§2.2 Graphical Methods for Quantitative Date

Qualitative vs. Quantitative data: quantitative date has numeric values, qualitative has classes with ranges of values or nonnumeric labels.

Examples letter grades, eye color, city/state of address and make of automobile are qualitative. Numeric exam scores, height/weight, CRN and how much you spend per month on groceries are quantitative.

Example Below is a chart with information on some major storms that occurred in the United States.

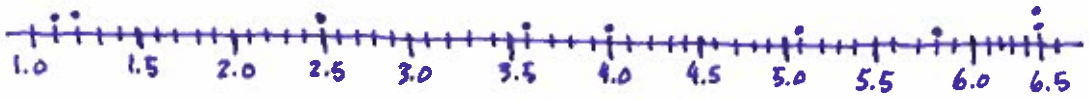
Storm name	Date	Category	Estimated Damage/Cost*	Deaths
Tropical Storm Alberto	Jul-94	n/a	1.2	32
Hurrican Marilyn	Sep-95	2	2.5	13
Hurrican Opal	Oct-95	3	~~5.8~~ 3.6	27
Hurrican Fran	Sep-96	3	5.8	37
Hurrican Bonnie	Aug-98	3	1.1	3
Hurrican George	Sep-98	2	6.5	16
Hurrican Floyd	Sep-99	2	6.5	77
Tropical Storm Allison	Jun-01	n/a	5.1	43
Hurrican Isabel	Sep-03	2	4.0	47

* Cost in billions of dollars

Qualitative: Storm name and Catagory
Quantitative: Cost and Deaths
The Date could be considered to be either: July-94 = 199407, Sep-03 = 200309

Dot Plots

For Cost:



See page 43 in the book for MPG on 100 cars.

Stem-and-leaf Display

For Cost:

1	1 2
2	5
3	6
4	0
5	1 8
6	5 5

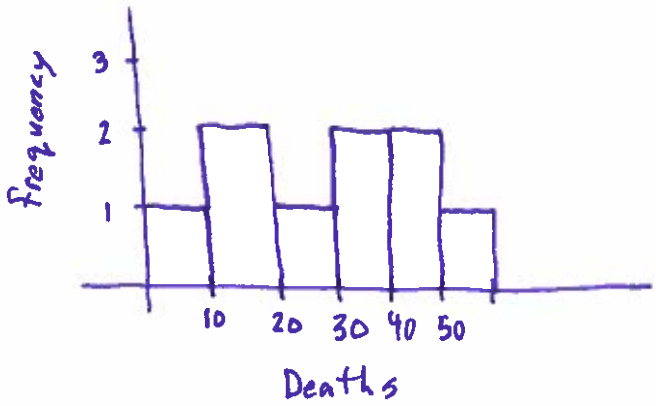
The whole number forms the first collumn (stem) and the decimal form the leafs, listed in ascending order

See page 44 in the book for MPG on 100 cars

Histograms: create class intervals and frequency (or relative frequency) chart, the create a bar chart/graph.

Example for Death data above:

Class Interval	Freq.	Rel. Freq.
0 - 10	1	1/9
11 - 20	2	2/9
21 - 30	1	1/9
31 - 40	2	2/9
41 - 50	2	2/9
51+	1	1/9
totals:	9	



See page 45 in the book for MPG on 100 cars.

For small data sets, use bigger intervals. For large data sets use smaller intervals.