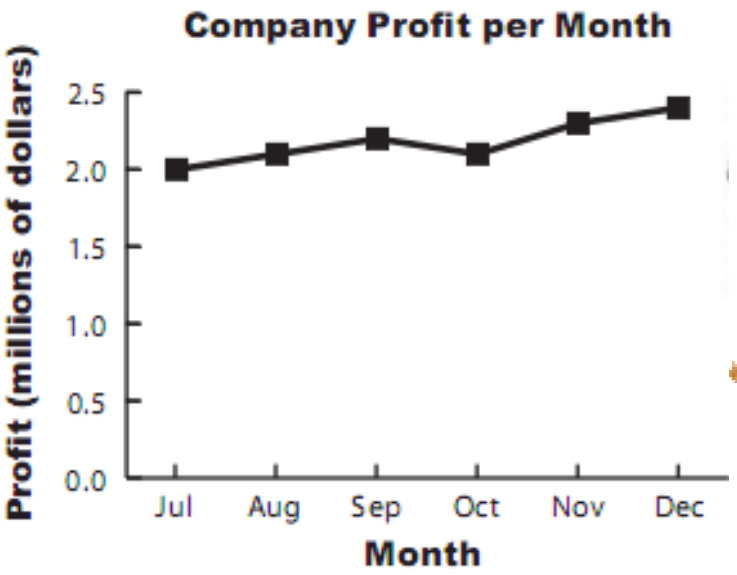
Why We need LEARN STATISTICS??

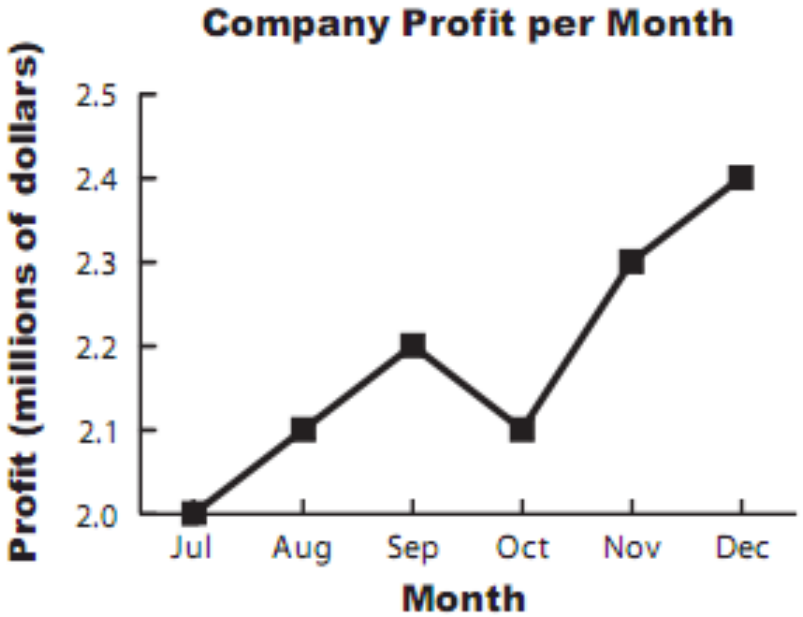
→Summarizing the truths about data

→Make objective decisions

→Make accurate prediction



Both of these charts are based on the same information but they look wildly different. What 's going on?



CHAPTER I
MEASURES OF CENTRAL TENDENCY & VARIABILITY

Curriculum Objective:

- **Determine the measures of central tendency and variability**
- **Apply these tendencies to solving problems**
- **Analyze these measure in the case**

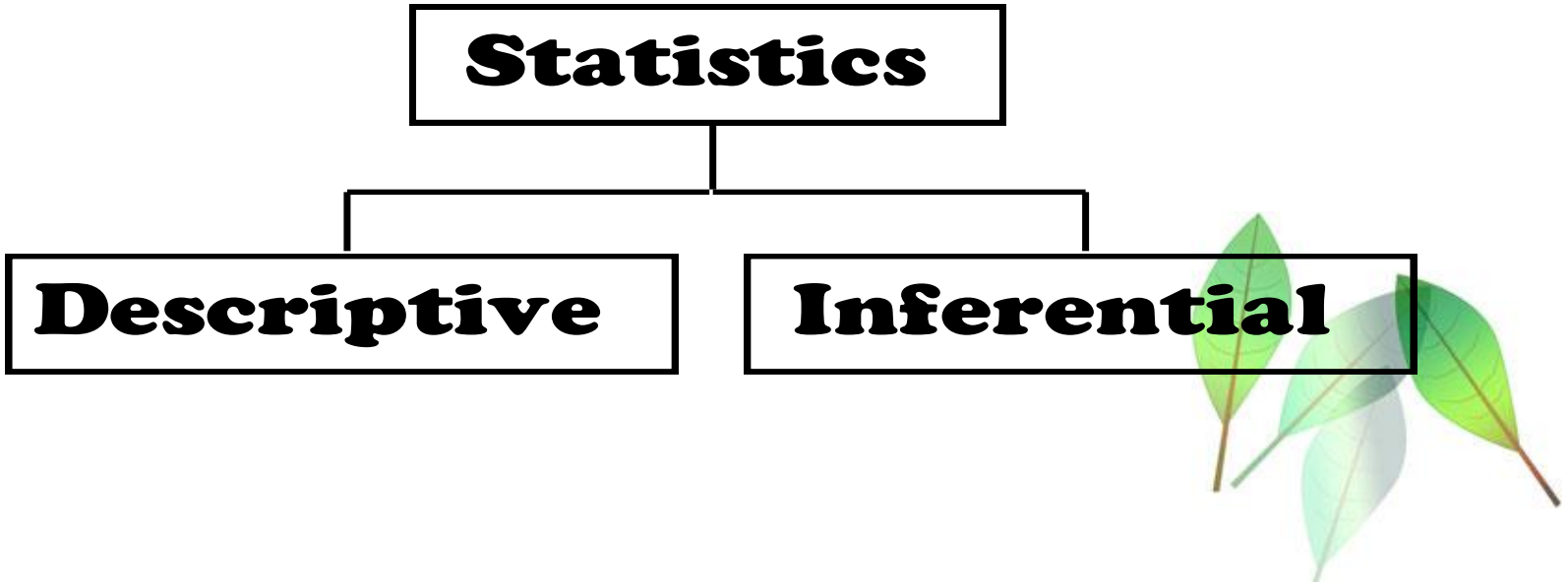
I want look pretty, so give the right impression?

Can U tell the fact from my figures?

Visualizing → Telling

Are u realized if statistic is everywhere????

What is Statistics?



Descriptive Statistics

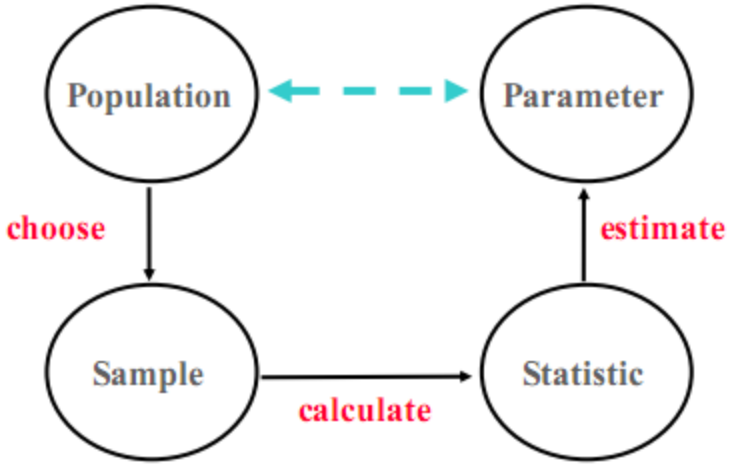
→Describe the characteristic of the data

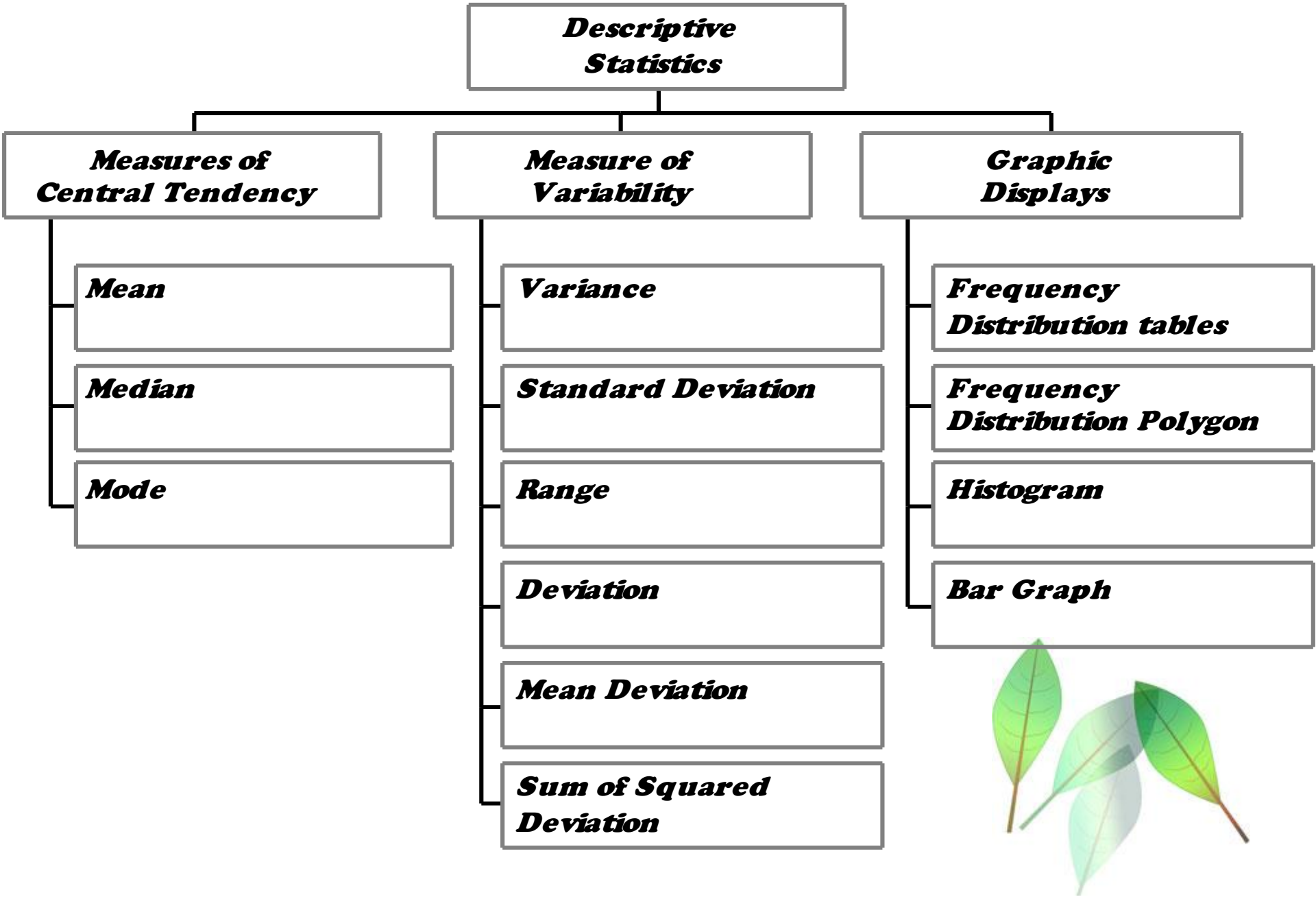
such as ; mean, median, std dev, variansi etc

Inferential Statistics

→Make an inferences about the population, characteristics from information contained in a sample drawn from population

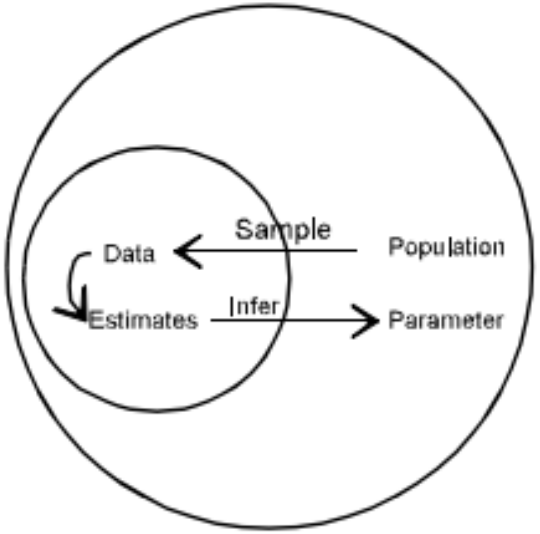
Such as : prediction, estimation, take the decision




Descriptive Statistics
Measures of Central Tendency
Measure of Variability
Graphic Displays
Mean
Median
Mode
Variance
Standard Deviation
Range
Deviation
Mean Deviation
Sum of Squared Deviation
Frequency Distribution tables
Frequency Distribution Polygon
Histogram
Bar Graph

1. Population

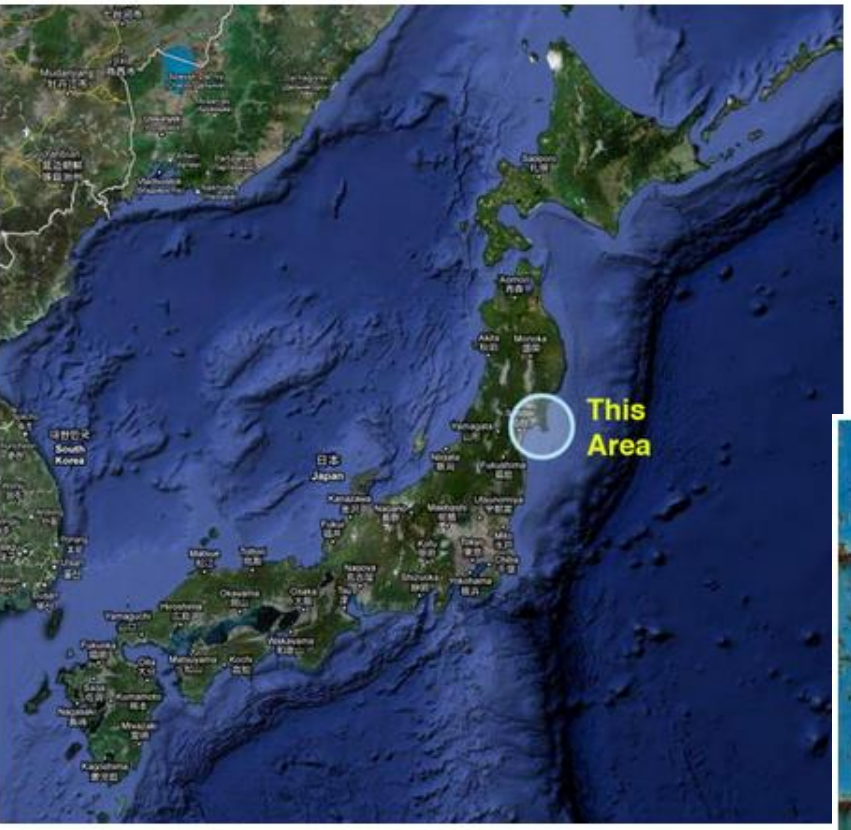
Is the set of all measurements of interest the investigator → parameter



2. Sample

Is a subset of measurements selected from the population of interest → statistic

Pulau Kucing (Tashirojima)



sumber: http://aksesdunia.com/tag/populasi-kucing/#ixzz1mPfpplYC

Data Scale

Qualitative Data

a. Nominal

Example: gender, date birth→ same level

b. Ordinal

Example : taste, grade score (difference level)

Quantitative Data

a. Interval

Data have a range

Example : Hot enough: 50 – 80 derajat C,

Hot 80 – 110 C,

Very Hot: 110 – 140 C

b. Ratio Data (0 absolut)
Can be applied with mathematic operations
Example : height, weight

example

	Jenis Kelamin	Warna Kulit	Perilaku/ Sikap	Suhu Tubuh	Berat Badan	Ujian	Peringkat	Huruf Mutu
	(L-P)		(20-80)	°Celcius		(0-100)	(1-11)	(A-F)
Barb	P	Hitam	80	36	60	100	1	A
Chris	L	Coklat	48	35	65	96	2.5	A
Bonnie	P	Putih	74	36	55	96	2.5	A
Robert	L	Kuning	35	37	57	93	4	A
Jim	L	Merah tembaga	79	35	70	92	5	A
Tina	P	Putih	60	34	45	89	7	B
Ron	L	Hitam	40	36	67	89	7	B
Jeff	L	Coklat	56	37	58	89	7	B
Brenda	P	Coklat	74	35	50	88	9	B
Mark	L	Putih	56	37	100	82	10	B
Mike	L	Kuning	65	36	90	75	11	C
Skala	nominal	nominal	interval	interval	rasio	rasio	ordinal	ordinal

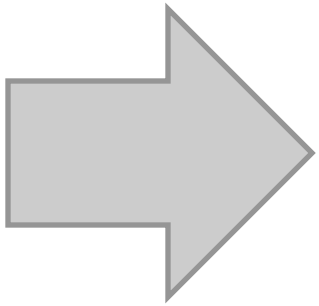
Visualizing information

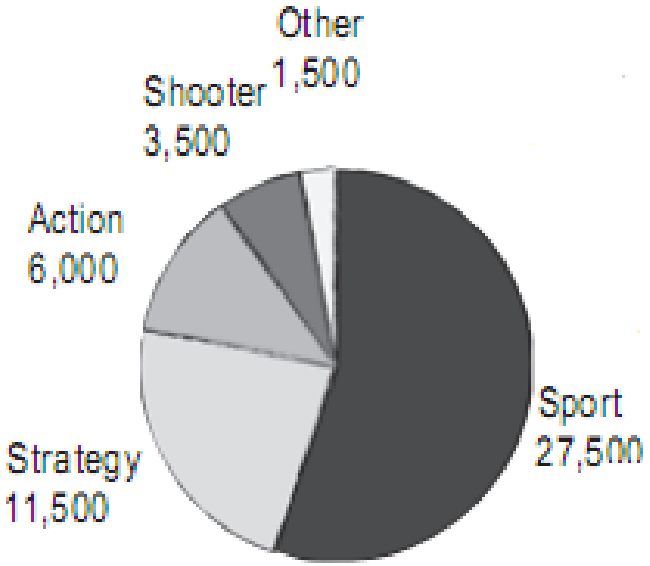
1. Pie Chart

The CEO want to compare the percentage of satisfied players for each game genre.

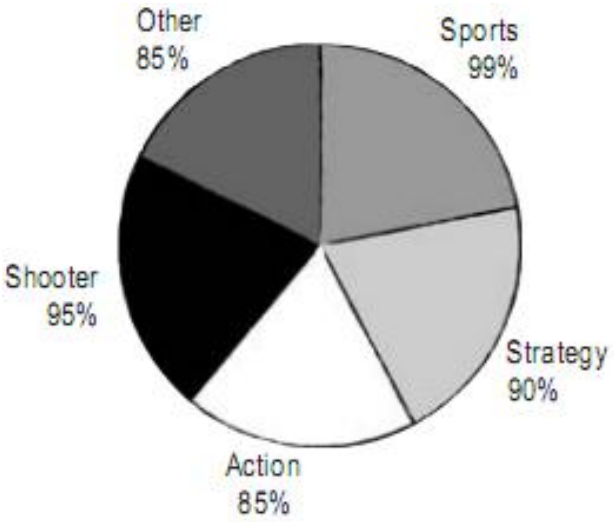
Genre	Units sold
Sports	27,500
Strategy	11,500
Action	6,000
Shooter	3,500
Other	1,500

sports	27500	55
strategi	11500	23
action	6000	12
shooter	3500	7
other	1500	3
total	50000	100



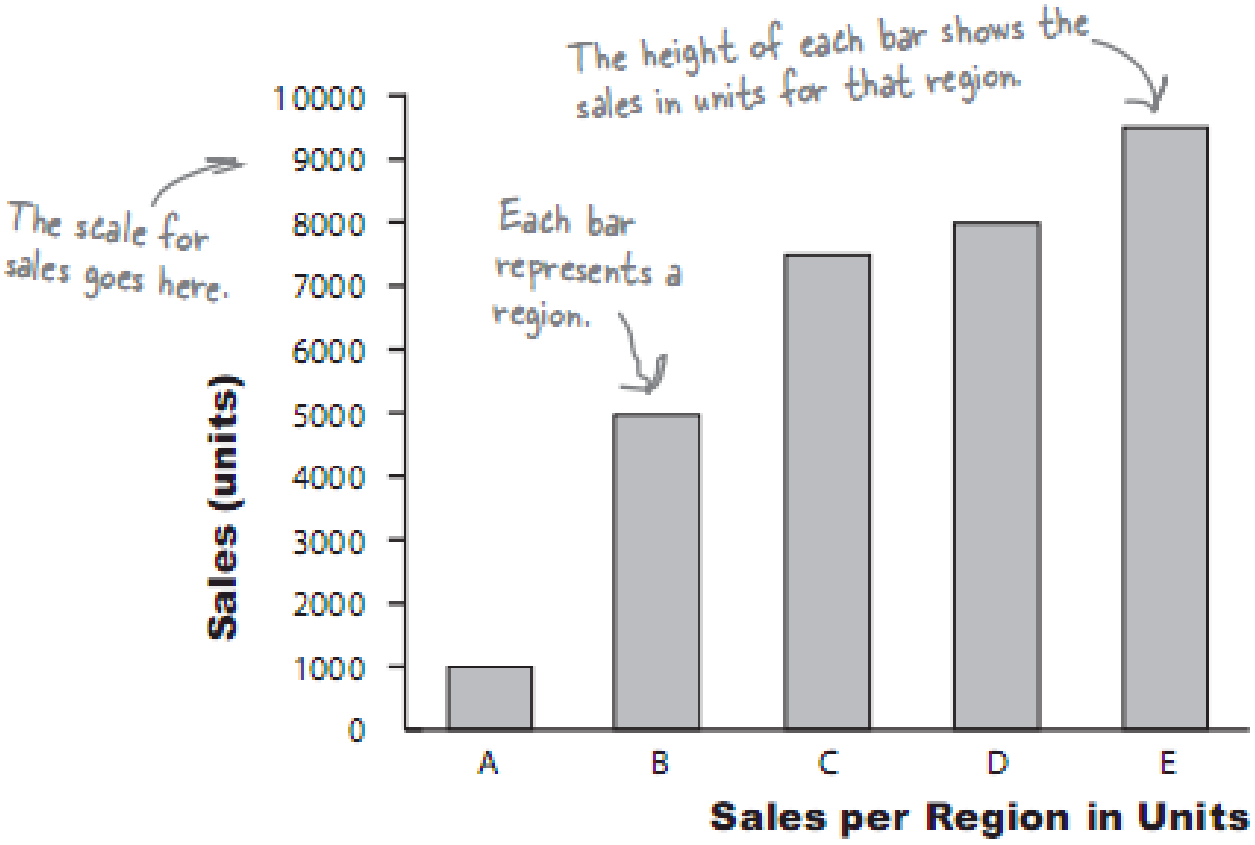


What going on with this chart?



2. Vertical bar charts

Ex. Chart showing the sales for five regions

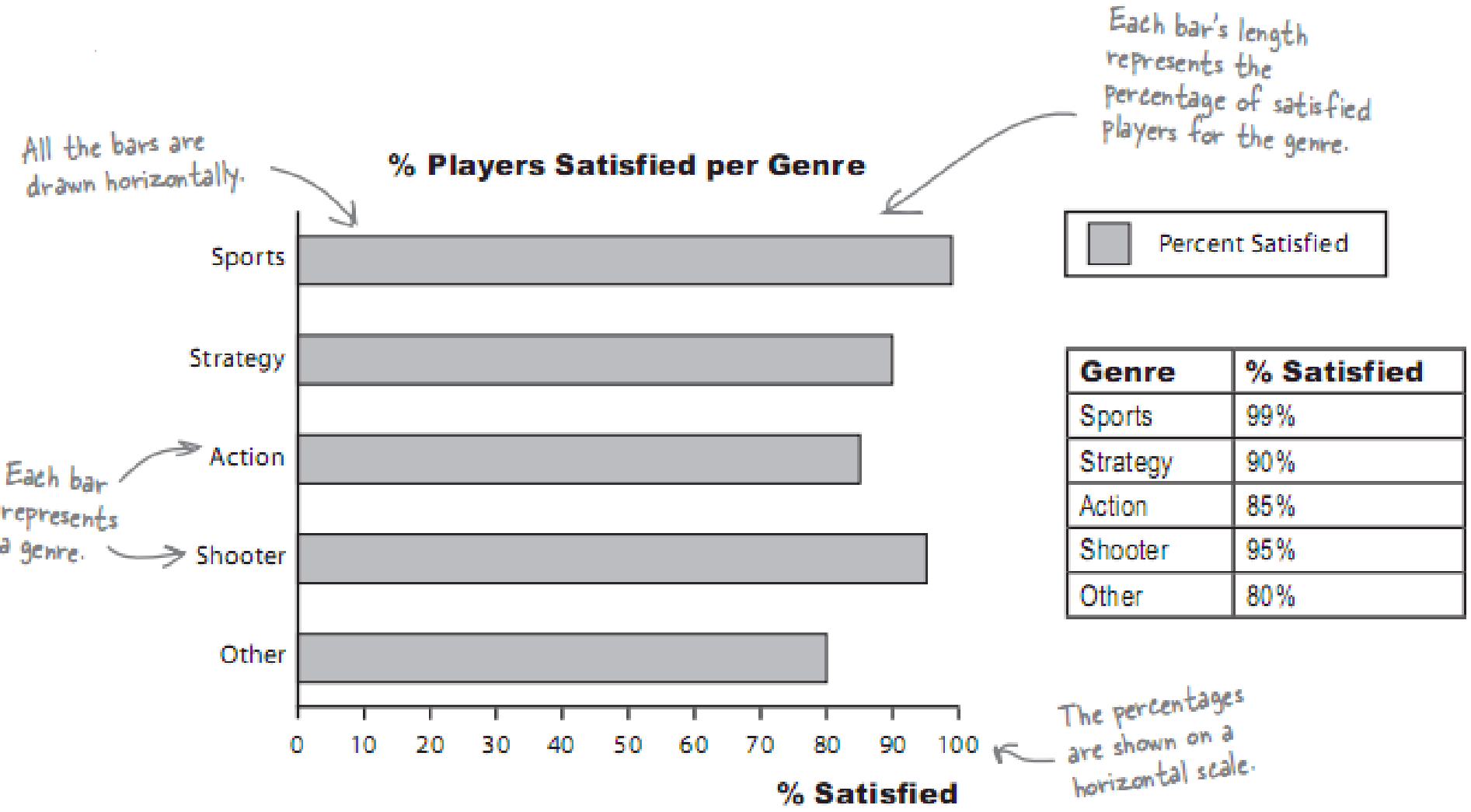


Sales (units)

Region	Sales (units)
A	1,000
B	5,000
C	7,500
D	8,000
E	9,500

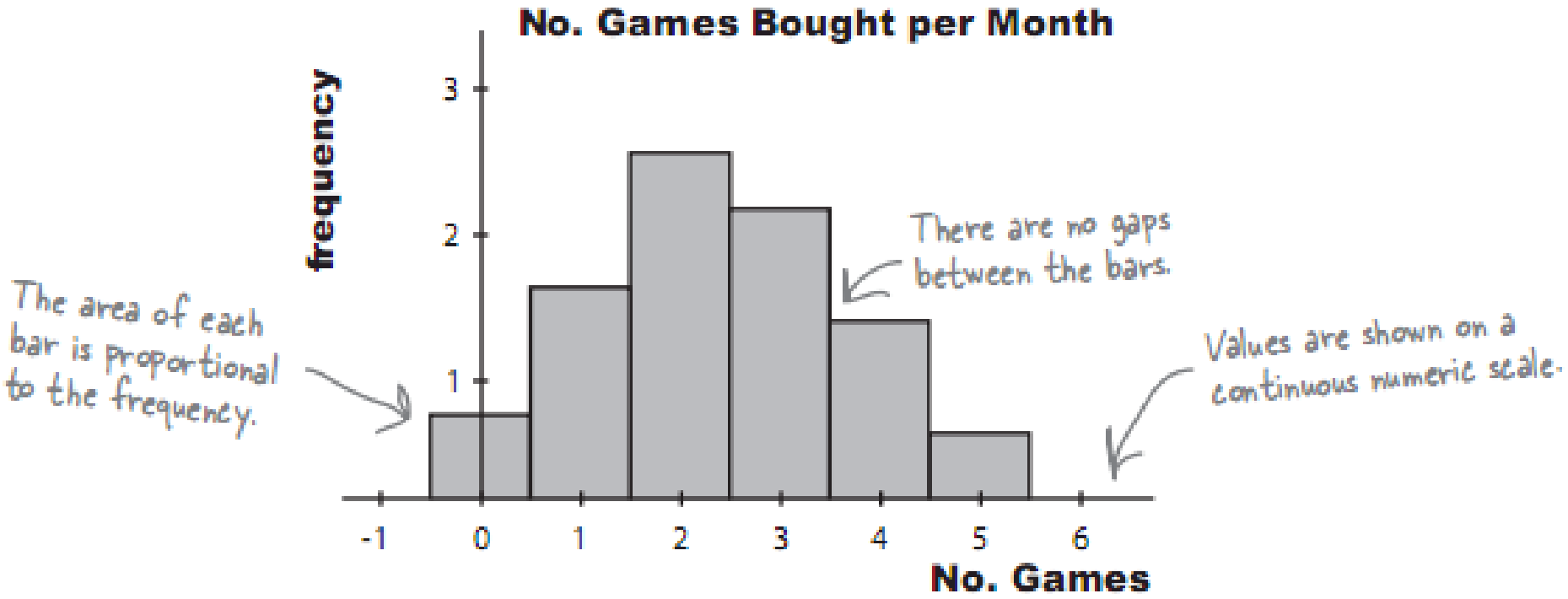
3. Horizontal Bar Charts

Ex.

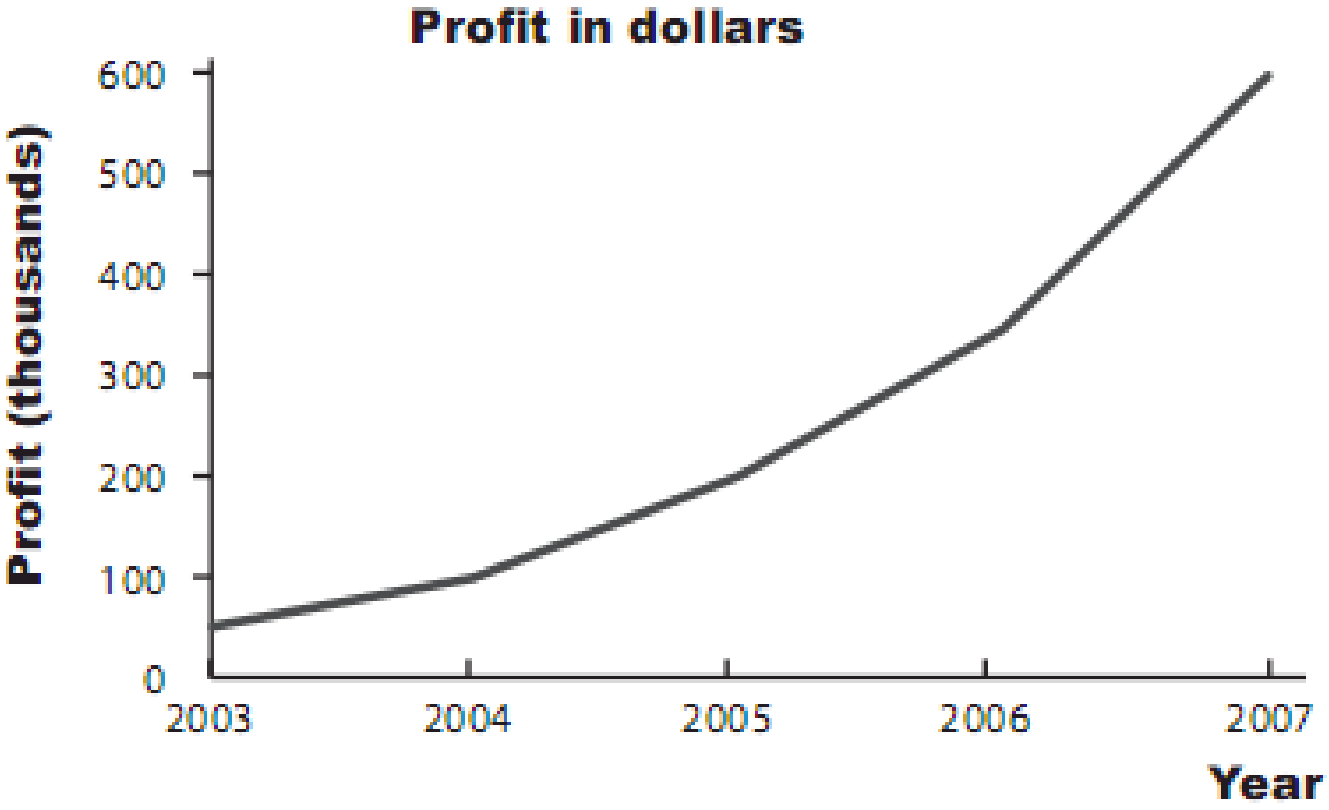


Genre	% Satisfied
Sports	99%
Strategy	90%
Action	85%
Shooter	95%
Other	80%

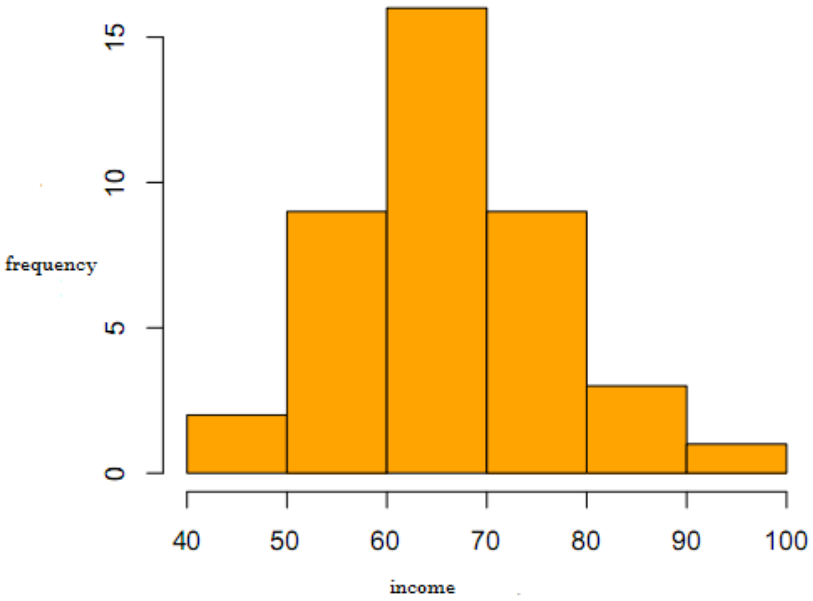
4. Histogram

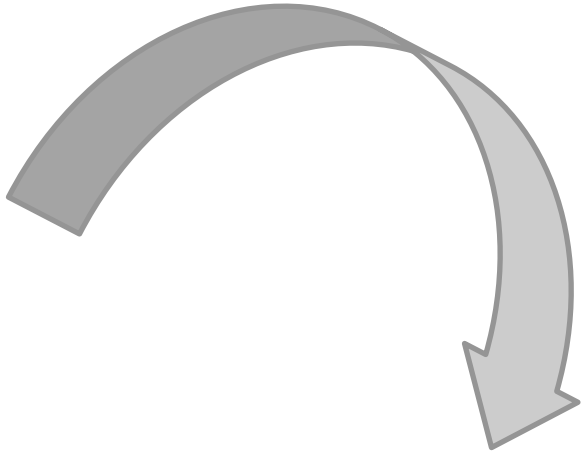

No. Games Bought per Month
frequency
3
2
1
-1
0
1
2
3
4
5
6
No. Games
The area of each bar is proportional to the frequency.
There are no gaps between the bars.
Values are shown on a continuous numeric scale.

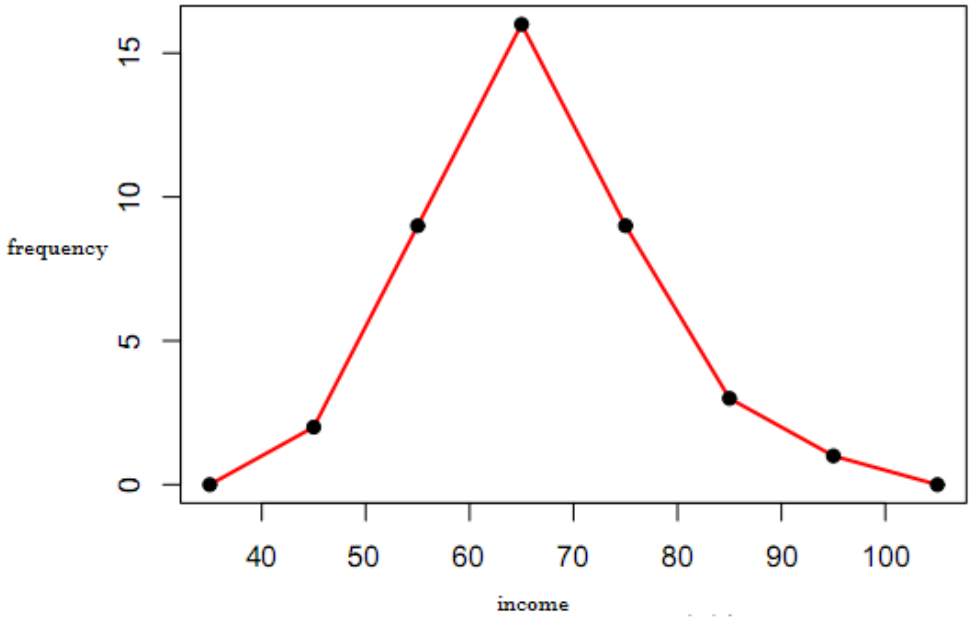
5. Line Charts



6. Polygon Frequency





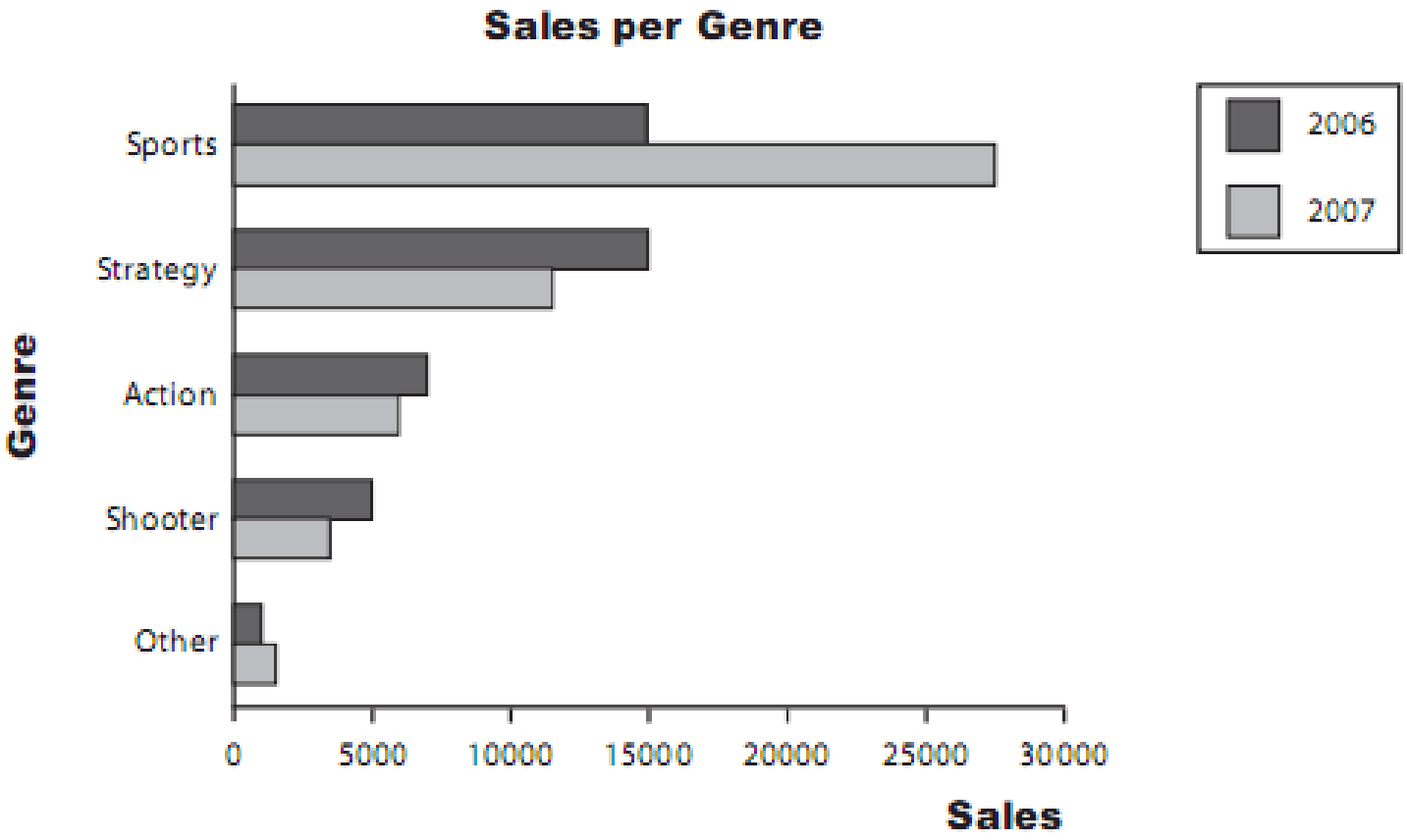


The CEO needs another chart for the keynote presentation. Here's the data; see if you can sketch the bar chart.

Continent	Sales (units)
North America	1,500
South America	500
Europe	1,500
Asia	2,000
Oceania	1,000
Africa	500
Antarctica	1

Sharpen your pencil

Here's another chart generated by the software. Which genre sold the most in 2007? How did this genre fare in 2006?



Here are two possible charts that the CEO could use in his keynote. Your task is to annotate each one, and say what you think the strengths and weaknesses are of each one relative to the other. Which would you pick?