

Seventh Lecture

Constructing Engineering Tables and Graphics

Tables :

You've probably constructed tables using word-processing applications such as Open-Office Write, WordPerfect, or Word.

Table 4. Major U.S. producers of CO₂ In 2004		Table title
Region	Emissions	Column heading (centered over numeric data)
Texas	652.5	Right-aligned data columns (but centered in the column as a group)
California	398.9	
Ohio	263.6	
All other U.S. states	4642.4	
U.S. total	5957.4	

Row headings →

Measurement indicator (not repeated in every data cell) → Note: Million metric tons of CO₂

Note1: be aware of column and row headings , middling, measurements as above

Regions Emissions		Table 5. Major U.S. producers of petroleum CO ₂ emissions
Texas		Regions
296.6		Emissions
California		Texas
261.5		California
All other U.S. states		All other U.S. states
2021.0		Total
Total		2579.1
2579.1		Note: Million metric tons of CO ₂ emissions

Note 2: texts can be shifted to tables as shown above , but the items in text should be arranged in similar couples to be understood by the program.

cantilever beam	Projecting beam or member supported at one end.
current-factor	Rating system for current in transistors.
logic circuit	Circuits made up of transistors, diodes, and resistors. The five common logic gates are AND, OR, NOT, NAND, and NOR gates.
polymers	Chemical compound or mixture of compounds consisting of repeating structural units.

Note 3: the gridlines of the tables can be hidden to be in a different style.

<p>In a comparison of Ford conventional vehicles and hybrid electric vehicles (HEV), the HEV proved to have a greater range (450-550 miles) than did the conventional vehicle (350 miles). And, as might be expected, these numbers were the same for gasoline range. In terms of fuel economy, the HEV was 30-50% better than the conventional vehicle. This, in turn, meant less frequent fill-ups for the HEV. Burning less gasoline causes the HEV to be 95% cleaner—far friendlier to the environment. And finally, this study found that the HEV performed more like a V-6 (more powerfully) than the conventional vehicle, whose performance was considered more like that of a 4-cylinder engine.</p>																							
<p>Table 1 shows the results of a comparison of conventional and hybrid electric vehicles done by Ford in 2002:</p>																							
<table border="1"> <caption>Table 1. Conventional-HEV Vehicle Comparisons</caption> <thead> <tr> <th></th><th>Conventional</th><th>Hybrid Electric</th></tr> </thead> <tbody> <tr> <td>Total Range</td><td>350 miles</td><td>450-550 miles</td></tr> <tr> <td>Gasoline Range</td><td>350 miles</td><td>450-550 miles</td></tr> <tr> <td>Fuel Economy</td><td>Base</td><td>30-50% over base</td></tr> <tr> <td>Refueling</td><td>Fill-up</td><td>Fill-up (less often)</td></tr> <tr> <td>Environmental Friendliness</td><td>Base</td><td>SULEV (95% cleaner than today's standard)</td></tr> <tr> <td>Performance</td><td>4-cylinder</td><td>Like a V-6</td></tr> </tbody> </table>				Conventional	Hybrid Electric	Total Range	350 miles	450-550 miles	Gasoline Range	350 miles	450-550 miles	Fuel Economy	Base	30-50% over base	Refueling	Fill-up	Fill-up (less often)	Environmental Friendliness	Base	SULEV (95% cleaner than today's standard)	Performance	4-cylinder	Like a V-6
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<p>Source: Ford Motor Company. "Hybrid Vehicles," <www.ford.com/en/ourVehicles/environmentalVehicles/hybridElectricVehicles/>. Accessed October 6, 2002.</p>																							

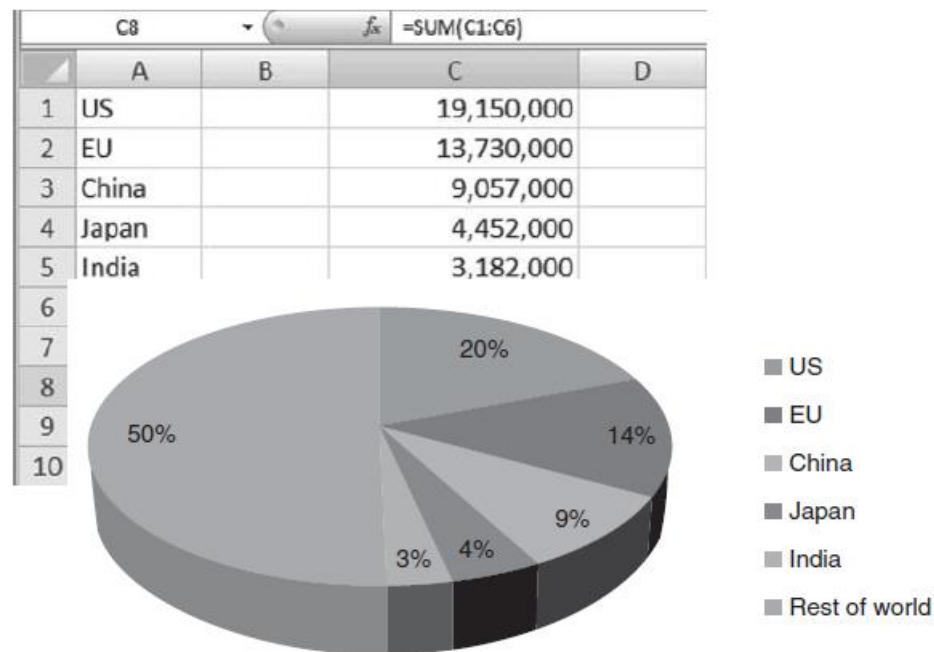
Note 4: converting a paragraph into table

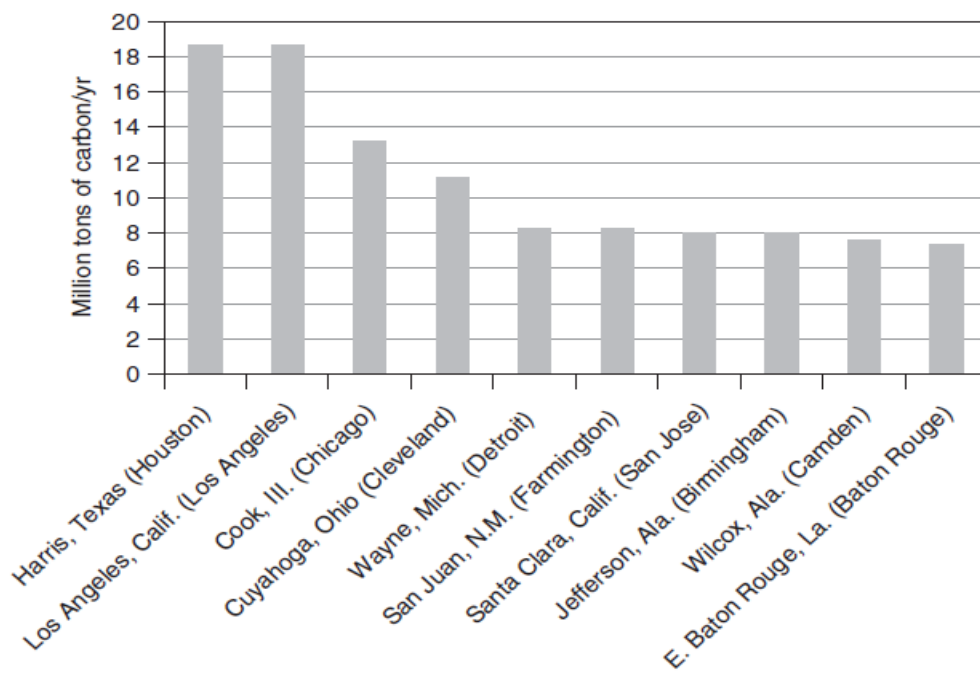
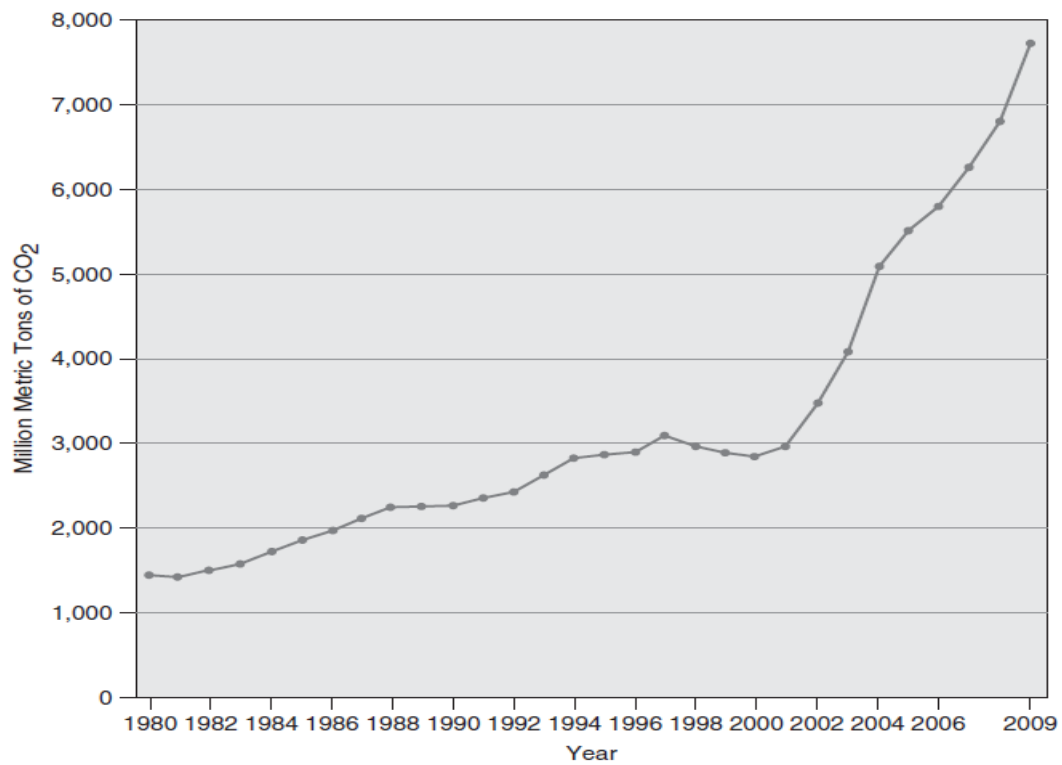
Note 5: cite the sources of the tables

Ex: Source: http://en.wikipedia.org/wiki/List_of_countries_by_carbon_dioxide_emissions

Charts & Graphs:

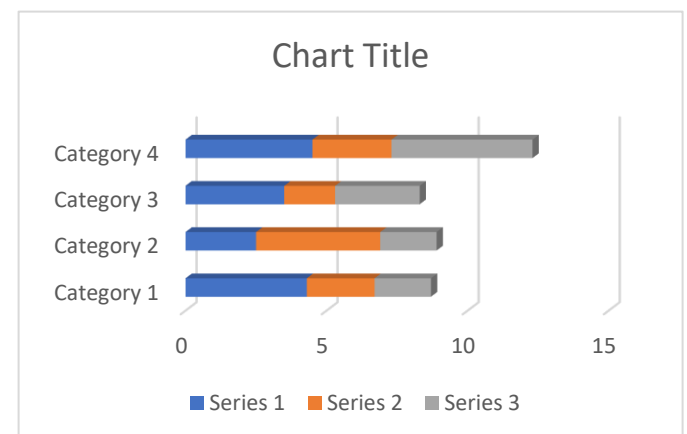
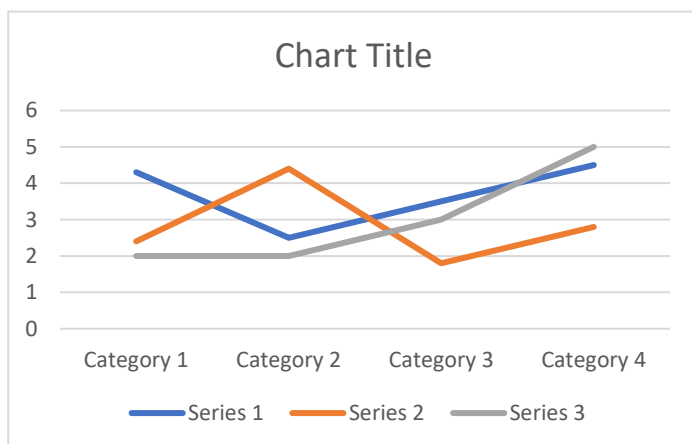
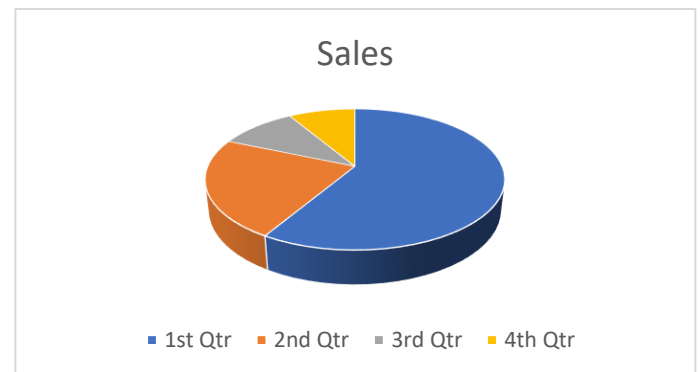
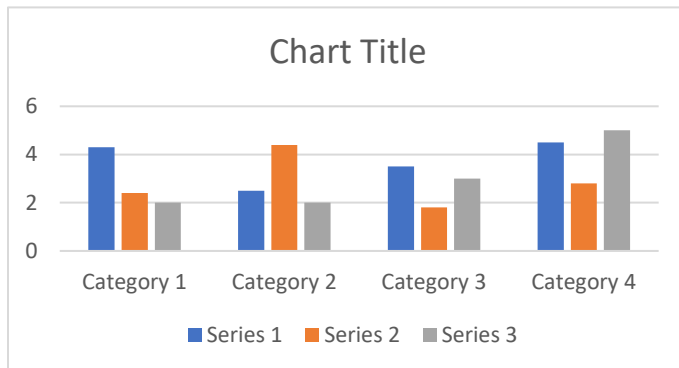
The terms *charts* and *graphs* encompass the numerous ingenious ways of showing relationships between data—for example, **line graphs, column charts, bar charts, pie charts, and three-dimensional variations such as pictographs**. All of these types are visual representations of tables. In tables, the significance of the data is not immediately evident. Charts and graphs, on the other hand, make that significance stand out.





When to use a line graph, column or bar chart, or pie chart?

- Pie charts depict the relative portion of a total amount made up by each member that contributes to that total.
- Line graphs depict change in data occurring over time.
- Column and bar charts enable comparisons.



Activity:

1. Course Report (time period : delivered on 1 - 2 - 2024)
2. Mid Term Exam (1st lecture – 5th lecture) on 23 – 2 - 2024

Course Report:

Write a Formal Technical Report (**Progress** or **Persuasive** report) for any selected engineering topic related to Chemical Engineering including:

- 1- Readers, select the reader, Title and Introduction. (1 Mark)
- 2- Purpose and objective, structure of the chosen report. (2 Marks)
- 3- procedures, analysis method, tables and graphs. (3 Marks)
- 4- Results and Discussion (2 Marks)
- 5- Conclusions and Recommendations (2 Marks)

The total marks is **10** . Size **14**, space **1.5**, in English only. **Four** pages only, ignoring any point you will lose marks. One report in **hard copy** for each group (6 or 7 students) should submit in English. Each student should contribute.