Excel Charts

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Class Objectives

1. Understand Charts and how to create them in Excel
2. Discuss use of charts in construction projects
3. Develop a Ghant chart to describe a project schedule

Assignments:

- Assignment 04: Construction Schedule
  Due before the start of next class

What is a Chart?

A chart is a graphical representation of data in which the data is represented by symbols
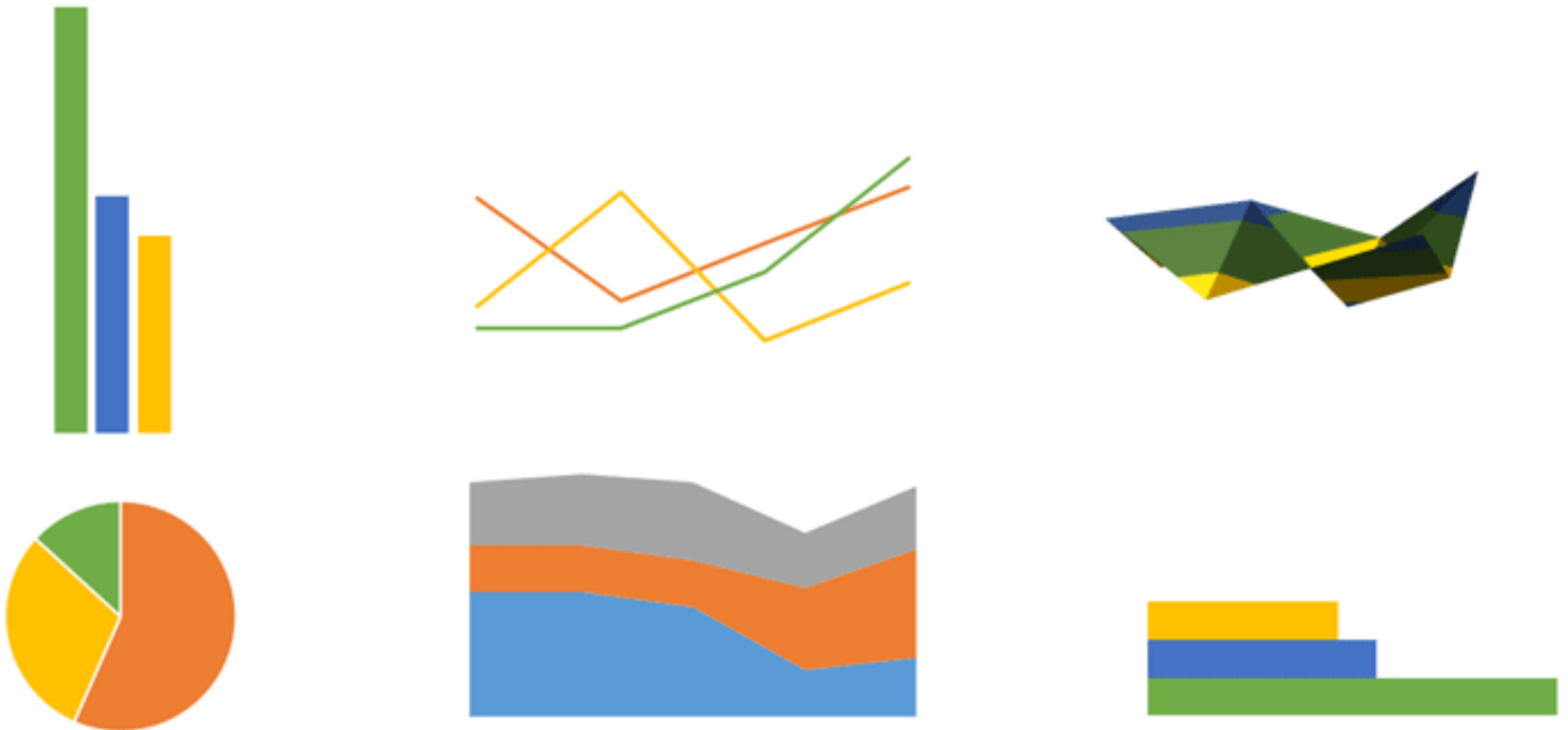
Chart Types

A data chart is a type of diagram or graph that organizes and represents a set of numerical or qualitative data.
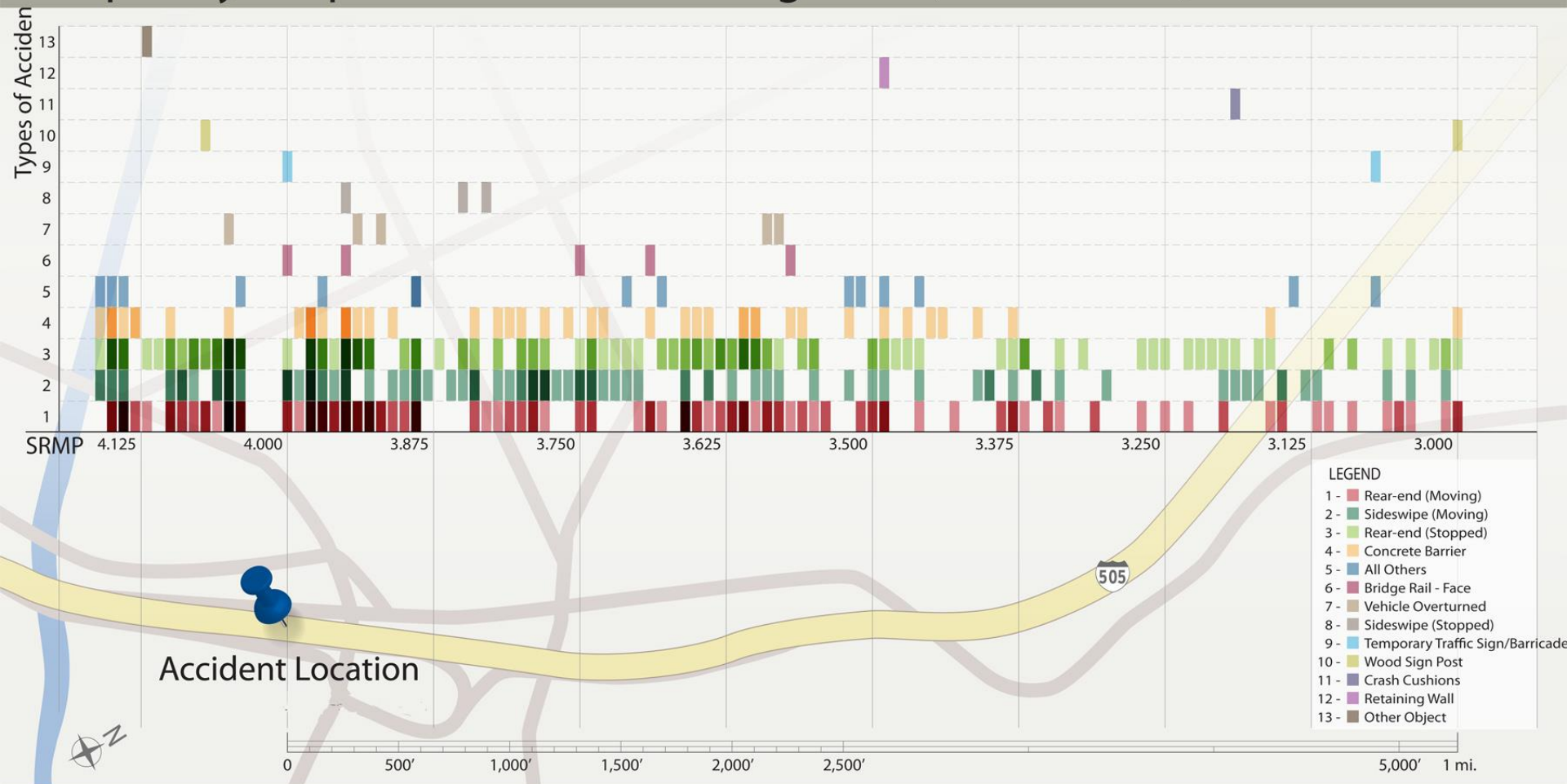
Why use Charts?

Charts are often used to ease understanding of large quantities of data and the relationships between parts of the data.

Why use Charts?

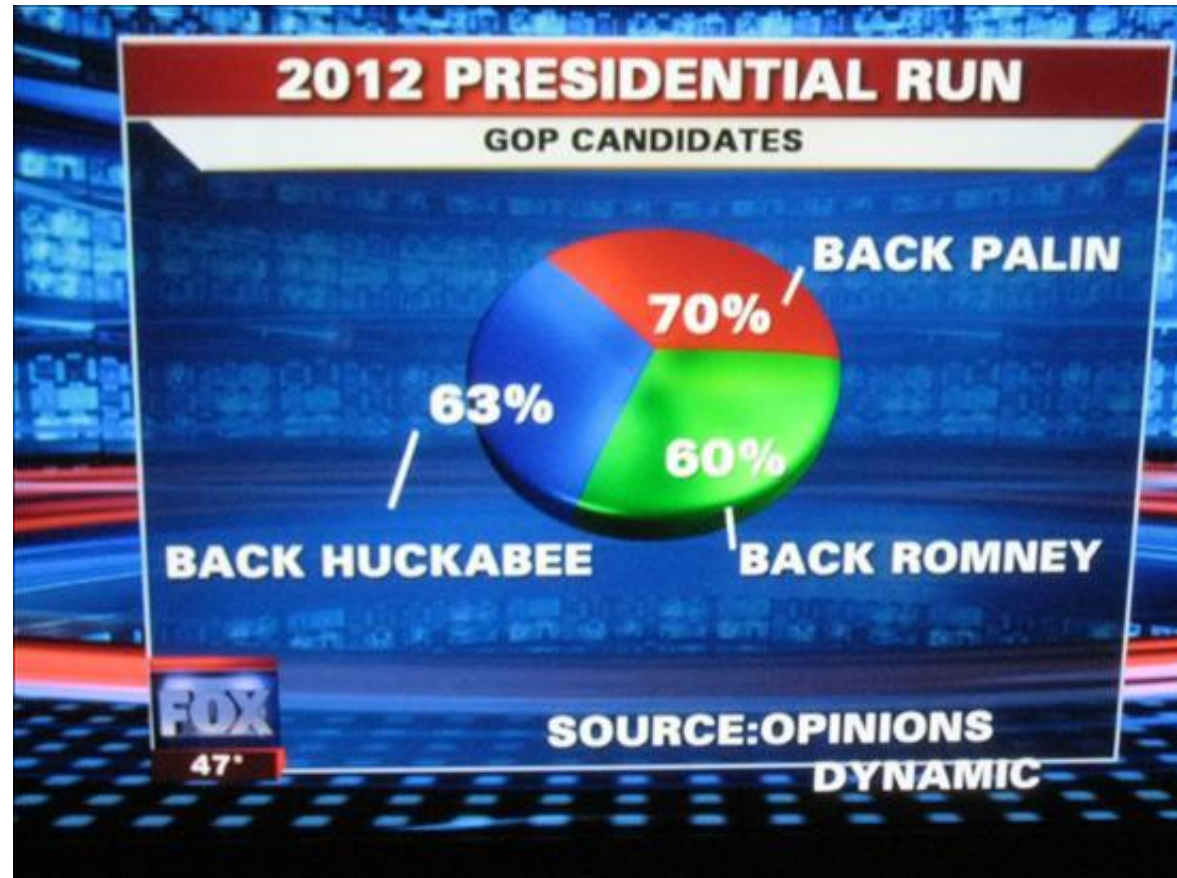Charts can be read more quickly than the raw data that they are produced from.

Frequency of Specific Accidents Along I-505 (2006 - 2011)

Pie Chart

Data that presents percentages in different groups are often displayed in a pie chart.

Line Chart

Data that represents numbers that change over a period of time might be best shown as a line chart.

U.S. Gross Domestic Product
Billions of US Dollars, $B
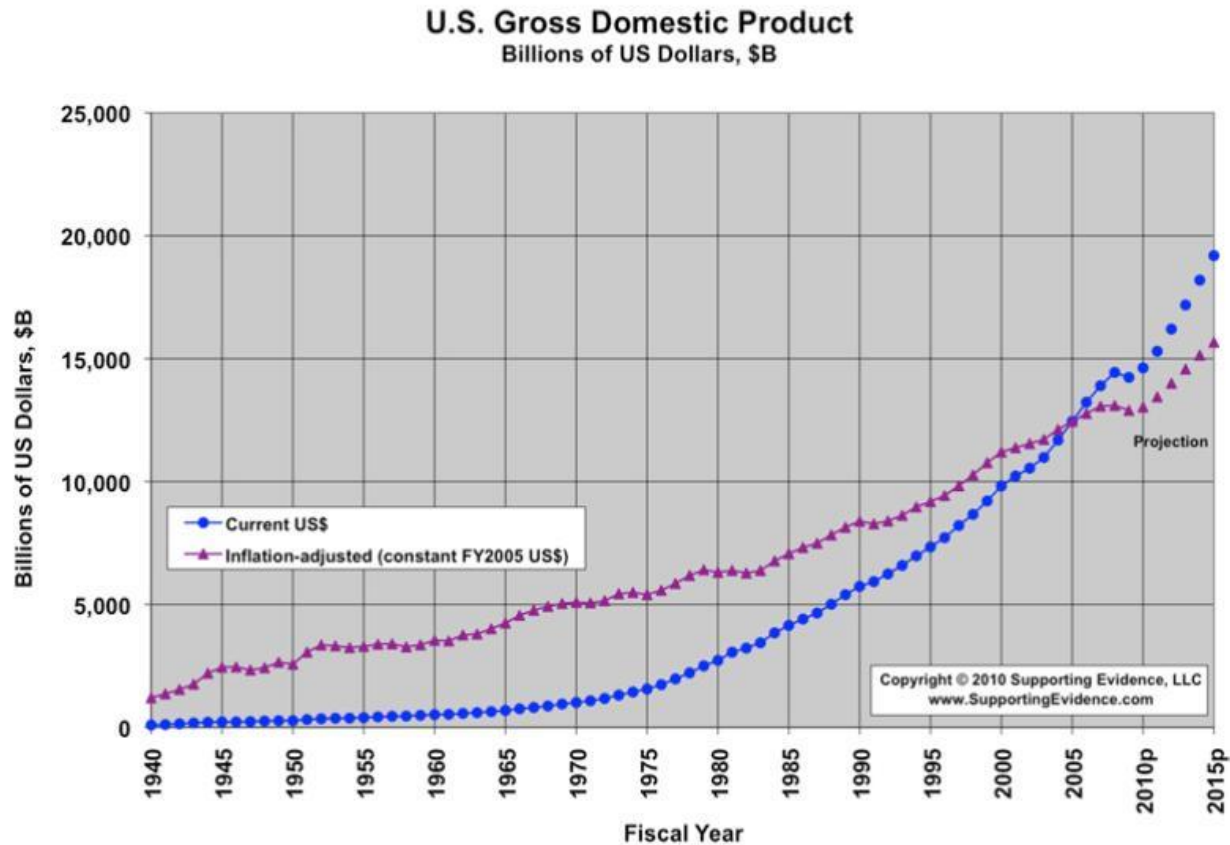
Chart Features

A chart can take a large variety of forms however there are common features that provide the chart with its ability to extract meaning from data.
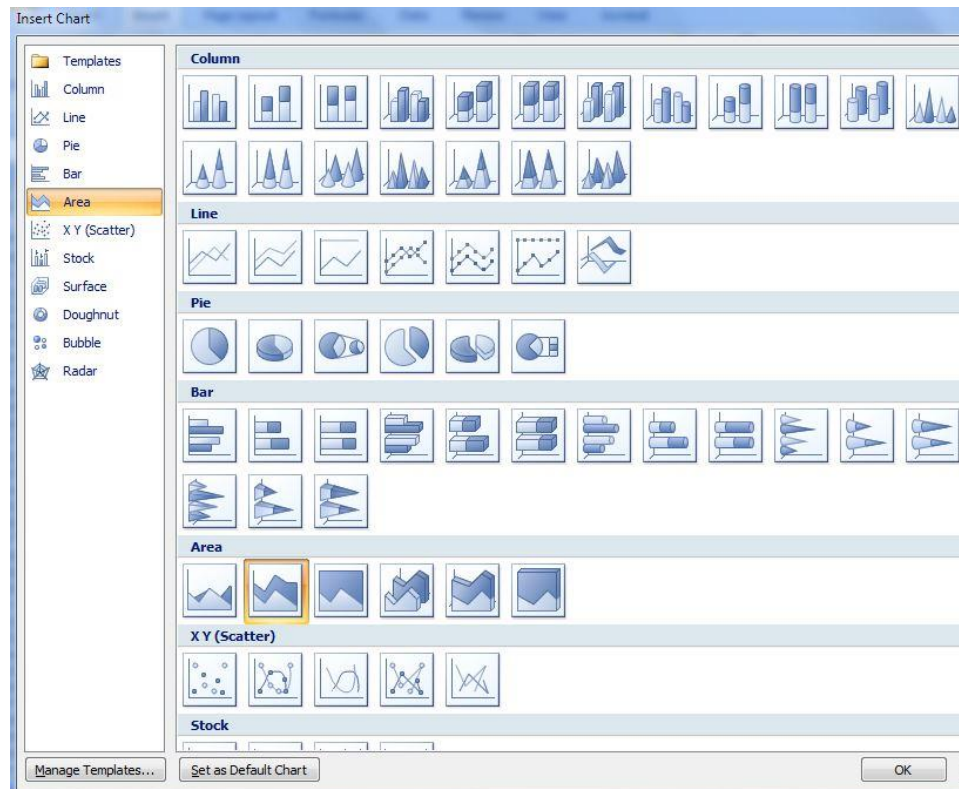
Chart Features

Typically the data in a chart is represented graphically, since humans are generally able to infer meaning from pictures quicker than from text.
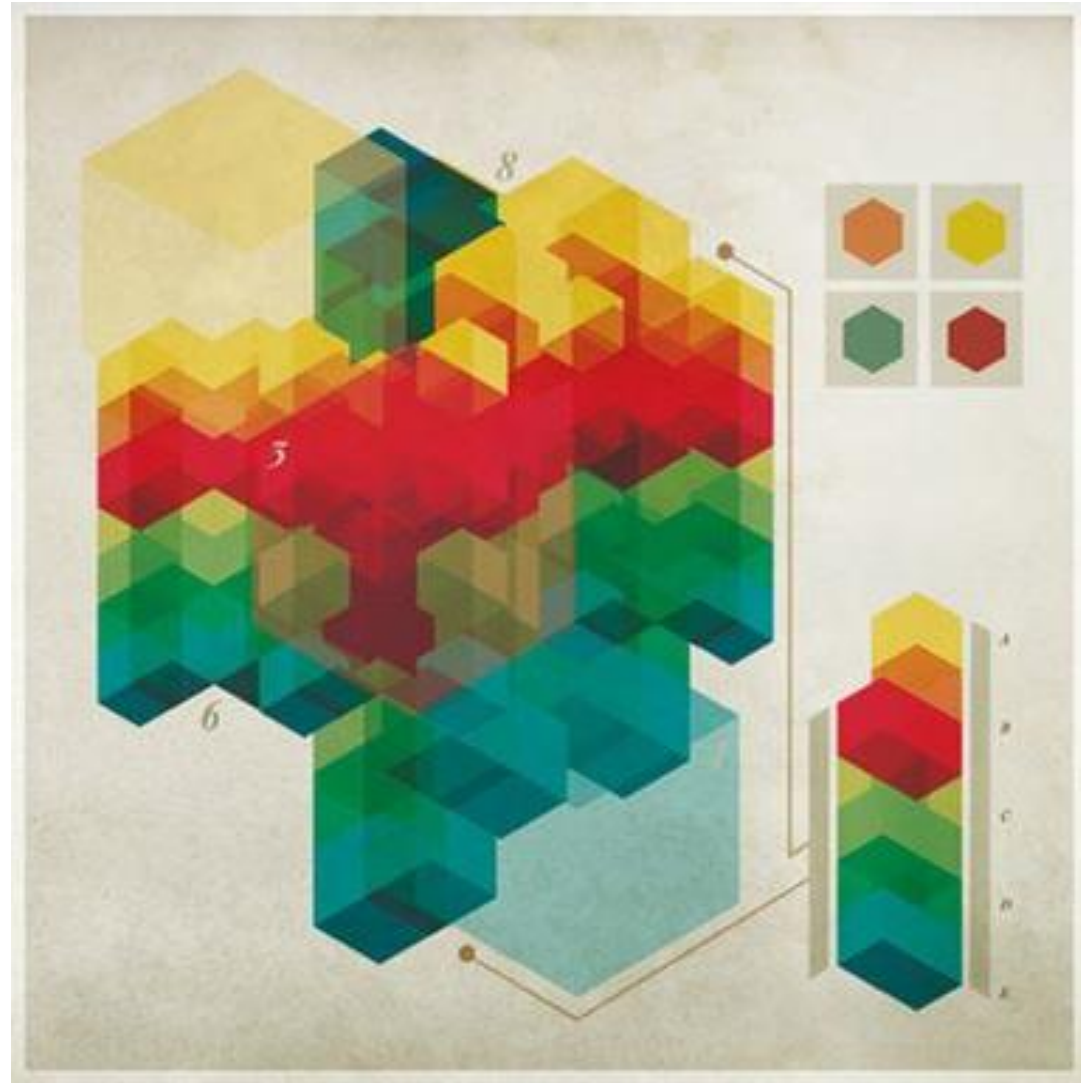
Chart Features

Title

Text is generally used only to annotate the data.

One of the more important uses of text in a graph is the title. A graph's title usually appears above the main graphic and provides a succinct description of what the data in the graph refers to.

TITLE

NASDAQ
NASDAQ Composite index

593500

453500

394500

253500.5

172700

25350

3

1999 2000 2001 2002 2003 2004 20
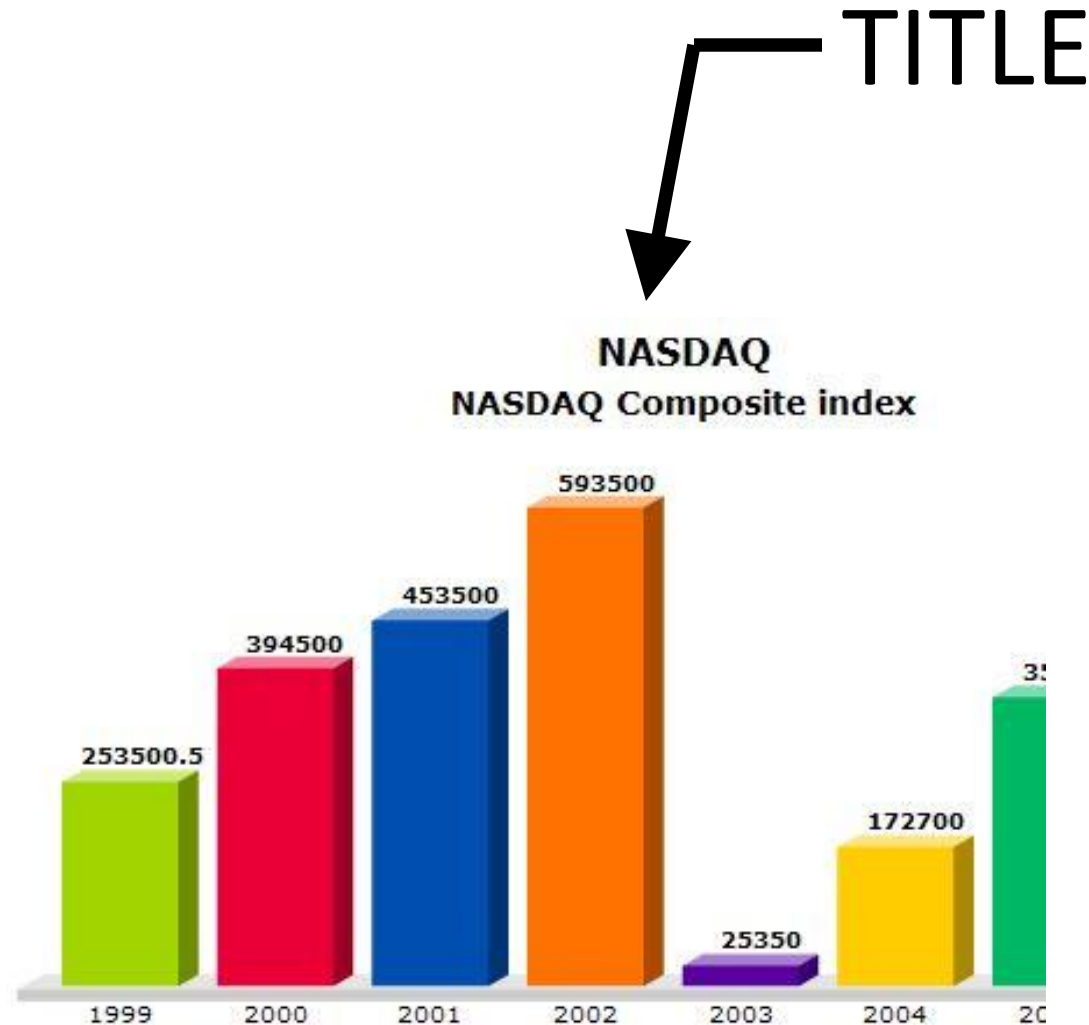
Chart Features

Axis

Dimensions in the data are often displayed on axes.

Each axis will have a scale, denoted by periodic graduations and usually accompanied by numerical or categorical indications.

Each axis will typically also have a label displayed outside or beside it, briefly describing the dimension represented.

LABEL
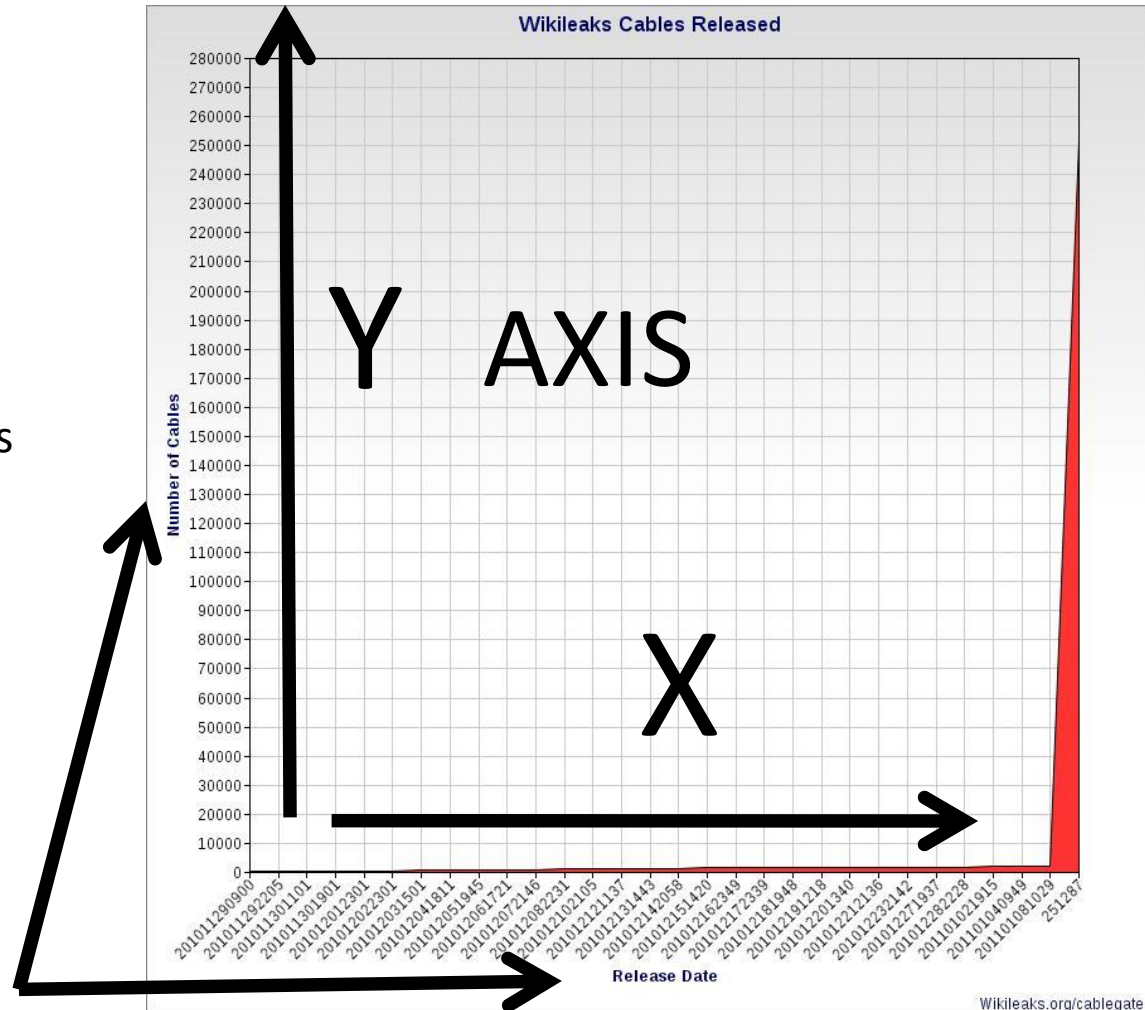
Chart Features

Grid Lines

Within the graph a grid of lines may appear to aid in the visual alignment of data. The grid can be enhanced by visually emphasizing the lines at regular or significant graduations. The emphasized lines are then called major grid lines and the remainders are minor grid lines.

MAJOR

MINOR

No. Of Products

	Books 1	Pencil 2	Laptops 3	Tables 4	Chairs 5	Printer 6
	4	5	5	9	7	8

Chart Features

Inferences

The data may appear as dots or shapes, connected or unconnected, and in any combination of colors and patterns. Inferences or points interest can be overlaid direct on the graph to further aid information extraction.

INFERENCES

TURNING ONE BILLION TOURISTS INTO ONE BILLION OPPORTUNITIES

In 2012, a record one billion tourists crossed international borders in a single year. Another five to six billion are estimated to travel in their own countries every year.

WHERE DO THEY COME FROM?

53%   22%   17%   4%   3%   1%

WHERE DO THEY GO?

Europe
Asia/Pacific
Americas
Middle East
Africa

51%   22%   16%   5%

WHY DO THEY TRAVEL?

LEISURE/RECREATION/HOLIDAYS   51%
VISIT FAMILY & FRIENDS/HEALTH/OTHER   27%
BUSINESS/PROFESSIONAL   15%
NOT SPECIFIED   7%

2012 1 BILLION INTERNATIONAL TOURISTS

EMERGING VS. ADVANCED

Travelling to emerging economies
Travelling to advanced economies

Chart Features

Legend

When the data appearing in a chart contains multiple variables, the chart may include a legend. A legend contains a list of the variables appearing in the chart and an example of their appearance. This information allows the data from each variable to be identified in the chart.

Behaviour Types:

- active social networkers (millions)
- messagers and mailers
- content sharers
- joiners and creators of groups
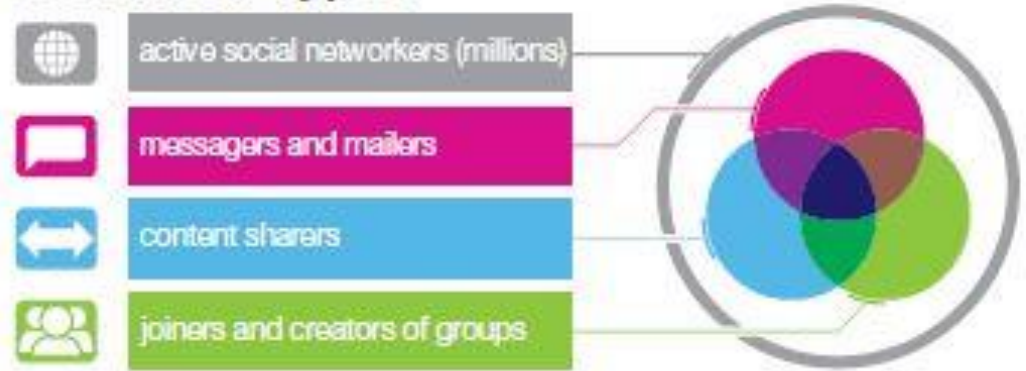
LEDGEND

Excel Charts

Chart Areas

The typical chart (or graph) in Excel comprises several distinct parts, including the
chart area,
data series,
axes,
legend,
plot area,
gridlines,
data markers,
and more.

Project Scheduling

Build an Activity Diagram

Project Scheduling

Bar Chart / Gantt Chart

Project Scheduling

Critical Path Method (CPM)

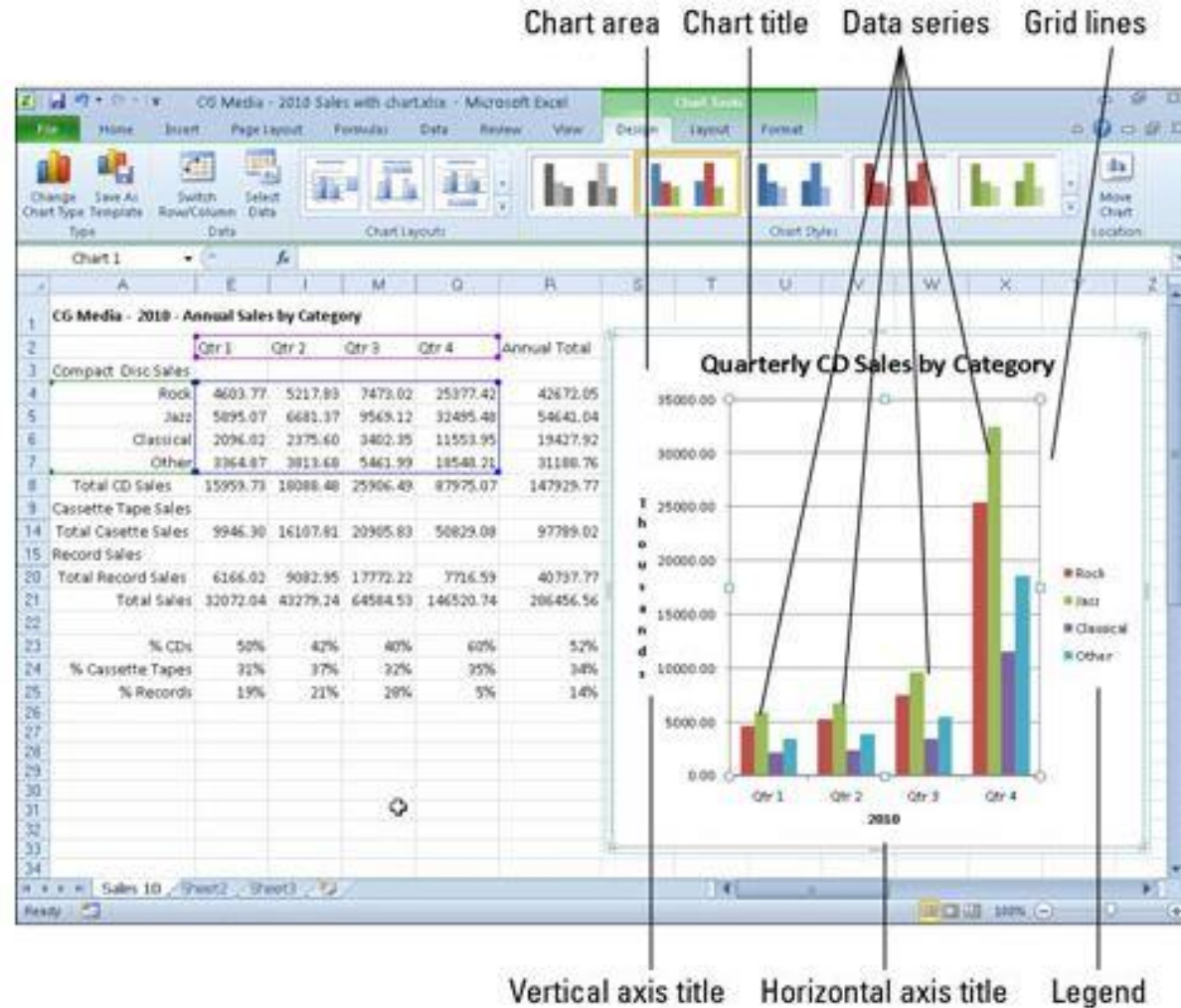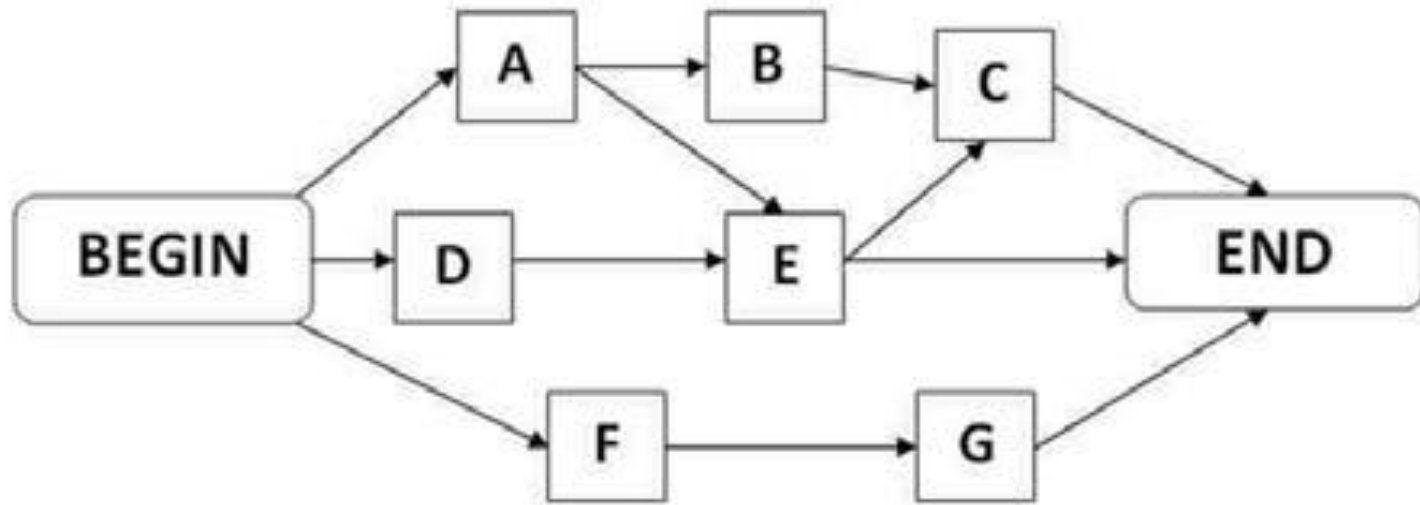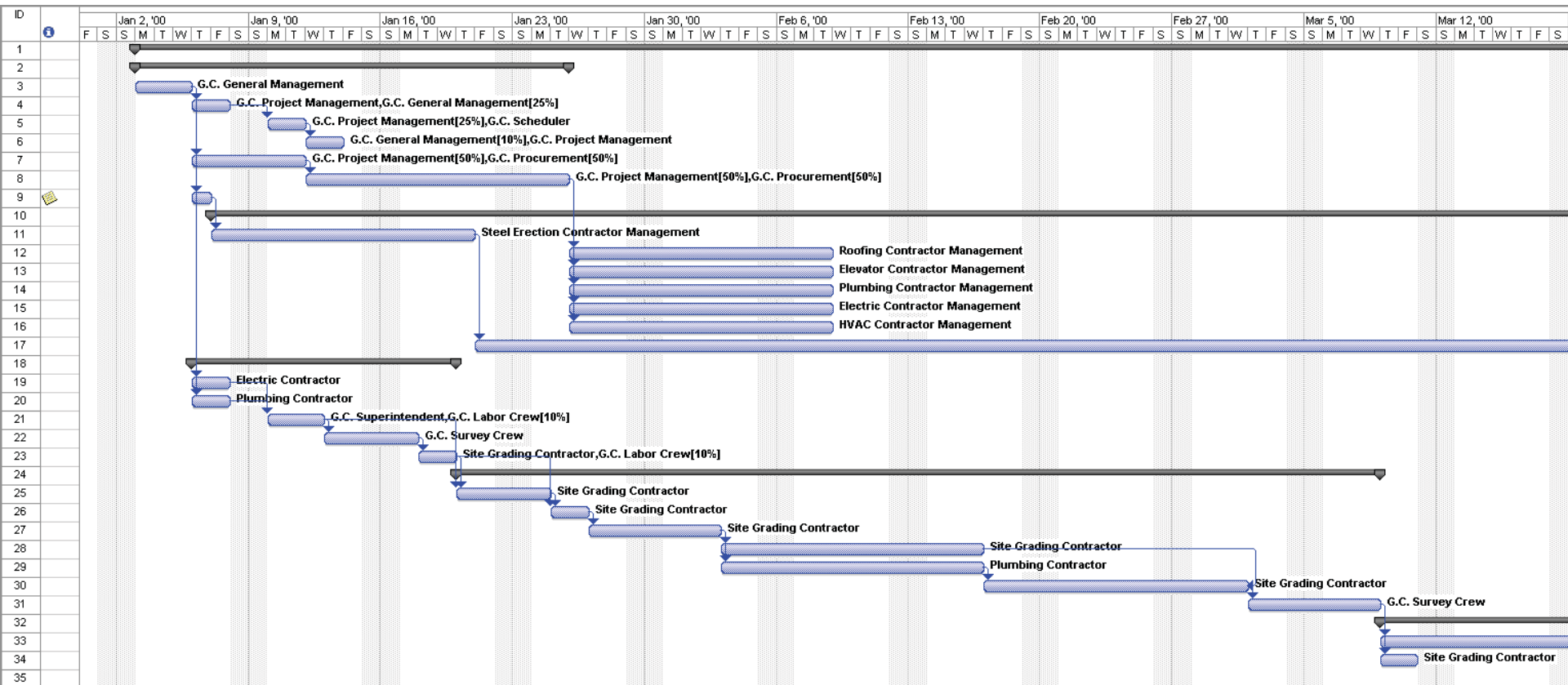| Act ID	Description	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	Cal
Pier Work							
1380	Pier No. 1 Form/Pour	12d	12d	25SEP00	11OCT00	43d	1
1390	Pier No. 2 Form/Pour	12d	12d	11OCT00	27OCT00	43d	1
1400	Pier No. 3 Form Pour	12d	12d	27OCT00	14NOV00	43d	1
1410	Pier No. 4 Form/Pour	12d	12d	14NOV00	30NOV00	43d	1
Superstructure							
1180	Prestressed Beams	5d	5d	01FEB01	08FEB01	0	1
1420	Install Fall Protection / Overhang	10d	10d	08FEB01	22FEB01	6d	1
1430	Form Diaphragms/Pour End & Pier	12d	12d	14FEB01	02MAR01	0	1
1435	Install Intermediate Diaphragms	4d	4d	08FEB01	14FEB01	0	1
1440	Form Bays - Abutment No.1 thru Pier No.2	10d	10d	02MAR01	16MAR01	0	1
1445	Form Bays - Pier No.2 thru Abutment No.2	15d	15d	16MAR01	06APR01	0	1
1450	Install Rebar	15d	15d	06APR01	27APR01	0	1
1460	Pour/Cure Deck	10d	10d	27APR01	11MAY01	0	1
1470	Strip deck	10d	10d	11MAY01	25MAY01	0	1
Subbase							
1210	Subbase	14d	14d	11JUN01	29JUN01	0	1
Approach Slabs							
1220	Approach Slabs	10d	10d	29JUN01	16JUL01	0	1
Asphalt Pavement							
1230	Asphalt Pavement	20d	20d	16JUL01	13AUG01	0	1
Guardrail							
1090	Guardrail	17d	17d	13AUG01	05SEP01	0	1
Signage							
1120	Signage	15d	15d	13AUG01	03SEP01	10d	1
Seeding							
1100	Seeding	5d	5d	05SEP01	12SEP01	0	1
Striping							
1110	Striping	3d	3d	12SEP01	17SEP01	0	1
1300	Interim Completion	0	0		17SEP01	0	2
Punchlist/Cleanup/Demobilization							
1290	Punchlist	11d	11d	17SEP01	02OCT01	0	1
1295	Cleanup/Demobilization	10d	10d	02OCT01	16OCT01	0	1
Maintenance of Traffic							
1240	Maintenance of Traffic - Set-up	15d	15d	28AUG00	18SEP00	1d	1
1245	Maintenance of Traffic - Take Down	10d	10d	31AUG01	14SEP01	1d	1
1310	Project Complete	0	0		16OCT01	0	1