

# Part 9

- *presentations*
- *slides*
- *principles of public speaking*

Research Methods in Computer Science

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# Some facts

- People remember
  - 20% of what they hear
  - 30% of what they see/read
  - 50% of what they see and hear
  - 70% of what they say and write
  - 90% of what they do
- Regarding information presented during a (one hour) lecture, students retain
  - 70% of the first 10 minutes
  - 20% of the last 10 minutes

# Types of presentations

Presentations typically serve one or more of the following purposes:

**Purpose:** Information delivery, Information gathering, Instruction, or Persuasion

In addition, we can classify presentations along the following ‘scales’:

**Medium:** Verbal, Verbal with Visual Aids, or Written

**Presence:** In person — Transmitted — Recorded

**Interaction:** Monolog — Dialogue

**Time:** Short — Long

**Audience:** Small — Large

**Setting:** Informal — Formal

**Preparation:** Ad hoc — Scripted

# Structure of presentations

- Introduction
  - ~~ motivation, contextualisation, overview
- Main body
  - ~~ main findings, elaboration
- Conclusion
  - ~~ comment on importance of findings, future work, summary

# Preparing presentations

- ① Determination of the objectives of the presentation
- ② Analysis of the audience
- ③ Planning
- ④ Organisation of the material for effective results
- ⑤ Preparation of visual aids / handouts
- ⑥ Delivery practice

# Visual aids: purpose

- Give structure to a presentation
- Provide a point of reference for the speaker and the audience
- Help an audience to remember
- Focus the attention of both audience and speaker
- Reinforce what is said

# Visual aids: types

- Prepared in advance, immutable at time of presentation
  - Video
  - Slide projector
- Created or reproduced during presentation, mutable at time of presentation
  - Flip chart
  - Chalk/White board
- Dual use
  - Overhead projector (OHP)
  - LCD projector (beamer) plus PC
  - Interactive white board plus PC

# Slides: structure

- Decide on a **structure / theme** for your slide in advance, then stick to it
  - Consider the following questions:
    - Does the audience know me (and my affiliation)?
    - How important is it that the audience remembers the title of my presentation?
    - How many navigational hints are required?
    - How many graphics do I need to include? Can they be placed consistently?
- The answers to these questions influence who you should structure your slides

# Structure examples

There Is No Largest Prime Number  
Euklid  
Reductio Proof of the Main Theorem

## There Is No Largest Prime Number

With an introduction to a new proof technique

Euklid of Alexandria  
Department of Mathematics  
University of Alexandria  
27th International Symposium on Prime Numbers, –280

1 Results  
■ Proof of the Main Theorem

There Is No Largest Prime Number  
The proof uses *reductio ad absurdum*.  
Euklid  
Reductio Proof of the Main Theorem

**Theorem**

*There is no largest prime number.*

**Proof.**

1 Suppose  $p$  were the largest prime number.  
2 Let  $q$  be the product of the first  $p$  numbers.  
3 Then  $q + 1$  is not divisible by any of them.  
4 Thus  $q + 1$  is also prime and greater than  $p$ . □

# Structure examples

There Is No Largest Prime Number  
With an introduction to a new proof technique

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**Results**

Proof of the Main Theorem



**There Is No Largest Prime Number**  
The proof uses *reductio ad absurdum*.

## Theorem

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## Proof.

1. Suppose  $p$  were the largest prime number.
2. Let  $q$  be the product of the first  $p$  numbers.
3. Then  $q + 1$  is not divisible by any of them.
4. Thus  $q + 1$  is also prime and greater than  $p$ . □

There Is No Largest Prime Number  
Euklid

Results

Proof of the Main Theorem



# Structure examples

Results

- There Is No Largest Prime Number

There Is No Largest Prime Number  
With an introduction to a new proof technique

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**Results**

Proof of the Main Theorem

Euklid

There Is No Largest Prime Number

Univ. Alexandria

Results

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Euklid

There Is No Largest Prime Number

Univ. Alexandria

# Structure examples

## There Is No Largest Prime Number With an introduction to a new proof technique

Euklid of Alexandria

Department of Mathematics  
University of Alexandria

27th International Symposium on Prime Numbers, –280

### 1 Results

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- ④ Thus  $q + 1$  is also prime and greater than  $p$ . □

# Slides: titles

- Put a title on each slide
- Titles should be short but **descriptive**
- Ideally, titles on consecutive slides should **tell a story** all by themselves
- **Capitalise** words **consistently**
  - Either always capitalise all words in the title (except for words like 'a' and 'the'), or
  - always only capitalise the first word in the title/subtitle
- The title of the whole presentation should be capitalised  
You might want to include it on every slide

# Slides: textual content

- Keep it simple
- A typical slide should contain 20 to 40 words, maximum 80
- Do not try to fill all the space
- Prefer enumerated or itemised lists over plain text
- Use at most two levels of 'subitemizing'
- Keep the number of items in a list low
- Highlight important things

# Slides: textual content

- Use short sentences
- Prefer phrases over complete sentences
- Break lines where there is a logical pause
- Do not hyphenate words
- Punctuate consistently
  - No punctuation after phrases
  - Complete punctuation in and after complete sentences
- Avoid decreasing font size to make more text fit on a slide

# Slides: fonts

- Aim for your text to be **legible** even under difficult conditions
- Use as few fonts as possible
- Use a **sans-serif font** unless you use a high-resolution LCD projector
- Use **monospaced** and **script** fonts only for specific purposes
- Avoid **italics** to express emphasis, **use colour instead**



Celebration  
The Feel of the Soul  
Attractive  
Mister Coltrane  
Best Holiday Wishes  
New York City  
Fashionista

Mathematic  
Script  
Technology  
Encoding  
Automatic  
Digital

Inria Serif - Light

Inria Serif - Regular

Inria Serif - Bold

Inria Serif - LightItalic

Inria Serif - Italic

Inria Serif - BoldItalic

Informatic

InriaSans - Light

Computer

Inria Sans - Regular

Engineer

Inria Sans - Bold

Modern

Inria Sans - LightItalic

Research

Inria Sans - Italic

Innovation

Inria Sans - BoldItalic

# Slides: colors

- Use colours sparingly
- Avoid bright text on dark background
- Maximise contrast
  - Normal text should be black on (nearly) white background
  - Avoid bright, light colours on white background
- Be aware of what we associate with different colours
- Test your presentation on the intended equipment if possible

# Slides: color associations

Red	Danger, aggression, passion, stimulating
Purple	Royalty, religion, calming
Green	Soothing, trustworthiness, nature
Blue	Restful, peaceful, relaxing
Yellow	Well-being
Brown	Nature, practicality, boring, close minded

Decide

- what you want to highlight,  
e.g. keywords, main results, examples, current focus
- which colour you want to use for each of these categories

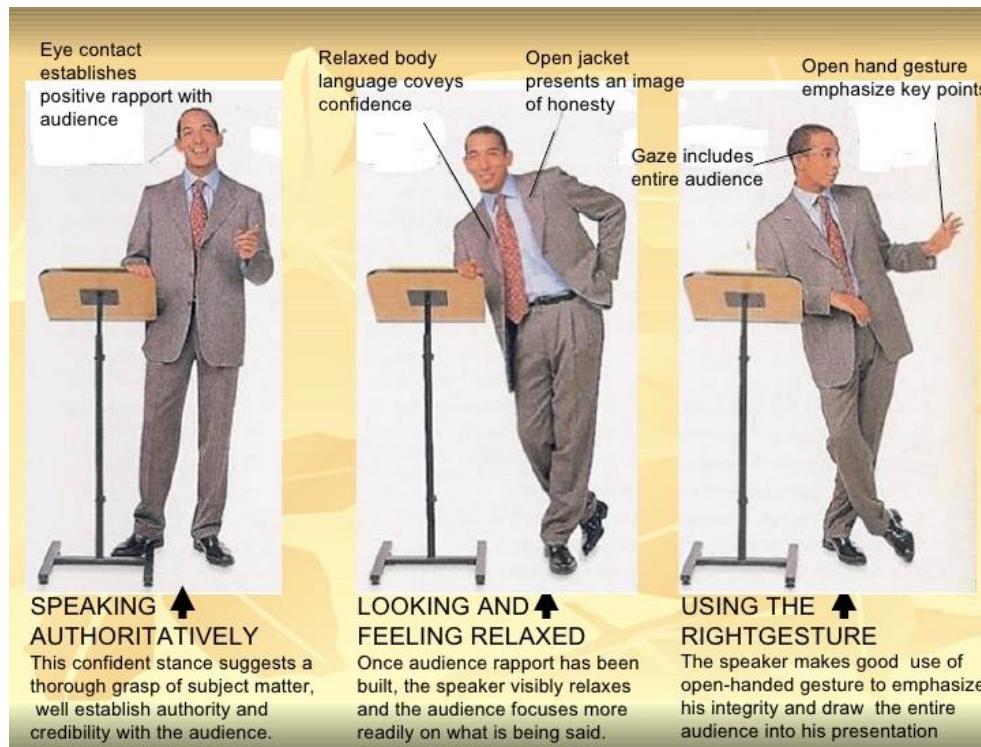
Then apply this **colour scheme** consistently

# Graphics and animations

- Graphics often convey concepts or ideas more effectively than text
- Use graphics as often as possible
- Graphics should only contain as much detail as necessary
- Graphics always require explanation
- Use animations to explain the dynamics of systems, algorithms, ...
- Do not use animations to simply attract attention
- Do not use distracting special effects like fancy slide transitions

# Stance and movement

- Be aware where you stand (centre stage vs side stage)
- Do **not** obscure the screen
- Stand tall, keep your head up most of the time
- Move from **stillness** to **stillness**, walk slowly



# Hands

- Use hand gestures to emphasise points
- Use open palm gestures, full arm gestures
- **Avoid** aggressive gestures
- **Avoid** hands in pockets, hands behind your back, hands clasped in front of your body



# Eye contact

- Maintain eye contact
  - lighthouse beam
  - treat everyone equal
  - do not look out of the window or on your watch
  - do not focus too long on a single individual
- Keep an eye on the audience's body language
  - does a point need further clarification?
  - can you proceed more quickly than anticipated?

# Voice

- Be aware of the **acoustics of the room**
- **Speak clearly** (do not shout or whisper)
- Pause shortly at key points (adds emphasis)
- Emphasise the right words, control your breathing
- Facial gestures and tone of voice should match your message
- Do not rush, or talk deliberately slowly, but vary speed
- Do not talk to the screen
- Do not turn your back to the audience and talk at the same time
- Do not read from a script (cue cards are ok)

# Seven principles of public speaking

(Isa N. Engleberg: The Principles of Public Presentation.  
Harper Collins, New York, 1994)

Purpose: Why are you speaking?

What do you want audience members to know, think,  
believe, or do as a result of your presentation?

People: Who is your audience?

How do the characteristics, skills, opinions, and behaviours  
of your audience affect your purpose?

Place: How can you plan and adapt to the logistics of this place?

How can you use visual aids to help you achieve your  
purpose?

# Seven principles of public speaking

**Preparation:** Where and how can you find good ideas and information for your speech?

How much and what kind of supporting materials do you need?

**Planning:** Is there a natural order to the ideas and information you will use?

What are the most effective ways to organise your speech in order to adapt it to the purpose, people, place, etc.?

**Personality:** How do you become associated with your message in a positive way?

What can you do to demonstrate your competence, charisma, and character to the audience?

**Performance:** What form of delivery is best suited to the purpose of your speech?

What delivery techniques will make your presentation more effective?

How should you practice?

# End of part 9

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