UI/UX Advanced Lecture 5 (final)

Designing Questionnaires and Analyzing Results

Alejandro Moreno
a.m.morenocelleri@saxion.nl

- Will be recorded and available in BB

Research methods

Desk research

User testing
- Give a task
- Scenario/Exploration

Interviews / Questionnaires / Surveys

(Non)Participatory observation

Research methods

Desk research

User testing
- Give a task
- Scenario/Exploration

Interviews / Questionnaires / Surveys (Today)

(Non)Participatory observation

Learning how to ask users

nicely!

Measure underlying concept

Does not measure other concepts

Means the same to everyone

Ideal question

3 goals

Measure underlying concept

Does not measure other concepts

Means the same to everyone

Valid

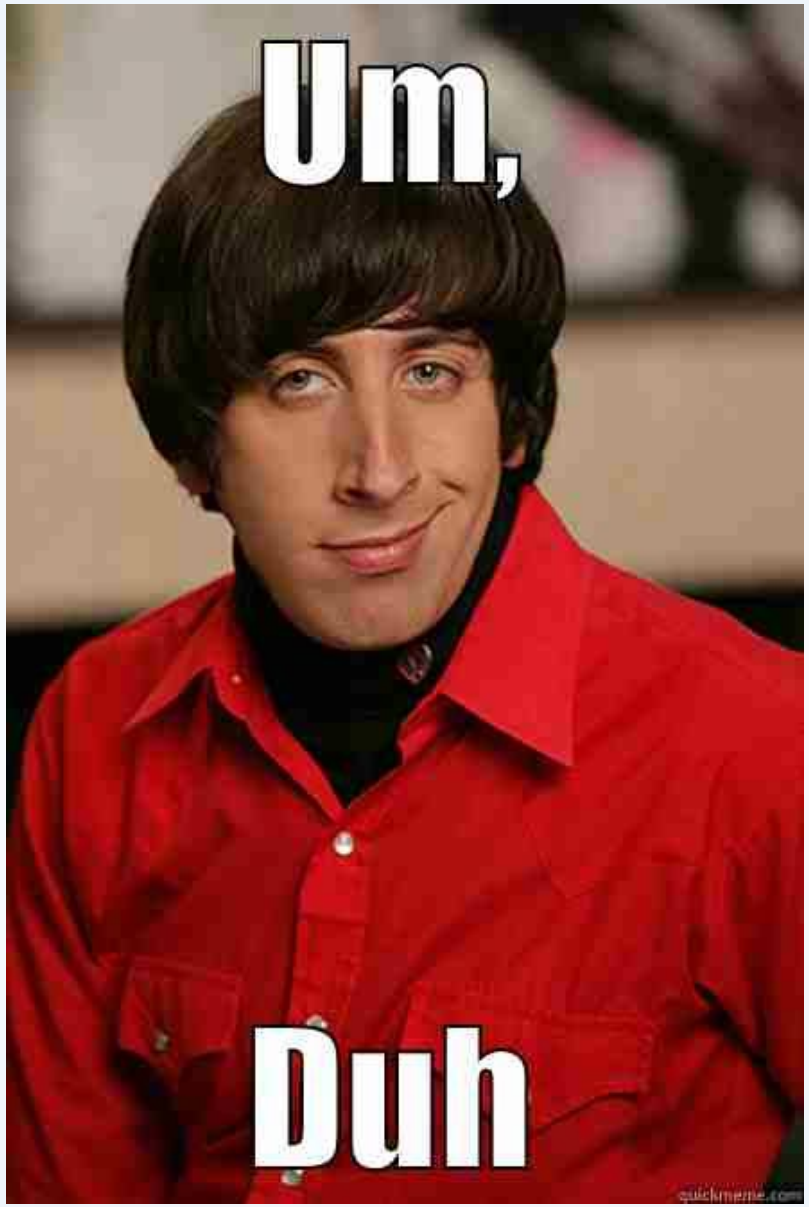
Ask what you intend to find

Succinct

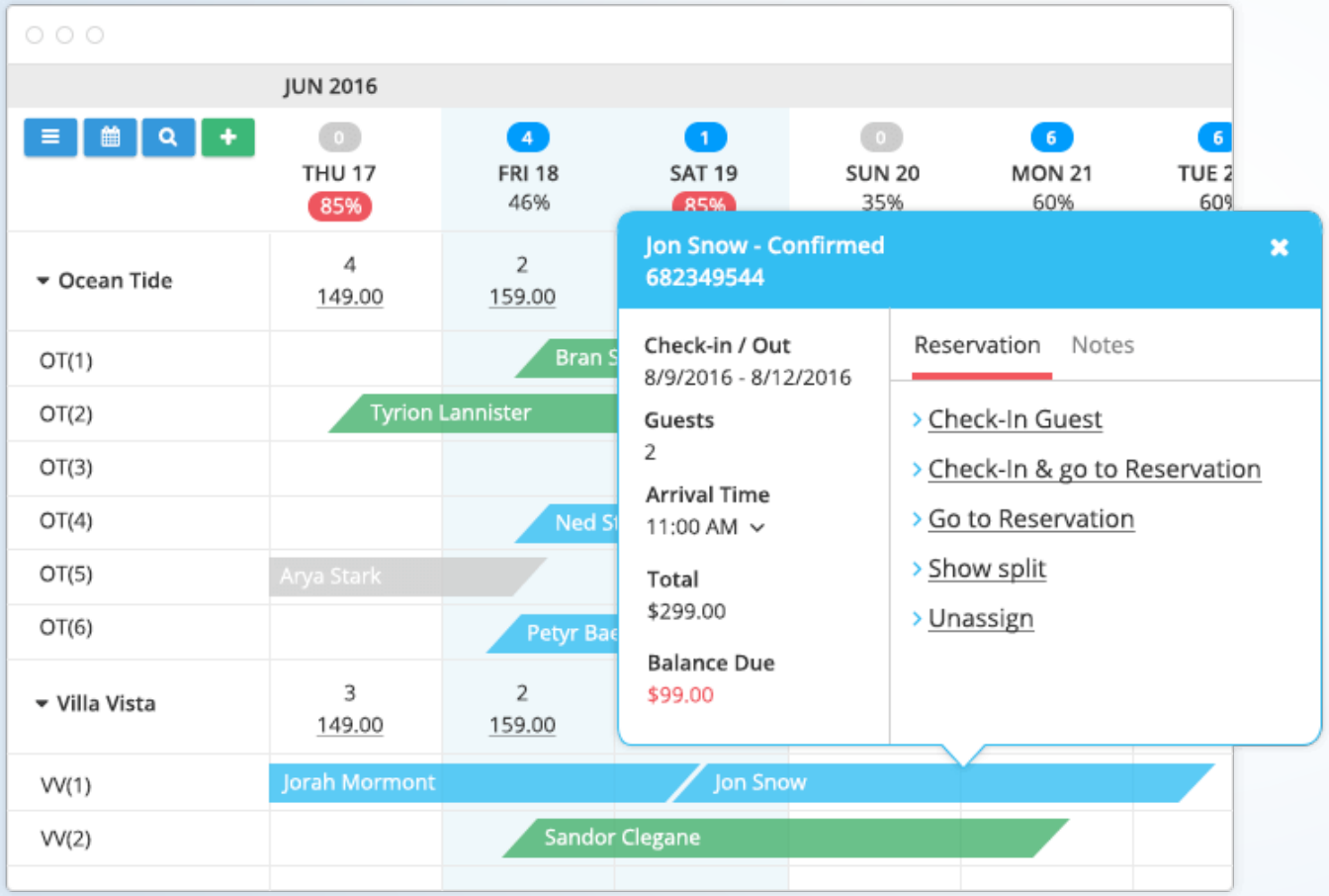
Aim to answer your question ONLY

Reliable

Same answers every time


Um,
Duh
quickmeme.com

Based on last year’ s Room booking assignment



Target group - Teachers

Premise - Its difficult for some teachers to book a room.

Task – Define the problem, its causes, and how to fix it.

Empathize phase

What do you need from the software?

What do you need from the software?

Are these colors correct?

Questionnaires

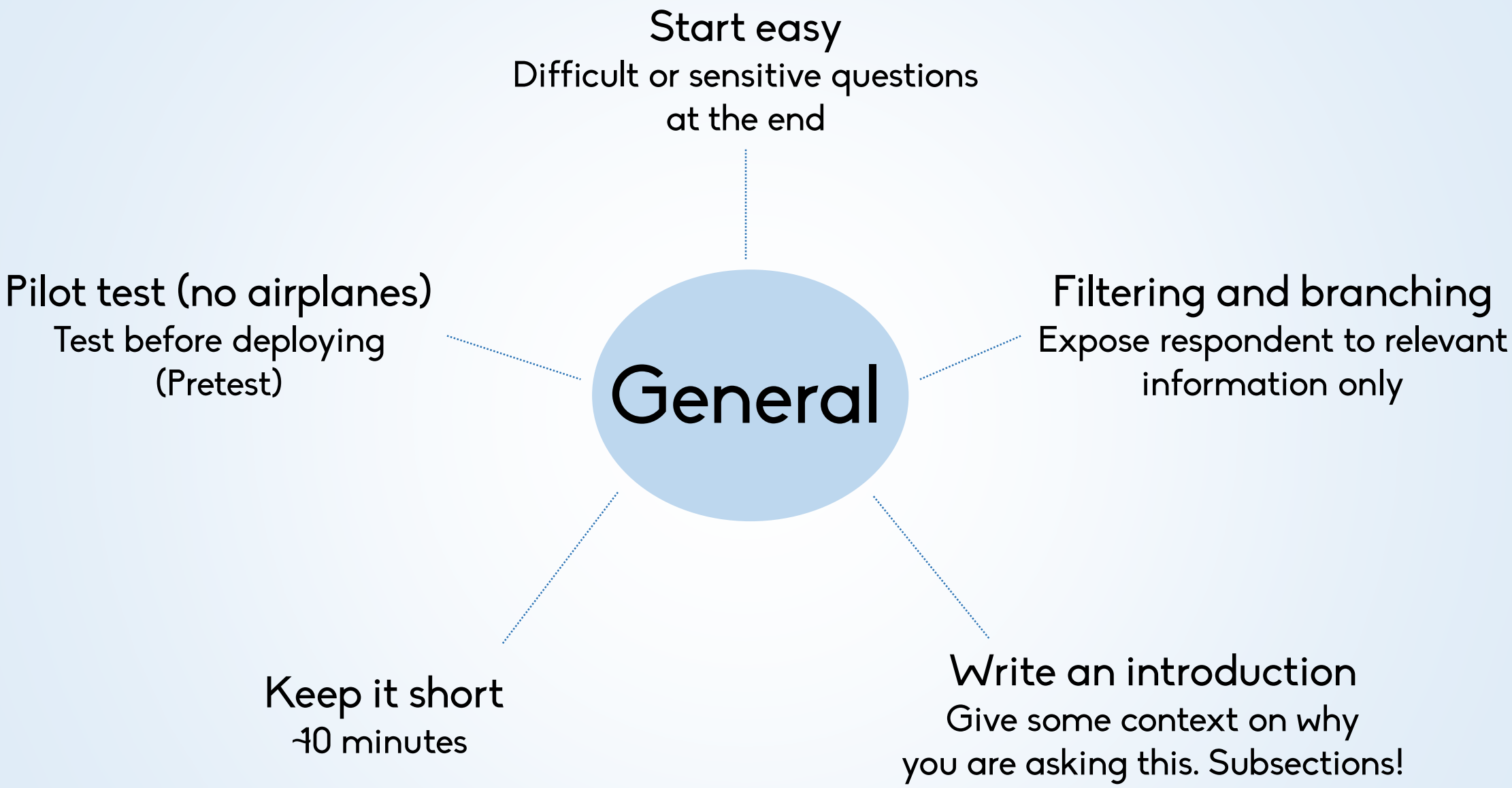
Considerations and tips

General

Type of questions and answers

Order of questions and answers

Avoid!


Start easy
Difficult or sensitive questions at the end
Pilot test (no airplanes)
Test before deploying (Pretest)
General
Filtering and branching
Expose respondent to relevant information only
Keep it short
~10 minutes
Write an introduction
Give some context on why you are asking this. Subsections!

Untitled form

Blackboard UI/UX analysis

* Required

I am a

- ◯ Teacher
- ◯ Student

What complaints do you have about the system? *

- [ ] not enough rooms to choose of
- [ ] have to go to the Front Desk to book a room
- [ ] Other
- [ ] Other: _____

If you checked "other", can you elaborate?

Your answer

Do you talk about this with your colleagues? If yes, what aspect is most often discussed? *

Your answer

Type

Open vs Close-ended

Discovery vs Known facts

Open ended tend to be skipped

Exhaustive lists

Give respondents all the options they require

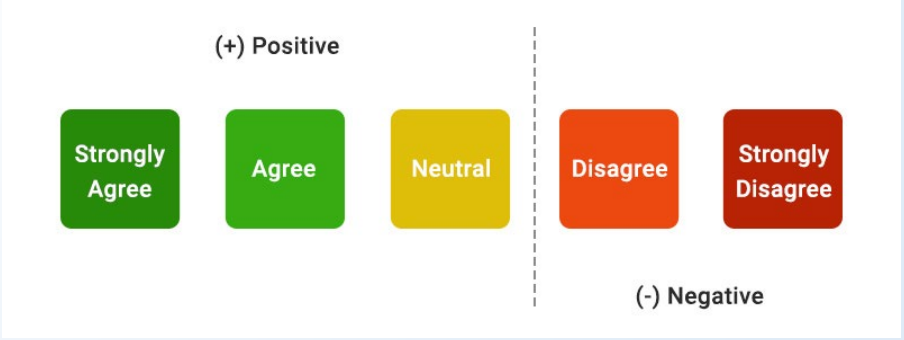
Scales

Nominal, Ordinal, Interval, Ratio

- **Nominal** — Label (Gender)
- **Ordinal** — Nominal + Order (Happiness)
- **Interval** — Ordinal + Proportion (Time)
- **Ratio** — Interval + Absolute zero (Price)

(Likert) Scale

Especially useful to assess attitudes and opinions (5 - 7)



Room Reservation

* Required

How often do you search for an empty room in the week. *

- ○ Never
- ○ Occasionally
- ○ Sometimes
- ○ Often
- ○ Always

How often do you use Blackboard weekly? *

- ○ Less than 1 hour
- ○ Between 1-3 hours
- ○ Between 3-5 hours
- ○ More than 5 hours

When you book a room it usually takes(including waiting time) *

- 1-5 min
- 6-9 min
- 10-20 min
- 20-60 min
- Multiple hours
- Multiple days

Priming

Primacy – Tendency to choose 1st

Recency – Most recently heard

Randomizing

Answers/Questions in different order

Rotating is also possible

Order

Direction of flow

Be consistent with the scale direction

Positive – High vs Negative - Low

Do you use the schedule for finding empty rooms? *

- ○ Never
- ○ Always
- ○ Often

Do you go to search for a room at the main desk? *

- ○ Never
- ○ Often
- ○ Always

How difficult is it for you to reserve a classroom?

	1	2	3	4	5	6	7	8	9	10	
Easy	○	○	○	○	○	○	○	○	○	○	Difficult

	1	2	3	4	5	6	7	8	9	10	
Very bad	○	○	○	○	○	○	○	○	○	○	Visually appealing

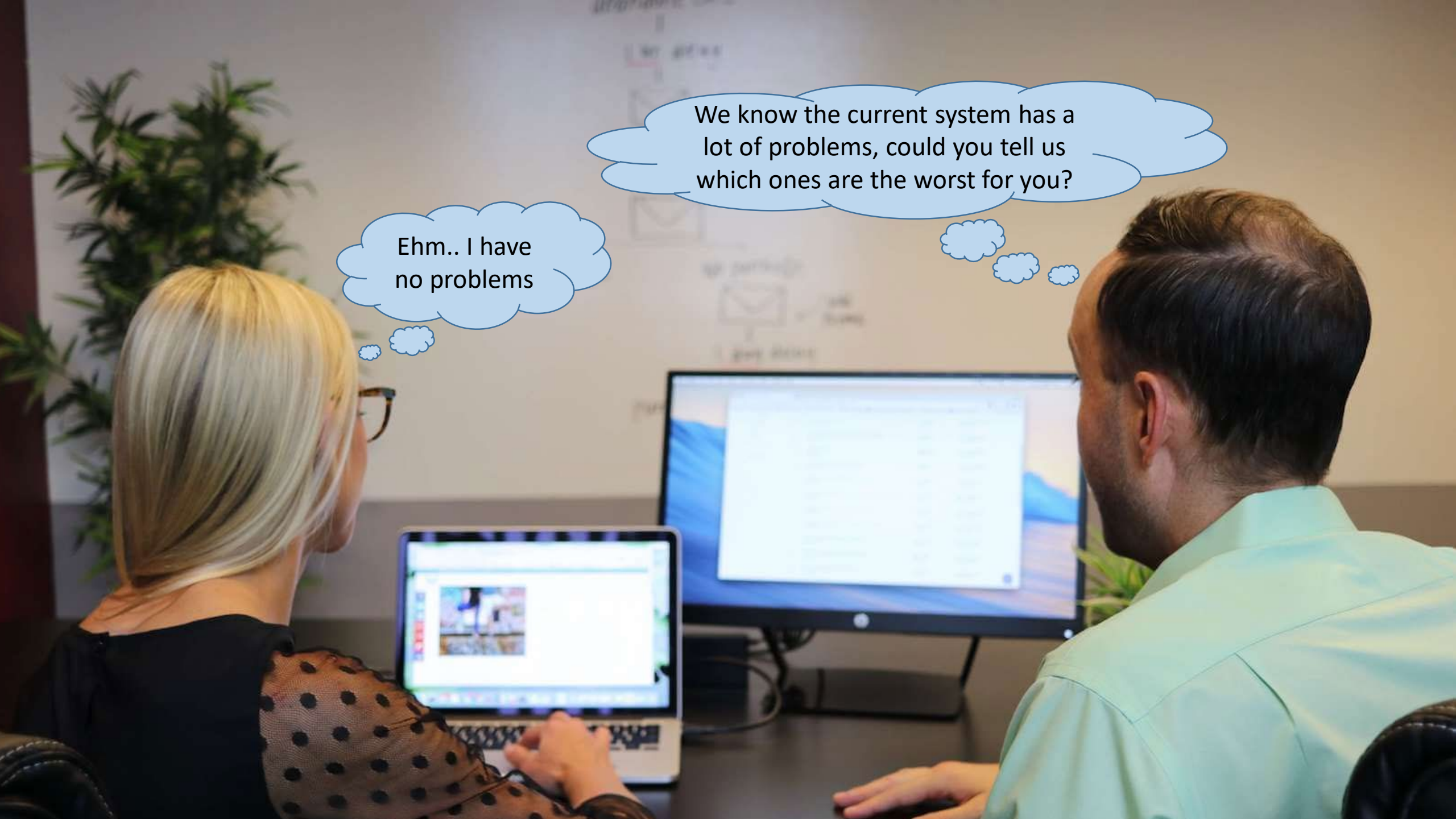
Avoid

Double / Compounded questions
Asking two things at once

Ambiguous / Vague / Complex / Negative
Be specific and clear, make it easy
to understand

Jargon / Technical terms
Not everyone is an expert
or is in the field

Leading / Emotional / Evocative
Be careful with biasing your respondent
or triggering them


We know the current system has a lot of problems, could you tell us which ones are the worst for you?
Ehm.. I have no problems

Do you feel like there is enough overall system feedback and feedback on room occupation? *

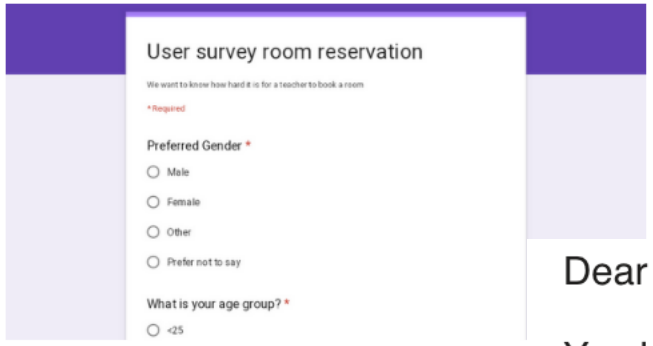
- ○ Yes
- ○ Indifferent
- ○ No

If we would give you a new tool, you want to use your...

- ○ Smartphone
- ○ Laptop
- ○ No preference
- ○ Other: _____

Hello Teachers,

In the advanced UI/UX course from the 2nd year of CMGT, we are taking look at the room reservation system and how we can improve up on it.
We already heard some bad things about it but would like to get some more feedback on the main flaws of the system.
If you are interested in giving your thoughts please fill out this
Survey: https://forms.gle/aB878csGAFxdrNvd9 .



User survey room reservation

We want to know how hard it is for a teacher to book a room

forms.gle

Dear teacher,

You have been specially chosen to give us feedback for us to improve your room reservation experience.

We invite you to fill in our questionnaire.

This shouldn't take more than 5 minutes of your time.

Link → https://forms.gle/j9aS3Ms3PouBn6sv5

Yours sincerely,

Your turn!

Room Master - Teacher Survey - Lucas

Questions about Saxion's Room Reservation Software.

We understand that a lot of teachers have already been asked to be interviewed so you only have to fill in the required questions.

* Required

What rating would you give the Room Reservation (selfservice point) Software? *

0	1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○	○

How did you make the reservation?

- ○ I went to the Front Office
- ○ I did it online
- ◉ Other

How would you rate making a reservation this way?

	1	2	3	4	5	6	7	8	9	10	
It's easy and intuitive	○	○	○	○	◉	○	○	○	○	○	It's hard to operate or unclear

Why are you searching for an empty room ? *

- (●) Coach meeting
- ( ) Giving Lectures
- ( ) Normal Classes
- ( ) Master Classes

Preferred Gender *

- ○ Male
- ○ Female
- ○ Other
- ○ Prefer not to say

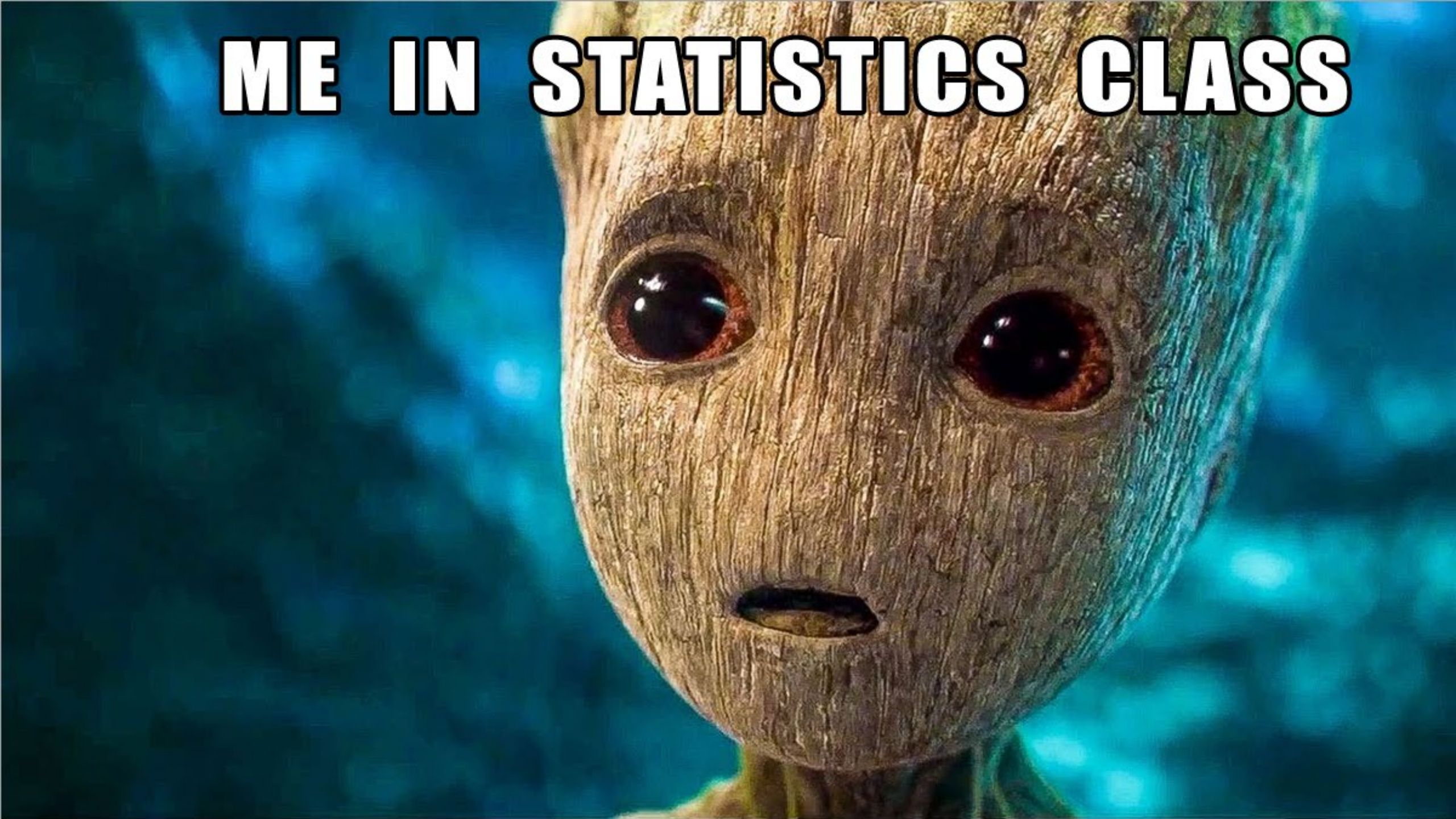
Bonus question

In each study year are you currently?

- 1st Year
- 2nd Year
- 3rd or 4th Year
- +4th Year

Analyzing Results

Statistics 101


ME IN STATISTICS CLASS

What are statistics used for?

Describing data in manageable form

You may have lots of measurements, or tested with a large number of people

Simplify the data in meaningful ways. (its like providing a TL;DR)

When doing this, you risk distorting or losing important detail

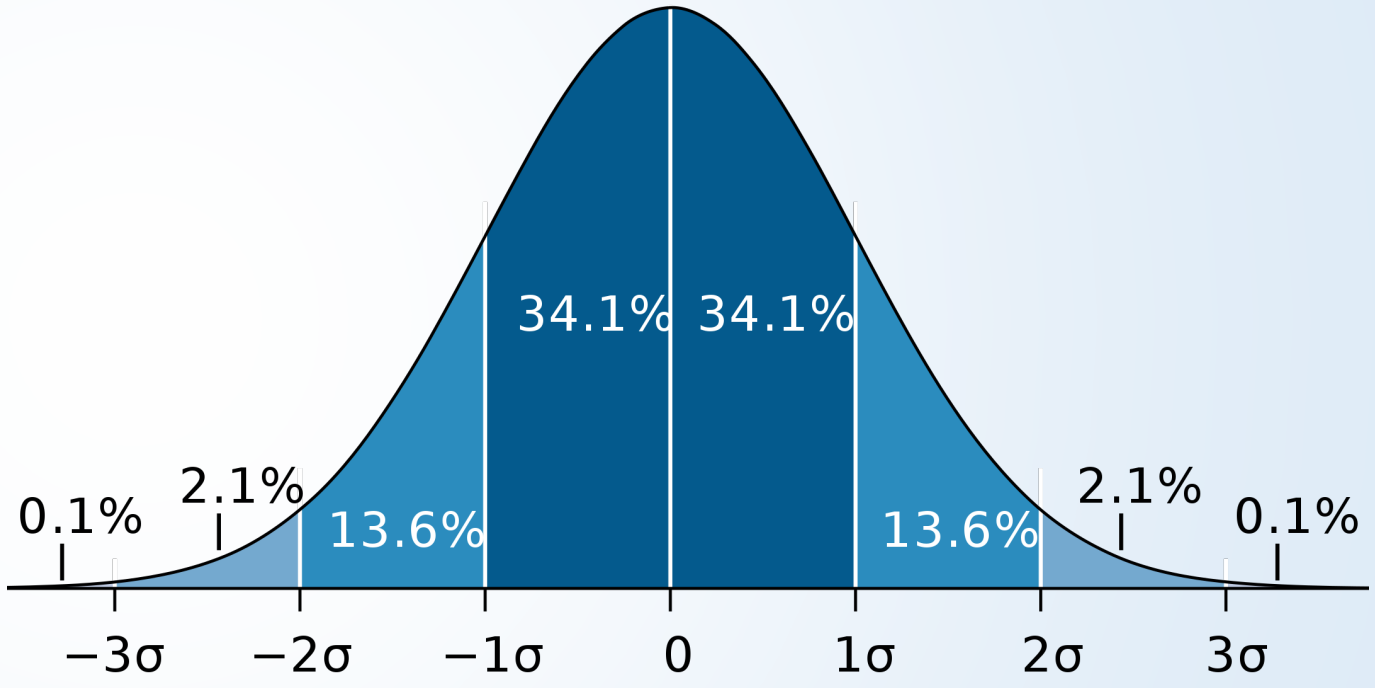
Statistics

3 characteristics to consider

Distribution

Central tendency

Dispersion



Statistics

3 characteristics to consider

We will be using a simple example related to the height of students

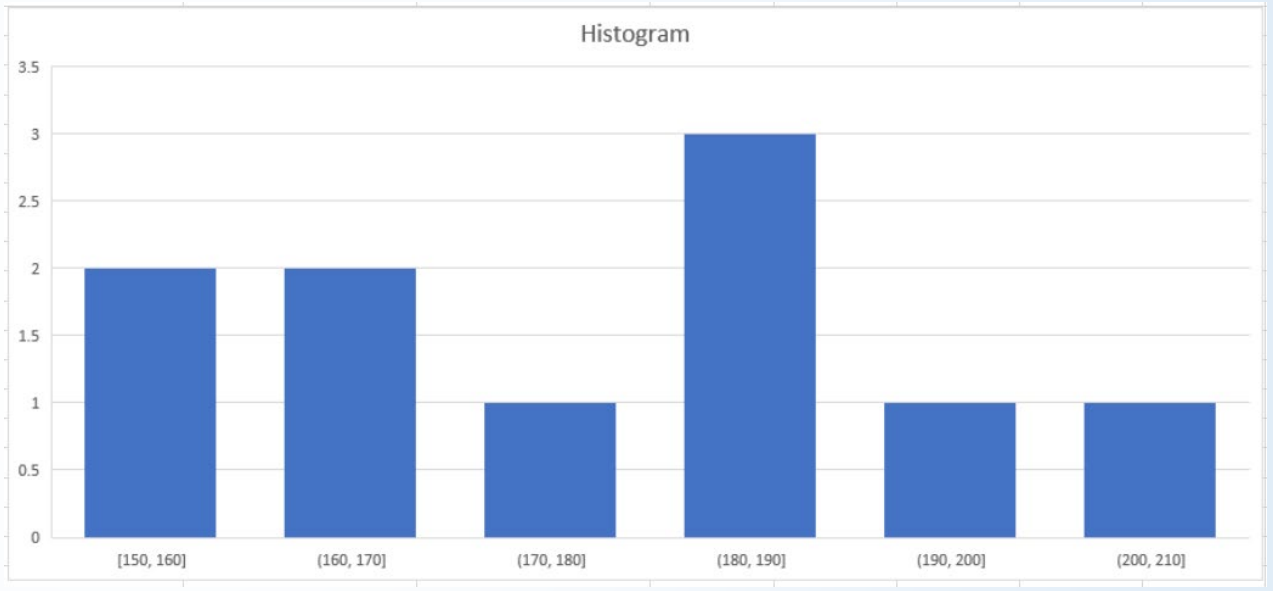
Height (cm)
150
170
160
165
185
190
200
210
178
189

Variable's

Distribution

Frequency of individual values or ranges

Data
150
170
160
165
185
190
200
210
178
189



Measures of

Central Tendency

Estimate the "center" of our dataset; what is most often occurring

Mean
Sum all values and divide by number of responses

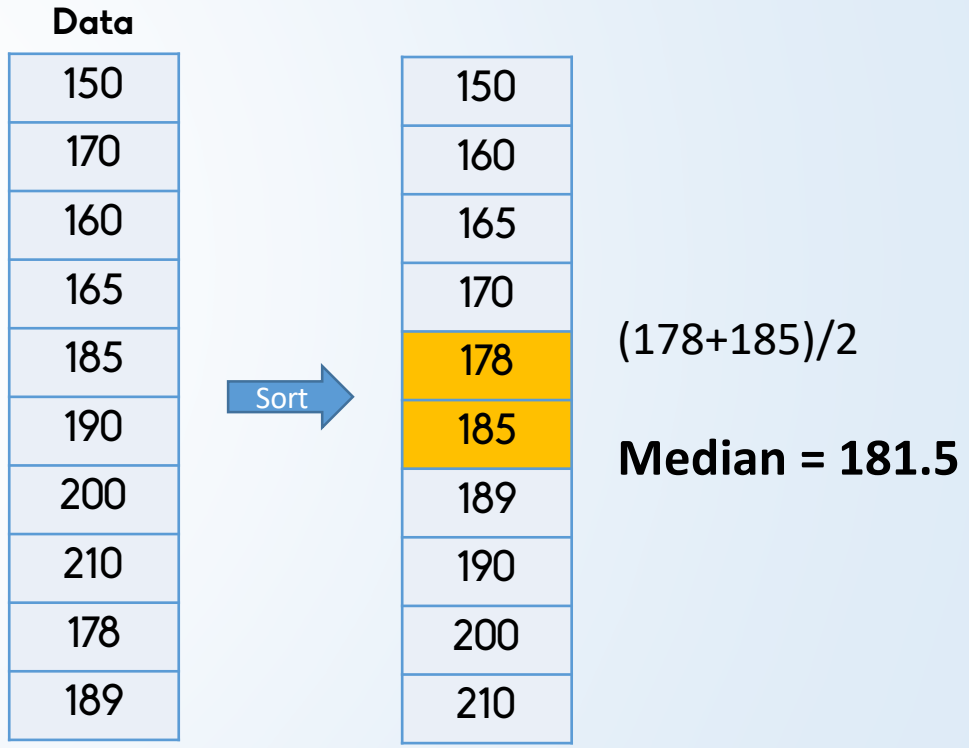
Sum = 150+170+160+…+189
Sum = 1797

N = 10

Mean = Sum / N
Mean = 1797/10

Mean = 179.7 cm

Median
Value that lies exactly in the middle of the sorted dataset

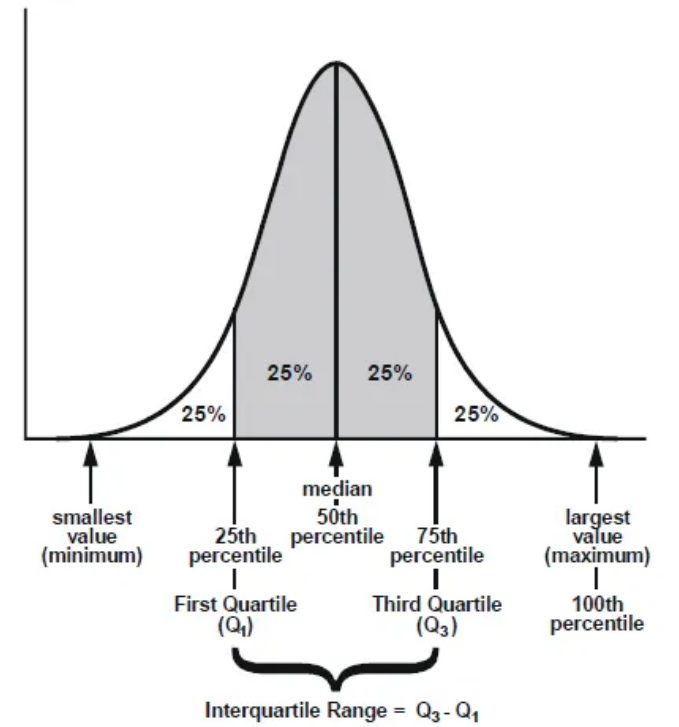


Measures of

Dispersion

Estimate how spread out our dataset is; how much variability it has

Quartiles
The point at which a certain % of data can be found



Interquartile range
Distance between Q3 and Q1

Data
150
160
165
170
178
185
189
190
200
210

Q1 = 162.5 | Excel = 163.75

Q3 = 195 | Excel = 192.5

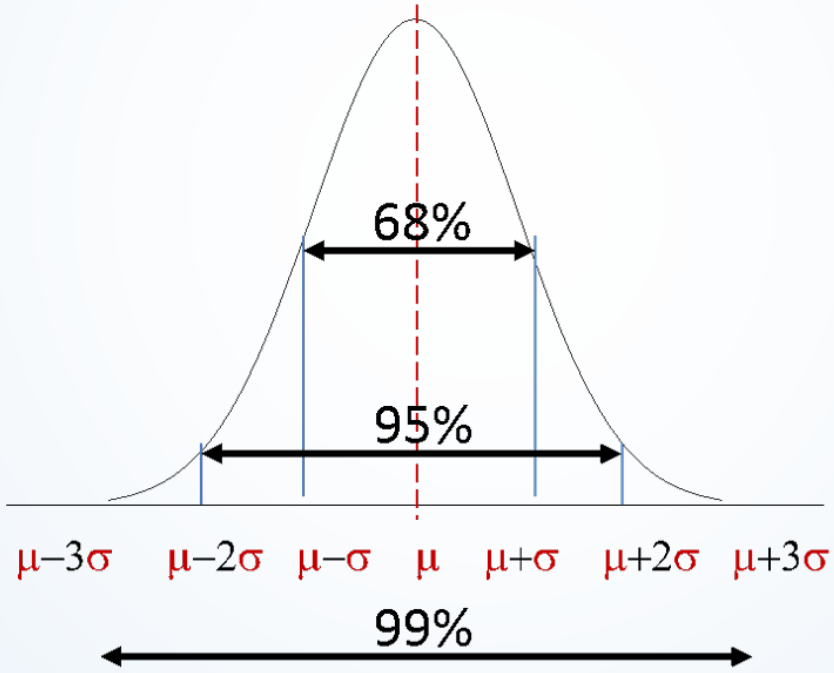
IQ = 32.5 | Excel = 28.75

Measures of

Dispersion

Estimate how spread out our dataset is; how much variability it has

Standard deviation
How much your data is spread out from the mean

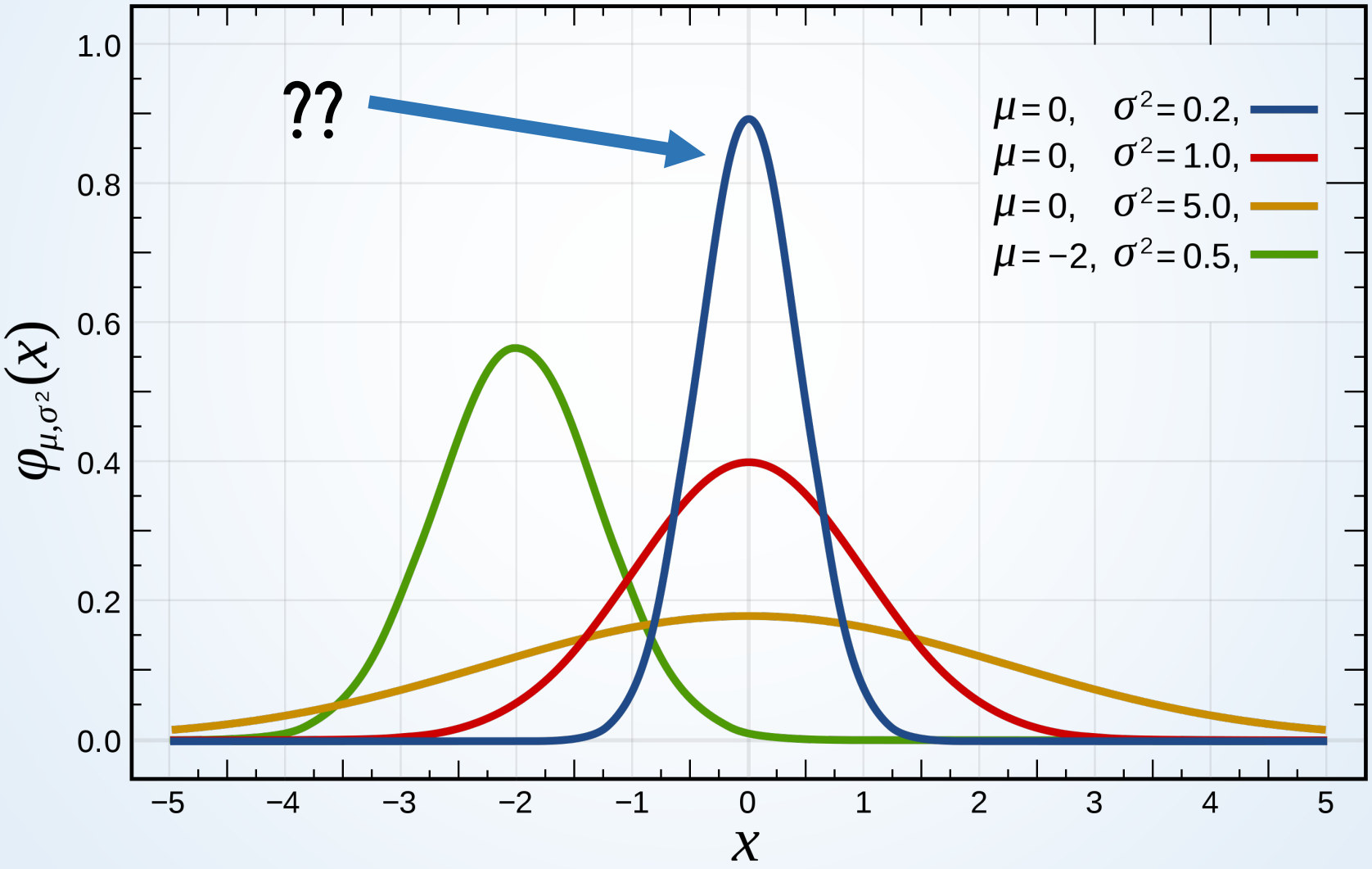


Data
150
170
160
165
185
190
200
210
178
189

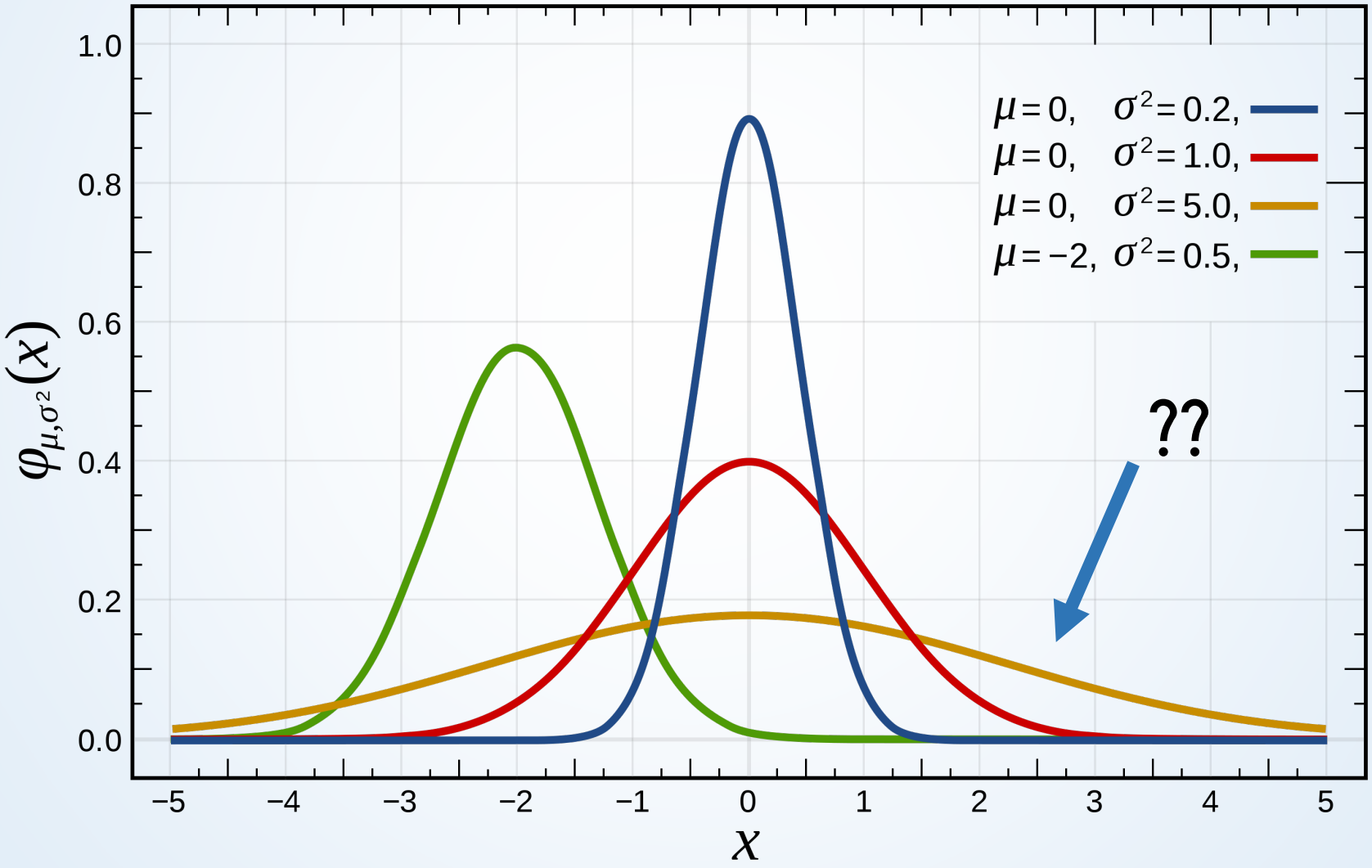
Mean = 179.7 cm
SD = 18.66 cm

68% | 161.04 – 198.36

What can we say about this curve?



What can we say about this curve?



So why is this important?

Avg. Rating: 80

Avg. Rating: 80

So why is this important?

Avg. Rating: 80
Critics: 1

Avg. Rating: 80
Critics: 2

So why is this important?

Avg. Rating: 80
Critics: 1

- A - 80

Avg. Rating: 80
Critics: 2

- A – 60
- B - 100

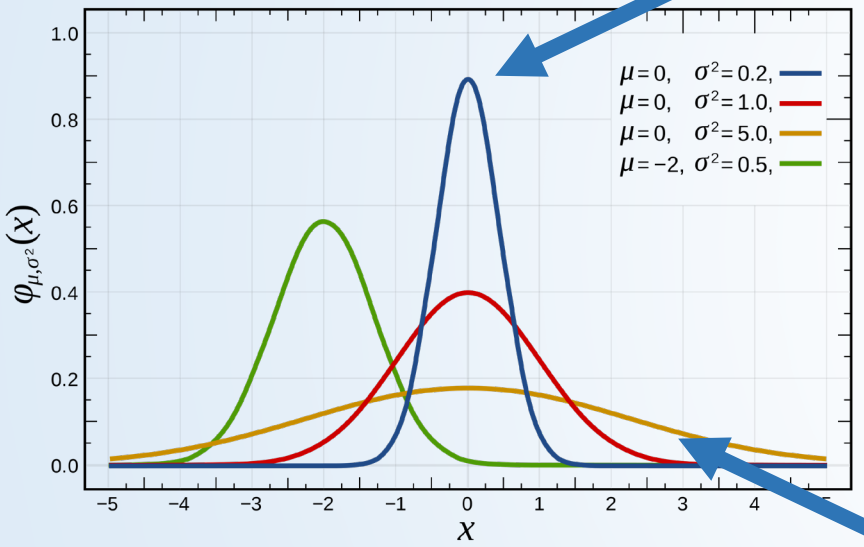
So why is this important?

Avg. Rating: 80
Critics: 4

- A – 70
- B – 80
- C – 90
- D - 80

Avg. Rating: 80
Critics: 5

- A – 60
- B – 100
- C – 40
- D – 100
- E - 100



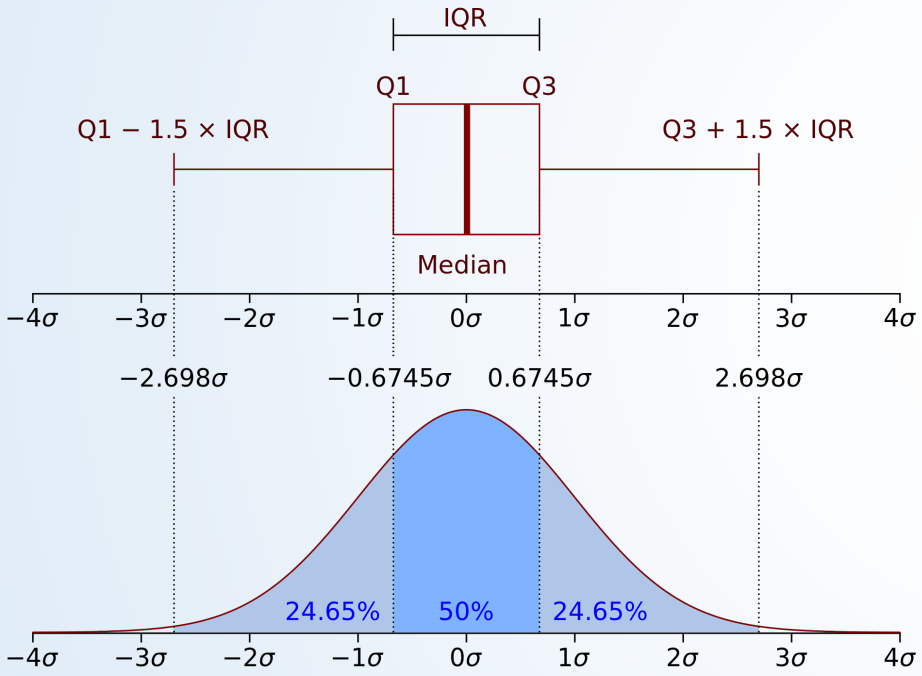
Avg. Rating: 80
Critics: 4

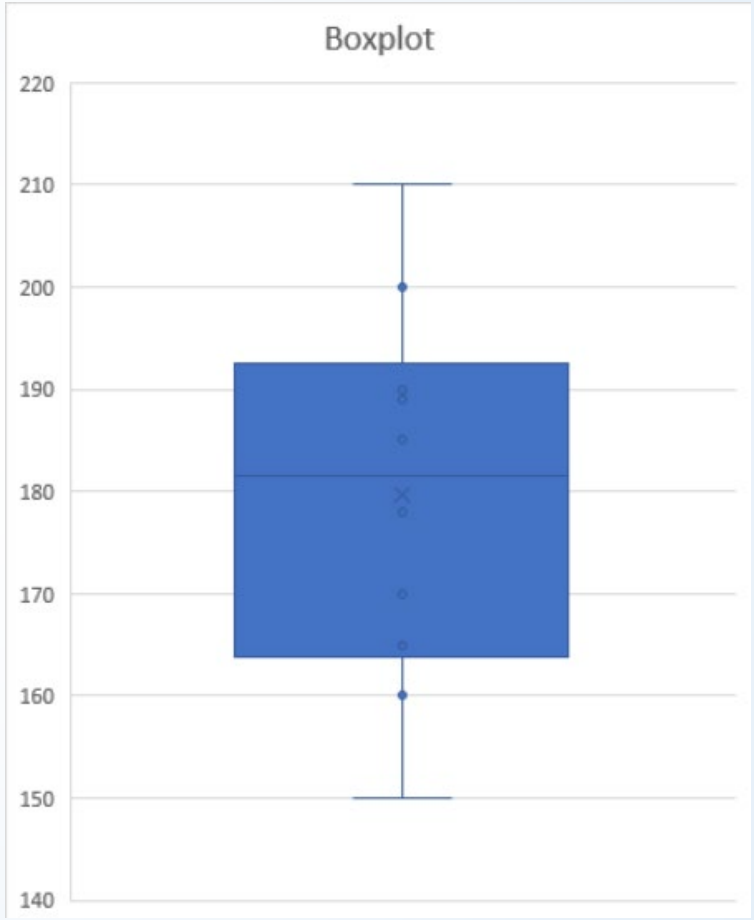
- A – 70
- B – 80
- C – 90
- D - 80

Avg. Rating: 80
Critics: 5

- A – 60
- B – 100
- C – 40
- D – 100
- E - 100

Box plot





Data
150
160
165
170
178
185
189
190
200
210

Lets try this out...

How to estimate

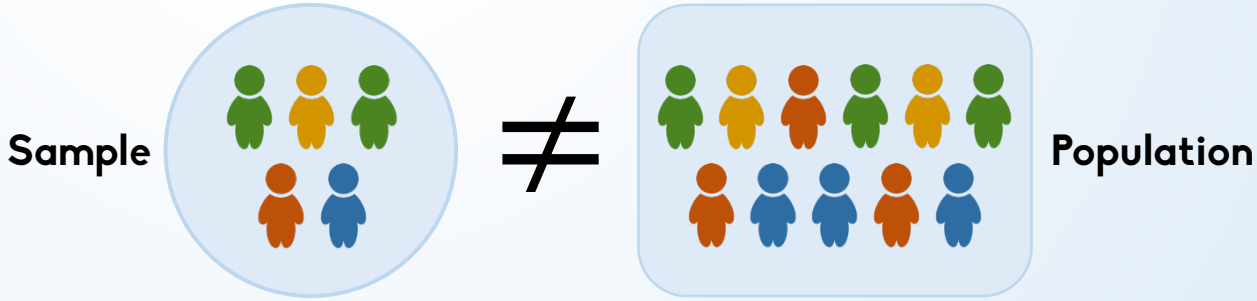
Sample size?

Descriptive Statistics

Describe basic features **of the data**, akin to a summary of the measurement

Inferential Statistics

Reach **conclusions** that **extend beyond the data** (e.g. generalizations, predictions)

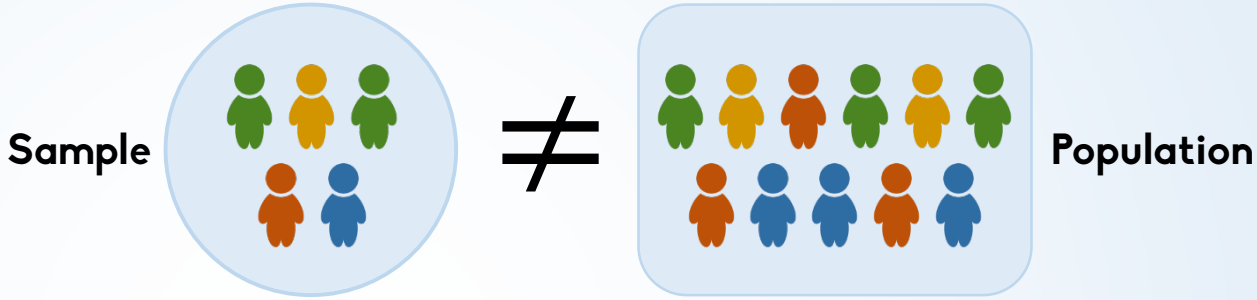


How to estimate

Sample size?

Inferential Statistics

Reach **conclusions** that **extend beyond the data** (e.g. generalizations, predictions)



Margin of error (confidence interval)
How uncertain our parameter's value is

Mean engagement = 3.8 (out of 5)

Mean engagement = 3.8 ± 0.5 (10%)

Confidence level
Probability of the margin of error containing the parameter

90%, 95%, 99%

https://www.surveymonkey.com/mp/sample-size-calculator/

Take home points!

- Questions need to be valid, succinct and reliable
- Avoid compounded, leading, ambiguous questions
- Statistics are used to summarize findings
- Reporting averages (means) is not enough, dispersion is also necessary to grasp the nature of the data
- Boxplots are a good way of presenting results

Thanks!

Alejandro Moreno
a.m.morenocelleri@saxion.nl