
DESCRIPTIVE STATISTICS IN MICROSOFT EXCEL

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A common task in business analysis is to analyze data in an attempt to provide insights for decision-making. A good first step is to investigate and describe features of the data by calculating a set of metrics that are often broadly referred to as “descriptive statistics.” Microsoft Excel offers numerous built-in functions for generating descriptive statistics. The purpose of this note is to illustrate the use of Excel functions for calculating the descriptive statistics of continuous data.

Upon completion of this note and its associated activities, you will be familiar with the functions used to identify the minimum, maximum, rank, average, median, variance, and standard deviation of a single continuous variable. You will also be familiar with functions for computing the covariance and the correlation between two continuous variables in a data set.

DESCRIBING THE RANGE OF THE DATA

The COUNT and COUNTA Functions

In large data sets, it is useful to be able to quickly count the number of data points. For example, suppose you have a list of all the products available at a large retailer and want to know how many products are available. Or, your manager may send you an unlabelled list of the past week’s customers, and you need to know the total number of customers. For counting the number of items in a data set, Excel has two useful functions: COUNT and COUNTA. COUNT identifies the number of numeric items in the data set. COUNTA identifies all the items in the data set, both numeric and non-numeric.

COUNT(value1, [value2], . . .) is a function that counts the number of cells that contain numbers. The arguments can be a list or a reference to a range.

COUNTA(value1, [value2], . . .) is a function that counts the number of cells that are not blank. The arguments can be a list or a reference to a range.

Example 1: Using the following product sales data (in the left panel below), count the number of products in the list and count the number of products that had sales.

DATA				SOLUTION					
	A	B	C	D		A	B	C	D
1		Product SKU	Monthly sales		1		Product SKU	Monthly sales	
2		A1B2C3	\$490		2		A1B2C3	\$490	
3		PK1H23	\$280		3		PK1H23	\$280	
4		A1F5Z8	\$194		4		A1F5Z8	\$194	
5		PV7H14	\$674		5		PV7H14	\$674	
6		D1B2M5	NA		6		D1B2M5	NA	
7		LK1R89	\$549		7		LK1R89	\$549	
8		P34BT6	\$698		8		P34BT6	\$698	
9		D1B2M6	\$209		9		D1B2M6	\$209	
10		YK1R90	\$201		10		YK1R90	\$201	
11		P34BT7	\$677		11		P34BT7	\$677	
12		D1B8R7	\$415		12		D1B8R7	\$415	
13		LK1R91	\$144		13		LK1R91	\$144	
14					14				
15					15	COUNT	0	11	
16					16	COUNTA	12	=COUNTA(C2:C13)	
17					17				

Solution: The items in the column Product SKU are expressed in an alphanumeric code. To count such non-numeric data, we must use the COUNTA function. The COUNTA function accurately identifies 12 alphanumeric SKUs. Notice that, for the same data, the COUNT function returns a count of zero because it counts only numbers.

Monthly sales primarily contain numerical data, but also contain one entry of NA. For the monthly sales, COUNT identifies 11 records with numeric data, whereas COUNTA identifies 12 records. If a record were blank, neither COUNT nor COUNTA would include it.

Using COUNT and COUNTA across all the columns of a large data set can be useful for identifying NA entries and some types of data entry errors, such as when text has been entered where only a numeric value should have been entered.

The MIN and MAX Functions

It is often useful to identify the smallest and largest observations in a data set. For example, you may be required to identify which sales agents had the least and most sales. For these purposes, Excel has a MIN function and a MAX function.

MIN(number1, [number2], . . .) is a function that returns the smallest number in a given set of numbers. The arguments can be either numbers, a reference to a number, or a list of numbers.

MAX(number1, [number2], . . .) is a function that returns the largest number in a given set of numbers.

Example 2: Using the following weekly sales data (in the left panel below), identify the minimum and the maximum weekly sales for Products A and B.

DATA				SOLUTION			
	A	B	C		A	B	C
1		Total sales (\$)		1		Total sales (\$)	
2	Week	Product A	Product B	2	Week	Product A	Product B
3	1	4,280	4,130	3	1	4,280	4,130
4	2	4,900	4,710	4	2	4,900	4,710
5	3	3,990	3,320	5	3	3,990	3,320
6	4	4,060	3,900	6	4	4,060	3,900
7	5	3,300	3,070	7	5	3,300	3,070
8	6	5,450	4,520	8	6	5,450	4,520
9	7	3,300	2,740	9	7	3,300	2,740
10	8	3,690	3,200	10	8	3,690	3,200
11	9	3,870	3,740	11	9	3,870	3,740
12	10	4,450	3,900	12	10	4,450	3,900
13				13			
14				14			
15	MIN	3,300	2,740	15	MIN	3,300	2,740
16	MAX	5,450	=MAX(C3:C12)	16	MAX	5,450	=MAX(C3:C12)

The SMALL and LARGE Functions

Sometimes it is useful to know more than just the minimum and maximum observations. For example, it is sometimes important to identify the second highest price in a second-price auction¹ or the top three sales agents.

SMALL(array, k) is a function that returns the kth smallest value in a data set. If k = 1, then SMALL returns the smallest number (the minimum). If k = 2, then SMALL returns the second smallest number.

LARGE(array, k) is a function that returns the kth largest value in a data set. If k = 1, then LARGE returns the largest number (the maximum). If k = 2, then LARGE returns the second largest number.

Example 3: Using the weekly sales data from Example 1, identify the sales amounts for the top three weeks for Products A and B.

Solution:

	A	B	C	D	E	F	G	H
1		Total sales (\$)						
2	Week	Product A	Product B		Top Ranked			
3	1	4,280	4,130		1	5,450	4,710	
4	2	4,900	4,710		2	4,900	4,520	
5	3	3,990	3,320		3	4,450	=LARGE(C3:C12,\$E5)	
6	4	4,060	3,900					
7	5	3,300	3,070					
8	6	5,450	4,520					
9	7	3,300	2,740					
10	8	3,690	3,200					
11	9	3,870	3,740					
12	10	4,450	3,900					

¹ A second-price auction is an auction mechanism commonly used in online advertising.

The RANK Functions

The rank of an observation is its position relative to the other data in the data set. We commonly use rankings to compare items of interest: for example, you may be aware that *The Empire Strikes Back* is the fourth top grossing film in science fiction or that, in the 2014/15 hockey season, Carey Price was the fourth among National Hockey League goalies in terms of saves (and the first in terms of save percentage).

RANK.EQ(Number, Ref, [Order]) is a function that returns the rank of a number in a list of numbers (Ref). Order is an optional argument that designates whether the rank should be based on descending or ascending order (1 = Ascending, 0 = Descending).

Whereas MIN, MAX, SMALL, and LARGE identify the observation in a specific rank (for example, the maximum is the first rank), the RANK.EQ function is used to identify the rank of a specific observation.

Example 4: Rank each of the following Taylor Swift videos in descending order, by the number of YouTube views.

	A	B	C
1	Taylor Swift Music Video	YouTube Views (June 24, 2015)	
2	22	268,419,713	
3	Begin Again	77,546,427	
4	Blank Space	966,194,547	
5	Everything Has Changed ft. Ed Sheeran	136,314,148	
6	I Knew You Were Trouble	251,803,829	
7	Love Story	231,800,809	
8	Mean	108,664,617	
9	Our Song	97,323,031	
10	Picture to Burn	60,246,235	
11	Red	64,814,024	
12	Shake It Off	888,456,377	
13	Sparks Fly	28,292,443	
14	The Story of Us	60,919,448	
15	We Are Never Ever Getting Back Together	308,822,270	
16	You Belong with Me	448,901,556	

Solution: To calculate the rank of each music video, in cell C2 type =RANK.EQ(B2, \$B\$2:\$B\$16, 0). In plain language, the references inside the function are as follows:

- The value of interest (B2)
- The list of all the values to compare against the value of interest (i.e., \$B\$2:\$B\$16)
- The indication that the ranking will be based on descending order (0)

Notice that we have typed \$ in front of the column and row information for the list of values. This symbol ensures that the formula can be copied and pasted down the column: the value of interest will change, but the list will stay the same for the entire column of ranks.

	A	B	C
1	Taylor Swift Music Video	YouTube Views (June 24, 2015)	RANK
2	22	268,419,713	5
3	Begin Again	77,546,427	11
4	Blank Space	966,194,547	1
5	Everything Has Changed ft. Ed Sheeran	136,314,148	8
6	I Knew You Were Trouble	251,803,829	6
7	Love Story	231,800,809	=RANK.EQ(B7,SB\$2:SB\$16)
8	Mean	108,664,617	9
9	Our Song	97,323,031	10
10	Picture to Burn	60,246,235	14
11	Red	64,814,024	12
12	Shake It Off	888,456,377	2
13	Sparks Fly	28,292,443	15
14	The Story of Us	60,919,448	13
15	We Are Never Ever Getting Back Together	308,822,270	4
16	You Belong with Me	448,901,556	3
17			

Note that Excel has two rank functions: RANK.EQ and RANK.AVG. The only difference between these two functions is the rank they assign when a tie occurs. RANK.EQ is most commonly used when describing data. It will assign the same rank to all members of a tie. For example, in sports, you might commonly hear, “Sue and Angela are tied for second place.” In this example, Sue and Angela will both have a rank of 2, and no one will have a rank of 3. Less commonly used, RANK.AVG will assign the average rank to all members of a tie. In the example, Sue and Angela would both be assigned a rank of 2.5.

DESCRIBING THE CENTRAL TENDENCY OF THE DATA

The AVERAGE and MEDIAN Functions

AVERAGE(number1, [number2], . . .) is a function that returns the arithmetic mean of a given set of numbers.

MEDIAN(number1, [number2], . . .) is a function that returns the median of a given set of numbers. The median indicates the middle of the data, the point where half of the observations are lower values and half of the observations are higher values.

Example 5: Five friends go to an all-you-can-eat wings night at a local restaurant. Srinivas eats 10 wings, Stanislav eats 18 wings, Hester eats 8 wings, Phillippe eats 23 wings, and Maeve eats 7 wings. Calculate the average and median number of wings consumed per person.

Solution: This example, the average and the median can be calculated by hand using the following formula:

$$\text{Average} = \frac{(10 + 18 + 8 + 23 + 7)}{5} = 13.2$$

The median can be determined by reordering the list by the number of wings consumed. This new order enables us to identify that the middle value is 10 wings (i.e., two observations are less than 10 and two observations are more than 10).

Entering the data in Excel, we can use the AVERAGE and MEDIAN functions to determine the average and the median number of wings consumed.

	A	B	C	D	E	F
1	Name	Wings				
2	Srinivas	10			=AVERAGE(B2:B6)	
3	Stanislav	18			↓	
4	Hester	8				
5	Phillippe	23		Average	13.2	
6	Maeve	7		Median	=MEDIAN(B2:B6)	
7						
8						

DESCRIBING THE SPREAD OF THE DATA

The VAR and STDEV Functions

Variance and standard deviation are mathematically related measures of variation or dispersion in a data set. Their relationship can be stated as follows:

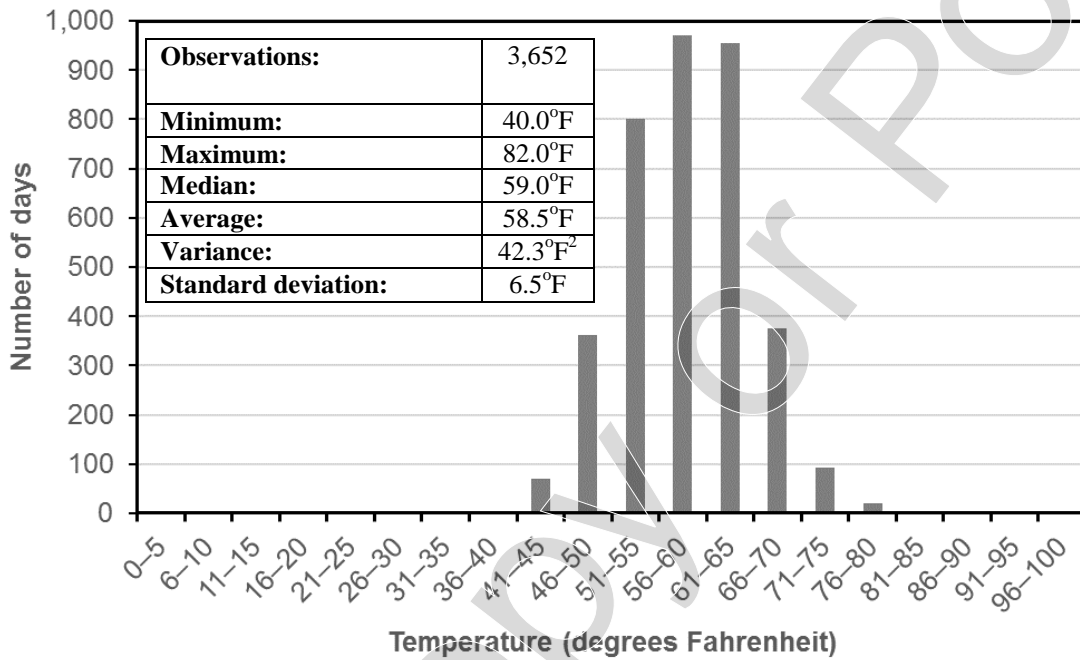
$$\text{Standard Deviation} = \sqrt{\text{Variance}}$$

A large variance, and therefore a large standard deviation, indicates that the data are highly dispersed (i.e., they are spread out). A small variance, and therefore a small standard deviation, indicates that the data are not dispersed. In relative terms, it generally means that the observation values are close to the average value.

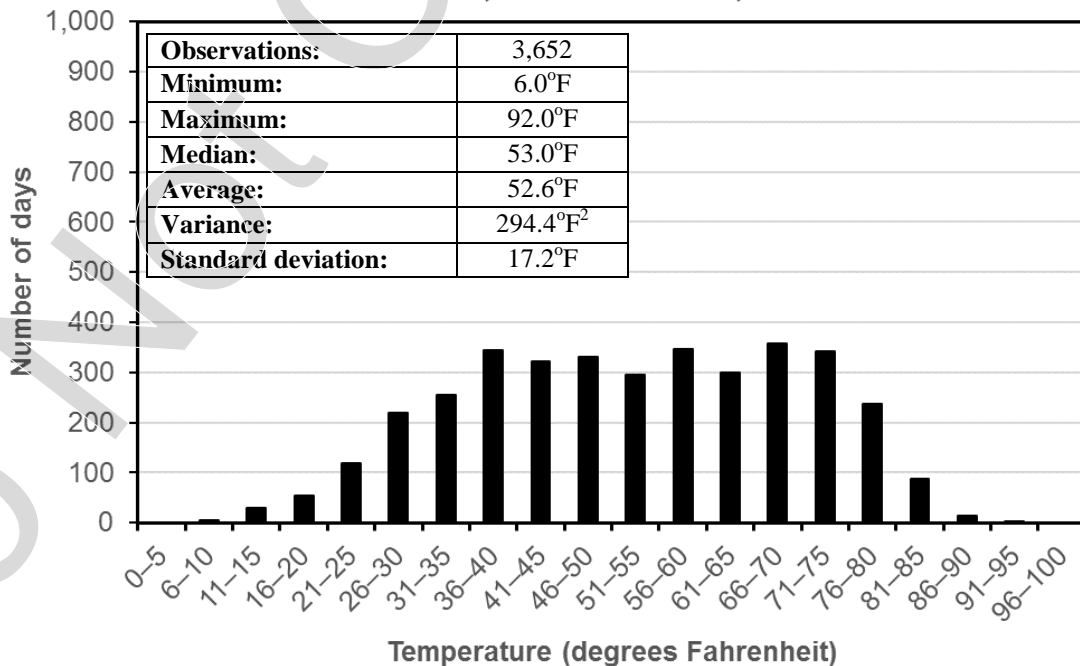
For example, the figures below present histograms of the average daily temperatures over the past 10 years in San Francisco and Boston. The variation in temperature in San Francisco is small: all of the observations are clustered together within a small range (40–82°F), and within that range, the majority of observations are close to the average of 58.5°F. As a result, the daily temperatures in San Francisco have a (relatively) small standard deviation.

In contrast, the variation in temperature in Boston is large: the observations are spread over a wider range (6–92°F), and within that interval, the daily temperatures are not clustered around the average of 52.6°F. As a result, the daily temperatures in Boston have a (relatively) large standard deviation.

Average daily temperature (°F), San Francisco Jan 1, 2005 to Dec 31, 2014



Average daily temperature (°F), Boston Jan 1, 2005 to Dec 31, 2014



Standard deviation is often easier to interpret than variance because it is expressed in the same units as the original data, whereas variance is expressed in squared units. That is, if the data are measured in degrees Fahrenheit, then the standard deviation is also expressed in degrees Fahrenheit.

VAR.S(number1, [number2], . . .) is a function that returns the variance of a given set of numbers.

STDEV.S(number1, [number2], . . .) is a function that returns the standard deviation of a given set of numbers.

Example 6: Calculate the variance and the standard deviation of the weekly sales data (from Example 1) for Product A and Product B.

Solution:

	A	B	C	D	E	F	G	H
1		Total sales (\$)						
2	Week	Product A	Product B					
3	1	4,280	4,130			Product A	Product B	
4	2	4,900	4,710		Variance	458,188	407,401	
5	3	3,990	3,320		St. Dev.	677	=STDEV.S(C3:C12)	
6	4	4,060	3,900					
7	5	3,300	3,070					
8	6	5,450	4,520					
9	7	3,300	2,740					
10	8	3,690	3,200					
11	9	3,870	3,740					
12	10	4,450	3,900					
13								

Note: The functions VAR.S and STDEV.S are sample-based statistics. Each of these functions has a corresponding function that ends in .P for a population-based statistic. In the field of statistics, a population is the entire group (of people or things) under study. A sample is a subset of the population that is used to draw inferences about the population. For example, all the bolts manufactured by a company this week represent a population. It may be important to know the percentage of bolts manufactured each week that are defective. Evaluating the entire population of bolts is expensive, impractical, and unnecessary. Instead, it is possible and sufficient to evaluate a random sample of representative bolts. In business applications, sample-based statistics are more commonly used than population-based statistics. Leaving off the .S or the .P and just using the function VAR or STDEV will also calculate the sample-based statistic, but Excel may alert you that you are using a function from an earlier version of Excel.

DESCRIBING THE RELATIONSHIP BETWEEN TWO VARIABLES

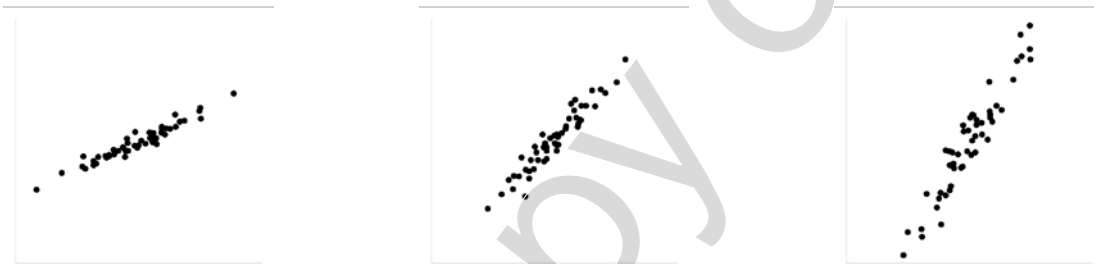
The COVARIANCE and CORREL Functions

Covariance and the correlation coefficient are two mathematically related measures of how two variables change together (i.e., how much they co-vary).

COVARIANCE.S(array1, array2) is a function that returns the covariance between two sets of data. Covariance can be difficult to interpret because the units of covariance depend on the units of each variable, and thus change for each pair of variables. However, covariance is an important relationship to calculate and is often computed as an input to subsequent calculations (e.g., in finance).

CORREL(array1, array2) is a function that returns the correlation between two sets of data. Compared with covariance, the correlation coefficient is an easier-to-interpret measure of the extent to which two variables vary together because it is on a fixed scale of -1 to $+1$. Therefore, the correlation coefficient is often used to describe the relationship between two variables. Unlike covariance, correlation does not have units.

It is important to be aware that the strength of the correlation does not imply the magnitude of change. For example, consider the strong positive correlation between temperature and ice cream sales (for example, correlation coefficient = $+0.95$). This correlation indicates only that temperature and ice cream sales tend to vary together. It could mean that each one-degree increase in temperature corresponds to an average increase in ice cream sales of 100 litres or 100 tonnes. A high correlation indicates only the strength of the predictability: that an increase in temperature almost certainly will occur at the same time as an increase in ice cream sales. For example, all scatterplots below have the same correlation coefficient (of $+0.95$):


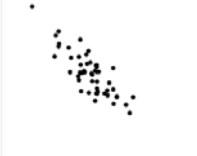







Example 7: Calculate the covariance and the correlation coefficient of the weekly sales data (from Example 1) for Product A and Product B.

Solution:

	A	B	C	D	E	F	G	H
1		Total sales (\$)						
2	Week	Product A	Product B					
3	1	4,280	4,130					
4	2	4,900	4,710					
5	3	3,990	3,320			Covariance (A, B)	395,259	
6	4	4,060	3,900			Correlation (A, B)	=CORREL(B3:B12,C3:C12)	
7	5	3,300	3,070					
8	6	5,450	4,520					
9	7	3,300	2,740					
10	8	3,690	3,200					
11	9	3,870	3,740					
12	10	4,450	3,900					
13								

Example Illustrations and Plain Language Descriptions for Various Correlation Coefficients

Correlation Coefficient	Meaning in words	Example illustrations
-1	Perfect negative correlation; when one variable goes up, the other variable always goes down.	
-0.8	Strong negative correlation; when one variable goes up, the other variable almost certainly goes down.	
-0.4	Weak negative correlation; when one variable goes up, the other variable will probably go down.	
0	No correlation; observing a change in one variable provides no information about the other variable.	
+0.4	Weak positive correlation; when one variable goes up, the other variable will probably go up.	
+0.8	Strong positive correlation; when one variable goes up, the other variable almost certainly goes up.	
+1	Perfect positive correlation; when one variable goes up, the other variable always goes up.	

SUMMARY TABLE OF KEY DESCRIPTIVE STATISTICS FUNCTIONS

Function*	Arguments	Use	Example (the cell coordinates refer to the data set used in Example 2)	Sample Output
COUNT	At least one value	Count the number of cells containing numeric information.	=COUNT(B3:B12)	10
COUNTA	At least one value	Count the number of non-blank cells (containing text or numbers).	=COUNT(B3:B12)	10
MIN	At least one number	Identify the minimum value.	=MIN(B3:B12)	3,300
MAX	At least one number	Identify the maximum value.	=MAX(B3:B12)	5,450
SMALL	At least one number, and a value for k	Identify the k th smallest value.	=SMALL(B3:B12, 4)	3,870
LARGE	At least one number, and a value for k	Identify the k th largest value.	=LARGE(B3:B12, 2)	4,450
RANK.AVG	A value you want to know the rank of, a list of values to compare it to, and 0 or 1 indicating whether the rank should be ascending (1) or descending (0)	Identify the rank of an observation within a data set; assign the average rank to all members of a tied set.	=RANK.AVG(3300, B3:B12, 0)	9.5
RANK.EQ	A value you want to know the rank of, a list of values to compare it to, and 0 or 1 indicating whether the rank should be ascending (1) or descending (0)	Identify the rank of an observation within a data set; assign the rank of the top value of the tie to all tied values.	=RANK.EQ(3300, B3:B12, 0)	9
AVERAGE	At least one number	Calculate the average.	=AVERAGE(B3:B12)	4,129
MEDIAN	At least one number	Calculate the median.	=MEDIAN(B3:B12)	4,025
VAR.S	At least one number	Calculate the sample variance.	=VAR.S(B3:B12)	458,188
STDEV.S	At least one number	Calculate the sample standard deviation.	=STDEV.S(B3:B12)	677
COVARIANCE.S	Two ranges or arrays of numbers of the same length	Calculate the sample covariance between two variables.	=COVARIANCE.S(B3:B12, C3:C12)	395,259
CORREL	Two ranges or arrays of numbers of the same length	Calculate the correlation coefficient of two variables.	=CORREL(B3:B12, C3:C12)	0.91

* The functions VAR.S, STDEV.S, and COVARIANCE.S are all sample-based statistics. Each of these functions has a corresponding function that ends in .P for a population-based statistic. In business applications, sample-based statistics are more commonly used than population-based statistics.

SUMMARY

The purpose of this note is to introduce and demonstrate the use of built-in Excel functions for descriptive statistics. The ability to investigate and describe the features of data is an important first step in any data analysis effort and can inform the appropriate next steps for analysis. Furthermore, descriptive statistics can be powerful analytical tools on their own. Many companies track descriptive statistics over time to inform and evaluate business decisions, such as the daily number of visitors to their website before and after a promotional activity. The ease of calculation, usefulness of the information, and widespread understanding of these metrics enable the extensive use of descriptive statistics across industries and applications.

PRACTICE PROBLEMS

Data sets for these problems are provided in the companion spreadsheet.

1. Using the 2013 NFL players' data, calculate the following descriptive statistics:
 - a. Minimum height
 - b. Maximum height
 - c. 10th greatest height
 - d. 100th greatest height
 - e. 10th smallest height
 - f. 100th smallest height
 - g. Average height
 - h. Standard deviation of height
2. Using the list of the 403 players who have ever been selected to play in the NBA All-Star Game, calculate the following descriptive statistics:
 - a. Minimum height
 - b. Maximum height
 - c. 10th greatest height
 - d. 100th greatest height
 - e. 10th smallest height
 - f. 100th smallest height
 - g. Average height
 - h. Standard deviation of height
3. Using the data provided on the average daily temperature and total daily precipitation between January 1, 2005, and December 31, 2014, for San Francisco, California, and Boston, Massachusetts, calculate the following descriptive statistics:
 - a. Range of temperature and precipitation for each city
 - b. Average and median temperature and precipitation for each city
 - c. Standard deviation of temperature and precipitation for each city
 - d. Correlation between precipitation and temperature for San Francisco
 - e. Correlation between precipitation and temperature for Boston
 - f. Correlation between temperature in San Francisco and temperature in Boston
 - g. Correlation between precipitation in San Francisco and precipitation in Boston

SOLUTIONS TO PRACTICE PROBLEMS

1.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
18														
19			Player Name	Team	Number	Height (in cm)								
20			Abdullah, Husain	KC	39	183								
21			Abdul-Quddus, Isa	NO	42	185				Threshold	Value	Formula		
22			Aboushi, Oday	NYJ	75	196				a. Minimum height	185.10	=MIN(F20:F1841)		
23			Abraham, John	ARI	55	193				b. Maximum height	205.74	=MAX(F20:F1841)		
24			Acho, Emmanuel	PHI	53	188		10		c. 10 th greatest height	203.20	=LARGE(F20:F1841,H24)		
25			Acho, Sam	ARI	94	191		100		d. 100 th greatest height	198.12	=LARGE(F20:F1841,H25)		
26			Adams, Joe	CAR	15	180		10		e. 10 th smallest height	172.72	=SMALL(F20:F1841,H26)		
27			Adams, Kris	NYG	89	191		100		f. 100 th smallest height	177.80	=SMALL(F20:F1841,H27)		
28			Adams, Kyle	CHI	86	193				g. Average height	187.93	=AVERAGE(F20:F1841)		
29			Adams, Michael	TB	27	173				h. Standard deviation of height	6.75	=STDEV.S(F20:F1841)		
30			Adams, Mike	DEN	20	180								

2.

	A	B	C	D	E	F	G	H	I	J	K	L
19												
20			Player Name	Height (in cm)								
21			A. C. GREEN	206								
22			ADRIAN DANTLEY	196						Threshold	Value	Formula
23			ADRIAN SMITH	185						a. Minimum height	175.26	=MIN(D21:D1842)
24			AL HORFORD	208						b. Maximum height	226.06	=MAX(D21:D1842)
25			ALEX ENGLISH	201		10				c. 10 th greatest height	218.44	=LARGE(D21:D1842,F25)
26			ALEX GROZA	201		100				d. 100 th greatest height	205.74	=LARGE(D21:D1842,F26)
27			ALLAN HOUSTON	198		10				e. 10 th smallest height	182.88	=SMALL(D21:D1842,F27)
28			ALLEN IVERSON	183		100				f. 100 th smallest height	190.50	=SMALL(D21:D1842,F28)
29			ALONZO MOURNING	205						g. Average height	199.06	=AVERAGE(D21:D1842)
30			ALVAN ADAMS	206						h. Standard deviation of height	9.23	=STDEV.S(D21:D1842)
31			ALVIN ROBERTSON	191								

3.

	C	D	E	F	G	H	I	J	K	L	M	N	O
20		San Francisco		Boston				San Francisco		Boston			
21		Precipitation	Average temperature	Precipitation	Average temperature			Precipitation	Average temperature	Precipitation	Average temperature		
22		Date	(Inches)	(Fahrenheit)	(Inches)	(Fahrenheit)		(Inches)	(Fahrenheit)	(Inches)	(Fahrenheit)		
23		1/1/2005	0.05	50	0	44		Min	0.00	40.00	0.00	6.00	
24		1/2/2005	1.16	47	0.02	32		Max	3.43	82.00	3.91	92.00	
25		1/3/2005	0.01	48	0.18	46		Average	0.05	58.48	0.12	52.60	
26		1/4/2005	0	46	0.29	40		Median	0.00	59.00	0.00	53.00	
27		1/5/2005	0.08	48	0.1	34		SD	0.19	6.51	0.33	17.16	
28		1/6/2005	0.02	50	0.64	30							
29		1/7/2005	0.59	52	0	34							
30		1/8/2005	0.42	51	0.58	32		Corr(rainSF, tempSF)	-0.1631			=CORREL(D23:D3674,E23:E3674)	
31		1/9/2005	0.02	51	0	30		Corr(rainBOS, tempBOS)	0.0019			=CORREL(F23:F3674,G23:G3674)	
32		1/10/2005	0.47	51	0.03	36		Corr(tempSF, tempBOS)	0.6539			=CORREL(E23:E3674,G23:G3674)	
33		1/11/2005	0.45	48	0.01	32		Corr(rainSF, rainBOS)	-0.0254			=CORREL(D23:D3674,F23:F3674)	
34		1/12/2005	0	46	0.29	34							