DATA
&
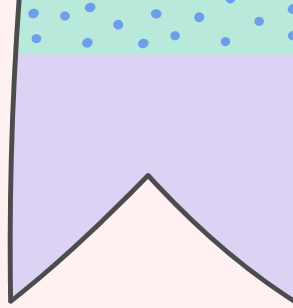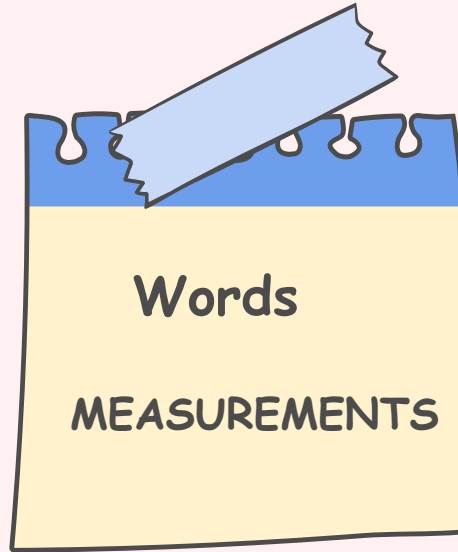# SPSS

DR.FATIMA ZULFIQAR
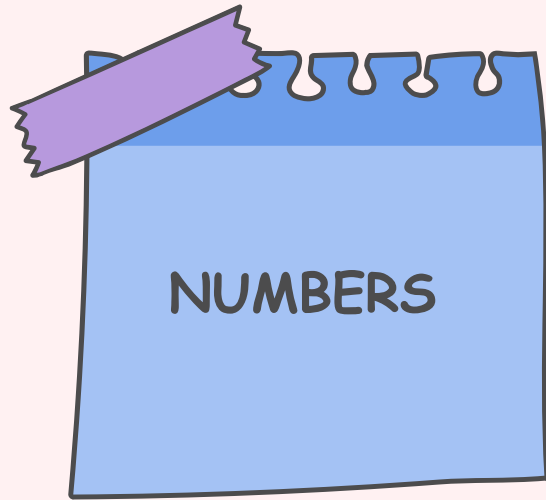KGMC

GO!

OBJECTIVES OF SESSION

- Define and classify DATA
- Explain how to present DATA
- Explain data collection procedures
- Explain SPSS
- Practice SPSS

NUMBERS

Words

MEASUREMENTS

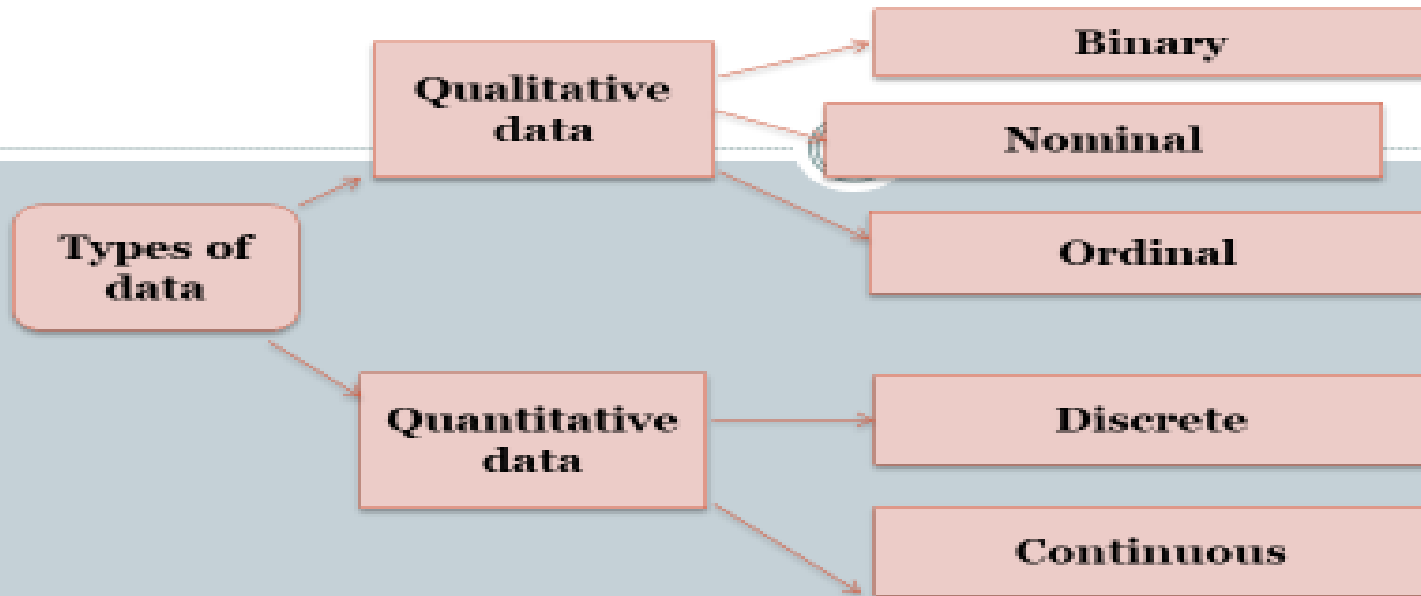Observations or Even just descriptions of things

Purpose of DATA

- To make decision about important issues

- To pass the information

- For research study.

- To obtain information

To keep record

CLASSIFICATION OF DATA

```
                          ┌──────────────┐
                    ┌────►│    Binary    │
                    │     └──────────────┘
      ┌──────────────┐    ┌──────────────┐
      │ Qualitative  │───►│   Nominal    │
      │    data      │    └──────────────┘
      └──────────────┘    ┌──────────────┐
            ▲        └───►│   Ordinal    │
            │             └──────────────┘
┌──────────────┐
│  Types of    │
│    data      │         ┌──────────────┐
└──────────────┘    ┌───►│   Discrete   │
            │        │    └──────────────┘
            │   ┌──────────────┐
            └──►│ Quantitative │
                │    data      │    ┌──────────────┐
                └──────────────┘───►│  Continuous  │
                                    └──────────────┘
```
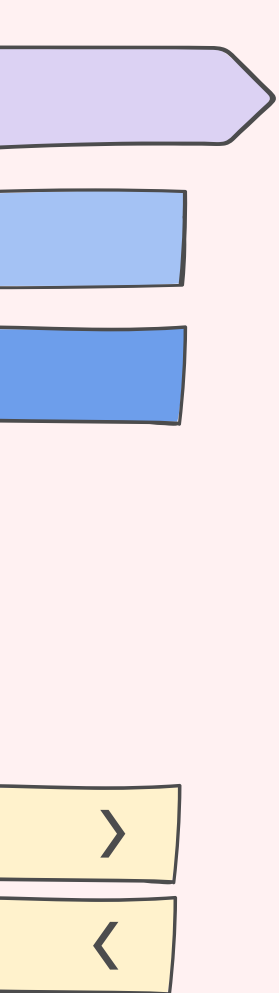
- **Binary data:**

Two mutually exclusive categories.

Binary data	categories
Gender	Male , female
Diabetes	Yes , no

- **Nominal data**: More than two mutually exclusive categories, these categories cannot be ordered .

Categories

- **Marital status:** single, married   ,widowed, separated, divorced .
- **Employment status:** unemployed, self-employed, government employee.

- **Ordinal data**: More than two mutually exclusive categories but they can be ordered one above another, from lowest to highest.

Ordinal data	categories
Level of knowledge	Good, average, poor
Depression	Mild, moderate, severe

- **Quantitative data** can be
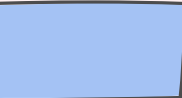
➢ **Discrete**
➢ **Continuous**

- **Discrete data** can only take certain values (like whole numbers)

Number of children: 2,4,5

Length of stay : 5 days, 6 days

- **Continuous data** can take any value (within a range). Continuous data is one which can take either a decimal or fraction form

Weight : 59.5kg, 76.8kg

Hb of the participant : 13.1 mg/dl,8.9mg/dl

*Put simply: **Discrete data** is counted, **Continuous data** is measured*
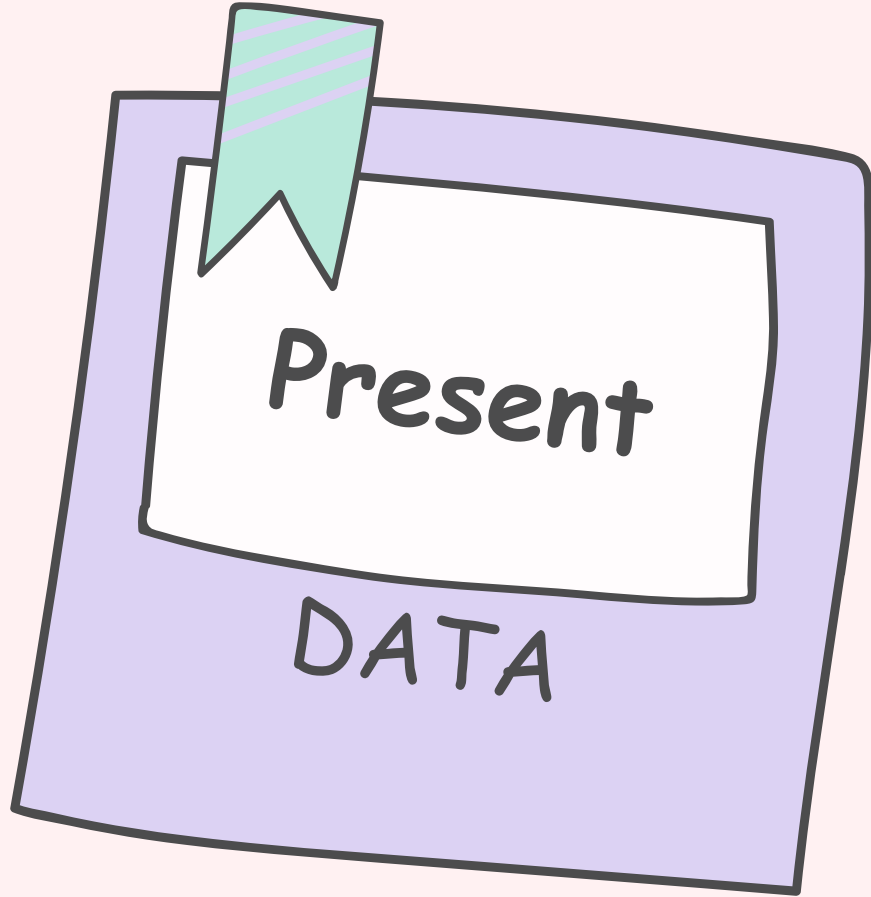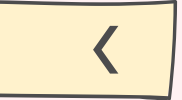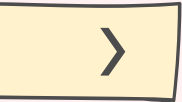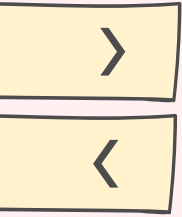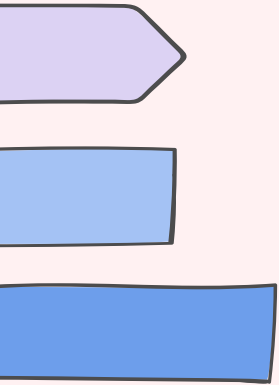
DATA collection tools

01

Observation. (checklist)

02

Questionnaire method.

03

Interview method

04

Focus group discussion

SPSS

- SPSS (Statistical Package for the Social Sciences) is a versatile and responsive program designed to undertake a range of statistical procedures.

- It's important to note that SPSS is not the only statistical software – there are many others that you may come across.

- Stata and SAS (and there are many others).

- The focus for this session, however, is on SPSS.

DATA

SORTED

ARRANGED

PRESENTED VISUALLY

EXPLAINED WITH A STORY

File   Edit   View   Data   Transform   Analyze   Direct Marketing   Graphs   Utilities   Add-ons   Window   Help

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1											
2											
3											
4											
5											
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16											
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18											
19											
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21											

Data View   Variable View

IBM SPSS Statistics Processor is re

File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1										
2										
3										

	Name	Type	Width	Decimals	Label
1	Age	Numeric	8	2	
2					
3					

File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Age	Numeric	8	2	age of patient	None	None	8	Right	Scale	Input
2	gender	Numeric	8	0	gender of patient	None	None	8	Right	Unknown	Input
3											
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23											
24											

Value Labels

Value Labels

Value:

Label:

Spelling...

Add

Change

Remove

OK   Cancel   Help

Data View   Variable View

IBM SPSS Statistics Processor is rea

File   Edit   View   Data   Transform   Analyze   Direct Marketing   Graphs   Utilities   Add-ons   Window   Help

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Age	Numeric	8	2	age of patient	None	None	8	Right	Scale	Input
2	gender	Numeric	8	0	gender of patient	None	None	8	Right	Unknown	Input
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Value Labels

Value Labels

Value:

Label:

Spelling...

1 = "male"
2 = "female"

Add
Change
Remove

OK   Cancel   Help

Data View   Variable View

IBM SPSS Statistics Processor is re

File　Edit　View　Data　Transform　Analyze　Direct Marketing　Graphs　Utilities　Add-ons　Window　Help

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Age	Numeric	8	2	age of patient	None	None	8	▆ Right	📏 Scale	↘ Input
2	gender	Numeric	8	0	gender of patient	{1, male}...	None	8	▆ Right	📏 Scale	↘ Input
3										📏 Scale	
4										📊 Ordinal	
5										🎲 Nominal	
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Data View　Variable View

	Age	gender	
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2			
3			
4			
5			
6			
7			
8			

File   Edit   View   Data   Transform   Analyze   Direct Marketing   Graphs   Utilities   Add-ons   Window   Help

Reports
Descriptive Statistics
Tables
Compare Means
General Linear Model
Generalized Linear Models
Mixed Models
Correlate
Regression
Loglinear
Neural Networks
Classify
Dimension Reduction
Scale
Nonparametric Tests
Forecasting
Survival
Multiple Response
Missing Value Analysis...
Multiple Imputation
Complex Samples
Quality Control
ROC Curve...

	Age	gender		var	var	var	var	var	var	var	var	var	var
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23													

Data View   Variable View

Analyze   IBM SPSS Statistics Processor is re

File | Edit | View | Data | Transform | Analyze | Direct Marketing | Graphs | Utilities | Add-ons | Window | Help

Reports
Descriptive Statistics ▶
Tables ▶
Compare Means ▶
General Linear Model ▶
Generalized Linear Models ▶
Mixed Models ▶
Correlate ▶
Regression ▶
Loglinear ▶
Neural Networks ▶
Classify ▶
Dimension Reduction ▶
Scale ▶
Nonparametric Tests ▶
Forecasting ▶
Survival ▶
Multiple Response ▶
Missing Value Analysis...
Multiple Imputation ▶
Complex Samples ▶
Quality Control ▶
ROC Curve...

123 Frequencies...
Descriptives...
Explore...
Crosstabs...
1/2 Ratio...
P-P Plots...
Q-Q Plots...

	Age	gender				var	var	var	var	var	var	var
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Data View | Variable View

Frequencies

IBM SPSS Statistics Processor is re

File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help

	Age	gender	var	var	var	var	var	var	var	var	var	var	var	var	var
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21															
22															
23															

Frequencies

Frequencies: Charts

Chart Type
- ● None
- ○ Bar charts
- ○ Pie charts
- ○ Histograms:
  - ☐ Show normal curve on histogram

Chart Values
- ◉ Frequencies ○ Percentages

age of pa
gender of

☑ Display fre

Statistics...
Charts...
Format...
Bootstrap...

Continue   Cancel   Help

Data View   Variable View

IBM SPSS Statistics Processor is re

File   Edit   View   Data   Transform   Analyze   Direct Marketing   Graphs   Utilities   Add-ons   Window   Help

4 : gender | 1

	Age	gender	var	var	var	var	var	var	var	var	var	var	var	var
1	18	1												
2	21	1												
3	20	2												
4	19	1												
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23														

Data View   Variable View

File　Edit　View　Data　Transform　Insert　Format　Analyze　Direct Marketing　Graphs　Utilities　Add-ons　Window　Help

- Output
  - Log
  - Frequencies
    - Title
    - Notes
    - Active Dataset
    - Statistics
    - age of patient
    - Histogram

```
FREQUENCIES VARIABLES=Age
  /HISTOGRAM
  /ORDER=ANALYSIS.
```
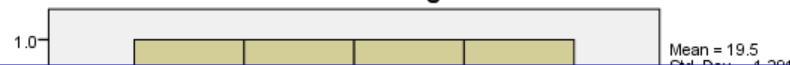
➡ **Frequencies**

[DataSet0]

Statistics

age of patient

N	Valid	4
	Missing	0

age of patient

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	1	25.0	25.0	25.0
	19	1	25.0	25.0	50.0
	20	1	25.0	25.0	75.0
	21	1	25.0	25.0	100.0
	Total	4	100.0	100.0	

Histogram

1.0

Mean = 19.5

IBM SPSS Statistics Pr

SPSS Output

- Separate file in Output Viewer
- Inline Editing of Tables
- Chart Editor for Graphs

Don't forget to save

- Data file
- Output file

THANK YOU