

UC San Diego Extension

Advanced Web Analytics: Harnessing the Predictive Power

Winter 2016

Homework#3

Date Given: Feb 15, 2016

Due Date: Feb 21, 2016

Install the R software on your computer and become familiar with it. (Optional)

You may listen to the following 9 videos.

		R Programming					
L#		Subject	# Slides - Ind. Lessons	# Slides	Duration - Ind. Lessons	Duration	Video Link
1		Introduction to R		92		1:13:42	
1.1		What is R and Installing R	23		0:17:57		https://vimeo.com/107039300
1.2		Packages and Running R	42		0:31:03		https://vimeo.com/107040663
1.3		Data Entry and Analysis	28		0:24:42		https://vimeo.com/107050748
2		R language Part 1		61		1:30:32	
2.1		Data Types	18		0:20:52		https://vimeo.com/107415428
2.2		Basic Functions	22		0:35:09		https://vimeo.com/107654462
2.3		Vector Functions	21		0:34:31		https://vimeo.com/107655951
3		R Language Part 2		91		2:23:03	
3.1		List, Text and Dates	38		1:00:56		https://vimeo.com/107876040
3.2		Writing Functions	20		0:41:51		https://vimeo.com/107881537
3.3		Data IO	33		0:40:16		https://vimeo.com/107883056
		GRAND TOTAL	231	231	4:50:29	4:50:29	

Install the KNIME software on your computer and become familiar with it. (Optional)

Excel exercises:

The following data is used for problems 1-4

The following table shows the points earned by all the students. The midterm scores are from a maximum of 70 points and the final scores are from a maximum of 90 points.

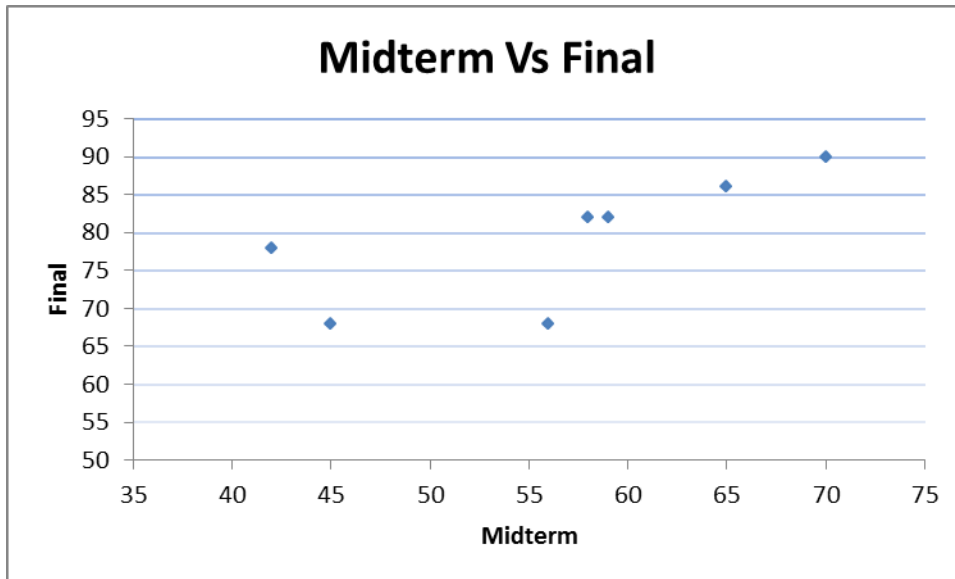
	A1					
	A	B	C	D	E	F
1	Name	Course	Dept	Midterm/ 70	Final/90	
2	John	Math101	Math	65	86	
3	Jack	Math101	Math	45	68	
4	Cindy	Math 102	Math	70	90	
5	Steve	ProgLang1	CS	56	68	
6	Mary	ProgLang1	CS	58	82	
7	Larry	ProgLang1	CS	42	78	
8	John	ProgLang1	CS	59	82	
9						
10	Midterm	40				
11	Final	60				
12						

1. What is the formula to compute total score (sum of midterm + final) of all the students. Create a spreadsheet (Excel) file with the data as shown in the table above. Write a formula in cell F2 and transmit that formula to all the rows by double-clicking on the right-bottom corner of F2 cell.
2. What is the formula to compute the final score of all the students, assuming that midterm is weighted at 40% (stored in B10) and final is weighted at 60% (stored in B11). Write a formula in cell G2 and transmit that formula to all the rows by double-clicking on the right-bottom corner of G2 cell.

Finally your spreadsheet should look as follows.

	A1							
	A	B	C	D	E	F	G	H
1	Name	Course	Dept	Midterm/ 70	Final/90	Total	Final Grade	
2	John	Math101	Math	65	86	151	77.6	
3	Jack	Math101	Math	45	68	113	58.8	
4	Cindy	Math 102	Math	70	90	160	82	
5	Steve	ProgLang1	CS	56	68	124	63.2	
6	Mary	ProgLang1	CS	58	82	140	72.4	
7	Larry	ProgLang1	CS	42	78	120	63.6	
8	John	ProgLang1	CS	59	82	141	72.8	
9								
10	Midterm	40						
11	Final	60						
12								

3. Insert a chart with X axis as Midterm scores and Y axis as Final scores. Your chart should look as follows.



4. Create a pivot table that shows the following.

- Sum of midterm
- Sum of Final

Group By Dept/Course

Your Pivot table should look as follows.

Row Labels	Sum of Midterm/70	Sum of Final/90
CS	215	310
ProgLang1	215	310
Math	180	244
Math 102	70	90
Math101	110	154
Grand Total	395	554

5. Suppose you have \$100 to spend. You need to buy a few of the following items.

Product	Price
A	\$17.67
B	\$9.26
C	\$5.25
D	\$8.95
E	\$19.26
F	\$2.31
G	\$11.52
H	\$9.07
I	\$16.53
J	\$1.30

What is the MAXIMUM number of items you can buy for exactly \$100? Use "Solver" to solve this problem. You should get the following answer.

Product	Price	Quantity	Price*Quantity
A	\$17.67	0	\$0.00
B	\$9.26	0	\$0.00
C	\$5.25	1	\$5.25
D	\$8.95	0	\$0.00
E	\$19.26	0	\$0.00
F	\$2.31	5	\$11.55
G	\$11.52	0	\$0.00
H	\$9.07	0	\$0.00
I	\$16.53	0	\$0.00
J	\$1.30	64	\$83.20
		70	\$100.00

What is the MINIMUM number of items you can buy for exactly \$100? Use "Solver" to solve this problem. You should get the following answer.

Product	Price	Quantity	Price*Quantity
A	\$17.67	1	\$17.67
B	\$9.26	1	\$9.26
C	\$5.25	0	\$0.00
D	\$8.95	1	\$8.95
E	\$19.26	2	\$38.52
F	\$2.31	0	\$0.00
G	\$11.52	0	\$0.00
H	\$9.07	1	\$9.07
I	\$16.53	1	\$16.53
J	\$1.30	0	\$0.00
		7	\$100.00