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- POLYTECHNIC OF EGYPT -

HUM231 - Presentation Skills and Technical Writing

Lecture 4 : Visual Elements in Technical Report

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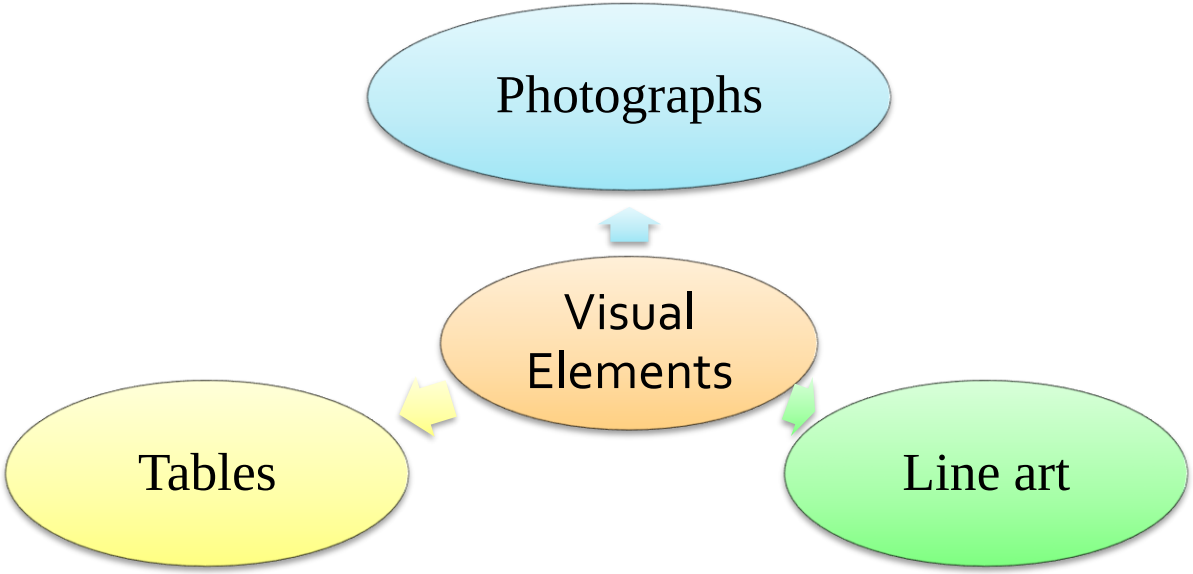
Visual Elements

- A **visual element** is a graphic, a table or an image that expresses information or a message.



Purpose of Visual Elements

- Visual elements should be considered in every technical document to:

1. Clarify content.
2. Help interpret information.
3. Make the document more interesting and easier to read.
4. Used to increase visual appeal.

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Types of Visual Elements

Photographs

- **Photographs** are visual elements that capture real-world images, providing a realistic and detailed view of the subject.

- The resolution of an image is very important. Use high resolution figures.

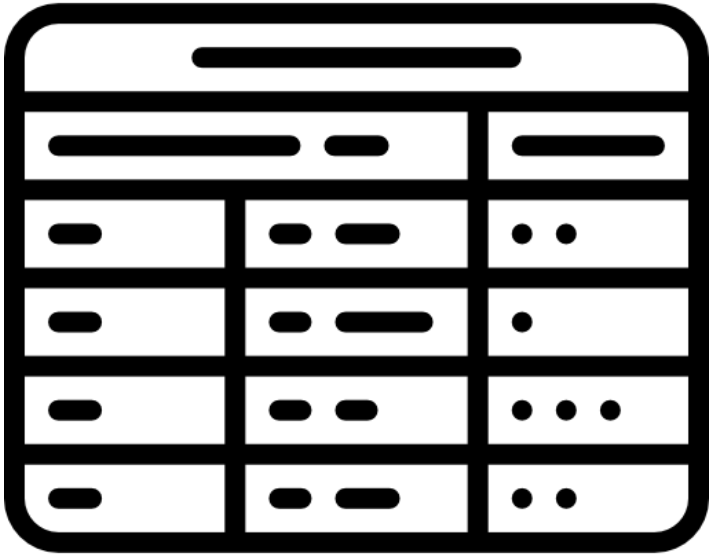
Photographs

- People in photos give a sense of action and scale.
- They help animate photos of equipment and machinery.

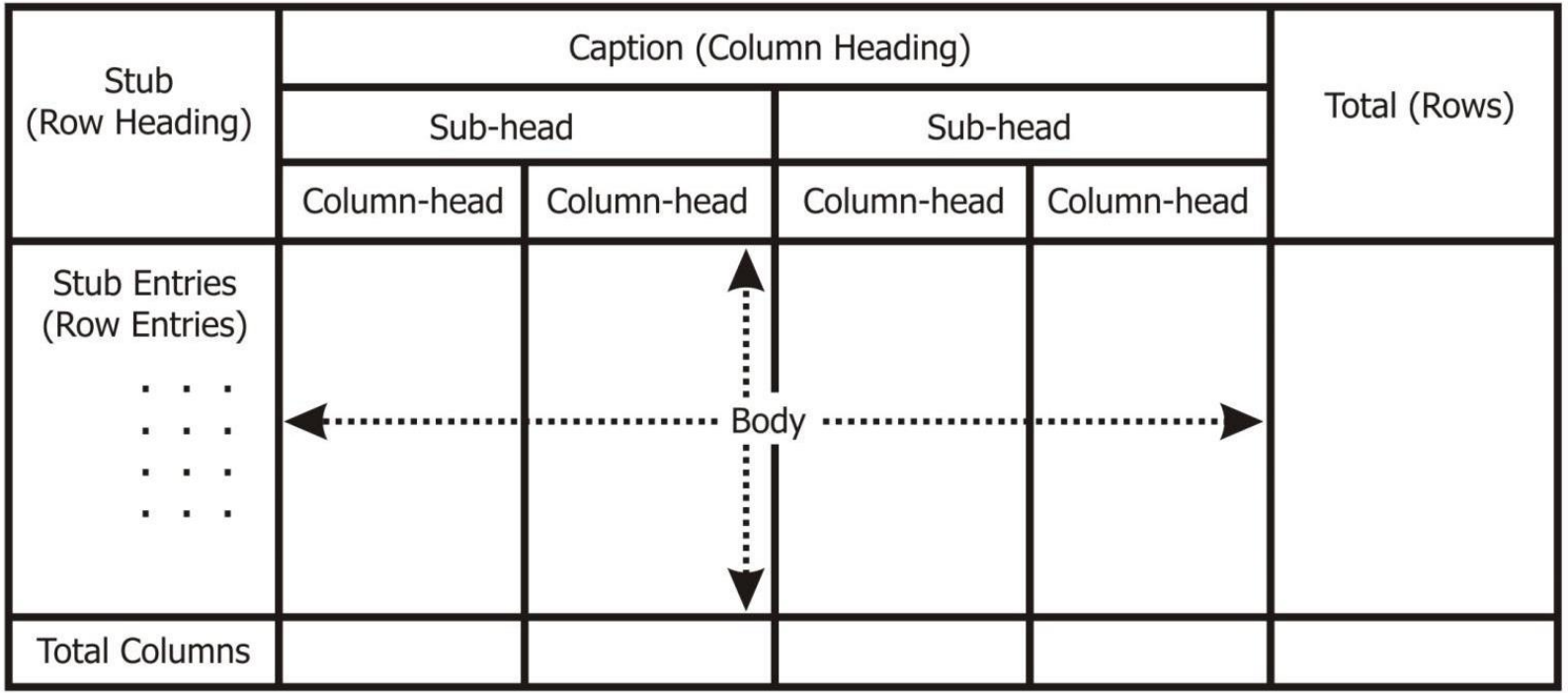
Tables

- **Tables** are structured visual elements that organize and present data in a clear, concise format.

- They consist of **rows** and **columns**, allowing for the systematic arrangement of information, making it easier for readers to **compare**, **analyze**, and **interpret data**.



Tables: Structure



Tables: Types

- There are two types of tables: **Numeric** and **Descriptive**.
- **Numeric tables** present quantitative data in a structured format.
- They are usually used in statistics, financial data, performance metrics, or measurements.

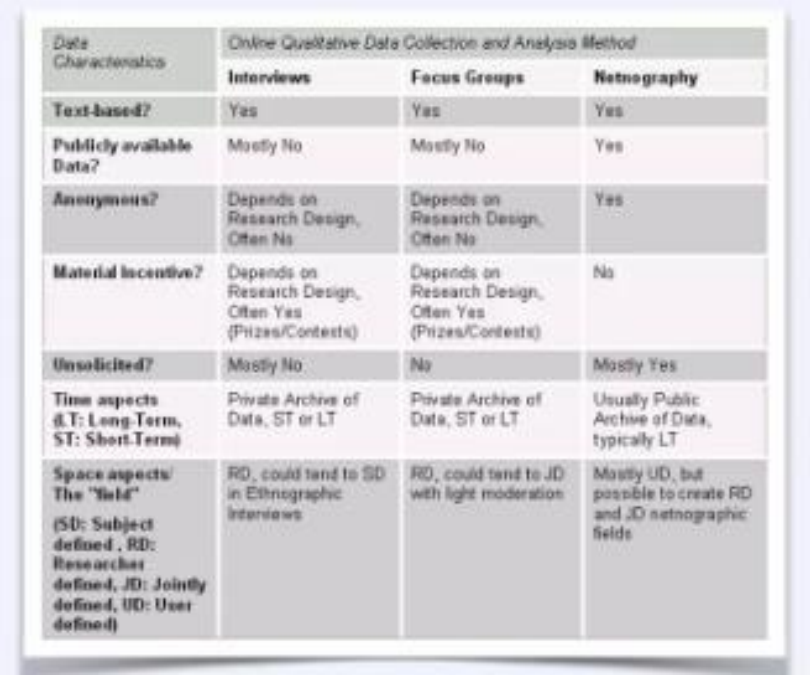
€ (mil)	2007	2008	2009
Gross revenue/sales	17,542	17,063	17,473
Operating/trading income	2,568	3,449	2,578
Net income	1,948	2,656	1,792
Shareholders' equity	11,560	13,619	13,598
Long-term debt	2,507	2,583	2,742
Market capitalisation	36,330	59,759	45,609
Employees (number)	67,662	63,358	64,643

Numeric Table

Tables: Types

- **Descriptive tables** provide qualitative information or summaries that describe characteristics, categories, or textual data, often including explanations or notes.

- These tables may contain text, categories, or summaries that elaborate on concepts or findings.

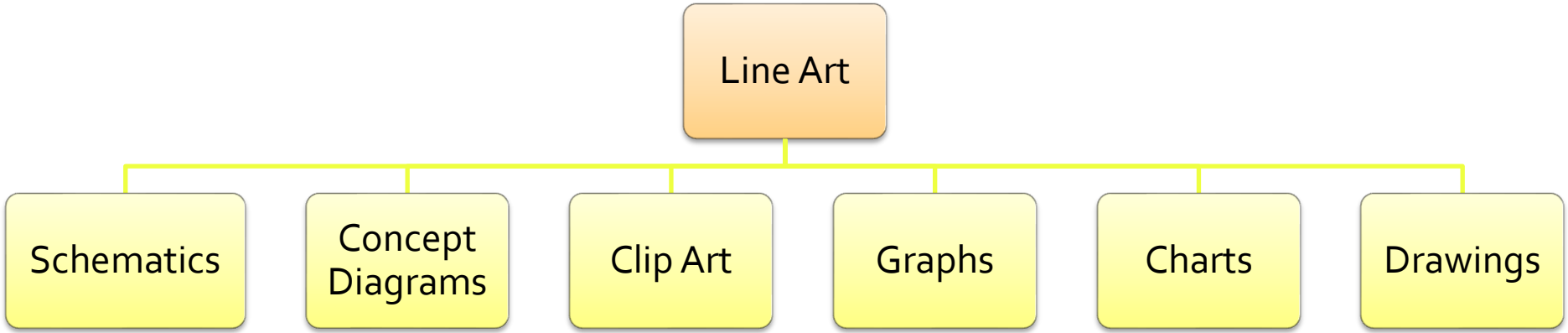


Data Characteristics	Online Qualitative Data Collection and Analysis Method		
	Interviews	**Focus Groups**	**Netnography**
Text-based?	Yes	Yes	Yes
Publicly available Data?	Mostly No	Mostly No	Yes
Anonymous?	Depends on Research Design, Often No	Depends on Research Design, Often No	Yes
Material Incentive?	Depends on Research Design, Often Yes (Prizes/Contests)	Depends on Research Design, Often Yes (Prizes/Contests)	No
Unsolicited?	Mostly No	No	Mostly Yes
Time aspects (LT: Long-Term, ST: Short-Term)	Private Archive of Data, ST or LT	Private Archive of Data, ST or LT	Usually Public Archive of Data, typically LT
Space aspects/ The "field" (SD: Subject defined , RD: Researcher defined, JD: Jointly defined, UD: User defined)	RD, could tend to SD in Ethnographic Interviews	RD, could tend to JD with light moderation	Mostly UD, but possible to create RD and JD netnographic fields

Descriptive Table

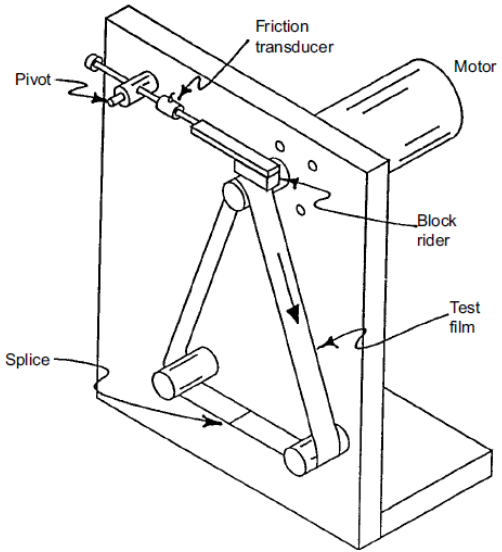
Line Art

- **Line art** refers to visual elements that can be drawn with lines, text, and lines formed into letters, words, and sentences.



Schematics

- **Schematics** are simplified sketches of a process or object.
- It was made to present the main components of the device.
- It is easier to see what is happening in a schematic than in a photo.

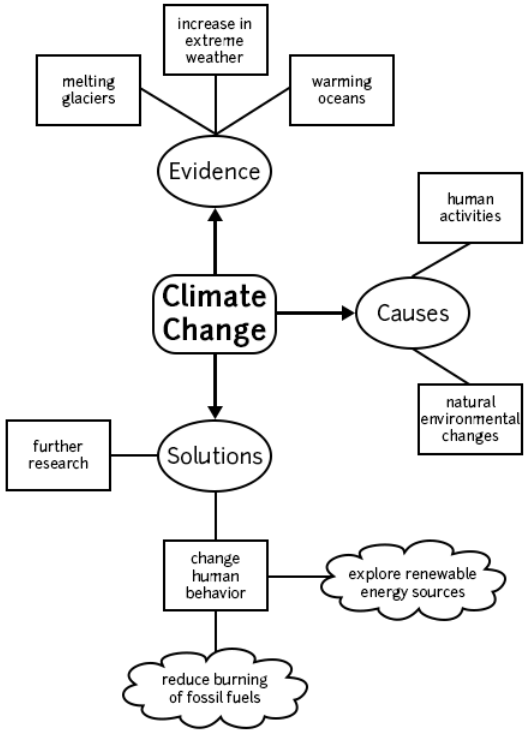


Schematic of a device

Concept Diagram

- **Concept Diagram** illustrates the relationships between various concepts or ideas within a particular topic.

- They aim to clarify and communicate ideas, frameworks, or models, making them useful for brainstorming, planning, and educational contexts.



Concept Diagram

Clip Art

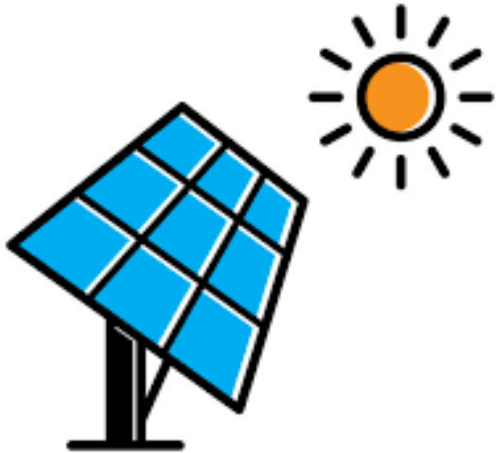
- **Clip Art** refers to pre-made images, illustrations, or graphics that can be easily inserted into documents or presentations.

- These visuals can include a variety of styles, such as cartoons, icons, and decorative elements, and they are often available in digital libraries or software applications.

Clipart of Wind Turbine

Clip Art

- Clip art is intended to add interest to a document.
- Avoid overly complex or distracting images that may reduce from the main message
- This type of line art is usually used in presentation more often than in technical reports.



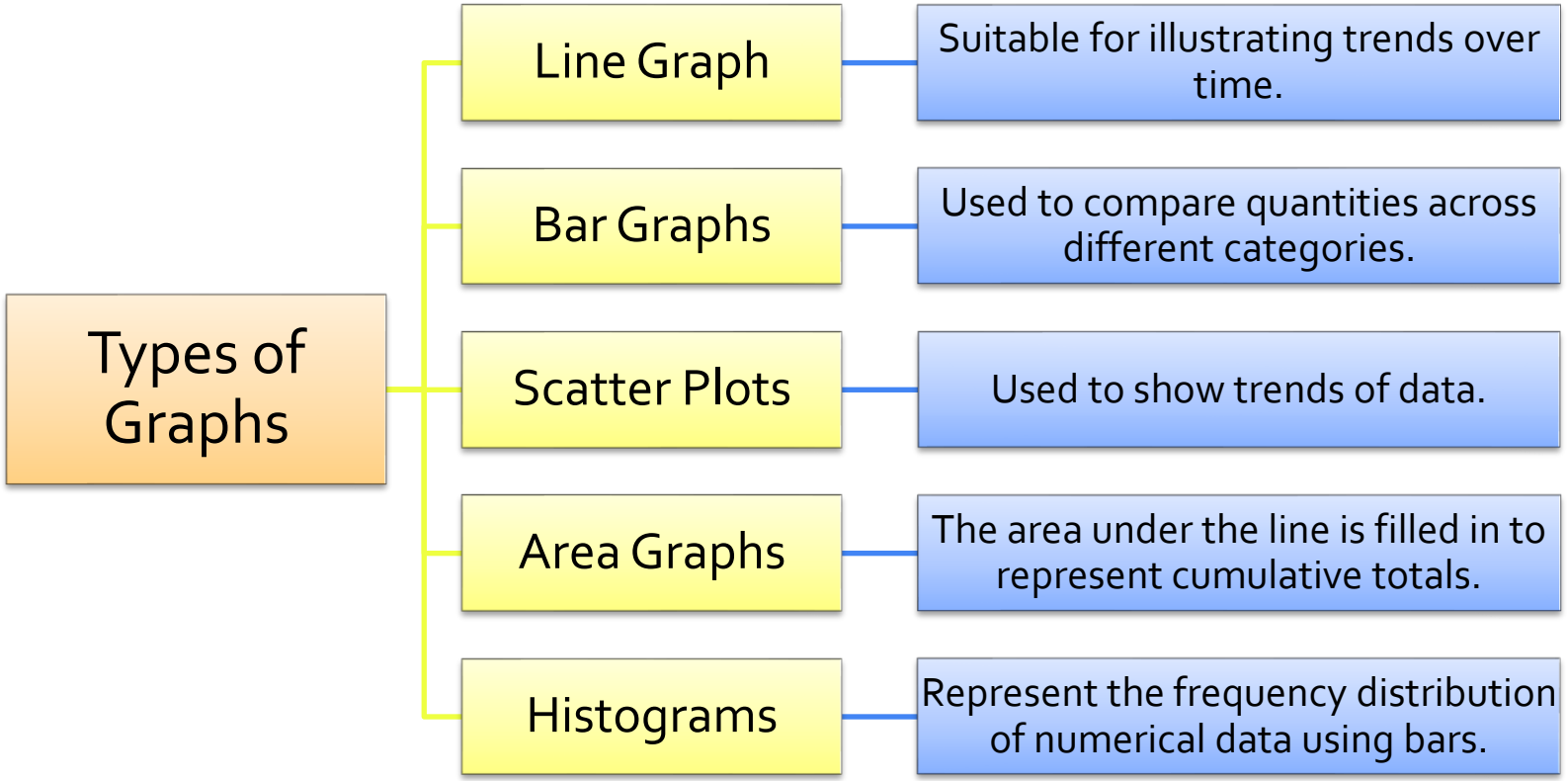
Clipart of solar Power

Graphs

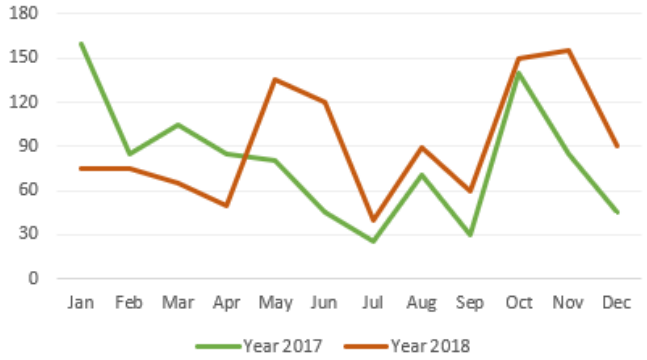
- **Graphs** highlight relationships and trends between variables, making them useful for analyzing and interpreting data.

- They are an indispensable part of many technical documents.

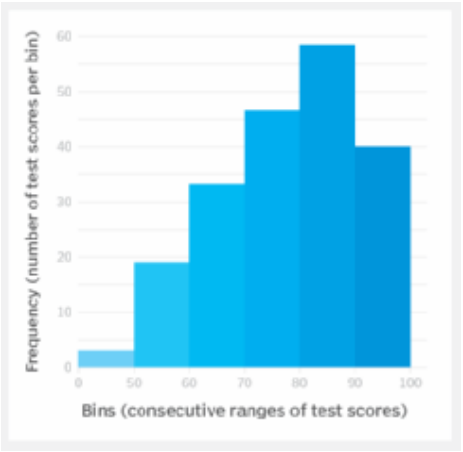
Graphs


Types of Graphs
Line Graph
Suitable for illustrating trends over time.
Bar Graphs
Used to compare quantities across different categories.
Scatter Plots
Used to show trends of data.
Area Graphs
The area under the line is filled in to represent cumulative totals.
Histograms
Represent the frequency distribution of numerical data using bars.

Graphs



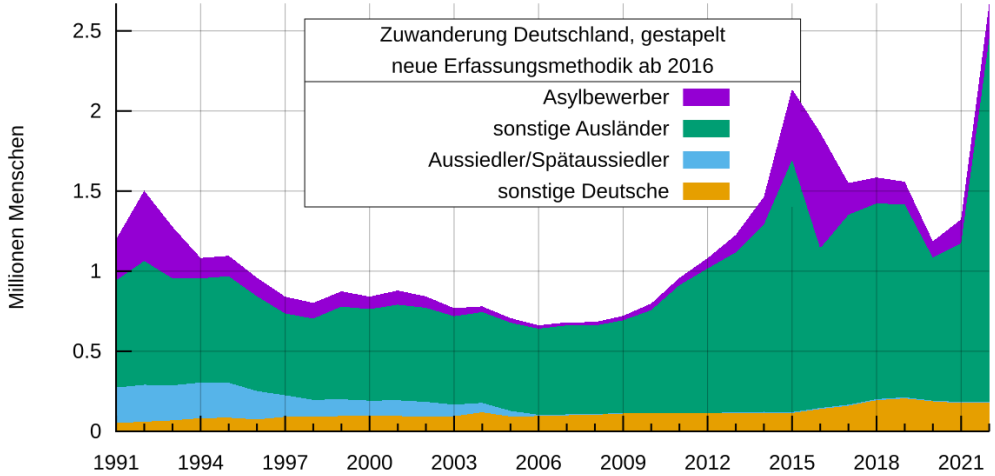
Line Graph



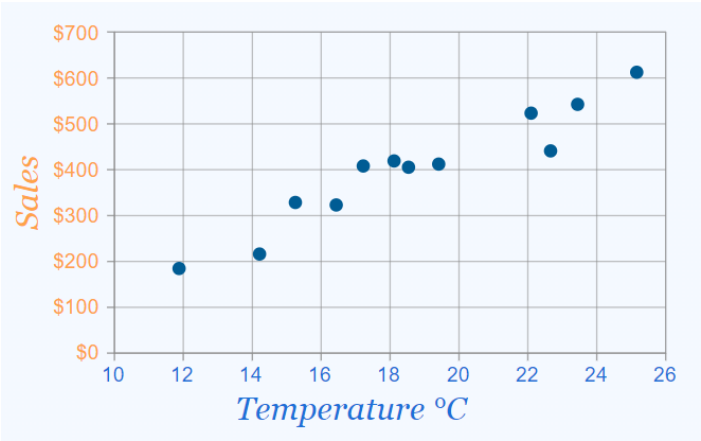
Histogram

Bar Graph

Graphs



Area Graph



Scatter Plot

Graphs

- **Some Important Remarks:**

1. Do not plot too many variables on the same graph, where the plot lines obscure one another or are difficult to compare.

2. Clearly label the vertical axis vertically and the horizontal axis horizontally

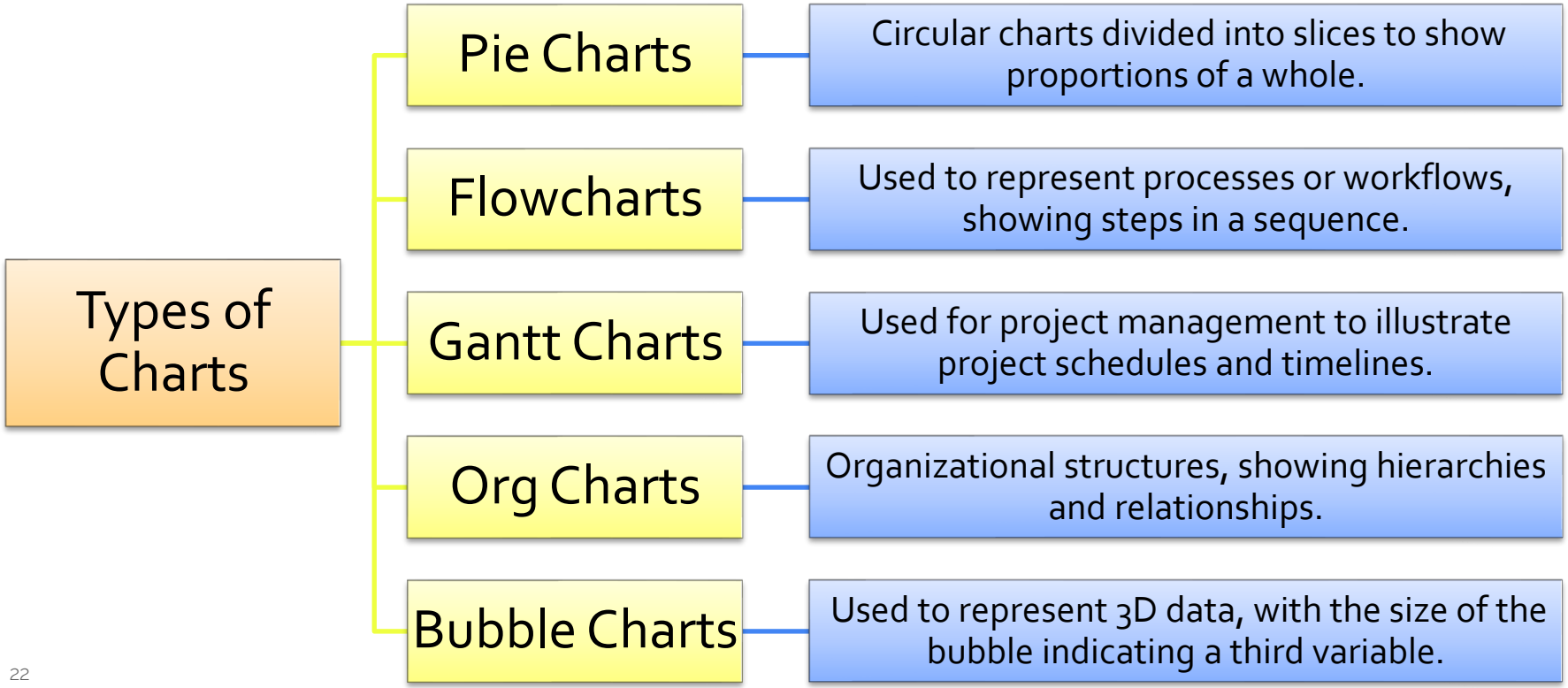
3. Before plotting your data, choose the appropriate type of graph used to clarify your point.

Charts

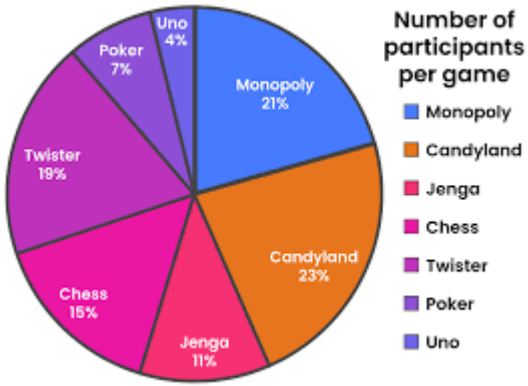
- **Charts** are visual presentations of numerical or verbal information.

- They can convey information, summarize data, or categorize information, serving a wider range of purposes beyond just displaying relationships.

Charts


Types of Charts
Pie Charts
Circular charts divided into slices to show proportions of a whole.
Flowcharts
Used to represent processes or workflows, showing steps in a sequence.
Gantt Charts
Used for project management to illustrate project schedules and timelines.
Org Charts
Organizational structures, showing hierarchies and relationships.
Bubble Charts
Used to represent 3D data, with the size of the bubble indicating a third variable.

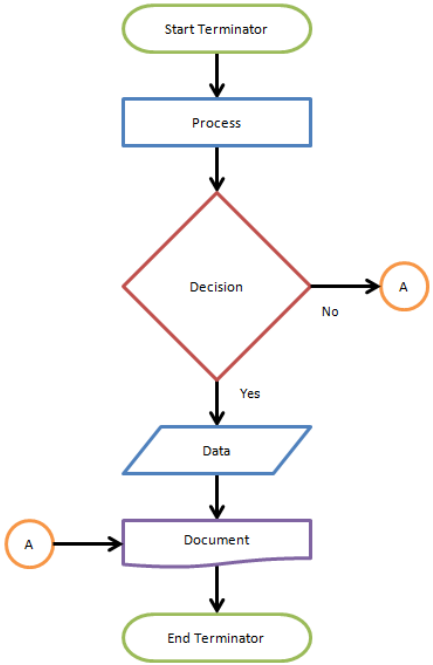
Graphs



Pie Chart

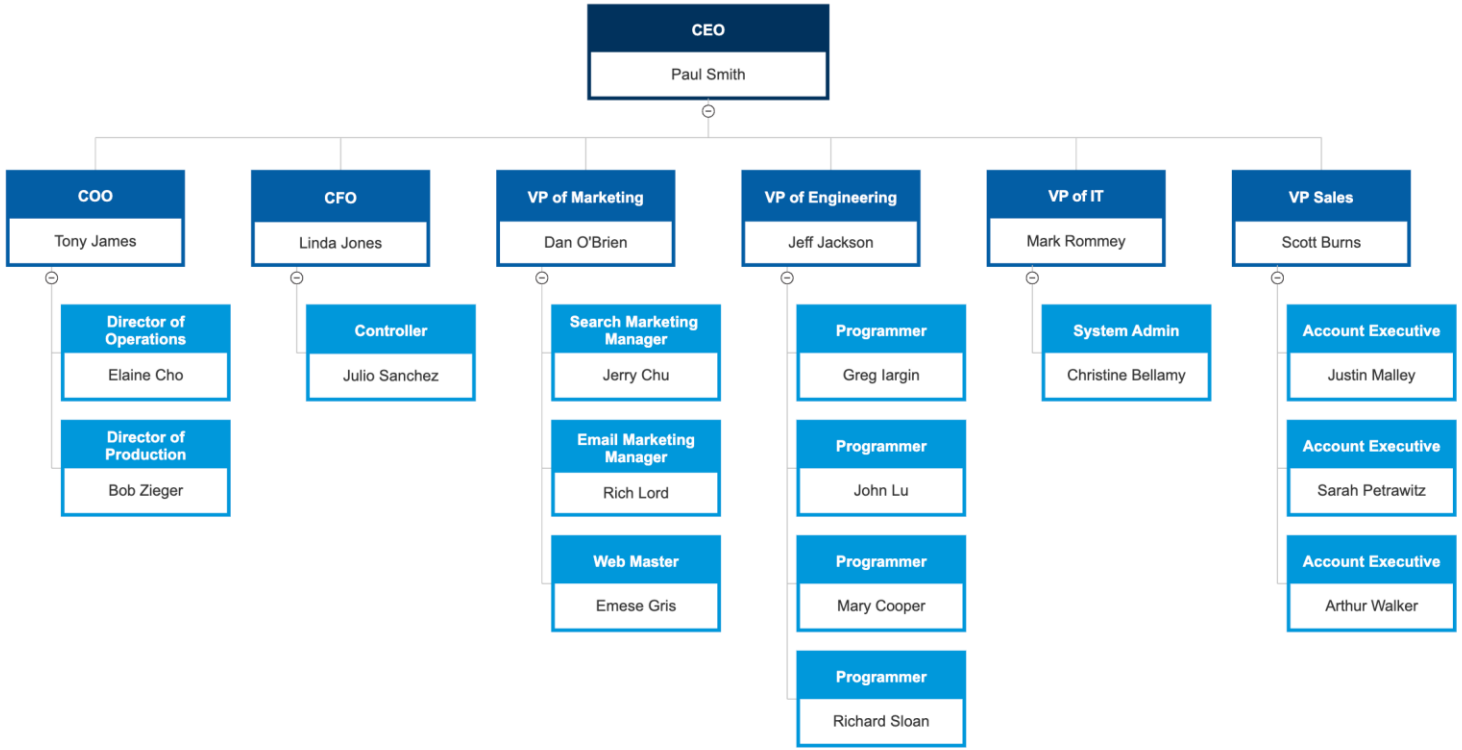
Task Name	Q1 2019		Q2 2019		Q3 2019	
	Jan 19	Feb 19	Mar 19	Apr 19	Jun 19	Jul 19
Planning						
Research						
Design						
Implementation						
Follow up						

Gantt Chart



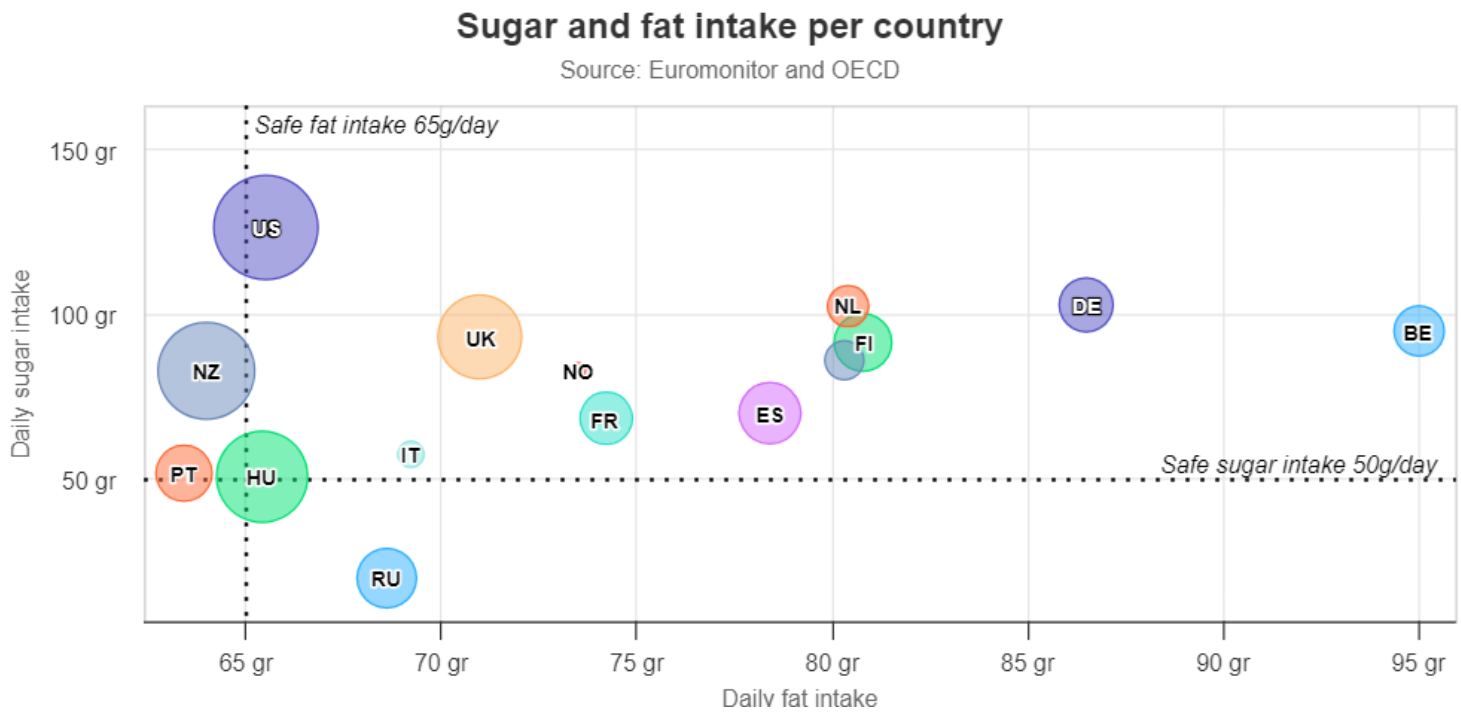
Flow Chart

Graphs



Org Chart

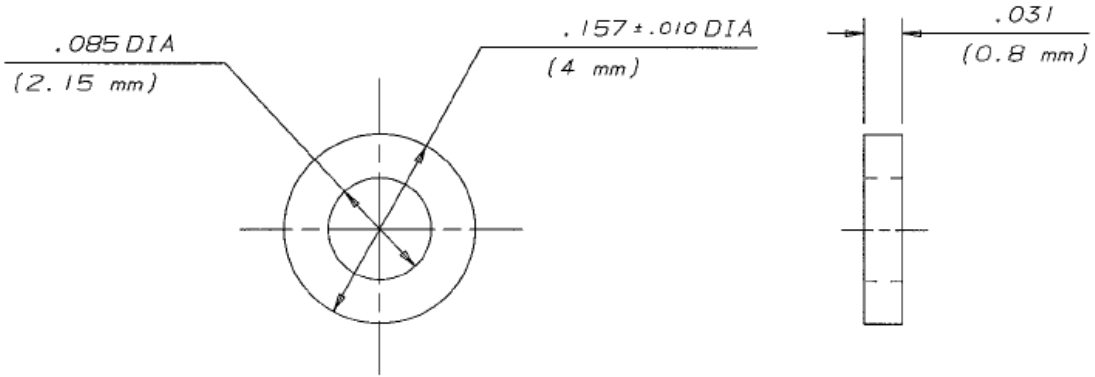
Graphs



Bubble Chart

Drawings

- **Drawings** are hand-rendered or digitally created illustrations that visually represent objects, processes, or concepts.



Example of engineering drawing

Drawings

- Drawings are used to show **dimensions**, **materials**, and **details** necessary for construction or understanding.

- They include **technical drawings**, **assembly drawings**, **cross-section drawings**, and **illustrative** drawings.

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Placement of Visual Elements in Technical Report

Figures

- When Placing a figure in a technical report, you must do the following.

1. Figures must be **centered**.
2. Figures must be **numbered**, and the numbering format should include the word **Figure** or a similar word such as **Fig.**
3. All figures should have **captions**, and the caption is placed with the figure number **below** the figure.
4. Figures should be chosen wisely to serve the requirements of using it.
5. The **size** and **resolution** of the figure is extremely important.

Tables

- When Placing a Table in a technical report, you must do the following.

1. Tables must be **centered**.
2. Tables must be **numbered**, and the numbering format should include the word **Table**.
3. All tables should have **captions**, and the caption is placed with the table number **above** the table.
4. Before inserting a table in your report, ensure that it would serve in organizing the data presented without missing any important information.

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Questions??