The Organization and Graphic Presentation of Data

EDP 613

Week 2

Basic Ideas

- **Distribution** - All of the possible values for a variable and how often they occur
- **Frequency distribution** - A table that displays a distribution
- **Relative frequency** - How often something happens divided by all outcomes

Professor Salaries

Search:

	Rank	Discipline	Years Since PhD	Years of Service	Sex	Salary in USD
1	Professor	Applied	19	18	Male	139750
2	Professor	Applied	20	16	Male	173200
3	Assistant Professor	Applied	4	3	Male	79750
4	Professor	Applied	45	39	Male	115000
5	Professor	Applied	40	41	Male	141500

Showing 1 to 5 of 397 entries

Previous 1 2 3 4 5 … 80 Next

Frequency Distribution Table

Rank	Frequency
Assistant Professor	67
Associate Professor	64
Professor	266

Other Descriptive Information

- **Proportion** - A relative frequency taken from the whole frequency and is normally between 0 and 1.
- **Percentage** - A relative frequency taken from the whole frequency and is normally between 0 and 100.

Rank	Frequency	Proportion	Percent
Assistant Professor	67	0.1687657	16.88
Associate Professor	64	0.1612091	16.12
Professor	266	0.6700252	67.00

Cumulative Distributions

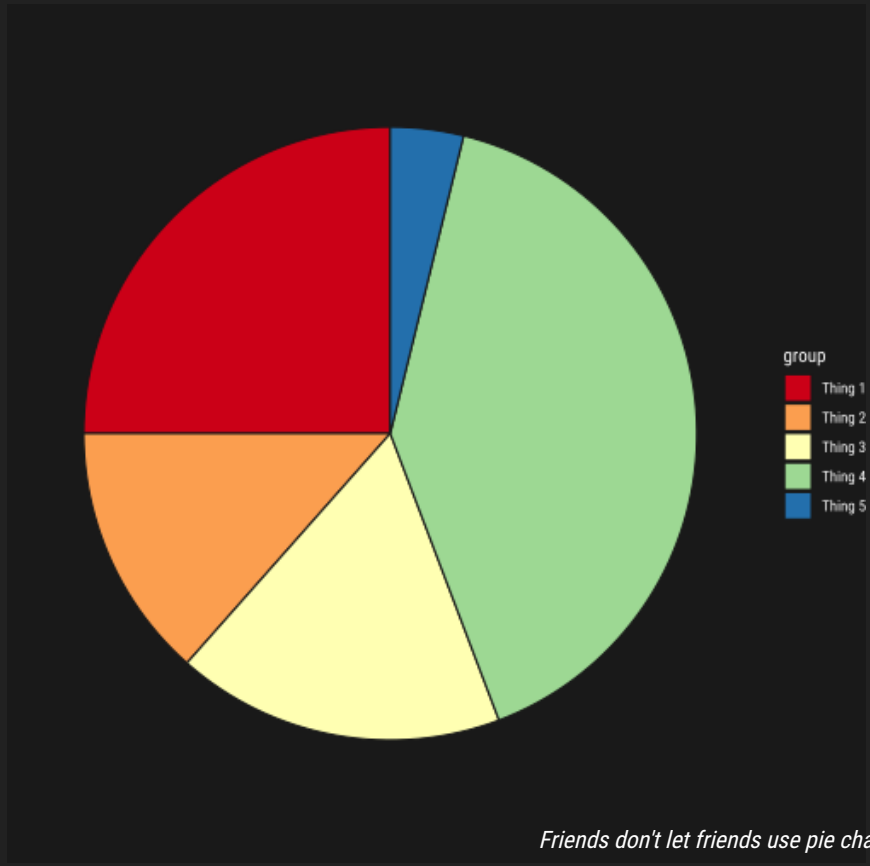
> - **Cumulative frequency** - A table that displays the frequencies at or below a given category.

Rank	Frequency	Proportion	Percent	Cumulative Proportion	Cumulative Percent
Assistant Professor	67	0.1687657	16.88	0.1687657	16.88
Associate Professor	64	0.1612091	16.12	0.3299748	33.00
Professor	266	0.6700252	67.00	1.0000000	100.00

Data Visualization

Pie Charts

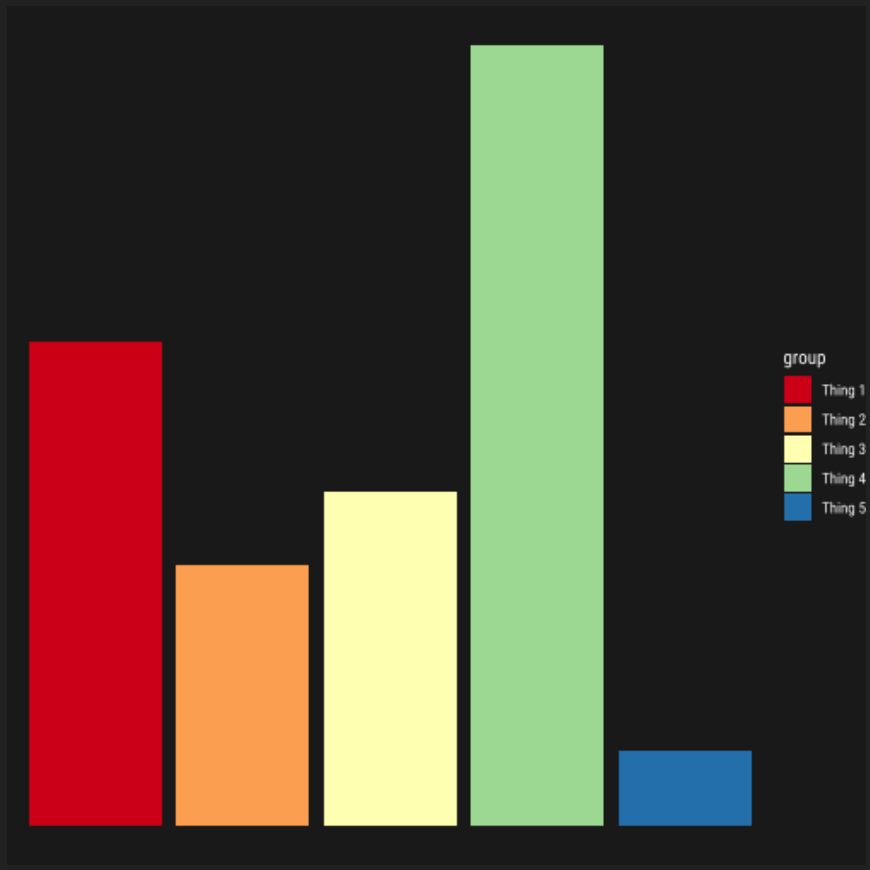
- discrete data



Friends don't let friends use pie charts!

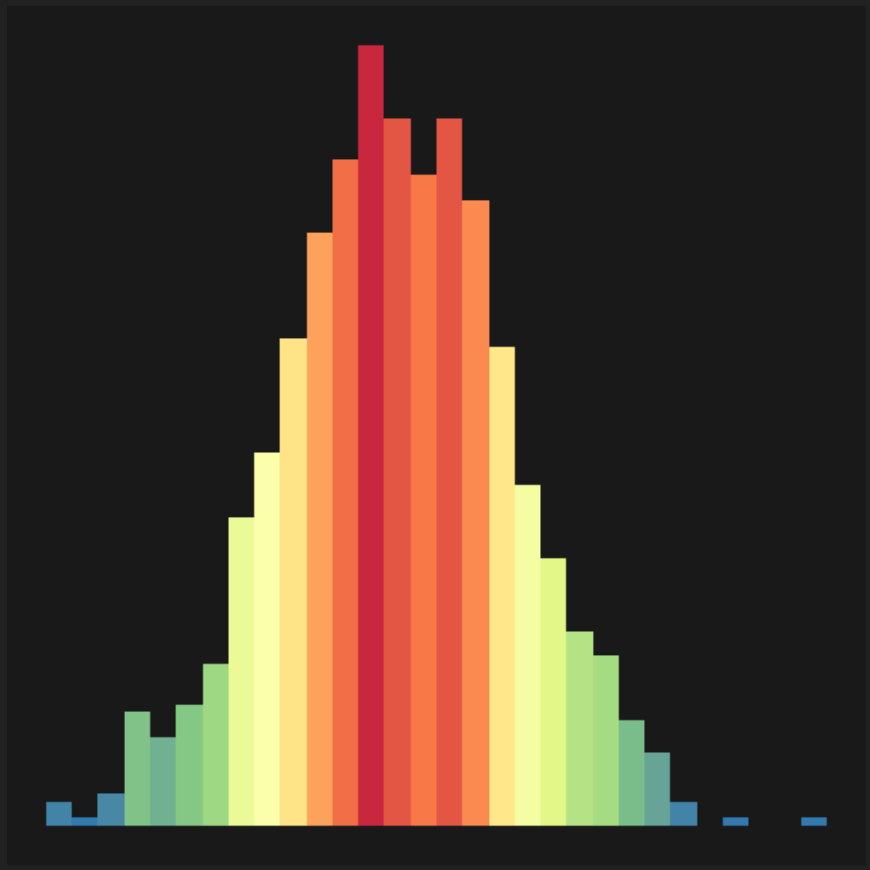
Bar Plot

- discrete data



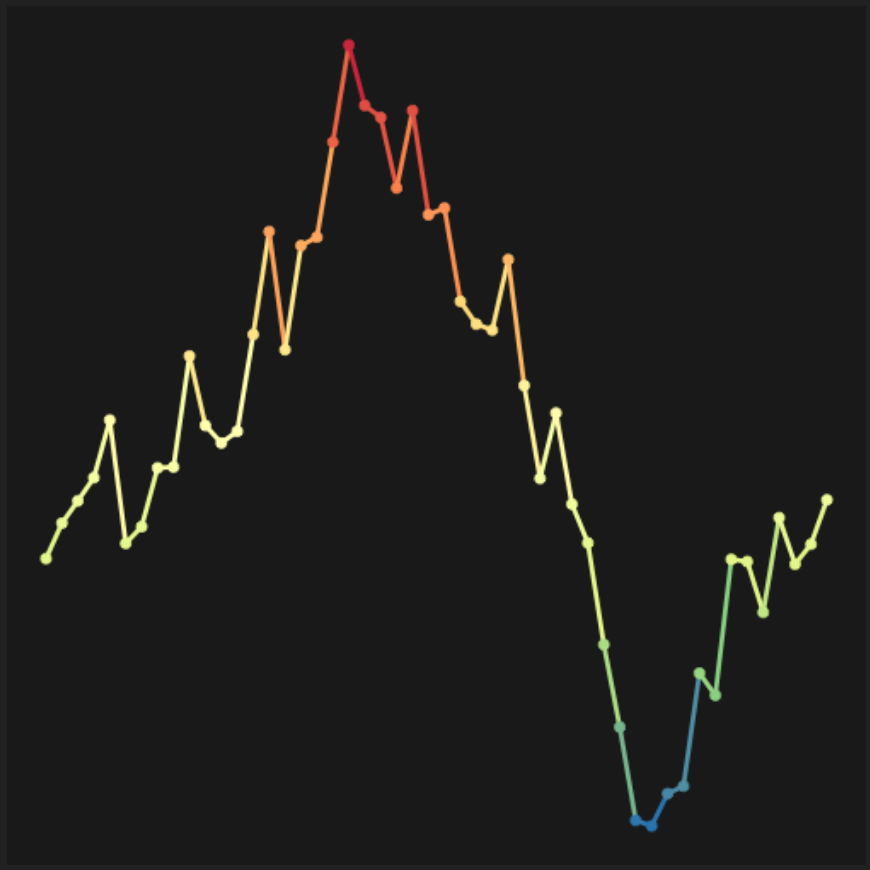
Histogram

- continuous data



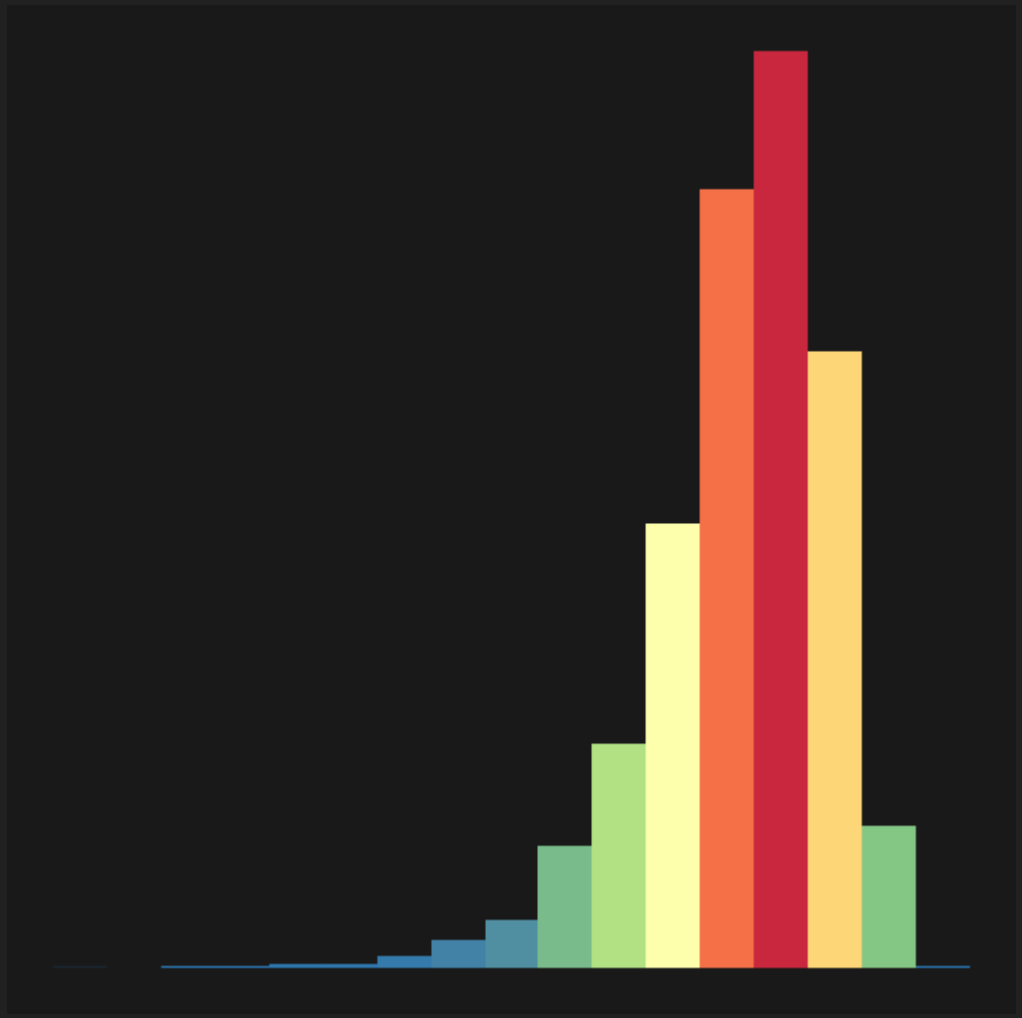
Line graph

- continuous data



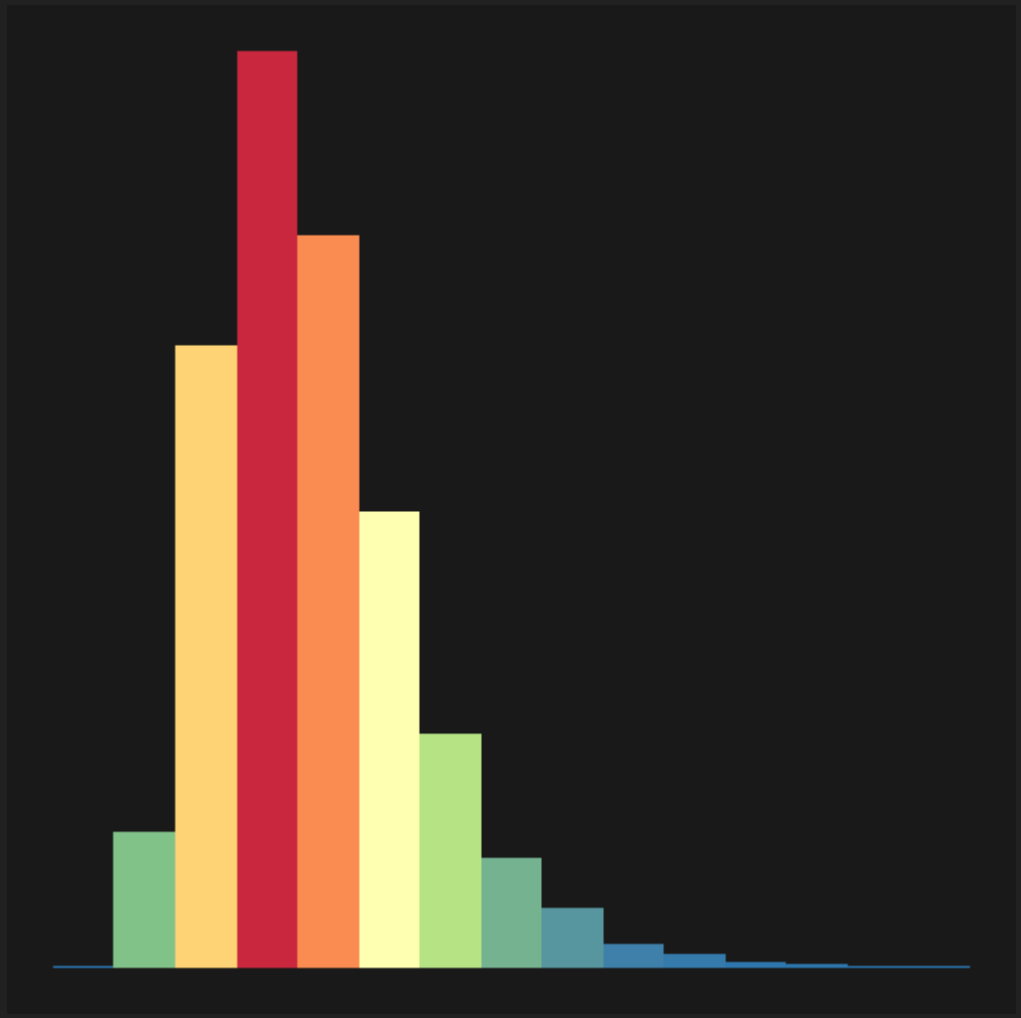
Special Distributions

- Skewed left OR Negative skew



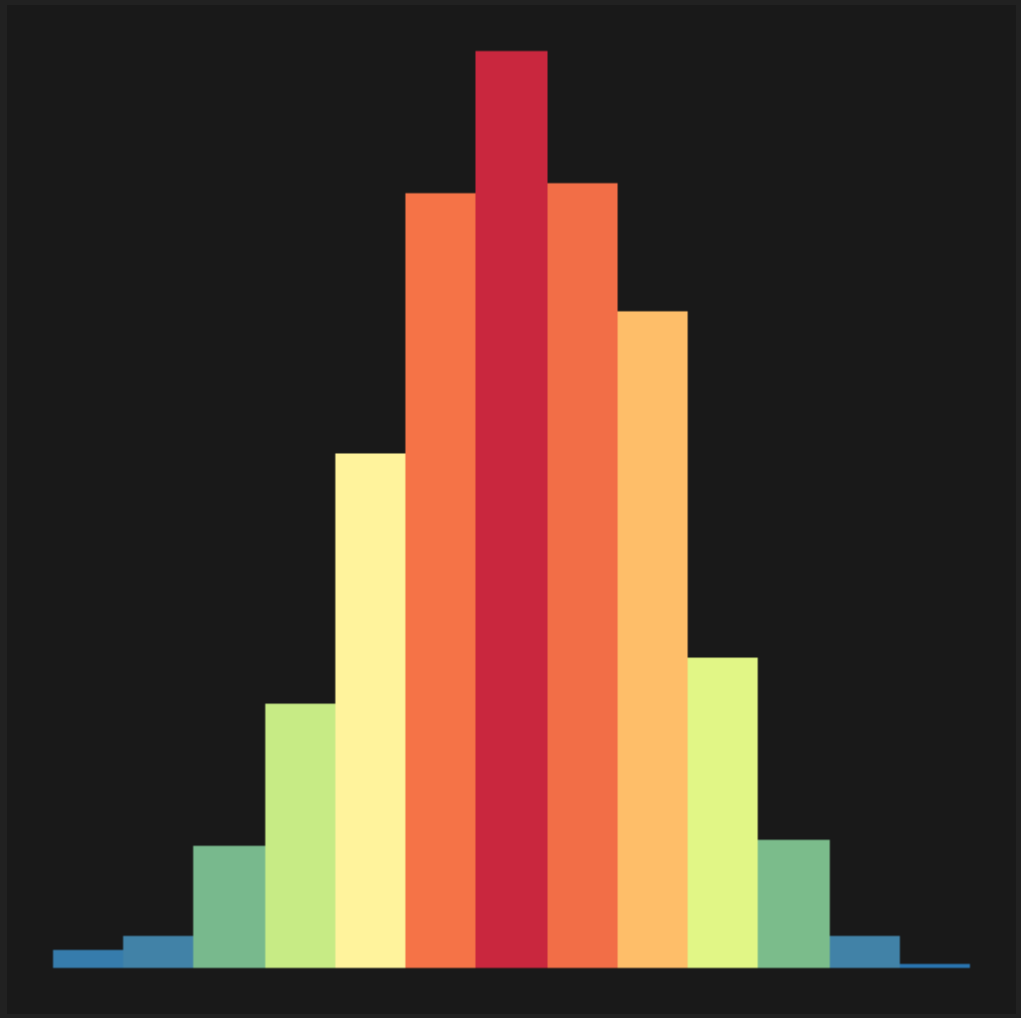
mode < median < mean

- Skewed right OR Positive skew



mode > median > mean

- Normal distribution



mode = median = mean

Remember that most of the time we're going to assume normality in this course!

That's it. Take a break before our R session!