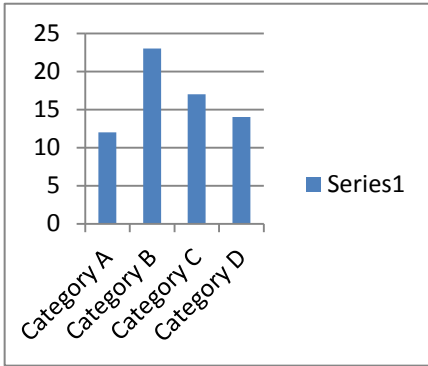


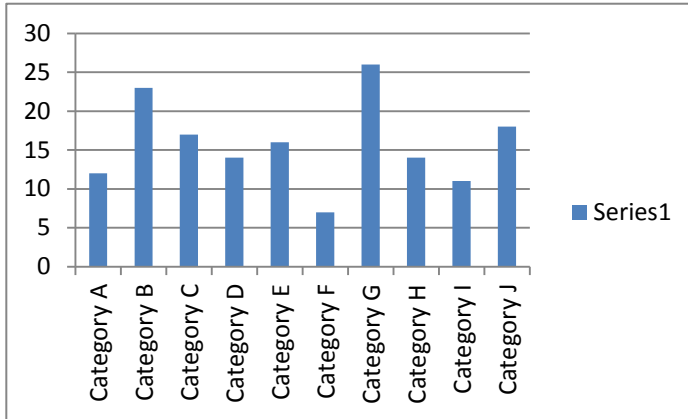
# The Shaffer 4 C's of Data Visualization

## "Clean" Examples

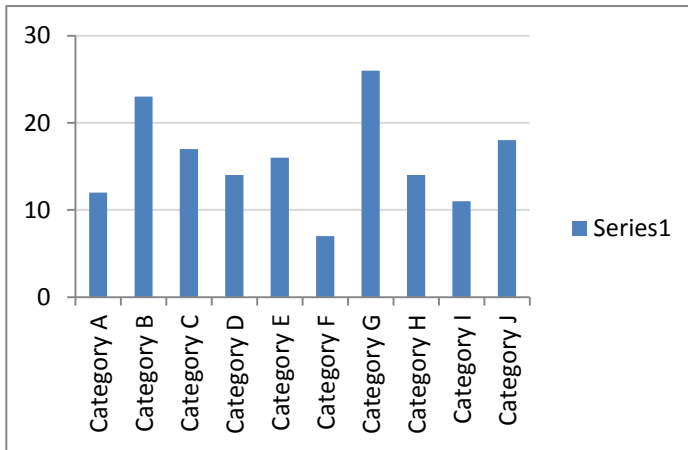
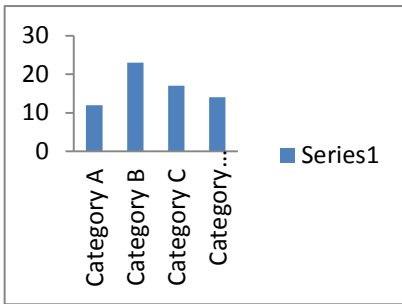
**Default in Excel**



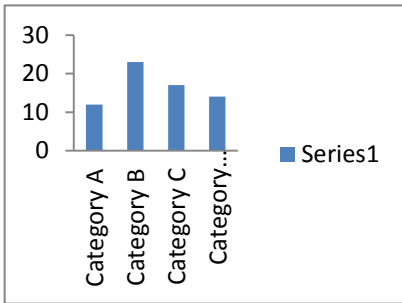
**Default in Excel**



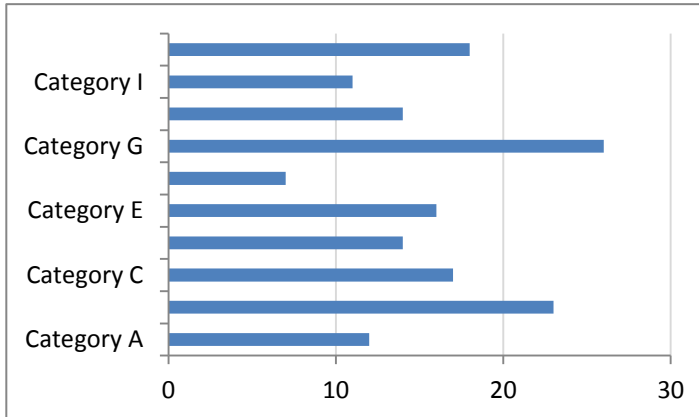
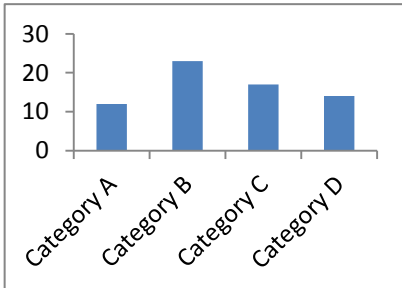
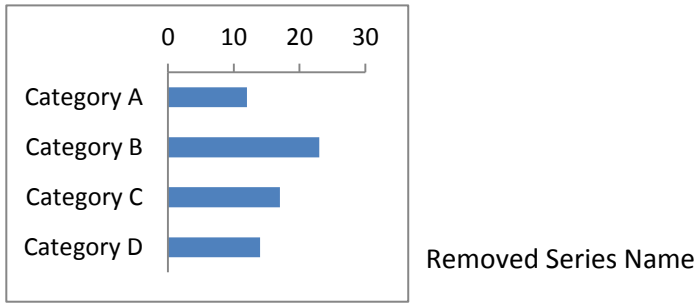
**Remove/Lighten Gridlines and lower # of Y-Axis Tick Marks**



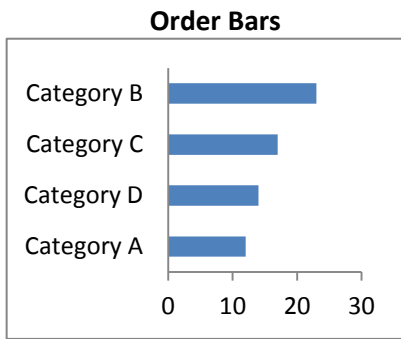
**Avoid Rotated Text**



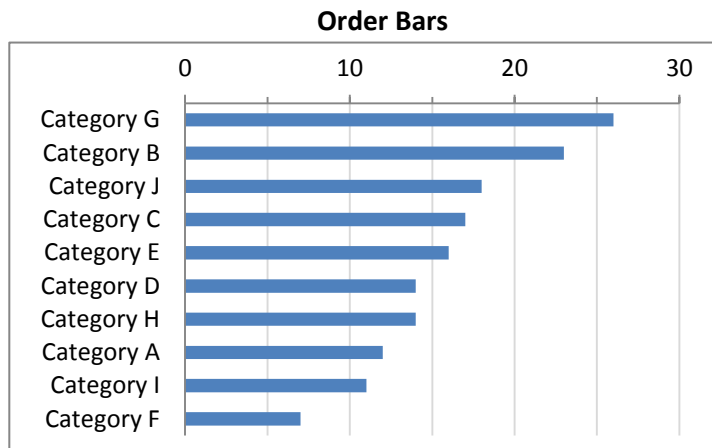
**Rotate Chart Instead**



## The Shaffer 4 C's of Data Visualization "Clean" Examples



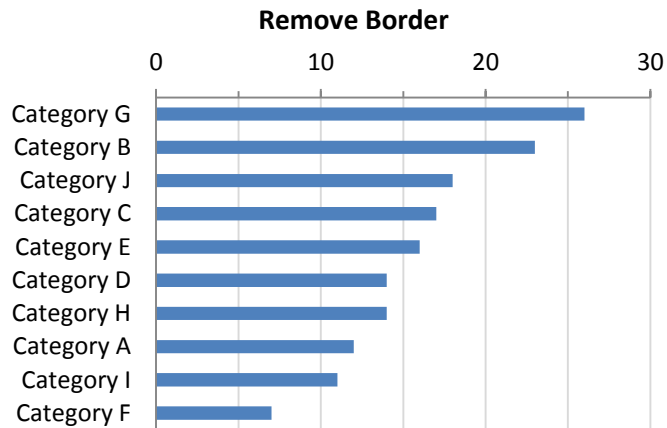
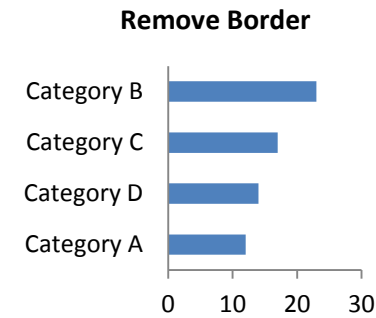
Removed tick marks on y-axis



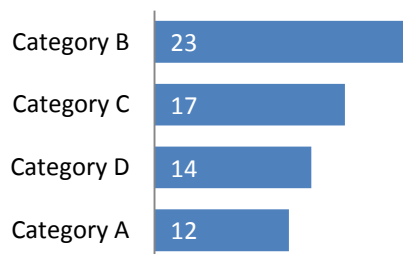
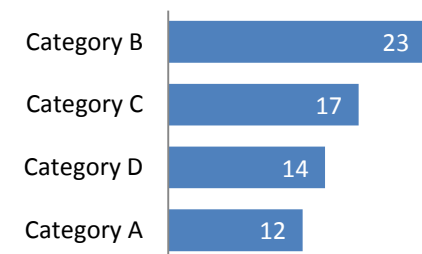
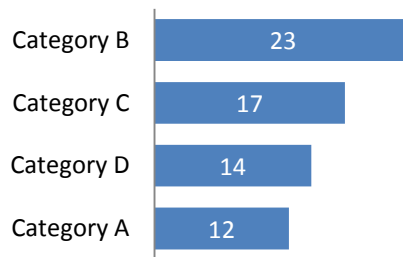
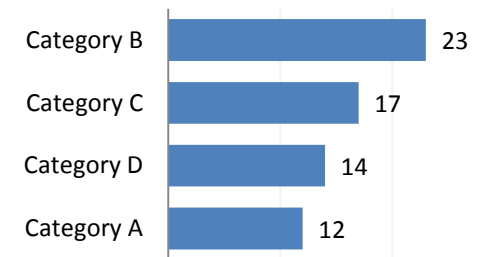
Note - Labels in units of 10 with gridlines. Added minor gridlines and minor ticks in units of 5.

Ordering Data adds context unless a specific order is required.

Ex. North, South, East, West (save alphabetical order for reference tables)

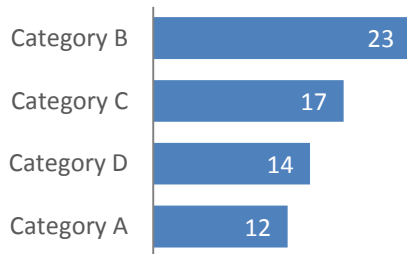


**If reasonable number of bars consider data labels instead of axis labels**

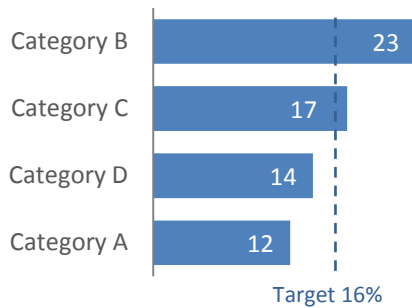


# The Shaffer 4 C's of Data Visualization "Clean" Examples

## Fine Tune Colors (ex. Dark Gray vs. Black)

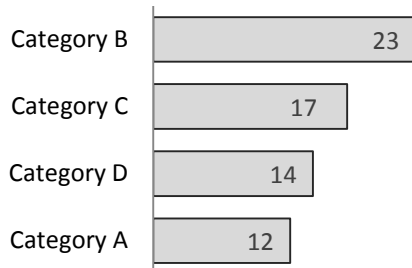


## Add Context - Ex. add Target Line, Expected Value or Average

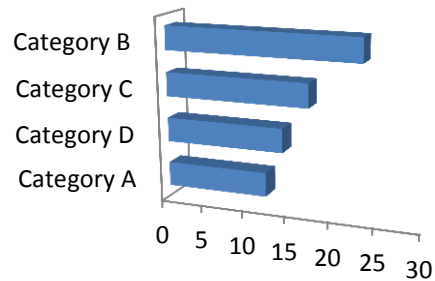


Tip - Add target lines and text at last step to avoid reformatting of chart. Using a dotted line or different color will help contrast the target line vs. a gridline.

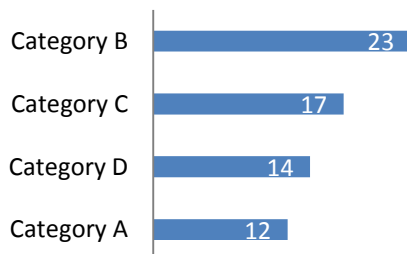
## Avoid Stark Borders on Bars



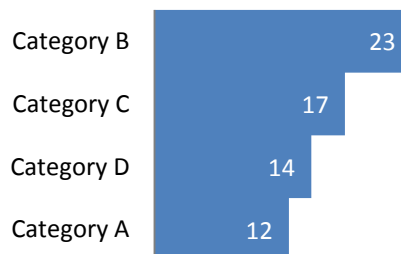
## Avoid 3D Bars



## Avoid Narrow Bars



## Avoid Connected Bars (unless distribution)

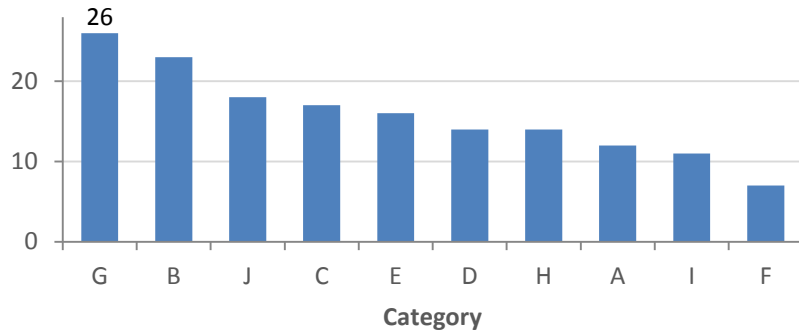


Note - distributions are typically graphed as vertical bars, connected and with a border.

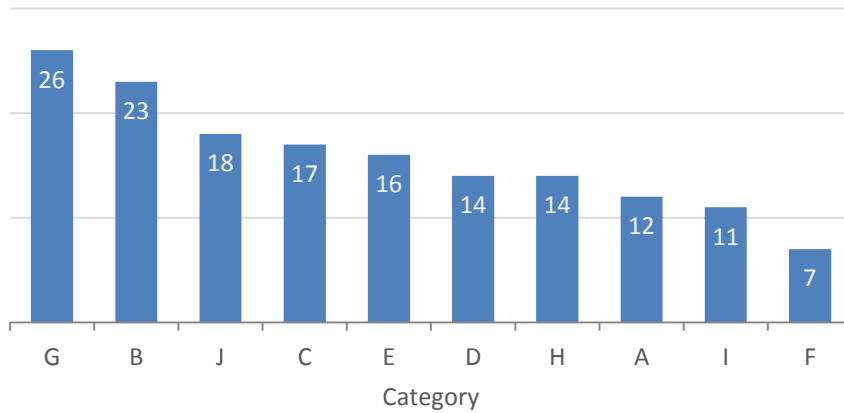
## The Shaffer 4 C's of Data Visualization "Clean" Examples

**Avoid Repeated Text.** Example, if "Category" were truly repeated vs. unique names.

Example with y-axis and one highlighted data point. 3 labels vs. 10 Data points.

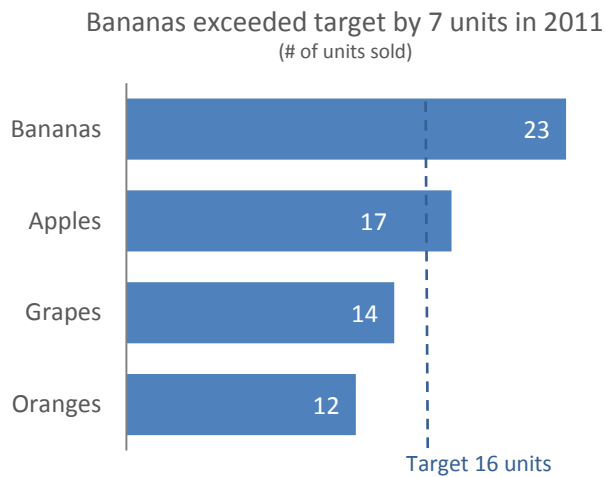


Example with 10 data points and no y-axis.



**Add Title (tell the story)**

**Include Labels (\$, # or %), Data Source, Date, Author, etc.**



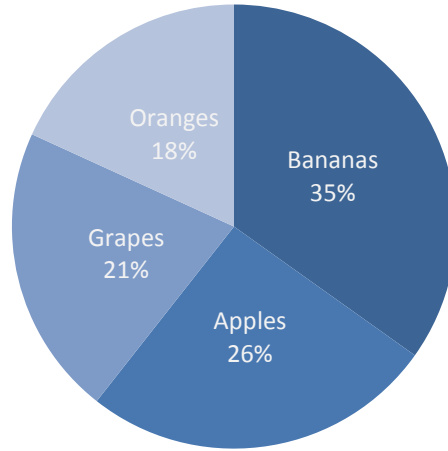
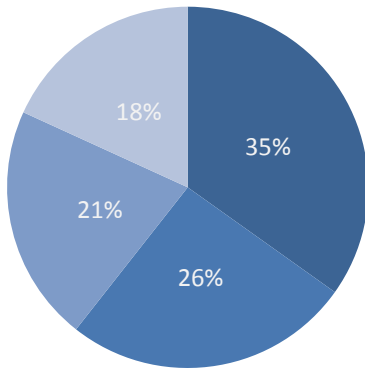
Source - 2011 Actual Sales from BI Tool  
Created by Jeffrey A. Shaffer  
2/17/2011

## The Shaffer 4 C's of Data Visualization "Clean" Examples

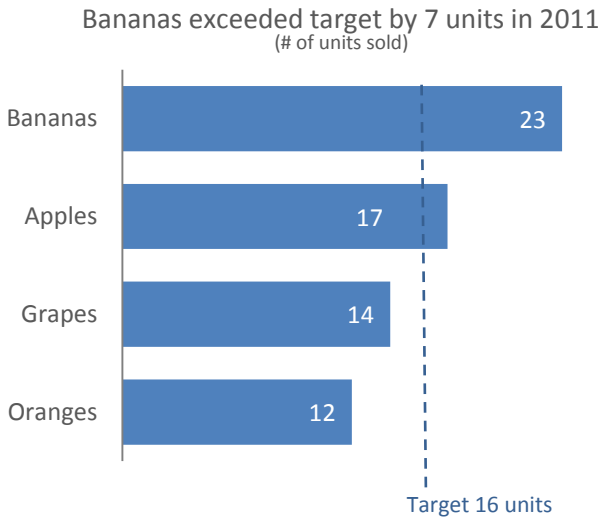
Sometimes it's necessary to show a % of a total. Example, Bananas as a % of total fruit.

Avoid Pie Charts

■ Bananas ■ Apples ■ Grapes ■ Oranges



Use bar charts for easier comparison and 100% stacked-bar chart for part to whole



Bananas represent 35% of total unit sales

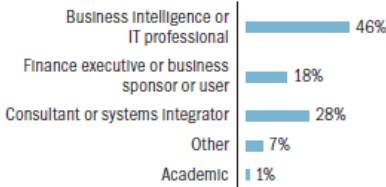


Source - 2011 Actual Sales from BI Tool  
Created by Jeffrey A. Shaffer  
2/17/2011

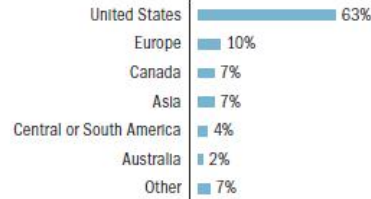
## The Shaffer 4 C's of Data Visualization "Clean" Examples

Here is an excellent example of these practices in use taken from:  
TDWI Best Practices Report entitled "Transforming Finance" by Wayne Eckerson

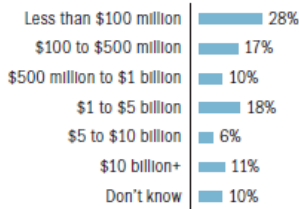
### What is your position?\*



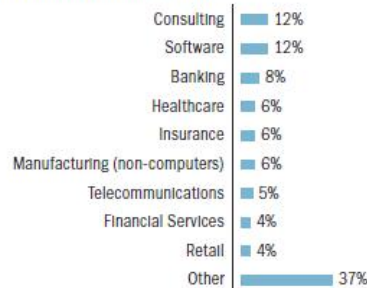
### Where are you located?



### What are the annual revenues of your organization?



### What industry are you from?



\*"Position" based on 282 survey respondents; all other demographics and figures based on 278 respondents.

### To what degree do you agree with the following statements?

"Our finance department ..."

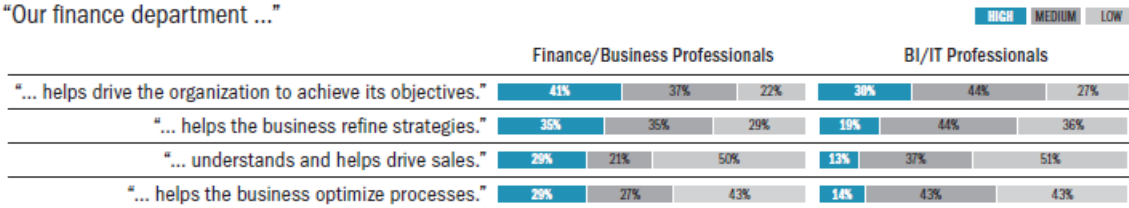


Figure 1. Less than half of survey respondents thought the finance department provides a strategic advisory role to the business to a high degree. Finance/business professionals had a more favorable opinion of finance's impact on the business than BI/IT professionals did.

### Rate the importance and effectiveness of each BI tool below for your finance team today.

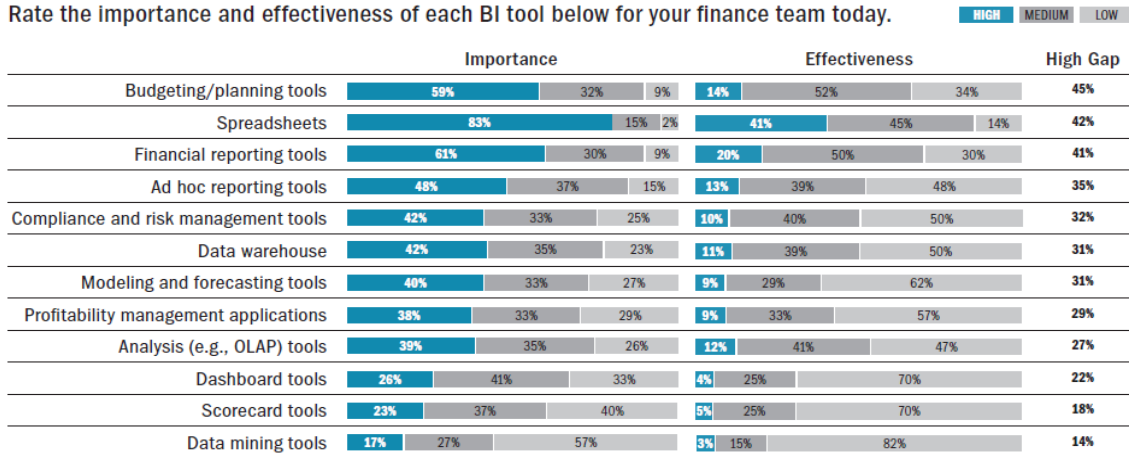


Figure 7. The finance department values many BI tools but is not very effective at implementing them, largely because a majority have yet to do so (except for financial reports and spreadsheets).