Rucha Rane

Homework #2

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40. Golf Magazine's Top 100 Teachers were asked the question, "What is the most critical area that prevents golfers from reaching their potential?" The possible responses were lack of accuracy, poor approach shots, poor mental approach, lack of power, limited practice, poor putting, poor short game, and poor strategic decisions. The data obtained follow (Golf Magazine. February 2002):

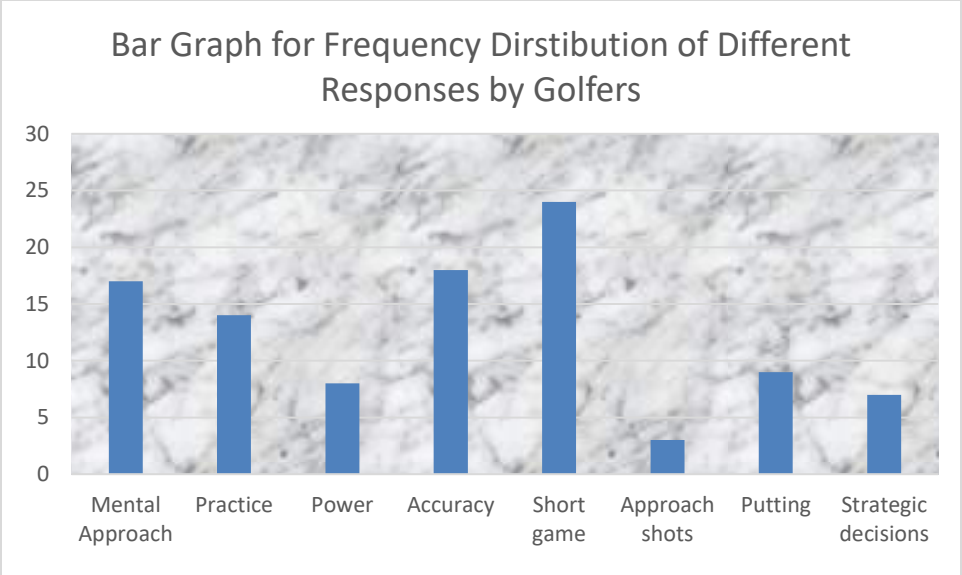
[Data can be found in the CD that came with the textbook]
[Name of data set is "Golf.xls" in "Ch 02 Descriptive" folder]

1. **Table for frequency and percent frequency for the data**

Area	Frequency	Relative Frequency	Percent Frequency
Mental Approach	17	0.17	17
Practice	14	0.14	14
Power	8	0.08	8
Accuracy	18	0.18	18
Short Game	24	0.24	24
Approach Shots	3	0.03	3
Putting	9	0.09	9
Strategic Decisions	7	0.07	7
TOTAL	**100**		

2. **Which four critical areas most often prevent golfers from reaching their potential?**
   Answer – *Poor Short Game, Lack of Accuracy, Poor Mental Approach and Limited Practice are the four critical areas that most prevent golfers from reaching their potential.*

3. **Provide a bar graph for the data.** (This is an additional question.)



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Do problems # **46**, **47**, and **48**
[Data sets are provided in the CD.]

 # 46 & 47

46. The daily high and low temperatures for 20 cities follow (*USA Today*, May 9, 2000).

City	High	Low	City	High	Low
Athens	75	54	Melbourne	66	50
Bangkok	92	74	Montreal	64	52
Cairo	84	57	Paris	77	55
Copenhagen	64	39	Rio de Janeiro	80	61
Dublin	64	46	Rome	81	54
Havana	86	68	Seoul	64	50
Hong Kong	81	72	Singapore	90	75
Johannesburg	61	50	Sydney	68	55
London	73	48	Tokyo	79	59
Manila	93	75	Vancouver	57	43

a. Prepare a stem-and-leaf display for the high temperatures.
b. Prepare a stem-and-leaf display for the low temperatures.
c. Compare the stem-and-leaf displays from parts (a) and (b), and make some comments about the differences between daily high and low temperatures.
d. Use the stem-and-leaf display from part (a) to determine the number of cities having a high temperature of 80 degrees or above.
e. Provide frequency distributions for both high and low temperature data.

47. Refer to the data set for high and low temperatures for 20 cities in Exercise 46.
a. Develop a scatter diagram to show the relationship between the two variables, high temperature and low temperature.
b. Comment on the relationship between high and low temperature.

46 (a)

High Temperatures

Stem	**Leaves**
5	7
6	1444468
7	3579
8	01146
9	023

46 (b)

Low Temperatures

Stem	**Leaves**
3	9
4	368
5	0002445579
6	18
7	2455

46 (c)

High		Low
	3	9
	4	368
7	5	0002445579
8644441	6	18
9753	7	2455
64110	8	
320	9	

Comparing the differences between daily high and daily low temperatures using a stem leaf plot as shown above, I can infer that the lowest daily temperature that was recorded was 39 degrees and the highest was 93. Also, more places had their daily low temperatures recorded between the range of 50 and 60 degrees whereas more places had their daily high temperatures recorded between the range of 60 and 70 degrees. Also, only one city recorded a low temperature of 39 degrees.

46(d)

Number of Cities having a high temperature of 80 degrees and above = **8**

46 (e)

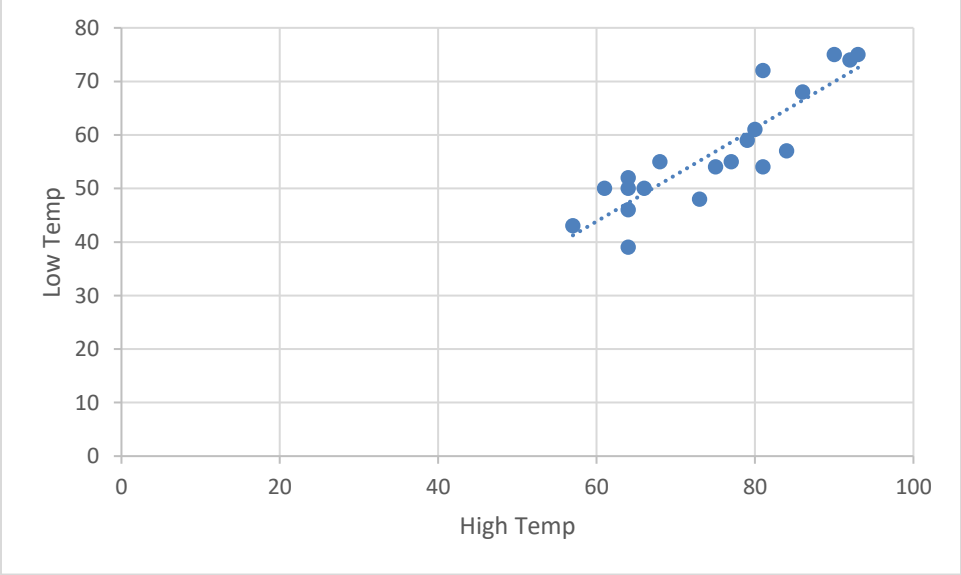
Frequency Distribution for High Temperatures

High Temp	**Frequency**	**Relative Freq**	**Percent Freq**
57	1	0.05	5
61	1	0.05	5
64	4	0.2	20
66	1	0.05	5
68	1	0.05	5
73	1	0.05	5
75	1	0.05	5
77	1	0.05	5
79	1	0.05	5
80	1	0.05	5
81	2	0.1	10
84	1	0.05	5
86	1	0.05	5
90	1	0.05	5
92	1	0.05	5
93	1	0.05	5
TOTAL	**20**		

Frequency Distribution for Low Temperatures

Low Temp	Frequency	Rel Freq	Percent Freq
39	1	0.05	5
43	1	0.05	5
46	1	0.05	5
48	1	0.05	5
50	3	0.15	15
52	1	0.05	5
54	2	0.1	10
55	2	0.1	10
57	1	0.05	5
59	1	0.05	5
61	1	0.05	5
68	1	0.05	5
72	1	0.05	5
74	1	0.05	5
75	2	0.1	10
TOTAL	20		

47(a)



47(b) The Scatter Plot above shows a positive relationship between high temperatures and low temperatures. Also, the relationship is not perfect, since all the plotted points in the scatter diagram are not on a straight line.

48. A study of job satisfaction was conducted for four occupations. Job satisfaction was measured using an 18-item questionnaire with each question receiving a response score of 1 to 5 with higher scores indicating greater satisfaction. The sum of the 18 scores provides the job satisfaction score for each individual in the sample. The data are as follow.

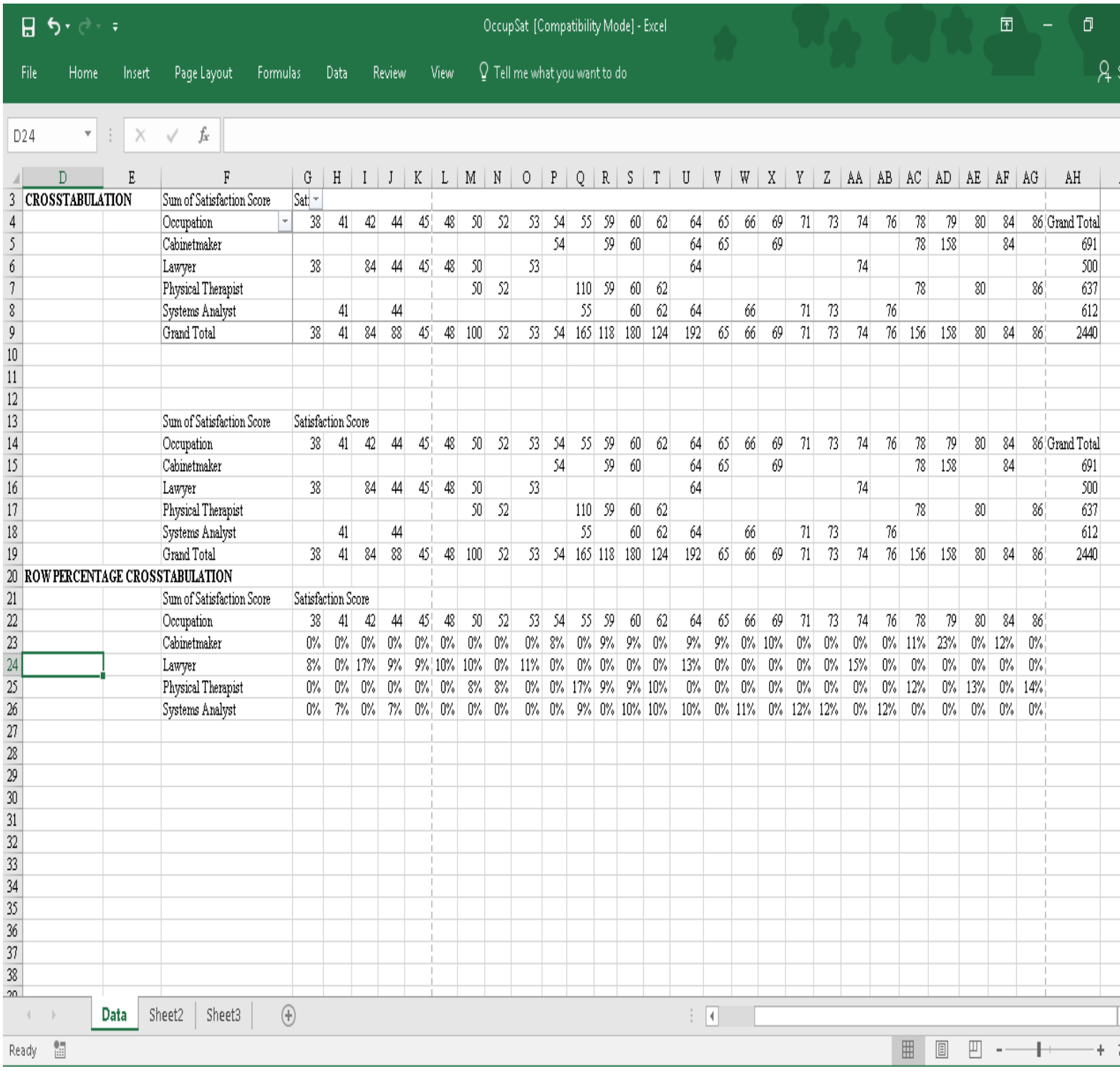
Occupation	Satisfaction Score	Occupation	Satisfaction Score	Occupation	Satisfaction Score
Lawyer	42	Physical Therapist	78	Systems Analyst	60
Physical Therapist	86	Systems Analyst	44	Physical Therapist	59
Lawyer	42	Systems Analyst	71	Cabinetmaker	78
Systems Analyst	55	Lawyer	50	Physical Therapist	60

(*continued*)

Occupation	Satisfaction Score	Occupation	Satisfaction Score	Occupation	Satisfaction Score
Lawyer	38	Lawyer	48	Physical Therapist	50
Cabinetmaker	79	Cabinetmaker	69	Cabinetmaker	79
Lawyer	44	Physical Therapist	80	Systems Analyst	62
Systems Analyst	41	Systems Analyst	64	Lawyer	45
Physical Therapist	55	Physical Therapist	55	Cabinetmaker	84
Systems Analyst	66	Cabinetmaker	64	Physical Therapist	62
Lawyer	53	Cabinetmaker	59	Systems Analyst	73
Cabinetmaker	65	Cabinetmaker	54	Cabinetmaker	60
Lawyer	74	Systems Analyst	76	Lawyer	64
Physical Therapist	52				

a. Provide a crosstabulation of occupation and job satisfaction score.
b. Compute the row percentages for your crosstabulation in part (a).
c. What observations can you make concerning the level of job satisfaction for these occupations?

48 (a) and 48 (b) – *See in Excel below*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	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
3	CROSSTABULATION		Sum of Satisfaction Score	Sat																											
4			Occupation	38	41	42	44	45	48	50	52	53	54	55	59	60	62	64	65	66	69	71	73	74	76	78	79	80	84	86	Grand Total
5			Cabinetmaker										54		59	60		64	65		69					78	158		84		691
6			Lawyer	38		84	44	45	48	50		53						64						74							500
7			Physical Therapist							50	52			110	59	60	62									78		80		86	637
8			Systems Analyst		41		44							55		60	62	64		66		71	73		76						612
9			Grand Total	38	41	84	88	45	48	100	52	53	54	165	118	180	124	192	65	66	69	71	73	74	76	156	158	80	84	86	2440
10																															
11																															
12																															
13			Sum of Satisfaction Score	Satisfaction Score																											
14			Occupation	38	41	42	44	45	48	50	52	53	54	55	59	60	62	64	65	66	69	71	73	74	76	78	79	80	84	86	Grand Total
15			Cabinetmaker										54		59	60		64	65		69					78	158		84		691
16			Lawyer	38		84	44	45	48	50		53						64						74							500
17			Physical Therapist							50	52			110	59	60	62									78		80		86	637
18			Systems Analyst		41		44							55		60	62	64		66		71	73		76						612
19			Grand Total	38	41	84	88	45	48	100	52	53	54	165	118	180	124	192	65	66	69	71	73	74	76	156	158	80	84	86	2440
20	ROW PERCENTAGE CROSSTABULATION																														
21			Sum of Satisfaction Score	Satisfaction Score																											
22			Occupation	38	41	42	44	45	48	50	52	53	54	55	59	60	62	64	65	66	69	71	73	74	76	78	79	80	84	86	
23			Cabinetmaker	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	9%	9%	0%	9%	9%	0%	10%	0%	0%	0%	0%	11%	23%	0%	12%	0%	
24			Lawyer	8%	0%	17%	9%	9%	10%	10%	0%	11%	0%	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	
25			Physical Therapist	0%	0%	0%	0%	0%	0%	8%	8%	0%	0%	17%	9%	9%	10%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	13%	0%	14%	
26			Systems Analyst	0%	7%	0%	7%	0%	0%	0%	0%	0%	0%	9%	0%	10%	10%	10%	0%	11%	0%	12%	12%	0%	12%	0%	0%	0%	0%	0%	
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Data Sheet2 Sheet3

Ready

48 (c) From the cross tabulation data and row percentage, it can be inferred that:

1. The Cabinetmaker profession reported the highest satisfaction score, whereas the Lawyer profession reported the lowest score.
2. Only lawyers reported the lowest satisfaction score of 38 and only physical therapists reported the highest satisfaction score of 86
3. Maximum people in the sample reported job satisfaction scores between 55 and 65.