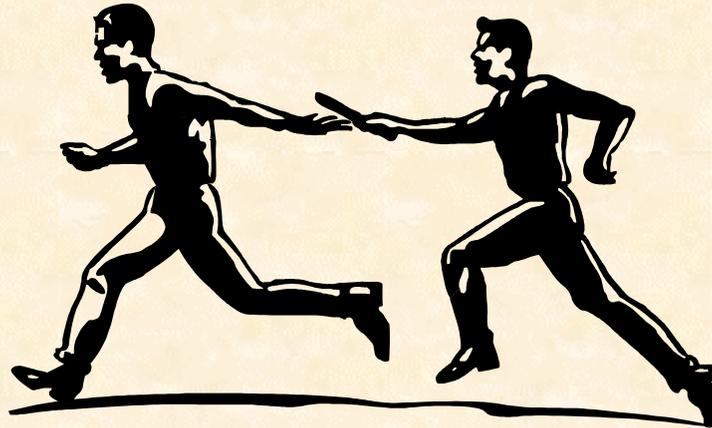
Agenda



You can ask questions during this talk



Let's Get Started



John Priestly (18th Century Chemist, Theorist and Clergyman)

Discovered Oxygen



*“The more elaborate our means of communication,
the less we communicate”*

He obviously didn't know about PowerPoint



Planning



Reducing anxiety



Creating a presentation



Dealing with Technical Slides



Enhancing a Presentation



Practice



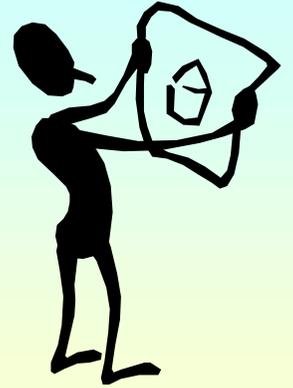
Delivery of Presentation



End



4 Questions to Ask



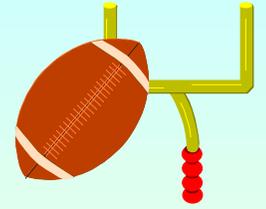
- **Who** is the audience?
- **What** are the goals of the audience?
- **What** is going to be presented?
- **How** is the presentation going to be given?

Who is the Audience?



- Understand technical abilities
 - Don't get too technical for general audience
 - Don't use acronyms or specialized words for non-technical audience
 - » Firewire, GPS, IEEE 488
 - » Use examples and stories
 - Don't be too simple for technical audience
 - » Still explain acronym first time

What are the Audience's Goals?



- What type of information do they want?
 - Understanding of general topic
 - New concepts
 - How to do something

What do you think they want to take away from the talk?

What is to be Presented?

- Design for Top- Down Approach
 - Start with main concepts
 - Fill in as needed
 - Use Normal View
 - Contains outline



14 Recent Job Description
GE Medical

- Three Requirements
- BSEE or equivalent
- Low signal and low-noise analog development experience
- Written and verbal communication skills

15

16 4 Questions to Ask

- Who is the audience?
- What are the goals of the audience?
- What is going to be presented?
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17 Who is the Audience?

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18 What are the Audience's Goals?

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19 What is to be Presented?

Click to add notes

What are the Audience's Goals?

- What type of information do they want?
 - Understanding of general topic
 - New concepts
 - How to do something

What do you think they want to take away from the talk?

Other Design Approach



■ Bottom-Up

- Randomly put in slides
 - » Brainstorming
- Use Slide Sorter view to rearrange

9

10

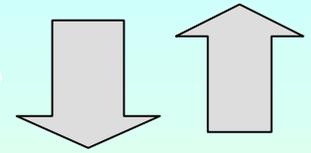
11

13

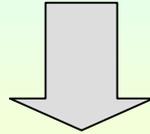
14

15

Comparison of Methods



■ Top Down



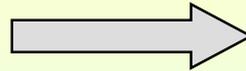
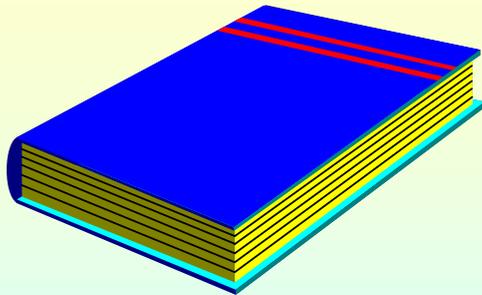
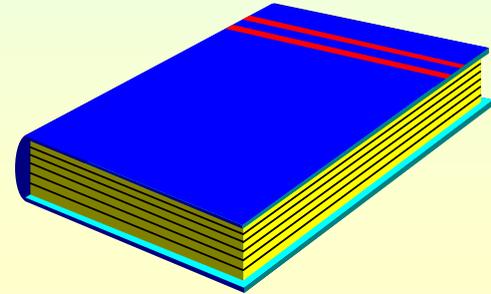
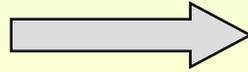
- When you don't know the subject area
- When you need to do further research
- If you tend to think in broader terms
 - » Deductive

■ Bottom Up



- Have expertise in the area
 - » Can think of all the points, and want to organize later
- Inductive
- This is the approach for using presentations in a classroom

Presentation and Paper

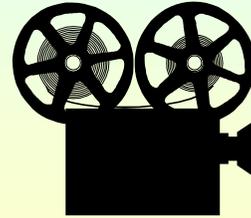


Will show a technique later for paper to PowerPoint

How is the presentation given?

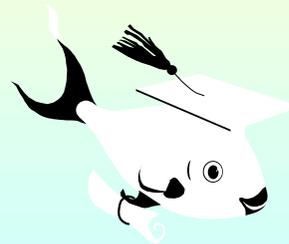
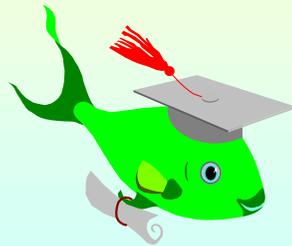
- Background problems

- Reduce brightness (30%)



- Overhead

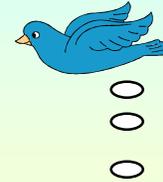
- B/W slides most of the time
 - » Need to view how PowerPoint looks



Overheads vs. Slide Show

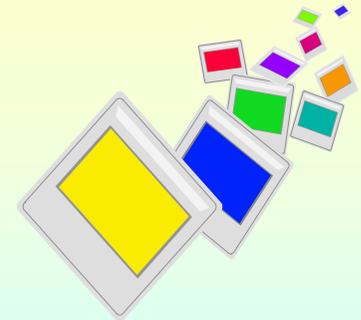
■ Advantages of overheads

- Immune to computer glitches
 - » Not to bulb burnout
- Doesn't appear “glitzy”
 - » So what



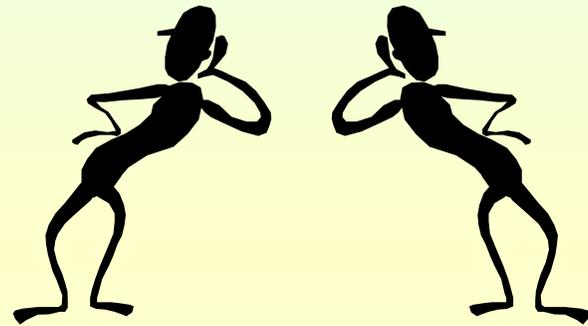
■ Advantages of slide show

- Control appearance of bullets easier
- Multimedia/Internet connectivity
- Use of **colors** much more **dramatic**
- Change on the fly (or on Vincent Price)



Plan on how to cover questions

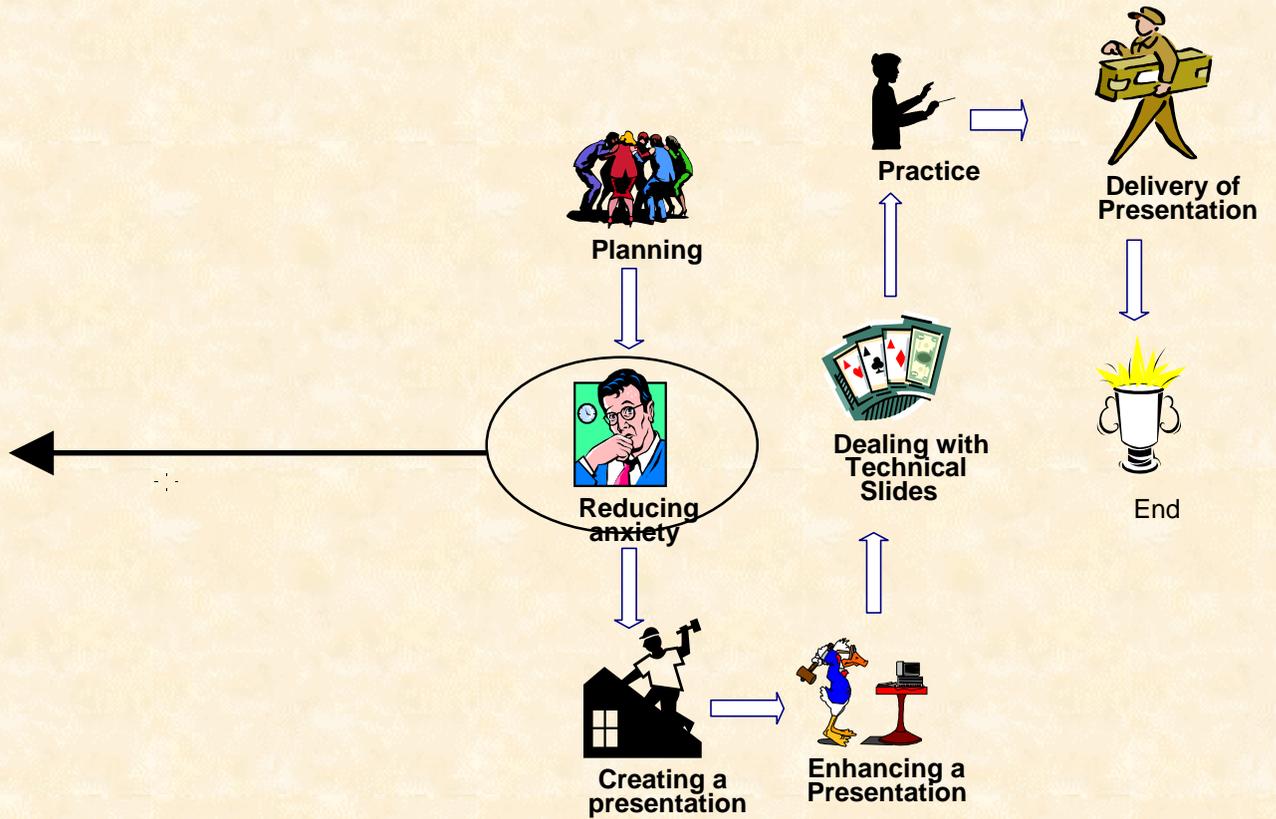
- During or at end
 - During involves audience
 - End is easier
 - » Time restriction
 - » Also for nervous presenter



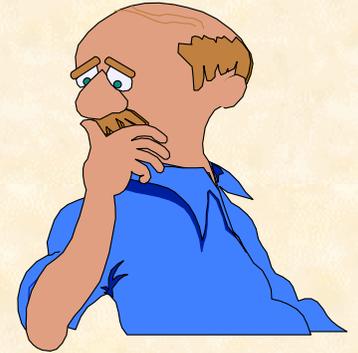
- Presenter can still ask questions
 - Prefer at end



Anxiety



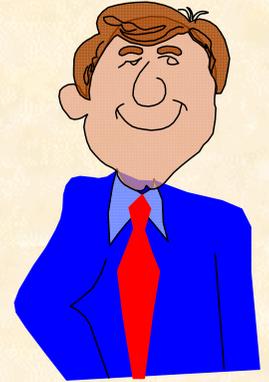
Reduce Anxiety - Part 1



- Why anxiety?
- Know material - practice 5 to 6 times
 - With each practice gain confidence
 - » Don't memorize
- What are problem slides
 - Pauses or errors
 - » Add bullets or extra slides
 - Key words to trigger you
- Don't use cards
- Visualize successful presentation



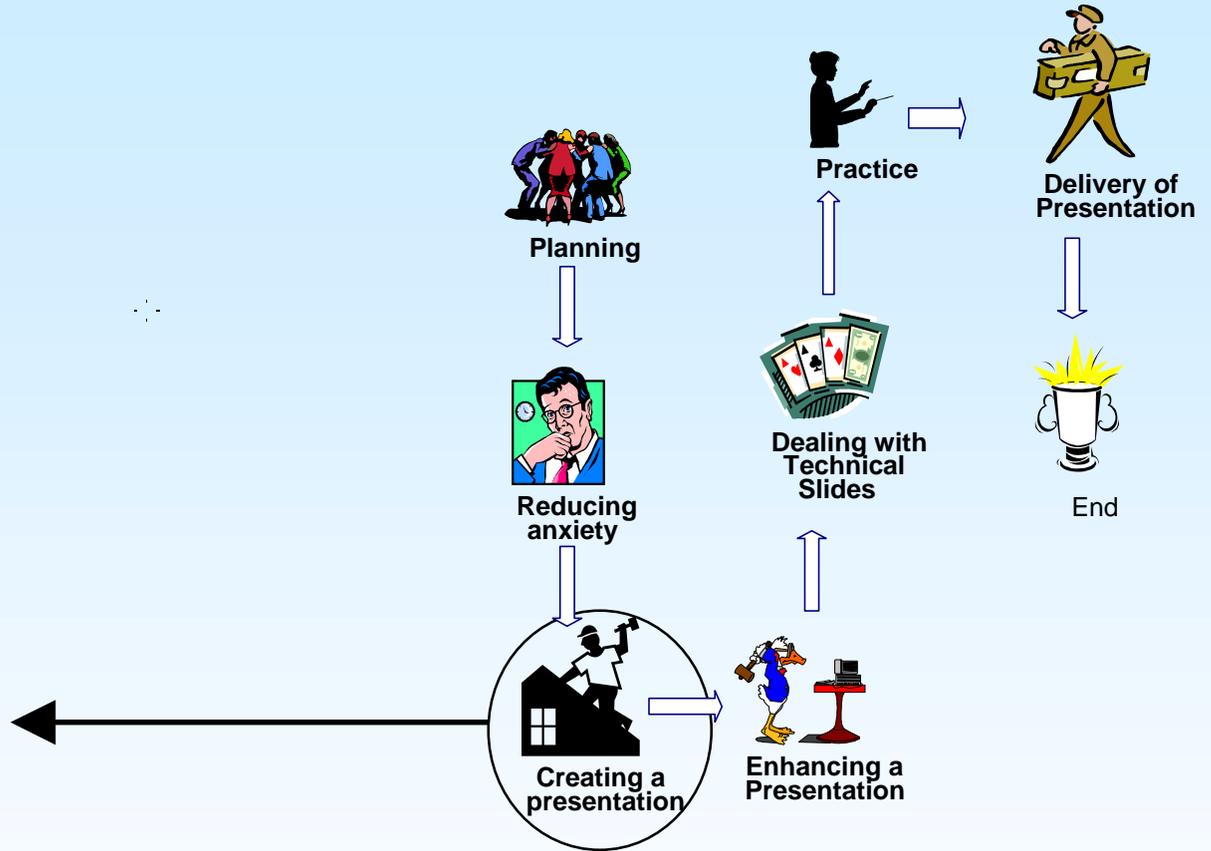
Reduce Anxiety - Part 2



- Start : Stand erect, deep breath, smile, eye contact
 - Upbeat voice
- Rapport - yes/no or showing of hands
 - Get audience involvement
- Be yourself- tell story
- Experience
 - First time vs. 20th time



Creating a presentation



Structuring the Opening

■ Title slide first

- Speaker's name, class (for students), main subject
- Nice large font, WordArt, or other application

■ Either agenda or introductory slide follow

- Agenda slide lists main points
- Introductory slide
 - » Opening remark
 - » Quote
 - From Internet



Title
Slide



Intro
Slide



Agenda
Slide

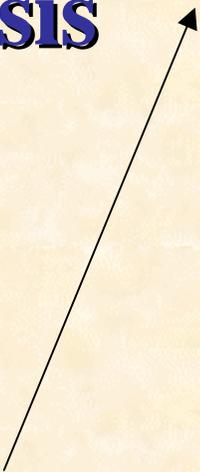
- Can do a mini-agenda in the title slide

Establish relevancy of topic to audience

Independent Sources, Mesh and Nodal Analysis

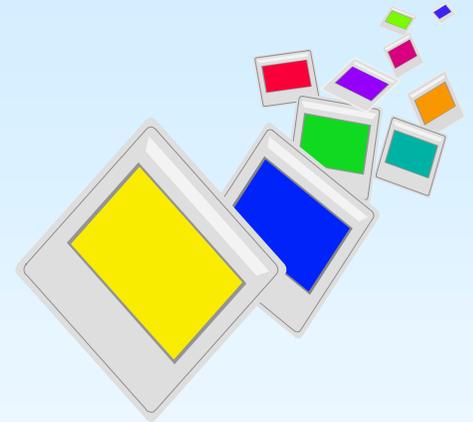
ECET 303- Week 4

Don't need a full agenda

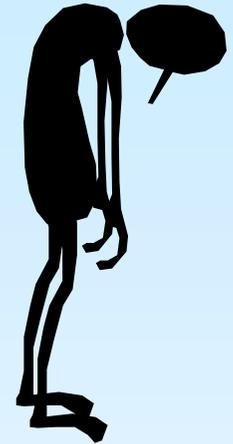


Bulleted Slide Structure

- Keep to 5-6 main bullets
 - Break up into multi-slides if more
 - Less bullets if use a lot of sub-bullets
- Keep to one sentence if possible
 - Use sub-bullets to add additional text
 - » Will prevent you from reading screen
- “Joy of Six”
 - Max six points per slide, six words per point



Think of all these points



- List all the tasks
- Create time frames for all tasks
- Arrange in groups
- Link all the tasks
- Create milestones
- Develop resources and their costs
- Assign resources
- Resolve conflicts
- Look at alternative linking
- Manage the program
- Report to management



**Keep to 5-6
main bullets**

**Can use more
once in a while**

Too Many Words on Slide

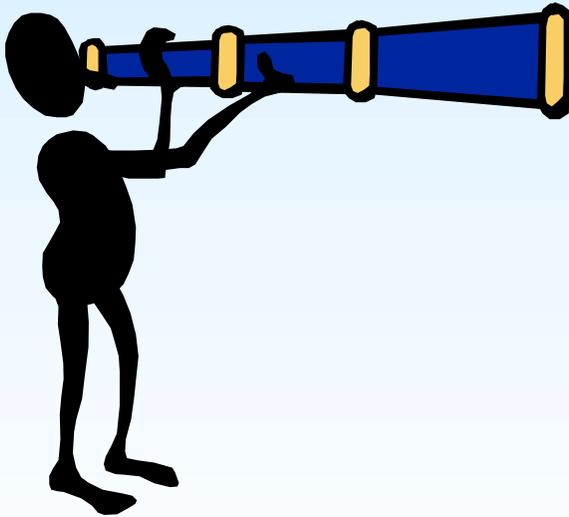
Would like to present the following points on the development process. The five phases of a development process include the product definition, design, test and evaluation, production and support phases.

Typically, we would spend a lot of time in test and evaluation phase, where we should be spending more time up front in the product definition and design phase.

In the product definition phase marketing typically will outline a series of specifications that hopefully are derived from quality marketing research with targeted customers. In that phase, technical feasibility must also be considered.

In the design phase, prototype development occurs. In recent years the concept of concurrent engineering has encourage multi-disciplinary meetings between engineering, marketing, production, service, and

Even Worse... From Using Word



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Development Process

Look at first 2 paragraphs

■ Five Phases

- Product Definition
- Design
- Test and Evaluation
- Production
- Support

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Typically, we would spend a lot of time in test and evaluation phase, where we should be spending more time up front in the product definition and design phase.

Development Process

Look at first 2 paragraphs

■ Five Phases

- Product Definition
 - » Want more time spent
- Design
 - » Want more time spent
- Test and Evaluation
 - » Most time typically
- Production
- Support

Would like to present the following points on the development process.

The five phases of a development process include the product definition, design, test and evaluation, production and support phases.

Typically, we would spend a lot of time in test and evaluation phase, where we should be spending more time up front in the product definition and design phase.

Paper to Slides



- Copy paragraph into second bullet
 - Already have first bullet
 - » Use to copy/paste first main bullet from text
- Find main idea or phrase, and then sub-phrases
 - Create sub-bullets
- Continue with second paragraph if have space
 - Put clipart or graph if needed
 - Might have to go to another slide

Another Bad Slide - Long Sentences

- This is the first bad slide, because it uses all sentences that are greater than one word
- If you don't break up the main bullets into sub-bullets, they can overpower you
- Writing these long sentences mean you can't think of just the phrases
- Even though I might have only five bullets on this slide, it looks too busy
- Would you want someone to look at this slide from a distance

Better Way - Sub-bullets

- This is the first bad slide
 - Uses all sentences that are greater than one word
- Break up the main bullets into sub-bullets
 - Otherwise they can overpower you
- Only write long sentences
 - Can't think of short phrases
- Have only five bullets
 - Looks too busy
- Look at this slide
 - Looks better from distance

When Using Quotes...



- Avoid bullets
- Can have 2-3 lines

Which looks better?

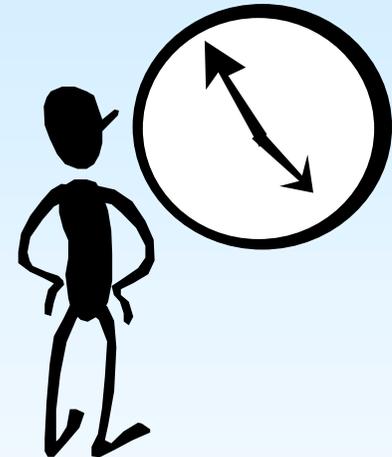
*“The more elaborate our means of communication,
the less we communicate”*

OR

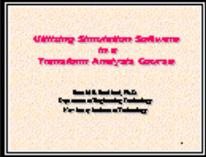
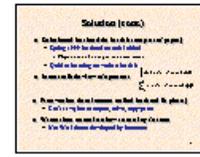
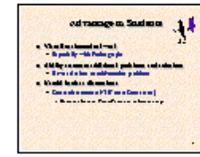
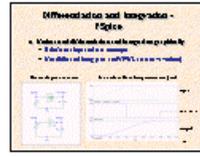
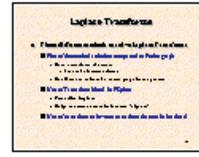
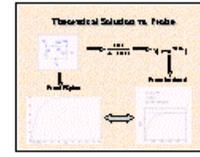
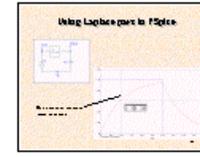
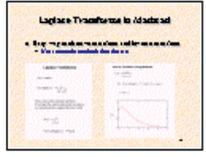
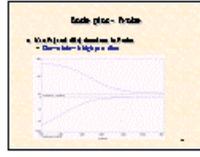
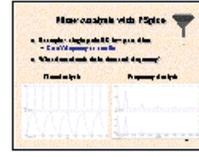
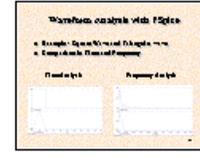
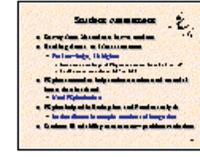
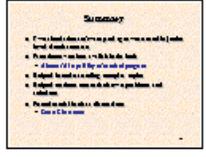
- The more elaborate means of communication
 - Less we communicate

Determine correct time for slide

- Minimum of 20 seconds, maximum of 2 minutes
 - Avoid movie effect or sleeper effect
 - » Add or combine slides if different
 - 20 minute presentation have between 15-30 slides
- Use rehearse time feature
 - No reason to extend talk
 - Must turn off automatic time

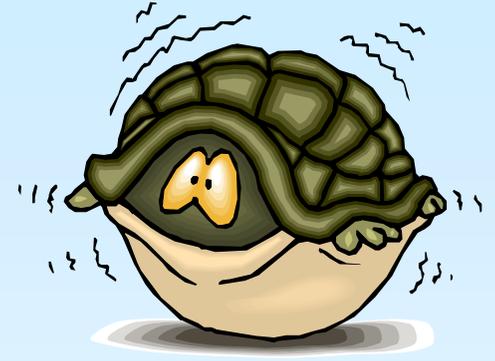


Rehearse Time Feature

 <p>Using Simulation Software as a Transform Analysis Course</p>	 <p>In Focus on Modeling, Study of the System</p>	 <p>Background</p>	 <p>Problems</p>	 <p>Solution</p>	 <p>Solution (cont.)</p>	 <p>end message to Students</p>
🔊 :06 1	🔊 :14 2	🔊 :26 3	🔊 :27 4	🔊 :52 5	🔊 :48 6	🔊 01:00 7
 <p>Example in the Steady State</p>	 <p>Complex variables - (steady state)</p>	 <p>Differentiation and Integration - (steady state)</p>	 <p>Differentiation and Integration - (steady state)</p>	 <p>Laplace Transforms</p>	 <p>Theoretical Solution vs. Probe</p>	 <p>Using Laplace part in PSpice</p>
🔊 :30 8	🔊 01:11 9	🔊 :33 10	🔊 01:03 11	🔊 :47 12	🔊 :53 13	🔊 :56 14
 <p>Laplace Transforms to (steady state)</p>	 <p>Steady-state Steady State - (steady state)</p>	 <p>Bode plot - Probe</p>	 <p>Fourier analysis - (steady state)</p>	 <p>Filter analysis with PSpice</p>	 <p>Transform analysis with PSpice</p>	 <p>Source comments</p>
🔊 :56 15	🔊 :26 16	🔊 :24 17	🔊 :48 18	🔊 :42 19	🔊 :18 20	🔊 :54 21
 <p>Summary</p>	 <p>The End</p>					
🔊 :31 22	🔊 :01 23					

Hiding Slides

- In Slide Sorter view, can Hide Slide
 - Right click
 - Better than deleting slide and saving to another file
 - » Customize for various audiences



Starting a New Slide

- New topic means new slide
 - Want to reinforce spoken word with visuals
 - » Remember demo
- Remember, people learn in a presentation



By seeing

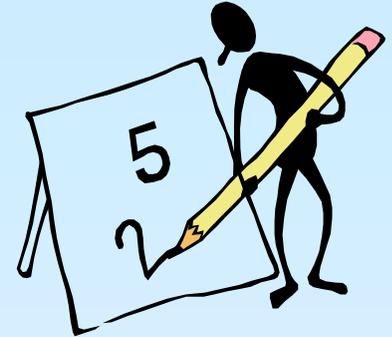


By hearing

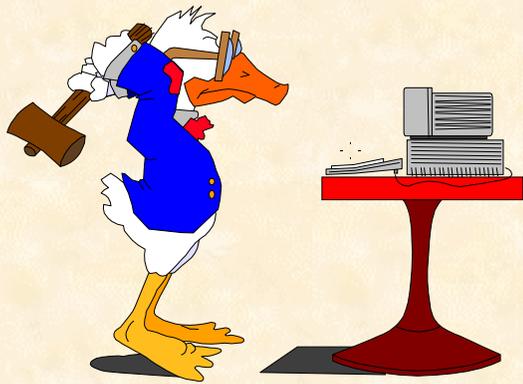


By writing

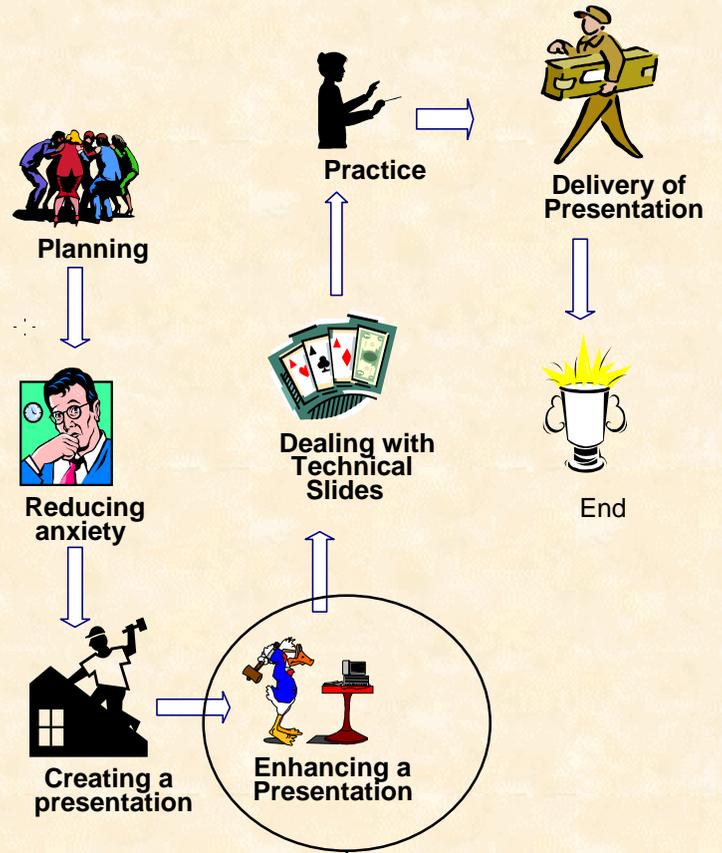
Numbering Slides



- Important for overheads
 - Problem if dropped or not sorted properly
 - Usually in footer
- Don't number title slide
 - Option in PowerPoint



Enhancing a Presentation



Vary the slide style and look

- Mix up styles of slides
 - Use graphs, clipart, org charts, two column text
 - Use different text style or bullet styles for emphasis
 - » Don't get carried away with too many styles
 - » Sometimes, don't use bullets
 - Use sufficient size font for the room you are in

Remember, substance over style

But style counts



Fonts

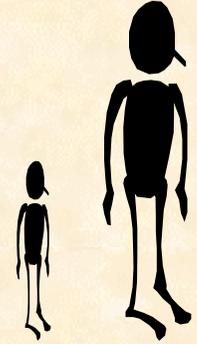
■ Different type

- Serif (Times Roman, Garamond)
 - » Better for writing
- Sans-Serif (Arial, Tahoma)
 - » Better for display
 - Still use Times Roman
- Headline (Braggadicio, Swiss 721)
 - » Either media

■ Within same font

- size **size**
- **Bold, *Italicize*, Shadow**
- Space between letters
S I Z E
- **Color**
 - » **Be careful**

Font Size



- Use different font sizes for sub-bullets
 - From 3-4 points smaller than the main bullet

- In this presentation main bullets are 28 points
 - Sub-bullets (second level) are 24 points and blue
 - » Third level is 20 points
 - 72 points = 1 inch

Spacing between bullets

- Can change spacing between bullets for better readability
 - Use Format...Line Spacing
 - Useful if only three or four bullets
 - Only use for main bullets (keep sub-bullets near main)

Which is more readable?

- This is the first bad slide
 - Uses all sentences that are greater than one word
- Break up the main bullets into sub-bullets
 - Otherwise they can overpower you
- Only write long sentences
 - Can't think of short phrases

Line spacing before paragraph is 0.2 lines (default)

Which is more readable?

- This is the first bad slide
 - Uses all sentences that are greater than one word
- Break up the main bullets into sub-bullets
 - Otherwise they can overpower you
- Only write long sentences
 - Can't think of short phrases

Line spacing before paragraph is 0.85 lines

Templates

- Applies color, font style and size, and color background
 - Applies to all slides
 - Can change at any time
 - Be careful about changing too far into presentation
 - » Word spacing
 - Can modify all with Master View
- Some templates are not as easy to view as others
 - Background color and font size
 - » Reverse color (dark background and light color)
 - Can modify specific slides with background/fonts

Same Slide with different Template

- Applies color, font style and size, and color background
 - Can change at any time
 - Be careful about changing too far into presentation
- Some templates are not as easy to view as others

Recommended Templates

- Blends
- Blueprint
- Bold Stripes
 - **Be careful about busy backgrounds**
- Cactus
 - **Backgrounds reduce bullet box**
- Capsule
 - **Conversion to B/W can be a problem**
- Dad's Tie
- Rice Paper
- Straight Edge

TITLE MOST PEOPLE LIKE

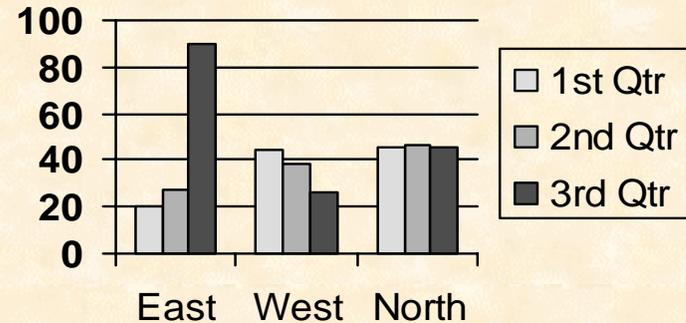
Title Most People Should Use

Use Case Sensitive for Titles

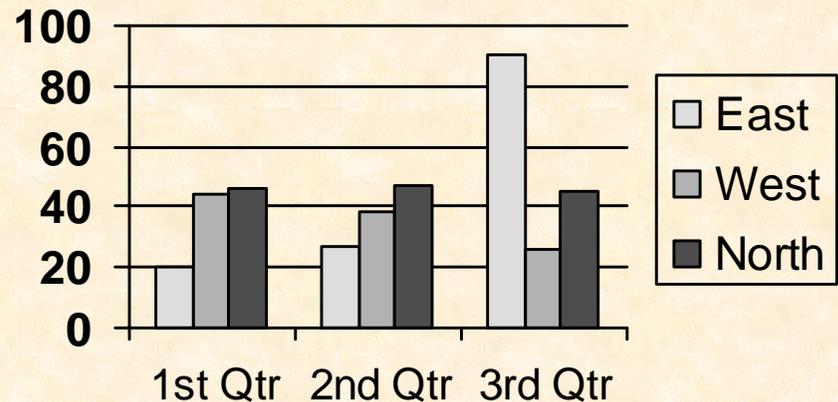
- PUT THE MAIN BULLET IN CAPS
- Put the main bullet in Caps
- Don't use too small a bullet (24 point)
 - This is smaller (16 point)
 - This is great for reading (11 point)

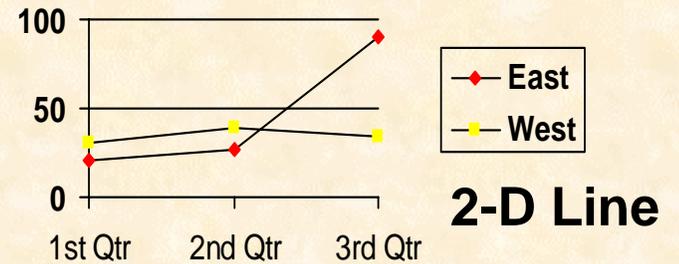
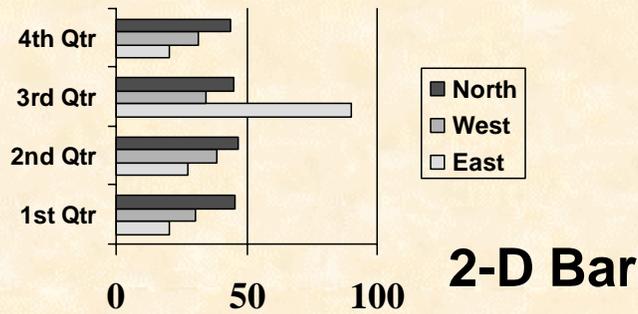
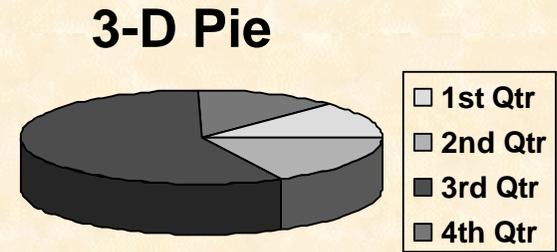
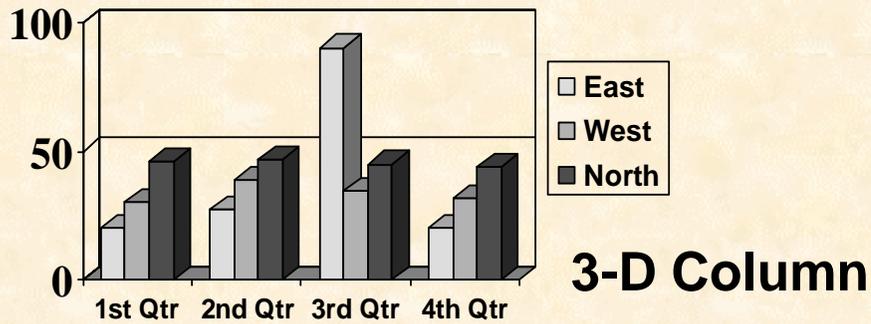
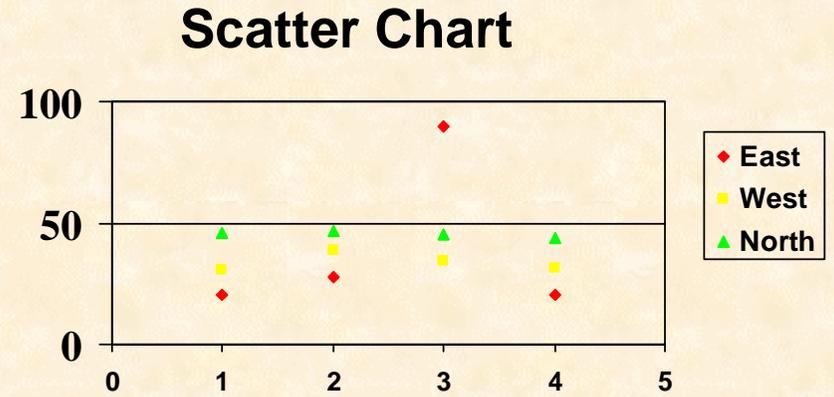
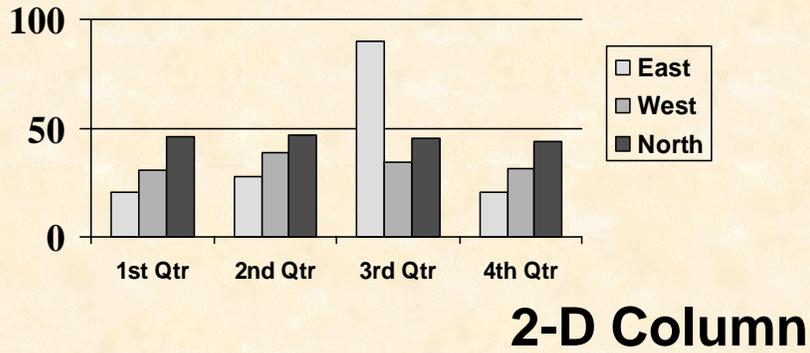
Graphs- for enhancing data

- The Eastern area has achieved significant growth over the year



- The Western area is not contributing enough in the 3rd Quarter





Graph Hints

- Use Excel for most graphing
 - Can create graph in PowerPoint (difficult)
 - Have more choices in Excel
 - » Also will probably have data in Excel
- Paste or Paste Link from Excel
- Can do same thing with other graphing apps
 - Sigma Plot, Axum, Matlab, Mathcad
- Embedded program – can edit

Organizational layout

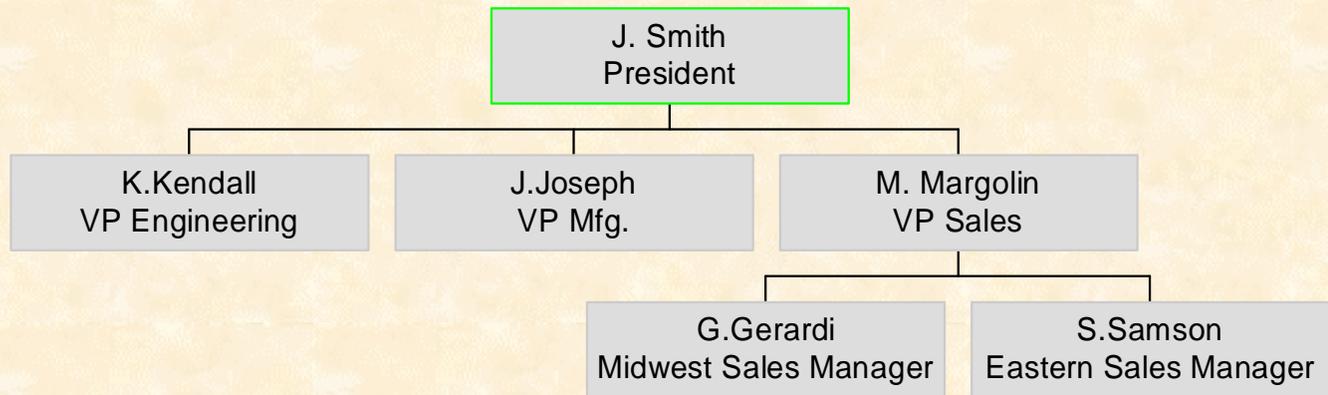
(wrong way)

- J. Smith is President
- Reporting to J. Smith is
 - K. Kendall (VP Engineering)
 - J. Joseph (VP Mfg.)
 - M. Margolin (VP Sales)
- Reporting to M. Margolin
 - G. Gerardi (Midwest Sales Manager)
 - S. Samson (Eastern Sales Manager)

Org Charts

(Better than words)

ABC Organization- Top Level



Even better is using Visio and copying/pasting

Bullet Styles

- ✓ Bullets can be different
- ⚠ Be careful not to get carried away
- 😊 Bullets can be fun
- 😞 Bullets can be sad

Relate bullet shape to words

Can have two columns of bullets

Advantages

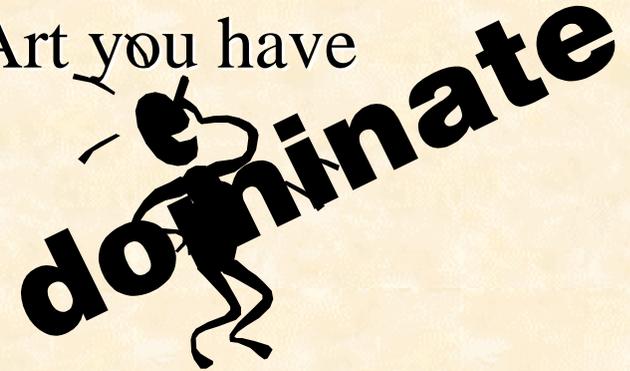
- Lower price
- Better warranty
- 800 number for service
- 5 years in business

Disadvantages

- Perceived as lower quality
- No in-house service
- Parts hard to find

Using Clip Art

- Need to understand what Clip Art you have
 - Can be humorous
 - » Be careful about being offensive
 - Can be used to illustrate a point
- Either place Clip Art while creating or go back
- Additional Clip Art from CD's or Internet
- The visuals should support and supplement your presentation



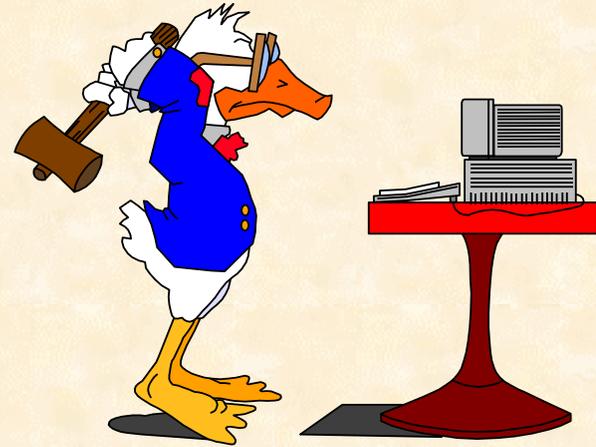
They should not dominate

Frustration with Computers

- People need to take time to understand computer programs
 - Should not get frustrated
 - Occasionally you will
- Remember the cost of a broken computer

Frustration with Computers

- People need to take time to understand computer programs
 - Should not get frustrated
 - Occasionally you will



- Remember the cost of a broken computer



Growth of Women in Engineering

- There has been significant growth over the last 10 years

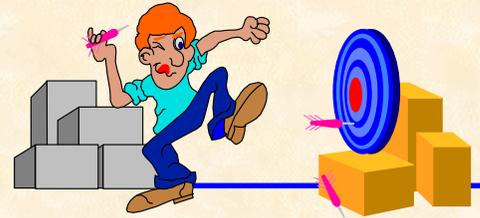


Ctrl-drag and resize

Other Clip Art from PowerPoint



Stability of Systems



On target with the answer



Need to investigate



Sometimes, just guess

ClipArt/Photos from the Internet

- Go to my home page

 - <http://www-ec.njit.edu/~rockland/>

 - Go to the Links subpage

 - » Have a number of links to pictures and clipArt on the Internet

 - When get to clipArt you like, right click mouse button

 - » Click on Save Image As

 - Be careful about copyright infringement



Sites for Clip art and Multimedia

<u>http://www.altavista.com/sites/search/simage</u>	AltaVista Photofinder is a very quick search engine for photos and artwork on the Internet
<u>http://www.webshots.com/</u>	Another very good search engine for photos is called Webshots
<u>http://dgl.microsoft.com/</u>	Microsoft Clip Gallery - Search for over 100,000 different Clipart images from this gallery provided by Microsoft
<u>http://www.clipart.com/</u>	Clipart.Com is a source of links to other sites for clipart, such as Clipart.com, Barry's Clipart, Clip Art Connection and MacFonts.com
<u>http://www.freegraphics.com/</u>	FreeGraphics.com is a searchable database of the best free graphics sites on the web. Sites are reviewed, rated, and divided into categories
<u>http://www.gograph.com/</u>	GoGraph.com is a site that provides thousands of clipart for both personal (free) and professional (for a fee) use

Microsoft Design Gallery

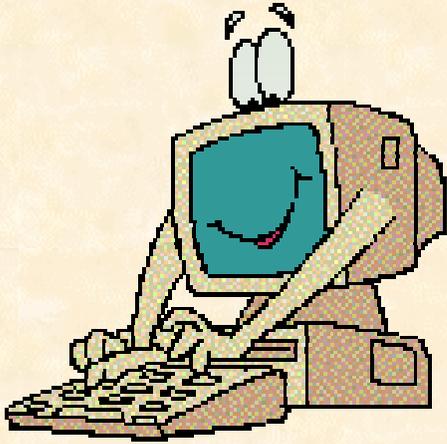


- Go into Insert Clipart
 - Clips Online
- Type in category or words
 - i.e. Screenbeans
 - Can select all or specific ones
- Download
 - Into Downloaded Clips
- Cut/Paste into specific categories
 - Or create new ones

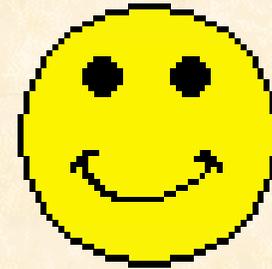
Final Words on Clip Art

- PowerPoint 2000 not complete
 - Better clip art with PowerPoint 97
 - Can use 2nd CD with Office 2000
- Use of screenbeans
 - Non racial and non sexist
- Can have sound or movies
 - Automated gif run (from gallery) in Slide show view
 - Other animation need to click
 - » Put video on desktop
- Can modify clipart
 - Ungroup and manipulate

Animated Clip Art



Computers are almost
automatic

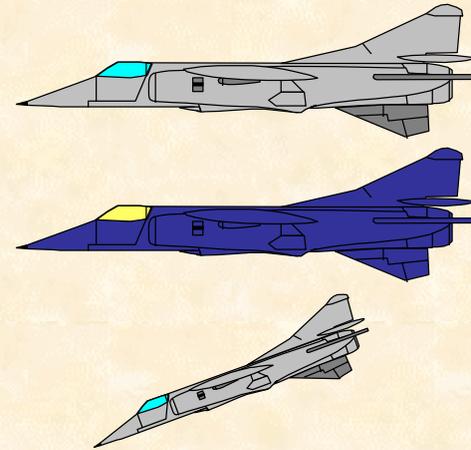


It's not a joke

Creating graphic

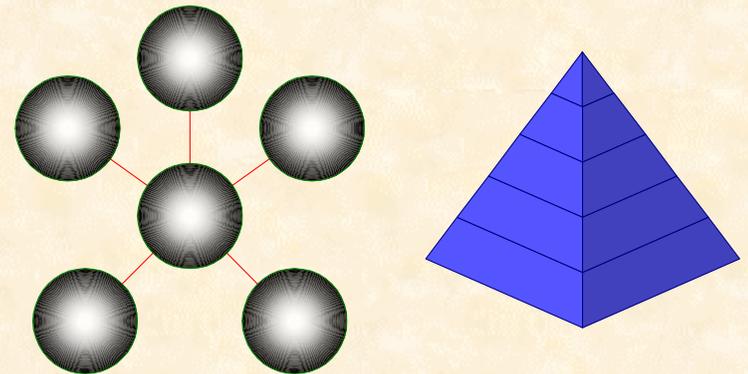
- Combine clipart

- Use recolor or ungroup/regroup to modify clipart



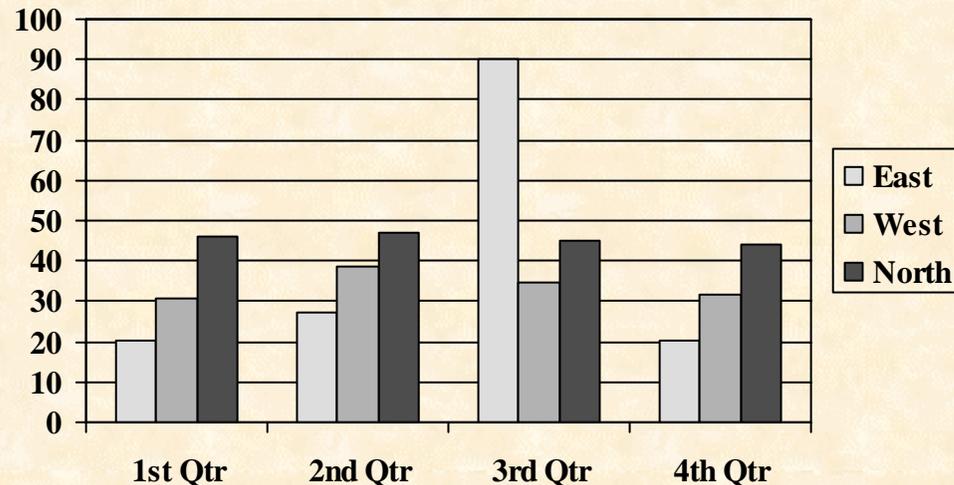
- Use program such as Visio

- Marketing type of diagrams



Bullet Animation

- Use build effects if using LCD or projector
 - Can use different colors on recent vs. old bullets
 - » Make sure that you don't use shadow
 - Cover up past points if using overheads (not best)
- Charts can also be animated



Be Careful about too much animation

- This is fast
- This is slow
- This is a swivel point - I'm getting dizzy

Builds



- Control over what audience sees
- Either main bullets or sub-bullets
- Can change color of last bullet
 - Shows that bullet is there, but can't see it
 - » Get rid of shadow
- Similar to way presenter writes
 - One line at a time
- Recommend box or checkerboard
 - Non moving build
 - » Default is fly

When not to use builds...

- Talk about bullets for just a few seconds
- Vary once in a while
- Only have 3 or 4 bullets
- Two column bullets - grouping

Custom Builds

- Normally have one text area
 - Bullets build by main bullet or secondary bullet
- Can duplicate text areas
 - Especially when varied sub-bullets and dimming

Slide without Build

Advantages

- Lower price
- Smaller profile
- Better warranty

Disadvantages

- Small company
- Limited service group
- Last to market

Slide with Build

Advantages

- Lower price
- Smaller profile
- Better warranty

Disadvantages

- Small company
- Limited service group
- Last to market

Slide Transitions

- Use transition effects if using projector
 - Be careful that they are long enough and interesting
 - Can use sound as effects- don't overuse
- Advance slide with mouse/keyboard
 - Page Up/Page Down or left mouse
- Best to use at different sections
 - Can use color for different sections
- For overhead, use flipchart or whiteboard
- **Blank screen (Shift-B)**



Can also use right mouse button for emphasis

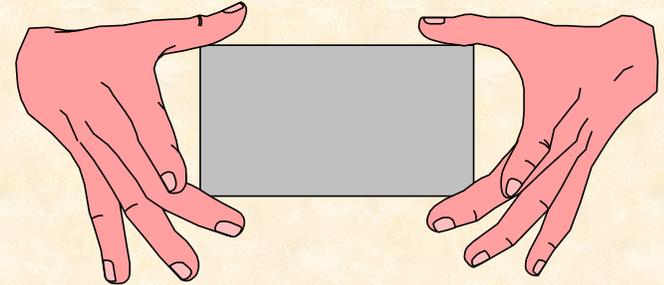
Don't get carried away

Spelling/Punctuation

- Spell check
 - Just as easy to make a mistake in a few slides
 - Use SpellCheck at very end
- Be consistent with punctuation
 - Periods or no periods

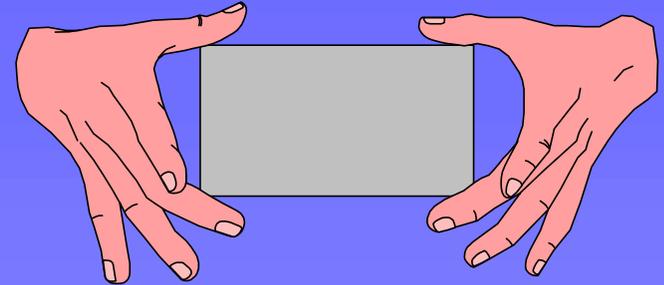


Audience Handouts



- Helps focus audience to you
 - Give out either before or after
 - Print out up to 9 per slide
 - » Can also Send to.. Microsoft Word
 - Incorporate with .pdf format
- Be careful about reverse print
 - Especially when using tables and printing handout
 - Also harder to read
- Convert color to grayscale (button for preview)

Audience Handouts



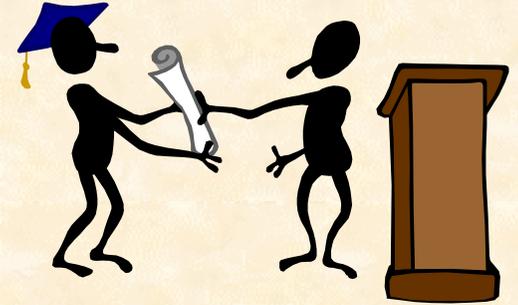
- Helps focus audience to you
 - Give out either before or after
 - Print out up to 9 per slide
 - » Can also Send to.. Microsoft Word
 - Incorporate with .pdf format
- Be careful about reverse print
 - Especially when using tables and printing handout
 - Also harder to read
- Convert color to grayscale (button for preview)

Table with White Font Color

Student	Test 1	Test 2
J. Smith	80	85
K. Kline	90	65

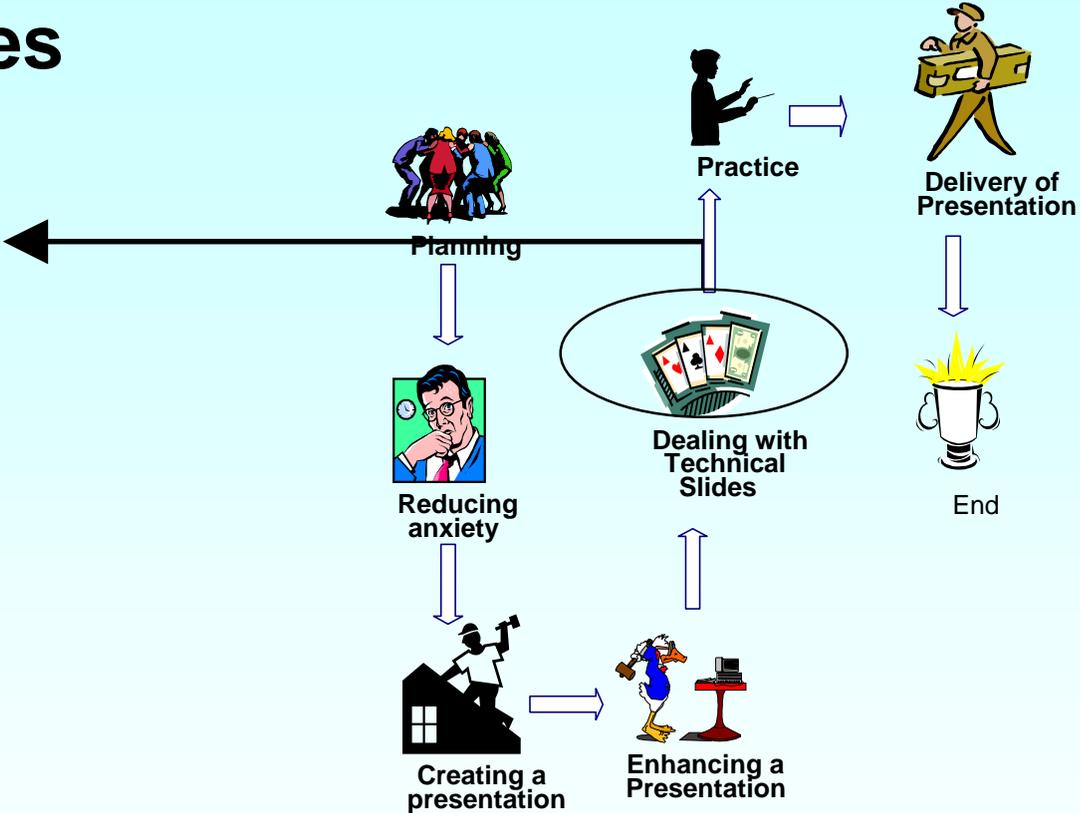
Table Appearance in Handout

The Closing



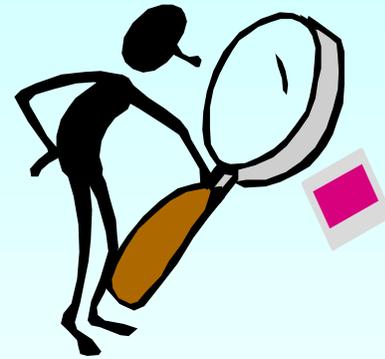
- End should include summary slide
 - Key points
 - Conclusion
 - » Relevant to audience
- Describe future options (if applicable)
 - Or a future strategy, plan and/or goal
- Last slide could be Thank You- with graphics
- For classroom, often have a cooperative learning exercise (last 10-15 minutes)

Dealing with technical slides



Technical Drawings

- Don't show detailed drawing
 - Hard to see
 - Spend too much time on slide

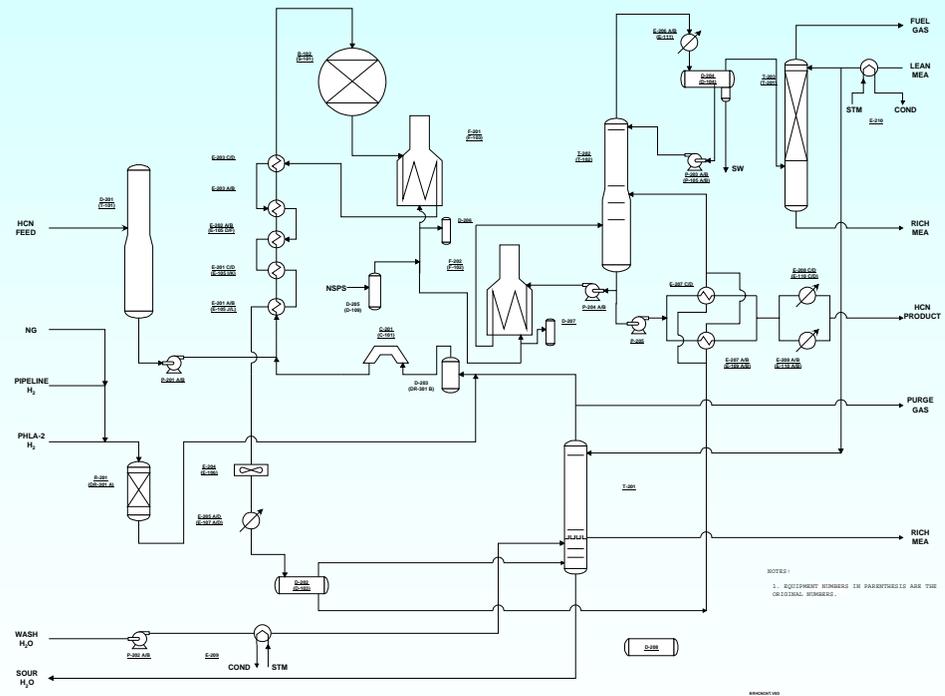


- Break up into multiple slides



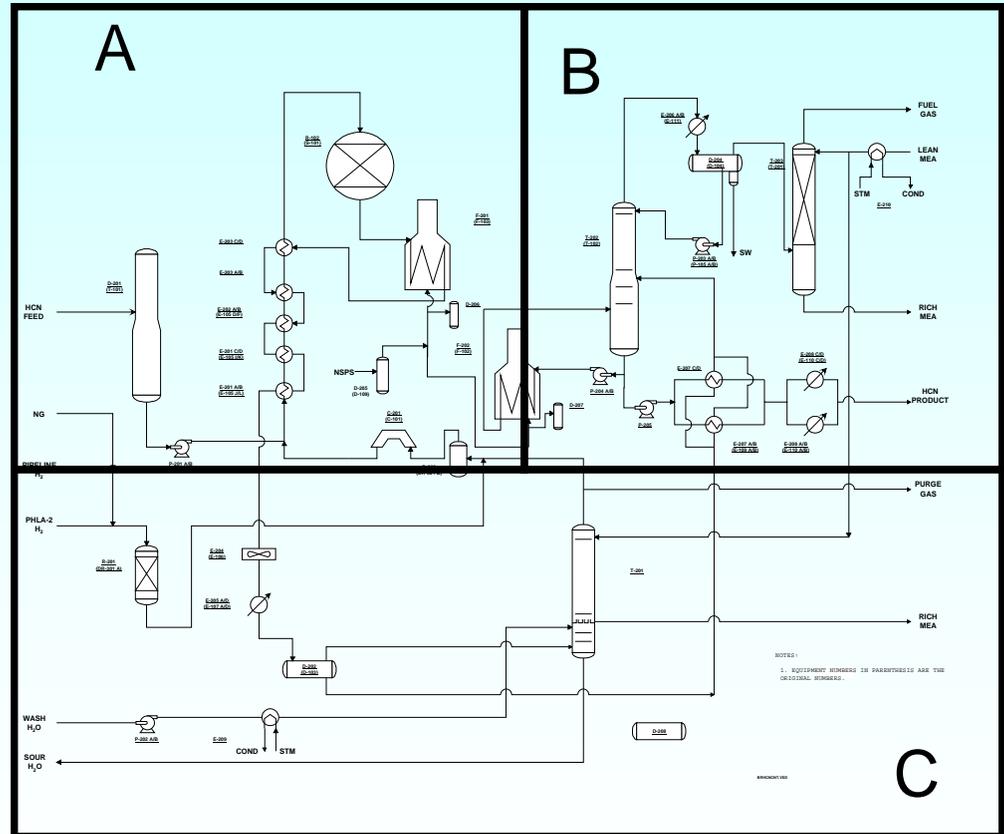
Detailed Drawing

■ Hard to read



Detailed Drawing -alternative

- Show sections with descriptions
- First show how you are going to break it down



Using Images

- Can get from Internet or scanner
 - Be careful of copyright laws
 - For Internet
 - » Click on right mouse button, and either View image or Save Image As...
 - Save in file and use Insert...Picture... File
- Use bullets under or to the side of image to explain
 - Don't leave the image alone

State of the Art in Oscilloscopes



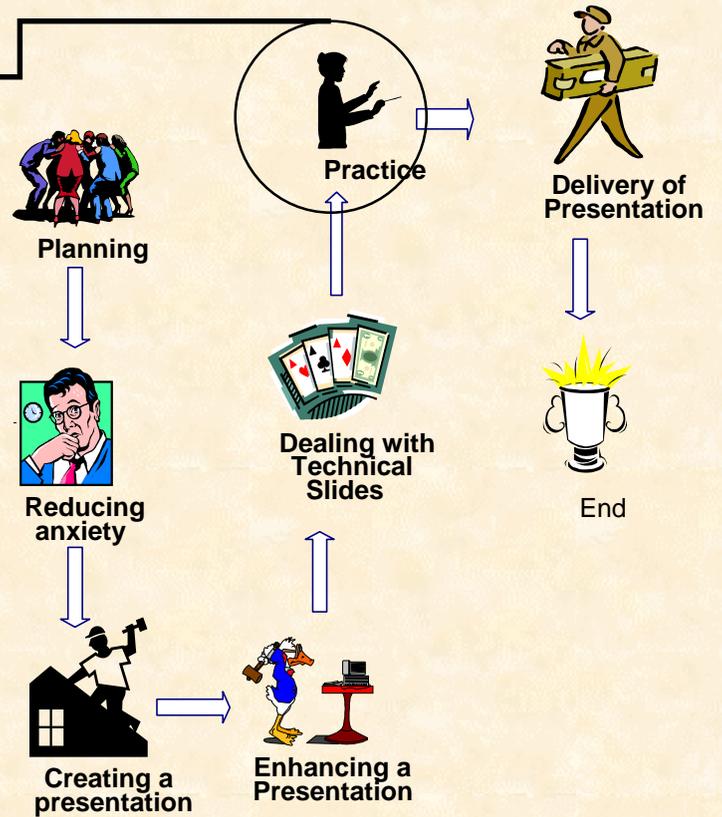
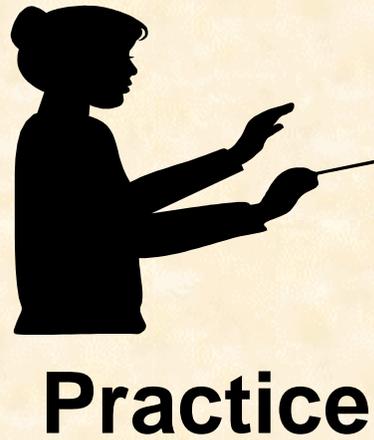
- Infinium is a 2 channel, 500 MHz oscilloscope from HP
 - 1-GSa/s sample rates
 - Simple, analog-like front panel
 - Windows® 95-based graphical user interface
 - Built-in information system

Using Equations

Average = $1/T * \int_0^T x(t) dt$ [from 0 to T]

$$\text{Average} = \frac{1}{T} \int_0^T x(t) dt$$

- Use Equation Editor - looks better
 - Or more powerful program MathType
 - » Use in conjunction with bullets or standalone
- Use with Insert...Object command
 - Have free standing text
 - » Will have to resize and move
 - Copy/Paste to another slide

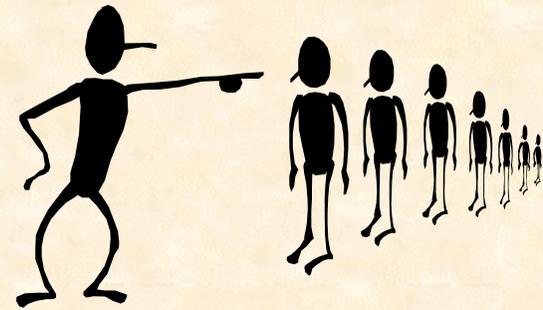


Concepts of Practicing



- Practice at least 5-6 times
 - For lessons can cut down to 2-3 times
 - » Still need to find problem slides
- Wait at least one or two days between reviews
- Practice in front of computer (simulation)
- What questions will audience ask?
 - Anticipate and put in presentation
- Can use video or audience after 3rd or 4th practice

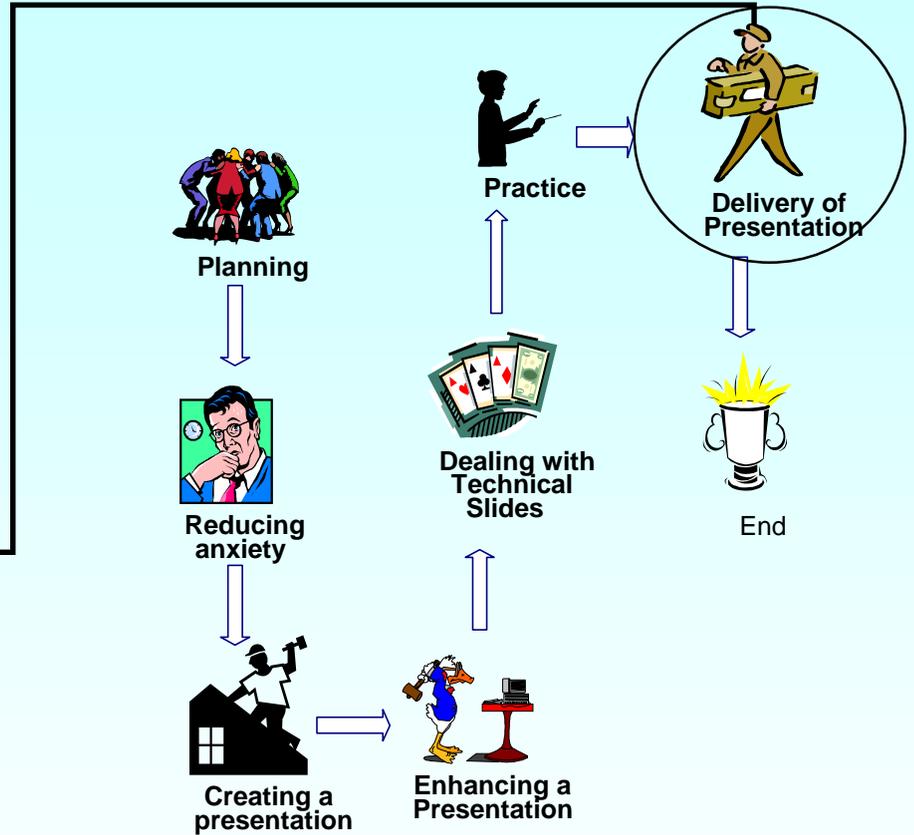
Development Paradigm



1. Creating first version
2. Missing slides and general flow (quick review)
3. Problem with talk -adding bullets/sub-bullets
4. Eye appeal and logical flow (modify style)
5. Clip art placement (or other visuals)
6. Trial practice with timing (last minute corrections)
7. Final practice/spell check



Delivery of Presentation



Use Voice Effectively



- Project voice
 - Face audience, not screen
- Voice inflection should vary
 - Visual complements audible
 - » Think of Ben Stein
- Use pauses
- Enunciate

Eliminate Filler Words

Uh or Um

OK

Yes

You know

Pause, don't speak

Use your body effectively

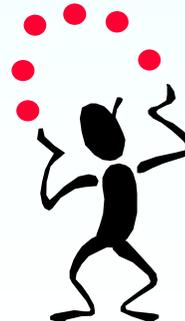
- Don't lean on desk
 - Posture erect



- Relax hands, broad gestures



- Avoid talking with hands
 - Emphasize points only

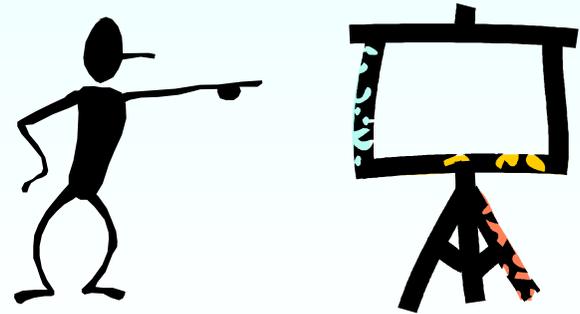


Other body restrictions

- Be careful about too much movement



- Don't point at screen too much



Placement of overheads/others

- Place overheads close to speaker
 - Have good transition



- Don't stand in front of overhead
 - Two B's (blinded and block)



Stand near computer to change for slide show

- Can use left mouse button
 - » Don't sit



Pointing out main ideas

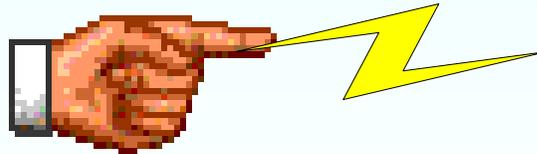
■ Finger Pointing



■ Mouse Pointing



■ Laser Pointing



“For conference talks, always have overheads as backups – for when you don’t, that is the time the computer will crash”

Murphy’s 3rd Law of Presentation

Using Slides for Students

- Slides help structure each lesson
 - Use slides as outline or structure
 - Should have agenda at very beginning
- Students can download slides
 - I put all slides on web in beginning
 - » **Added value** - not complete without lecture
 - » Could publish slides to web
 - Have handouts in front of them
 - » Avoid writing furiously (listen)
- Add pictures, drawings, clip art
 - Scanned images
 - Video (and related formats), audio

Presentation Technology in Classroom

■ Use of Smartcart (NJIT)

- Have all my lectures on zip drive
 - » Don't have large notebooks or binders
- Combine with Internet

■ Computer projectors

- 1500 to 2000 lumens
 - » For traveling, less than 6 lbs
 - » Cost less than \$5000 (Optoma and Infocus)
- Remote control also laser pointer
- Incorporate video as input
- Keystone adjustment, zoom, various resolution

Pedagogy

■ Multimedia lecture

- Slides, board, verbal, cooperative learning
 - » Prevent from just having slide show teaching
 - » Slides are outline – main ideas
- Ten minute rule
 - » No more than ten minutes for slides
- Board helpful for spontaneity and formulas
 - » Would be creating slides forever
 - » Board work helps show thinking process
 - » Also has students eyes refocusing

Related Software Technologies

■ Techsmith

- Snag-IT (screen capture program)

- » Useful for applications
- » Paint can also be used

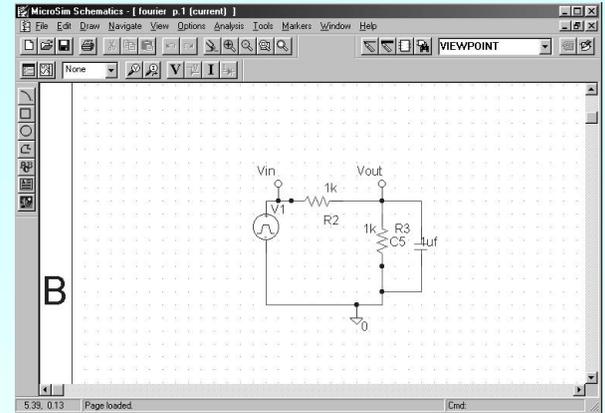
- Camtasia

- » Convert presentation to realvideo streaming files
 - Dramatically reduced size from .avi format
 - Has bullet builds and other movement

■ Realmedia

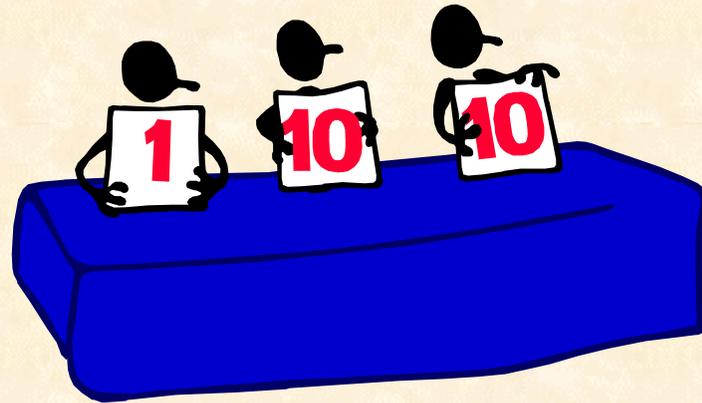
- Real presenter

- » Converts presentation to .jpg files with audio and index



Summary

- Presented 7 main areas on technical presentations
- Know how to present AND know how to use application
 - Both are important
- Practice is the key



Implementation in classroom

- Best to give two presentations to students
 - First one is “practice”
- Develop guidelines from this presentation
 - Use an evaluation sheet
 - » Other students “grade” presentations
- Required throughout curriculum
 - Do it even in lab course
 - » Review of papers, topics
- Make sure you vary the discussion
 - DON'T DO ALL PRESENTATIONS IN CLASSROOM

The End

