

MIS 304: Using and Managing Information Systems

Assignment 2

You are looking to do a test marketing of your new and innovative Business in Tucson Arizona. You are thinking about print and internet marketing approaches. However, before you begin your marketing, you think you should have a better sense of the target population.

Process

You have a Spreadsheet with a sample of people from Tucson Arizona (Note, this is a real marketing Database of people living near the UA campus, downloaded in January 2016, which is why names and street addresses have been randomized for privacy). You will undertake some data preparation steps and use pivot tables to answer some basic questions about Tucson.

Core Items to Consider

Spreadsheet: You MUST use the included MS Excel spreadsheet. Create your pivot tables on separate worksheets, one worksheet per question. Within a worksheet you may have as many pivot tables for the tasks as you deem necessary.

Note, you are doing yourself a disservice if you simply copy and paste formulas to get the answer. Try to understand what each formula is trying to do, or even brainstorm other ways to accomplish the same result. Taking a little extra time here will certainly pay off in the future!

Grading Notes

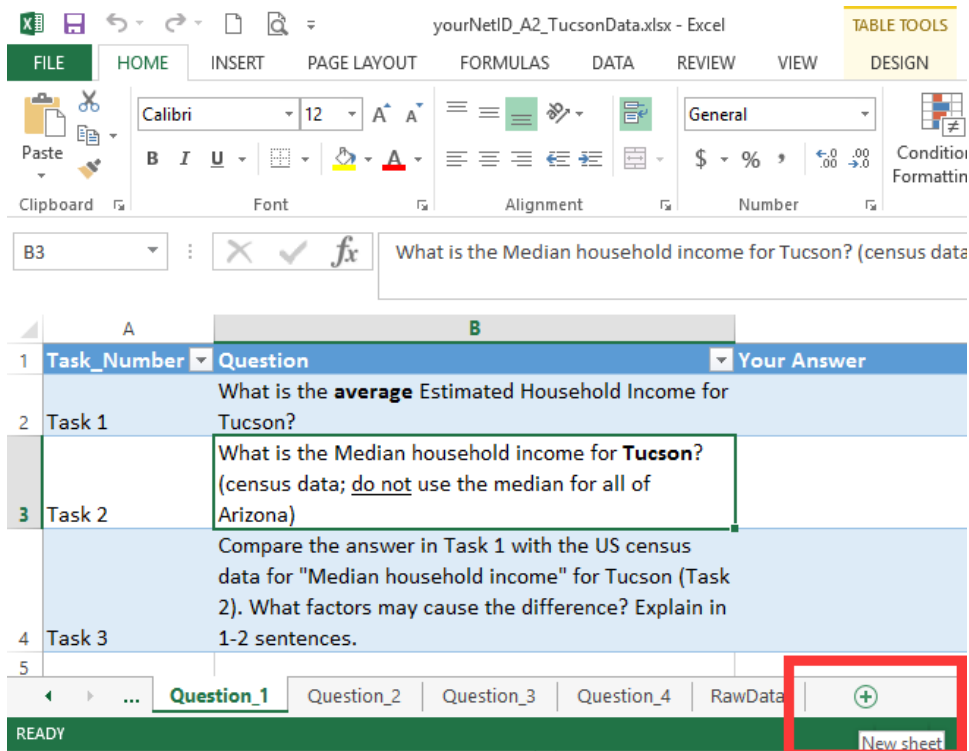
Rename the Excel file, replace “yourNetID” with your NetID; for example, a user with NetID “wilbur” will rename the file to: wilbur_A2_TucsonData.xlsx (note: incorrectly naming your file will result in a loss of points).

- Questions 0: Student Identification and Integrity statement (5%)
- Correctly complete the Data Preparation steps (15%)
- Questions 1 (20%)
- Questions 2 (25%)
- Questions 3 (25%)
- Questions 4 (10%)

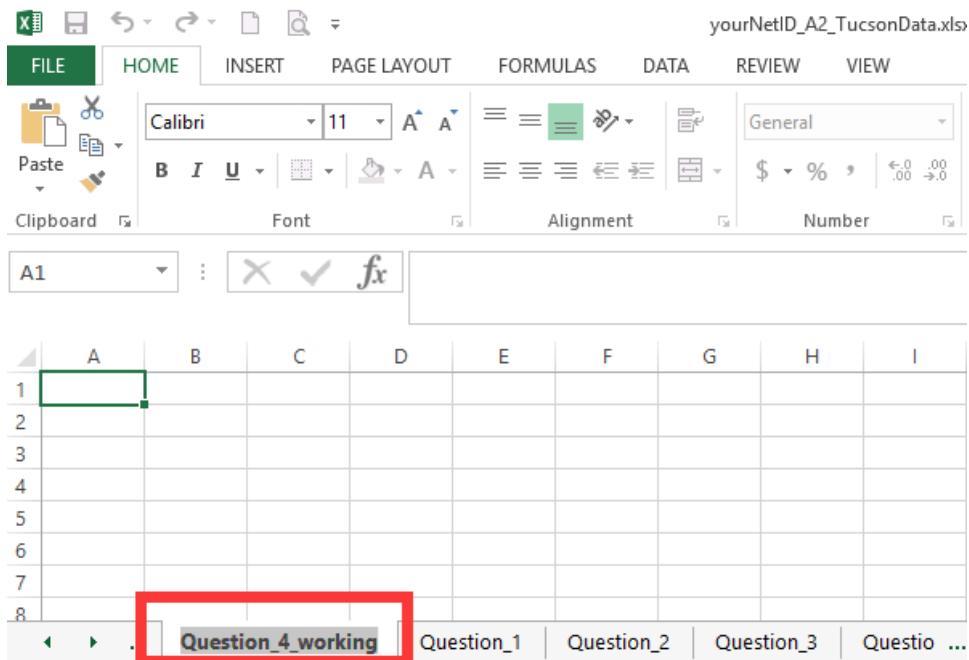
Note

Your deliverable is a completed Excel workbook. Remember to keep each Question on its own worksheet (graders will be looking for these worksheets, so please do not rename these to avoid losing points). Therefore, your submitted spreadsheet will have at least the following worksheets: Question_0, Question_1, Question_2, Question_3, Question_4 (and “RawData”). A worksheet may have multiple pivot tables on it.

You can add a worksheet by clicking the Insert Worksheet button at the bottom of the Excel window (then add the Pivot table into an existing worksheet).



Rename any worksheets you add appropriately (e.g., if you add a worksheet for working notes for Question_4, please call it Question_4_working). To rename a worksheet, you will right click the worksheet tab and select Rename. The worksheet's name will become highlighted and you may edit the name.



Please be careful to ensure that your answers match the Pivot table results. Failure to include the correct answers to Tasks is an error, even if the correct numbers are generated in your Pivot

Tables. In business the ability to correctly report the results of an analysis and paying attention to detail matters.

Ensure your Excel column widths are reasonable (e.g., keep them under 40) to avoid errors with TurnItIn. (Read: <https://support.office.com/en-us/article/Change-the-column-width-and-row-height-db30658d-0c0b-44ad-825f-55f1cb4d9957>)

Deliverables

Student Identification and Integrity Statement

Complete the “Question_0” worksheet.

Data Preparation Steps

When you obtain data from an external source for analysis, there is invariably some “data preprocessing” required to get it into a format suitable for your analysis. While we have done some of the pre-processing for you, we want you to have experience with this step. In business, data pre-processing and cleansing can sometimes take up to 80% of the total analysis task time.

The following steps are performed in the “RawData” worksheet.

- (1) Fill in the first column with a sample (row) number, from {1, 2, ..., 2000} (this is useful for a few different reasons including generating an accurate count when working with pivot tables). You can use Excel’s flash-fill to fill in the values. (Read: <https://support.office.com/en-us/article/Use-AutoFill-and-Flash-Fill-2e79a709-c814-4b27-8bc2-c4dc84d49464>)
- (2) Fill in the mid-point value for the “Estimated Household Income” in the column “MidEHI” (rounded to the nearest dollar). This is useful for answering questions about the average (estimated) income of a sample sub-group. One way to do it is to create a Pivot Table to get the different “income brackets”. Then extract the upper and lower dollar bounds of each income bracket and find the mid-point. Note: there are other ways to generate this data, but doing this step manually (i.e., without use of Excel formulas) will lead to a loss of points. During grading we look for an appropriate formula in the MidEHI column along with supporting data / worksheet(s) in your workbook.
 - a. Create a new worksheet “midEHR”.

	A	B	C	D	E	F	G	H
1	Delimiter_1	-		Type in				
2	Delimiter_2							
3								
4		Delimiter begin position	End Lower Bound (position)	Lower Bound	Begin Upper Bound (position)	Upper Bound	Mid-point of Income	Rounded Mid- point of Income

- b. Go back to worksheet “RawData”, click on a cell, insert “Pivot Table”

yourNetID_A2_TucsonData.xlsx - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW TABLE TOOLS DESIGN

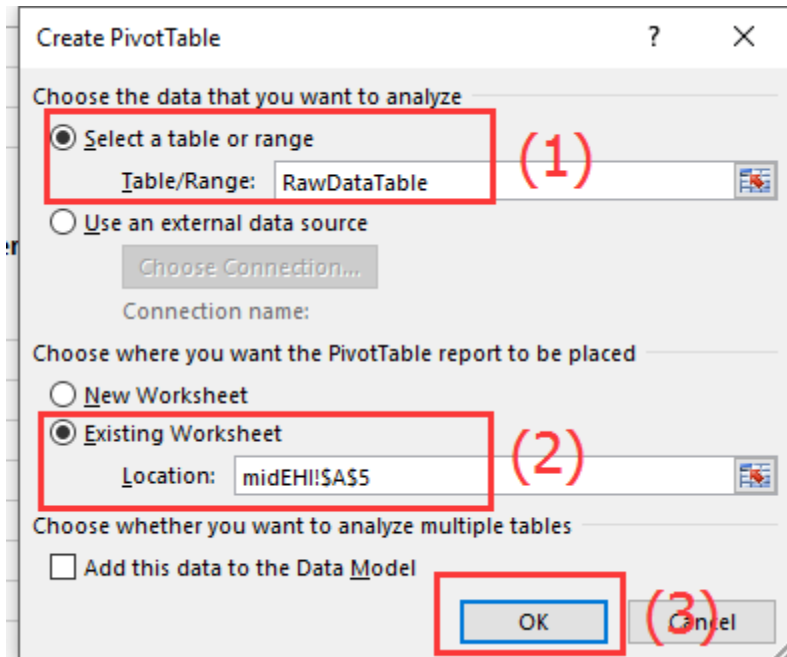
PivotTable recommended Table Pictures Online Pictures Illustrations Apps Recommended Charts PivotChart Power View Line Column W Lc

I2

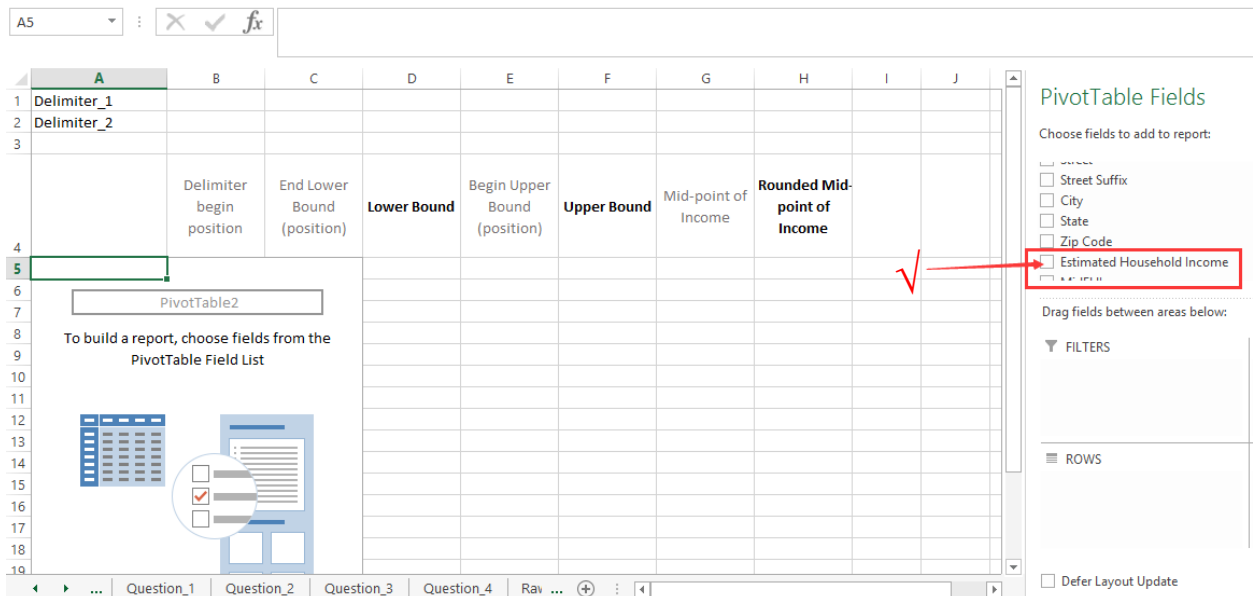
SampleNo	Last Na	Street	Street S	City	State	Zip Cod	Estimated Hou	MidEHI	Estimated	Books / N	isMagazi
2	1 CERVANTE	Speedway	Bld	Tucson	AZ	85719	\$100,000 - \$124,999		\$100,000 - \$	Books & Magazines, I	
3	2 COTTON	Lester	St	Tucson	AZ	85719	\$20,000 - \$29,999		\$175,000 - \$	Book Buyers, Books &	
4	3 ALDRICH	Euclid	Ave	Tucson	AZ	85719	\$100,000 - \$124,999		\$100,000 - \$	Books & Magazines, I	
5	4 HANLEY	7th	St	Tucson	AZ	85719	\$50,000 - \$59,999		\$300,000 - \$349,999		
6	5 ODELL	Grant	Rd	Tucson	AZ	85719	\$30,000 - \$39,999			Books & Magazines	
7	6 TERRY	1st	Ave	Tucson	AZ	85719	\$20,000 - \$29,999			Book Buyers, Books &	
8	7 BERGERO	10th	St	Tucson	AZ	85719	Under \$20,000		\$150,000 - \$174,999		
9	8 WHALEN	Olsen	Ave	Tucson	AZ	85719	\$20,000 - \$29,999				
10	9 ZIEGLER	10th	St	Tucson	AZ	85719	\$20,000 - \$29,999				
11	10 DIXON	Mabel	St	Tucson	AZ	85719	\$100,000 - \$124,999		\$175,000 - \$	Books & Magazines, I	
12	11 MILES	Mabel	St	Tucson	AZ	85719	\$20,000 - \$29,999		\$250,000 - \$299,999		
13	12 DELAROSA	Campbell	Ave	Tucson	AZ	85719	Under \$20,000		\$100,000 - \$	Books & Magazines, I	
14	13 PEREIRA	Norris	Ave	Tucson	AZ	85719	\$150,000 - \$174,999		\$450,000 - \$	Books & Magazines, I	
15	14 LYON	4th	St	Tucson	AZ	85719	\$40,000 - \$49,999		\$175,000 - \$	Books & Magazines, I	
16	15	Hedrick	Dr	Tucson	AZ	85719	\$50,000 - \$59,999		\$100,000 - \$124,999		
17	16 HERNAND	Mabel	St	Tucson	AZ	85719	Under \$20,000		\$125,000 - \$	Books & Magazines, I	
18	17 RICHMON	Kapok	Ln	Tucson	AZ	85719	\$80,000 - \$89,999		\$400,000 - \$	Books & Magazines, I	
19	18 MAJOR	19th	St	Tucson	AZ	85719	\$20,000 - \$29,999		\$75,000 - \$99,999		
20	19 GILLIS	Mountain	Ave	Tucson	AZ	85719	Under \$20,000		\$100,000 - \$	Book Buyers, Books &	
21	20 CARPENTE	4th	St	Tucson	AZ	85719	\$80,000 - \$89,999		\$300,000 - \$	Books & Magazines, I	
22	21 SAMUELS	Mitchell	Dr	Tucson	AZ	85719	\$20,000 - \$29,999		\$150,000 - \$174,999		
23	22 FLOOD	Copper	St	Tucson	AZ	85719	\$40,000 - \$49,999		\$125,000 - \$149,999		
24	23 CASH	Glenn	St	Tucson	AZ	85719	\$20,000 - \$29,999		\$250,000 - \$299,999		

Question_0 Question_1 Question_2 Question_3 Question_4 RawData midEHI

c. Create "Pivot Table"



- d. Get the basic “Pivot Table” structure, choose “Estimated Household Income” as the rows.



You should get a table like this:

1	Delimiter_1							
2	Delimiter_2							
3								
		Delimiter begin position	End Lower Bound (position)	Lower Bound	Begin Upper Bound (position)	Upper Bound	Mid-point of Income	Rounded Mid-point of Income
4								
5	Row Labels							
6	\$100,000 - \$124,999							
7	\$125,000 - \$149,999							
8	\$150,000 - \$174,999							
9	\$175,000 - \$199,999							
10	\$20,000 - \$29,999							
11	\$200,000 - \$249,999							
12	\$250,000 - \$299,999							
13	\$30,000 - \$39,999							
14	\$40,000 - \$49,999							
15	\$50,000 - \$59,999							
16	\$60,000 - \$69,999							
17	\$70,000 - \$79,999							
18	\$80,000 - \$89,999							
19	\$90,000 - \$99,999							

- e. Extract the “Lower Bound” and the “Upper Bound” of “Estimated Household Income”. Make sure you have “space hyphen space” for “delimiter_1”, “space” for “delimiter_2”. Do not type in the quotation marks.

Delimiter_1	-							
Delimiter_2								
		Delimiter begin position	End Lower Bound (position)	Lower Bound	Begin Upper Bound (position)	Upper Bound	Mid-point of Income	Rounded Mid-point of Income
Row Labels								
\$100,000 - \$124,999								
\$125,000 - \$149,999								
\$150,000 - \$174,999								
\$175,000 - \$199,999								
\$20,000 - \$29,999								
\$200,000 - \$249,999								
\$250,000 - \$299,999								
\$30,000 - \$39,999								
\$40,000 - \$49,999								
\$50,000 - \$59,999								
\$60,000 - \$69,999								
\$70,000 - \$79,999								
\$80,000 - \$89,999								
\$90,000 - \$99,999								
Under \$20,000								

Think about and figure out these questions (Use Google or any search engine your like):

What is “FUNCTION” in Excel?

What is “FIND” function? (Read: <https://support.office.com/en-us/article/FIND-FINDB-functions-c7912941-af2a-4bdf-a553-d0d89b0a0628>)

What does a dollar sign (“\$”) mean in an Excel formula?

What is “LEFT” function? (Read: <https://support.office.com/en-us/article/LEFT-LEFTB-functions-9203d2d2-7960-479b-84c6-1ea52b99640c>)

What is “LEN” function? (Read: <https://support.office.com/en-us/article/LEN-LENB-functions-29236f94-cedc-429d-affd-b5e33d2c67cb>)

What is “MID” function? (Read: <https://support.office.com/en-us/article/MID-MIDB-functions-d5f9e25c-d7d6-472e-b568-4ecb12433028>)

What is “ROUND” function? (Read: <https://support.office.com/en-us/article/ROUND-function-c018c5d8-40fb-4053-90b1-b3e7f61a213c>)

	A	B	C	D	E	F	G	H
1	Delimiter_1	-						
2	Delimiter_2							
3								
4		Delimiter begin position	End Lower Bound (position)	Lower Bound	Begin Upper Bound (position)	Upper Bound	Mid-point of Income	Rounded Mid-point of Income
5	Row Labels							
6	\$100,000 - \$124,999	9	8	\$100,000	12	\$124,999	112499.5	112500
7	\$125,000 - \$149,999							
8	\$150,000 - \$174,999							
9	\$175,000 - \$199,999							
10	\$20,							
11	\$200	=FIND(\$B\$1, A6)		=LEFT(A6,C6)		=MID(A6,E6,8)		=ROUND(G6,0)
12	\$250,000 - \$299,999							
13	\$30,000 - \$39,999							
14	\$40,000 - \$49,999							
15	\$50,000 - \$59,999							
16	\$60,000 - \$69,999							
17	\$70,000 - \$79,999							
18	\$80,000 - \$89,999							
19	\$90,000 - \$99,999							
20	Under \$20,000							

=B6-1
 =B6+LEN(\$B\$1)
 =(D6+F6)/2

- f. Copy and extend the formula down. Select the entire row, place your mouse cursor at the lower right-hand corner. You'll know you have hit it when the cursor changes to a plus sign. Click the plus and drag it down.

	A	B	C	D	E	F	G	H
1	Delimiter_1	-						
2	Delimiter_2							
3								
4		Delimiter begin position	End Lower Bound (position)	Lower Bound	Begin Upper Bound (position)	Upper Bound	Mid-point of Income	Rounded Mid- point of Income
5	Row Labels							
6	\$100,000 - \$124,999	9	8	\$100,000	12	\$124,999	112499.5	112500
7	\$125,000 - \$149,999							
8	\$150,000 - \$174,999							
9	\$175,000 - \$199,999							
10	\$20,000 - \$29,999							
11	\$200,000 - \$249,999							
12	\$250,000 - \$299,999							
13	\$30,000 - \$39,999							
14	\$40,000 - \$49,999							
15	\$50,000 - \$59,999							
16	\$60,000 - \$69,999							
17	\$70,000 - \$79,999							
18	\$80,000 - \$89,999							
19	\$90,000 - \$99,999							
20	Under \$20,000							

(1) Select the entire row

(2) Place your mouse cursor here

You should get a table like this

	A	B	C	D	E	F	G	H
3								
4		Delimiter begin position	End Lower Bound (position)	Lower Bound	Begin Upper Bound (position)	Upper Bound	Mid-point of Income	Rounded Mid- point of Income
5	Row Labels							
6	\$100,000 - \$124,999	9	8	\$100,000	12	\$124,999	112499.5	112500
7	\$125,000 - \$149,999	9	8	\$125,000	12	\$149,999	137499.5	137500
8	\$150,000 - \$174,999	9	8	\$150,000	12	\$174,999	162499.5	162500
9	\$175,000 - \$199,999	9	8	\$175,000	12	\$199,999	187499.5	187500
10	\$20,000 - \$29,999	8	7	\$20,000	11	\$29,999	24999.5	25000
11	\$200,000 - \$249,999	9	8	\$200,000	12	\$249,999	224999.5	225000
12	\$250,000 - \$299,999	9	8	\$250,000	12	\$299,999	274999.5	275000
13	\$30,000 - \$39,999	8	7	\$30,000	11	\$39,999	34999.5	35000
14	\$40,000 - \$49,999	8	7	\$40,000	11	\$49,999	44999.5	45000
15	\$50,000 - \$59,999	8	7	\$50,000	11	\$59,999	54999.5	55000
16	\$60,000 - \$69,999	8	7	\$60,000	11	\$69,999	64999.5	65000
17	\$70,000 - \$79,999	8	7	\$70,000	11	\$79,999	74999.5	75000
18	\$80,000 - \$89,999	8	7	\$80,000	11	\$89,999	84999.5	85000
19	\$90,000 - \$99,999	8	7	\$90,000	11	\$99,999	94999.5	95000
20	Under \$20,000	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
21	Grand Total							
22								

(3) Drag it down

Think about: why you get error message in the last row? (What is the difference between “delimiter_1” and “delimiter_2”?)

	A	B	C	D	E	F	G	H
2	Delimiter_2							
3								
4		Delimiter begin position	End Lower Bound (position)	Lower Bound	Begin Upper Bound (position)	Upper Bound	Mid-point of Income	Rounded Mid- point of Income
5	Row Labels							
6	\$100,000 - \$124,999	9	8	\$100,000	12	\$124,999	112499.5	112500
7	\$125,000 - \$149,999	9	8	\$125,000	12	\$149,999	137499.5	137500
8	\$150,000 - \$174,999	9	8	\$150,000	12	\$174,999	162499.5	162500
9	\$175,000 - \$199,999	9	8	\$175,000	12	\$199,999	187499.5	187500
10	\$20,000 - \$29,999	8	7	\$20,000	11	\$29,999	24999.5	25000
11	\$200,000 - \$249,999	9	8	\$200,000	12	\$249,999	224999.5	225000
12	\$250,000 - \$299,999	9	8	\$250,000	12	\$299,999	274999.5	275000
13	\$30,000 - \$39,999	=FIND(\$B\$2, A20)	7	0	=B20+LEN(\$B\$2)		34999.5	35000
14	\$40,000 - \$49,999	8	7	\$40,000	11	\$49,999	44999.5	45000
15	\$50,000 - \$59,999	8	7	\$50,000	11	\$59,999	54999.5	55000
16	\$60,000 - \$69,999	8	7	\$60,000	11	\$69,999	64999.5	65000
17	\$70,000 - \$79,999	8	7	\$70,000	11	\$79,999	74999.5	75000
18	\$80,000 - \$89,999	8	7	\$80,000	11	\$89,999	84999.5	85000
19	\$90,000 - \$99,999	8	7	\$90,000	11	\$99,999	94999.5	95000
20	Under \$20,000	6	5	0	7	\$20,000	10000	10000
21	Grand Total							

g. Go back to worksheet “RawData”, fill in the “MidEHI” column.

Think about and figure out these questions (Use Google or any search engine your like):

What is “VLOOKUP” function? (Read: <https://support.office.com/en-us/article/VLOOKUP-function-0bbc8083-26fe-4963-8ab8-93a18ad188a1>)

What is “IF” function? (Read: <https://support.office.com/en-us/article/IF-function-69aed7c9-4e8a-4755-a9bc-aa8bbff73be2>)

	A	B	C	D	E	F	G	H	I	J
1	SampleNo	Last Na	Street	Street	City	State	Zip Cod	Estimated Hou	MidEHI	Estimate
2	1	CERVANTI	Speedway Blvd		Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$100,000 - \$1
3	2	COTTON	Lester	St	Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$175,000 - \$1
4	3	ALDRICH	Euclid	Ave	Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$100,000 - \$1
5	4	HANLEY	7th	St	Tucson	AZ	85719	\$50,000 - \$59,999	55000	\$300,000 - \$3
6	5	ODELL	Grant	Rd	Tucson	AZ	85719	\$30,000 - \$39,999	35000	
7	6	TERRY	1st	Ave	Tucson	AZ	85719	\$20,000 - \$29,999	25000	
8	=VLOOKUP([@[Estimated Household Income]],midEHI!\$A\$6:\$H\$20,8,FALSE)									
9										
10	7	ZIEGLER	10th	St	Tucson	AZ	85719	\$20,000 - \$29,999	25000	
11	10	DIXON	Mabel	St	Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$175,000 - \$1
12	11	MILES	Mabel	St	Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$250,000 - \$2
13	12	DELAROSA	Campbell	Ave	Tucson	AZ	85719	Under \$20,000	10000	\$100,000 - \$1
14	13	PEREIRA	Norris	Ave	Tucson	AZ	85719	\$150,000 - \$174,9	162500	\$450,000 - \$1
15	14	LYON	4th	St	Tucson	AZ	85719	\$40,000 - \$49,999	45000	\$175,000 - \$1
16	15		Hedrick	Dr	Tucson	AZ	85719	\$50,000 - \$59,999	55000	\$100,000 - \$1
17	16	HERNAND	Mabel	St	Tucson	AZ	85719	Under \$20,000	10000	\$125,000 - \$1
18	17	RICHMON	Kapok	Ln	Tucson	AZ	85719	\$80,000 - \$89,999	85000	\$400,000 - \$1
19	18	MAJOR	19th	St	Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$75,000 - \$99
20	19	GILLIS	Mountain	Ave	Tucson	AZ	85719	Under \$20,000	10000	\$100,000 - \$1
21	20	CARPENTE	4th	St	Tucson	AZ	85719	\$80,000 - \$89,999	85000	\$300,000 - \$1
22	21	SAMUELS	Mitchell	Dr	Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$150,000 - \$1
23	22	FLOOR	Campbell	St	Tucson	AZ	85719	\$40,000 - \$49,999	45000	\$125,000 - \$1

- (3) Fill in the column for “isMagazineSubscriber”. The purpose is to know if the sampled individual subscribes to a magazine. This is used in answering Question_2. A formula you can use is:

=IF(ISBLANK([@[Books / Magazines]]),"Unknown",IF(ISERROR(SEARCH("Magazine Subscriber",[@[Books / Magazines]])),"Non_Subscriber","Magazine Subscriber"))

	A	B	C	D	E	F	G	H	I	J	K	L
1	SampleNo	Last Na	Street	Street	City	State	Zip Cod	Estimated Hou	MidEHI	Estimate	Books / Ma	isMagazineSubscri
2	1	CERVANTI	Speedway Blvd		Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$100,000 - \$	Books & Ma	Magazine Subscriber
3	2	COTTON	Lester	St	Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$175,000 - \$	Book Buyer	Magazine Subscriber
4	3	ALDRICH	Euclid	Ave	Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$100,000 - \$	Books & Ma	Magazine Subscriber
5	4	HANLEY	7th	St	Tucson	AZ	85719	\$50,000 - \$59,999	55000	\$300,000 - \$349,999		Unknown
6	5	ODELL	Grant	Rd	Tucson	AZ	85719	\$30,000 - \$39,999	35000		Books & Ma	Non_Subscriber
7	6	TERRY	1st	Ave	Tucson	AZ	85719	\$20,000 - \$29,999	25000		Book Buyer	Magazine Subscriber
8	7	BERGERO	10th	St	Tucson	AZ	85719	Under \$20,000	10000	\$150,000 - \$174,999		Unknown
9	8	WHALEN	Olsen	Ave	Tucson	AZ	85719	\$20,000 - \$29,999	25000			Unknown
10	9	ZIEGLER	10th	St	Tucson	AZ	85719	\$20,000 - \$29,999	25000			Unknown
11	10	DIXON	Mabel	St	Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$175,000 - \$	Books & Ma	Magazine Subscriber
12	11	MILES	Mabel	St	Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$250,000 - \$299,999		Unknown
13	12	DELAROSA	Campbell	Ave	Tucson	AZ	85719	Under \$20,000	10000	\$100,000 - \$	Books & Ma	Magazine Subscriber
14	13	PEREIRA	Norris	Ave	Tucson	AZ	85719	\$150,000 - \$174,9	162500	\$450,000 - \$	Books & Ma	Magazine Subscriber
15	14	LYON	4th	St	Tucson	AZ	85719	\$40,000 - \$49,999	45000	\$175,000 - \$	Books & Ma	Magazine Subscriber
16	15		Hedrick	Dr	Tucson	AZ	85719	\$50,000 - \$59,999	55000	\$100,000 - \$124,999		Unknown
17	16	HERNAND	Mabel	St	Tucson	AZ	85719	Under \$20,000	10000	\$125,000 - \$	Books & Ma	Magazine Subscriber
18	17	RICHMON	Kapok	Ln	Tucson	AZ	85719	\$80,000 - \$89,999	85000	\$400,000 - \$	Books & Ma	Magazine Subscriber
19	18	MAJOR	19th	St	Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$75,000 - \$99,999		Unknown
20	19	GILLIS	Mountain	Ave	Tucson	AZ	85719	Under \$20,000	10000	\$100,000 - \$	Book Buyer	Magazine Subscriber
21	20	CARPENTE	4th	St	Tucson	AZ	85719	\$80,000 - \$89,999	85000	\$300,000 - \$	Books & Ma	Magazine Subscriber
22	21	SAMUELS	Mitchell	Dr	Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$150,000 - \$174,999		Unknown
23	22	FLOOR	Campbell	St	Tucson	AZ	85719	\$40,000 - \$49,999	45000	\$125,000 - \$149,999		Unknown

- (4) Fill in the column for “isOnInternet”. The purpose is to know if the sampled individual uses the Internet (or has access). This is used in answering Question_3. A formula you can use is:

=IF(ISBLANK([@[Technology / Entertainment]]),
"Unknown",IF(ISERROR(SEARCH("Internet",[@[Technology /
Entertainment]])), "No_Internet", "On Internet"))

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Sample	Last Na	Street	Street	City	State	Zip Cod	Estimated Ho	MidEHI	Estimate	Books /	isMagazineSubscri	Technolo	isOnInte
2		1 CERVANTI	Speedway Blvd		Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$100,000 - \$	Books & Ma Magazine Subscriber			Unknown
3		2 COTTON	Lester St		Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$175,000 - \$	Book Buyer: Magazine Subscriber	Internet Us	Internet Us	On Internet
4		3 ALDRICH	Euclid Ave		Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$100,000 - \$	Books & Ma Magazine Subscriber	Internet Us	Internet Us	On Internet
5		4 HANLEY	7th St		Tucson	AZ	85719	\$50,000 - \$59,999	55000	\$300,000 - \$349,999	Unknown	Internet Us	Internet Us	On Internet
6		5 ODELL	Grant Rd		Tucson	AZ	85719	\$30,000 - \$39,999	35000		Books & Ma Non-Subscriber	Audio Prod	Internet Us	On Internet
7		6 TERRY	1st Ave		Tucson	AZ	85719	\$20,000 - \$29,999	25000		Book Buyer: Magazine Subscriber	Internet Us	Internet Us	On Internet
8		7 BERGERO	10th St		Tucson	AZ	85719	Under \$20,000	10000	\$150,000 - \$174,999	Unknown	Internet Us	Internet Us	On Internet
9		8 WHALEN	Olsen Ave		Tucson	AZ	85719	\$20,000 - \$29,999	25000		Unknown	Internet Us	Internet Us	On Internet
10		9 ZIEGLER	10th St		Tucson	AZ	85719	\$20,000 - \$29,999	25000		Unknown	Internet Us	Internet Us	On Internet
11		10 DIXON	Mabel St		Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$175,000 - \$	Books & Ma Magazine Subscriber			Unknown
12		11 MILES	Mabel St		Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$250,000 - \$299,999	Unknown	Internet Us	Internet Us	On Internet
13		12 DELAROSA	Campbell Ave		Tucson	AZ	85719	Under \$20,000	10000	\$100,000 - \$	Books & Ma Magazine Subscriber	Internet Us	Internet Us	On Internet
14		13 PEREIRA	Norris Ave		Tucson	AZ	85719	\$150,000 - \$174,9	162500	\$450,000 - \$	Books & Ma Magazine Subscriber			Unknown
15		14 LYON	4th St		Tucson	AZ	85719	\$40,000 - \$49,999	45000	\$175,000 - \$	Books & Ma Magazine Subscriber			Unknown
16		15	Hedrick Dr		Tucson	AZ	85719	\$50,000 - \$59,999	55000	\$100,000 - \$124,999	Unknown	Internet Us	Internet Us	On Internet
17		16 HERNAND	Mabel St		Tucson	AZ	85719	Under \$20,000	10000	\$125,000 - \$	Books & Ma Magazine Subscriber			Unknown
18		17 RICHMON	Kapok Ln		Tucson	AZ	85719	\$80,000 - \$89,999	85000	\$400,000 - \$	Books & Ma Magazine Subscriber			Unknown
19		18 MAJOR	19th St		Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$75,000 - \$99,999	Unknown	Internet Us	Internet Us	On Internet
20		19 GILLIS	Mountain Ave		Tucson	AZ	85719	Under \$20,000	10000	\$100,000 - \$	Book Buyer: Magazine Subscriber			Unknown
21		20 CARPENTE	4th St		Tucson	AZ	85719	\$80,000 - \$89,999	85000	\$300,000 - \$	Books & Ma Magazine Subscriber			Unknown
22		21 SAMUELS	Mitchell Dr		Tucson	AZ	85719	\$20,000 - \$29,999	25000	\$150,000 - \$174,999	Unknown	Internet Us	Internet Us	On Internet
23		22 FLORES	Campbell Ave		Tucson	AZ	85719	\$100,000 - \$124,9	112500	\$175,000 - \$	Books & Ma Magazine Subscriber			Unknown
		...	Question 1	Question 2	Question 3	Question 4	RawData	midEHI						

Attempt Question 1 onwards AFTER you complete the Data Preparation steps.

Question_1: Sample profile

In the Worksheet for Question_1, fill in answers to Tasks 1-3.

For Task 1, you can determine the average by going to the worksheet “RawData” (for column MidEHI) and choosing the Average function.

	Sampl	Last Na	Street	Street S	City	State	Zip Cod	Estimated Household I	MidEHI	Estim
1984	1983	FISH	Adelaide	Dr	Tucson	AZ	85719	Under \$20,000	10000	\$300,
1985	1984	DODGE	Glenn	St	Tucson	AZ	85719	\$50,000 - \$59,999	55000	\$300,
1986	1985	HAGEN	Manlove	St	Tucson	AZ	85719	Under \$20,000	10000	
1987	1986	GRECO	Seneca	St	Tucson	AZ	85719	\$80,000 - \$89,999	85000	\$300,
1988	1987	MADISON	Knox	Dr	Tucson	AZ	85719	Under \$20,000	10000	\$150,
1989	1988	KOCH	Edison	St	Tucson	AZ	85719	\$70,000 - \$79,999	75000	\$250,
1990	1989	CHAMBER	Helen	St	Tucson	AZ	85719	\$20,000 - \$29,999	25000	
1991	1990	GOODMA	Cherry	Ave	Tucson	AZ	85719	Under \$20,000	10000	\$175,
1992	1991	SHERWOC	Campbell	Ave	Tucson	AZ	85719	Under \$20,000	10000	
1993	1992	GARY	Elm	St	Tucson	AZ	85719	Under \$20,000	10000	\$125,
1994	1993	AQUINO	Lee	St	Tucson	AZ	85719	\$20,000 - \$29,999		
1995	1994	NASH	Eastland	St	Tucson	AZ	85719	\$70,000 - \$79,999		
1996	1995	FOX	Hampton	St	Tucson	AZ	85719	\$60,000 - \$69,999	65000	\$125,
1997	1996	PINTO	Jackson	Ave	Tucson	AZ	85719	\$40,000 - \$49,999	45000	
1998	1997	HUERTA	3rd	St	Tucson	AZ	85719	Under \$20,000	10000	\$175,
1999	1998	MCKENZIE	Blacklidge	Dr	Tucson	AZ	85719	\$80,000 - \$89,999	85000	\$200,
2000	1999	BEATTY	Beverly	Dr	Tucson	AZ	85719	\$60,000 - \$69,999	65000	\$150,
2001	2000	RYAN	Rillito Cre	Pl	Tucson	AZ	85719	\$70,000 - \$79,999	75000	\$125,
2002	2000	Total						2000		
2003										
2004										
2005										
2006										

Source: ReferenceUSA

Worksheet tabs: Question_1, Question_2, Question_3, Question_4, **RawData**, midEHI

Formula bar: =AVERAGE(I2:I2001)

For Task 2, to obtain the “Median household income” census data please use:
<http://quickfacts.census.gov/qfd/states/04/0477000.html>

QuickFacts

UNITED STATES

(1) TUCSON

[What's New & FAQs >](#)

[Tell us what you think >](#)

QuickFacts provides statistics for all states and counties, and for cities and towns with a population of 5,000 or more.

Table

ALL TOPICS	Q = Browse more datasets	UNITED STATES
ALL TOPICS		
Population		
Age and Sex		
Race and Hispanic Origin		
Population Characteristics		
Housing		
Families and Living Arrangements		
Education		
Health		
Economy		
Transportation		
Income and Poverty		
Businesses		
Geography		
Population, Census, April 1, 2010		
Age and Sex		

Question_2: Magazine Subscribers

In the worksheet for Question_2, complete the pivot table analysis and fill in answers to Tasks 1-4.

Formatting

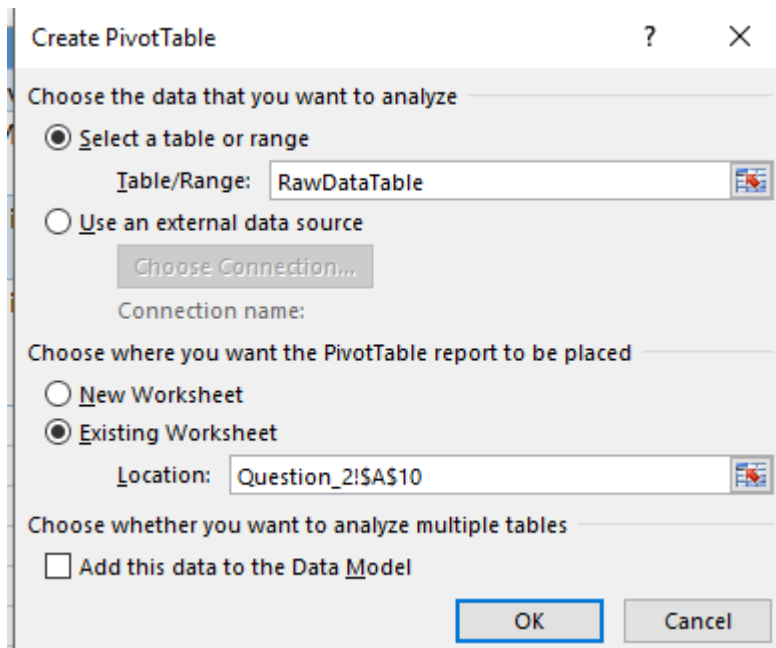
Answer to Task_2: use a percentage format.

Answer to Task_3 and Task_4: use a Currency format.

(Read: <http://www.excel-easy.com/basics/format-cells.html>)

Pivot Table Analysis

1. Navigate to the “RawData” worksheet. Click on a cell.
2. Click the Insert tab at the top of the Excel window, then click on PivotTable (the Create PivotTable window should open).
3. Choose to place the PivotTable report in an Existing Worksheet: Question_2 (cell A10).



4. To ensure the Pivot Table has the current data, press the Refresh button under the PIVOTTABLE TOOLS > Analyze tab.

The screenshot shows the Microsoft Excel interface with the file name "yourNetID_A2_TucsonData.xlsx". The "PIVOTTABLE TOOLS" ribbon is active, with the "ANALYZE" tab selected. The ribbon contains several groups of icons: "PivotTable" (Options, Field Settings, Active Field), "Group" (Group Selection, Ungroup, Group Field), "Filter" (Insert Slicer, Insert Timeline, Filter), "Connections" (Refresh, Change Data Source), and "Actions" (Clear, Select, Move Pi). The "Active Field" group is highlighted with an orange box. In the worksheet, a PivotTable named "PivotTable3" is being created in Row 10, starting at cell A10. The PivotTable is currently empty, and a message box prompts the user to "To build a report, choose fields from the PivotTable Field List". The "Question_2" tab is highlighted with a red box in the bottom tab bar.

5. Add the “isMagazineSubscriber” column to the ROWS area. Note if you only see a Blank entry show up under Row Labels, Refresh the Pivot table (see previous step).

Insert Pivot Table in Row 10 (i.e., starting in A10)

Row Labels

Magazine Subscriber

Non_Subscriber

Unknown

Grand Total

PivotTable Fields

Choose fields to add to report:

☐ MidEHI

☐ Estimated Home Value

☐ Books / Magazines

☒ isMagazineSubscriber

☐ Technology / Entertainment

☐ isOutstate

Drag fields between areas below:

FILTERS

ROWS

isMagazineSubscriber

Defer Layout Update

6. Add the “SampleNo” column to the VALUES area. Change the Value Field Settings to use a Count calculation instead of the default Sum.

Insert Pivot Table in Row 10 (i.e., starting in A10)

Row Labels

Magazine Subscriber

Non_Subscriber

Unknown

Grand Total

Sum of SampleNo

PivotTable Fields

Choose fields to add to report:

☒ SampleNo

☐ Last Name

☐ Street

☐ Street Suffix

☐ City

☐ State

yourNetID_A2_TucsonData.xlsx - Excel

PIVOTTABLE TOOLS

ANALYZE DESIGN

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

Clipboard Font Alignment Number Styles Cells Editing

Insert Sum AutoSum Fill Sort & Find & Filter Select

Clear

Sign in

Insert Pivot Table in Row 10 (i.e., starting in A10)

Row Labels

Magazine Subscriber

Non_Subscriber

Unknown

Grand Total

Sum of SampleNo

PivotTable Fields

Choose fields to add to report:

☒ SampleNo

☐ Last Name

☐ Street

☐ Street Suffix

☐ City

☐ State

Drag fields between areas below:

FILTERS

ROWS

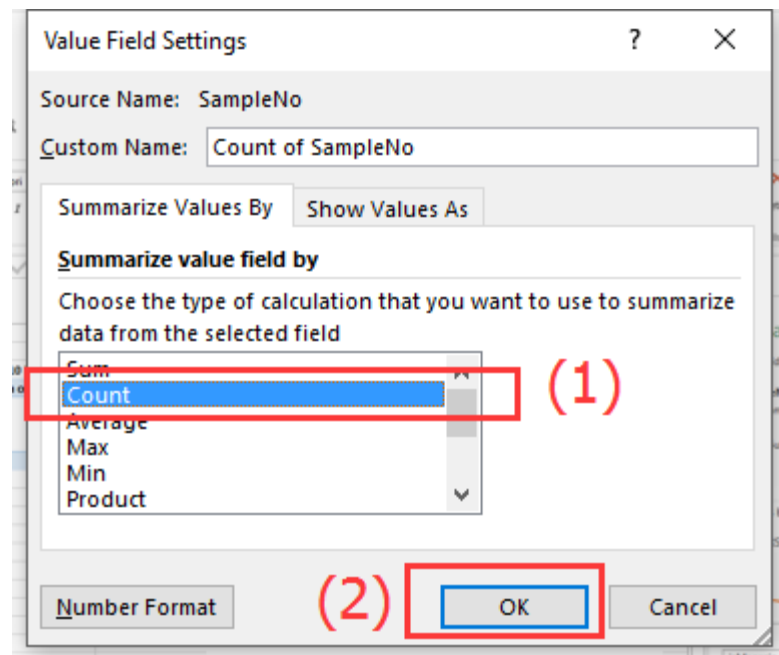
isMagazineSubscriber

Defer Layout Update

UPDATE

(1) click "Sum of SampleNo"

(2) click "Value Field Settings"



7. Add the MidEHI column to the VALUES area. Change the Value Field Settings to use an Average calculation instead of the default Sum. Use the Currency format for the column values.

You should get a table like this.

Insert Pivot Table in Row 10 (i.e., starting in A10)		
Row Labels	Count of SampleNo	Average of MidEHI
Magazine Subscriber		\$
Non_Subscriber		\$
Unknown		\$
Grand Total	2000	\$

Question_3: Internet Users

In the Worksheet for Question_3, complete the pivot table analysis and fill in answers to Tasks 1-4.

Formatting

Answer to Task_2: use a percentage format.

Answer to Task_3 and Task_4: use a Currency format.

Pivot Table Analysis

1. Navigate to the “RawData” worksheet. Click on a cell.
 2. Click the Insert tab at the top of the Excel window, then click on PivotTable (the Create PivotTable window should open).
 3. Choose to place the PivotTable report in an Existing Worksheet: Question_3 (cell A10).
 4. To ensure the Pivot Table has the current data, press the Refresh button under the PIVOTTABLE TOOLS > Analyze tab.
 5. Add the “isOnInternet” column to the ROWS area. Filter out Unknown values.
 6. Add the “SampleNo” column to the VALUES area. Change the Value Field Settings to use a Count calculation instead of the default Sum.
 7. Add the “MidEHI” column to the VALUES area. Change the Value Field Settings to use an Average calculation instead of the default Sum. Use the Currency format for the column values.
- You should get a table like this.

Insert Pivot Table in Row 10 (i.e., starting in A10)		
Row Labels	Count of SampleNo	Average of MidEHI
No_Internet		\$
On Internet		\$
Grand Total		\$

8. Answer Tasks 1, 2, 3 now.
 9. Add the Automotive Interest column to the ROWS area. Filter out (blank) values.
- You should get a table like this.

Insert Pivot Table in Row 10 (i.e., starting in A10)		
Row Labels	Count of SampleNo	Average of MidEHI
No_Internet		\$
Automotive Interest		\$
On Internet		\$
Automotive Interest		\$
Grand Total		\$

10. Answer Task 4.

Question_4: Your New Business

In the Worksheet for Question_4, use a pivot table (as done for the previous questions) to help fill in answers to Tasks 1-5.

Pick two (or more) lifestyle categories that you think will serve as a proxy for what your business is selling (other than what we used in Question_3). In other words, use Lifestyle categories in the “RawData” beginning with the “Apparel / Fashion / Beauty” column (and onwards).

List what your categories are, and tell us how many people have an interest in them. Support your work with facts (i.e., use one or more pivot tables).

Using the 2014 census.gov estimate for the Tucson population (see Question 1 for the URL), estimate the number of people interested in your business (across Tucson). Our data sample is 2000 people. The population of Tucson is much larger. So you will want to extrapolate the numbers you get from the sample to the overall Tucson market.

Make your Life Easy

Create columns that have the aggregate data you need to summarize. You can combine the “IF” statement with the “SEARCH()” function to extract data from columns. Be very careful of typos, and verify your formula is working for all the cases before using it.

You should extract specific values within a column into a new column to improve your analysis (as we did in the Data Preparation step). For example, to generate whether a sampled individual was interested in Magazines, we used the formula (seen earlier in the assignment):

=IF(ISBLANK([@[Books / Magazines]]),"Unknown",IF(ISERROR(SEARCH("Magazine Subscriber",[@[Books / Magazines]]),"Non_Subscriber","Magazine Subscriber")))

This formula searched within the column “Books / Magazines” for the phrase “Magazine Subscriber”.

You may similarly search for one or more phrases. To search for multiple phrases, you can combine the search condition using “OR” / “AND”. Examples are below.

Note you can use either “ISERR()” or “ISERROR()”. The SEARCH() function returns an error if the search phrase (e.g., “Book Buyers”) is not found. So, if no error (i.e., NOT() an error) occurs, it means the search phrase (e.g., “Book Buyers”) was found.

Lifestyle interest	Search Formula
Print Buyer means either "Book Buyers" OR "Magazine Subscribers"	=IF(OR(NOT(ISERR(SEARCH("Magazine Subscribers",[@[Books / Magazines]]))),NOT(ISERR(SEARCH("Book Buyers",[@[Books / Magazines]]))),,"Print Buyer","Non Buyer")
BMBuyer means both "Book Buyers" AND "Magazine Subscribers"	=IF(AND(NOT(ISERR(SEARCH("Magazine Subscribers",[@[Books / Magazines]]))),NOT(ISERR(SEARCH("Book Buyers",[@[Books / Magazines]]))),,"BMBuyer","Non Buyer")

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