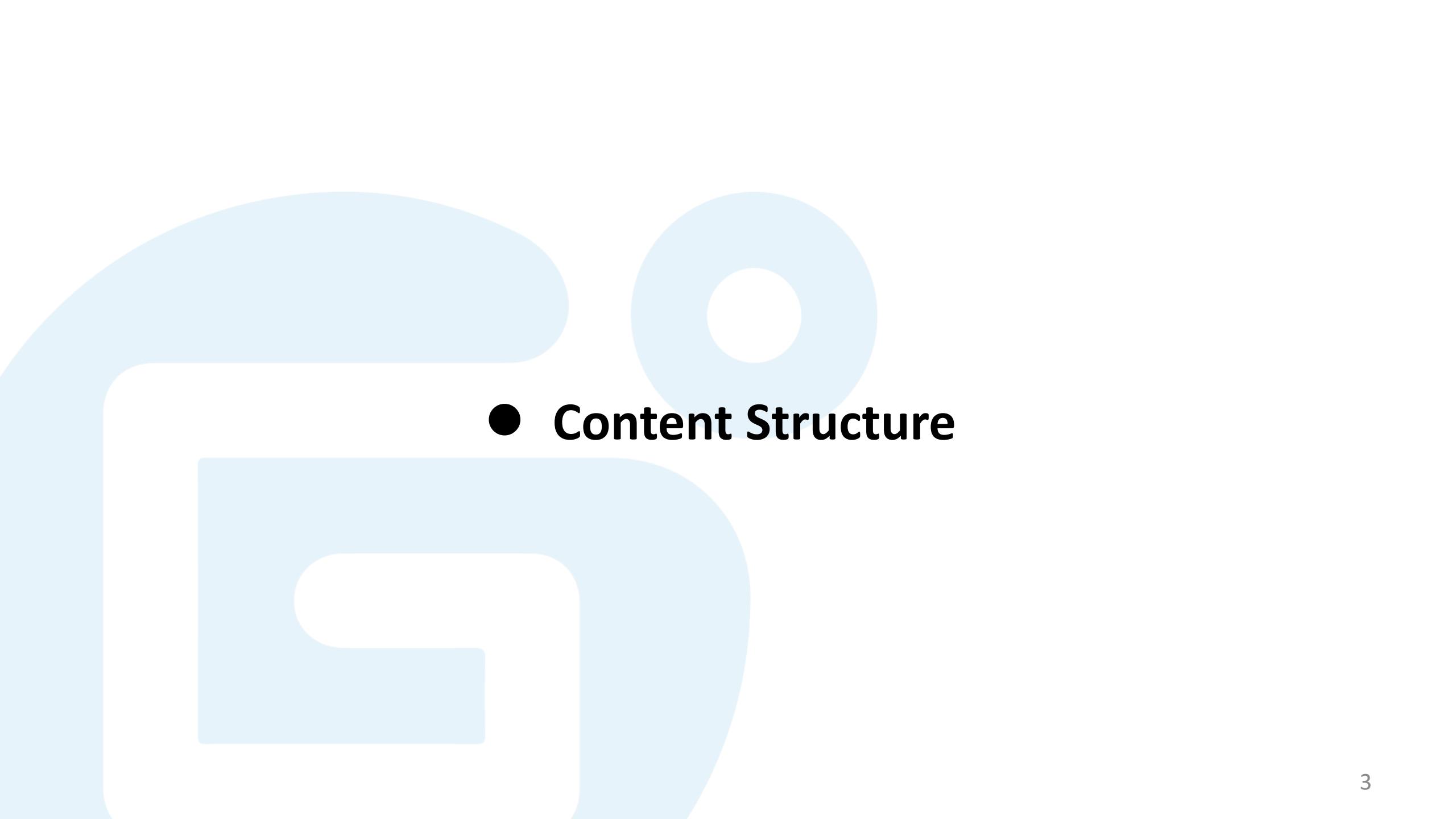


Academic Presentation Skills

Content

- Content Structure
- PPT Design
- Q&A

[Please click here to see the Lecture Video](#)



● Content Structure

What is an Academic Presentation?

- A presentation is any situation which involves speaking to a group of people in order to make a clear point, educate and share intended information.
- Many presentations also have different forms of supporting visual aids such as slides, a whiteboard, projections or flip charts.

How to Evaluate Your Presentation?

Your audience will evaluate your performances from the following aspects:

- Your understanding of the topic and the audience
- Appropriate breadth and depth
- An argument in the content
- A clear structure: a distinct beginning, middle and end
- Suitable visual aids
- Proper timing/length

All academic presentation skills can be learnt and continually improved through practice?

How to Practice?

One way of tackling a presentation is to divide it into three stages:

- **Planning**
- **Preparing**
- **Presenting**

But, what can we do in each stage? Let's see ...

For Planning — Two Factors

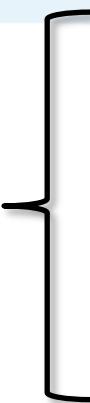
Two key factors, **purpose** and **audience**, should be addressed when planning:

Purpose



- What's really important in your topic field?
- What's the exact problem?
- What conclusion can you achieve?
- Which examples could be used?
- What do you want your audience to learn?
- How long do you want to talk?

Audience



- Who are they?
- What are their reasons for attending?
- How many are likely to be present?
- What sort of people – age, education, status?
- What do they already know about the subject?
- What are their likely attitudes/biases?

For Preparing – Three Rules

There are **3 Rules** that should be remembered when do your preparation:

- **Rule 1:** Content is the most important part of your presentation.
- **Rule 2:** The length of the content should be matched to the time required for the presentation.
- **Rule 3:** The visuals should enhance not detract from your presentation.

For Preparing – The Structure Order

A clear structure will allow the audience to understand your main themes. To support this, break your presentation into three sections: **Introduction, Main Body and Conclusion.**

The order when you **show** your presentation:

1. Introduction	2. Main Body	3. Conclusion
Set the context, outline your objectives	Explain your main findings	Summarise each point made
Tell them what you are going to elaborate next	Explanation	Tell them what you just told them

However, this order is **not** the most suitable order during the preparing ...

For Preparing – The Working Order

Consider working in a **3–1–2** order when preparing your presentation:

3. Conclusion	1. Introduction	2. Main Body
Work backwards from your overall conclusions to ensure all concluding statements are supported throughout the presentation.	Prime your audience for what's to come and mention the key areas that you will be developing throughout the presentation.	Expand each of your key points in order that the concluding statements are justified

More details will be talked about the three sections in the following slides ...

For Preparing – Conclusion

The **conclusion** is as equally important as the introduction and should not be rushed.

Common pitfalls are running out of time, speeding up, mumbling and fading off, or ending abruptly.

If the ending is weak it will affect what the audience think of the overall presentation.

Prepare an ending (or end slide) as:

- Sums up the whole presentation.
- Does not wander around the subject.
- Does not introduce any new ideas.
- Does not keep repeating points over and over again.

For Preparing – Introduction

Your ***introduction*** will need to create an immediate impression and gain the attention of the audience. Therefore, it is very important to organize the introduction in the clear way:

- What (Which topic) do you want to talk about?
- Why is it important?
- What have been done? (the background information)
- What's the problem that still need to be solved?

These information should be stated early in the presentation so that your audience can follow the development of your argument/discussion.

For Preparing – Main Body

The middle part of your presentation is where ***the bulk of your research*** (your learning) is relayed.

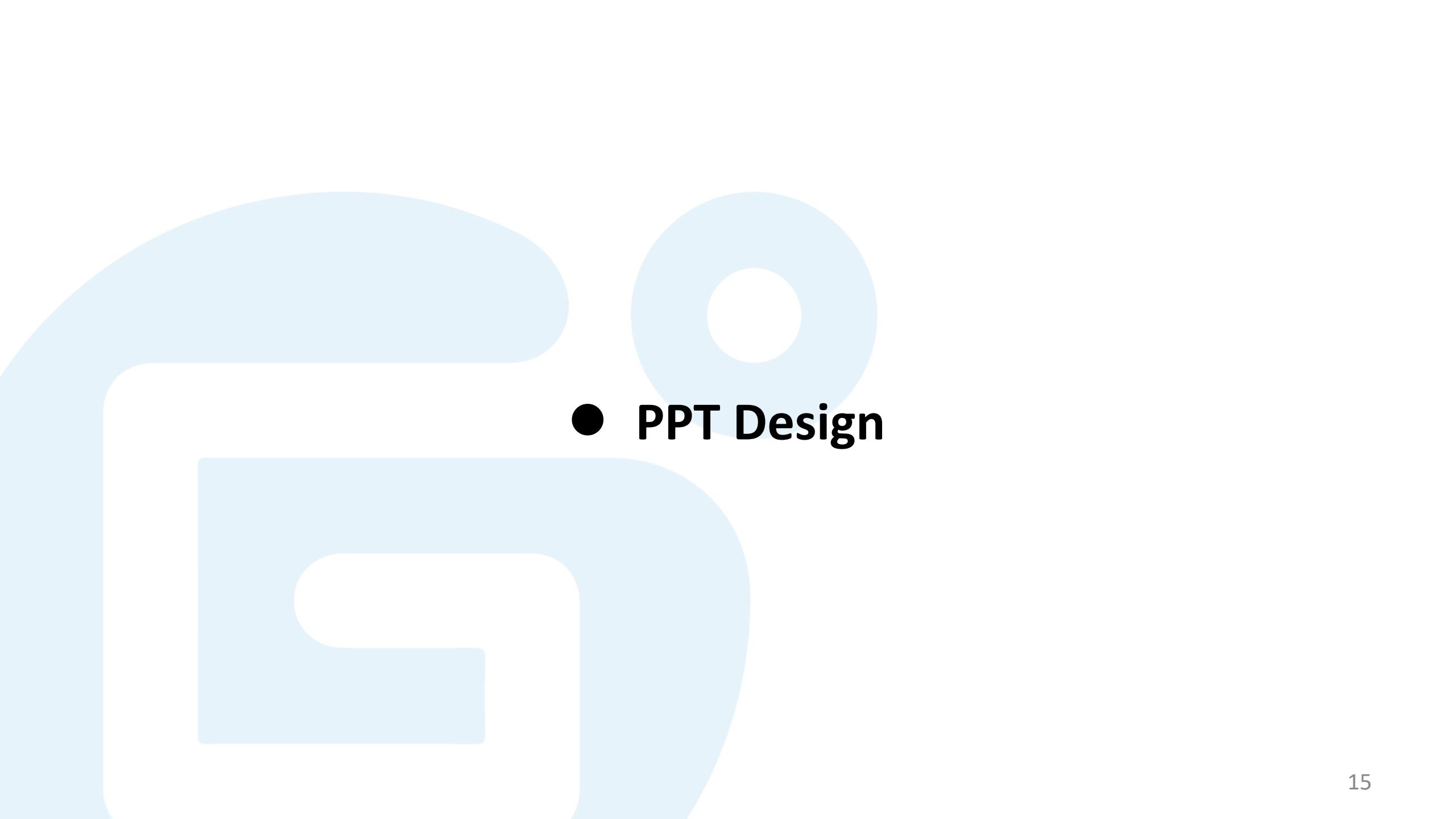
- Sufficient materials, not too much or too little.
- Using graphs instead of text.
- Graphs will help the audiences ***feel*** the way you do, and verbal will help the audiences ***think*** the way you do.
- Knowing exactly the specifics on each graph and making sure that they are appropriate to your point that you wish to convey.
- Being logical flow and natural transition among slides, avoiding jumping from one point to another.
- To remember, from the beginning to the end, being always related to the main theme.

For Presenting – The Delivery

Presentation should be viewed as an important opportunity to ***sell*** your knowledge in a professional way.

As a presenter, consider the following practical issues:

- Do not simply read the text from the slides without any of your own words.
Remember the audience can read by themselves!
- Use cue cards as memory aids. Try to keep them small so that they can be held in one hand, and not read like a script.
- Open body language – hands at your side or bent at the elbow in front of your body. But don't fold your arms or put your hands in your pocket.
- Look at the audience – don't fix your stare, but glance around in a casual manner.
- Clear tone.
- Pay attention to the time.
- It's normal to be nervous, admit it and control it.
- Always have a duplicate of the PPT.



● PPT Design

PPT Design Considerations (1)

Reduction!

Don't over populate slides:

Minimal **key** text – ‘free space’

5-8 bullet points

Detail in handouts

Slides to time ratio:

May not have more slides than minutes

1 slide/min

PPT Design Considerations (2)

Guide: headings **36-44 pt** / text **18-32 pt**
reference **14-18 pt**

'crazy' fonts less 'busy' – **Calibri/Arial** enough

Contrast text to background – e.g. black on white

Don't need to use PPT template: start blank

Keep it ***clean*** and ***simple***

PPT Animations (1)

Wipe animations (custom, “appear” enough)



Avoid other “crazy” animations

Use drop shadows to bring images out



shadows

Can emphasize or highlight text with transparent boxes or your laser

To highlight
your key words



PPT Animations (2)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fred	PPPP	CCCC								
Mabilda		PP								
José			PP							
Rashid				PPPP	CCCC					
Seamus					PPPP	FFFF	CCCC			
LuAnne										
Saty		PP								
Mitko										
Tania										
Bob										
Mabilda (2001 Vintage)		PP	CCCC							
Saty (2002 Vintage)			PP	CCCC						
José (2003 Vintage)				PPPP	CCCC					
LuAnne (2004 Vintage)					PPPP	FFFF	CCCC			
Mitko (2005 Vintage)						PPPP	CCCC			
LuAnne (2005 Vintage)							PPPP	CCCC		
Active Count 2000										
Vintage	10	9	8	6	5	3	2	1	1	1
Conditional Default Rate	0%	0%	13%	0%	0%	33%	50%	0%	0%	0%
Cumulative Default Rate	0%	0%	10%	10%	10%	20%	30%	30%	30%	30%
Foreclosure Inventory	0%	11%	13%	0%	40%	67%	50%	0%	0%	0%
Active Count All										
Borrowers With										
Mortgage Any Vintage	10	10	10	9	9	7	6	5	3	3
Conditional Default Rate	0%	0%	13%	0%	11%	14%	17%	20%	0%	0%
Cumulative Default Rate	0%	0%	10%	10%	20%	30%	40%	50%	50%	50%
Foreclosure Inventory	0%	10%	10%	11%	33%	29%	33%	20%	0%	0%

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fred	PPPP	CCCC								
Mabilda		PP								
José			PP							
Rashid				PPPP	CCCC					
Seamus					PPPP	FFFF	CCCC			
LuAnne										
Saty		PP								
Mitko										
Tania										
Bob										
Mabilda (2001 Vintage)		PP	CCCC							
Saty (2002 Vintage)			PP	CCCC						
José (2003 Vintage)				PPPP	CCCC					
LuAnne (2004 Vintage)					PPPP	FFFF	CCCC			
Mitko (2005 Vintage)						PPPP	CCCC			
LuAnne (2005 Vintage)							PPPP	CCCC		
Active Count 2000										
Vintage	10	9	8	6	5	3	2	1	1	1
Conditional Default Rate	0%	0%	13%	0%	0%	33%	50%	0%	0%	0%
Cumulative Default Rate	0%	0%	10%	10%	10%	20%	30%	30%	30%	30%
Foreclosure Inventory	0%	11%	13%	0%	40%	67%	50%	0%	0%	0%
Active Count All										
Borrowers With										
Mortgage Any Vintage	10	10	10	9	9	7	6	5	3	3
Conditional Default Rate	0%	0%	13%	0%	11%	14%	17%	20%	0%	0%
Cumulative Default Rate	0%	0%	10%	10%	20%	30%	40%	50%	50%	50%
Foreclosure Inventory	0%	10%	10%	11%	33%	29%	33%	20%	0%	0%

Good VS Bad

Background - Good

- Use backgrounds such as this one that are attractive but simple
- Use backgrounds which are light
- Use the same background consistently throughout your presentation

Background – Bad

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



Good VS Bad

Slide layout – Good

- Show one point at a time:
 - Will help audience concentrate on what you are saying
 - Will prevent audience from reading ahead
 - Will help you keep your presentation focused

Slide layout - Bad

- This page contains too many words for a presentation slide. It is not written in point form, making it difficult both for your audience to read and for you to present each point. Although there are exactly the same number of points on this slide as the previous slide, it looks much more complicated. In short, your audience will spend too much time trying to read this paragraph instead of listening to you.

Good VS Bad

Fonts - Good

- Use a decent font size
- Use different size fonts for main points and secondary points
 - this font is 24-point, the main point font is 32-point, and the title font is 44-point
- Use a standard font like Times New Roman or Arial

Fonts - Bad

- If you use a small font, your audience won't be able to read what you have written
- **CAPITALIZE ONLY WHEN NECESSARY. IT IS DIFFICULT TO READ**
- **Don't use a complicated font**

Good VS Bad

Color - Good

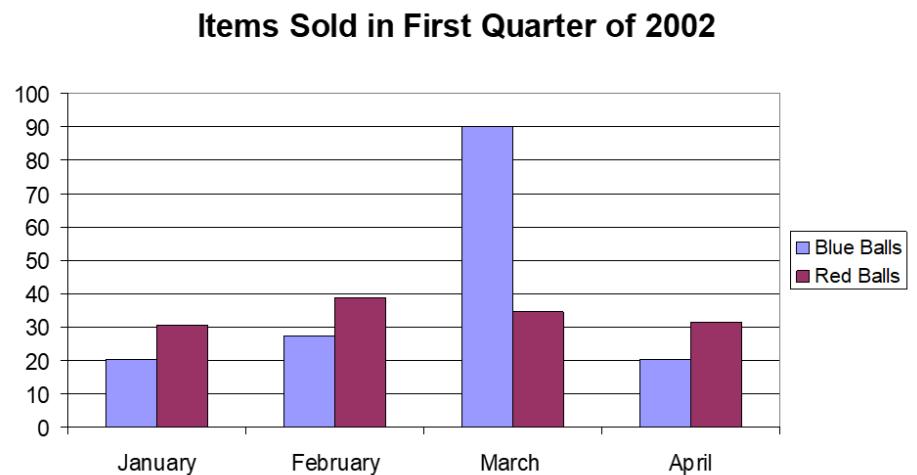
- Use font color that contrasts sharply with the background
 - Blue font on white background
- Use color to reinforce the logic of your structure
 - Ex: light blue title and dark blue text
- Use color to emphasize a point
 - But only use this occasionally

Color - Bad

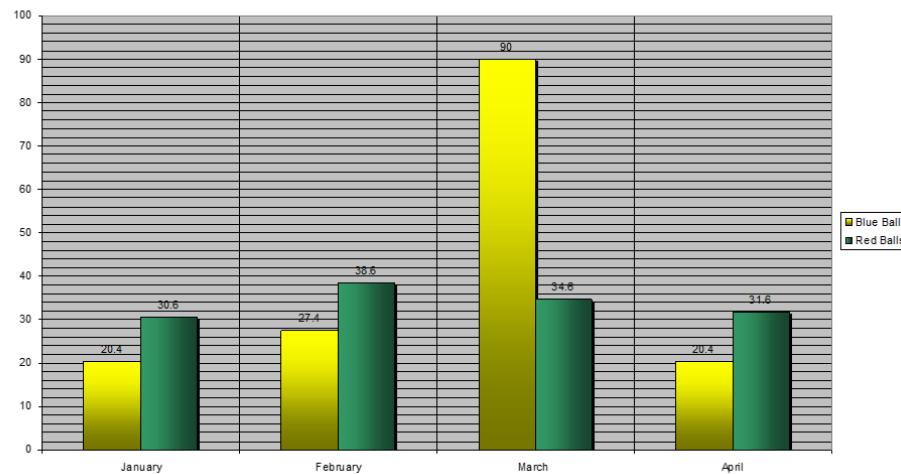
- Using a font color that does not contrast with the background color is hard to read
- Using color for decoration is distracting and annoying.
- Using a different color for each point is unnecessary
 - Same for secondary points
- Trying to be creative can also be bad

Good VS Bad

Graphs - Good



Graphs - Bad



Good VS Bad

Key points - Good

- **Production processes:**

- Renewable materials (2007 - 2015) (Smith, 2014)
- Recycled or reclaimed (2007 - 2009) (Jones, 2017)
- Sourcing materials.
- Summary: reputation / sustainability

Points – Bad

- **Production processes:**

- Renewable materials from **71%** in 2007 to **85%** in 2015 (Smith, 2014)
- Recycled or reclaimed waste products **84%** in 2007 to **90%** in 2009. (Jones, 2017)
- Sourcing materials close to the supply chain to reduce transport costs.
- Summary: CSR = reputation / sustainability

Three Referencing Format

Production processes:

- Renewable materials (2007 - 2015) (Jones, 2014)
- Recycled or reclaimed (2007 - 2009) (Smith, 2014)

- Sourcing materials > supply chain > transport costs.
- Summary: reputation / sustainability

point by point

Production processes:

- Renewable materials (2007 - 2015)
- Recycled or reclaimed (2007 - 2009)
- Sourcing materials > supply chain > transport costs.

Summary: reputation / sustainability

• Source: (Smith, 2014 / Jones, 2017)

bottom of 1 slide

Reference list

Exeter University Sports Dept (2014) Varsity annual report (7th Edition). Harlow: Pearson

Jones, A. (2017) recycling materials in the workplace. *Strategic Direction* 22 (4), 100-113.

ONS (2013) Graduates in the labour market. Retreived on 07/ February, 2019 from:
<http://www.ons.gov.uk/ons/rel/lmac/graduates-in-the-labour-market>

Smith, M. (2014). Sustainable Marketing. *Strategic Direction* 31 (8), 1-3.

a summary

Picture Attention



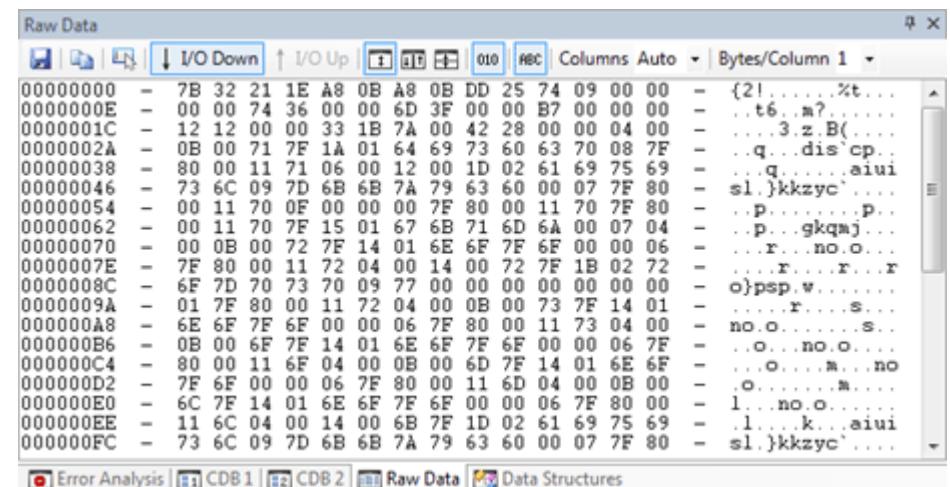
No irrelevant/cartoon/joke pictures

Don't Display Your Raw Data!

Or the process how your data produce!

Such as

coleta aleatória		dados ordenados		intervalos	frequência	classe
pacientes	HDL (mg/dL)	pacientes	HDL (mg/dL)			
1	55	7	44	HDL<45	1	1
2	57	8	45			
3	53	16	46			
4	49	14	47	45≤HDL <50	4	2
5	54	4	49			
6	52	9	50			
7	44	10	52			
8	45	6	52			
9	50	13	53			
10	52	3	53			
11	55	5	54			
12	67	1	55	50≤HDL <55	6	3
13	53	11	55			
14	47	2	57			
15	65	18	59			
16	46	17	64	55≤HDL <60	4	4
17	64	15	65			
18	59	12	67	60≤HDL <65	1	5
				65≤HDL	2	6



The screenshot shows a software window titled "Raw Data" displaying raw data in both hex and ASCII formats. The hex data is on the left, and the ASCII representation is on the right. The ASCII data consists of a series of characters and symbols, including letters, numbers, and punctuation marks. The software interface includes various buttons and tabs at the top and bottom.

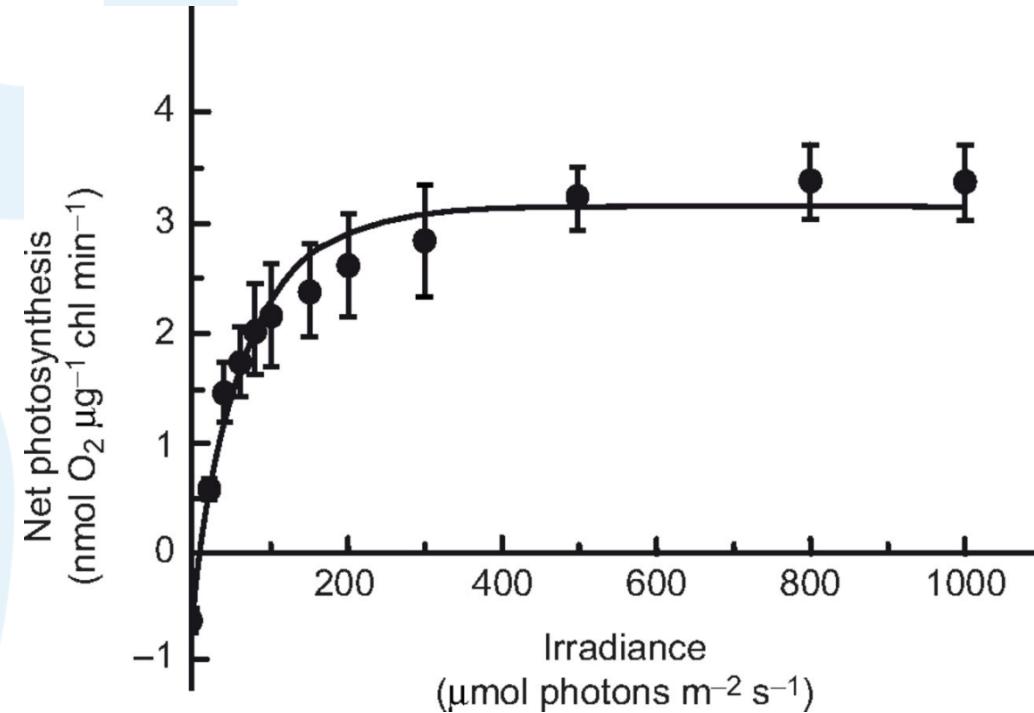
Show your core findings just into a few tables & figures, directly!

Such as

Table 1
Wood the Woodchucks Chucked in Experiment 1

Woodchuck	Wood chucked (in kg)	%
1	423.9	94.2
2	373.0	82.9
4	347.0	77.1
6	411.3	91.4

Note. Each virtual woodchuck received a 450-kg woodpile.
Woodchucks 3 and 5 were removed from the analysis because they would not chuck wood.



And don't forget to point out the meaning of x- or y-axis!



● Q&A

The Roles of Q&A



Deepening the understanding of all the audience.

Encouraging the exchange of ideas among everyone.

Being incomplete without an active Q&A session.

For Question — Your Hesitation...

Asking questions
requires a certain
amount of courage



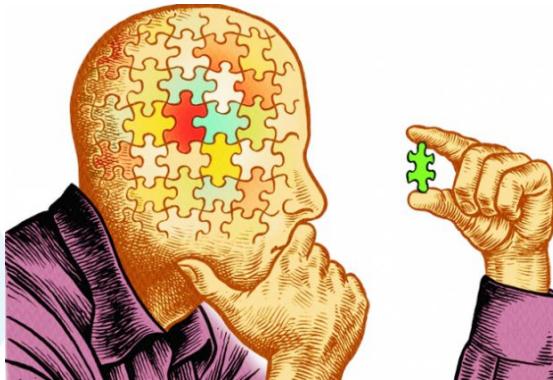
Natural for hesitating or
shy away from asking
questions in public

Words in your mind...

- My question won't interest anyone else, so I'll ask the speaker after the seminar.
- I won't be able to express my question, it is too complicated.
- I'm probably supposed to know the answer, it is my field.
- It is too obvious a question. Everyone else knows the answer.
- I don't want to look stupid or unread.
- I don't want to have a confrontation in public.
- I must have missed the slide that would explain. I can't let on that I wasn't paying attention.

For Question – Guidelines to Think Critically

By asking questions,
not only gaining the
information you
requested



but also the ability
to **think critically**

Thinking critically guidelines...

- What is the key question of this research?
- Think about the data you are given and try to develop your own conclusions. Then compare them to the presenter's conclusions. Are they the same? If not, then why?
- What is the most important data in this research? Is it solid? (Are there any holes in it?)
- Do the experimental results have a direct and meaningful connection with the key question?
- Can you think of any other ways to interpret or explain the data and experimental results?
- If you were doing this study, what would be your plans for continued or future research?

For Answer — the Least Controllable Section

Answering questions,
reflecting the person's
scientific knowledge,
attitude, vision...

Thinking about the potential questions is the best
preparation for the least controllable section...

Be judged by how you
handle questions...



For Answer — the Way for Answering

For questions on future directions or hypothesis:

It's OK to have no definite answers, but you can exploit this opportunity to introduce your own opinions, your vision and your dream...

You can make an “effective response” like this:

- We don't know yet...but I am expecting ... result
- We are planning ...experiment
- In future we would like to try...

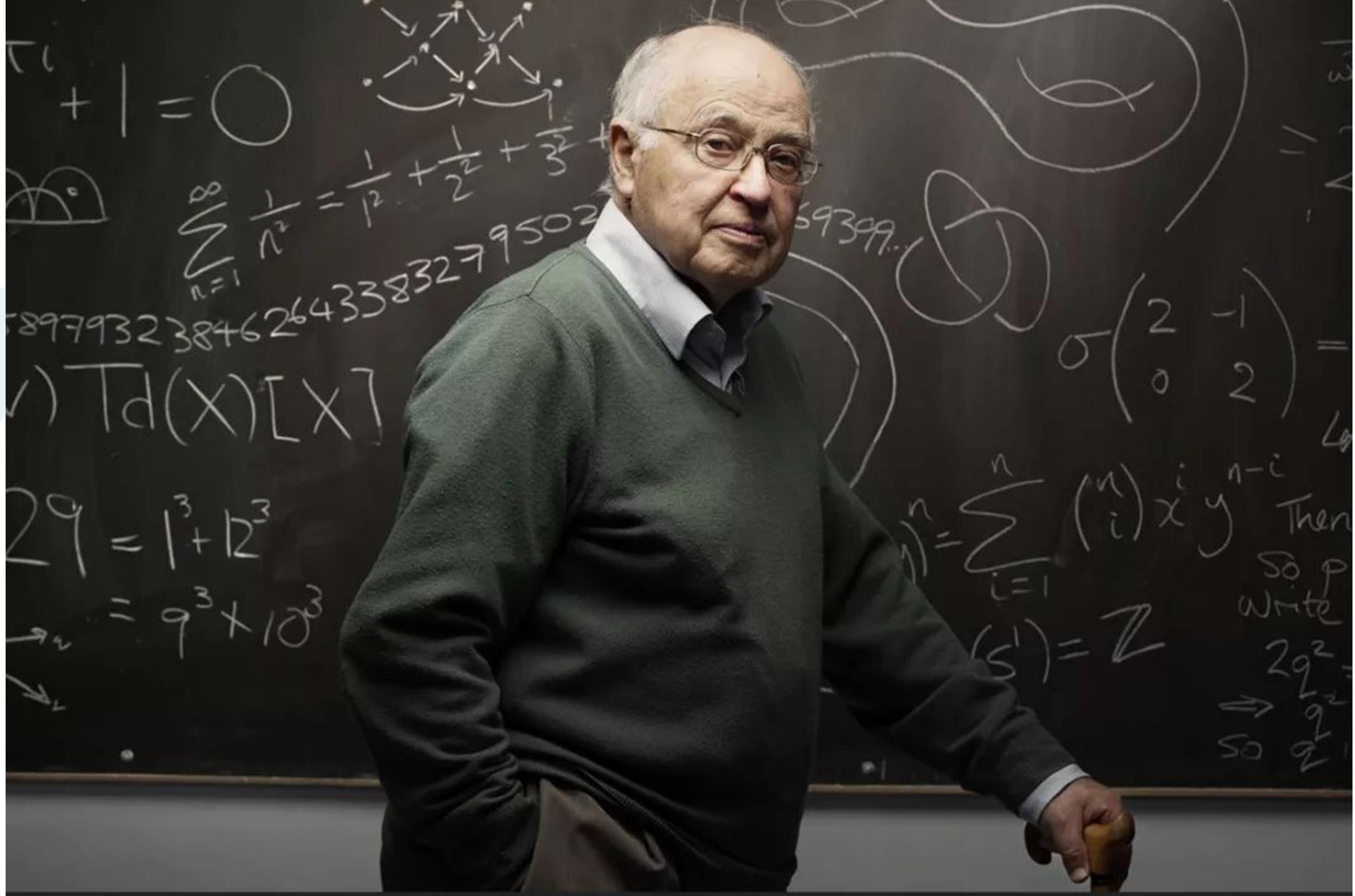
For questions on results of the past:

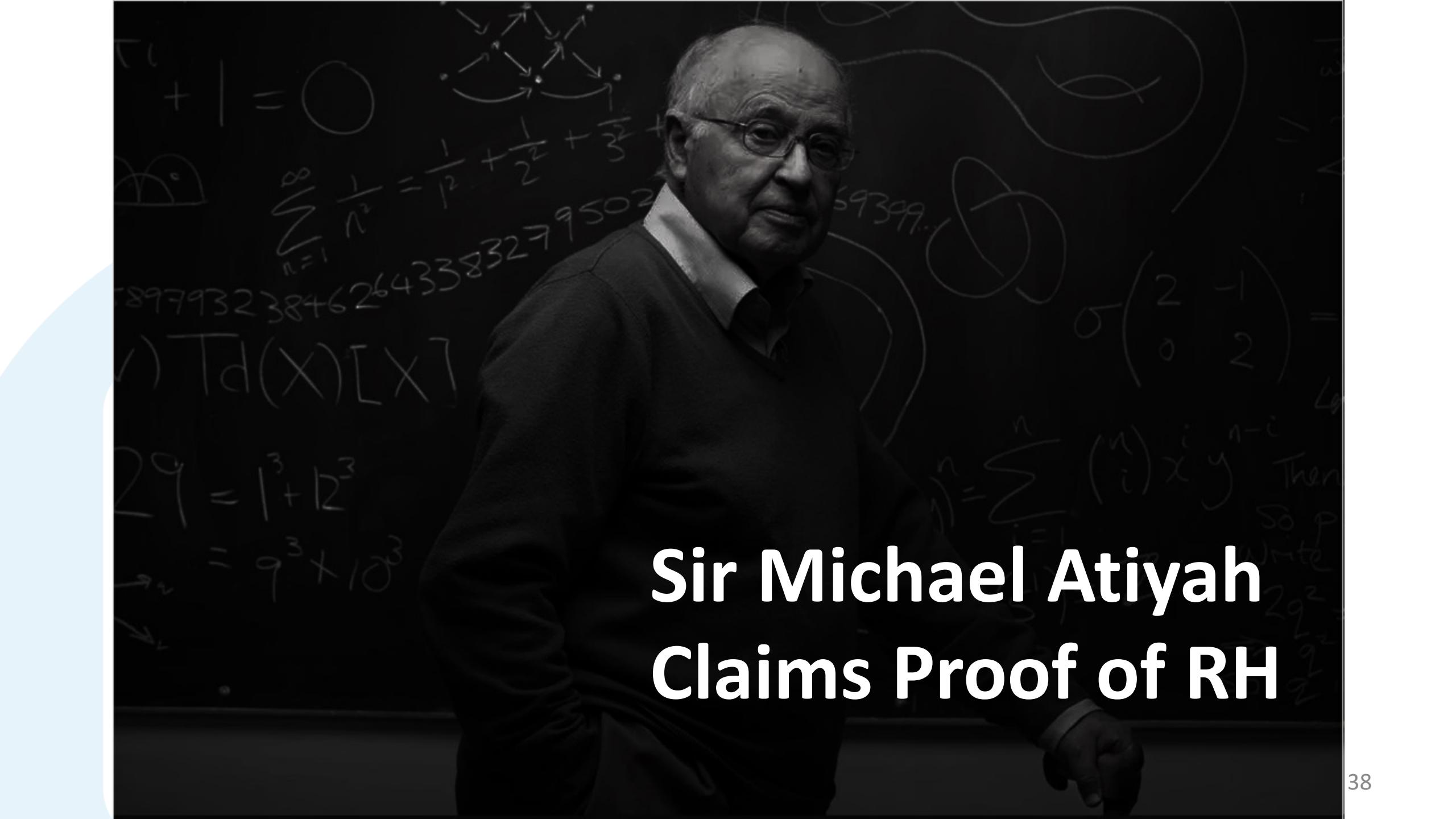
“I don't know” is a forbidden answer to questions about your own research. If you fail to provide an satisfactory answer, audience will be immensely disappointed.

Make a concrete foundation of your research and its background, so that you can provide an adequate explanation even under the stressful environment at the Q&A session.



● Reading Sample





Sir Michael Atiyah Claims Proof of RH

Sir Michael Atiyah Claims Proof of RH

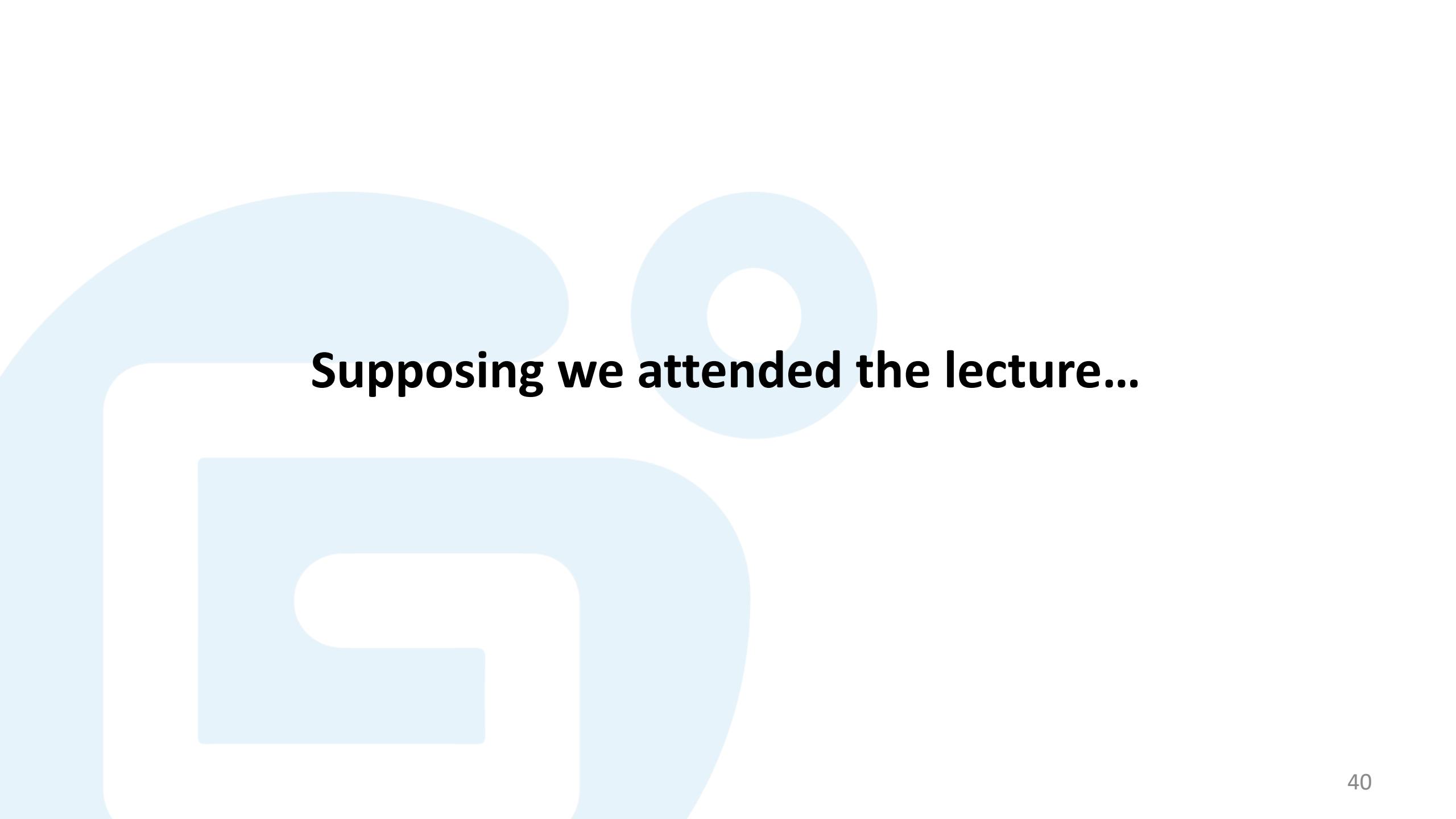
Let's find out how he has done in the final presentation!

Time: about 45mins

How many bullet points in each pages?

Detail in handouts

Have a guess!



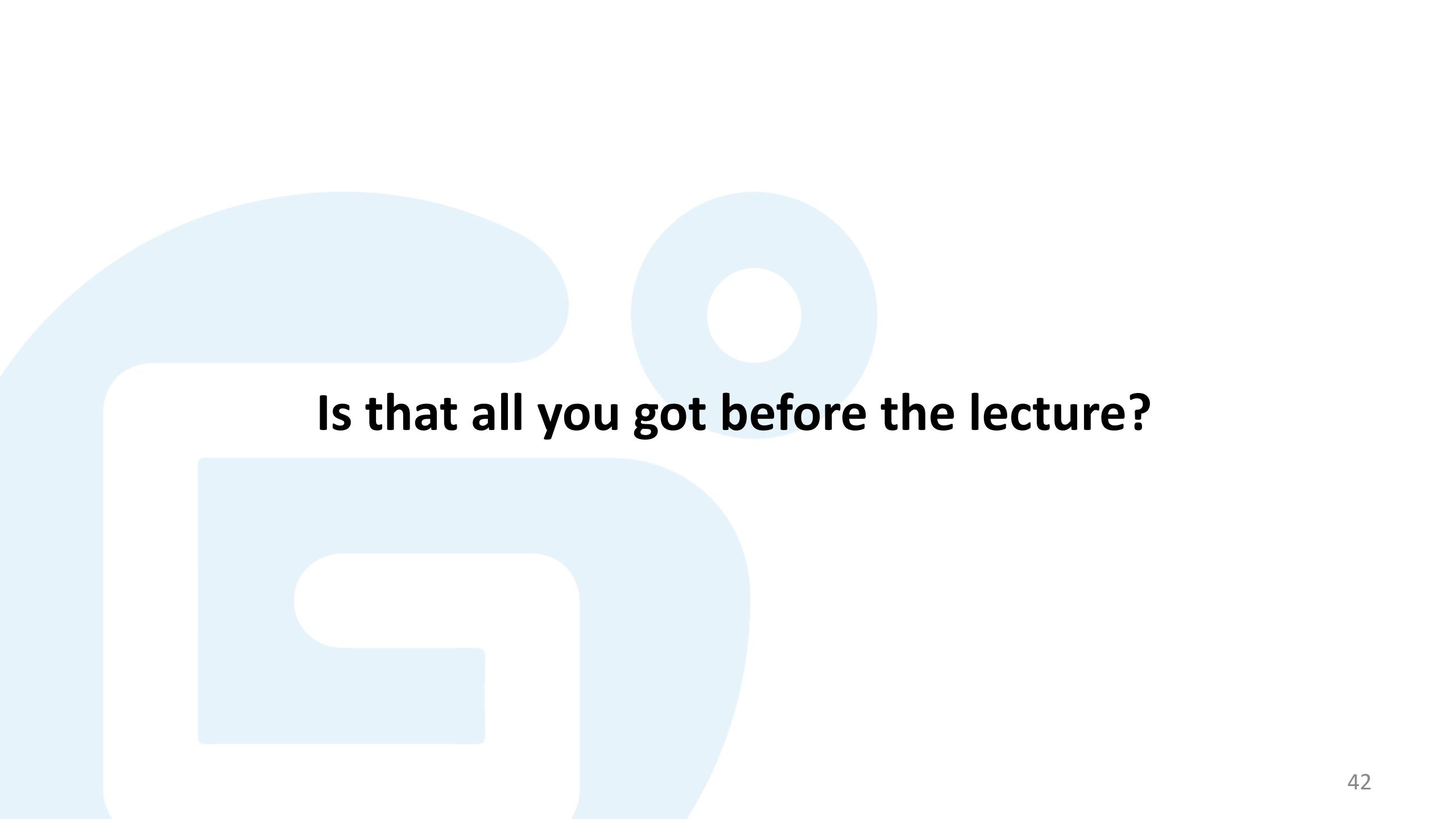
Supposing we attended the lecture...

Sir Michael Francis Atiyah

“The Riemann Hypothesis”

(Monday, September 24, 9:45 a.m.)

The Riemann Hypothesis is a famous unsolved problem dating from 1859. I will present a simple proof using a radically new approach. It is based on work of von Neumann (1936), Hirzebruch (1954) and Dirac (1928).



Is that all you got before the lecture?

Know Something about Sir Michael Atiyah

And of course, by further reading!

General ones

Pre-handouts

VIII.6 Advice to a Young Mathematician



The most important thing that a young mathematician needs to learn is of course mathematics. However, it can also be very valuable to learn from the experiences of other mathematicians. The five contributors to this article were asked to draw on their experiences of mathematical life and research, and to offer advice that they might have liked to receive when they were just setting out on their careers. (The title of this entry is a nod to Sir Peter Medawar's well-known book, *Advice to a Young Scientist*.) The resulting contributions were every bit as interesting as we had expected; what was more surprising was that there was remarkably little overlap between the contributions. So here they are, five gems

Motivation

A research mathematician, like a creative artist, has to be passionately interested in the subject and fully dedicated to it. Without strong internal motivation you cannot succeed, but if you enjoy mathematics the satisfaction you can get from solving hard problems is immense.

Define $K[a]$ to be the closed rectangle

$$(2.1) \quad |Re(s - 1/2)| \leq \frac{1}{4}, \quad |Im(s)| \leq a.$$

Then, on $K[a]$, T is a polynomial of degree $k\{a\} = k(K[a])$.

This terminology is formally equivalent to that of Hirzebruch [3], with his Todd polynomials. But Hirzebruch worked with formal power series and did not require convergence. That was adequate for his applications which were essentially algebraic and arithmetic, as the appearance of the Bernoulli numbers later showed.

However, to relate to von Neumann's analytical theory it is necessary to take weak limits as has just been done. This provides the crucial link between algebra/arithmetic and analysis which is at the heart of the ζ function.

This makes it reasonable to expect that RH might emerge naturally from the fusion of the different techniques in [2].

I return now to other properties of $T(s)$ explained in [2]:

Finding it's difficult?

Fine, that's why you should be attending the lecture!

For conceptions and terms, search before lecture begins

Pay attention to the differences between handouts and slides

THE RIEMANN HYPOTHESIS

24TH SEPTEMBER 2018 – HEIDELBERG LAUREATE FORUM

MICHAEL ATIYAH



Trinity College
Cambridge



THE UNIVERSITY
of EDINBURGH

Dedicated to Lily Atiyah



8 January 1928 – 13 March 2018

BERNHARD RIEMANN



1826 - 1866

- Riemann ζ function

$$\zeta(s) = 1 + \frac{1}{2^s} + \frac{1}{3^s} + \dots + \frac{1}{n^s} + \dots$$

analytic function of $s = x + iy$

- Riemann Hypothesis (1859)

in critical strip $0 < x < 1$

any solution of $\zeta(s) = 0$ is on “critical line” $x = 1/2$

[Collected works in 1 volume]

HISTORY OF THE PRIMES

Euclid, Gauss, Euler, Riemann, Hadamard, Selberg, Langlands...



Ramanujan
1887 - 1920



Shot from the film "The man who knew infinity",
starring Dev Patel as Ramanujan and Jeremy Irons as
Hardy

Rethinking the rules

The content and topic somehow outweigh the rules!

Capitalized letters

Pictures

Template?

THE QUATERNIONS

- Dublin bridge 1843, Hamilton discovered quaternions



Hamilton
1805 - 1865



GENERALIZATION OF EULER'S FORMULA

- Euler's formula $e^{\pi i} = -1$ connects π (Archimedes), e (Euler) and $i = \sqrt{-1}$
- Seek for a quaternionic version of this formula.
- von Neumann and Hirzebruch lead to generalization of Euler's formula to quaternions.
- Euler-Hamilton formula $e^{\mathcal{K}w} = -1$ with $w = \frac{\pi}{\mathcal{K}}i$



Von Neumann
1903 - 1957



Hirzebruch
1927 - 2012

Any recommendations from you?

The visual aids are of top concern!

Changes in pictures

Highlight

The breath

WHAT RICHARD FEYNMAN AND JACK GOOD SAID ABOUT α

• **Feynman:** *Where does alpha come from; is it related to π , or perhaps to e ? Nobody knows, it is one of the great damn mysteries of physics : a number that comes to us with no understanding by man. You might say the hand of God wrote the number and we don't know how He pushed his pencil.*

• **Good:** *We need a fundamental theory that provides a Platonic explanation of alpha.*



Feynman
1918 - 1988



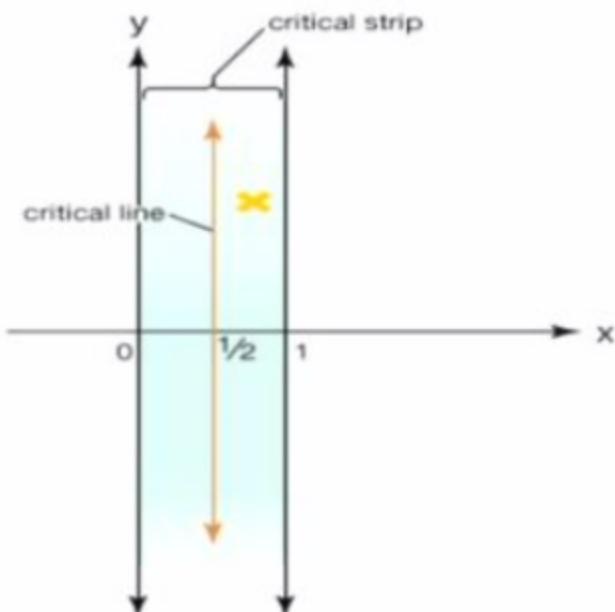
Good
1916 - 2009

HOW DOES $T(s)$ HELP TO PROVE RH?

- Proof by contradiction: **assume** b is a zero of ζ , in the critical strip but not on the critical line & derive contradiction. Define:

$$F(s) = T(1 + \zeta(s+b)) - 1 \quad F(b) = 0$$

- convexity of the critical strip implies $F(2s) = 2F(s)$
- analyticity of $F(s)$ at 0 then implies $F(s)$ identically zero
- this implies $\zeta(s)$ is identically zero, the required contradiction



Recap the whole

There are 14 slides, only one of them deals with details.

The only one figure is here to demonstrate the proof

The only one multi-color figure

EXPECTED TASKS FOR THE FUTURE

- Using the most powerful tools available.
- Examine all famous conjectures (proven and non-proven).
- Decide which are effectively computable (on the required time-scale).
- Decide which decisions we have time for.

What if, say, you are still confused?

There is always way to learn.

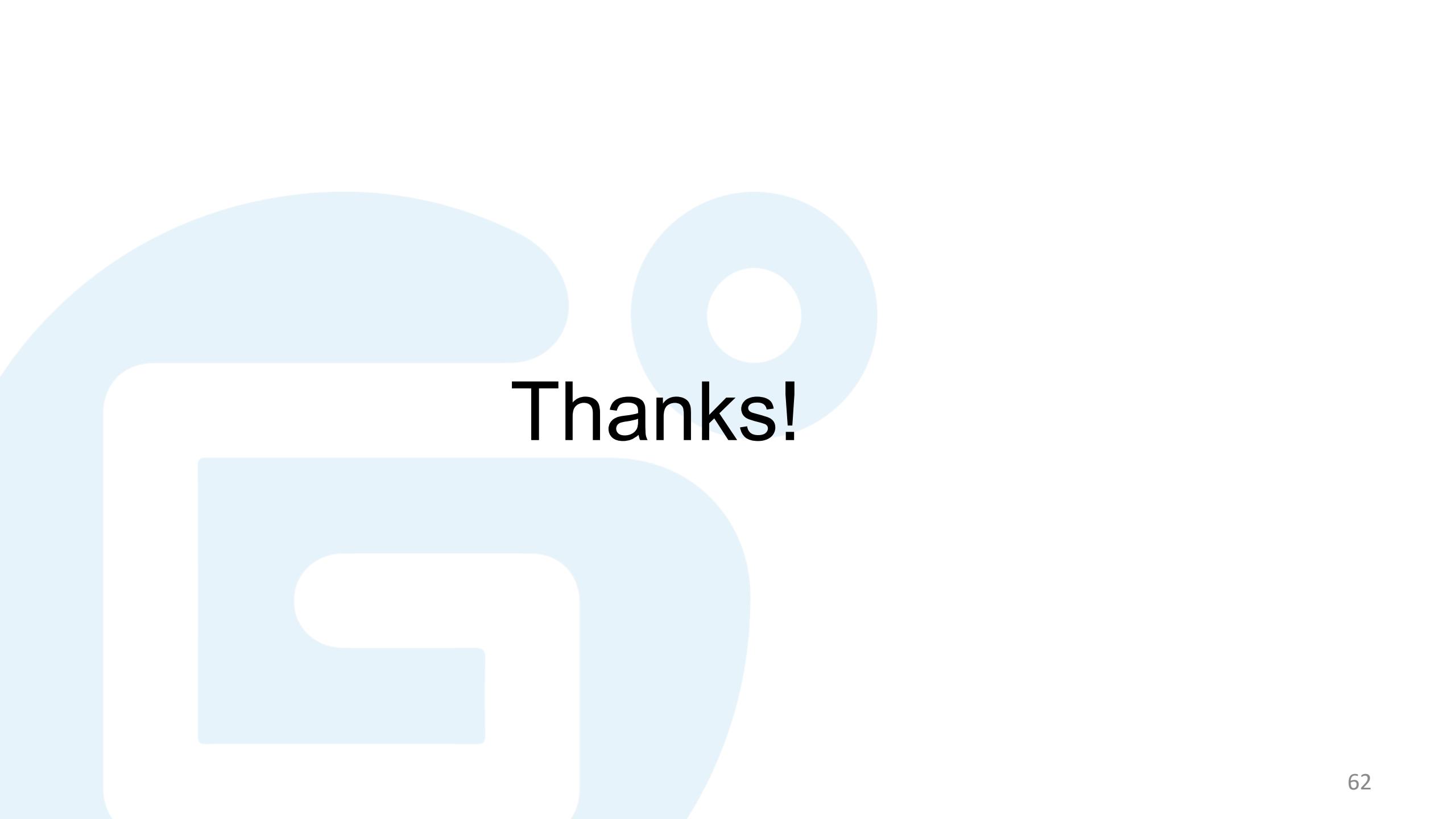
The visual design for speaker

The time alert

The notion of being formal







Thanks!