DATA WRANGLING WITH EXCEL

PART II

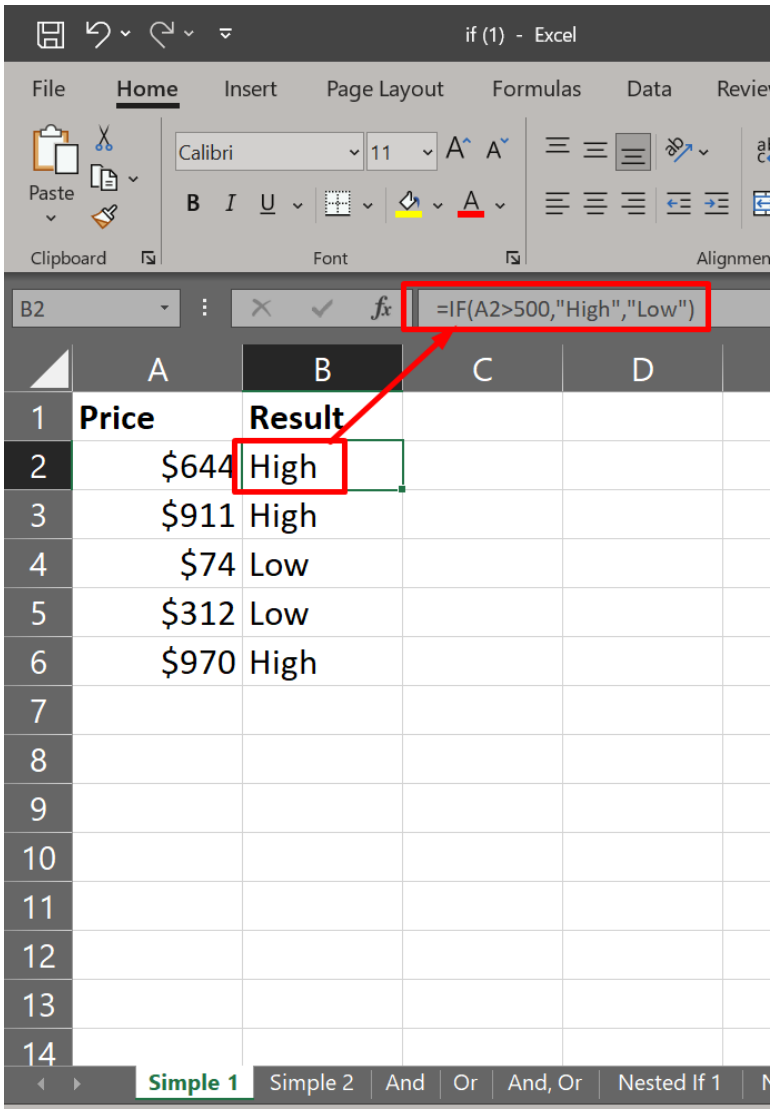
DR. ALVIN ANG

CONTENTS

I. IF + AND + OR / IFS / COUNTIF / AVGIF / SUMIF

https://www.alvinang.sg/s/if.xlsx

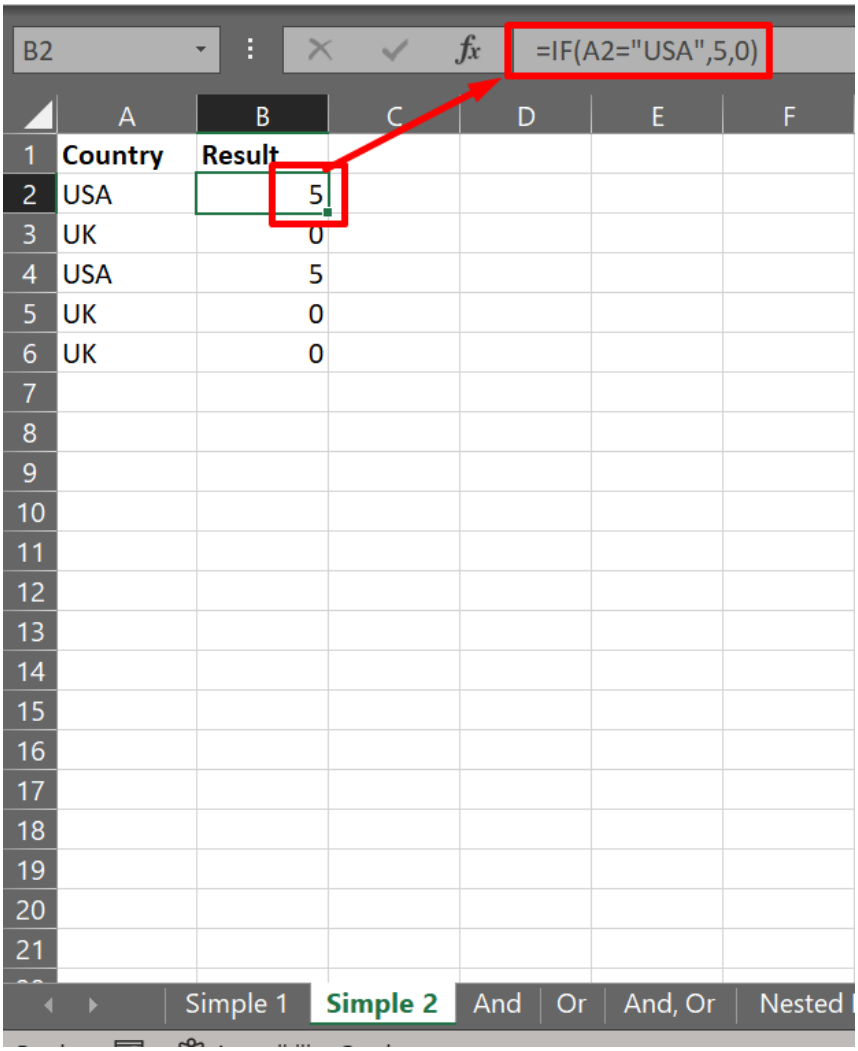
A. IF 1



If Result > $500 then "High"

B. IF 2

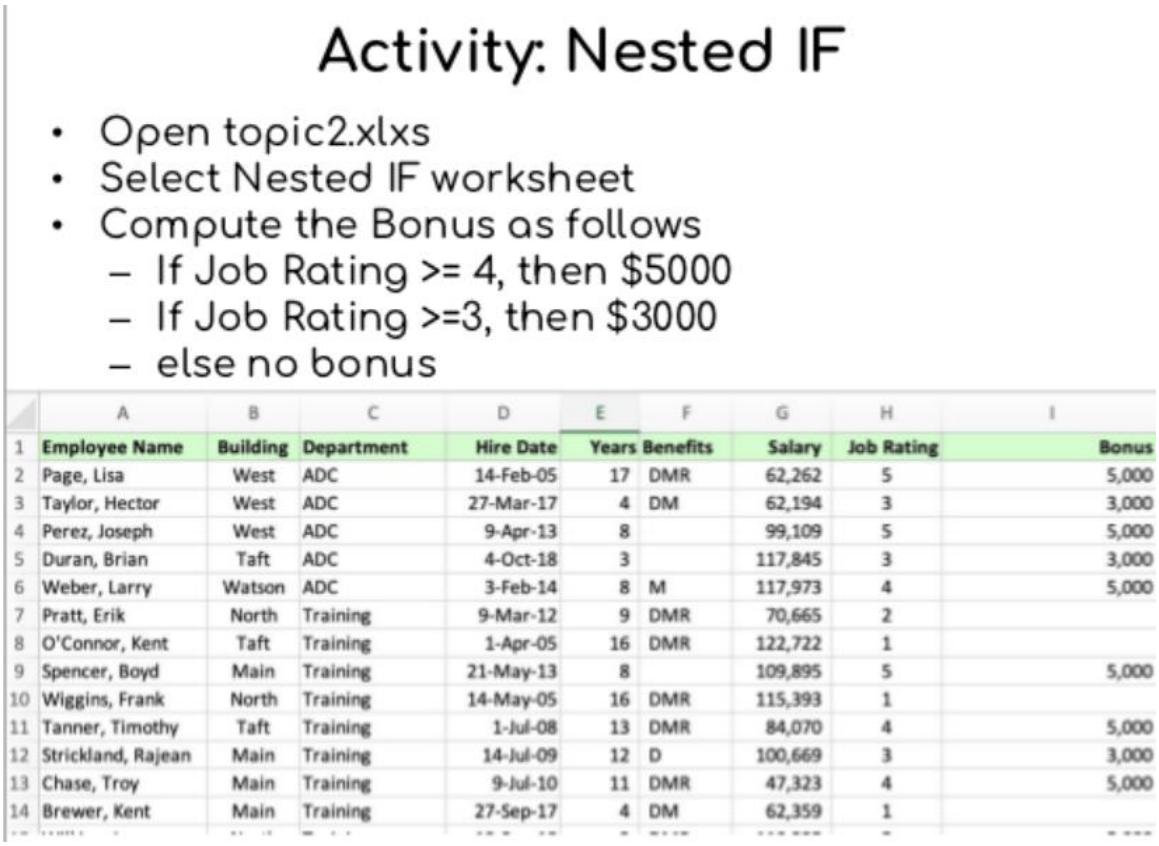
https://www.alvinang.sg/s/if.xlsx



If USA then > "5"

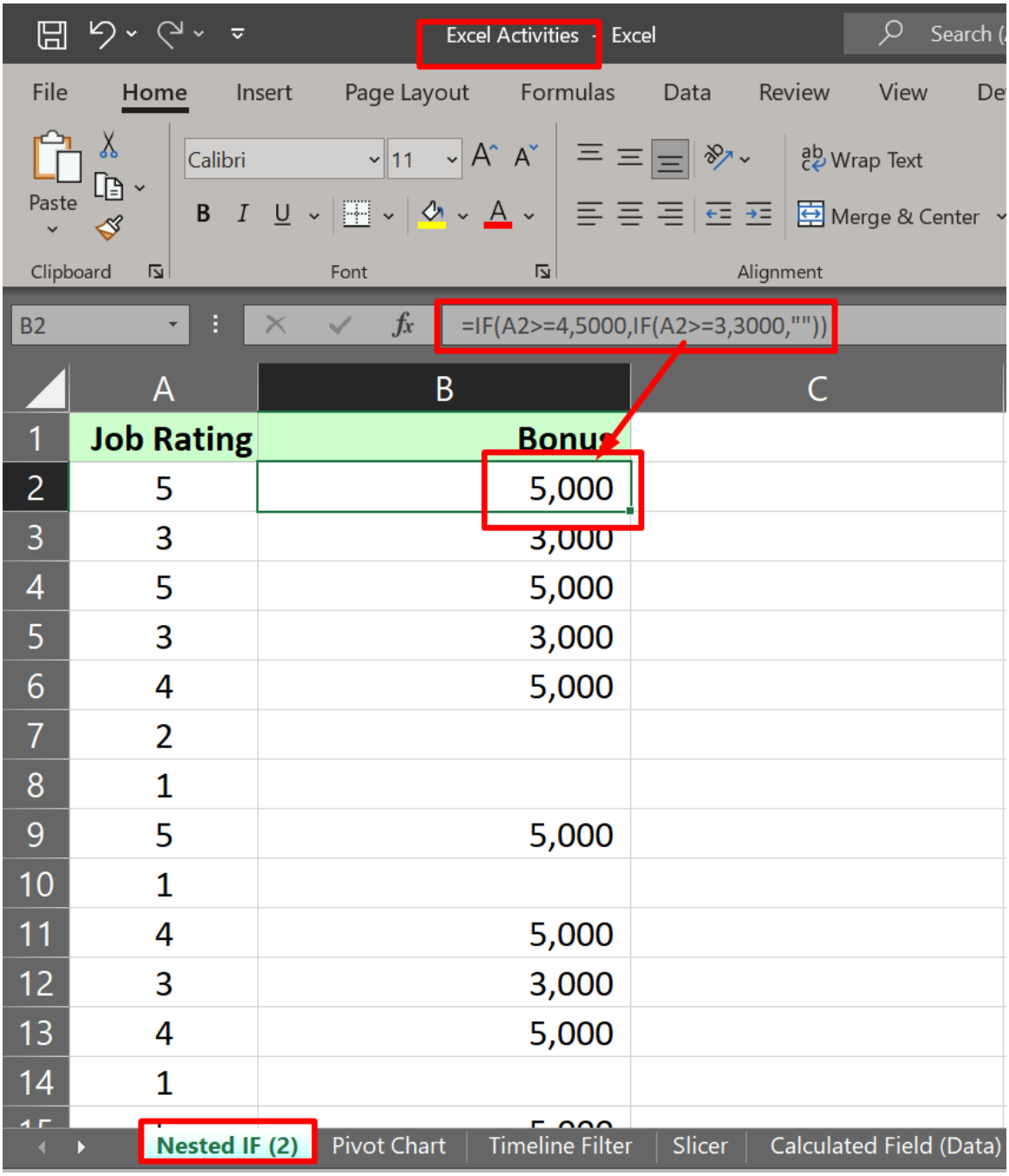
1. ACTIVITY: IF

https://www.alvinang.sg/s/Excel-Activities-1.xlsx



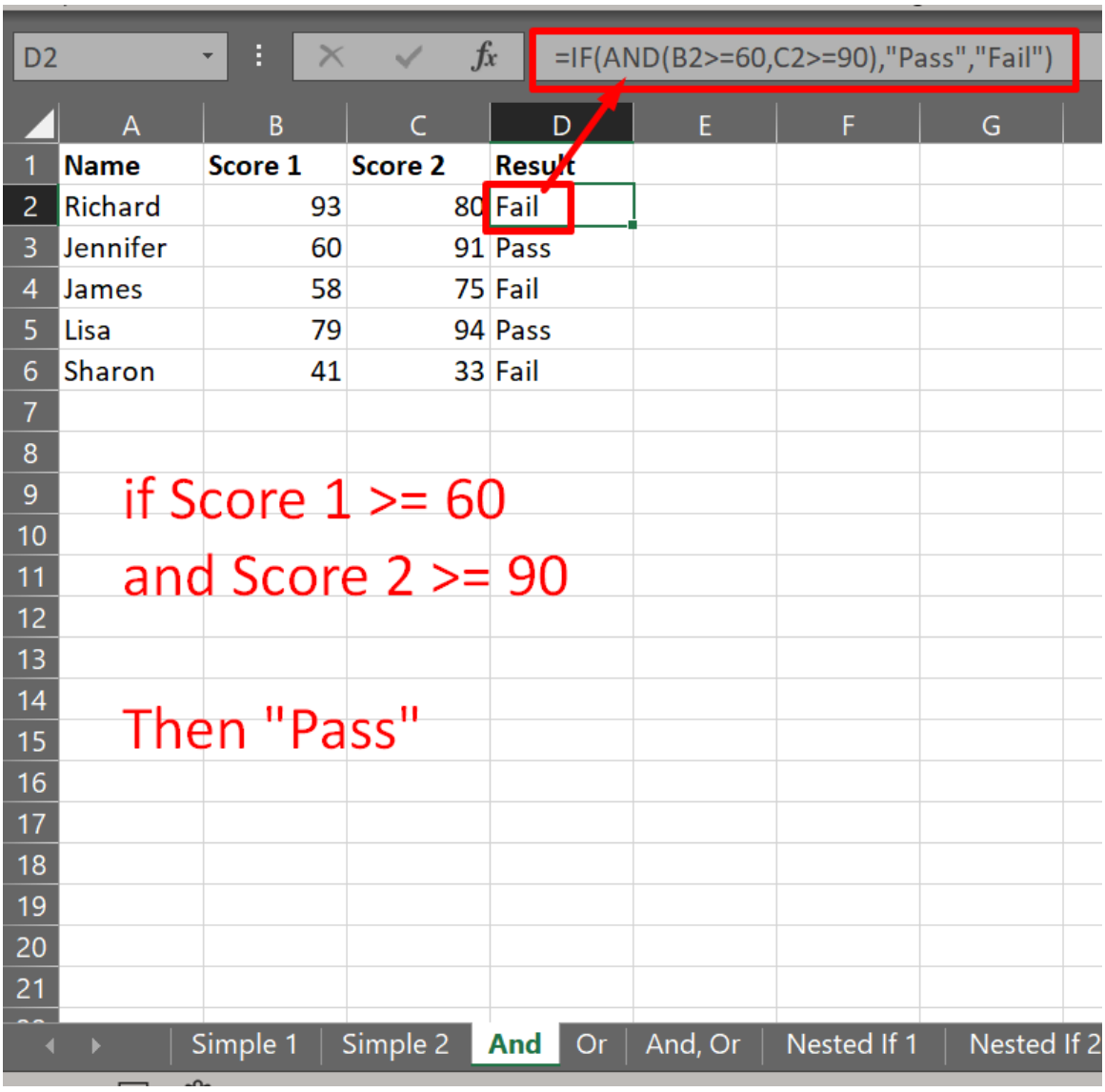
	A	B	C	D	E	F	G	H	I
1	**Employee Name**	**Building**	**Department**	**Hire Date**	**Years**	**Benefits**	**Salary**	**Job Rating**	**Bonus**
2	Page, Lisa	West	ADC	14-Feb-05	17	DMR	62,262	5	5,000
3	Taylor, Hector	West	ADC	27-Mar-17	4	DM	62,194	3	3,000
4	Perez, Joseph	West	ADC	9-Apr-13	8		99,109	5	5,000
5	Duran, Brian	Taft	ADC	4-Oct-18	3		117,845	3	3,000
6	Weber, Larry	Watson	ADC	3-Feb-14	8	M	117,973	4	5,000
7	Pratt, Erik	North	Training	9-Mar-12	9	DMR	70,665	2	
8	O'Connor, Kent	Taft	Training	1-Apr-05	16	DMR	122,722	1	
9	Spencer, Boyd	Main	Training	21-May-13	8		109,895	5	5,000
10	Wiggins, Frank	North	Training	14-May-05	16	DMR	115,393	1	
11	Tanner, Timothy	Taft	Training	1-Jul-08	13	DMR	84,070	4	5,000
12	Strickland, Rajean	Main	Training	14-Jul-09	12	D	100,669	3	3,000
13	Chase, Troy	Main	Training	9-Jul-10	11	DMR	47,323	4	5,000
14	Brewer, Kent	Main	Training	27-Sep-17	4	DM	62,359	1	

a) Answer to IF



C. IF + AND 1

https://www.alvinang.sg/s/if.xlsx



D. IF + AND 2

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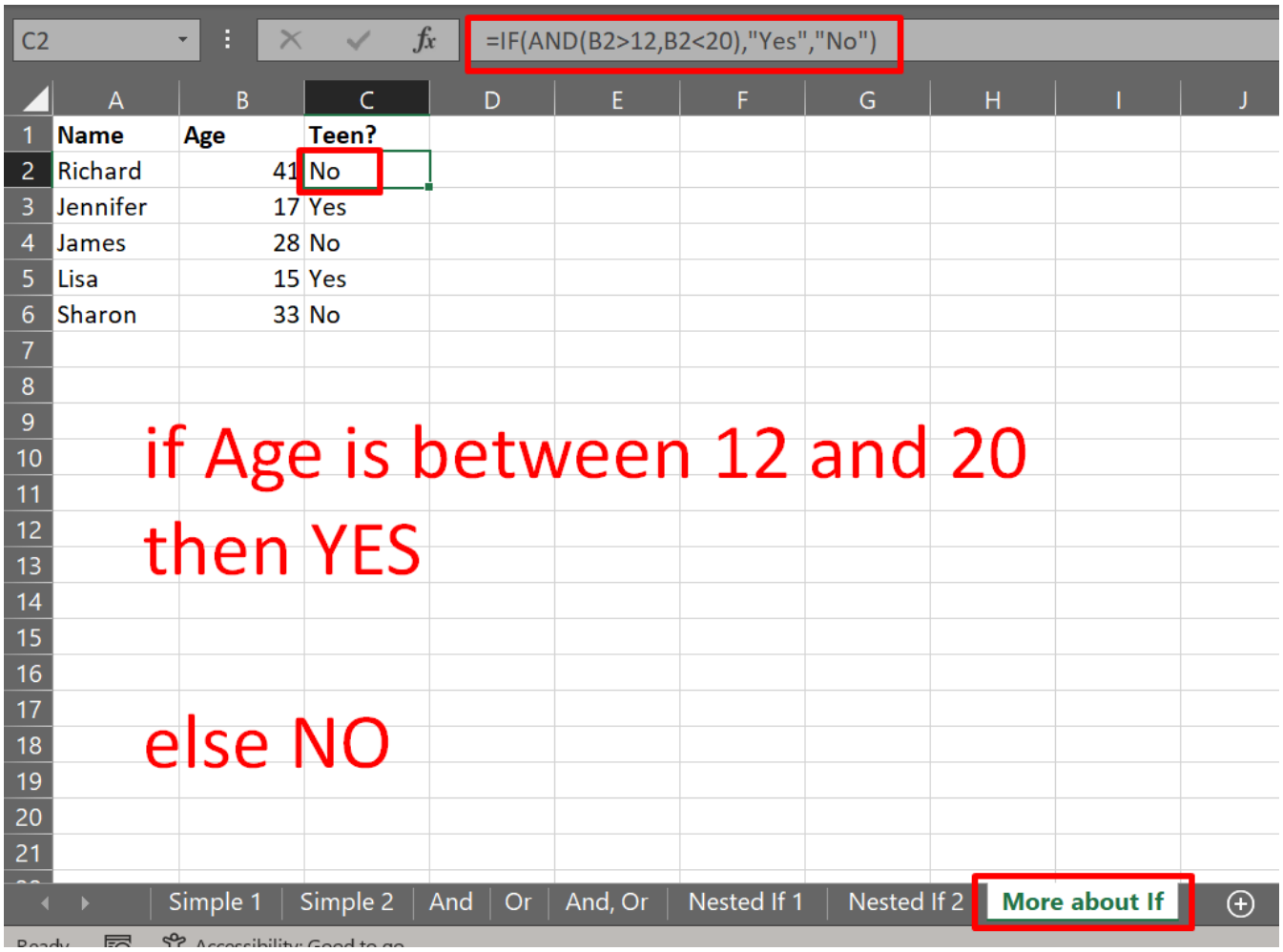

1. ACTIVITY: IF + AND

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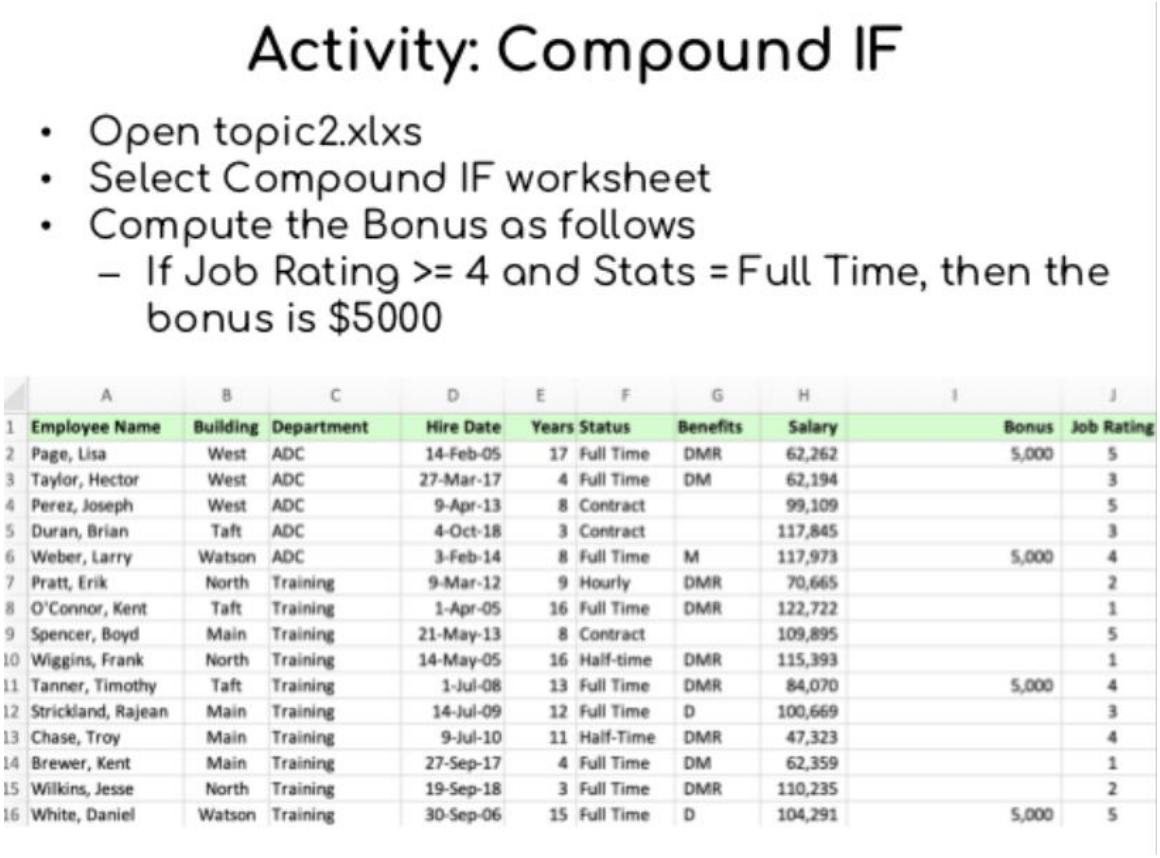
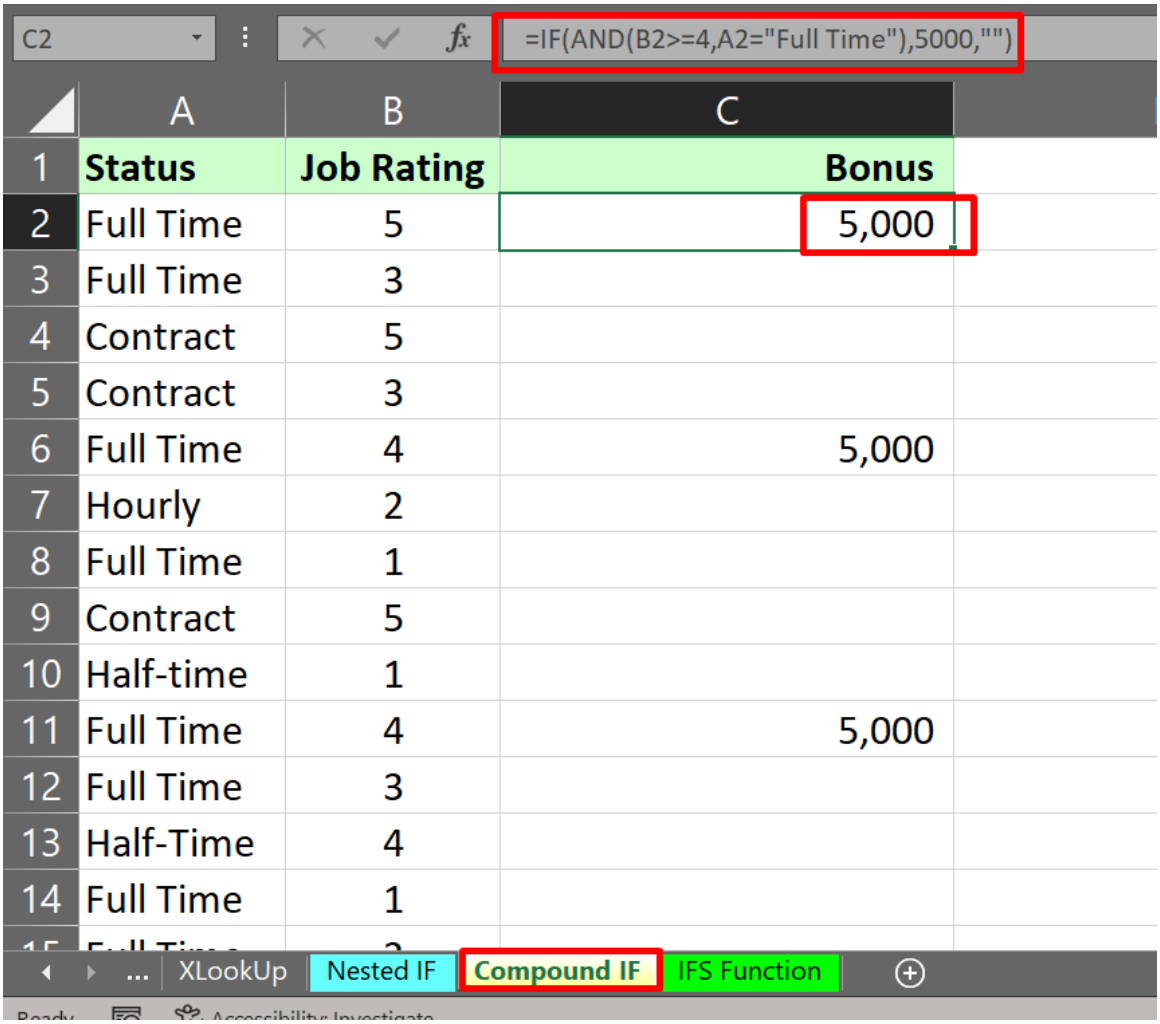


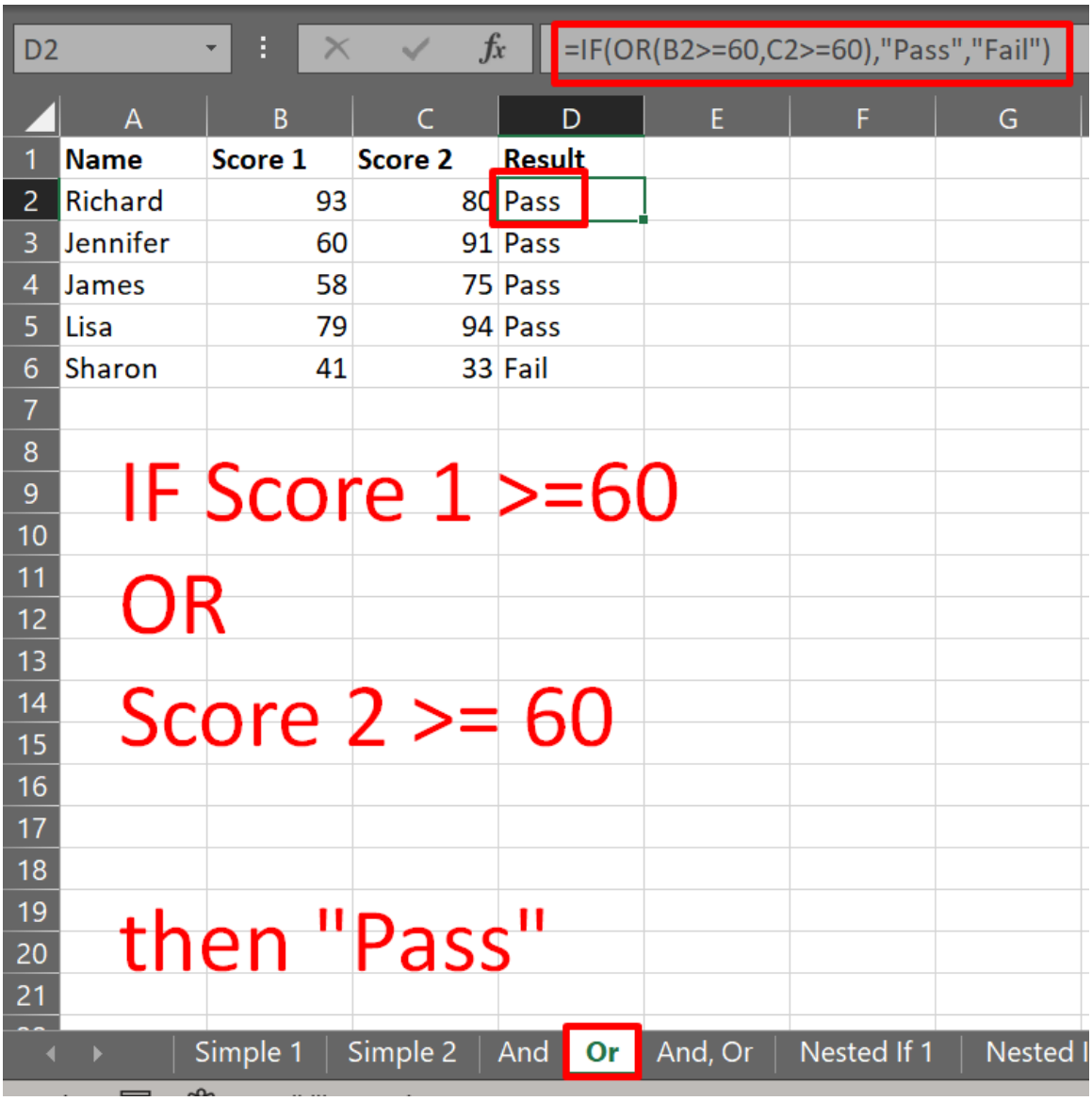
	A	B	C	D	E	F	G	H	I	J
1	**Employee Name**	**Building**	**Department**	**Hire Date**	**Years**	**Status**	**Benefits**	**Salary**	**Bonus**	**Job Rating**
2	Page, Lisa	West	ADC	14-Feb-05	17	Full Time	DMR	62,262	5,000	5
3	Taylor, Hector	West	ADC	27-Mar-17	4	Full Time	DM	62,194		3
4	Perez, Joseph	West	ADC	9-Apr-13	8	Contract		99,109		5
5	Duran, Brian	Taft	ADC	4-Oct-18	3	Contract		117,845		3
6	Weber, Larry	Watson	ADC	3-Feb-14	8	Full Time	M	117,973	5,000	4
7	Pratt, Erik	North	Training	9-Mar-12	9	Hourly	DMR	70,665		2
8	O'Connor, Kent	Taft	Training	1-Apr-05	16	Full Time	DMR	122,722		1
9	Spencer, Boyd	Main	Training	21-May-13	8	Contract		109,895		5
10	Wiggins, Frank	North	Training	14-May-05	16	Half-time	DMR	115,393		1
11	Tanner, Timothy	Taft	Training	1-Jul-08	13	Full Time	DMR	84,070	5,000	4
12	Strickland, Rajean	Main	Training	14-Jul-09	12	Full Time	D	100,669		3
13	Chase, Troy	Main	Training	9-Jul-10	11	Half-Time	DMR	47,323		4
14	Brewer, Kent	Main	Training	27-Sep-17	4	Full Time	DM	62,359		1
15	Wilkins, Jesse	North	Training	19-Sep-18	3	Full Time	DMR	110,235		2
16	White, Daniel	Watson	Training	30-Sep-06	15	Full Time	D	104,291	5,000	5

2. ANSWER TO IF + AND



E. IF + OR

https://www.alvinang.sg/s/if.xlsx



F. IF + AND + OR

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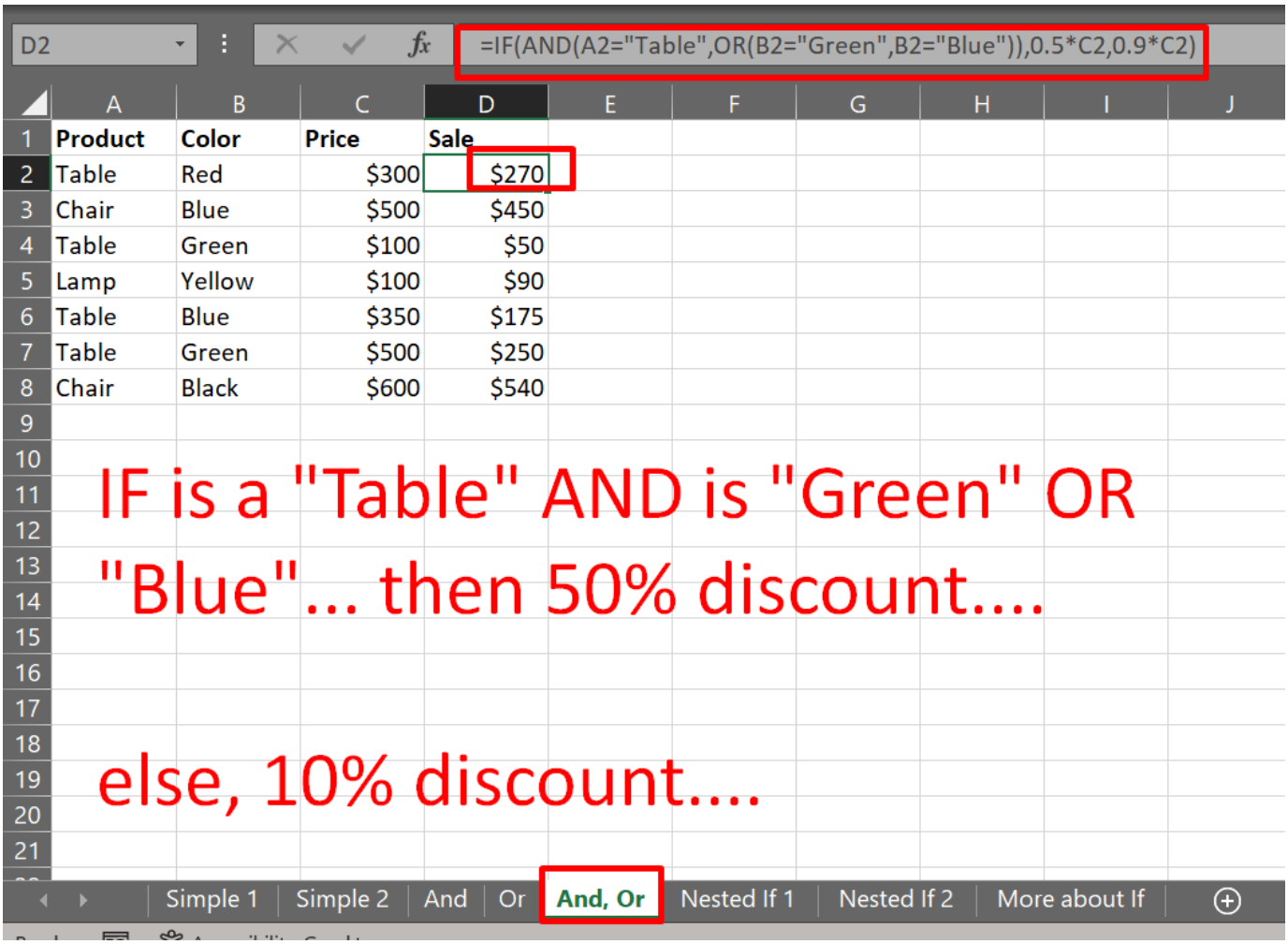
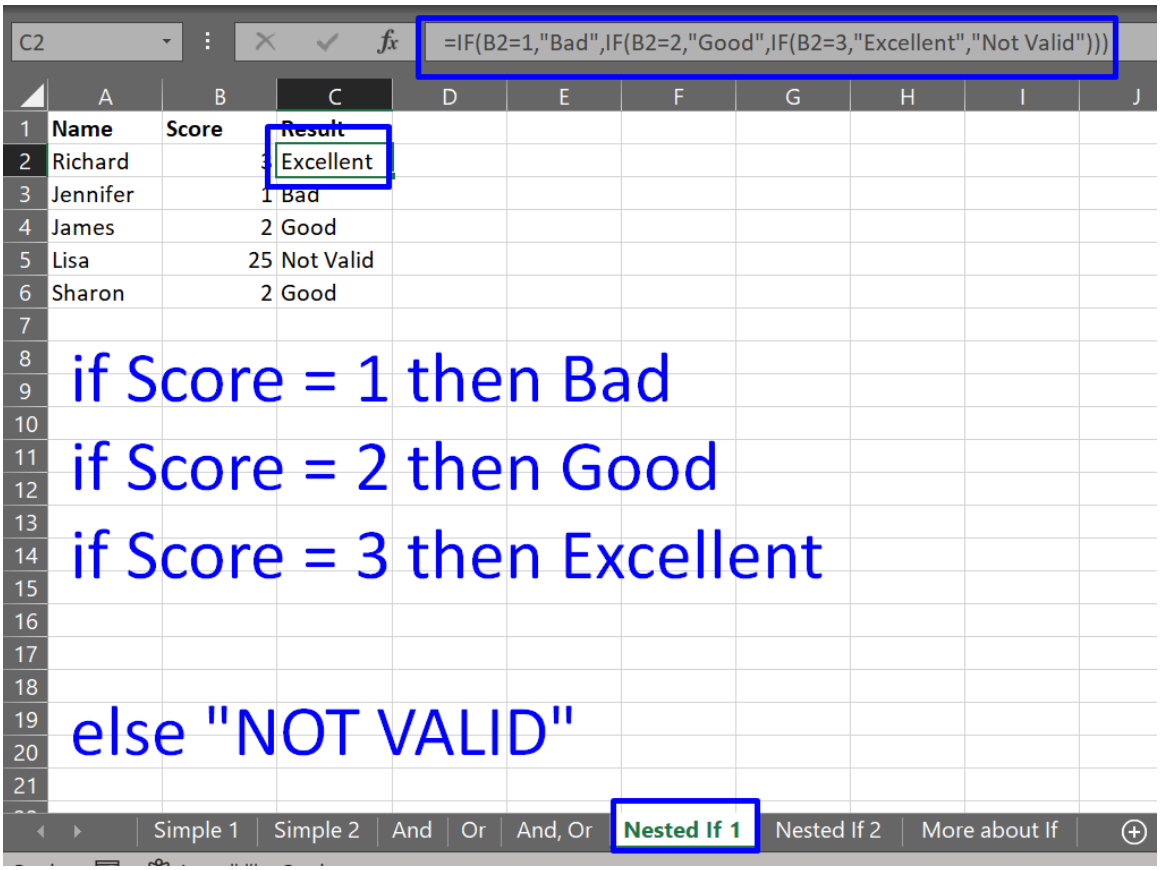


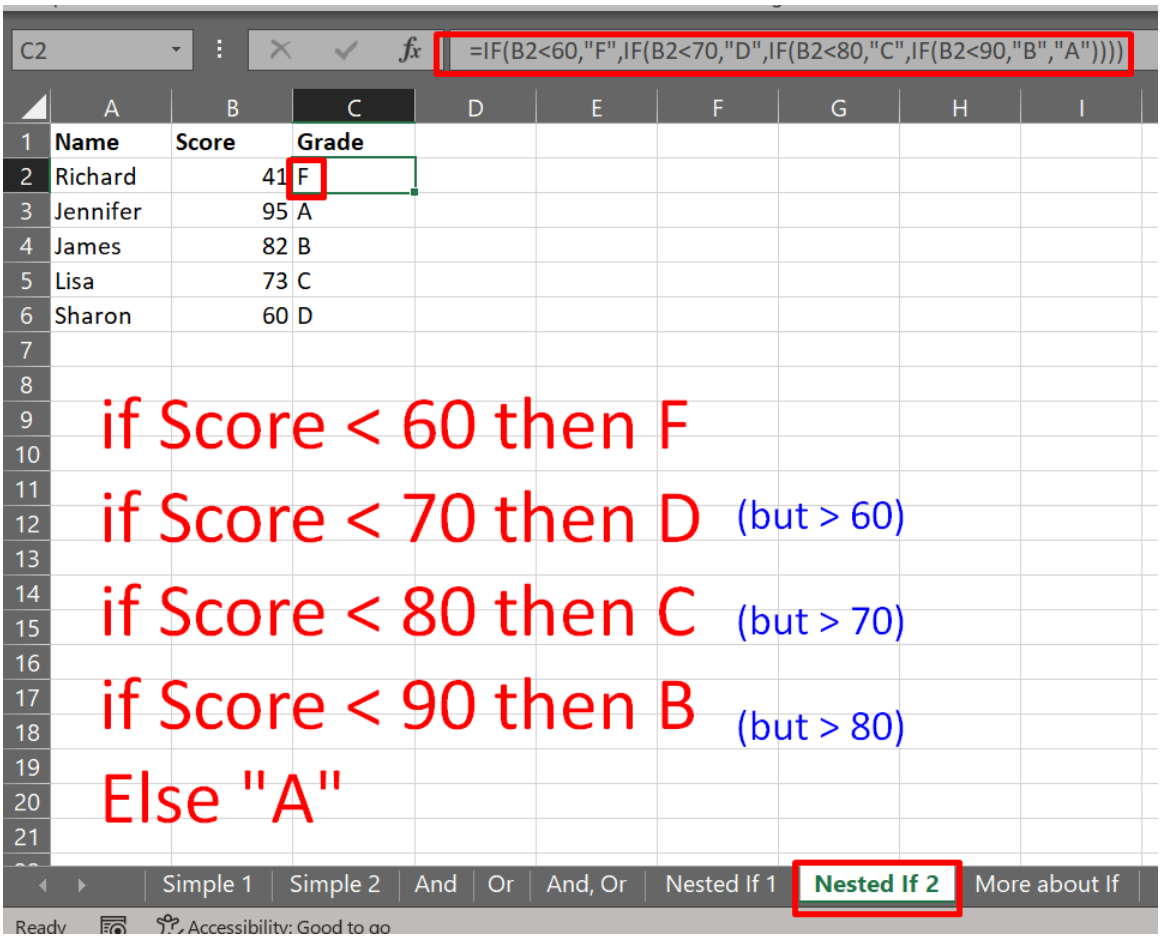
G. NESTED IF 1

https://www.alvinang.sg/s/if.xlsx



H. NESTED IF 2

https://www.alvinang.sg/s/if.xlsx



I. ACTIVITY: NESTED IF

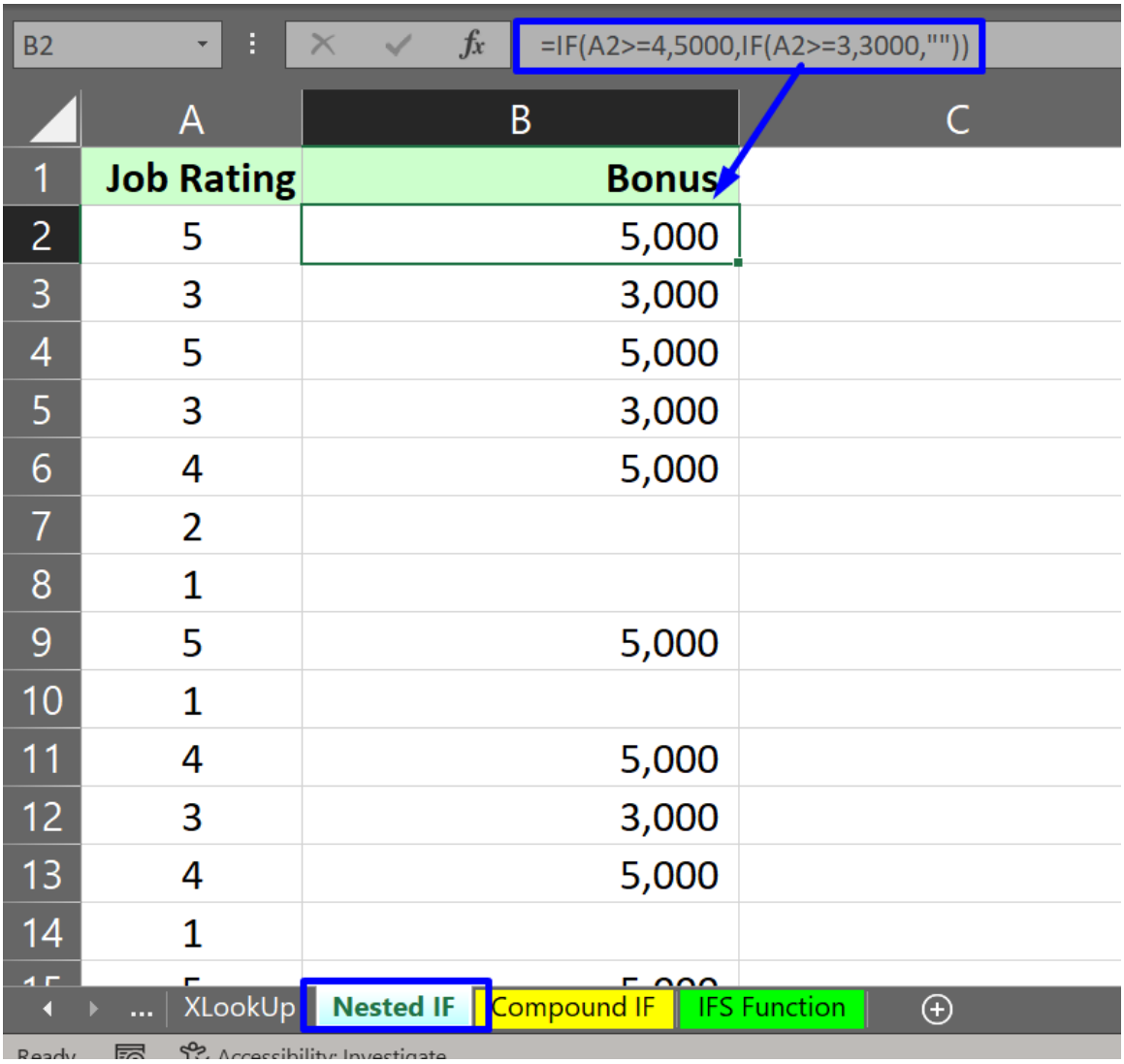
https://www.alvinang.sg/s/Excel-Activities-1.xlsx

Activity: Nested IF

- Open topic2.xlxs
- Select Nested IF worksheet
- Compute the Bonus as follows
  - If Job Rating >= 4, then $5000
  - If Job Rating >=3, then $3000
  - else no bonus

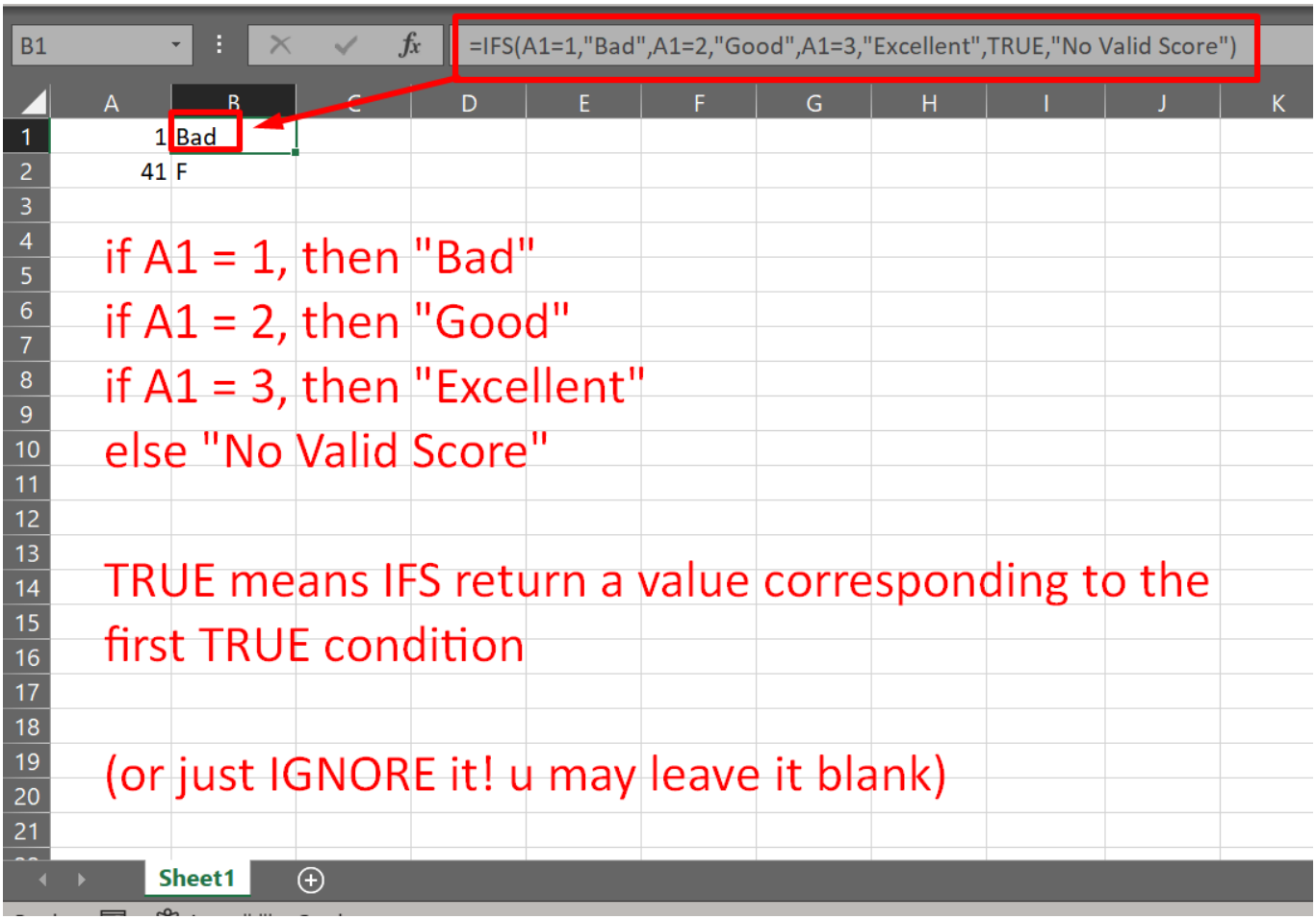
	A	B	C	D	E	F	G	H	I
1	**Employee Name**	**Building**	**Department**	**Hire Date**	**Years**	**Benefits**	**Salary**	**Job Rating**	**Bonus**
2	Page, Lisa	West	ADC	14-Feb-05	17	DMR	62,262	5	5,000
3	Taylor, Hector	West	ADC	27-Mar-17	4	DM	62,194	3	3,000
4	Perez, Joseph	West	ADC	9-Apr-13	8		99,109	5	5,000
5	Duran, Brian	Taft	ADC	4-Oct-18	3		117,845	3	3,000
6	Weber, Larry	Watson	ADC	3-Feb-14	8	M	117,973	4	5,000
7	Pratt, Erik	North	Training	9-Mar-12	9	DMR	70,665	2	
8	O'Connor, Kent	Taft	Training	1-Apr-05	16	DMR	122,722	1	
9	Spencer, Boyd	Main	Training	21-May-13	8		109,895	5	5,000
10	Wiggins, Frank	North	Training	14-May-05	16	DMR	115,393	1	
11	Tanner, Timothy	Taft	Training	1-Jul-08	13	DMR	84,070	4	5,000
12	Strickland, Rajean	Main	Training	14-Jul-09	12	D	100,669	3	3,000
13	Chase, Troy	Main	Training	9-Jul-10	11	DMR	47,323	4	5,000
14	Brewer, Kent	Main	Training	27-Sep-17	4	DM	62,359	1	

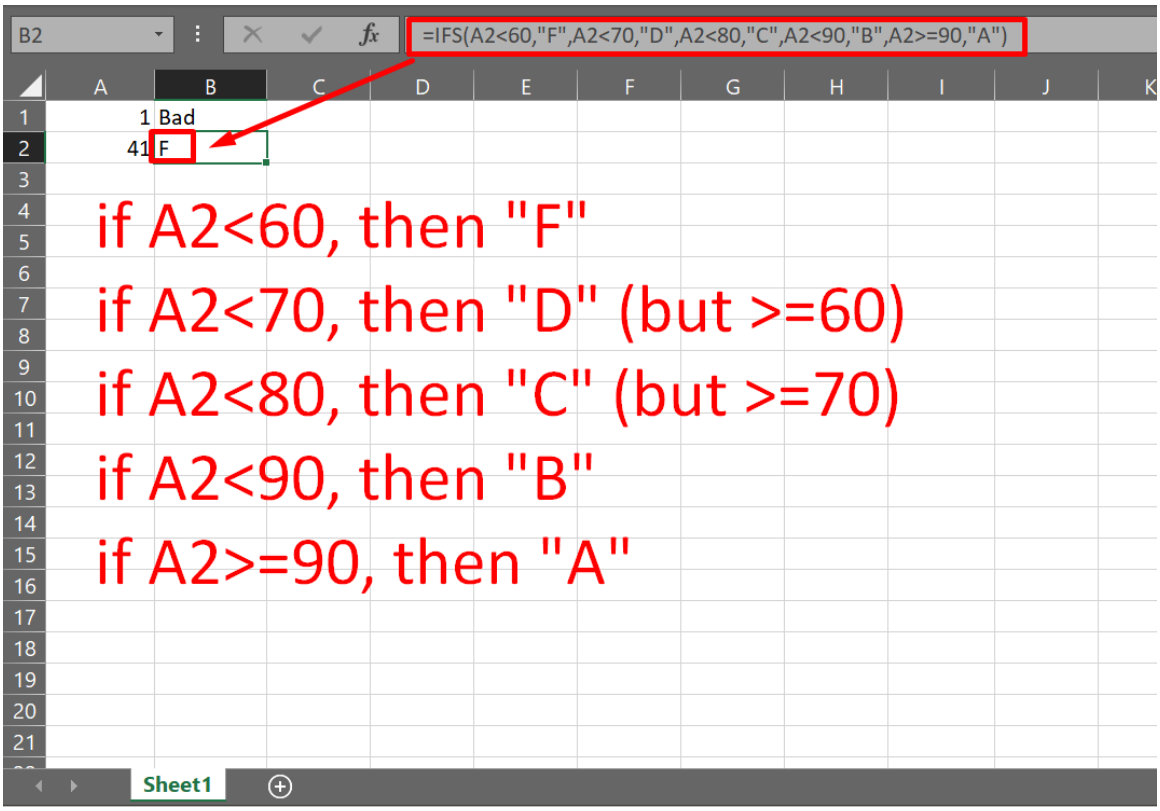
1. ANSWER TO NESTED IF



J. IFS

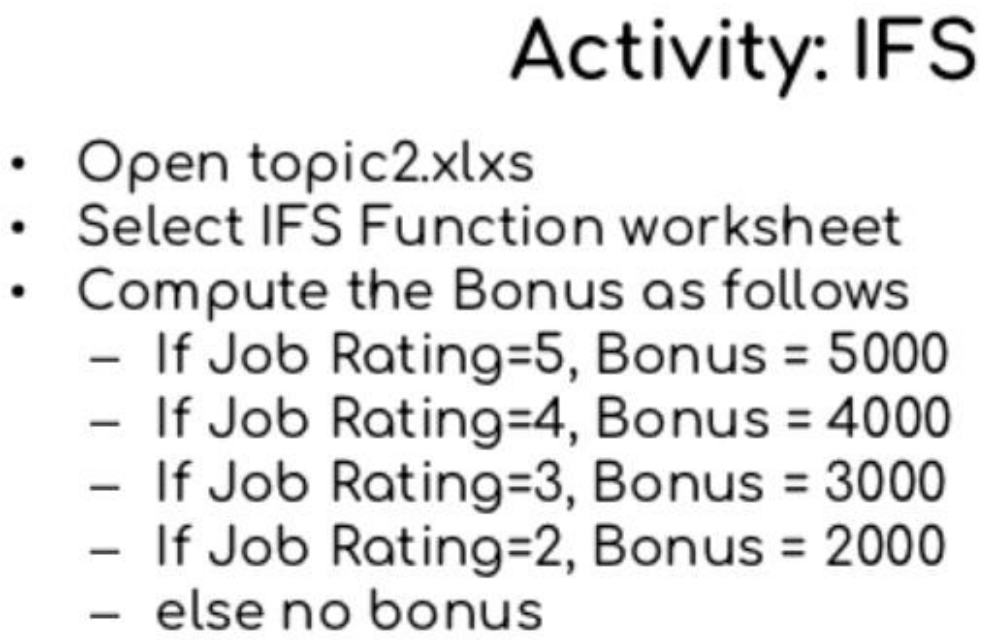
https://www.alvinang.sg/s/ifs.xlsx



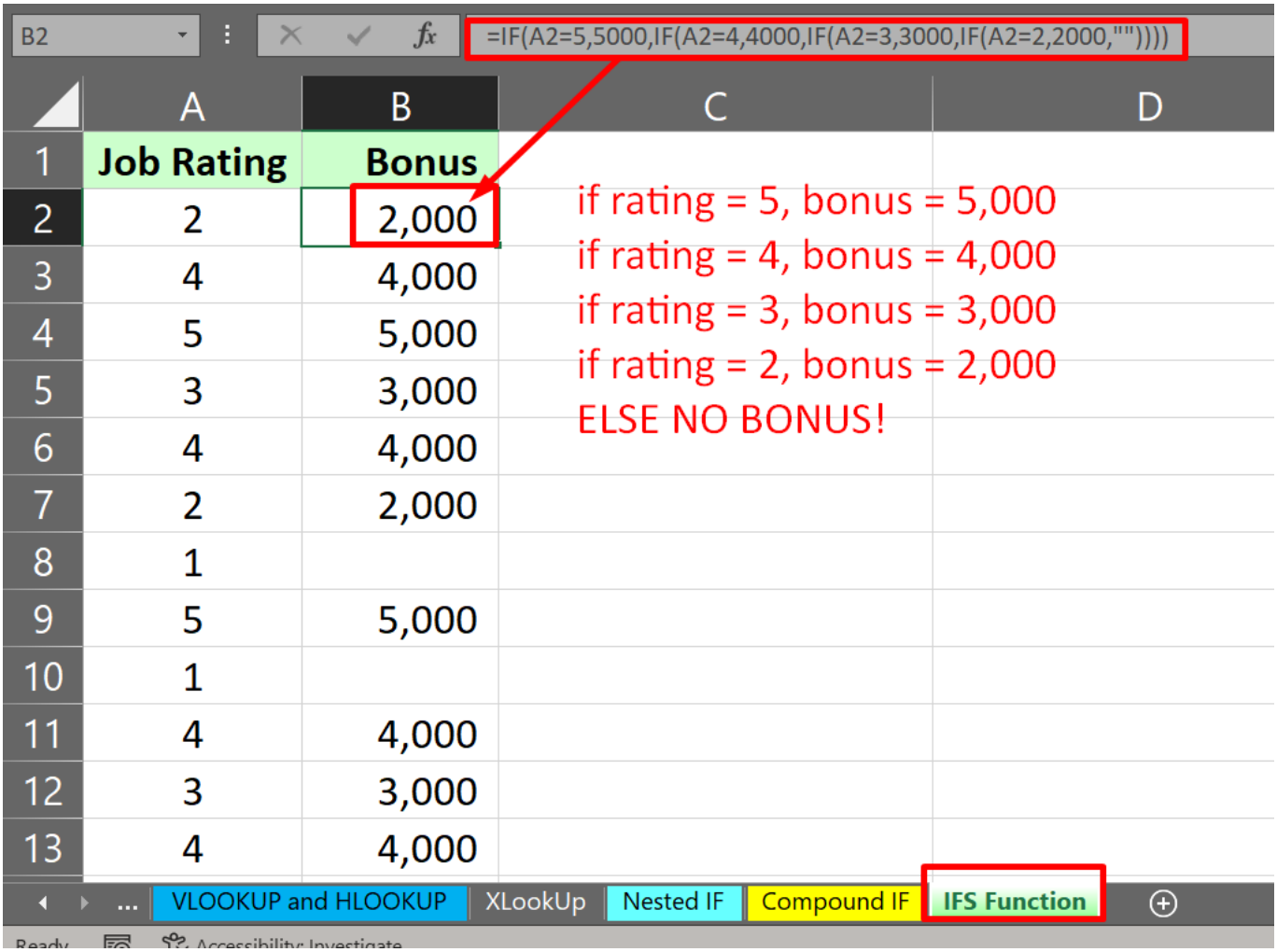


1. ACTIVITY: IFS

https://www.alvinang.sg/s/Excel-Activities-1.xlsx



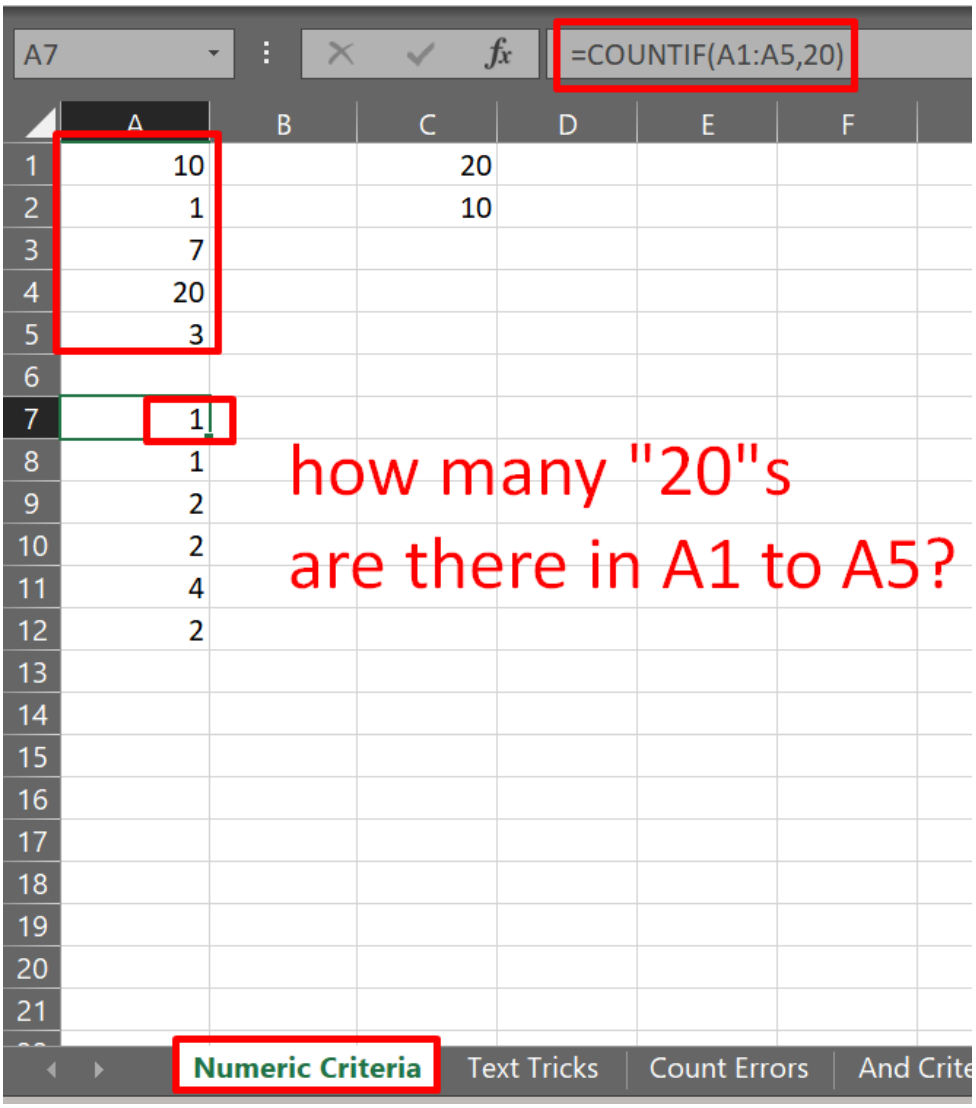
2. ANSWER TO IFS

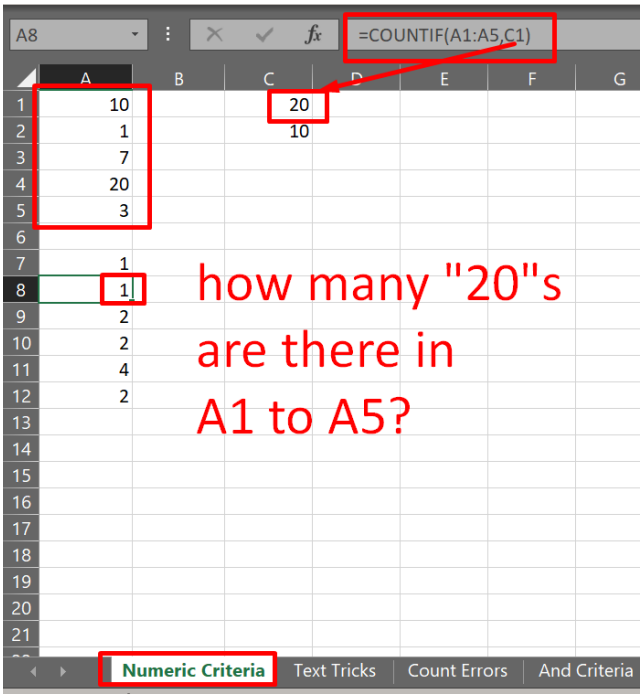


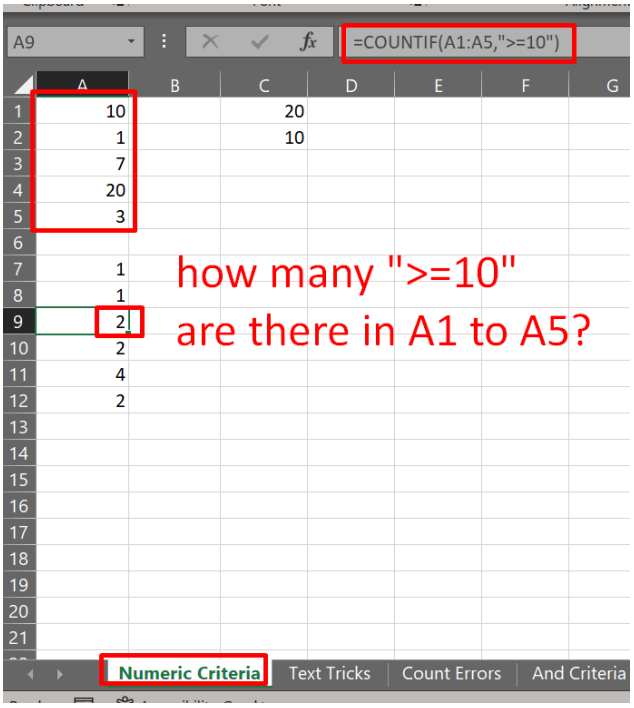
K. COUNTIF

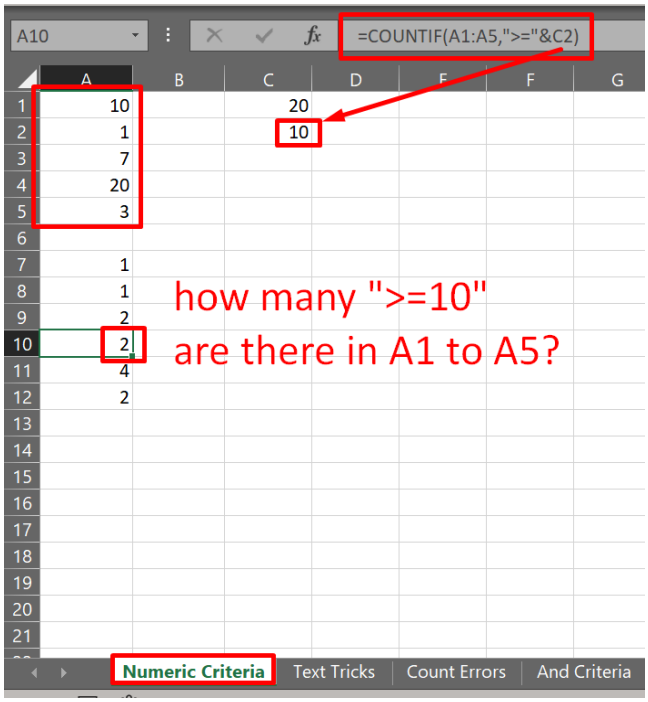
https://www.alvinang.sg/s/countif.xlsx

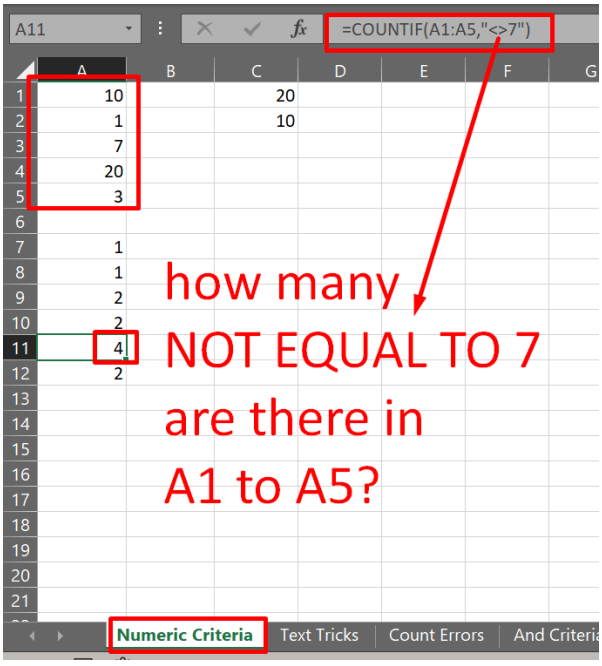
1. COUNT NUMBERS

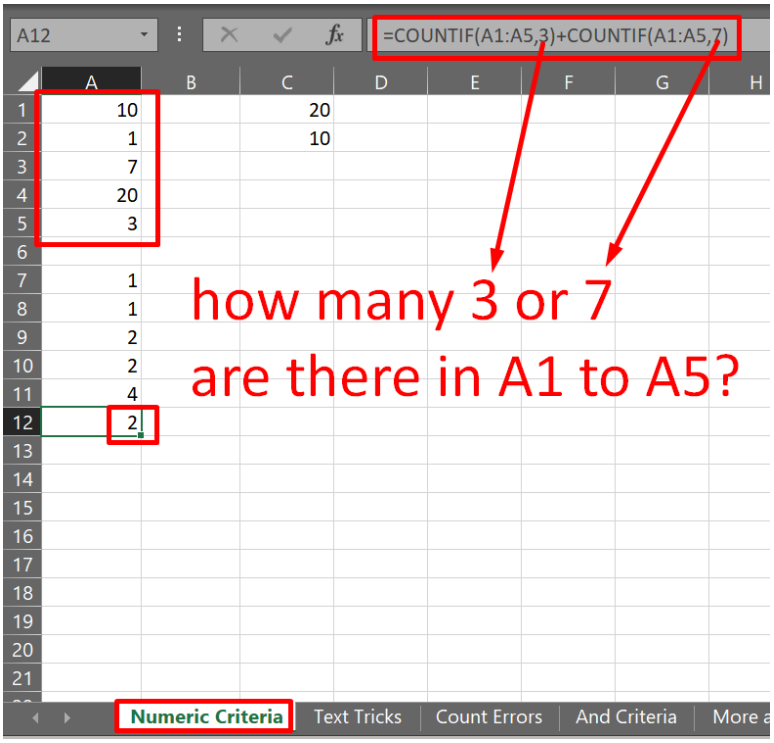




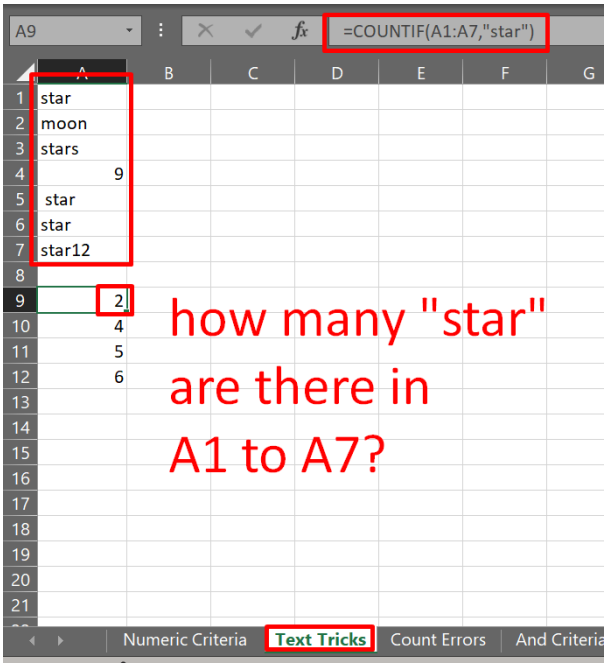


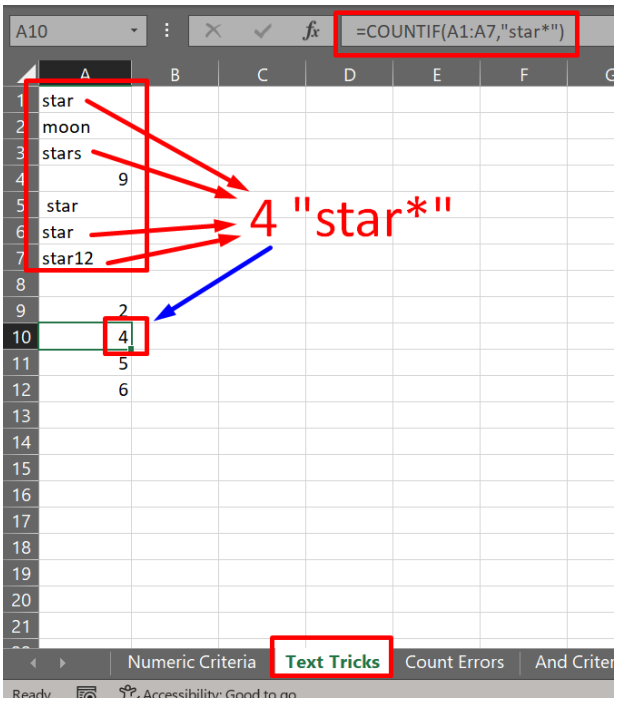


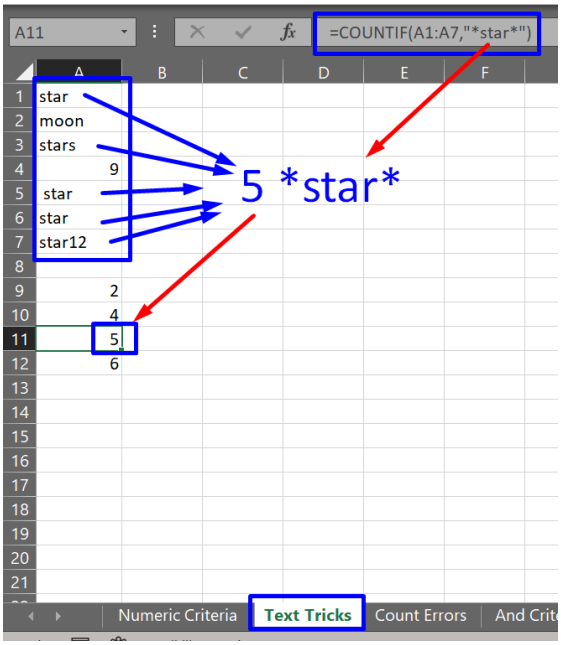


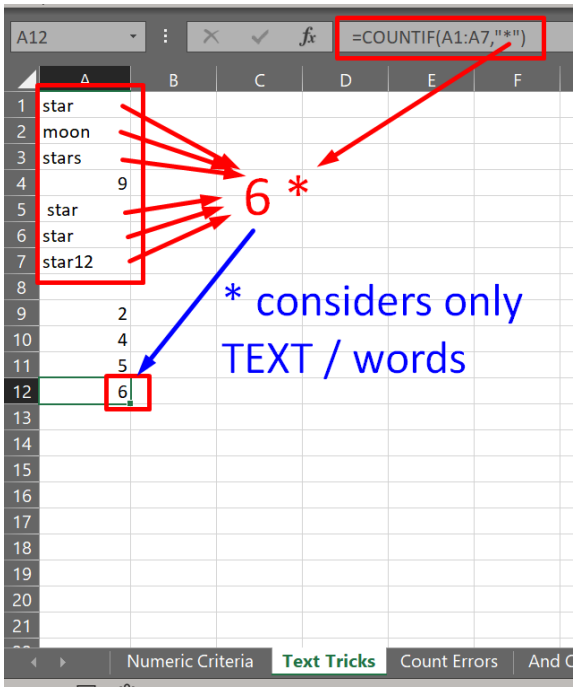


2. COUNT TEXT

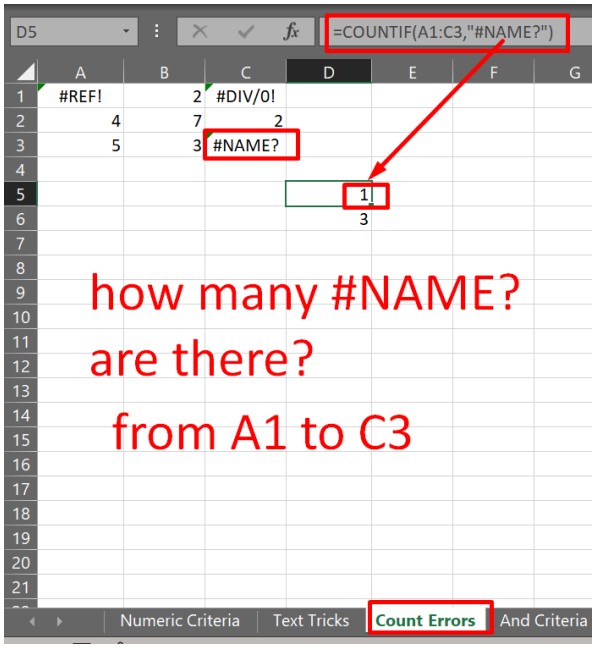


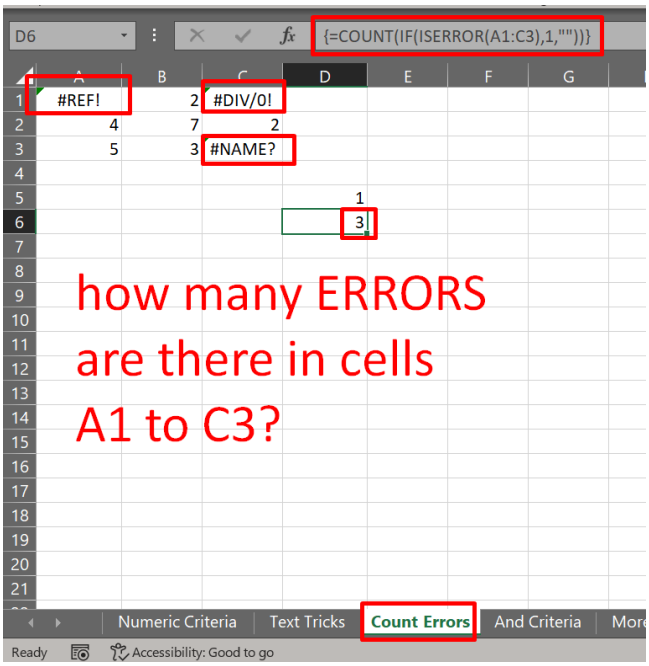




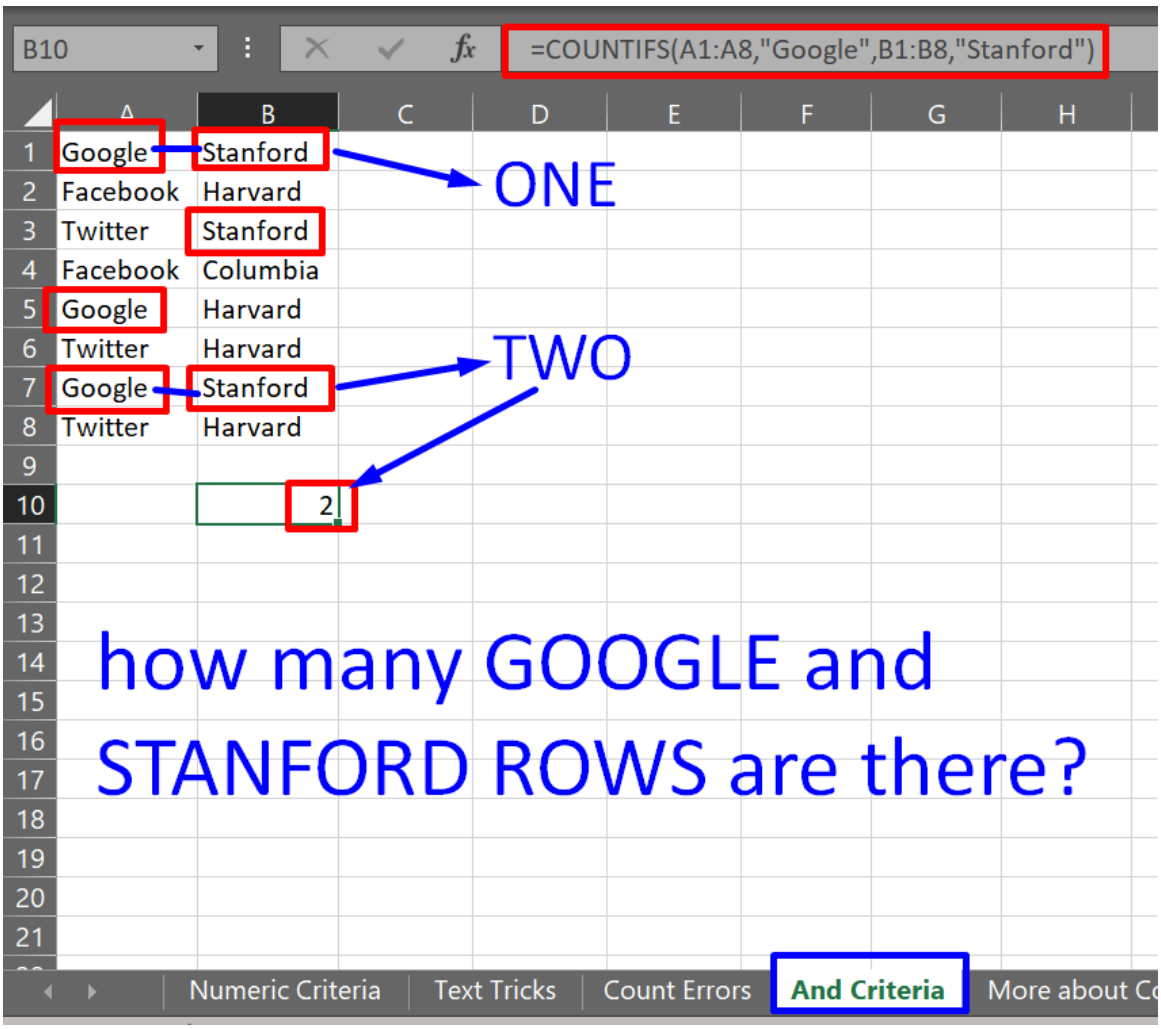


3. COUNT ERRORS

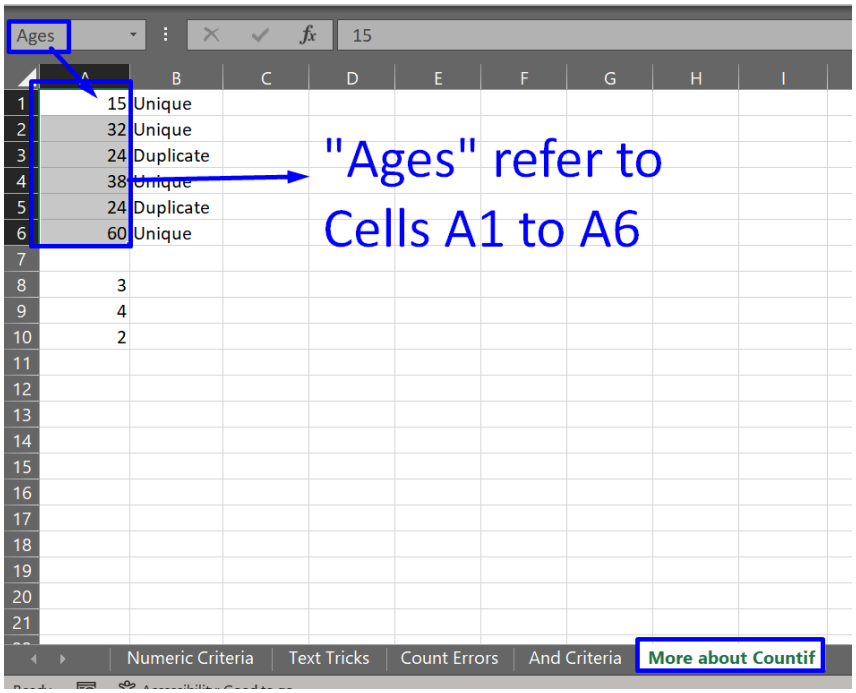


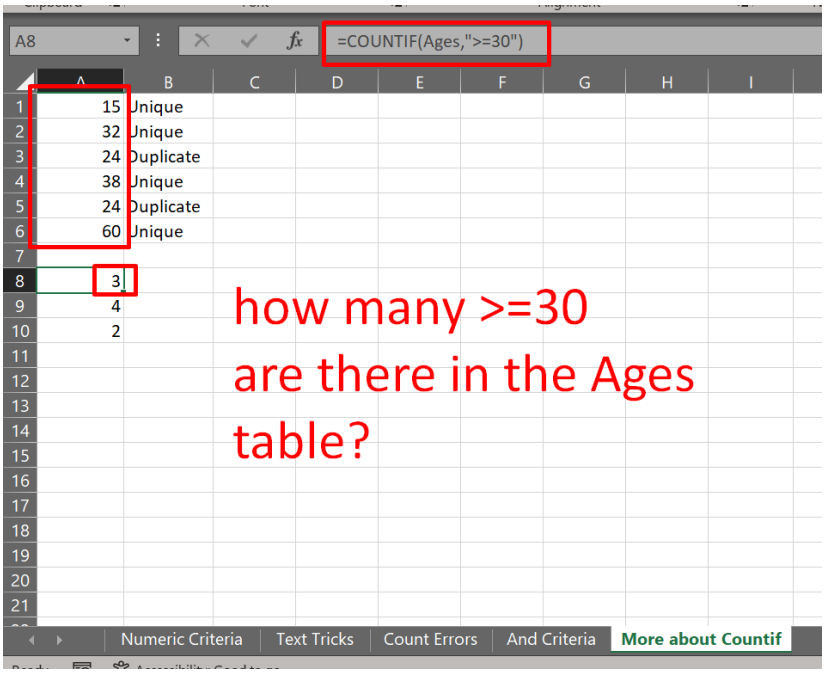


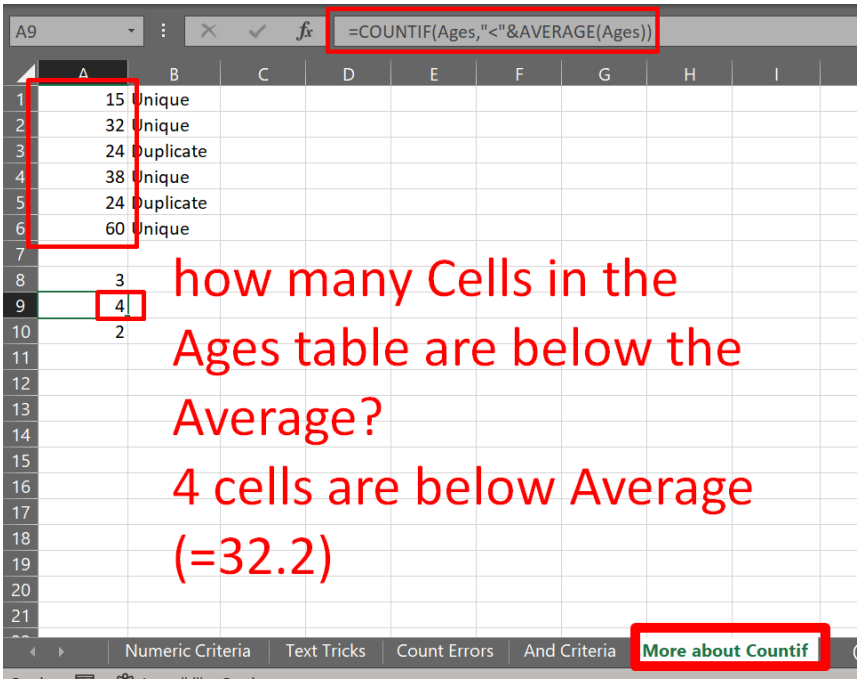
4. COUNTIF + AND

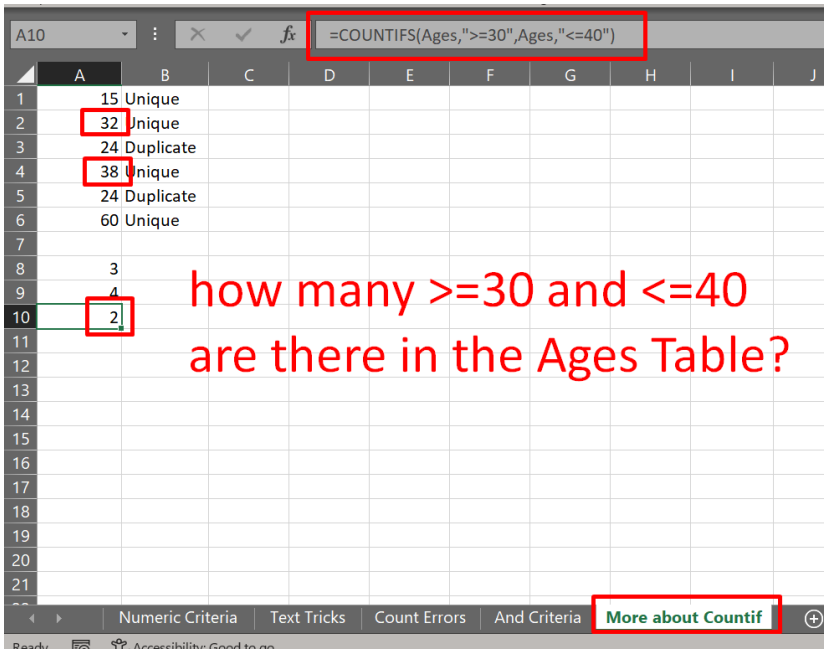


5. MORE ABOUT COUNTIF





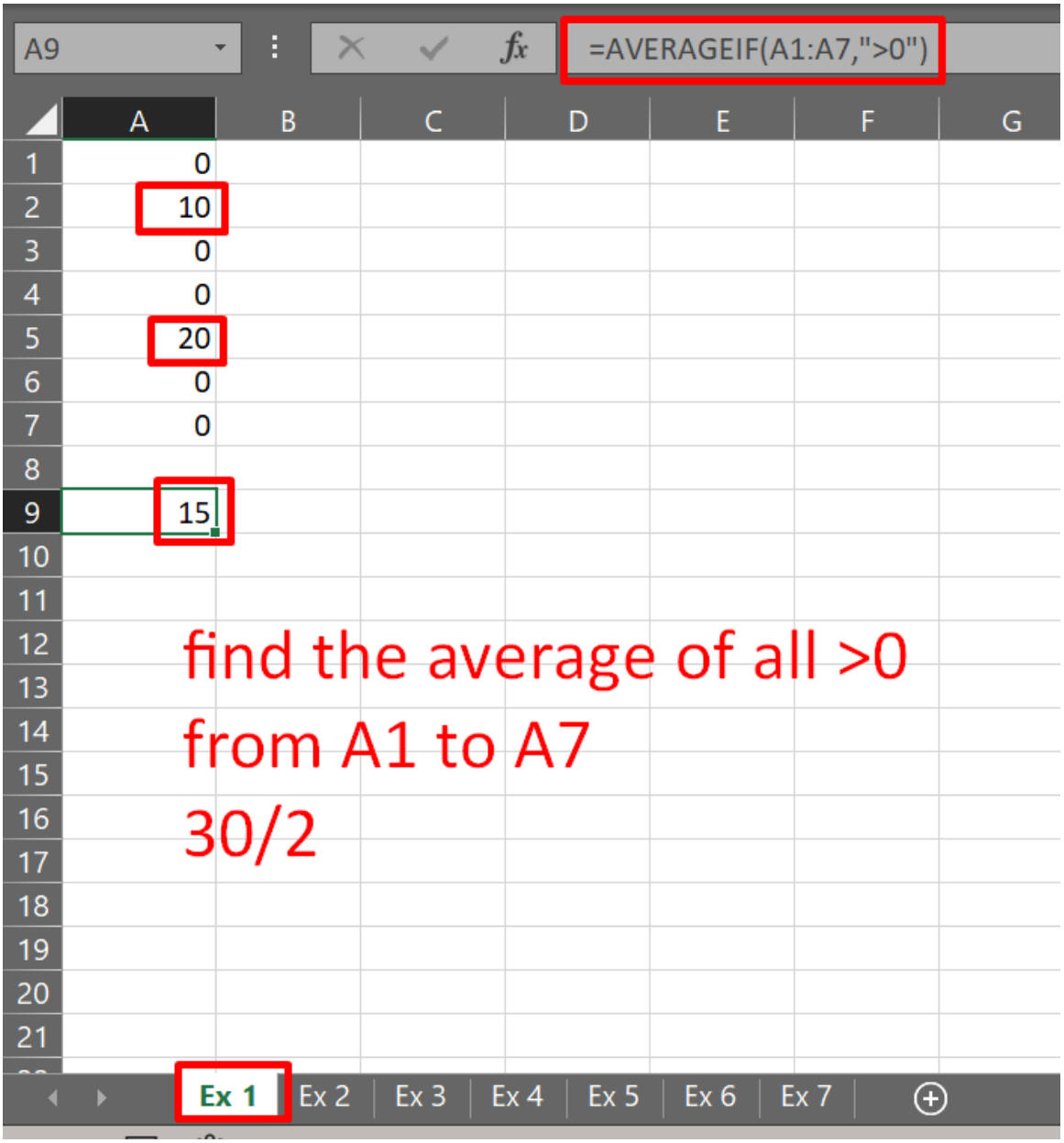




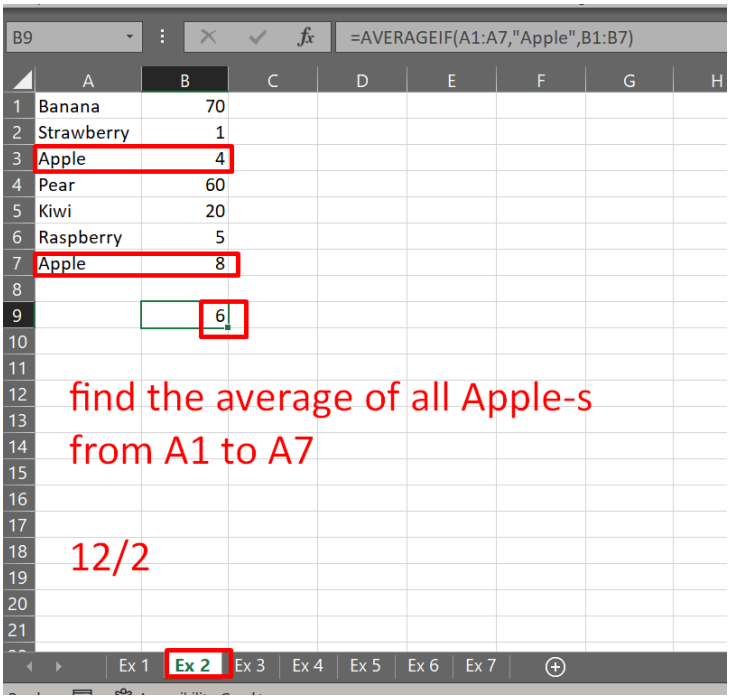
L. AVERAGEIF

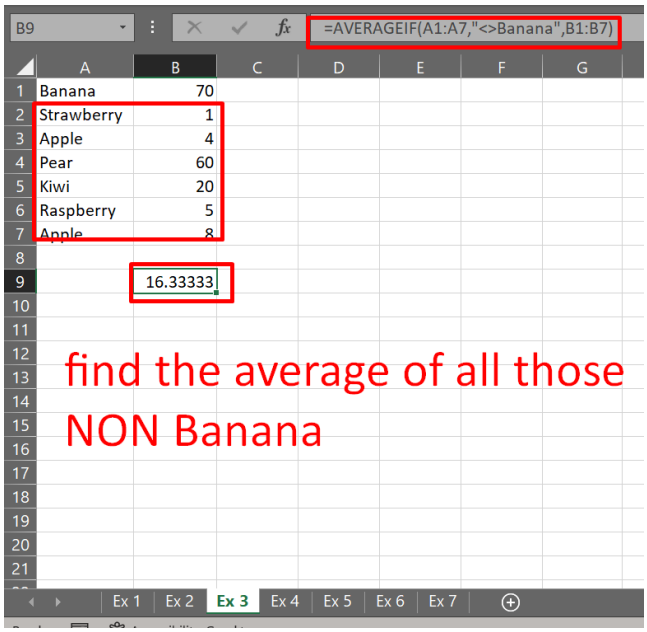
https://www.alvinang.sg/s/averageif.xlsx

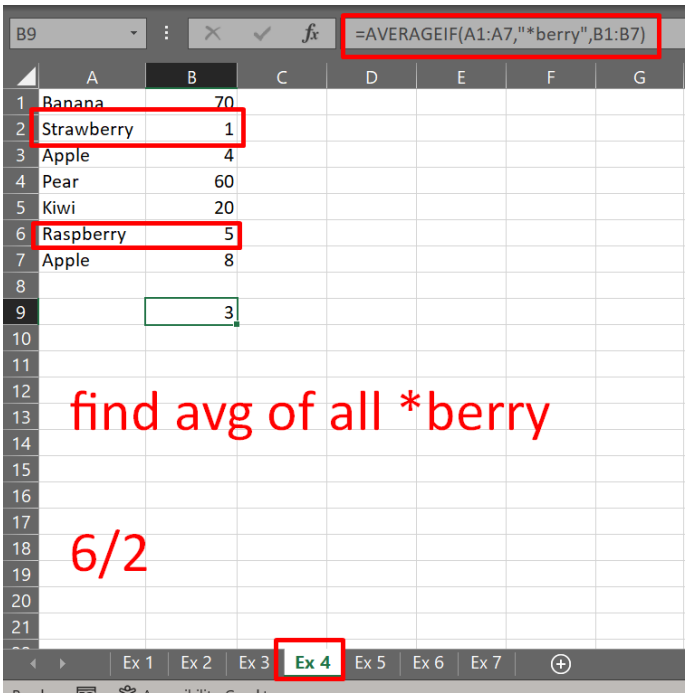
1. AVG NUMBERS

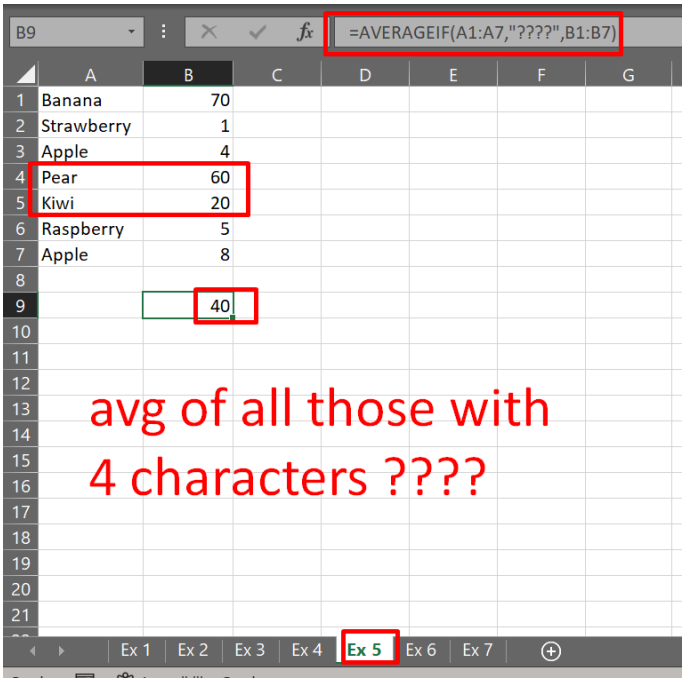


2. AVG TEXT

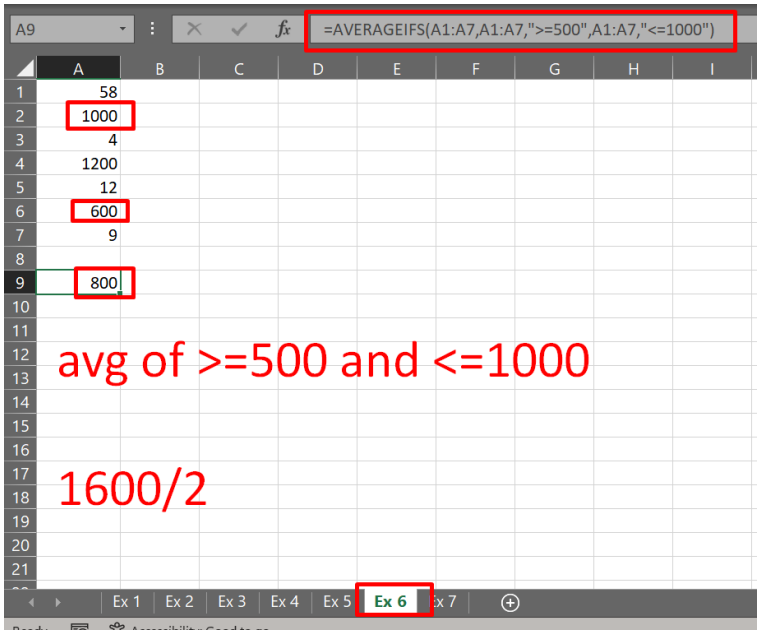


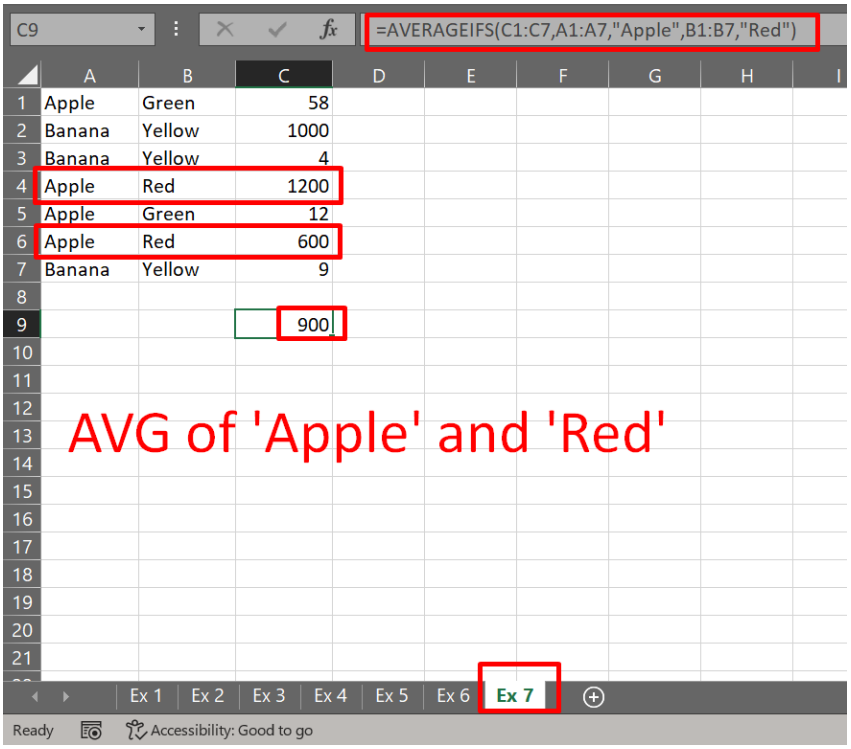






3. AVG + AND





4. ACTIVITY: COUNTIF / AVGIF

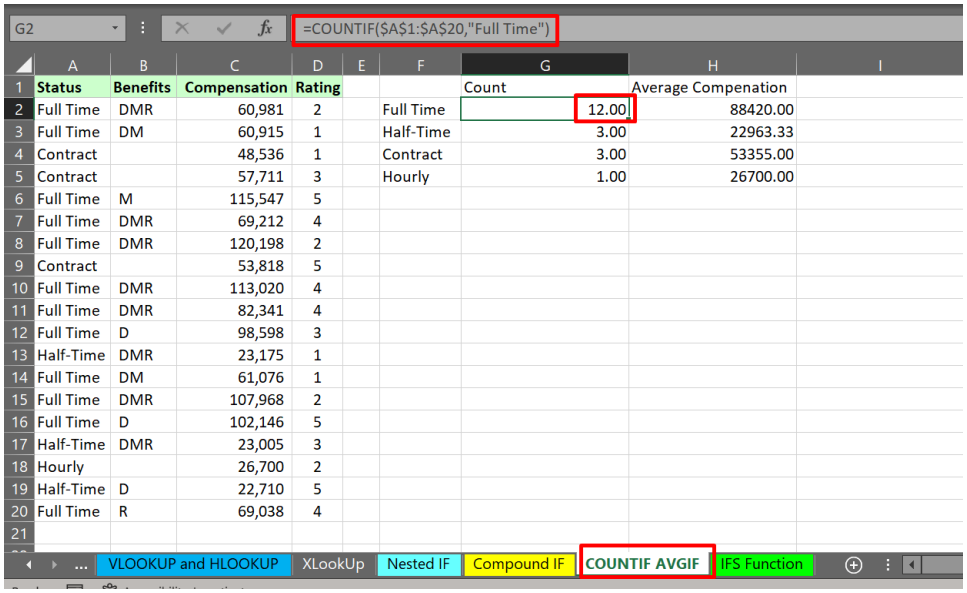
https://www.alvinang.sg/s/Excel-Activities-1.xlsx

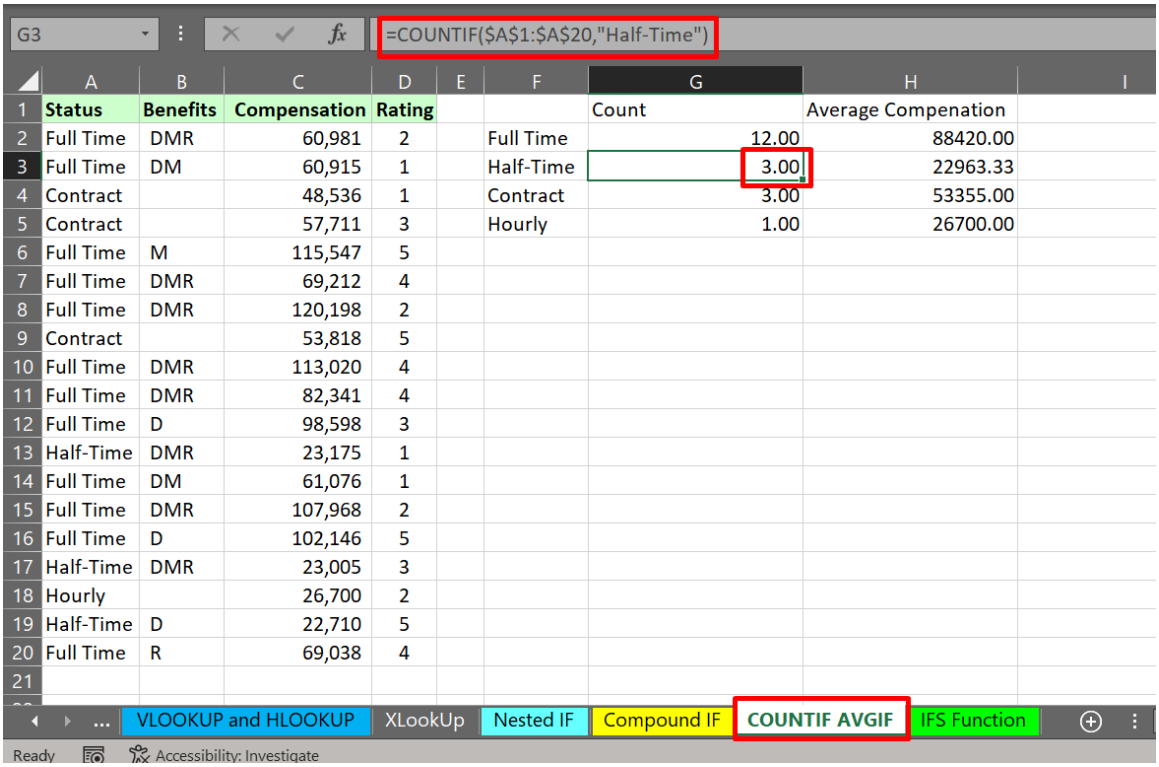
Activity: COUNTIF & AVERAGEIF

- Open topic2.xlxs
- Select COUNTIF SUMIF AVERAGEIF worksheet
- Count the number of stuff in each status and their average compensation

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**Employee Name**	**Building**	**Dept.**	**Hire Date**	**Years**	**Status**	**Benefits**	**Compensation**	**Rating**			Count	Average Compenation
2	Page, Lisa	West	ADC	28-Feb-05	17	Full Time	DMR	60,981	2		Full Time	374.00	92364.39
3	Taylor, Hector	West	ADC	10-Apr-17	4	Full Time	DM	60,915	1		Half-Time		
4	Dawson, Jonathan	West	ADC	23-Apr-13	8	Contract		48,536	1		Contract		
5	Duran, Brian	Taft	ADC	18-Oct-18	3	Contract		57,711	3		Hourly		
6	Weber, Larry	Watson	ADC	17-Feb-14	8	Full Time	M	115,547	5				
7	Pratt, Erik	North	Training	23-Mar-12	9	Full Time	DMR	69,212	4				
8	O'Connor, Kent	Taft	Training	15-Apr-05	16	Full Time	DMR	120,198	2				
9	Spencer, Boyd	Main	Training	4-Jun-13	8	Contract		53,818	5				
10	Wiggins, Frank	North	Training	28-May-05	16	Full Time	DMR	113,020	4				
11	Tanner, Timothy	Taft	Training	15-Jul-08	13	Full Time	DMR	82,341	4				
12	Strickland, Rajean	Main	Training	28-Jul-09	12	Full Time	D	98,598	3				

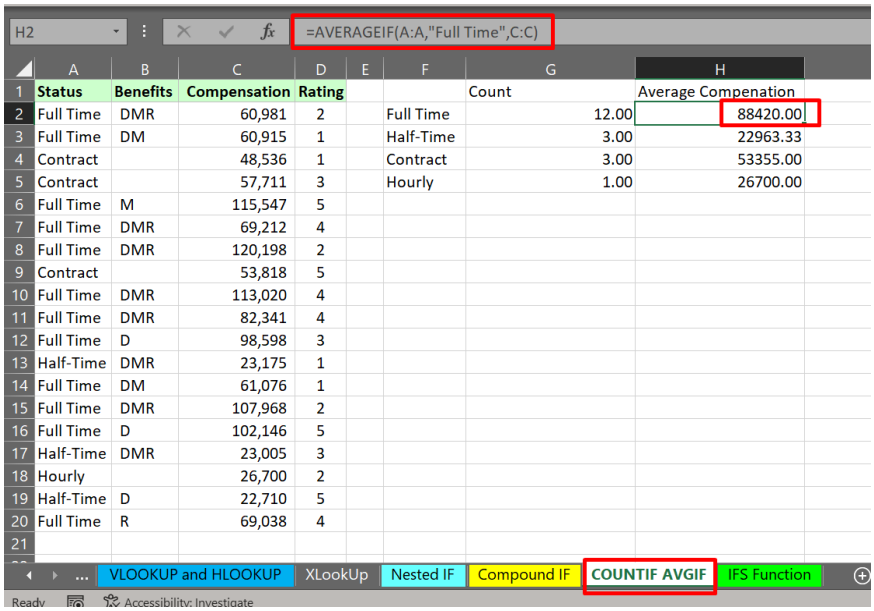
a) Answer to COUNTIF





	A	B	C	D	E	F	G	H	I
1	**Status**	**Benefits**	**Compensation**	**Rating**			Count	Average Compenation	
2	Full Time	DMR	60,981	2		Full Time	12.00	88420.00	
3	Full Time	DM	60,915	1		Half-Time	3.00	22963.33	
4	Contract		48,536	1		Contract	3.00	53355.00	
5	Contract		57,711	3		Hourly	1.00	26700.00	
6	Full Time	M	115,547	5					
7	Full Time	DMR	69,212	4					
8	Full Time	DMR	120,198	2					
9	Contract		53,818	5					
10	Full Time	DMR	113,020	4					
11	Full Time	DMR	82,341	4					
12	Full Time	D	98,598	3					
13	Half-Time	DMR	23,175	1					
14	Full Time	DM	61,076	1					
15	Full Time	DMR	107,968	2					
16	Full Time	D	102,146	5					
17	Half-Time	DMR	23,005	3					
18	Hourly		26,700	2					
19	Half-Time	D	22,710	5					
20	Full Time	R	69,038	4					
21									

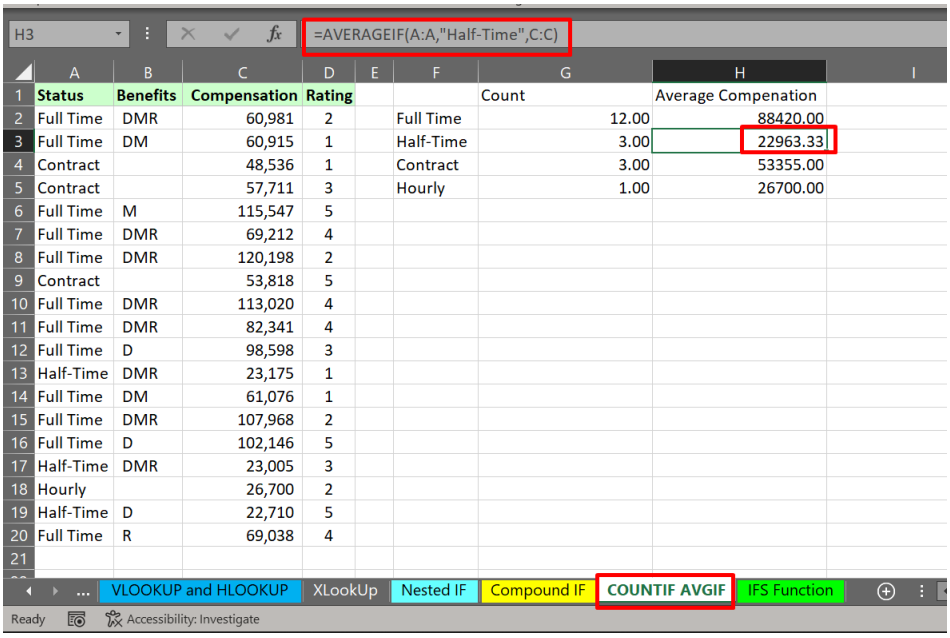
b) Answer to AVGIF



	A	B	C	D	E	F	G	H
1	**Status**	**Benefits**	**Compensation**	**Rating**			Count	Average Compenation
2	Full Time	DMR	60,981	2		Full Time	12.00	88420.00
3	Full Time	DM	60,915	1		Half-Time	3.00	22963.33
4	Contract		48,536	1		Contract	3.00	53355.00
5	Contract		57,711	3		Hourly	1.00	26700.00
6	Full Time	M	115,547	5				
7	Full Time	DMR	69,212	4				
8	Full Time	DMR	120,198	2				
9	Contract		53,818	5				
10	Full Time	DMR	113,020	4				
11	Full Time	DMR	82,341	4				
12	Full Time	D	98,598	3				
13	Half-Time	DMR	23,175	1				
14	Full Time	DM	61,076	1				
15	Full Time	DMR	107,968	2				
16	Full Time	D	102,146	5				
17	Half-Time	DMR	23,005	3				
18	Hourly		26,700	2				
19	Half-Time	D	22,710	5				
20	Full Time	R	69,038	4				
21								

VLOOKUP and HLOOKUP | XLookUp | Nested IF | Compound IF | COUNTIF AVGIF | IFS Function

Ready | Accessibility: Investigate



	A	B	C	D	E	F	G	H	I
1	**Status**	**Benefits**	**Compensation**	**Rating**			Count	Average Compenation	
2	Full Time	DMR	60,981	2		Full Time	12.00	88420.00	
3	Full Time	DM	60,915	1		Half-Time	3.00	22963.33	
4	Contract		48,536	1		Contract	3.00	53355.00	
5	Contract		57,711	3		Hourly	1.00	26700.00	
6	Full Time	M	115,547	5					
7	Full Time	DMR	69,212	4					
8	Full Time	DMR	120,198	2					
9	Contract		53,818	5					
10	Full Time	DMR	113,020	4					
11	Full Time	DMR	82,341	4					
12	Full Time	D	98,598	3					
13	Half-Time	DMR	23,175	1					
14	Full Time	DM	61,076	1					
15	Full Time	DMR	107,968	2					
16	Full Time	D	102,146	5					
17	Half-Time	DMR	23,005	3					
18	Hourly		26,700	2					
19	Half-Time	D	22,710	5					
20	Full Time	R	69,038	4					
21									

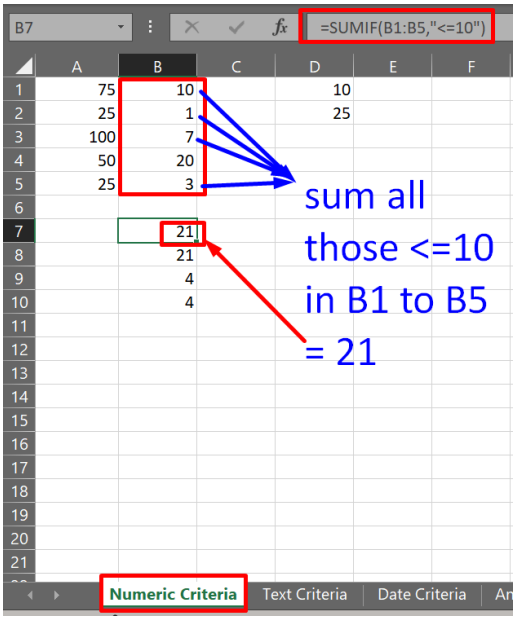
VLOOKUP and HLOOKUP | XLookUp | Nested IF | Compound IF | COUNTIF AVGIF | IFS Function

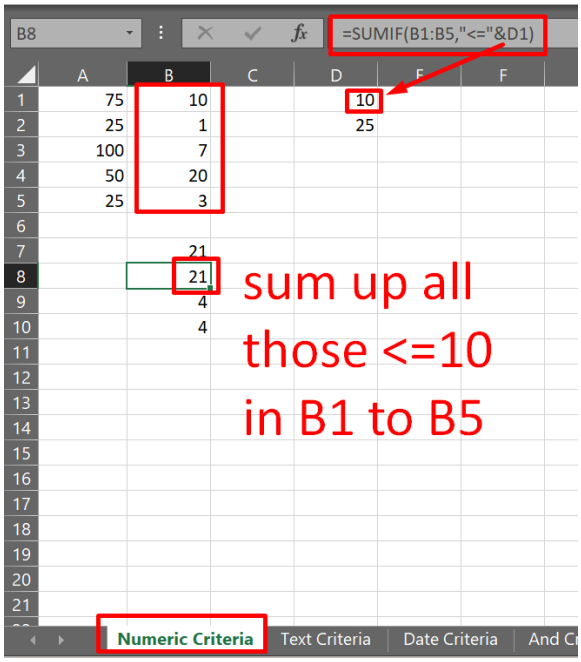
Ready | Accessibility: Investigate

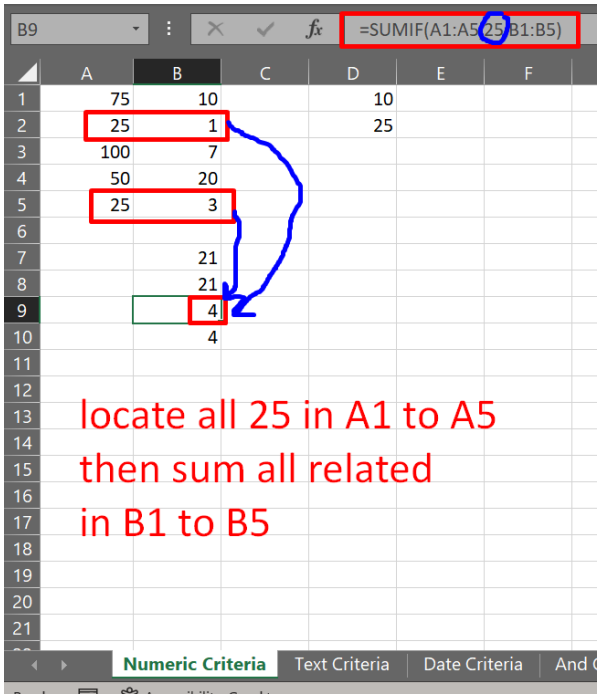
M. SUMIF

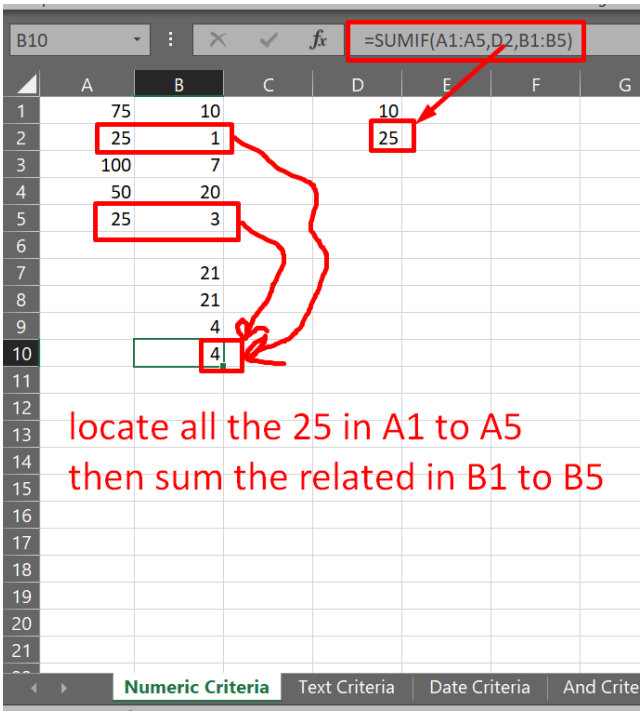
https://www.alvinang.sg/s/sumif.xlsx

1. SUM NUMBERS

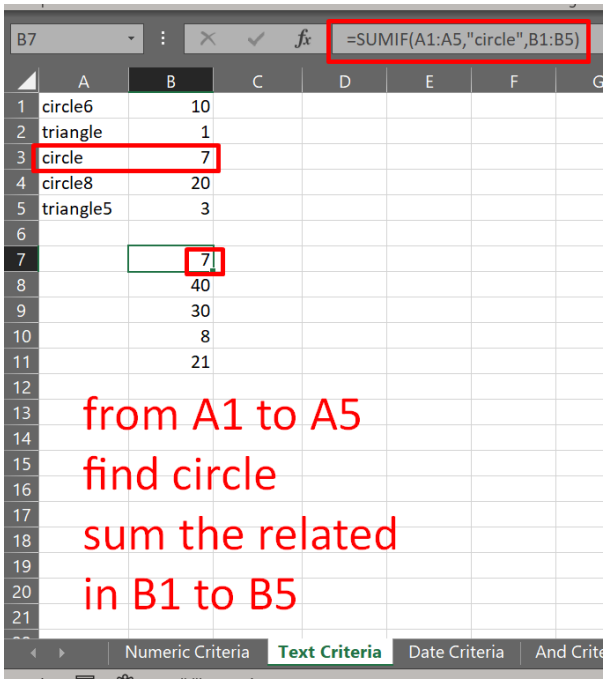


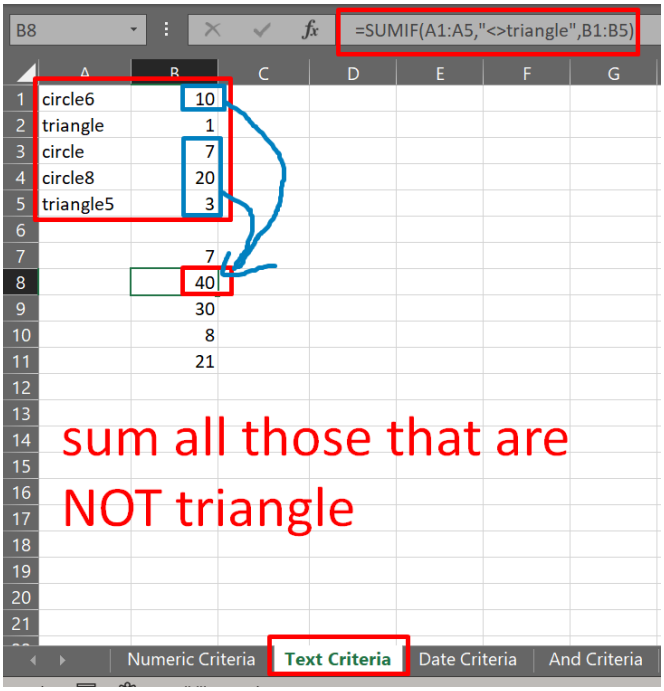


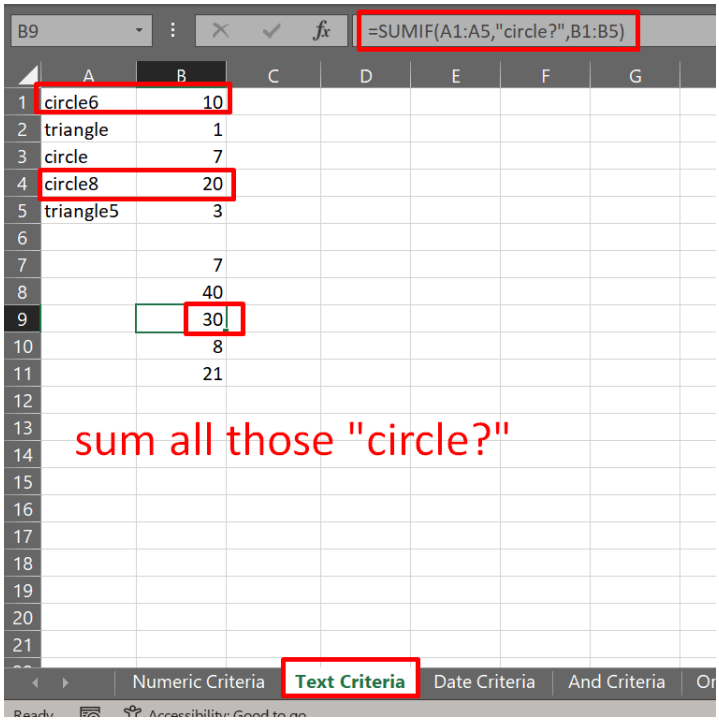


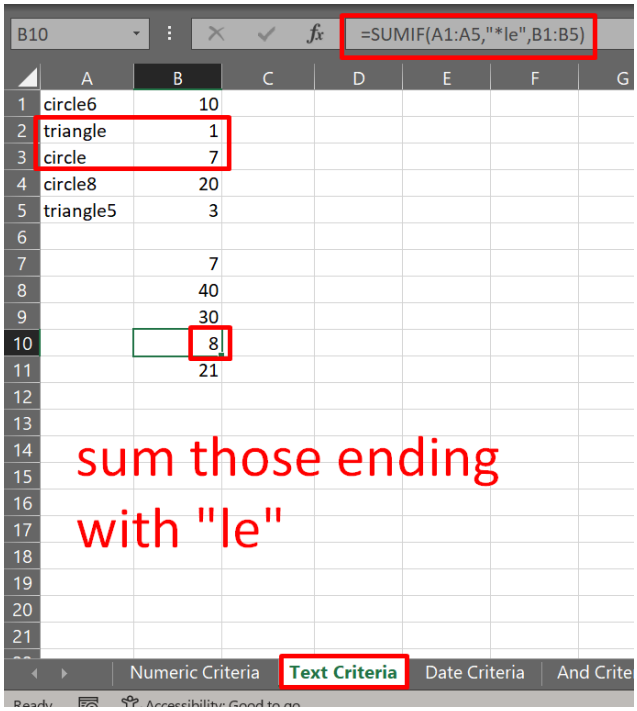


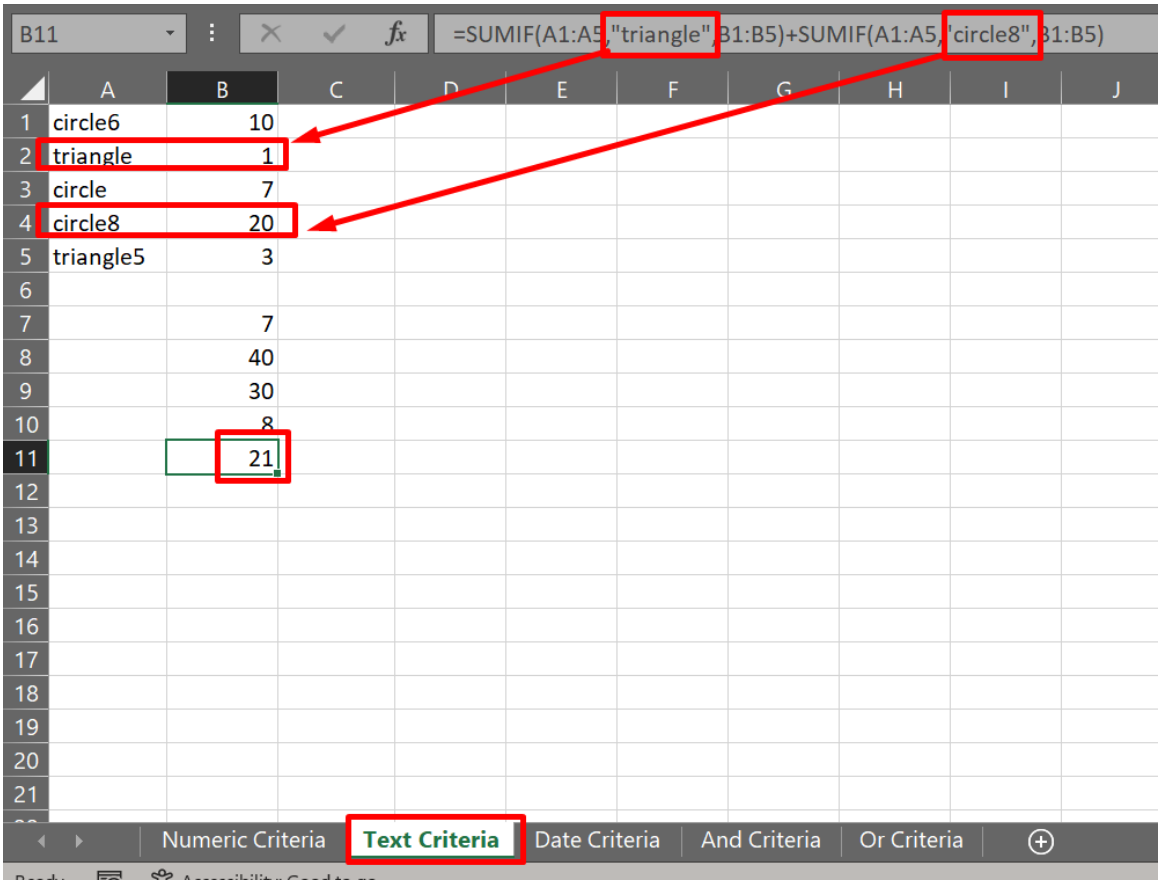
2. SUM TEXT



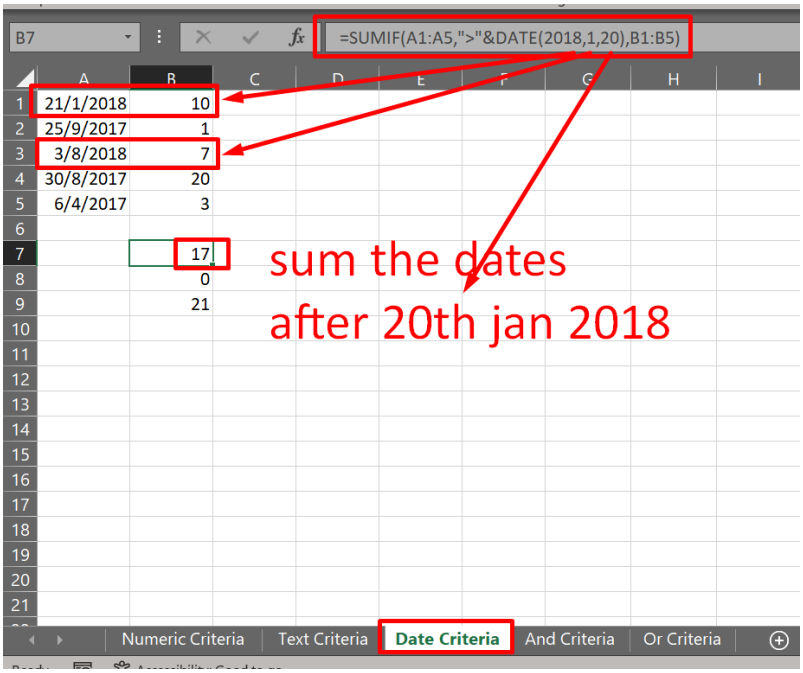


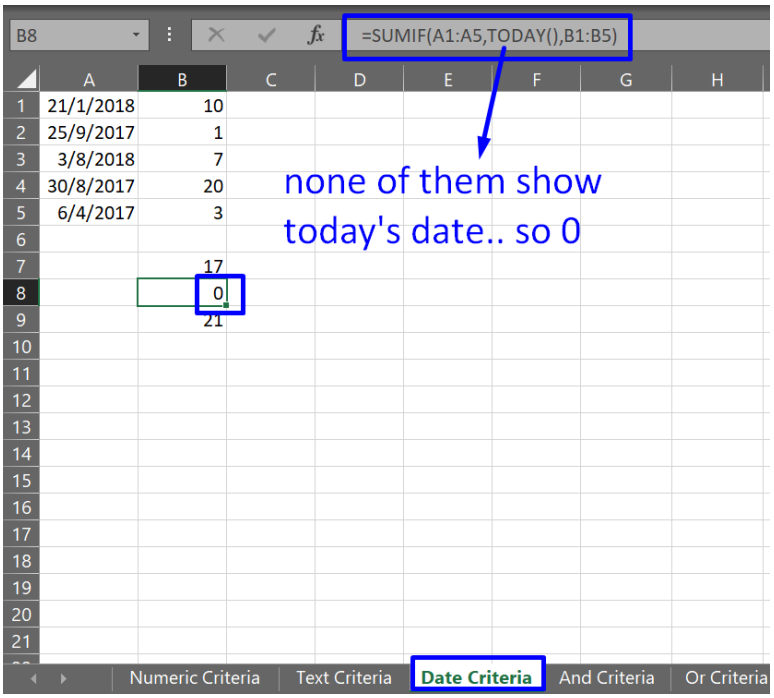


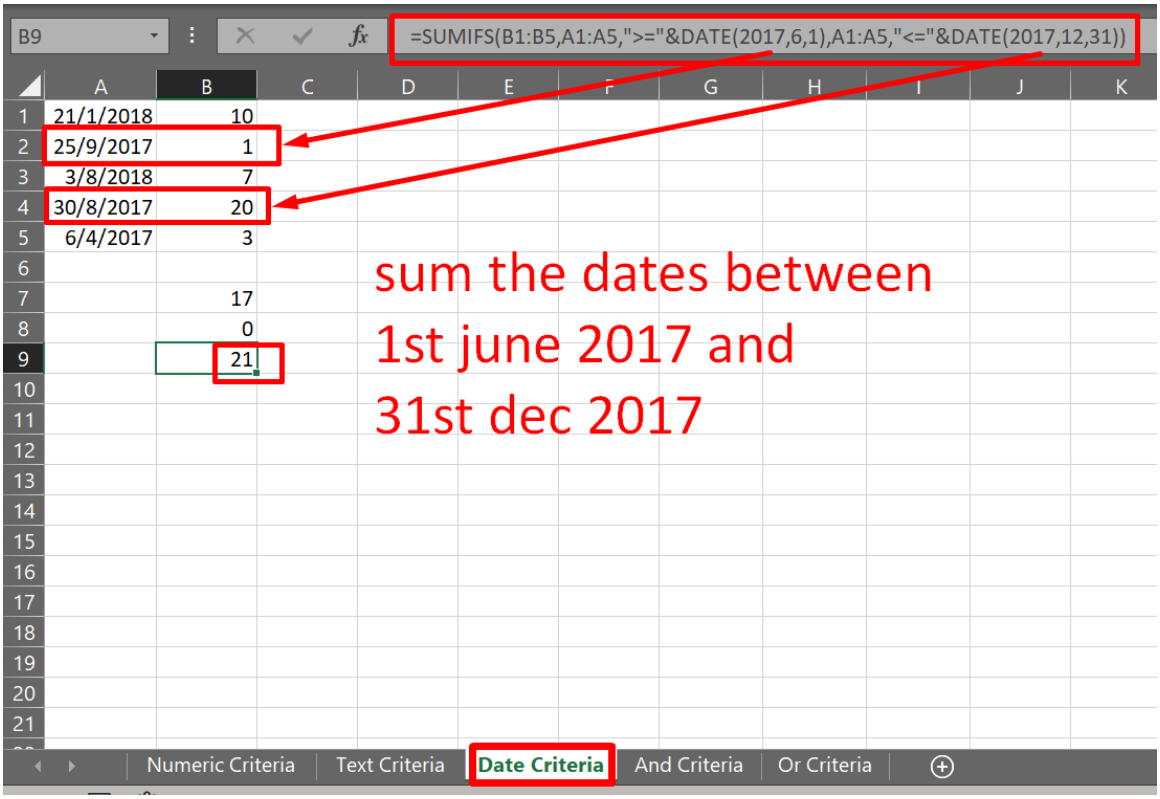




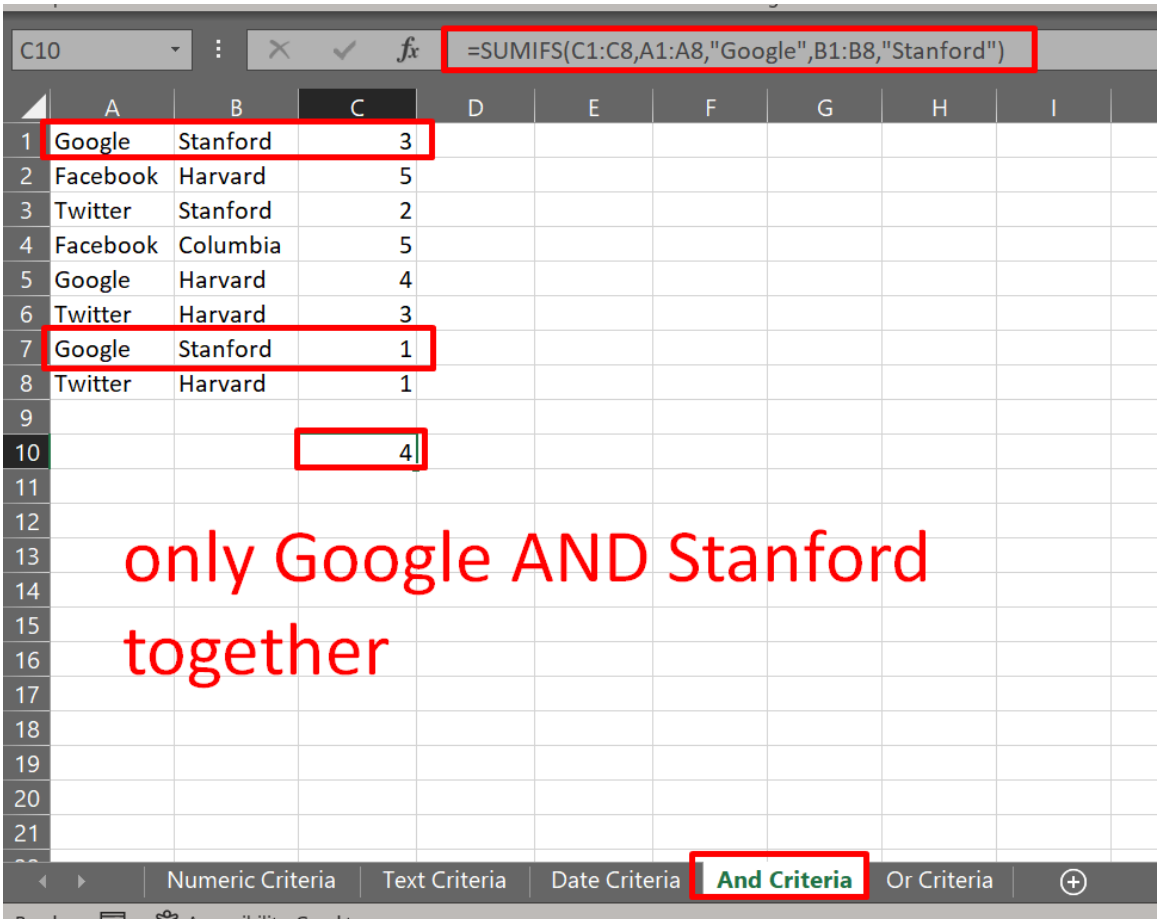
3. SUM DATES



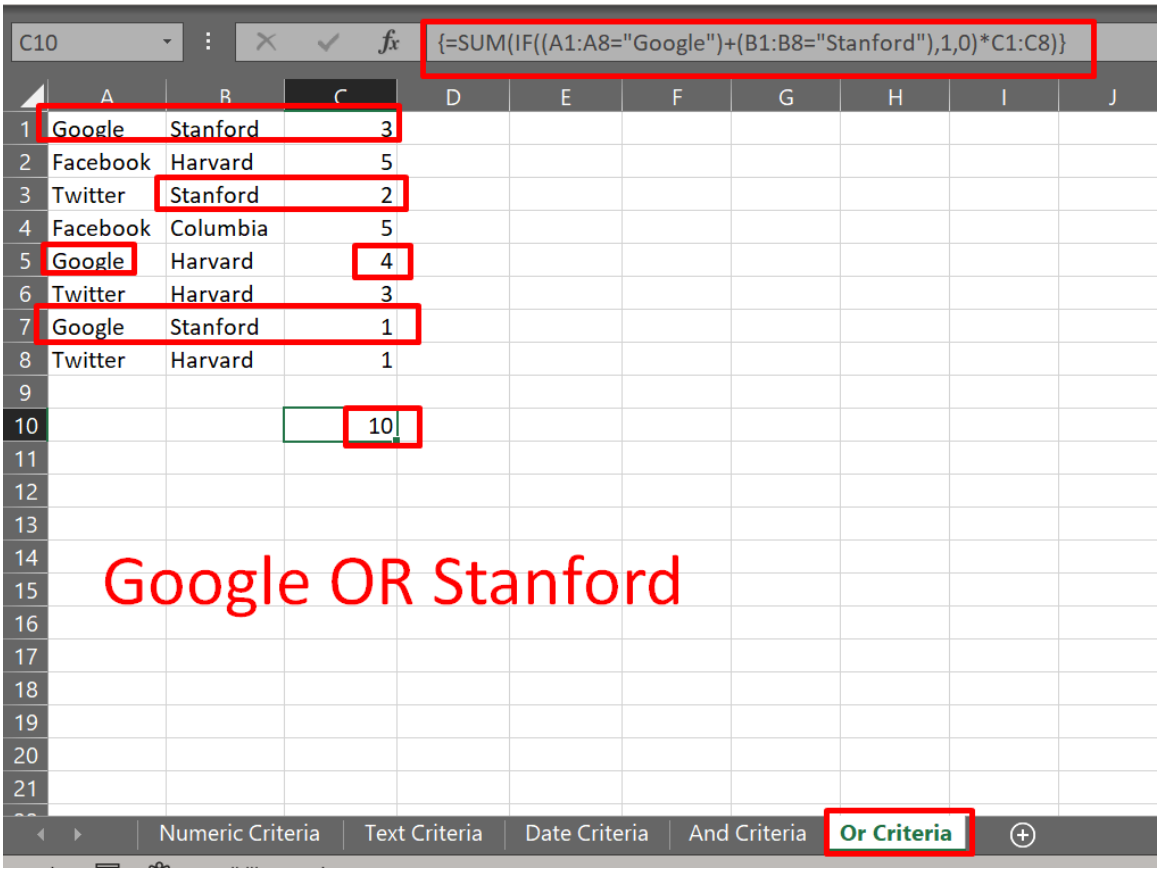




4. SUM + AND



5. SUM + OR

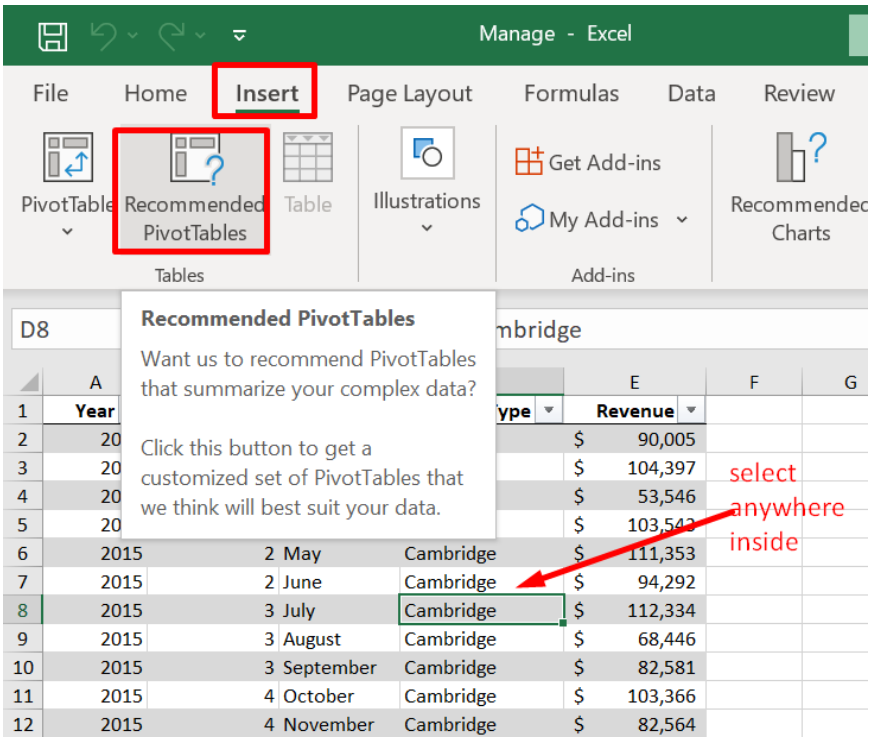


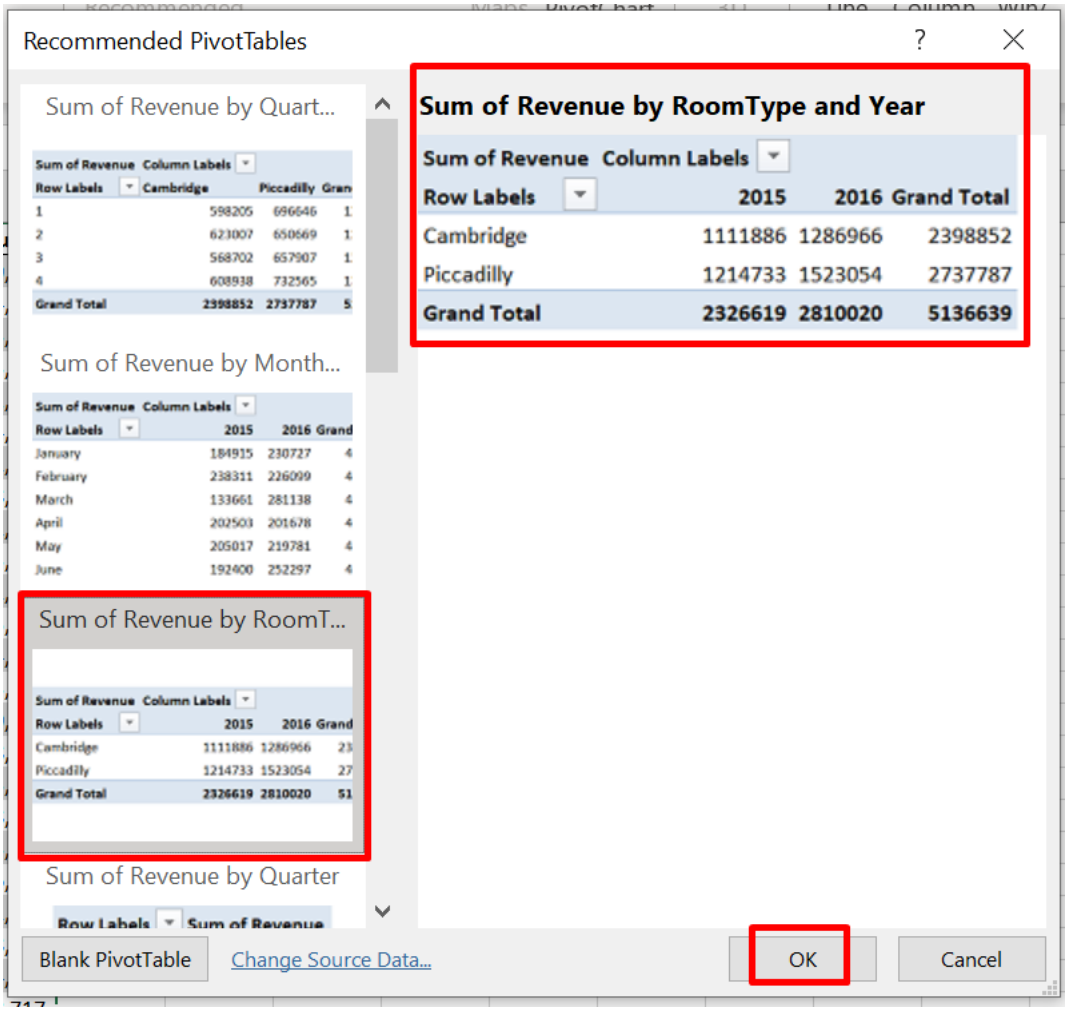
II. PIVOT TABLES

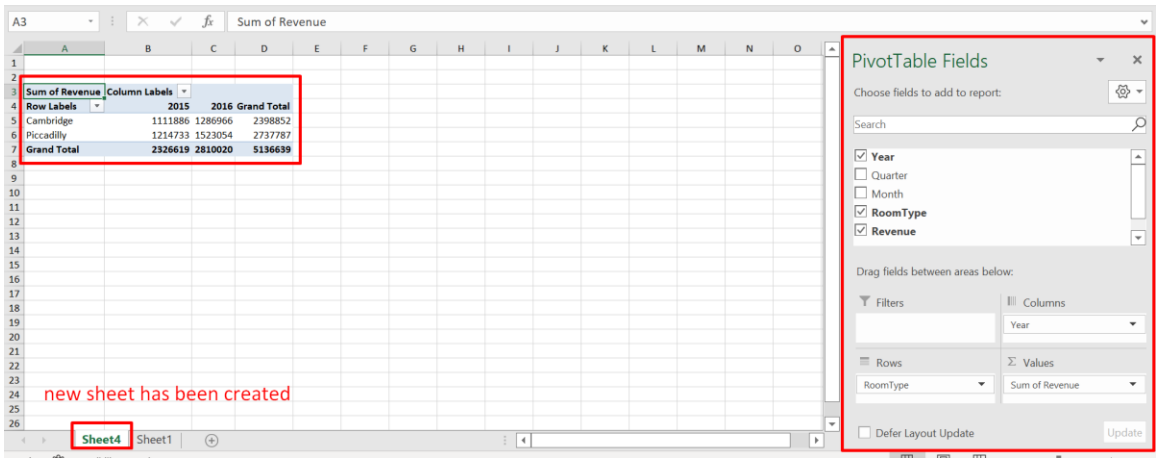
A. PART I: PIVOT TABLE USING MANAGE.XLSX

1. USING RECOMMENDED PIVOT TABLES

https://www.alvinang.sg/s/Manage.xlsx

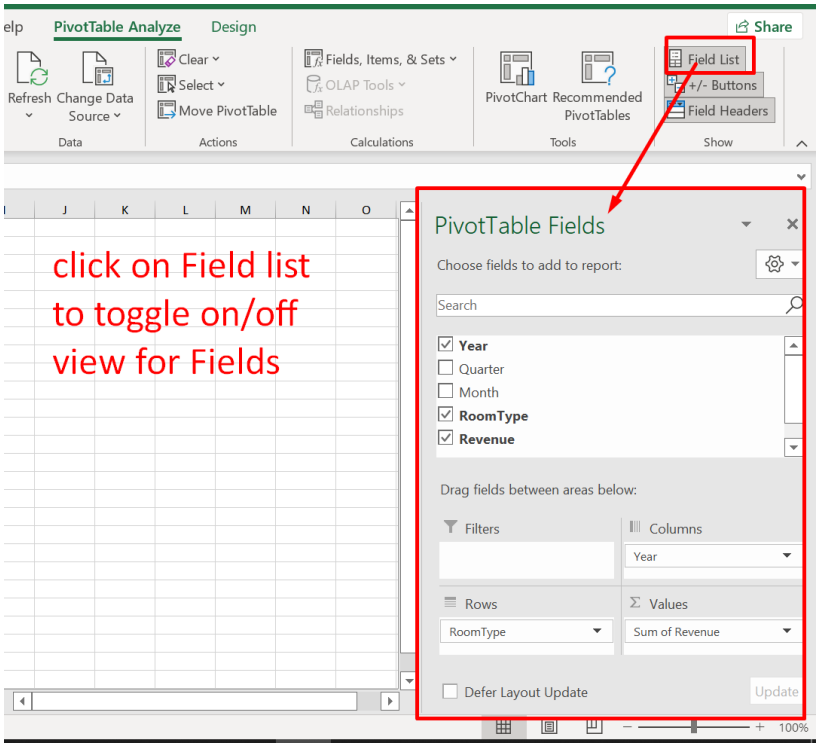


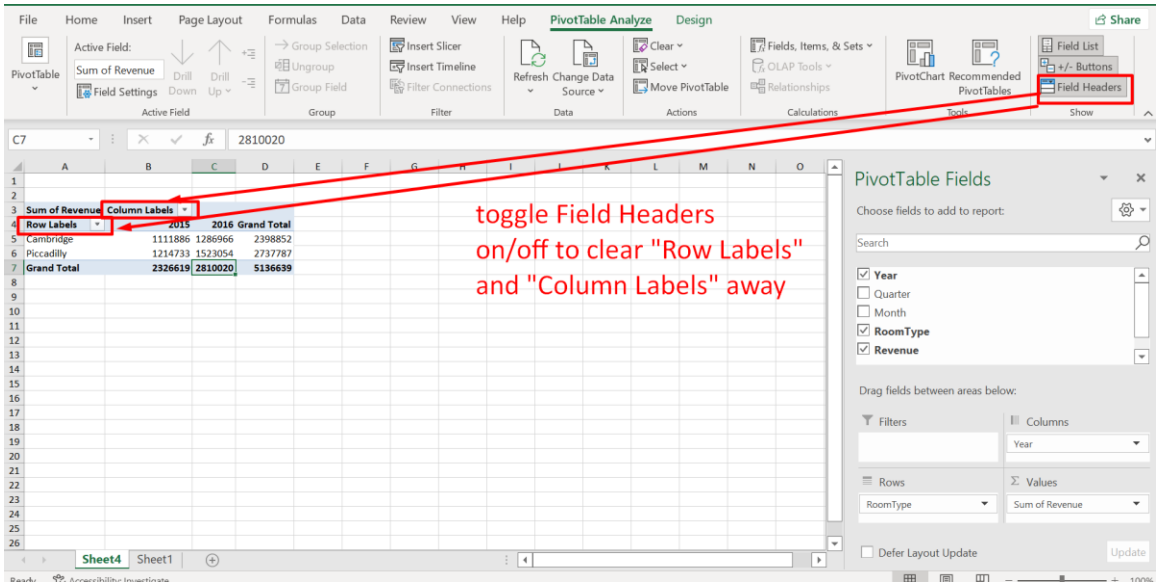




2. TOGGLING VIEWING FIELDS

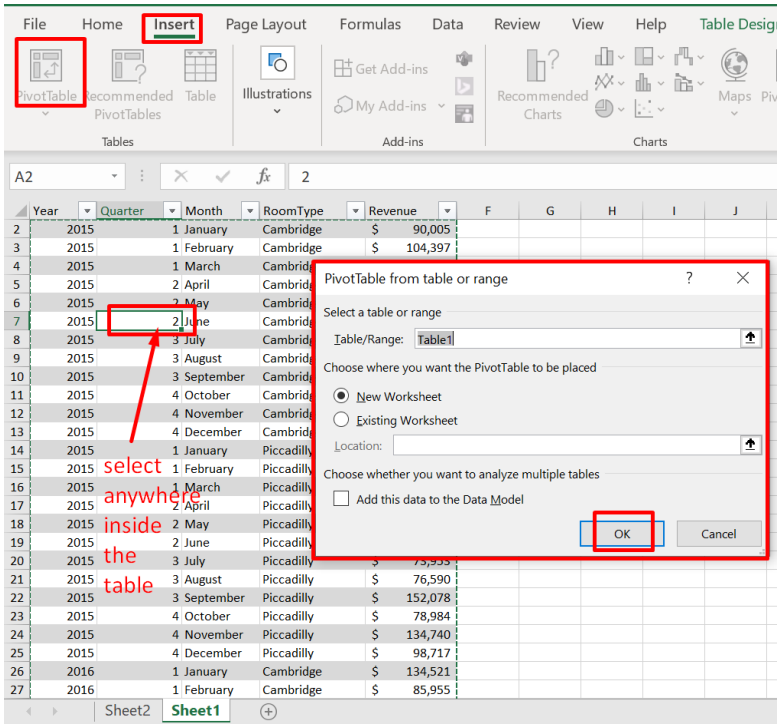
https://www.alvinang.sg/s/Manage.xlsx

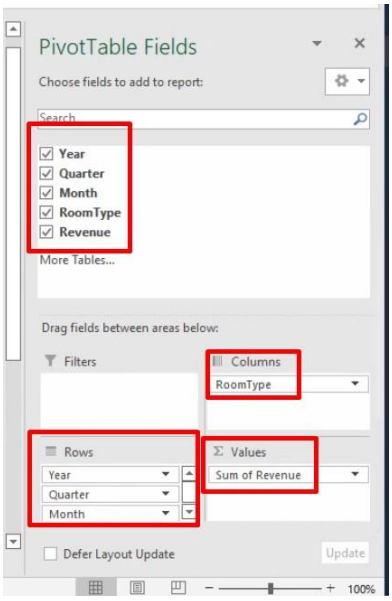


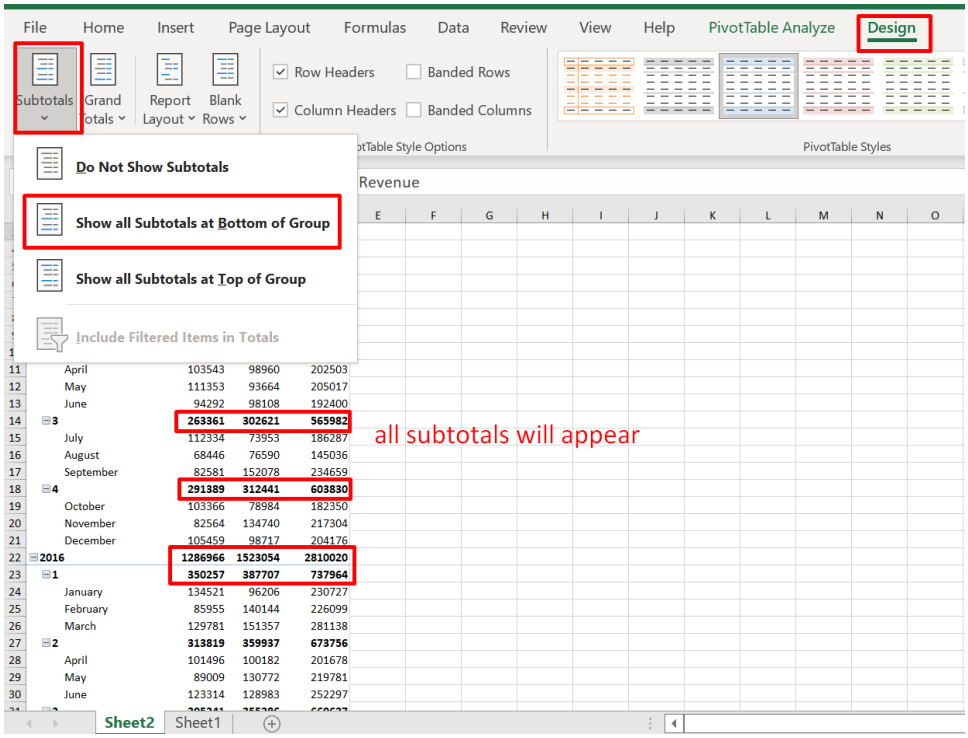


3. SUBTOTALS / GRAND TOTALS

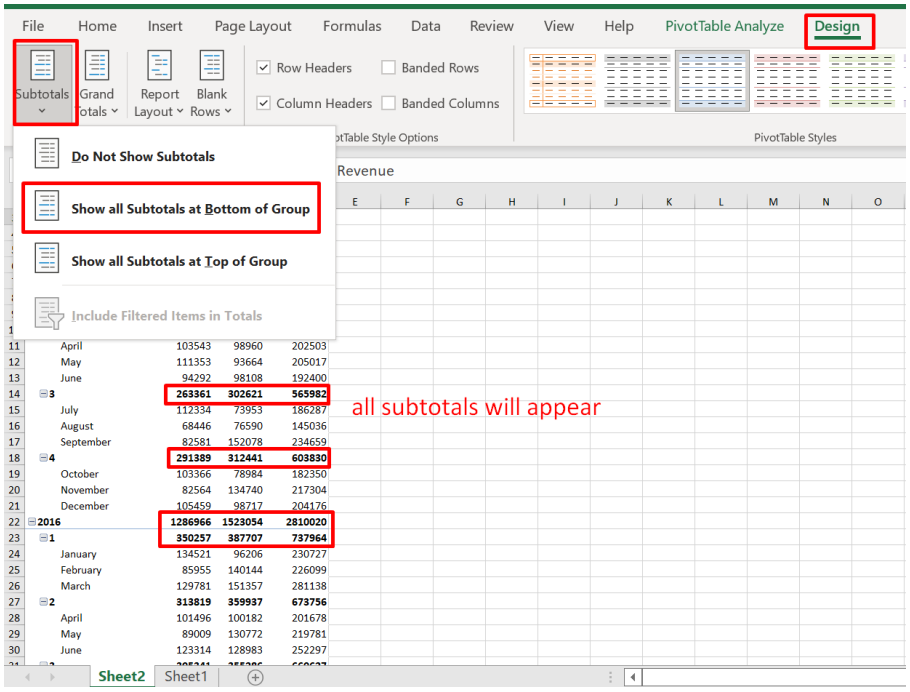
https://www.alvinang.sg/s/Manage.xlsx







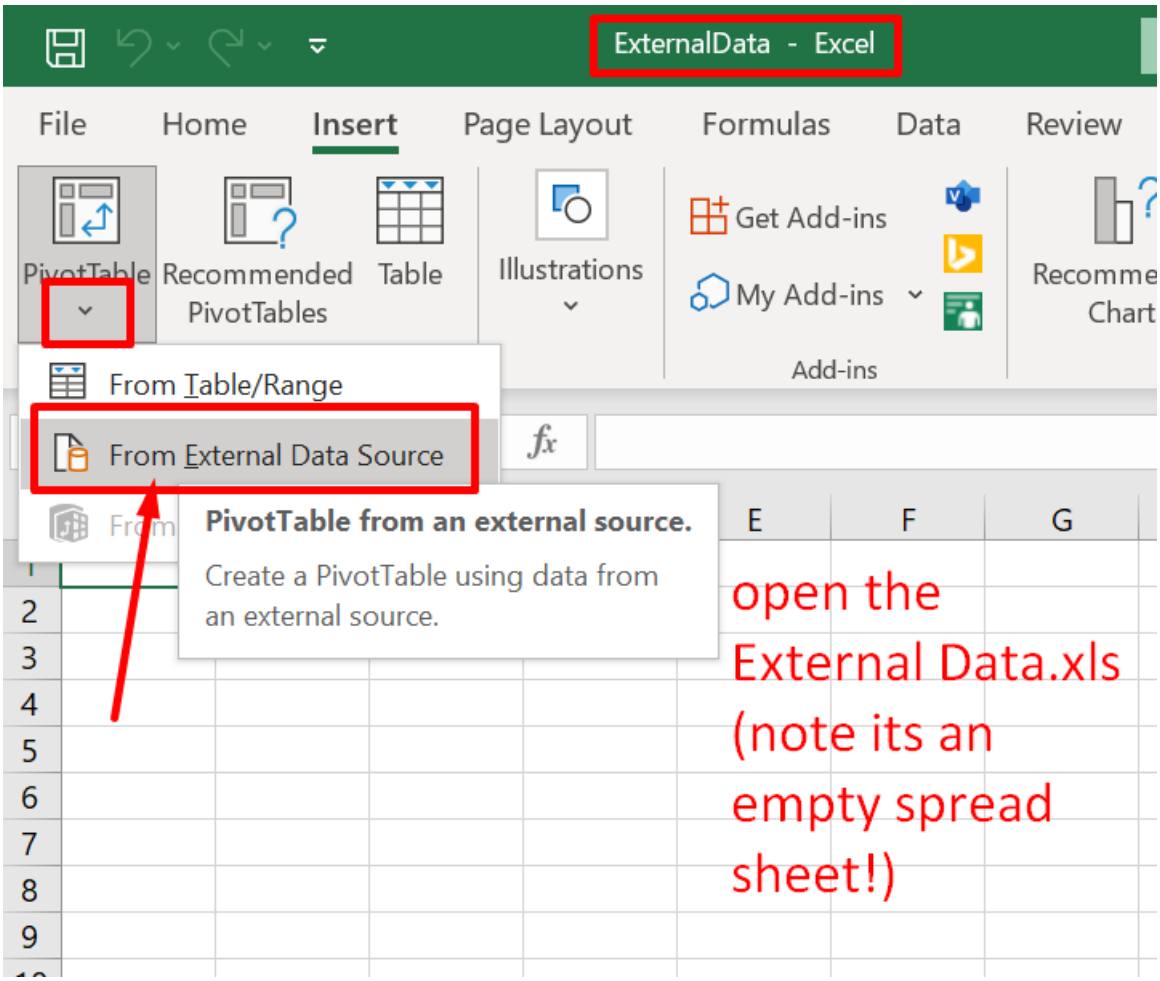
11	April	103543	98960	202503
12	May	111353	93664	205017
13	June	94292	98108	192400
14	**3**	**263361**	**302621**	**565982**
15	July	112334	73953	186287
16	August	68446	76590	145036
17	September	82581	152078	234659
18	**4**	**291389**	**312441**	**603830**
19	October	103366	78984	182350
20	November	82564	134740	217304
21	December	105459	98717	204176
22	**2016**	**1286966**	**1523054**	**2810020**
23	**1**	**350257**	**387707**	**737964**
24	January	134521	96206	230727
25	February	85955	140144	226099
26	March	129781	151357	281138
27	**2**	**313819**	**359937**	**673756**
28	April	101496	100182	201678
29	May	89009	130772	219781
30	June	123314	128983	252297

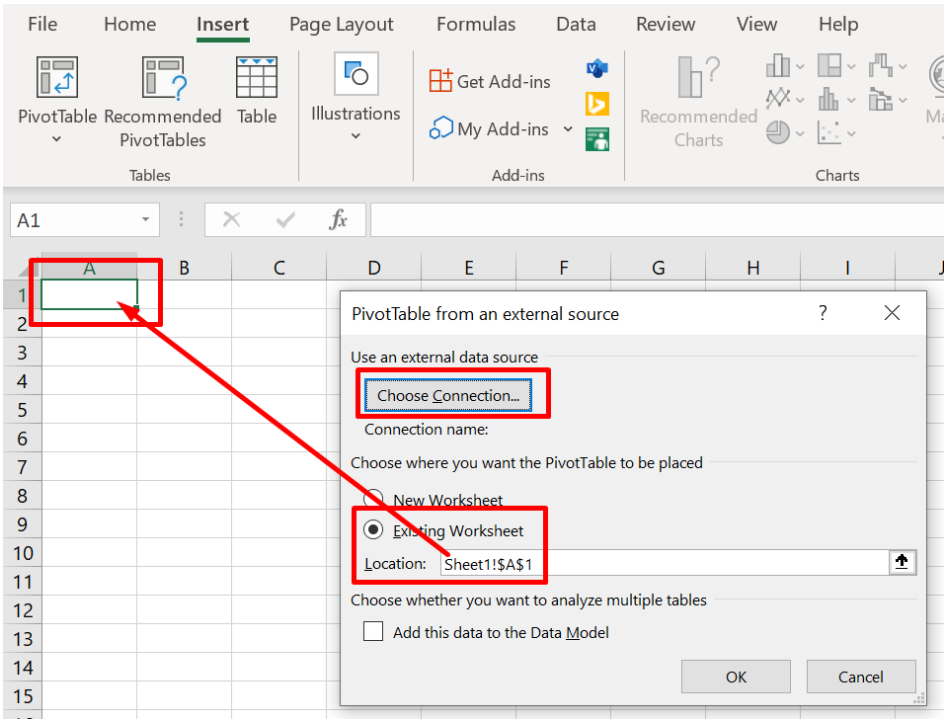


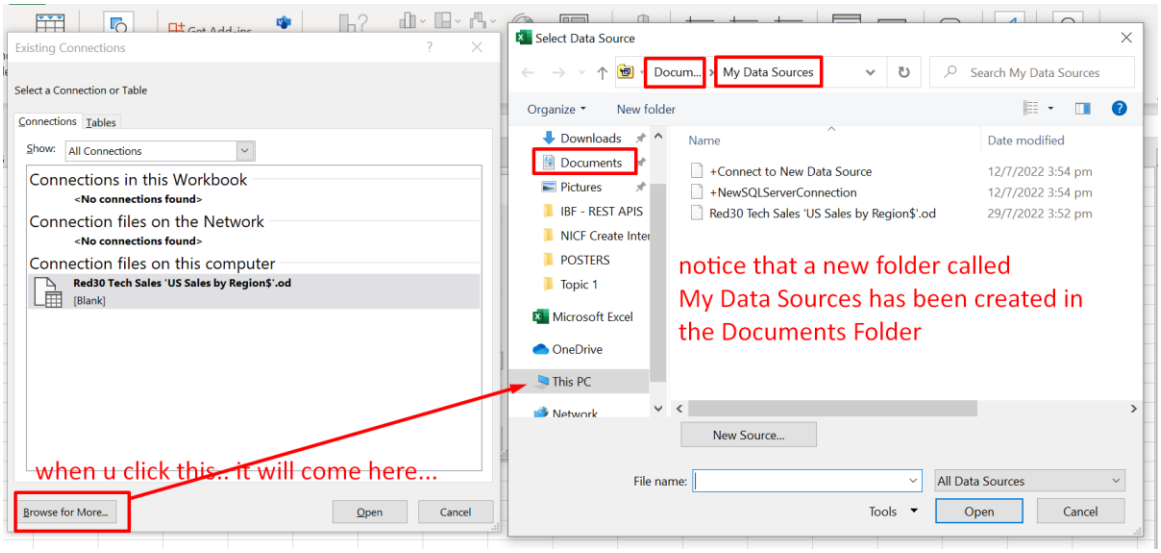
B. PART II: PIVOT TABLES USING EXTERNALDATA.XLSX

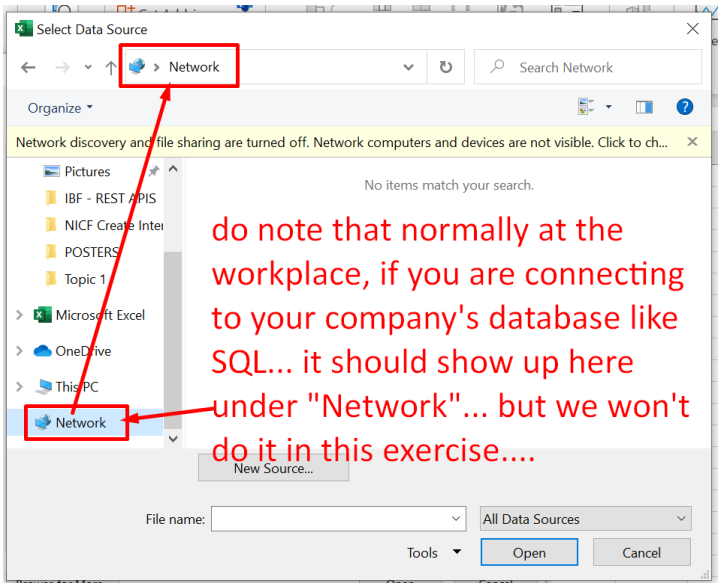
1. CONNECTING TO EXTERNAL DATA USING PIVOT TABLE

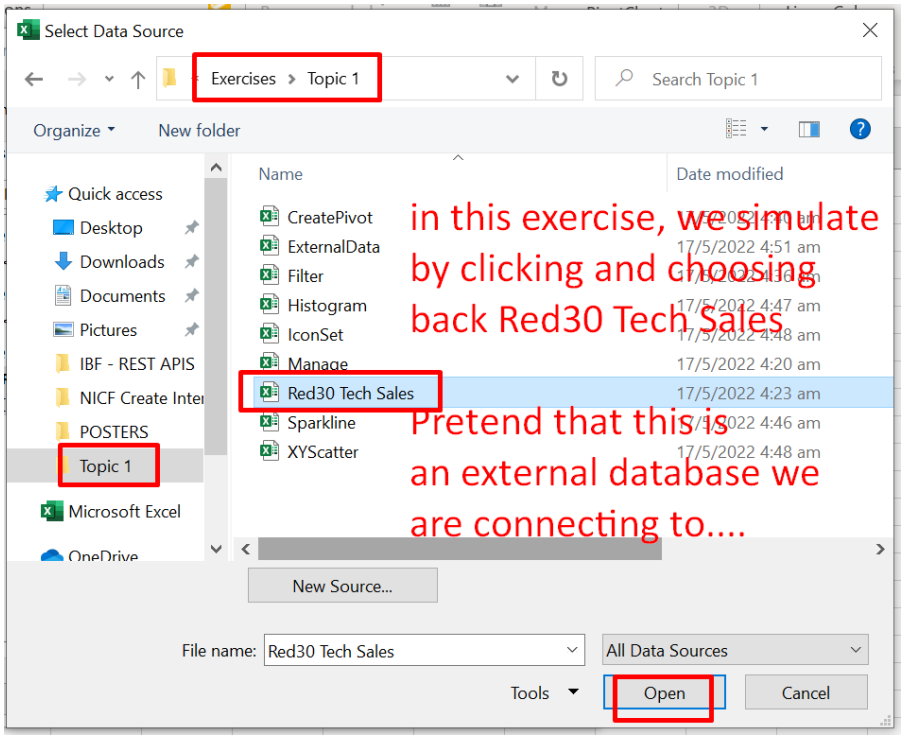
- External Databases for example Microsoft Access / SQL
- https://www.alvinang.sg/s/ExternalData.xlsx
- https://www.alvinang.sg/s/Red30-Tech-Sales.xlsx

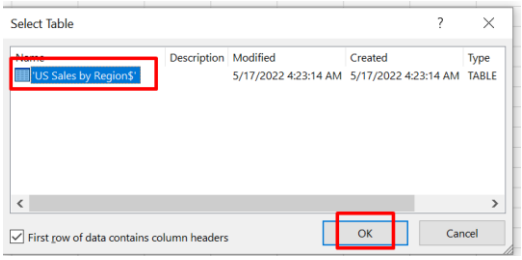


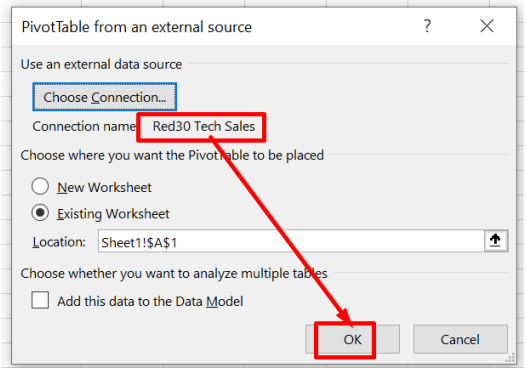


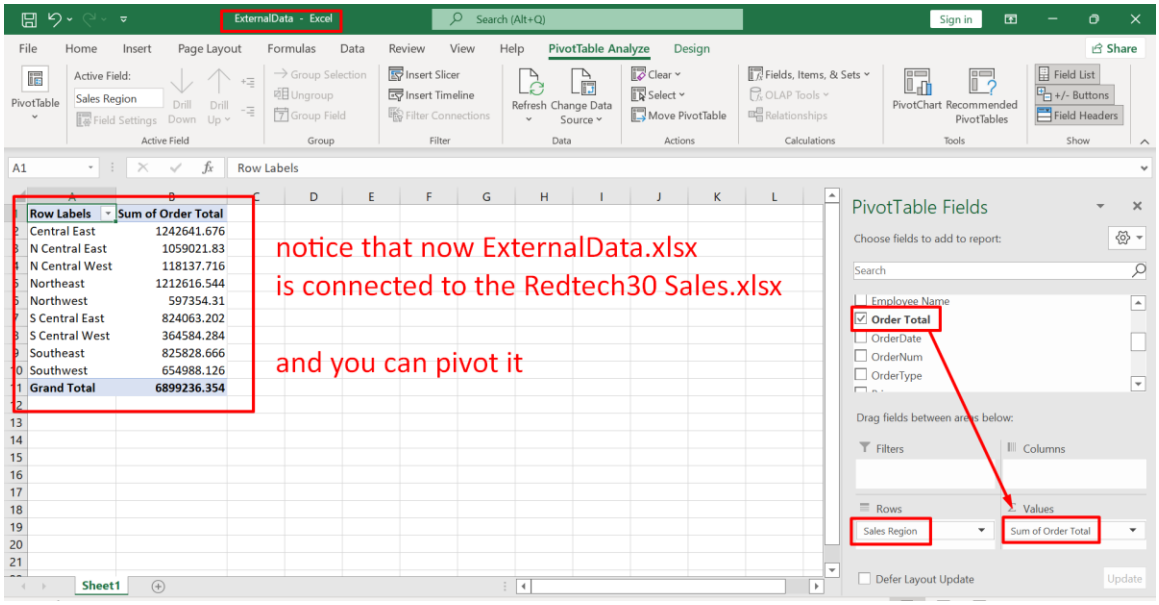




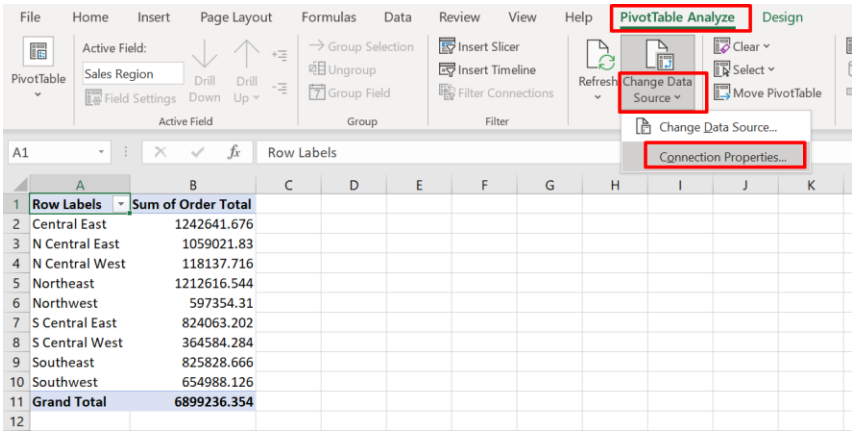




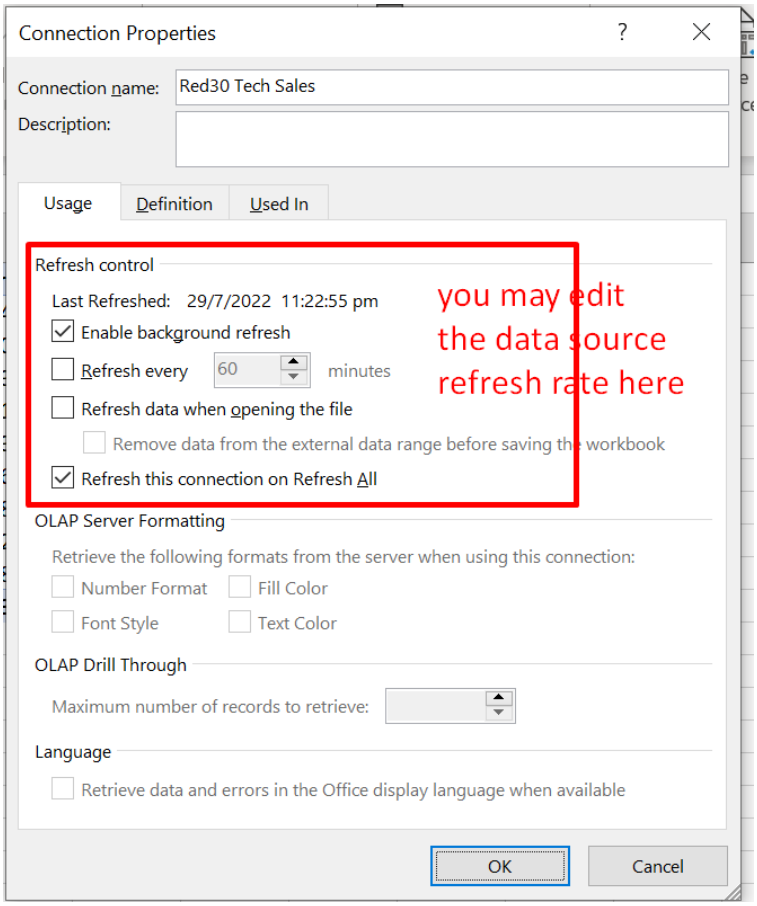




2. EXTERNAL DATA REFRESH RATE



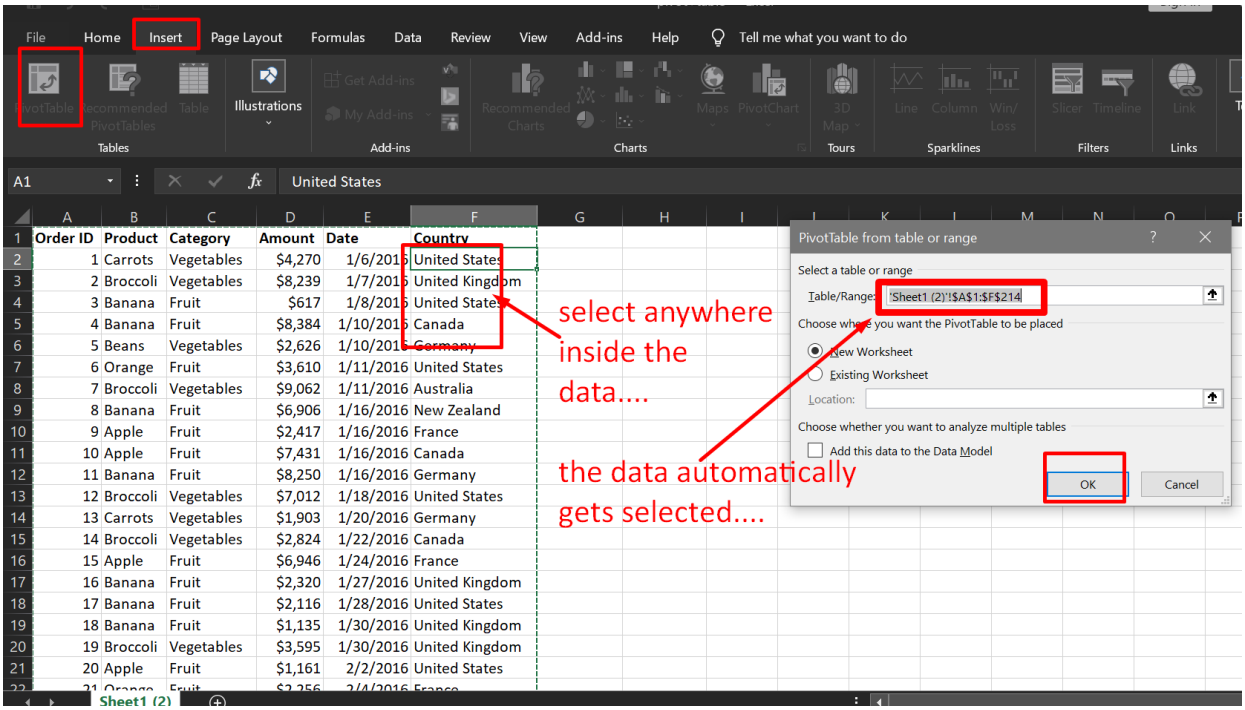
	A	B
1	Row Labels	Sum of Order Total
2	Central East	1242641.676
3	N Central East	1059021.83
4	N Central West	118137.716
5	Northeast	1212616.544
6	Northwest	597354.31
7	S Central East	824063.202
8	S Central West	364584.284
9	Southeast	825828.666
10	Southwest	654988.126
11	Grand Total	6899236.354
12		

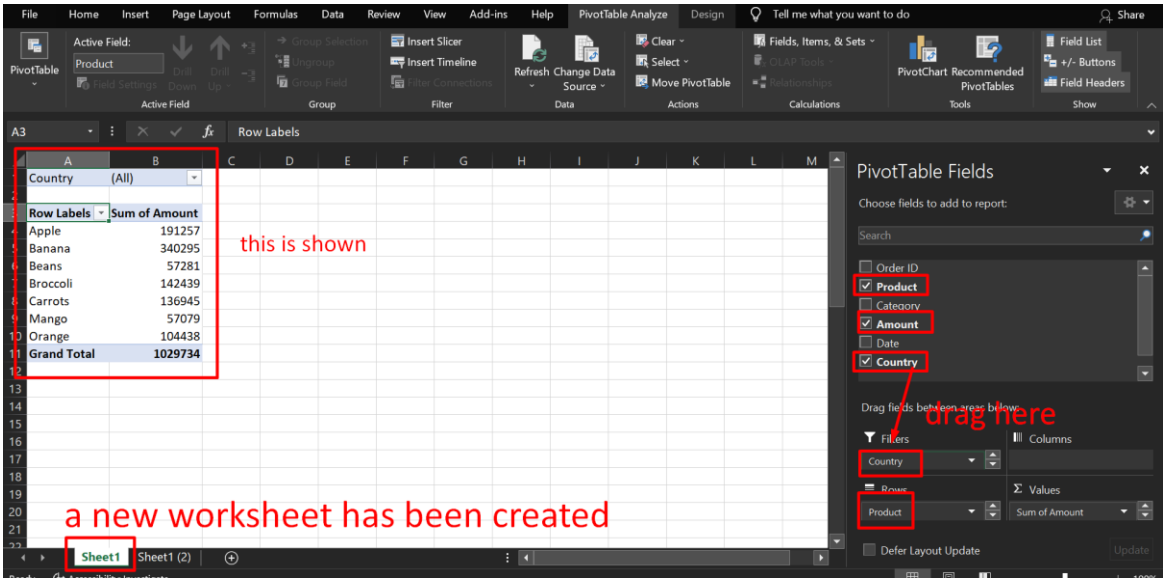


C. PART III: PIVOT TABLE USING PIVOT-TABLE.XLSX

1. INSERT PIVOT TABLE

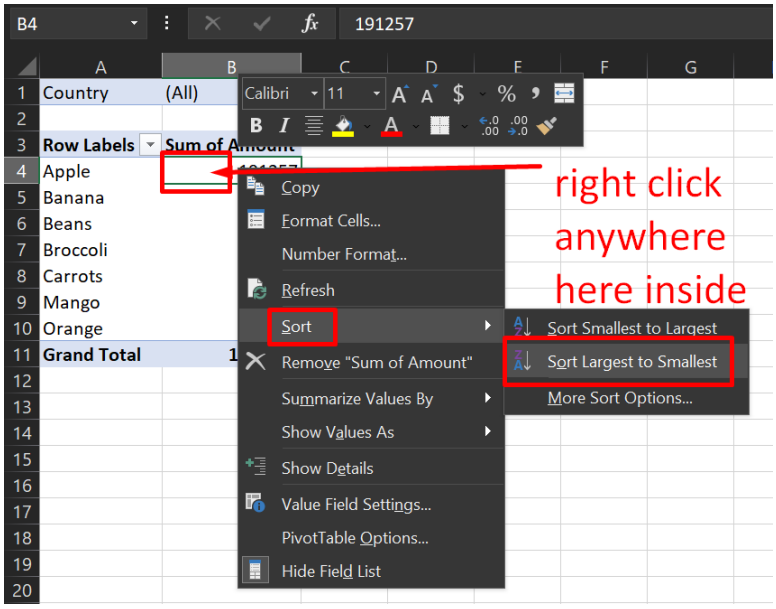
File: https://www.alvinang.sg/s/pivot-table.xlsx

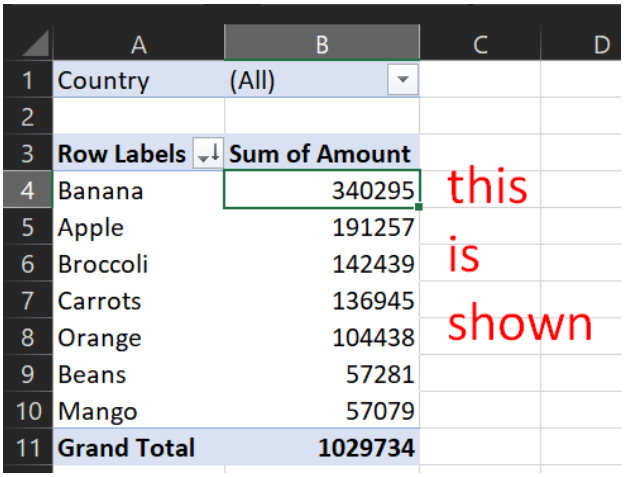




2. SORT PIVOT TABLE

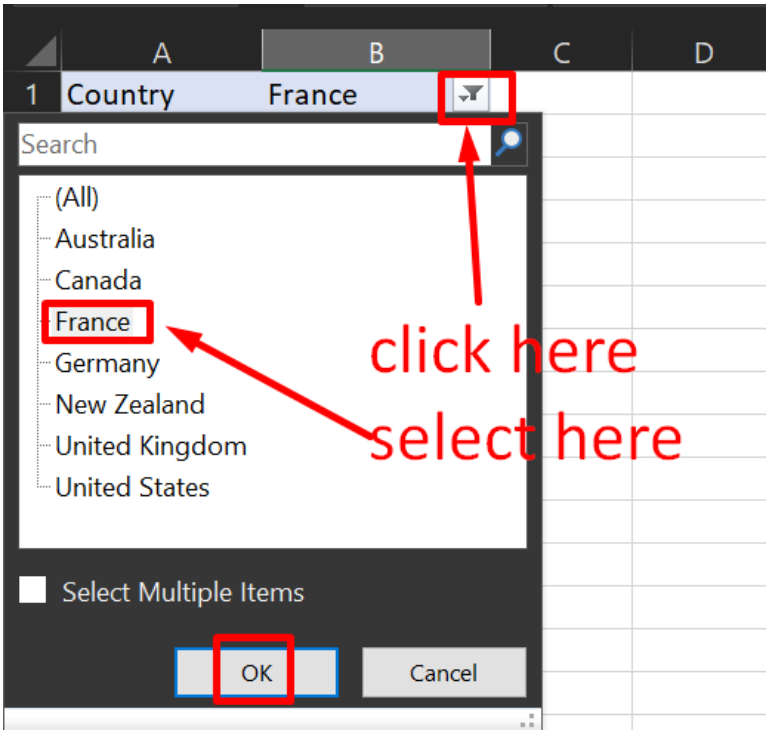
File: https://www.alvinang.sg/s/pivot-table.xlsx

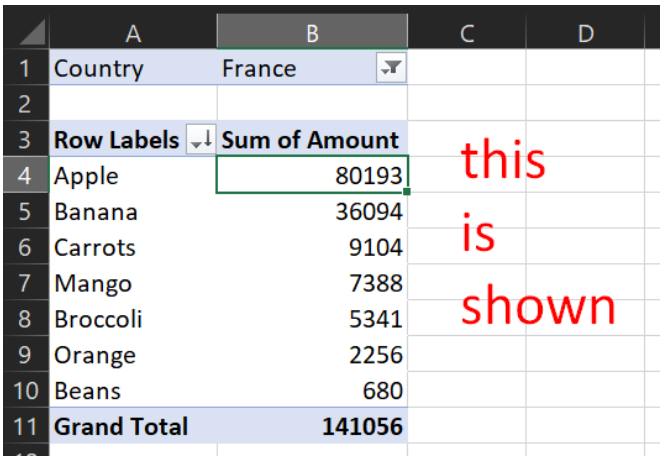




3. FILTER PIVOT TABLE

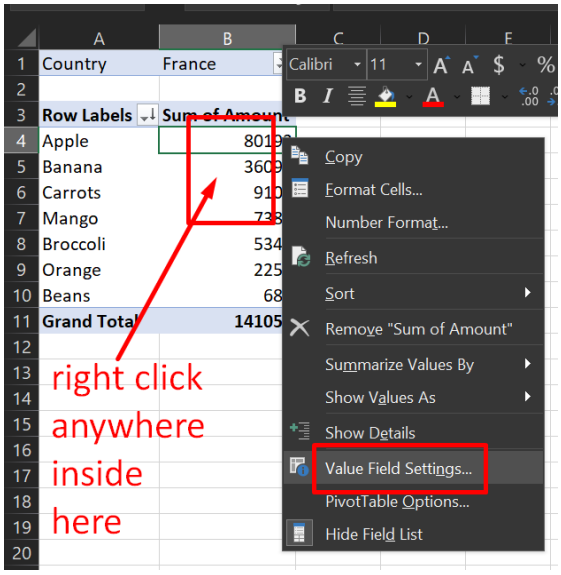
File: https://www.alvinang.sg/s/pivot-table.xlsx

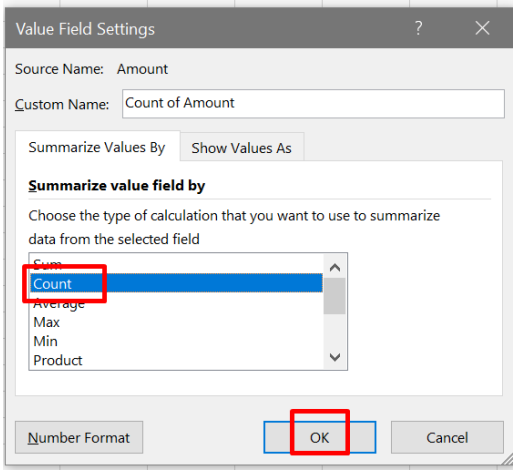


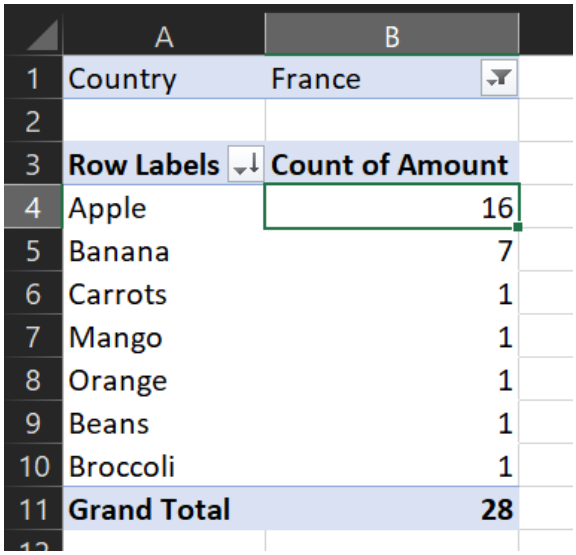


4. VALUE FIELD SETTINGS

File: https://www.alvinang.sg/s/pivot-table.xlsx



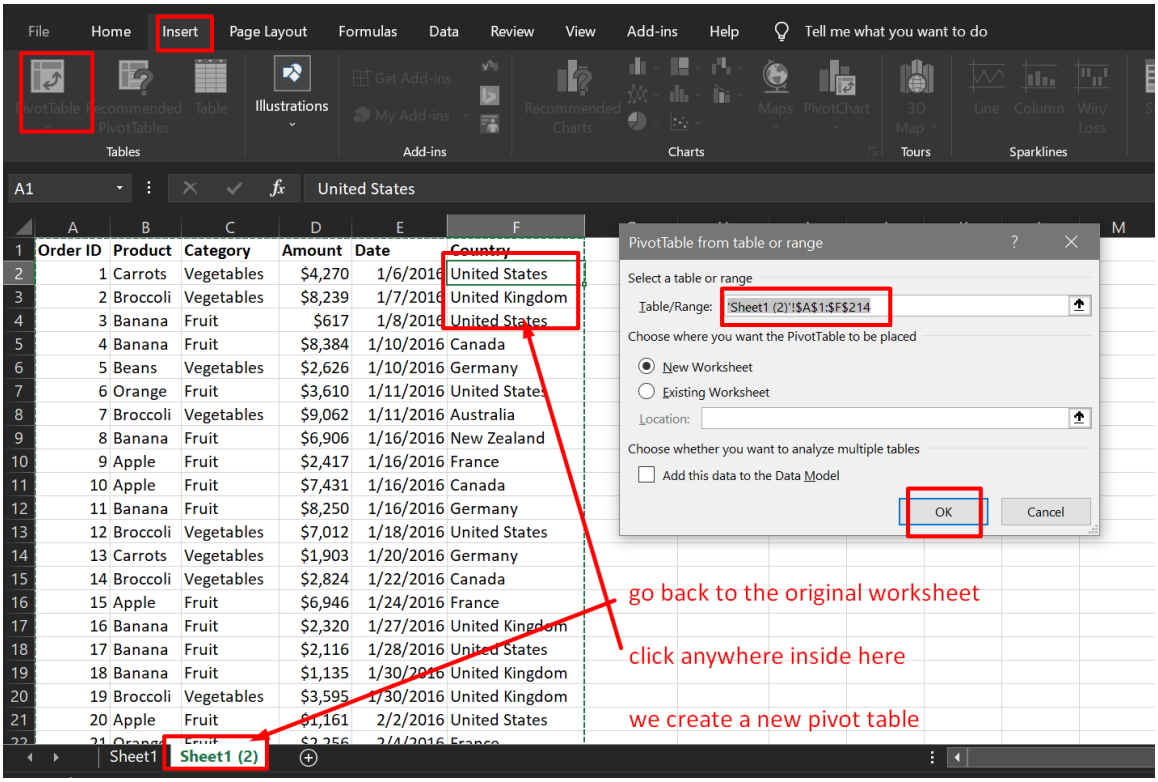




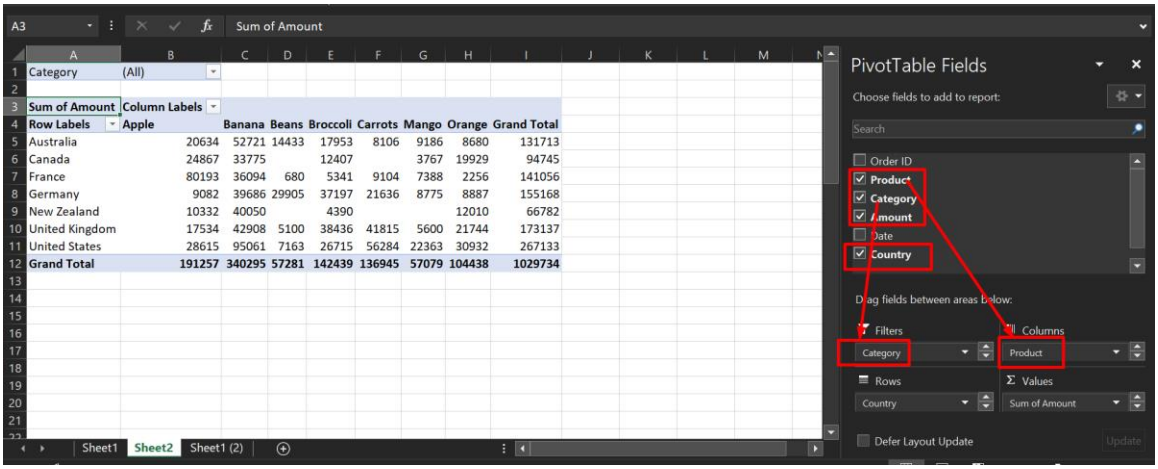
	A	B
1	Country	France
2		
3	Row Labels	Count of Amount
4	Apple	16
5	Banana	7
6	Carrots	1
7	Mango	1
8	Orange	1
9	Beans	1
10	Broccoli	1
11	Grand Total	28

5. PIVOT CHART

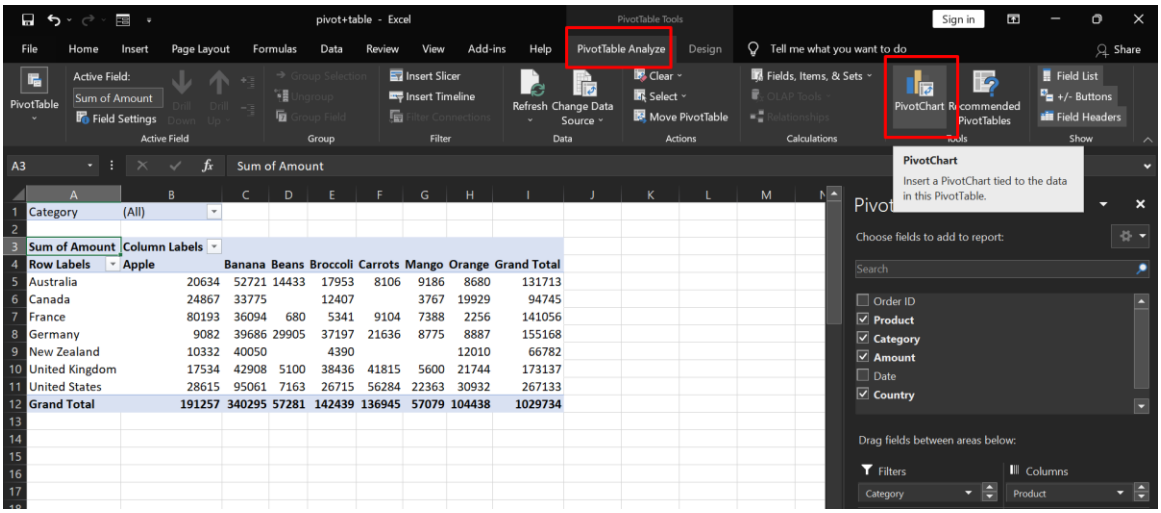
File: https://www.alvinang.sg/s/pivot-table.xlsx



	Order ID	Product	Category	Amount	Date	Country
2	1	Carrots	Vegetables	$4,270	1/6/2016	United States
3	2	Broccoli	Vegetables	$8,239	1/7/2016	United Kingdom
4	3	Banana	Fruit	$617	1/8/2016	United States
5	4	Banana	Fruit	$8,384	1/10/2016	Canada
6	5	Beans	Vegetables	$2,626	1/10/2016	Germany
7	6	Orange	Fruit	$3,610	1/11/2016	United States
8	7	Broccoli	Vegetables	$9,062	1/11/2016	Australia
9	8	Banana	Fruit	$6,906	1/16/2016	New Zealand
10	9	Apple	Fruit	$2,417	1/16/2016	France
11	10	Apple	Fruit	$7,431	1/16/2016	Canada
12	11	Banana	Fruit	$8,250	1/16/2016	Germany
13	12	Broccoli	Vegetables	$7,012	1/18/2016	United States
14	13	Carrots	Vegetables	$1,903	1/20/2016	Germany
15	14	Broccoli	Vegetables	$2,824	1/22/2016	Canada
16	15	Apple	Fruit	$6,946	1/24/2016	France
17	16	Banana	Fruit	$2,320	1/27/2016	United Kingdom
18	17	Banana	Fruit	$2,116	1/28/2016	United States
19	18	Banana	Fruit	$1,135	1/30/2016	United Kingdom
20	19	Broccoli	Vegetables	$3,595	1/30/2016	United Kingdom
21	20	Apple	Fruit	$1,161	2/2/2016	United States



Category	(All)								
Sum of Amount	Column Labels								
Row Labels	Apple	Banana	Beans	Broccoli	Carrots	Mango	Orange	Grand Total	
Australia	20634	52721	14433	17953	8106	9186	8680	131713	
Canada	24867	33775		12407		3767	19929	94745	
France	80193	36094	680	5341	9104	7388	2256	141056	
Germany	9082	39686	29905	37197	21636	8775	8887	155168	
New Zealand	10332	40050		4390			12010	66782	
United Kingdom	17534	42908	5100	38436	41815	5600	21744	173137	
United States	28615	95061	7163	26715	56284	22363	30932	267133	
Grand Total	191257	340295	57281	142439	136945	57079	104438	1029734	



Category	(All)								
Sum of Amount	Column Labels								
Row Labels	Apple	Banana	Beans	Broccoli	Carrots	Mango	Orange	Grand Total	
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Canada	24867	33775		12407		3767	19929	94745	
France	80193	36094	680	5341	9104	7388	2256	141056	
Germany	9082	39686	29905	37197	21636	8775	8887	155168	
New Zealand	10332	40050		4390			12010	66782	
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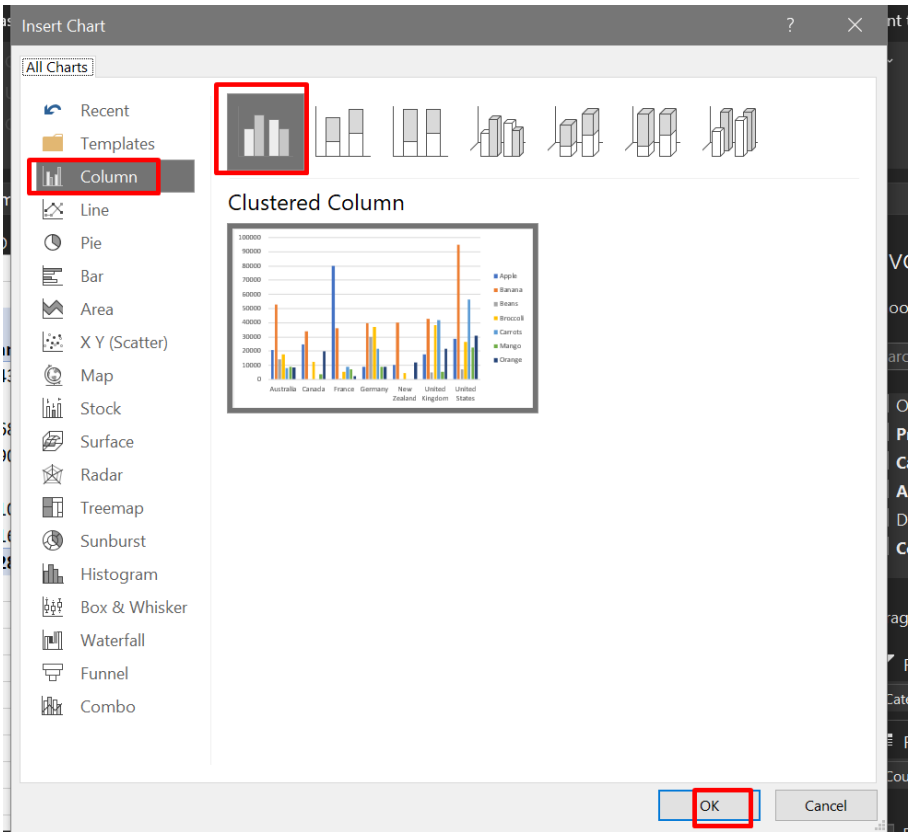
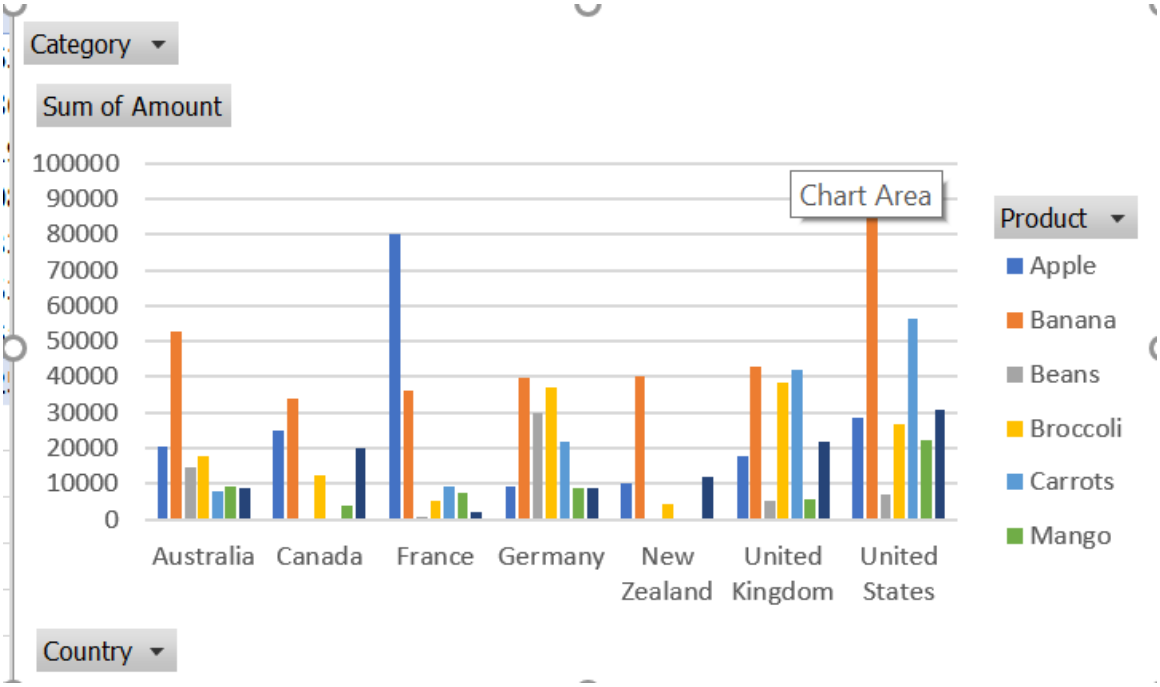
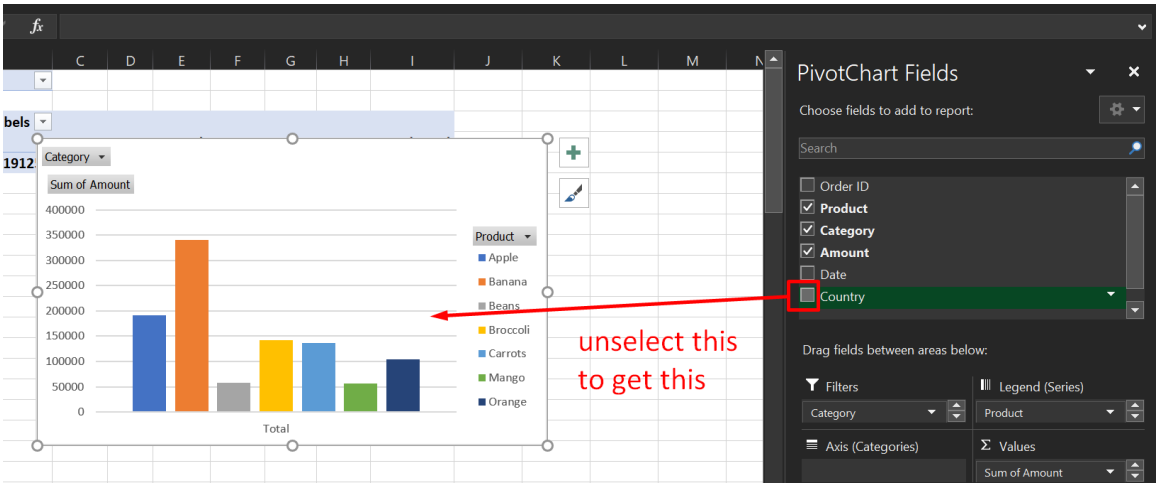
Grand Total	191257	340295	57281	142439	136945	57079	104438	1029734	

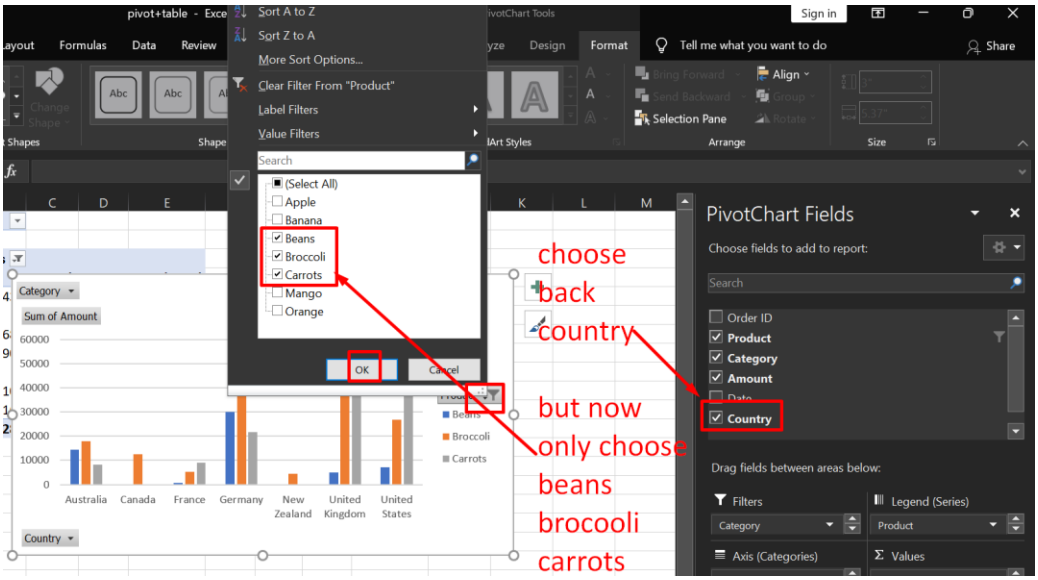


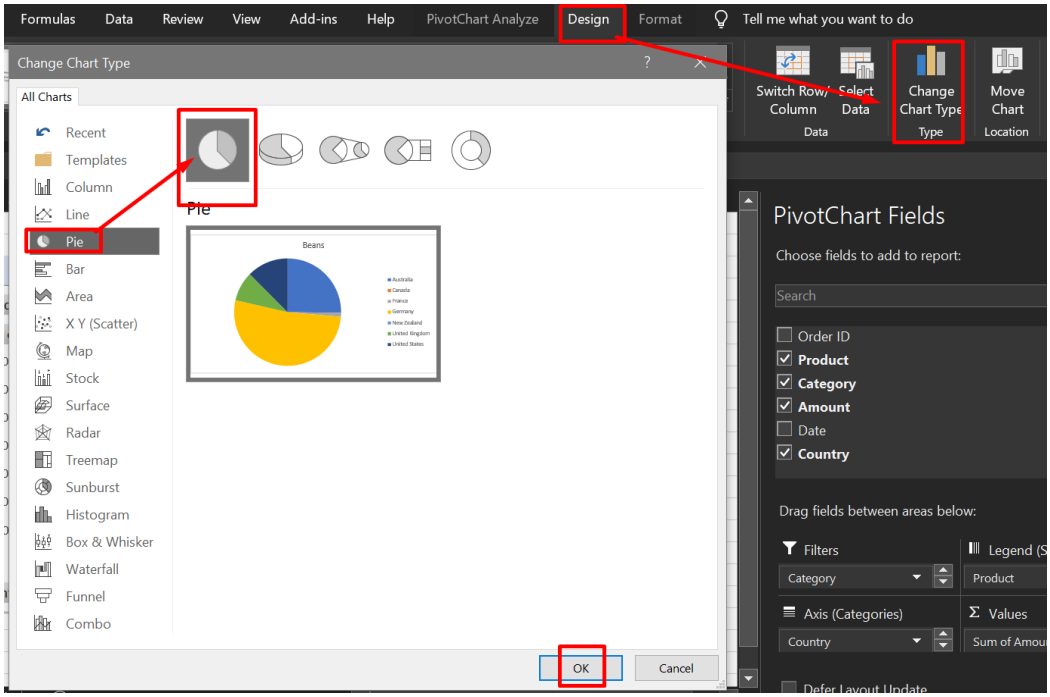


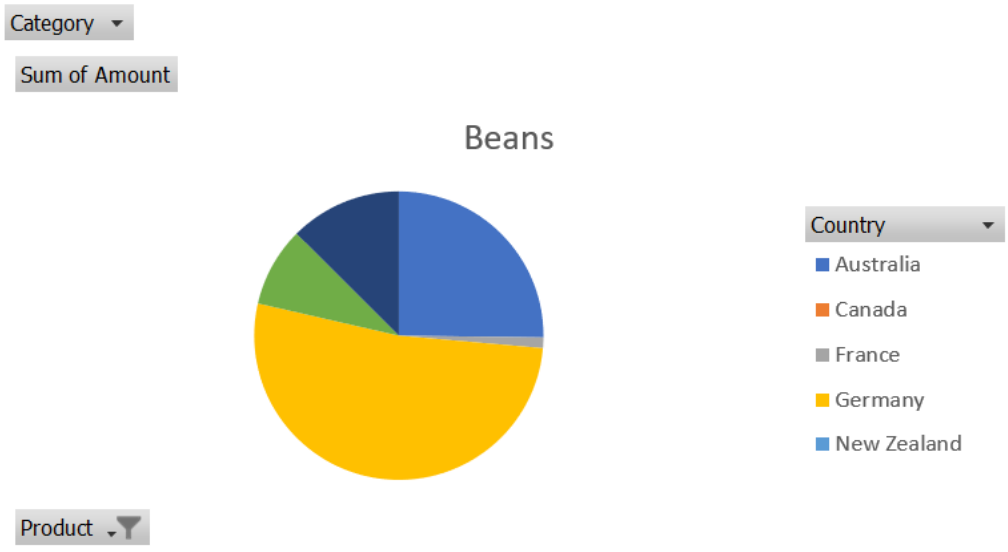
6. FILTER PIVOT CHART

File: https://www.alvinang.sg/s/pivot-table.xlsx









D. ACTIVITY: CREATE PIVOT TABLE

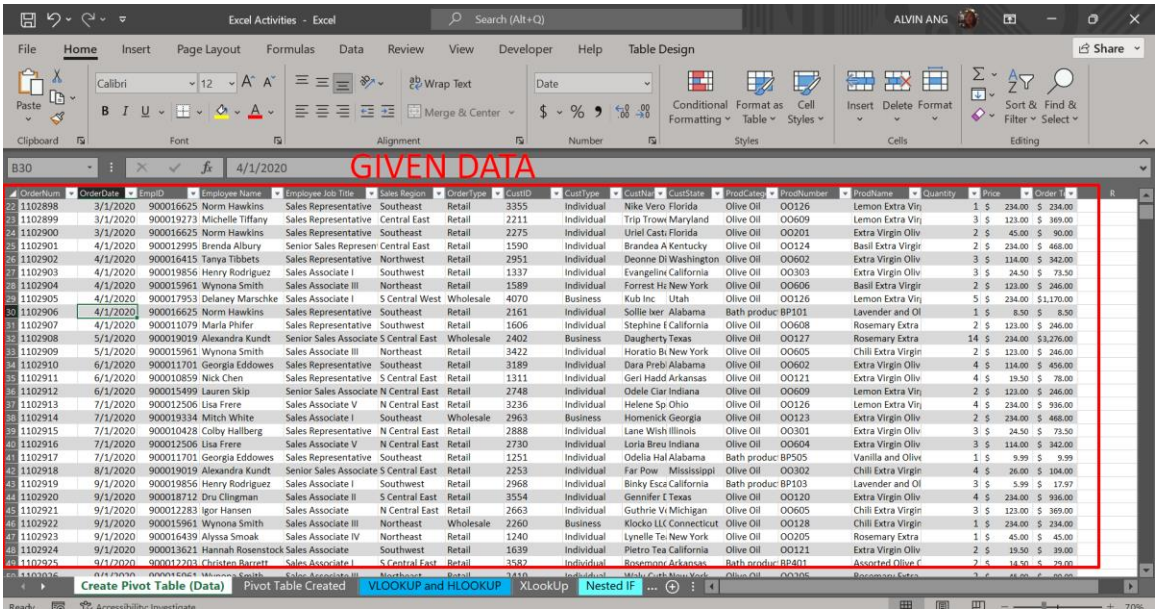
https://www.alvinang.sg/s/Excel-Activities-1.xlsx

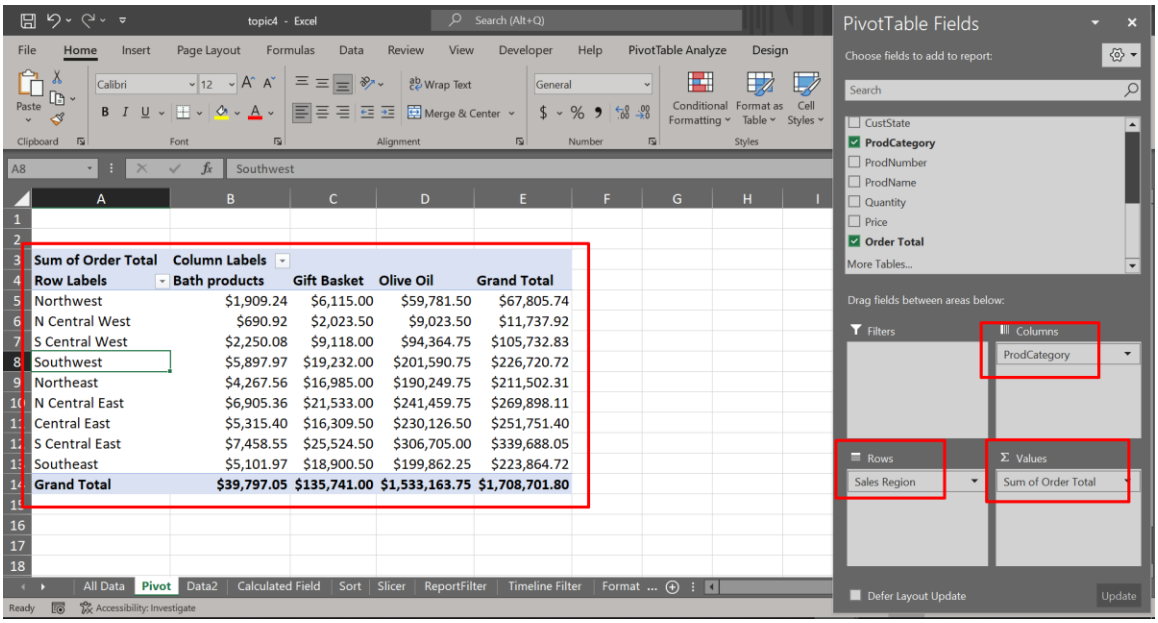
Activity: Create PivotTable

- Open topic4.xlxs
- Select AllData worksheet
- Create a PivotTable as shown below

Sum of Order Total	Column Labels			
Row Labels	Bath products	Gift Basket	Olive Oil	Grand Total
Northwest	$1,909.24	$6,115.00	$59,781.50	$67,805.74
N Central West	$690.92	$2,023.50	$9,023.50	$11,737.92
S Central West	$2,250.08	$9,118.00	$94,364.75	$105,732.83
Southwest	$5,897.97	$19,232.00	$201,590.75	$226,720.72
Northeast	$4,267.56	$16,985.00	$190,249.75	$211,502.31
N Central East	$6,905.36	$21,533.00	$241,459.75	$269,898.11
Central East	$5,315.40	$16,309.50	$230,126.50	$251,751.40
S Central East	$7,458.55	$25,524.50	$306,705.00	$339,688.05
Southeast	$5,101.97	$18,900.50	$199,862.25	$223,864.72
Grand Total	**$39,797.05**	##########	##########	##########

1. ANSWER TO CREATE PIVOT TABLE





Sum of Order Total	Column Labels			
Row Labels	Bath products	Gift Basket	Olive Oil	Grand Total
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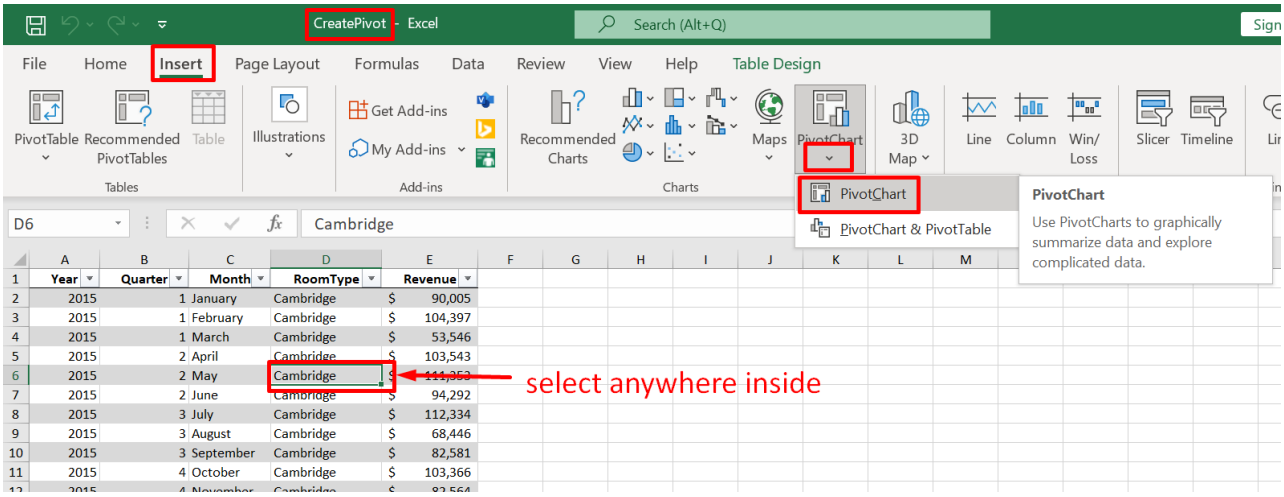
Central East	$5,315.40	$16,309.50	$230,126.50	$251,751.40
S Central East	$7,458.55	$25,524.50	$306,705.00	$339,688.05
Southeast	$5,101.97	$18,900.50	$199,862.25	$223,864.72
Grand Total	$39,797.05	$135,741.00	$1,533,163.75	$1,708,701.80

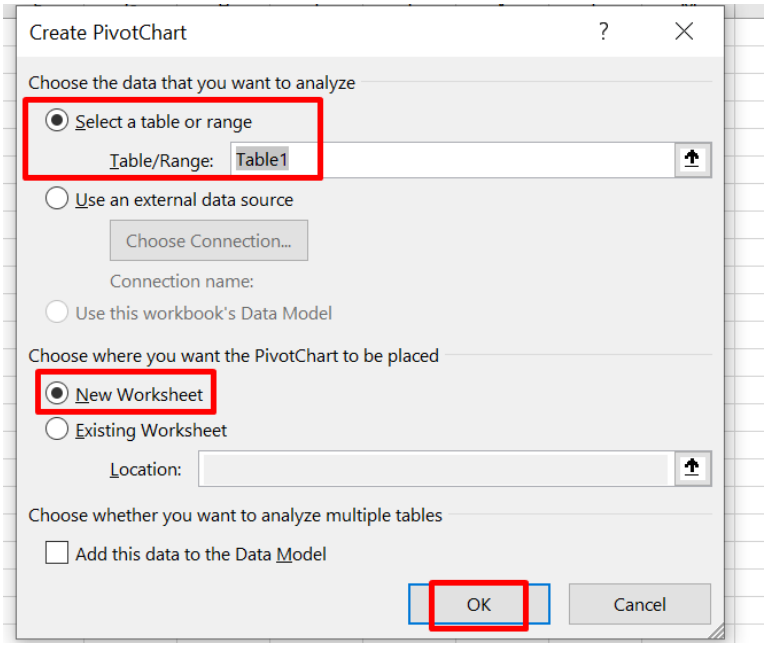
E. PIVOT CHART USING CREATEPIVOT.XLSX

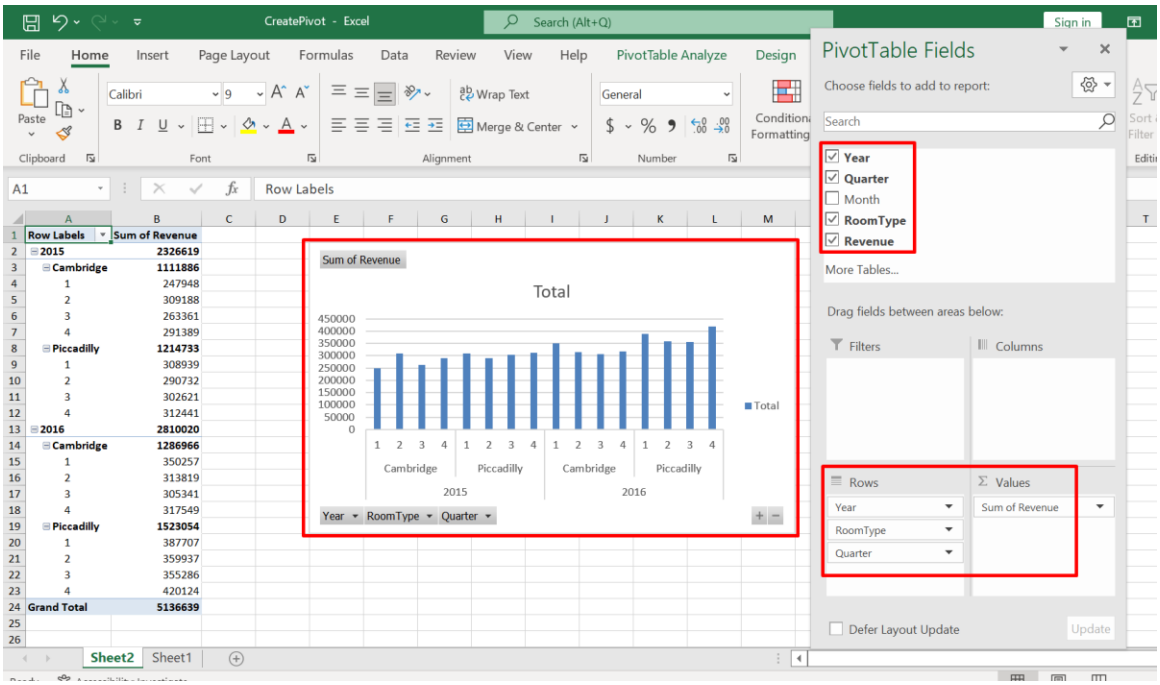
https://www.alvinang.sg/s/CreatePivot.xlsx

1. INSERTING PIVOT CHART

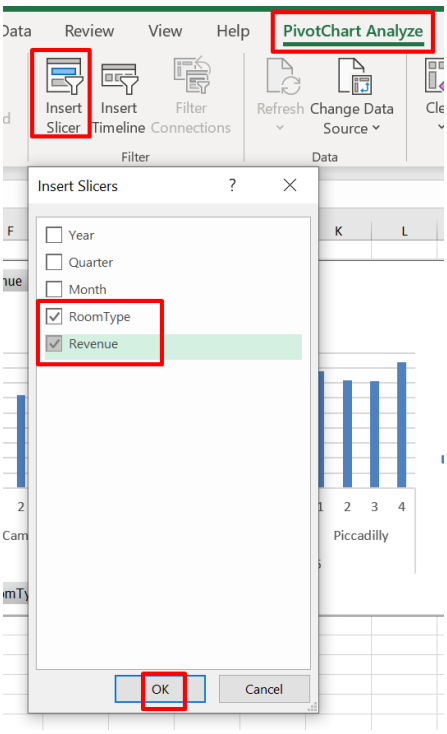


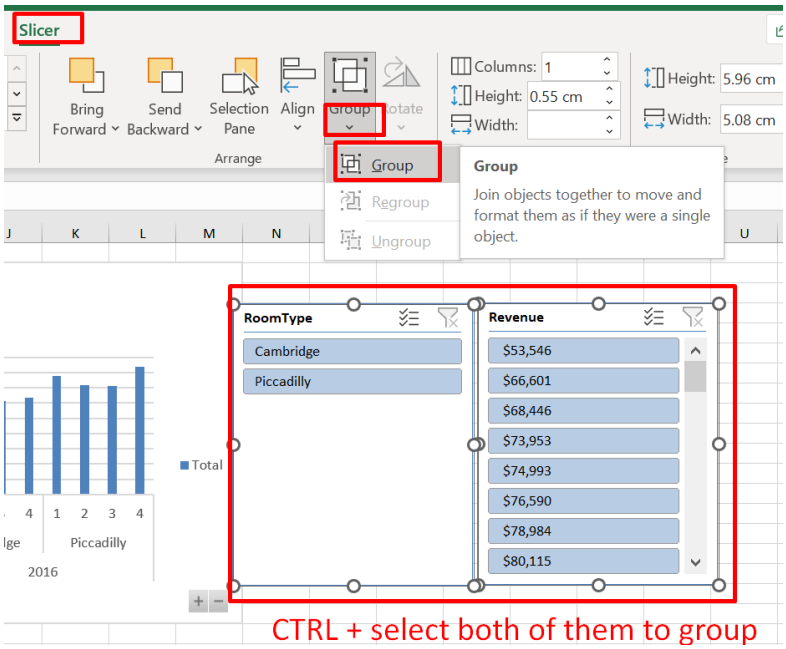
	A	B	C	D	E
1	Year	Quarter	Month	RoomType	Revenue
2	2015	1	January	Cambridge	$ 90,005
3	2015	1	February	Cambridge	$ 104,397
4	2015	1	March	Cambridge	$ 53,546
5	2015	2	April	Cambridge	$ 103,543
6	2015	2	May	Cambridge	$ 111,353
7	2015	2	June	Cambridge	$ 94,292
8	2015	3	July	Cambridge	$ 112,334
9	2015	3	August	Cambridge	$ 68,446
10	2015	3	September	Cambridge	$ 82,581
11	2015	4	October	Cambridge	$ 103,366

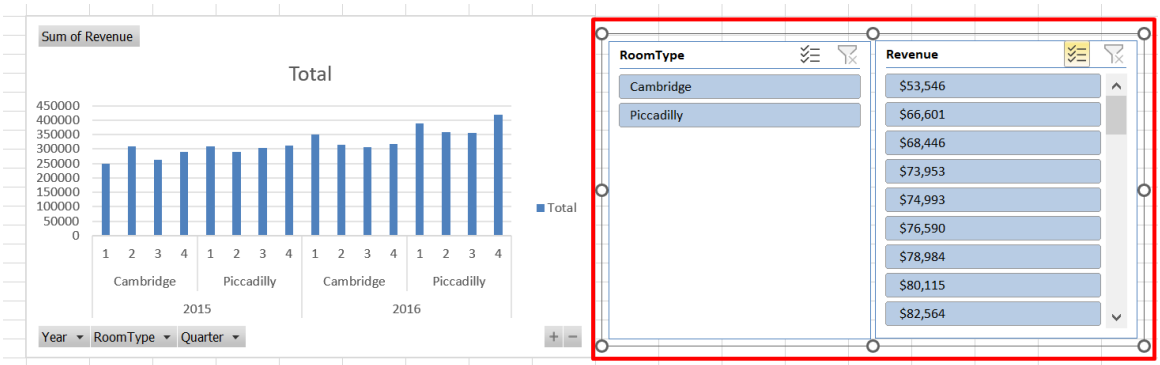




2. INSERT SLICER INTO PIVOT CHART







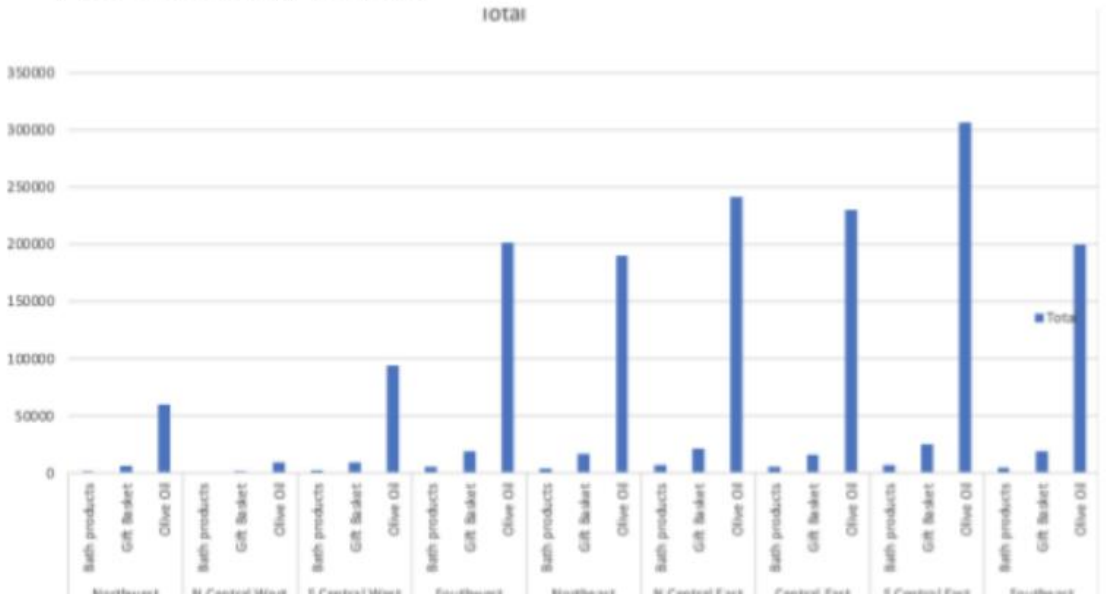
you can now resize the group of slicers and play around the filter to watch the chart change!!!

3. ACTIVITY: PIVOT CHART

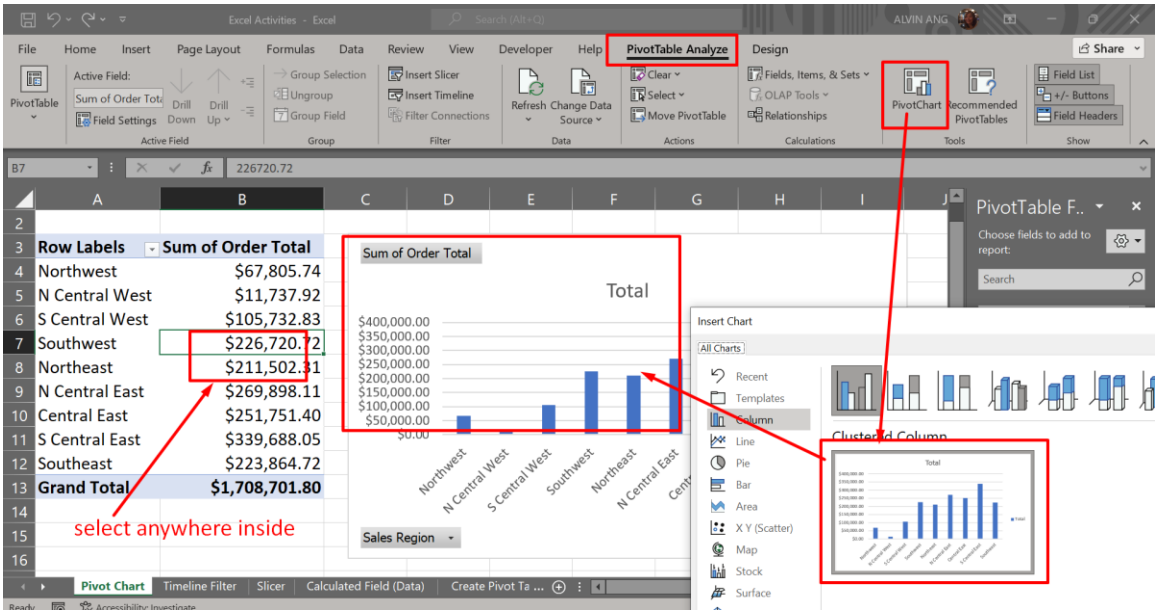
https://www.alvinang.sg/s/Excel-Activities-1.xlsx

Activity: PivotChart

- Open topic4.xlxs
- Select Pivot Chart worksheet
- Create a Pivot Chart as show below
- Add a slicer filter.



a) Answer to Pivot Chart

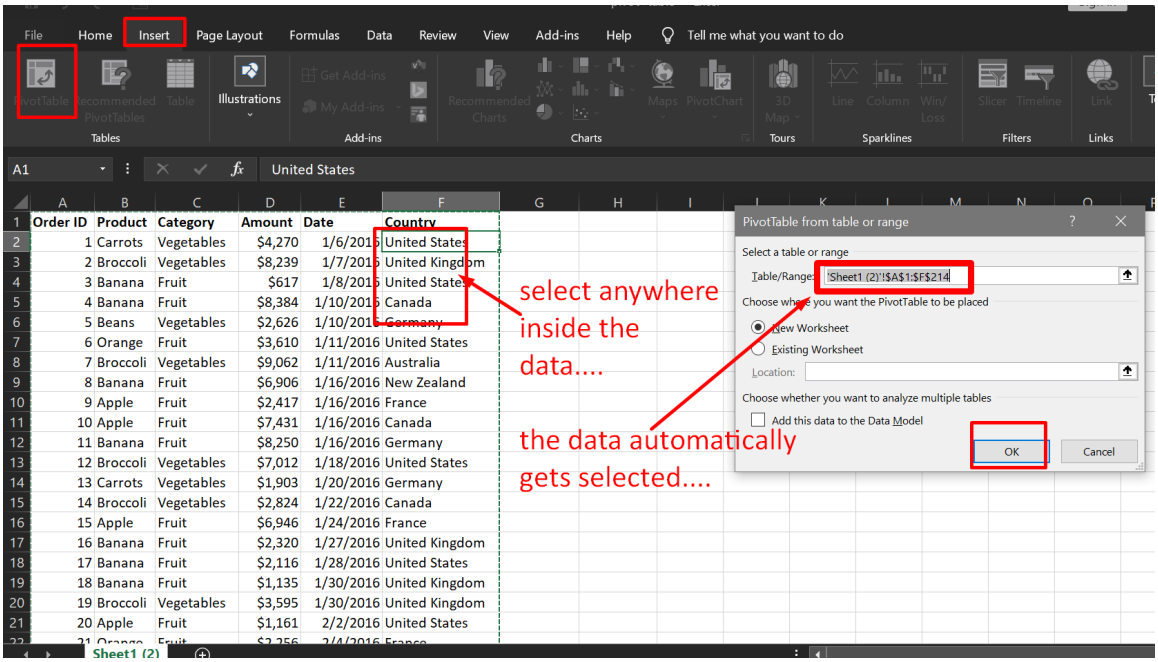


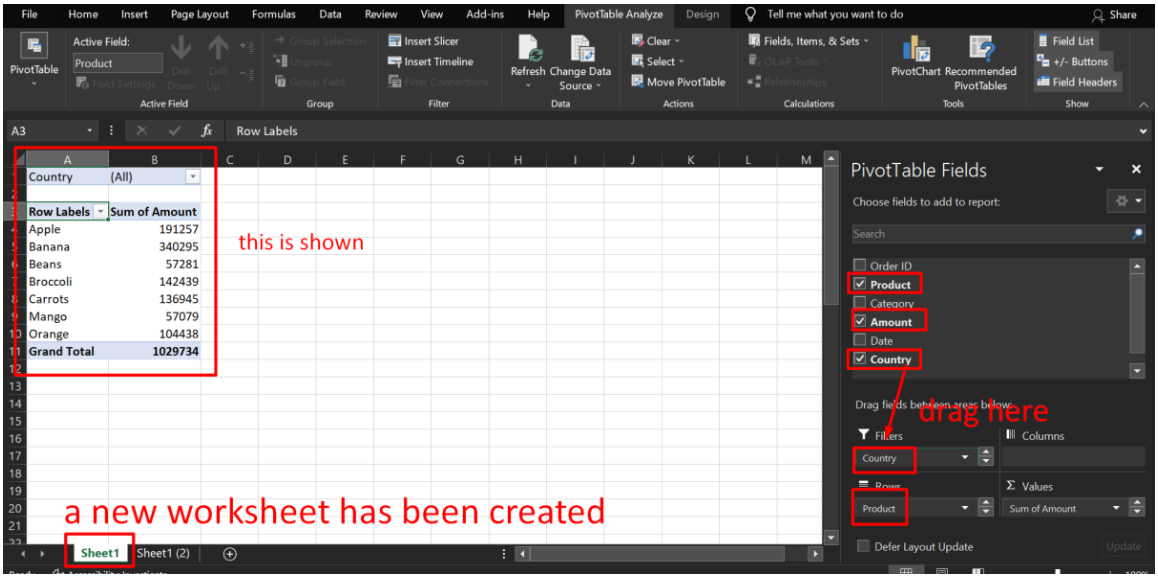
F. SLICERS

1. SLICERS USING PIVOT-TABLE.XLSX

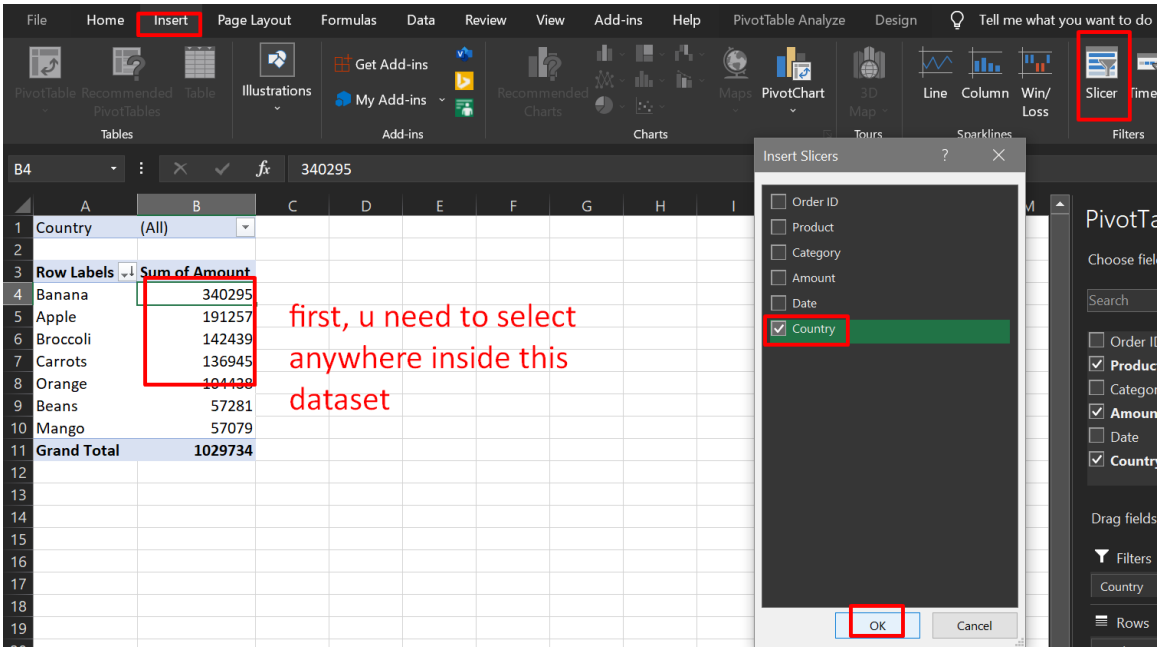
File: https://www.alvinang.sg/s/pivot-table.xlsx

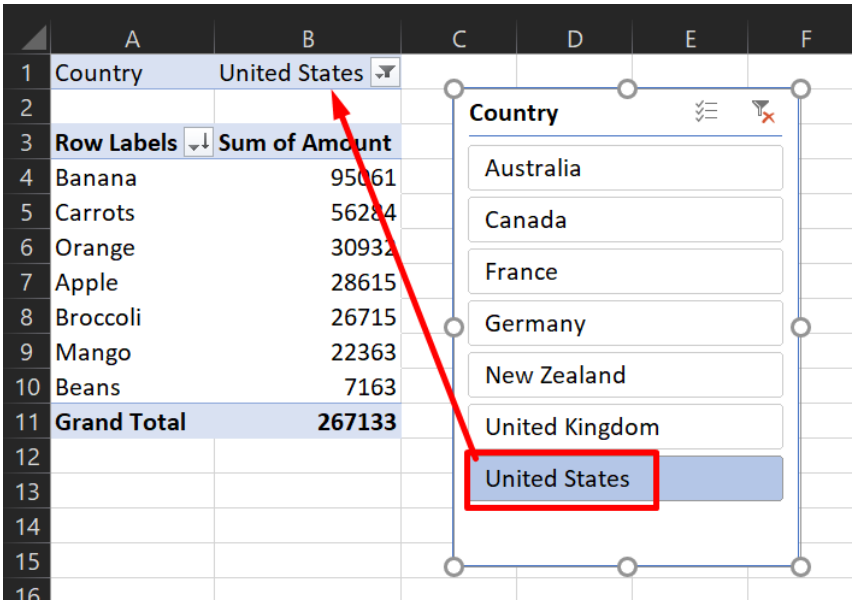
a) Create Pivot Table



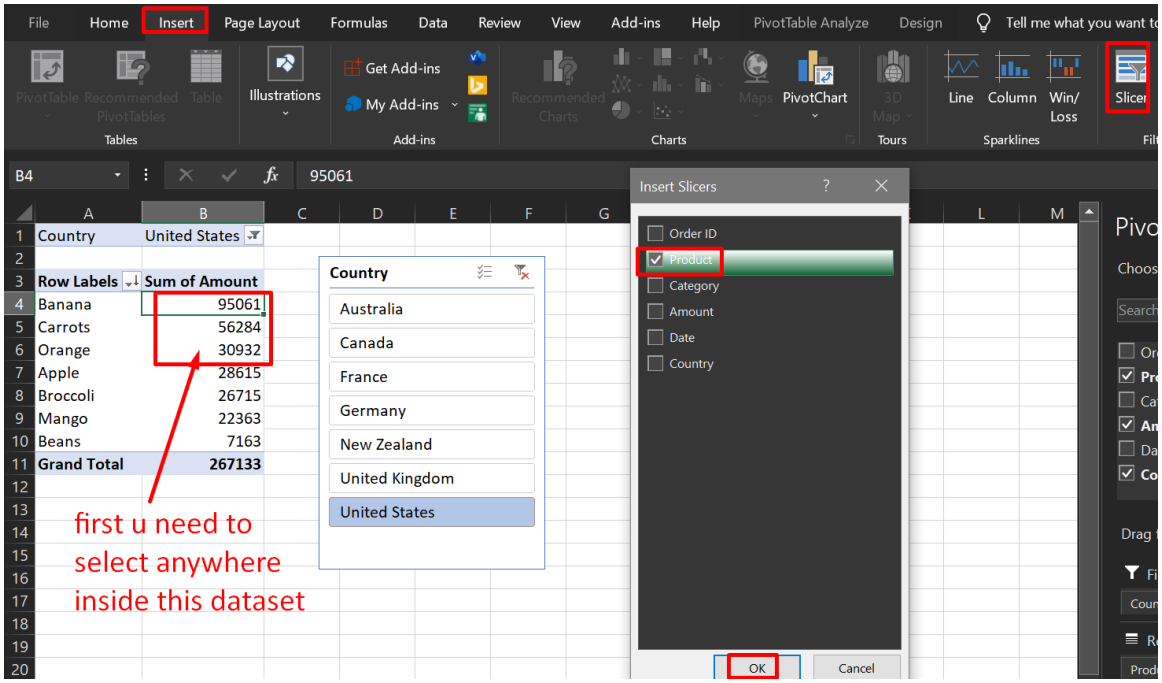


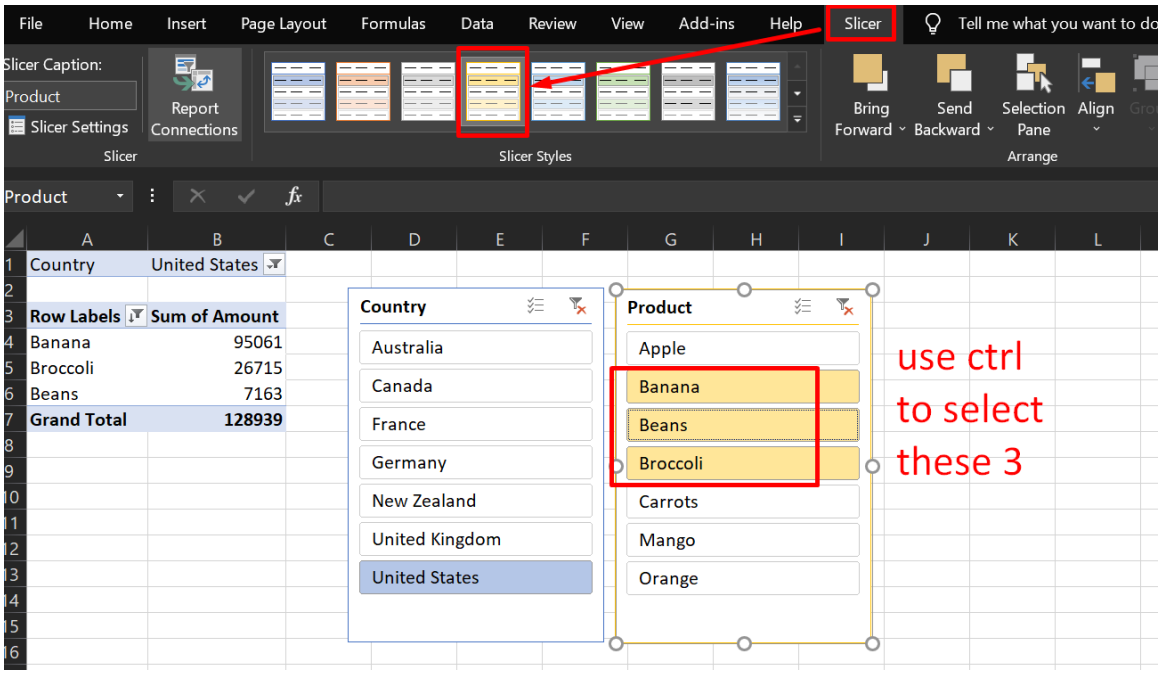
b) Insert Slicer





c) Styling a Slicer

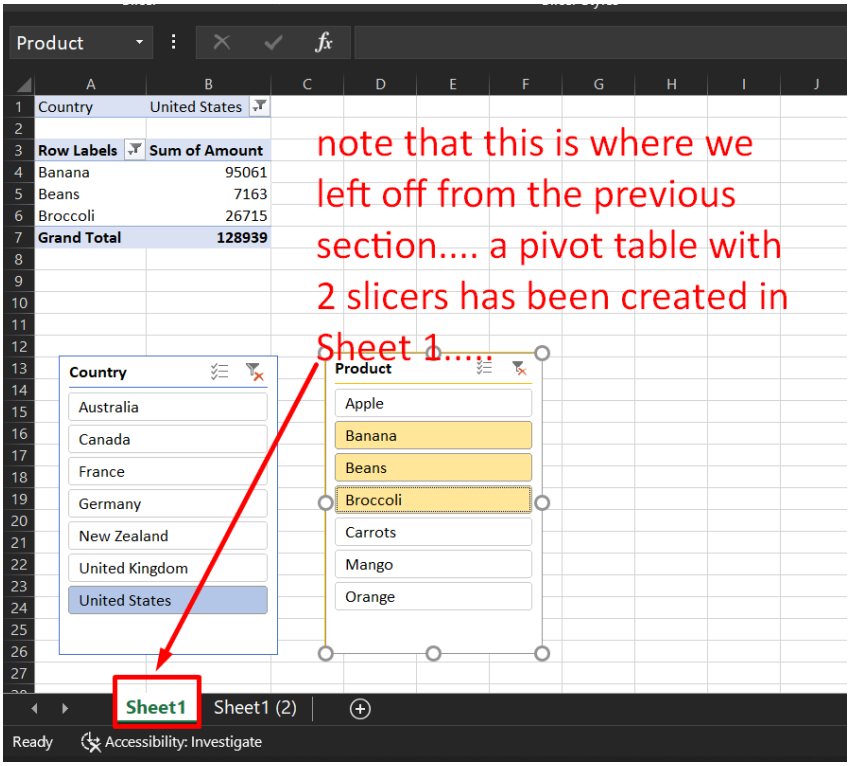


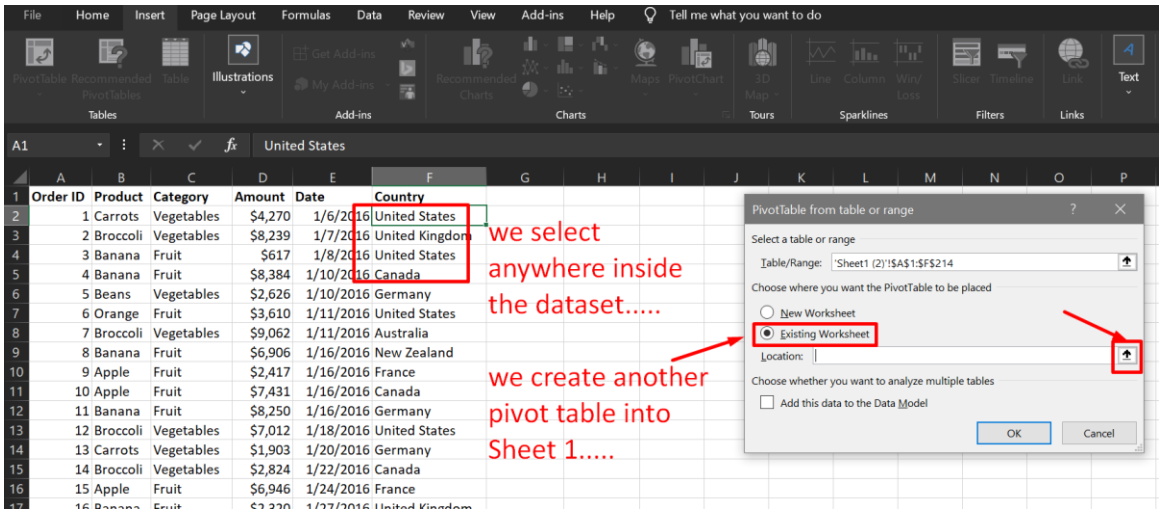


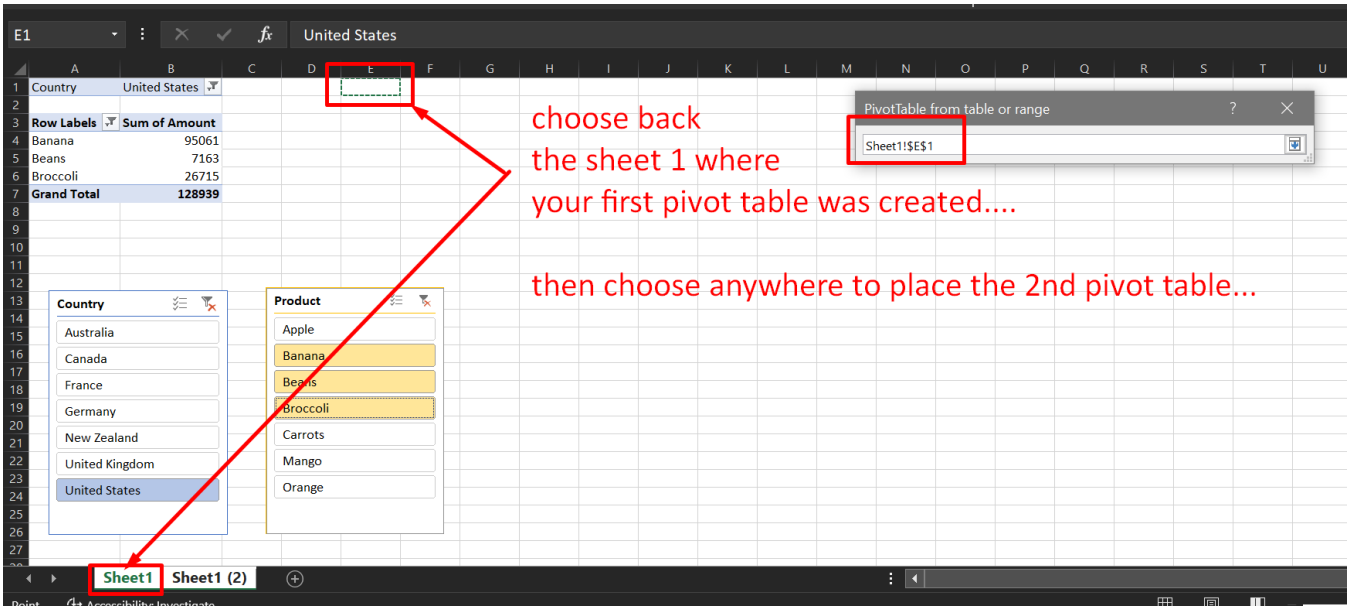
Country	United States
Row Labels	**Sum of Amount**
Banana	95061
Carrots	56284
Orange	30932
Apple	28615
Broccoli	26715
Mango	22363
Beans	7163
Grand Total	**267133**

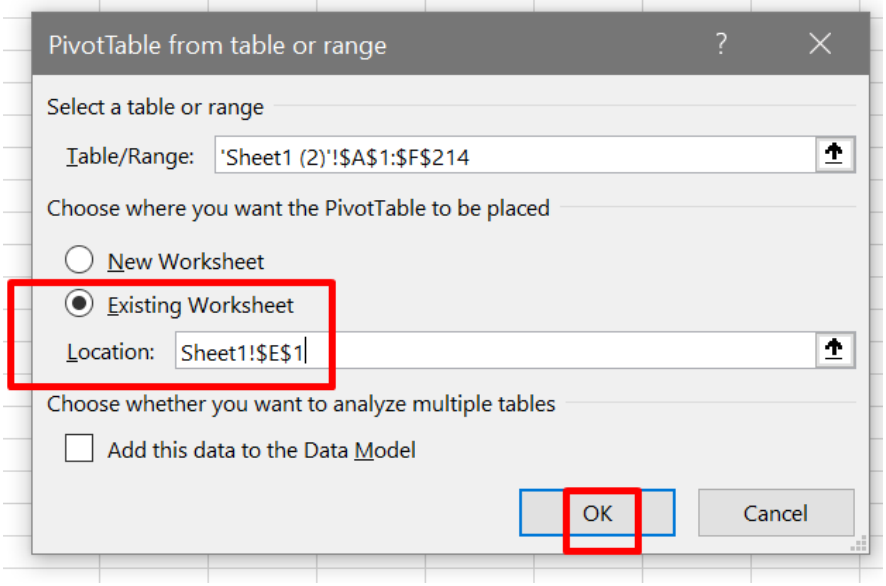
Country	United States
Row Labels	**Sum of Amount**
Banana	95061
Broccoli	26715
Beans	7163
Grand Total	**128939**

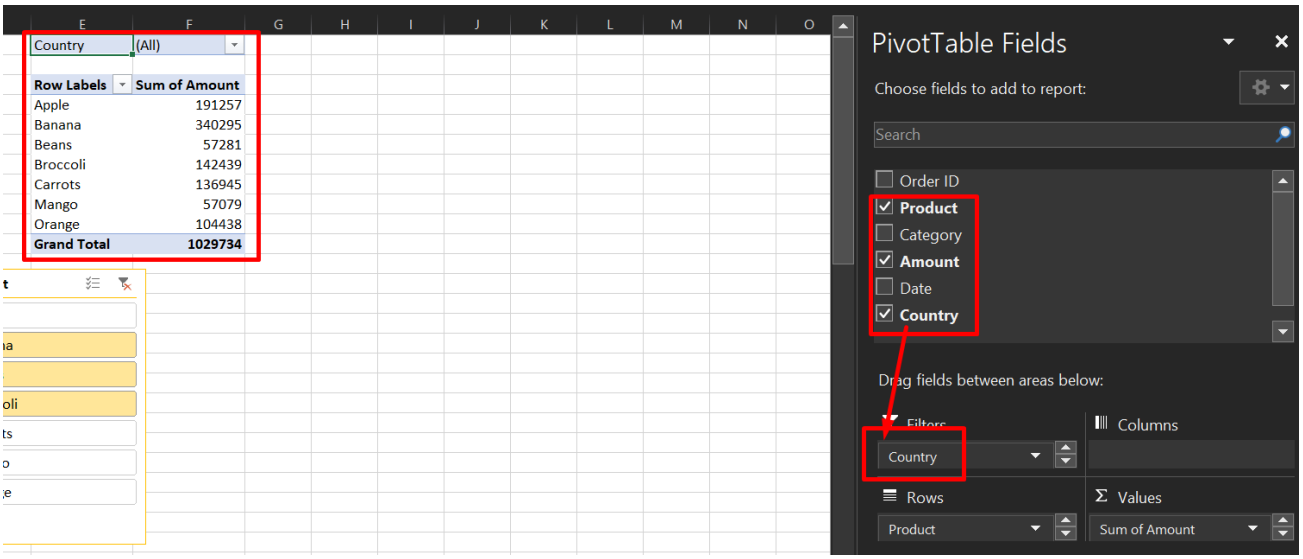
d) Slicer with Second Pivot Table

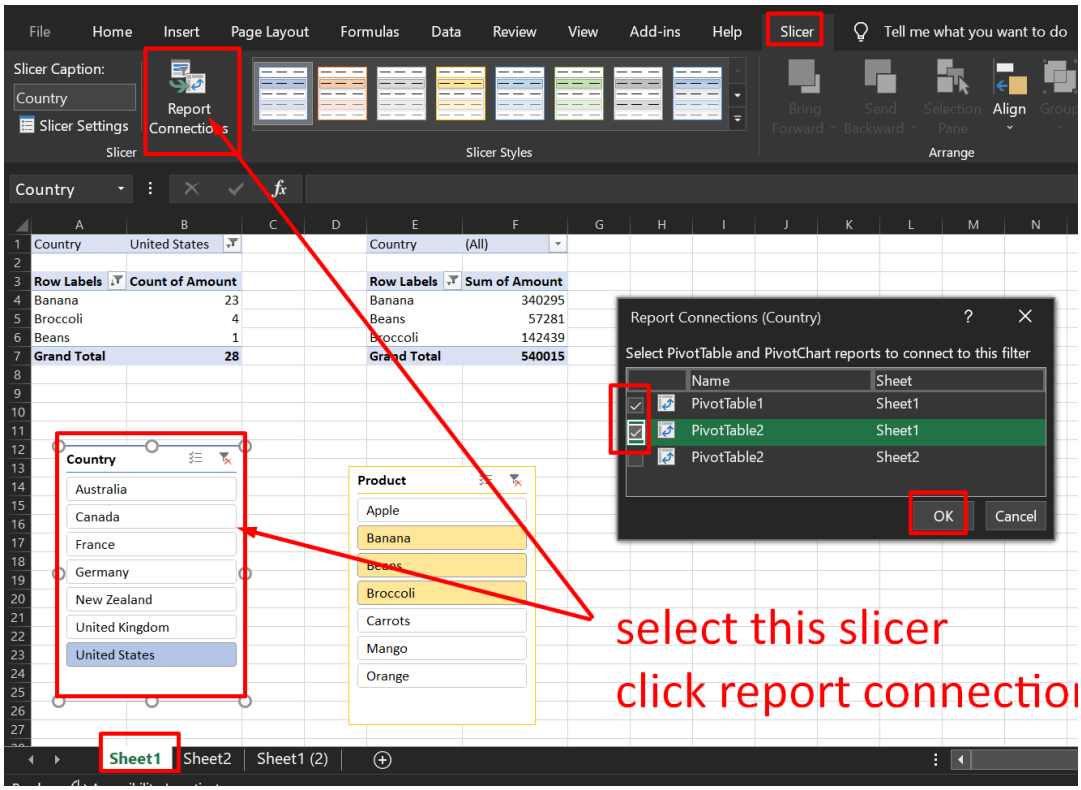


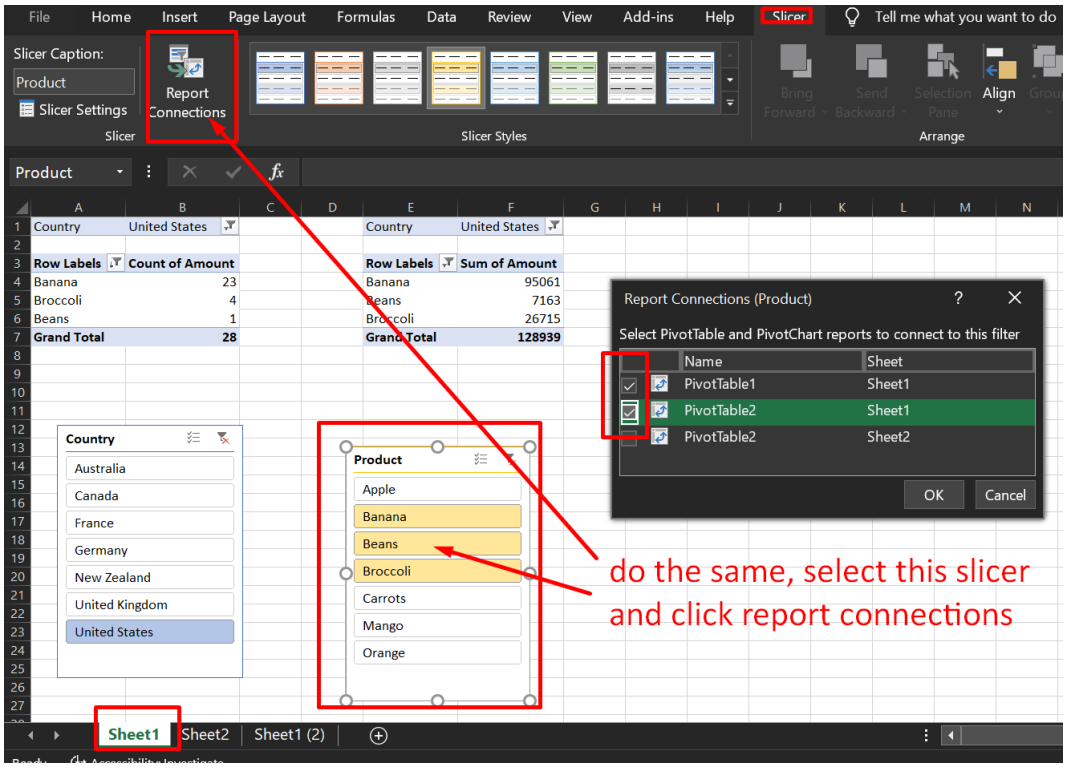


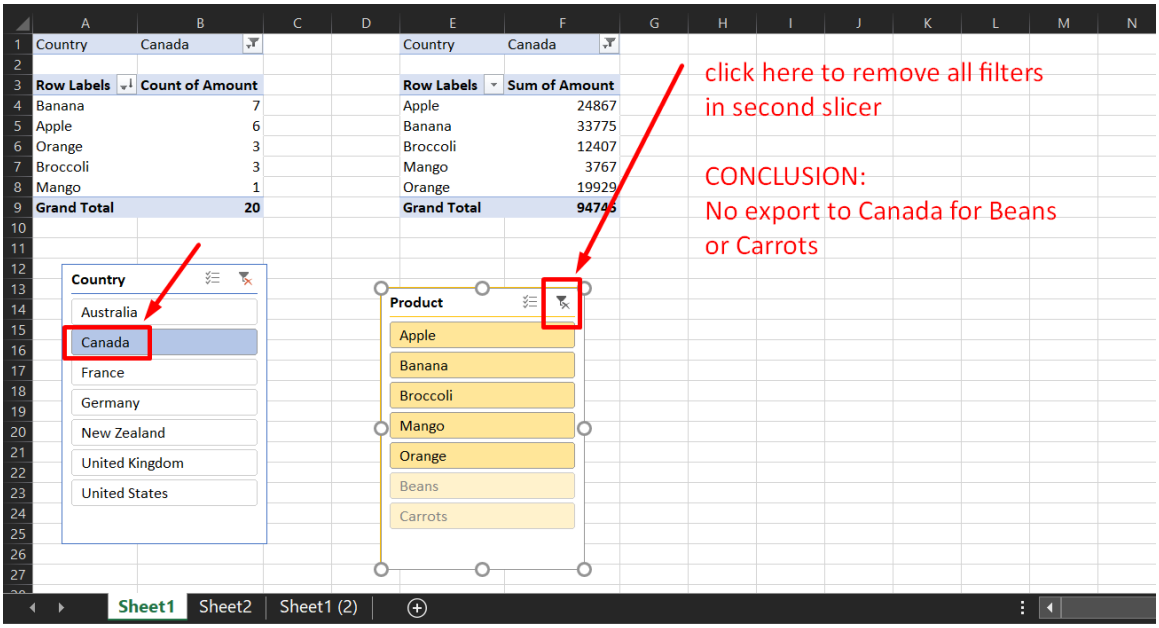


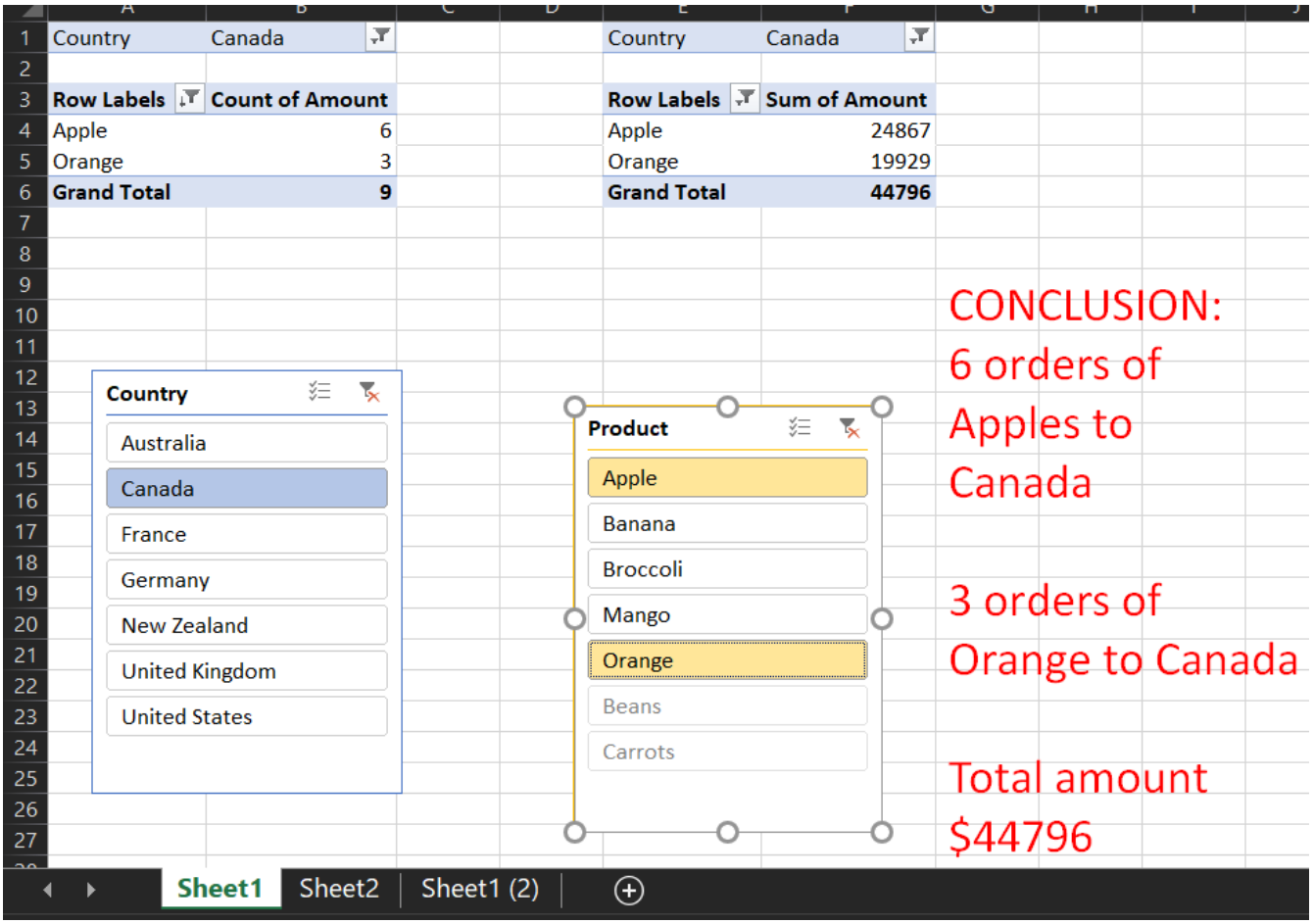






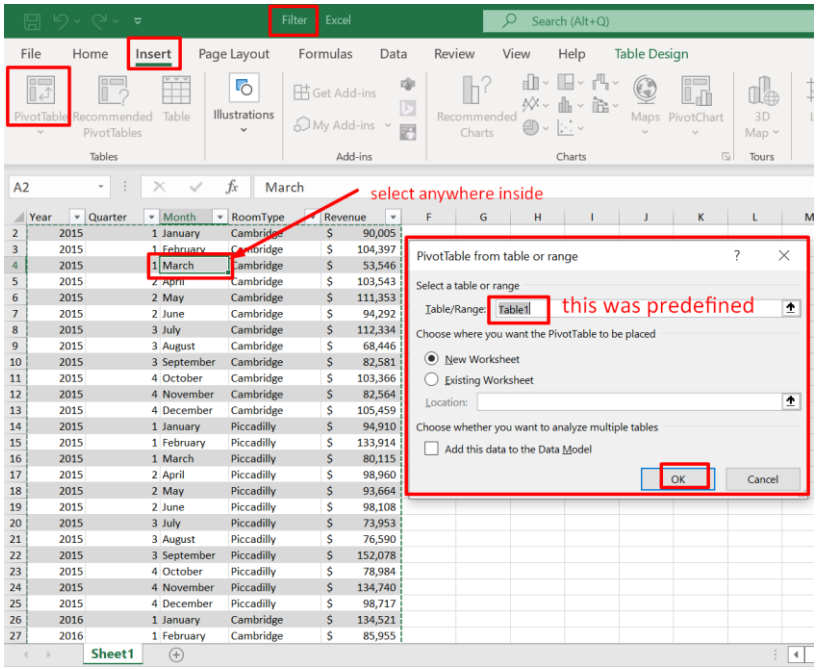


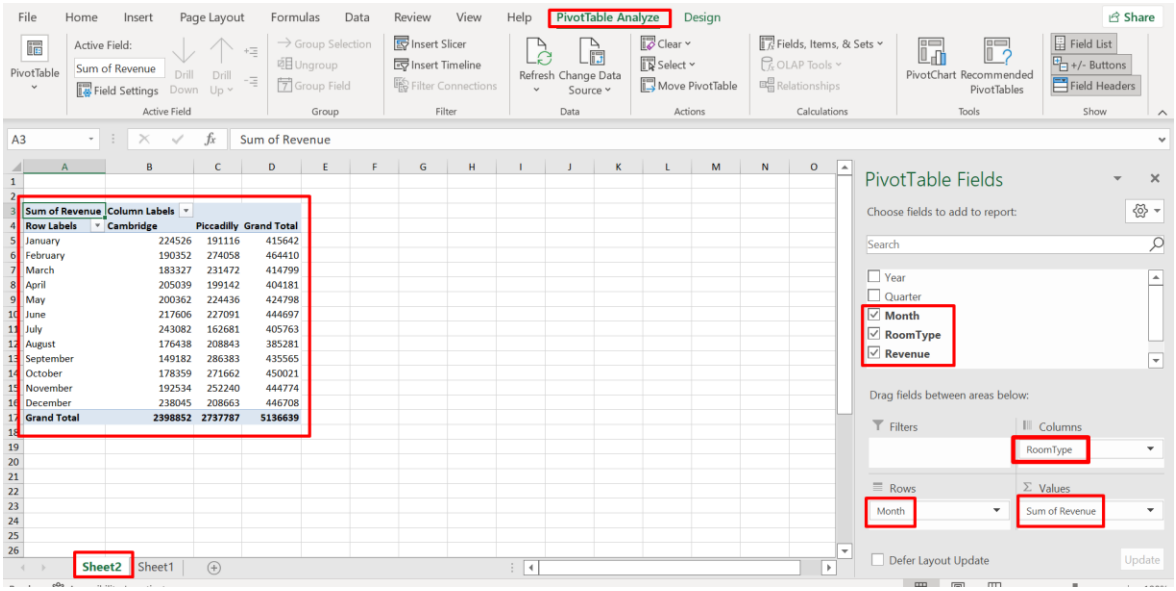


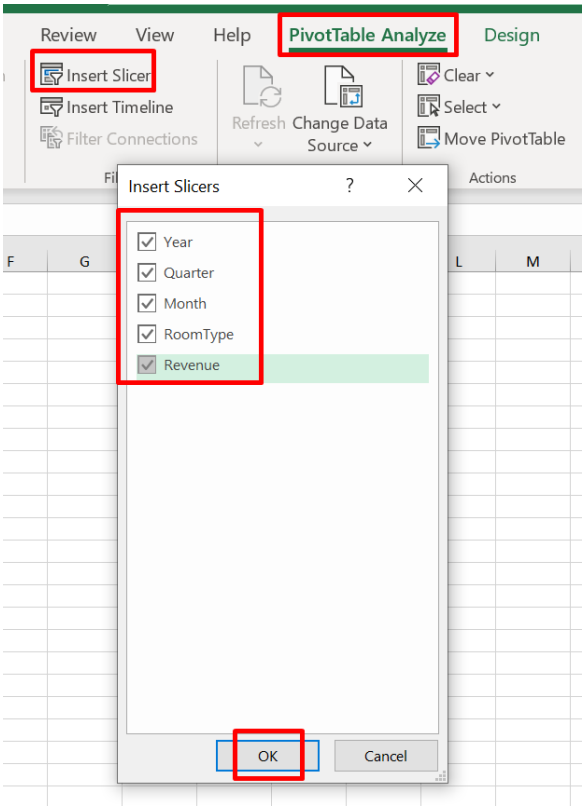


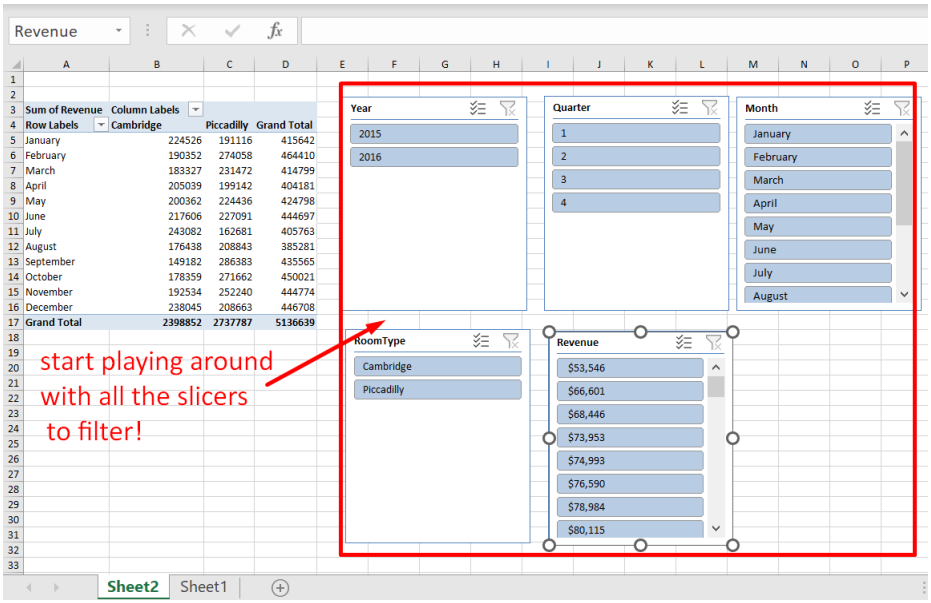
2. SLICERS USING FILTER.XLSX

https://www.alvinang.sg/s/Filter.xlsx





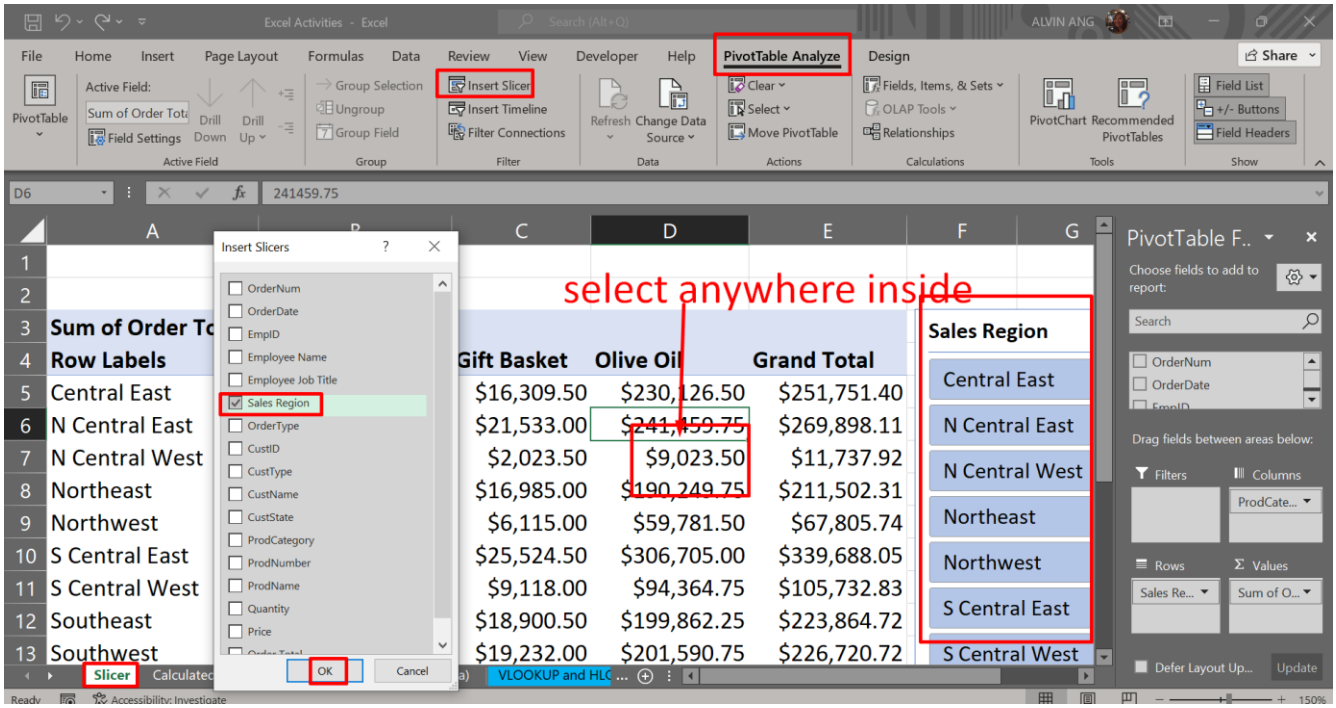




3. ACTIVITY: SLICER

https://www.alvinang.sg/s/Excel-Activities-1.xlsx

a) Answer to Slicer

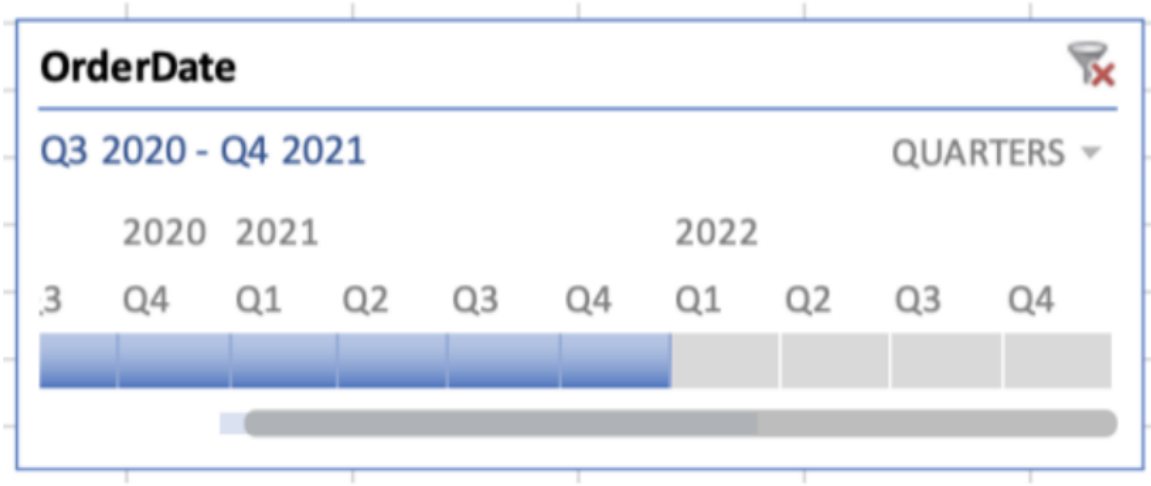


4. ACTIVITY: TIMELINE

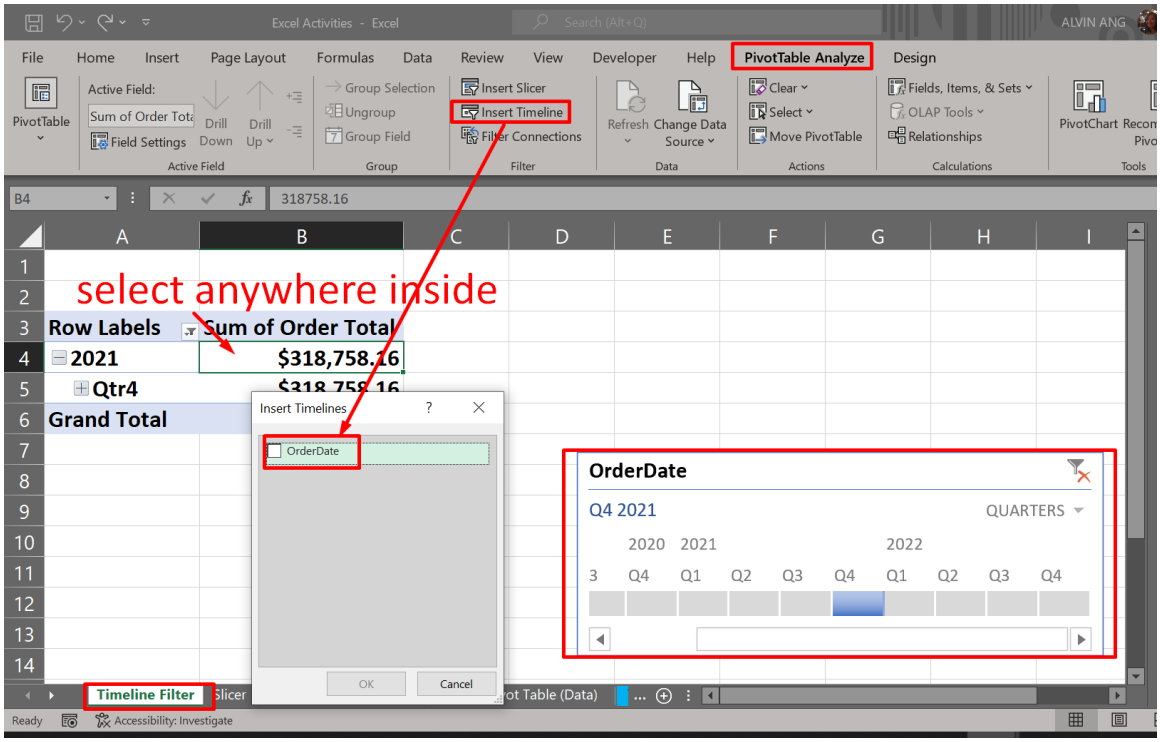
https://www.alvinang.sg/s/Excel-Activities-1.xlsx

Activity: Timeline Filter

- Open topic4.xlxs
- Select Timeline worksheet
- Add a timeline filter for the order date.

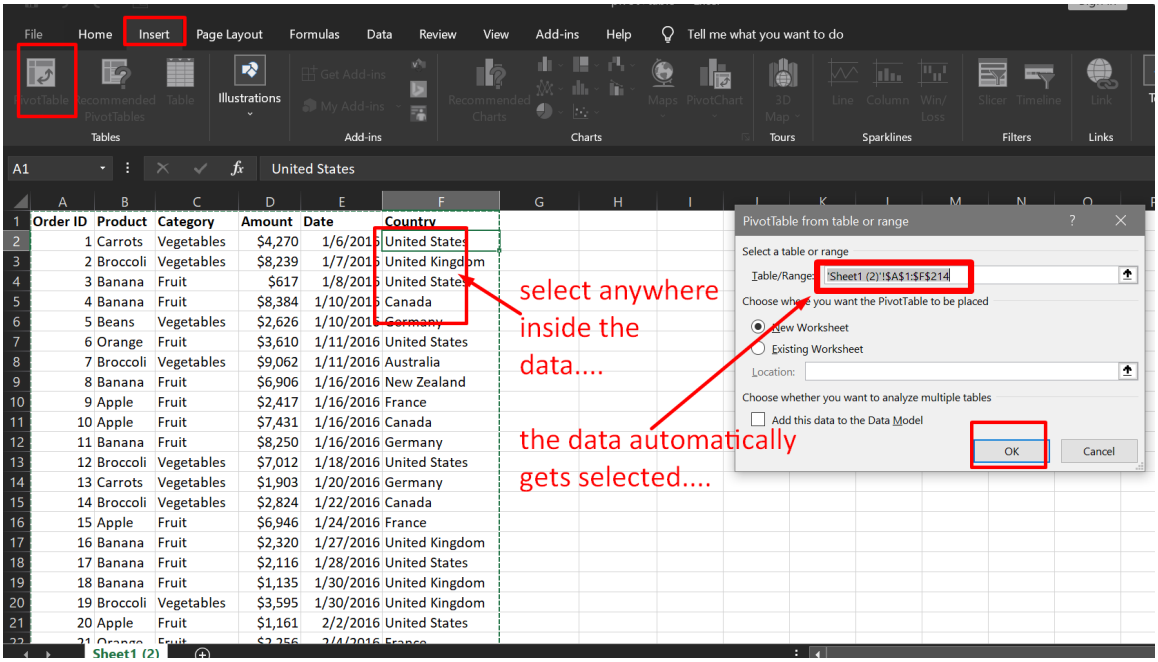


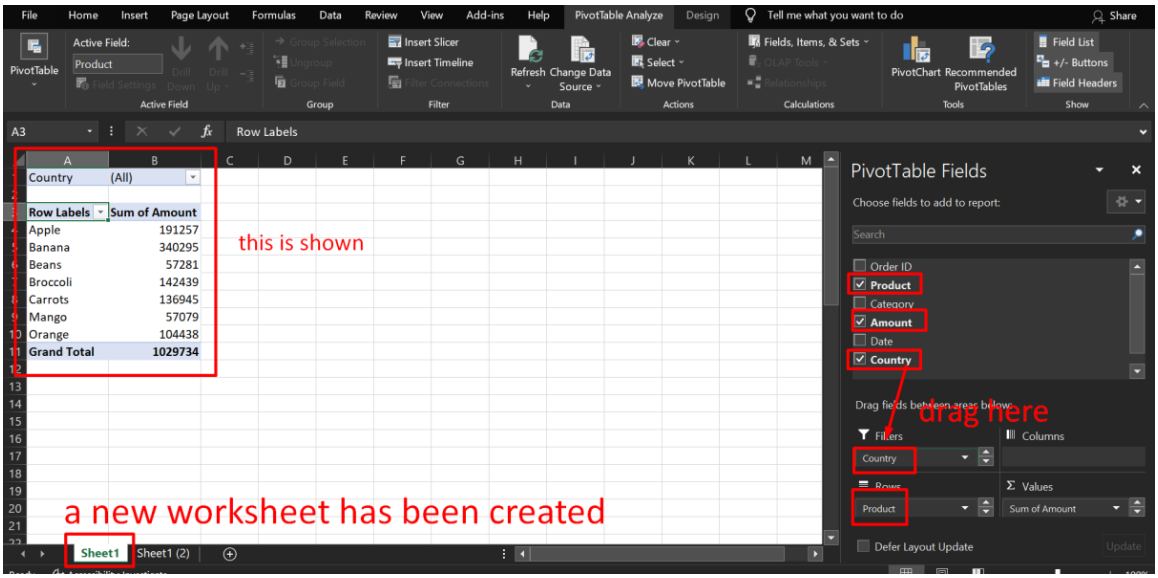
a) Answer to Timeline

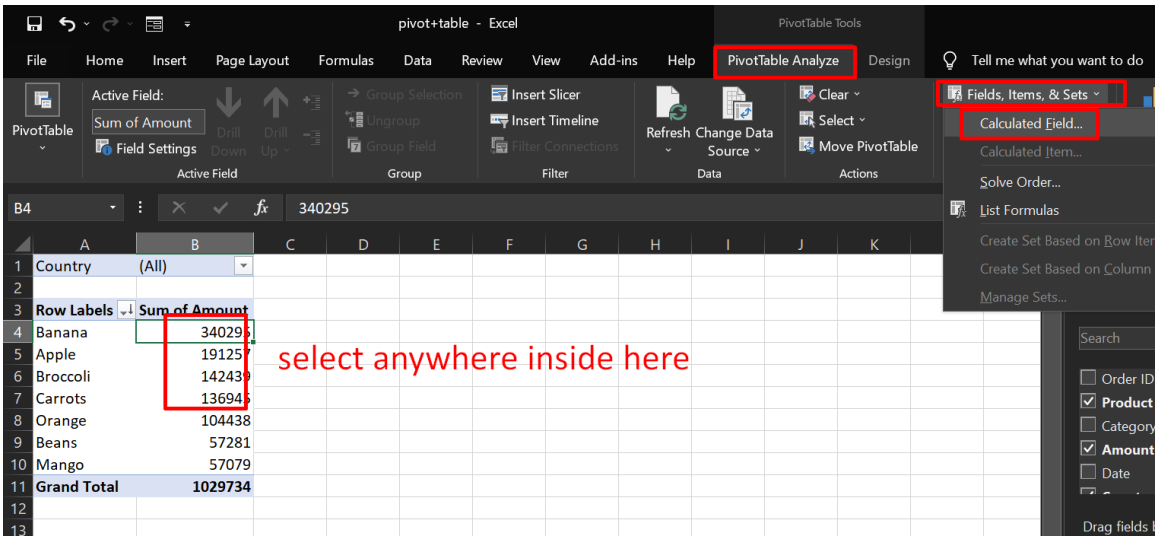


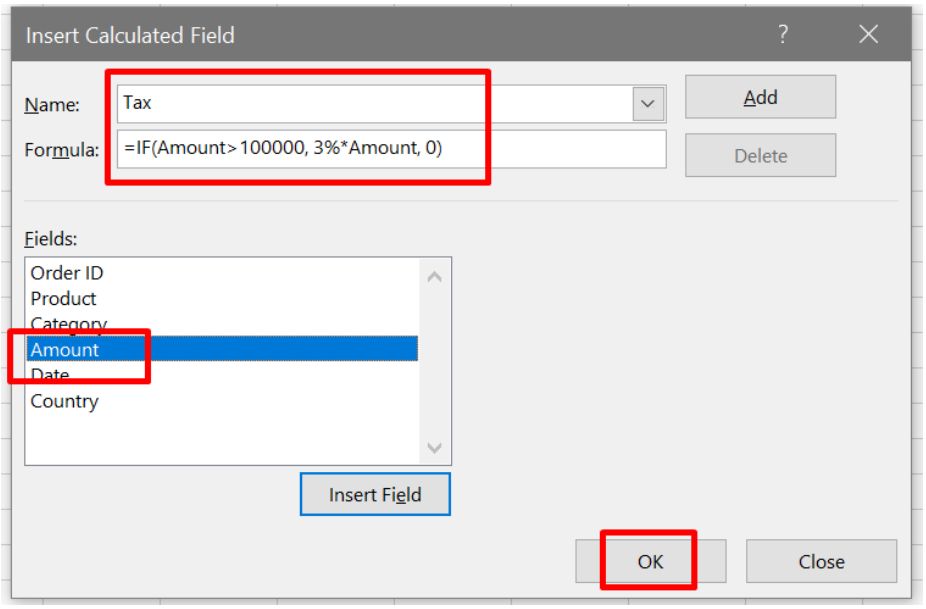
G. CALCULATED FIELDS

File: https://www.alvinang.sg/s/pivot-table.xlsx

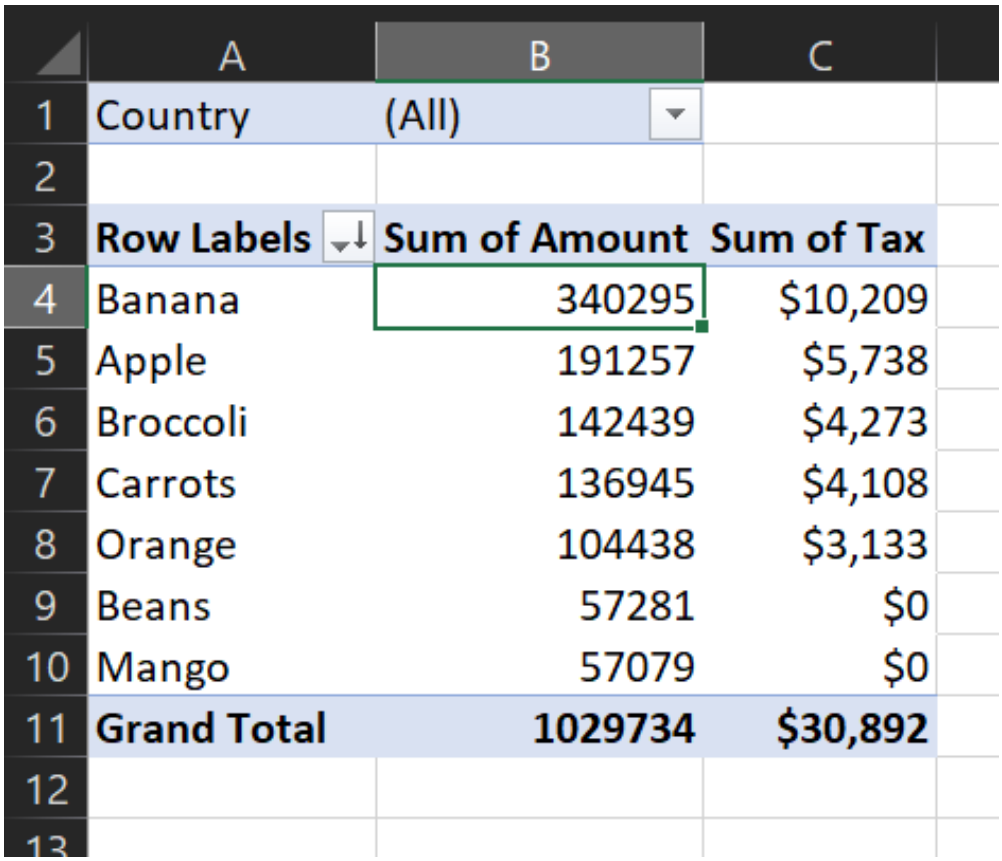








=IF(Amount>100000, 3%*Amount, 0)



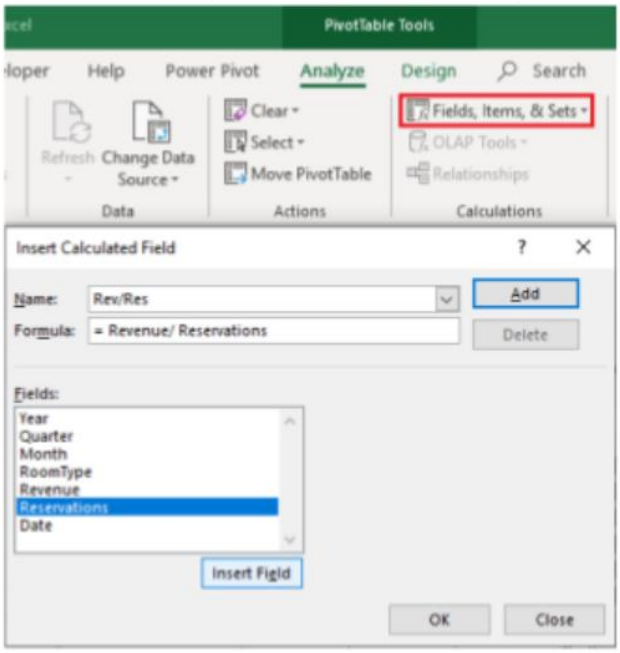
	A	B	C
1	Country	(All)	
2			
3	**Row Labels**	**Sum of Amount**	**Sum of Tax**
4	Banana	340295	$10,209
5	Apple	191257	$5,738
6	Broccoli	142439	$4,273
7	Carrots	136945	$4,108
8	Orange	104438	$3,133
9	Beans	57281	$0
10	Mango	57079	$0
11	**Grand Total**	**1029734**	**$30,892**
12			
13			

1. ACTIVITY: CALCULATED FIELD

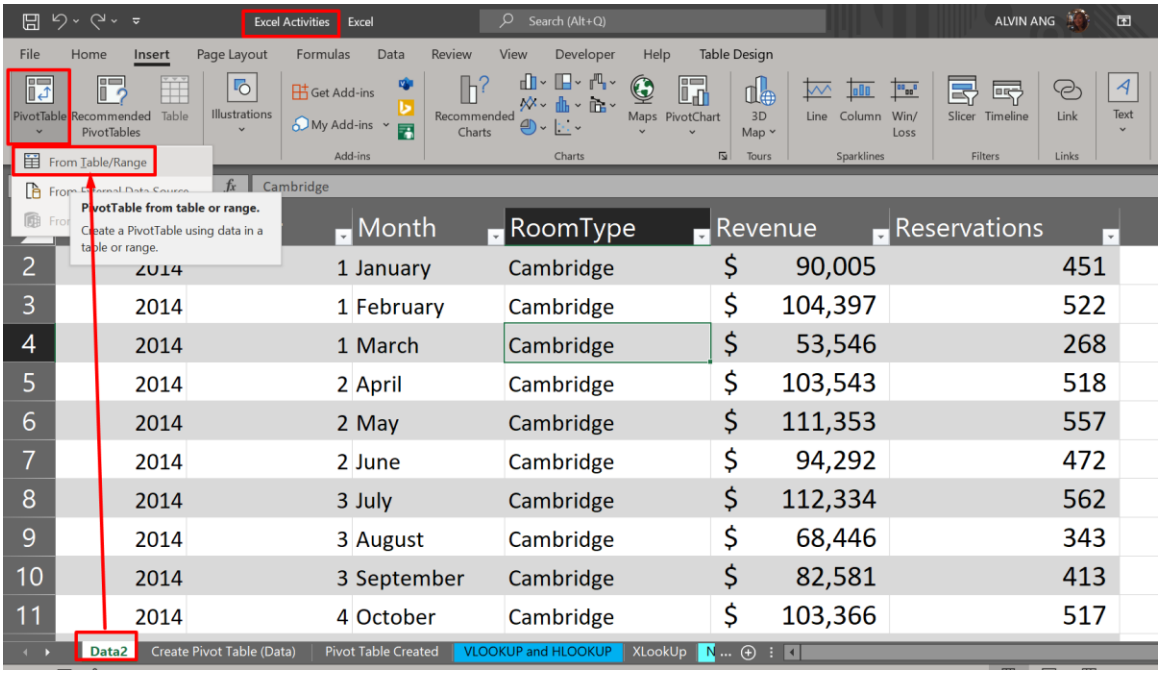
https://www.alvinang.sg/s/Excel-Activities-1.xlsx

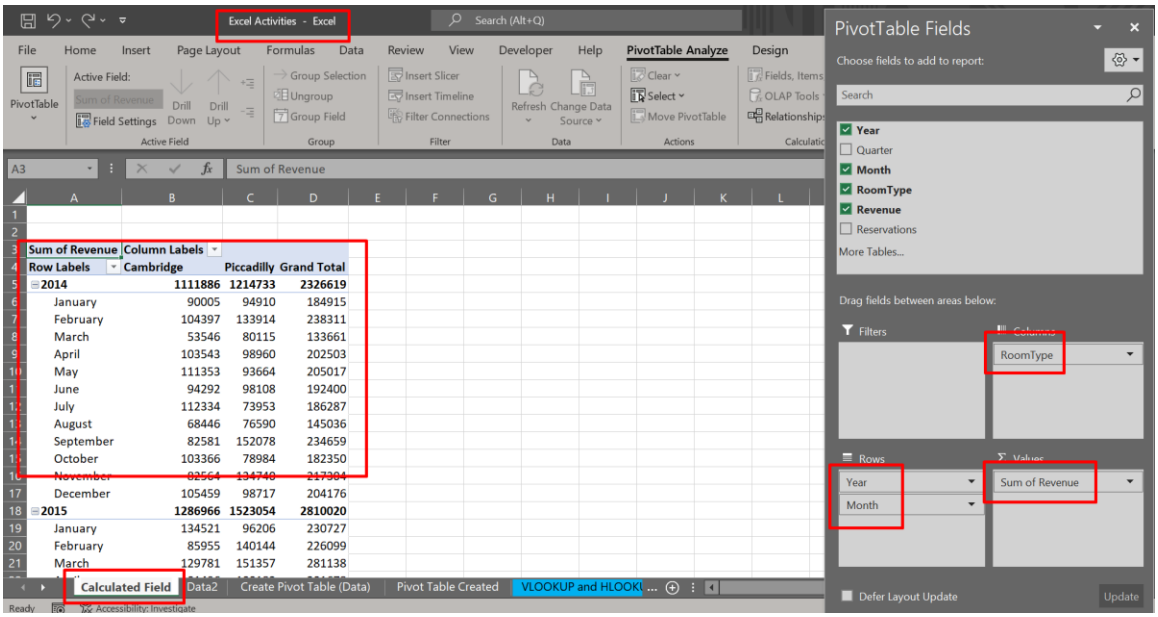
Activity: Calculated Field

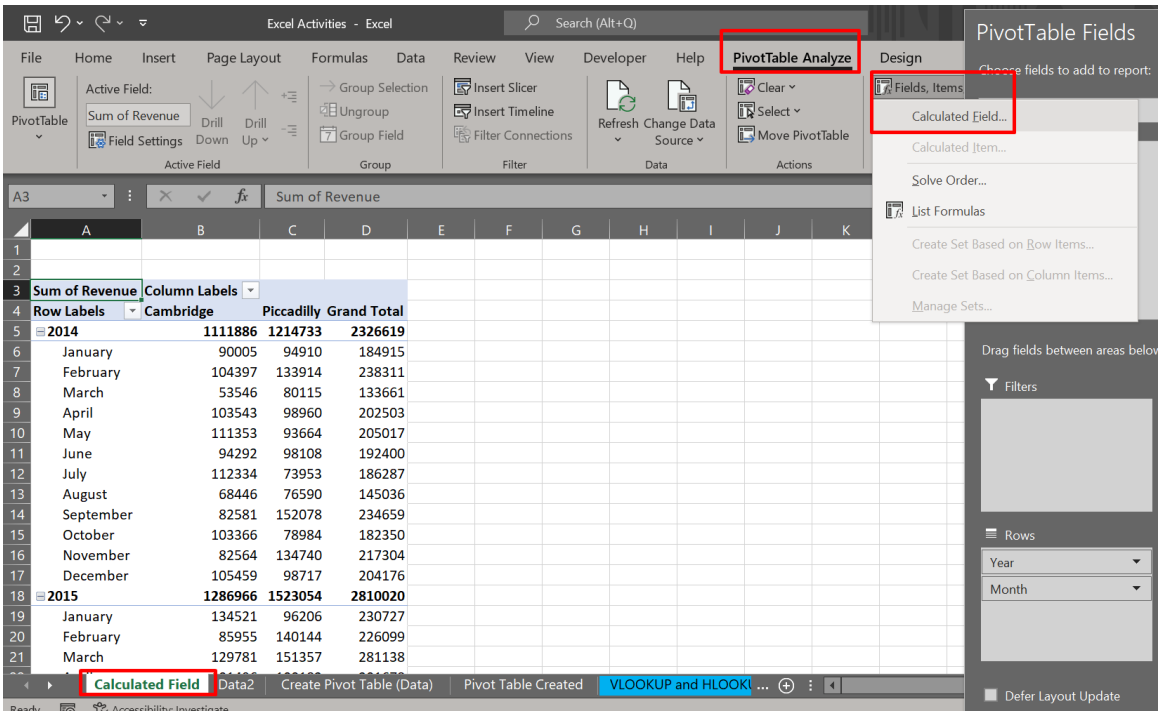
- Open topic4.xlxs
- Select Calculated Field worksheet
- Add a new field Rev/Res = Revenue/Reservations

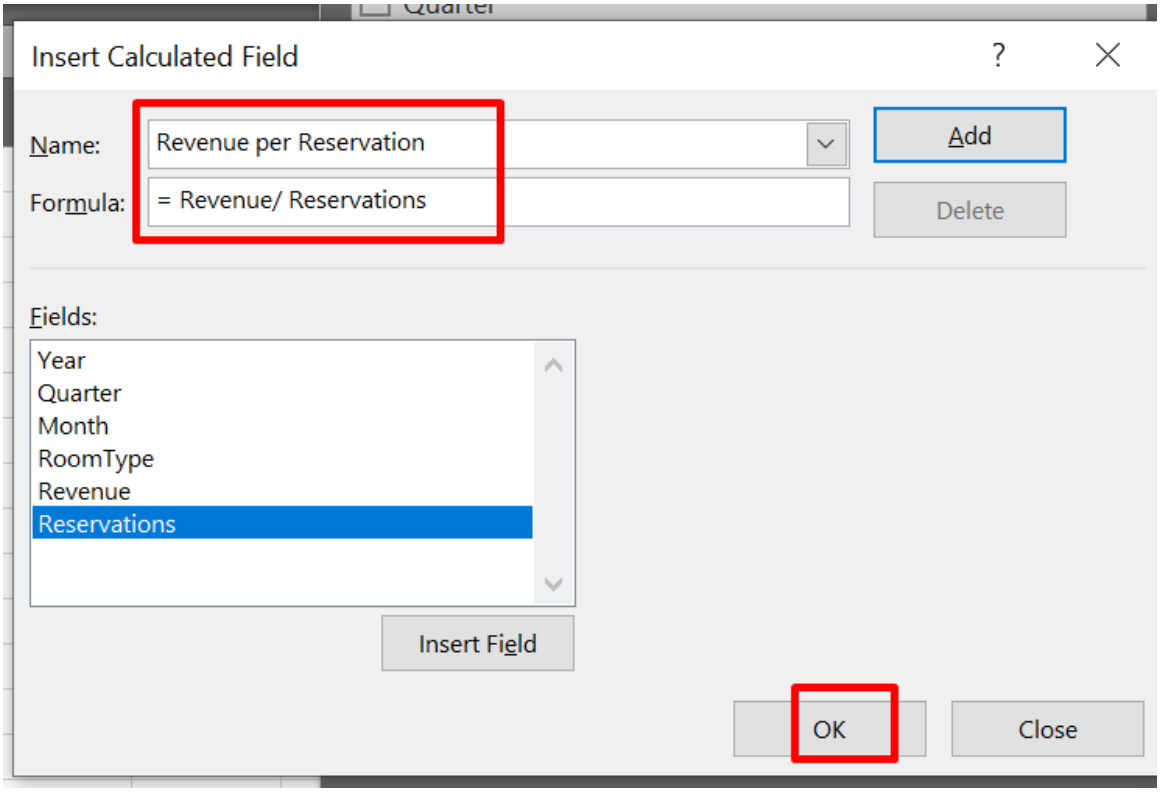


2. ANSWER TO CALCULATED FIELD









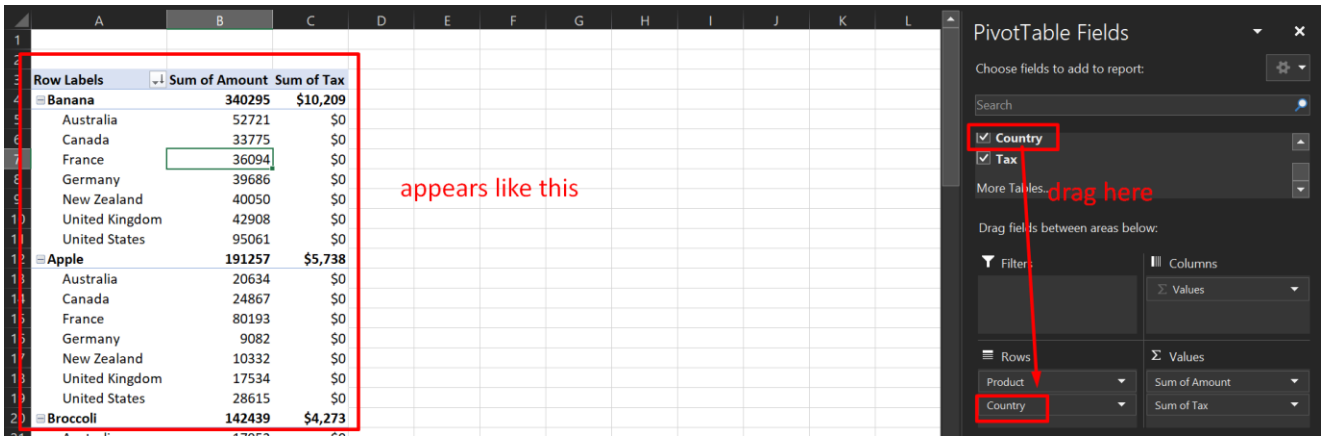
FINAL ANSWER FOR CALCULATED FIELD

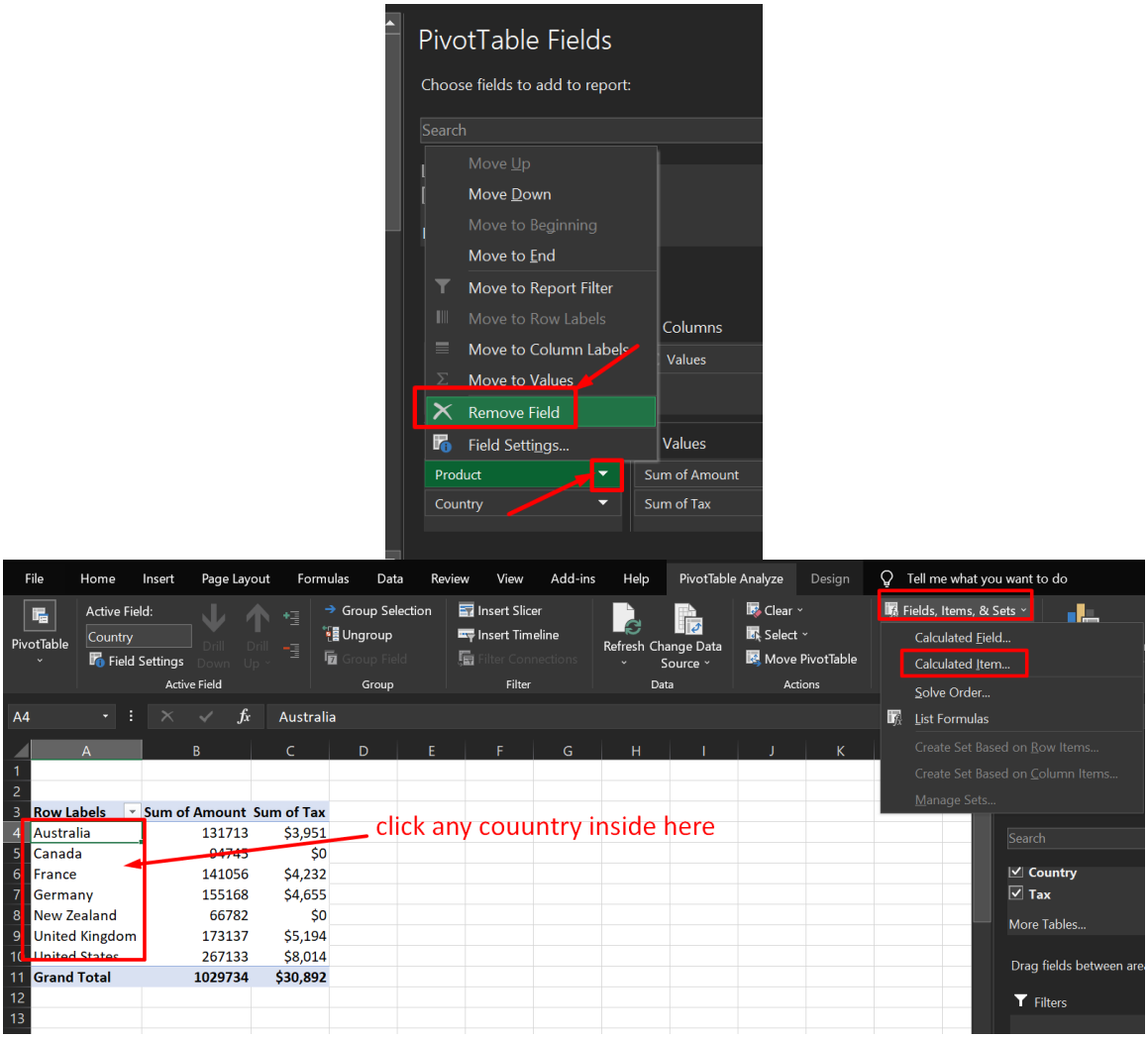
Row Labels	Cambridge Sum of Revenue	Cambridge Sum of Revenue per Reservation	Piccadilly Sum of Revenue	Piccadilly Sum of Revenue per Reservation	Total Sum of Revenue	Total Sum of Revenue per Reservation
2014	**1111886**	**199.8357297**	**1214733**	**274.702171**	**2326619**	**232.9880833**
January	90005	199.5676275	94910	274.3063584	184915	232.0138018
February	104397	199.9942529	133914	274.9774127	238311	236.185332
March	53546	199.7985075	80115	274.3664384	133661	238.6803571
April	103543	199.8899614	98960	274.8888889	202503	230.6412301
May	111353	199.9156194	93664	274.6744868	205017	228.3040089
June	94292	199.7711864	98108	274.8123249	192400	232.0868516
July	112334	199.8825623	73953	274.9182156	186287	224.1720818
August	68446	199.5510204	76590	274.516129	145036	233.1768489
September	82581	199.9539952	152078	274.5090253	234659	242.6670114
October	103366	199.934236	78984	274.25	182350	226.5217391
November	82564	199.9128329	134740	274.9795918	217304	240.6467331
December	105459	199.7329545	98717	274.9777159	204176	230.1871477
2015	**1286966**	**199.8704768**	**1523054**	**274.72114**	**2810020**	**234.5005424**
January	134521	199.8826152	96206	274.8742857	230727	225.5395894
February	85955	199.8953488	140144	274.7921569	226099	240.5308511
March	129781	199.9707242	151357	274.6950998	281138	234.2816667
April	101496	199.7952756	100182	274.4712329	201678	231.0171821
May	89009	199.5717489	130772	274.7310924	219781	238.3741866
June	123314	199.8606159	128983	274.4319149	252297	232.1039558
July	130748	199.9204893	88728	274.6996904	219476	224.642784
August	107992	199.9851852	132253	274.954262	240245	235.3036239

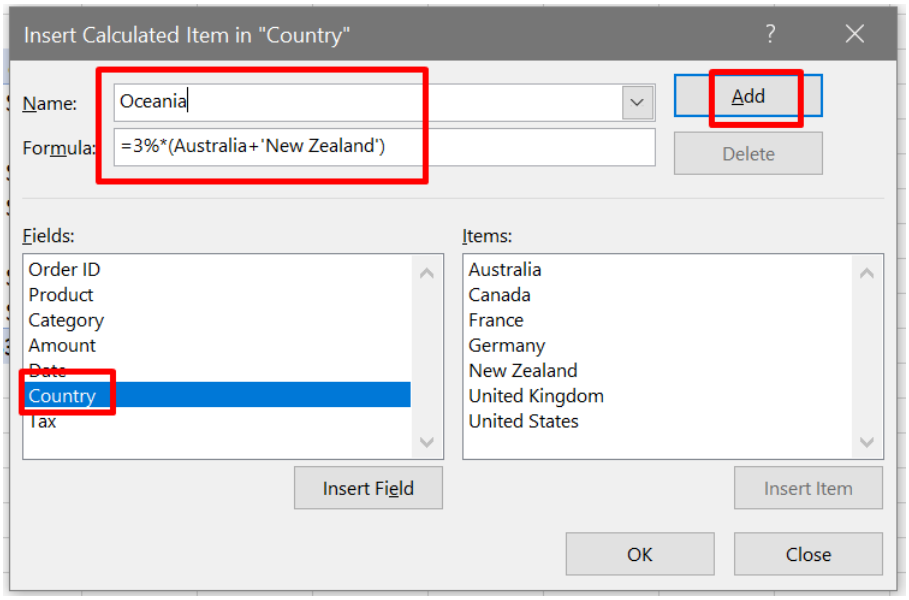
Calculated Field | Data2 | Create Pivot Table (Data) | Pivot Table Created

H. CALCULATED ITEM

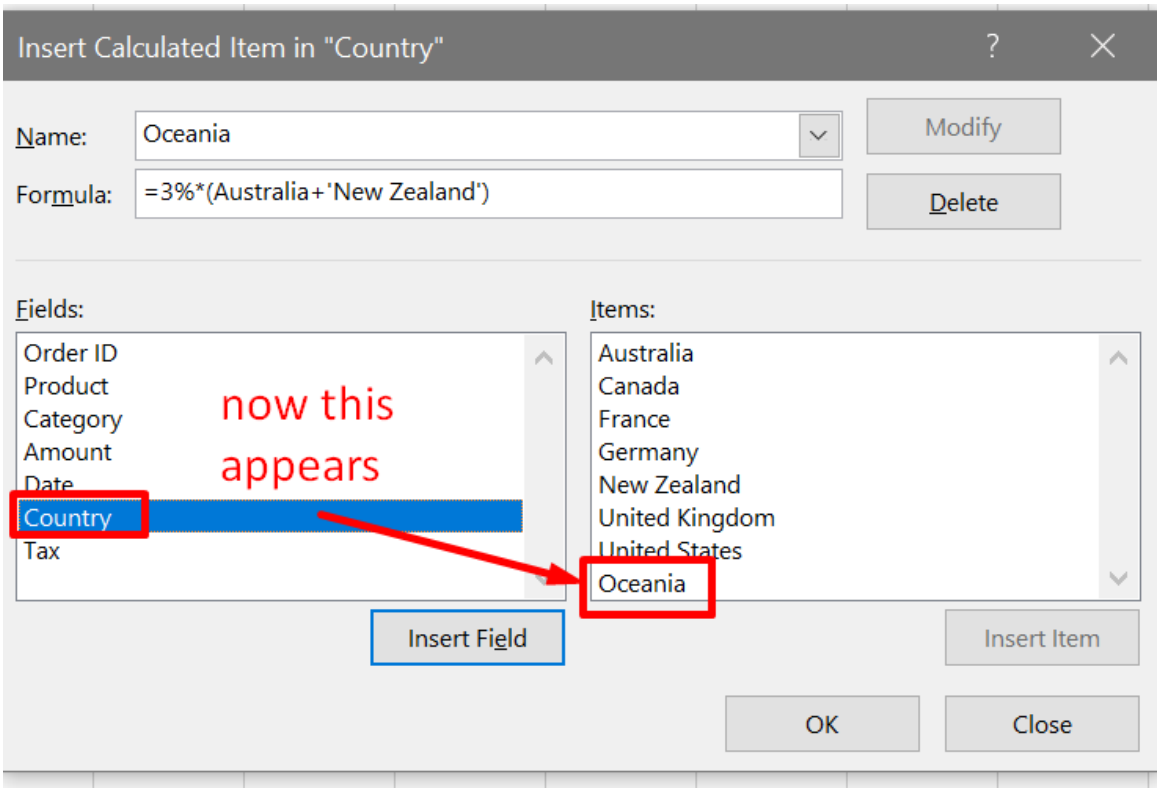
File: https://www.alvinang.sg/s/pivot-table.xlsx

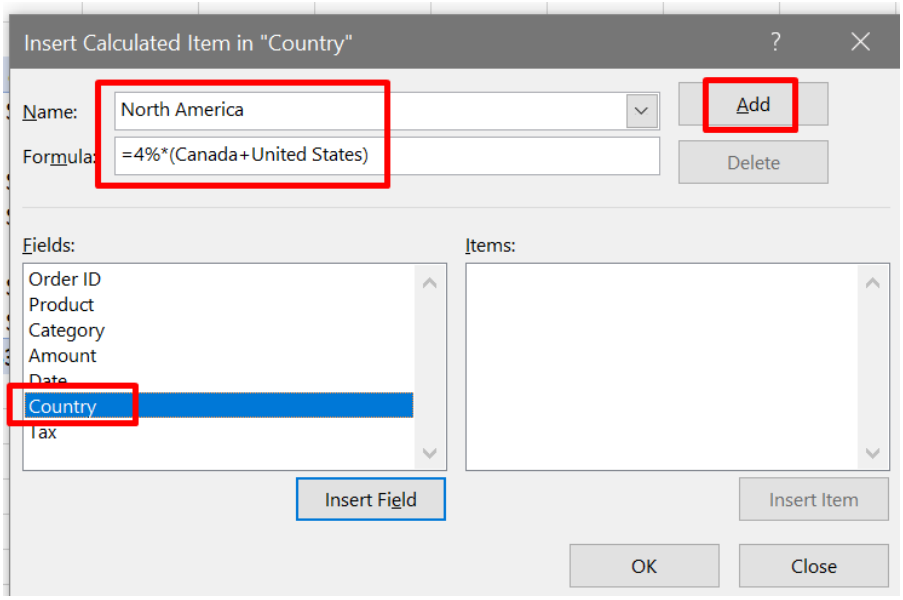




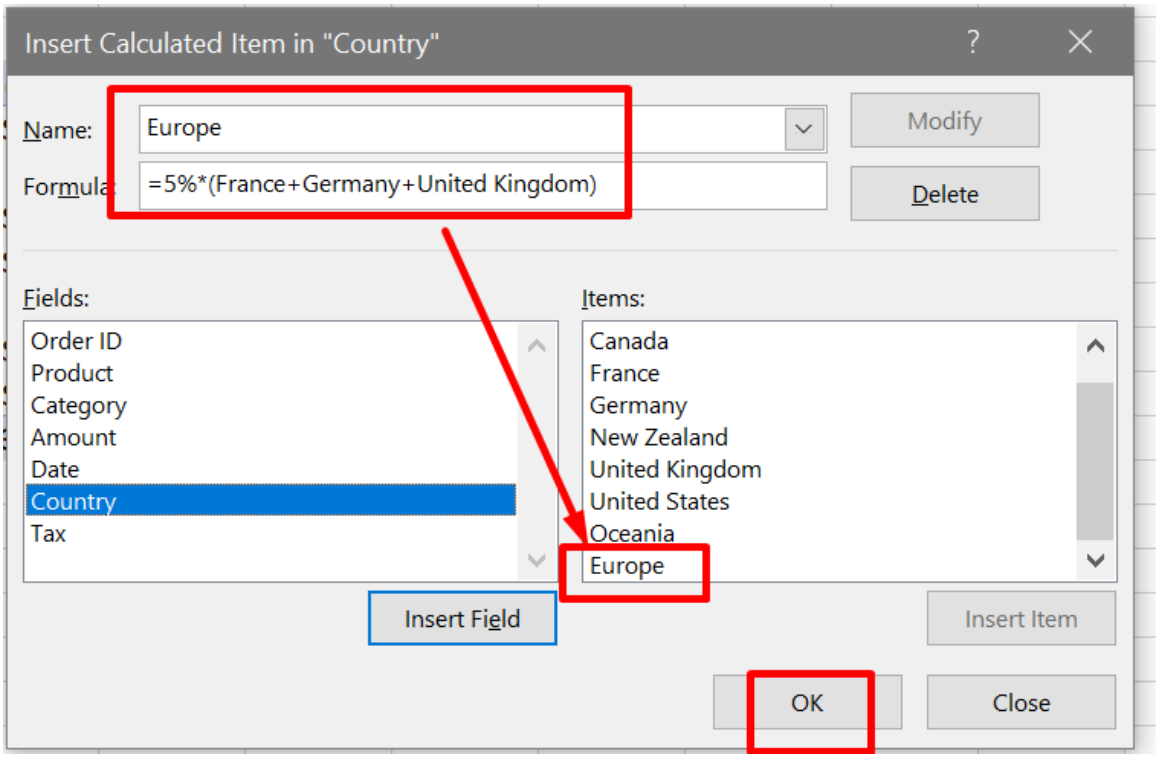


=3%*(Australia+'New Zealand')

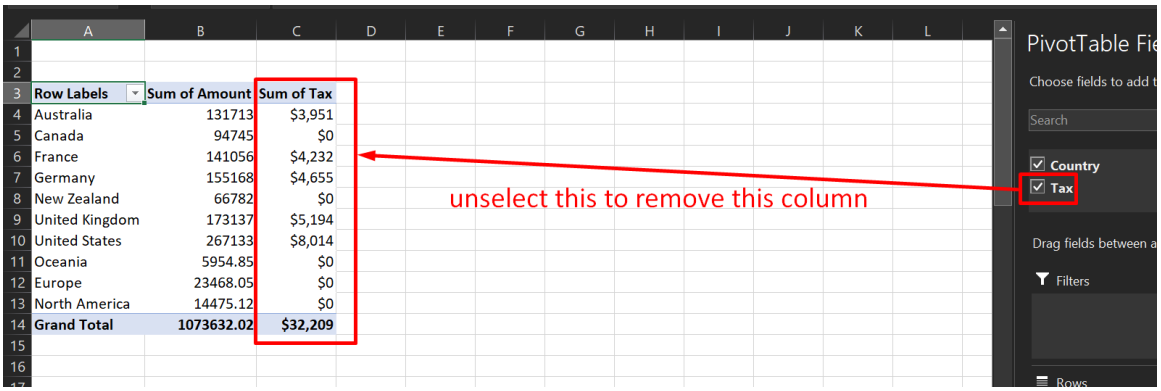


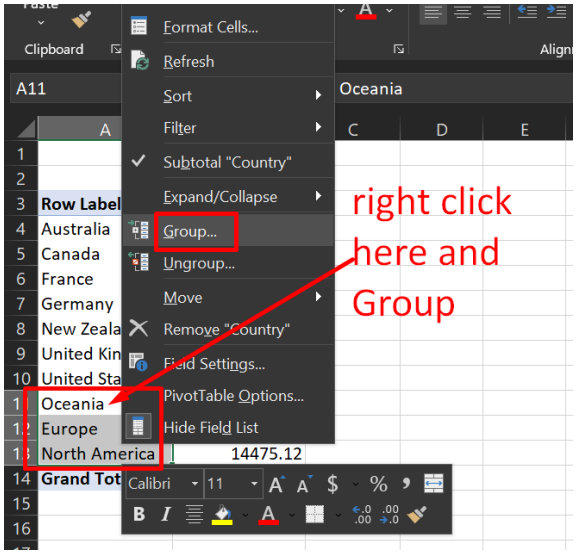


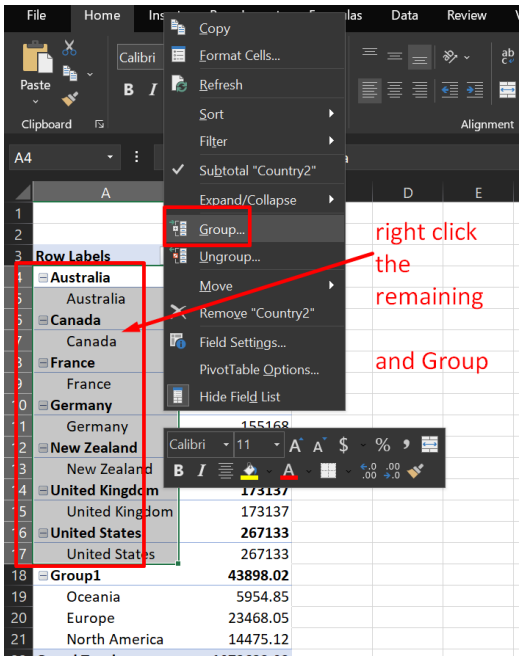
=4%*(Canada+United States)

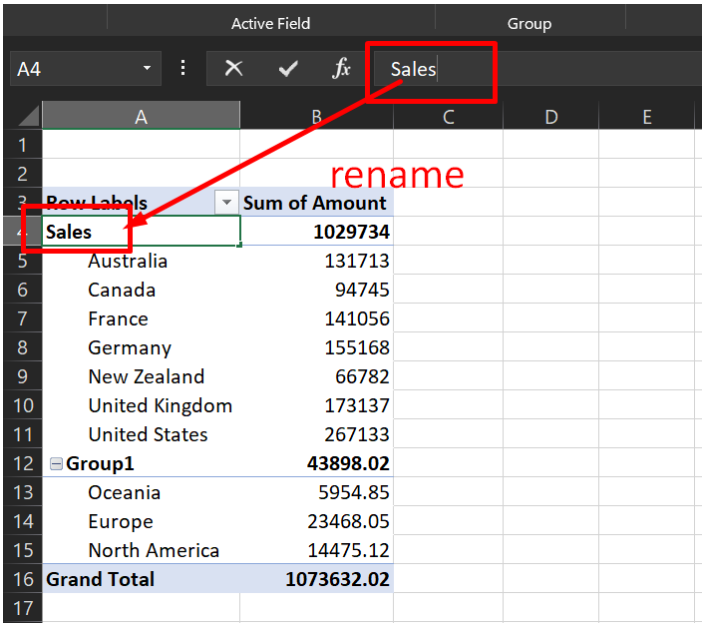


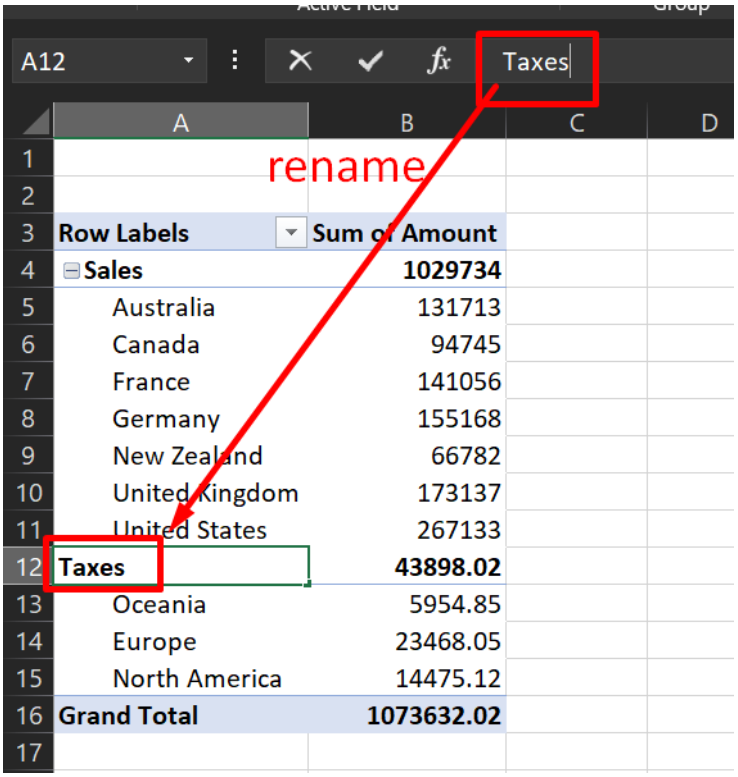
=5%*(France+Germany+United Kingdom)





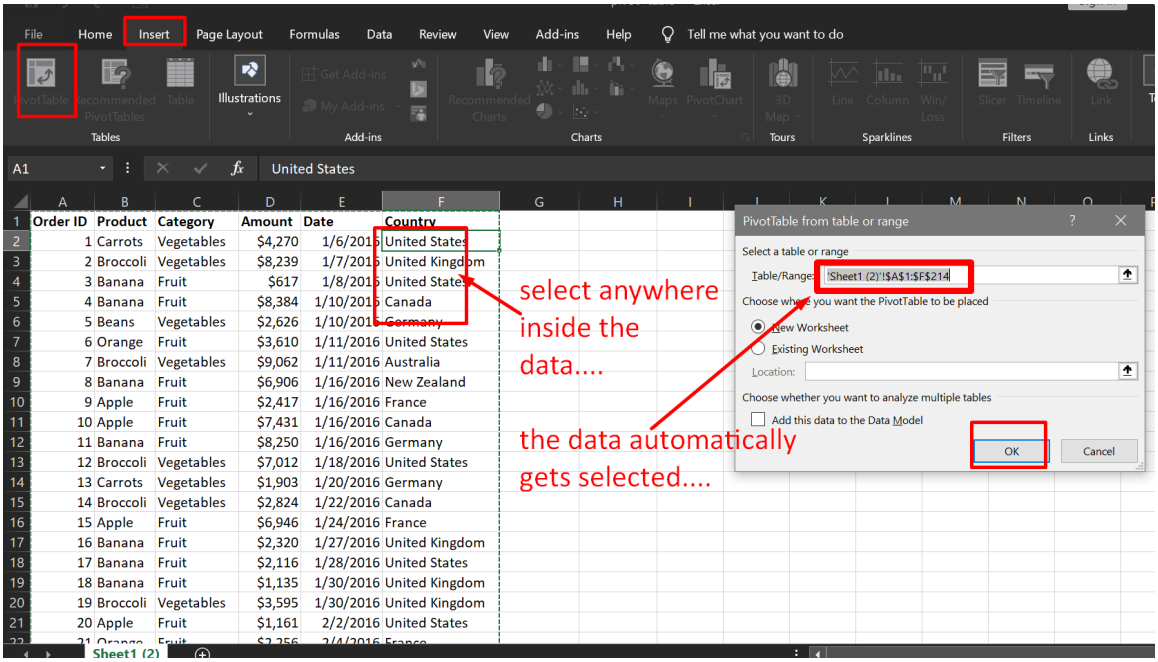


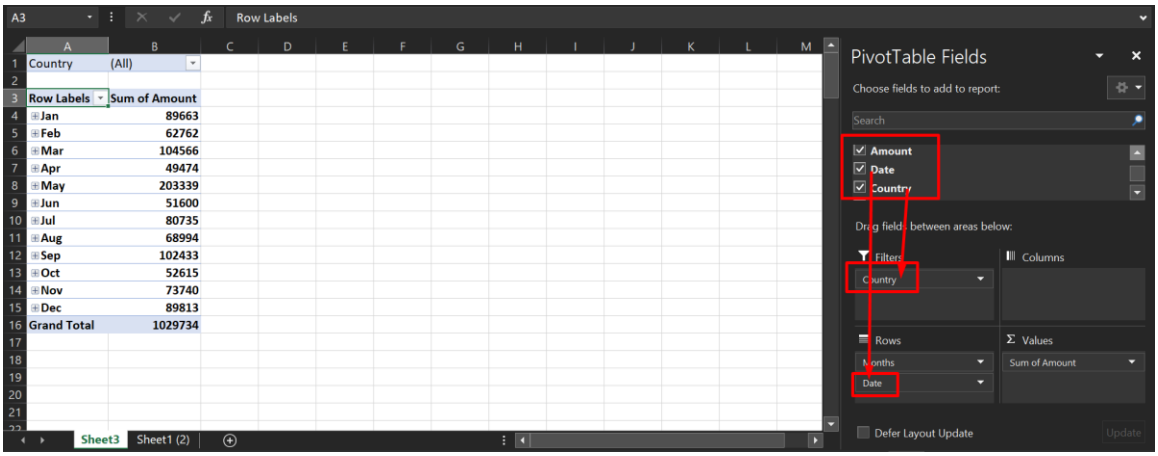




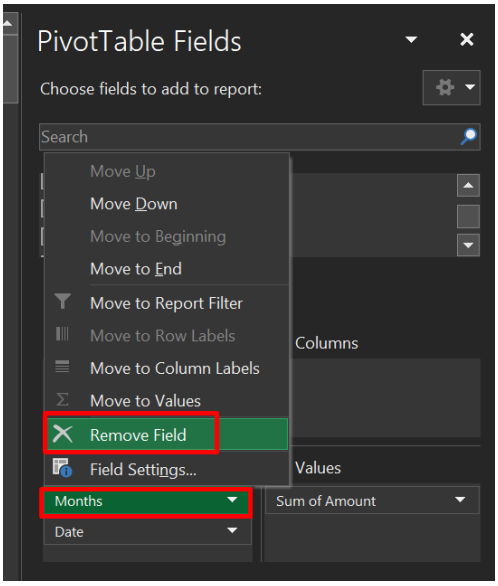
I. GROUP PIVOT TABLE DATES

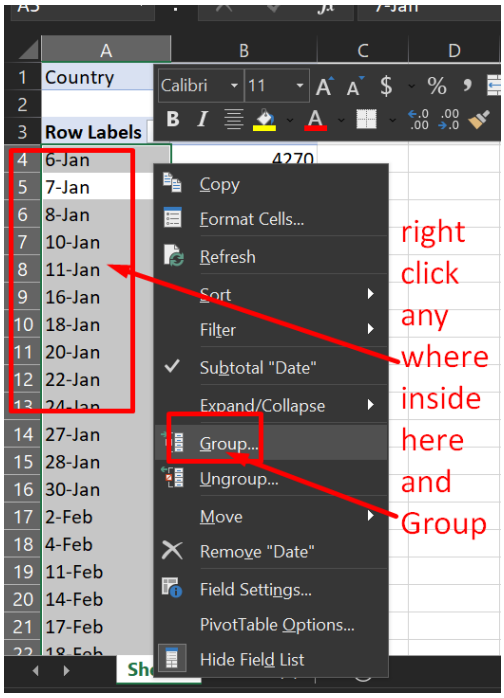
File: https://www.alvinang.sg/s/pivot-table.xlsx

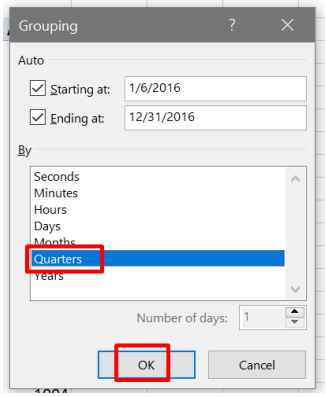


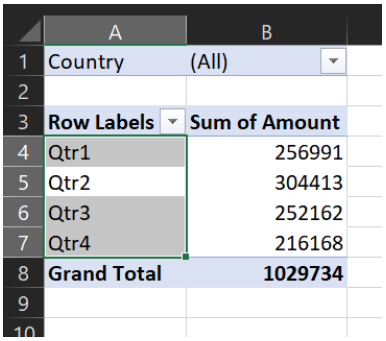


Row Labels	Sum of Amount
Jan	89663
Feb	62762
Mar	104566
Apr	49474
May	203339
Jun	51600
Jul	80735
Aug	68994
Sep	102433
Oct	52615
Nov	73740
Dec	89813
Grand Total	1029734







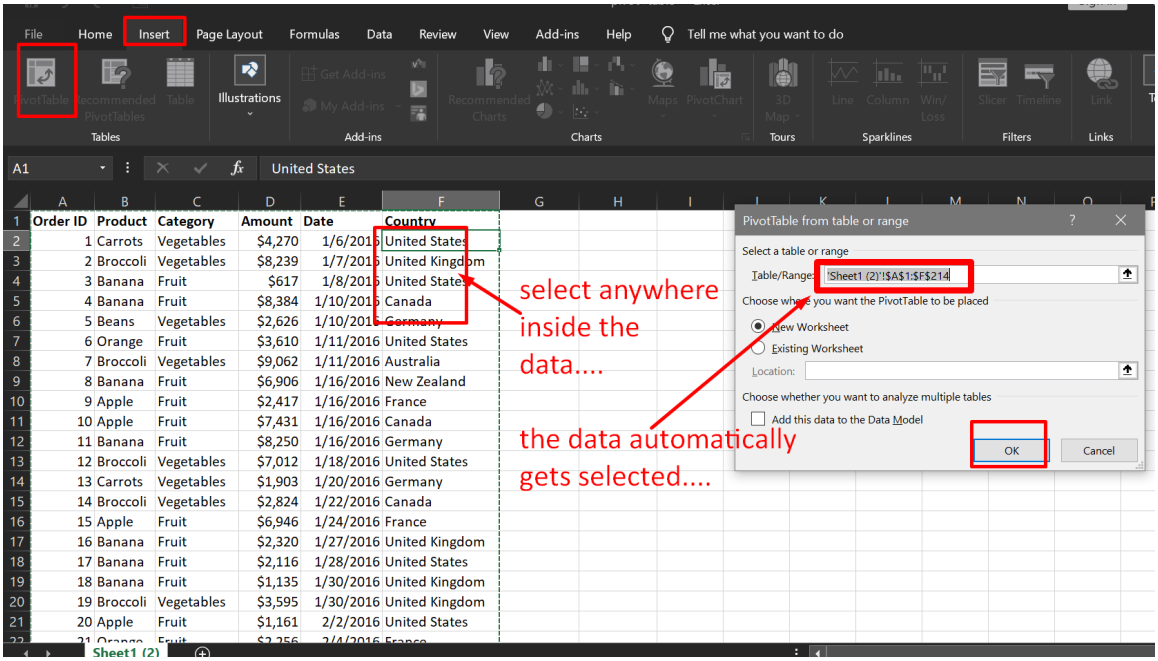


	A	B
1	Country	(All)
2		
3	**Row Labels**	**Sum of Amount**
4	Qtr1	256991
5	Qtr2	304413
6	Qtr3	252162
7	Qtr4	216168
8	**Grand Total**	**1029734**
9		
10		

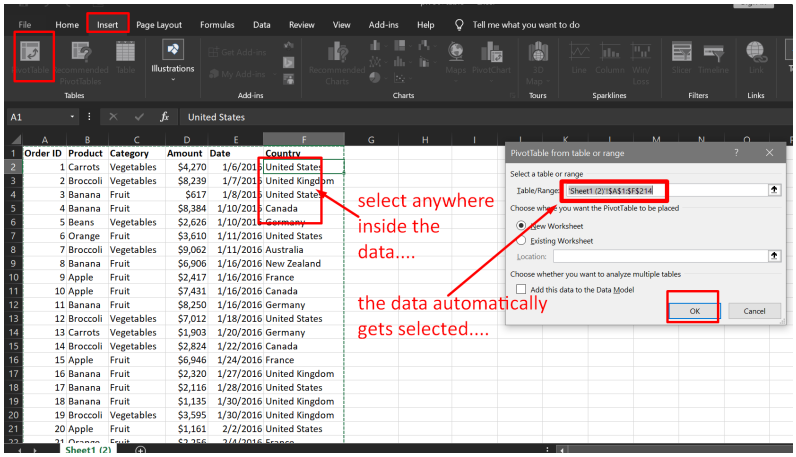
J. MULTI LEVEL PIVOT TABLE

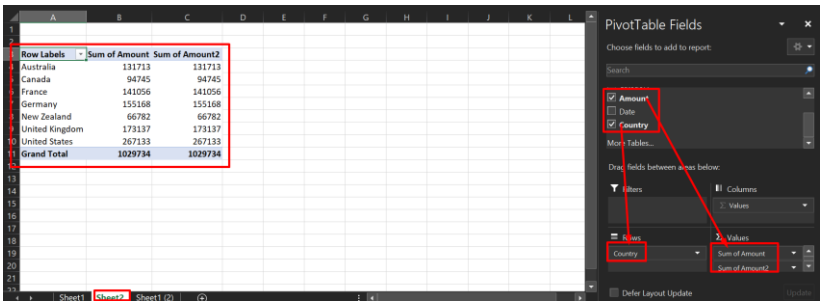
File: https://www.alvinang.sg/s/pivot-table.xlsx

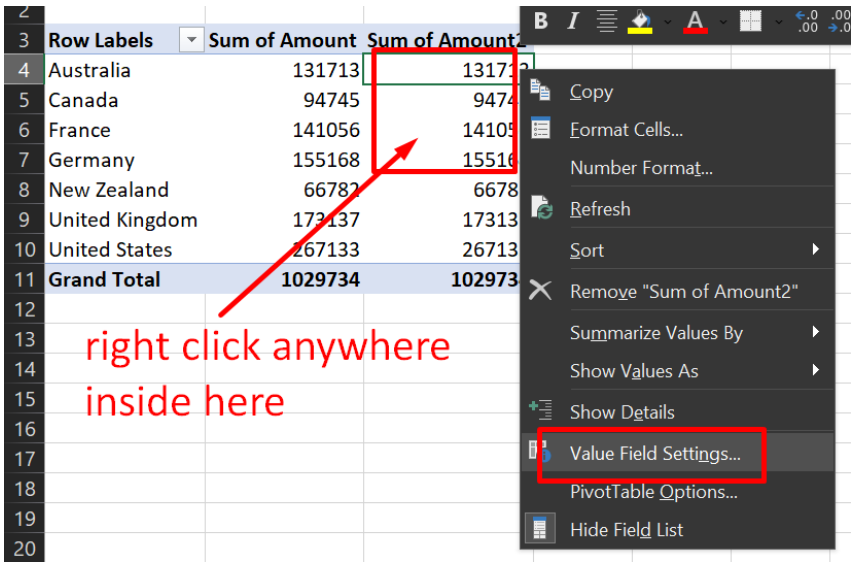
1. MULTIPLE ROW FIELDS

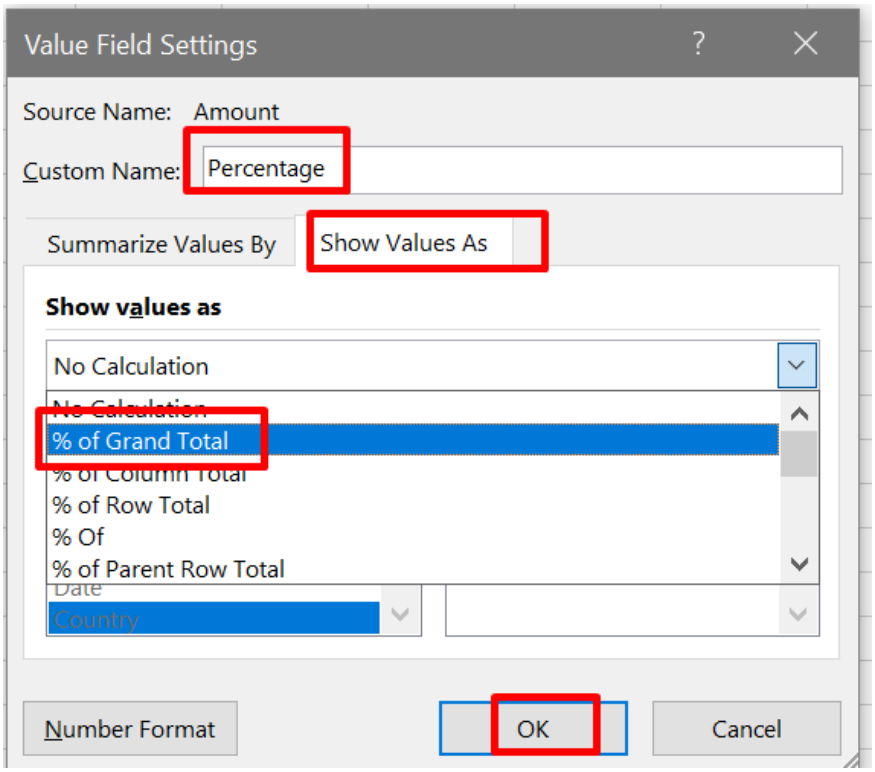


2. MULTIPLE VALUE FIELDS



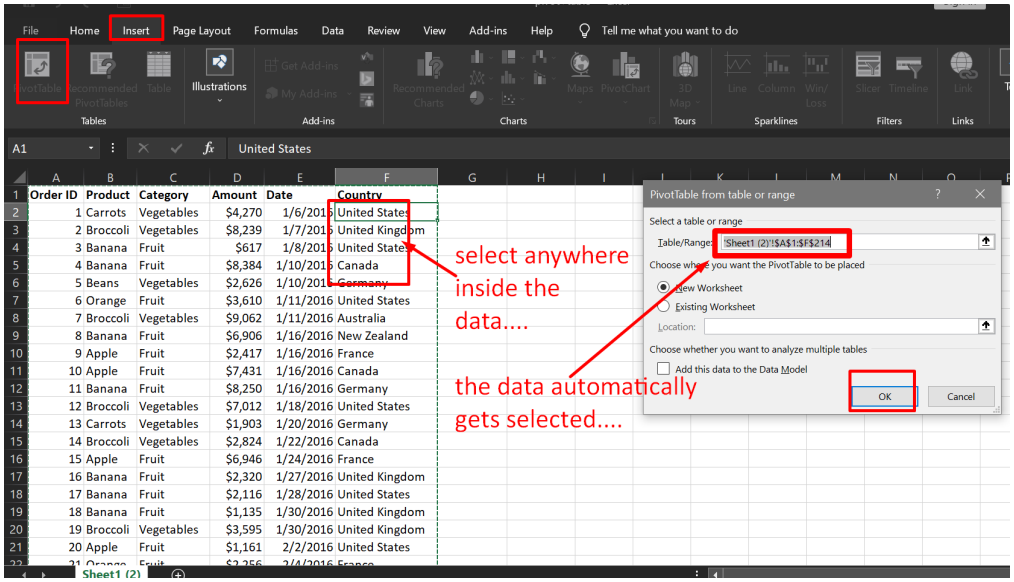




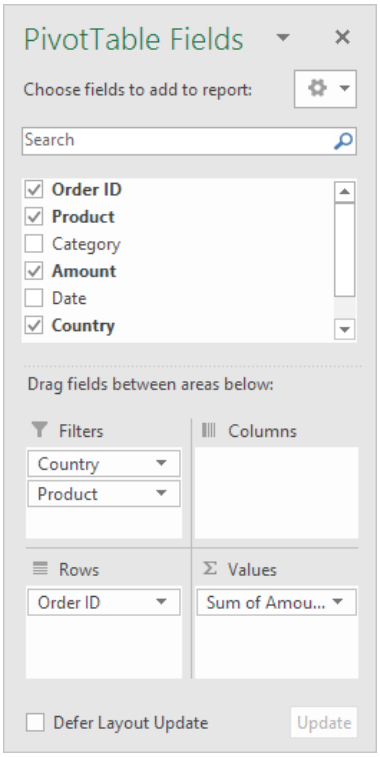


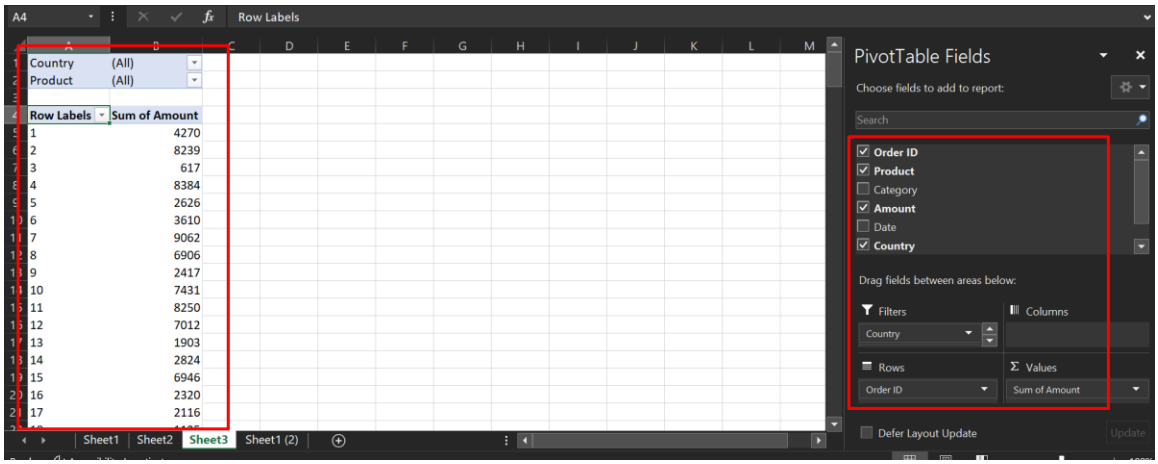
3	Row Labels	Sum of Amount	Percentage
4	Australia	131713	12.79%
5	Canada	94745	9.20%
6	France	141056	13.70%
7	Germany	155168	15.07%
8	New Zealand	66782	6.49%
9	United Kingdom	173137	16.81%
10	United States	267133	25.94%
11	**Grand Total**	**1029734**	**100.00%**

3. MULTIPLE REPORT FILTER FIELDS



Order ID	Product	Category	Amount	Date	Country
1	Carrots	Vegetables	$4,270	1/6/2016	United States
2	Broccoli	Vegetables	$8,239	1/7/2016	United Kingdom
3	Banana	Fruit	$617	1/8/2016	United States
4	Banana	Fruit	$8,384	1/10/2016	Canada
5	Beans	Vegetables	$2,626	1/10/2016	Germany
6	Orange	Fruit	$3,610	1/11/2016	United States
7	Broccoli	Vegetables	$9,062	1/11/2016	Australia
8	Banana	Fruit	$6,906	1/16/2016	New Zealand
9	Apple	Fruit	$2,417	1/16/2016	France
10	Apple	Fruit	$7,431	1/16/2016	Canada
11	Banana	Fruit	$8,250	1/16/2016	Germany
12	Broccoli	Vegetables	$7,012	1/18/2016	United States
13	Carrots	Vegetables	$1,903	1/20/2016	Germany
14	Broccoli	Vegetables	$2,824	1/22/2016	Canada
15	Apple	Fruit	$6,946	1/24/2016	France
16	Banana	Fruit	$2,320	1/27/2016	United Kingdom
17	Banana	Fruit	$2,116	1/28/2016	United States
18	Banana	Fruit	$1,135	1/30/2016	United Kingdom
19	Broccoli	Vegetables	$3,595	1/30/2016	United Kingdom
20	Apple	Fruit	$1,161	2/2/2016	United States

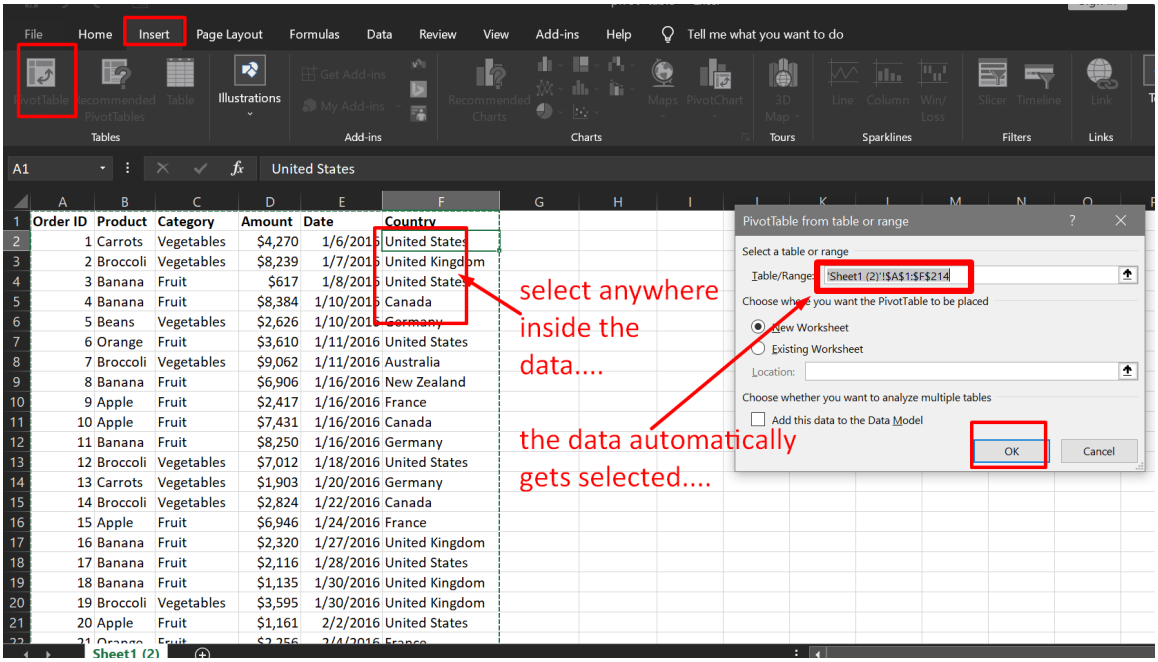


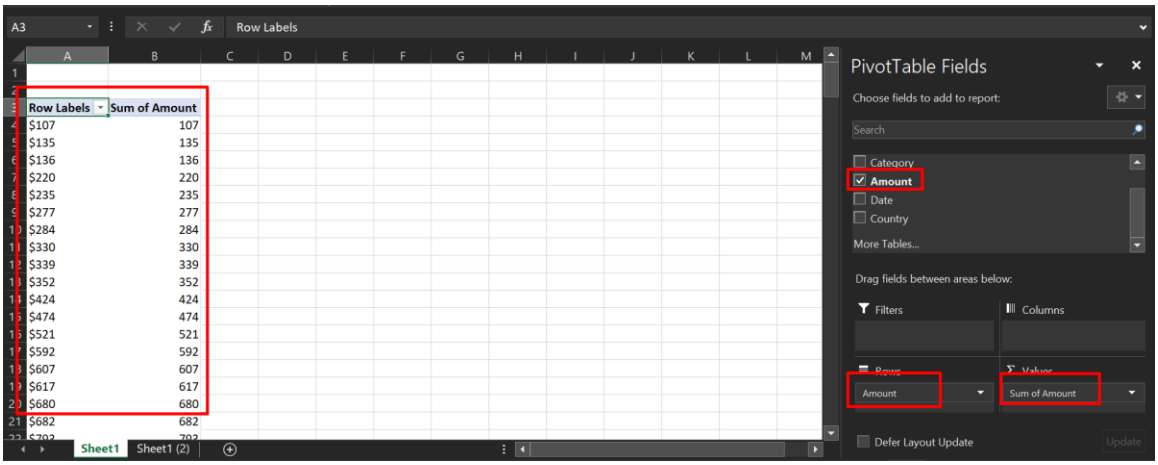


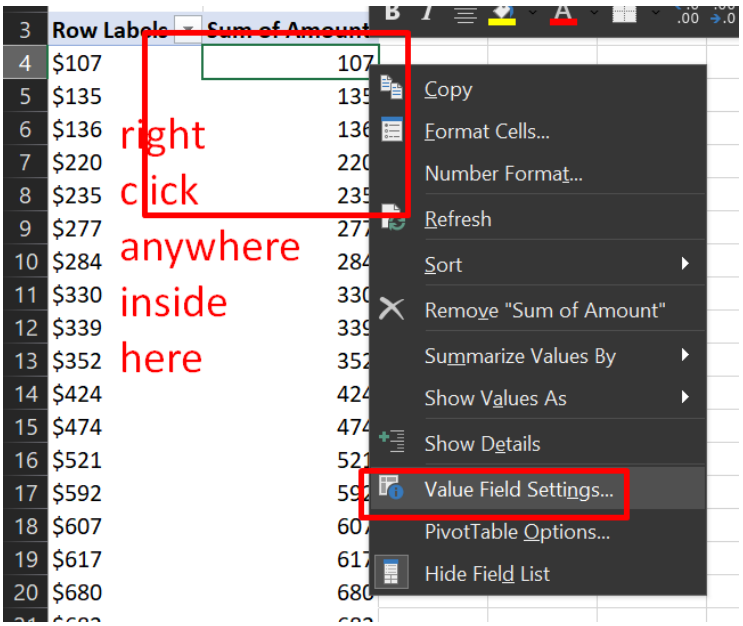
	A	B
1	Country	United Kingdom
2	Product	Broccoli
3		
4	**Row Labels**	**Sum of Amount**
5	2	8239
6	19	3595
7	86	2054
8	92	2011
9	112	7231
10	121	6343
11	126	3027
12	163	5936
13	**Grand Total**	**38436**
14		

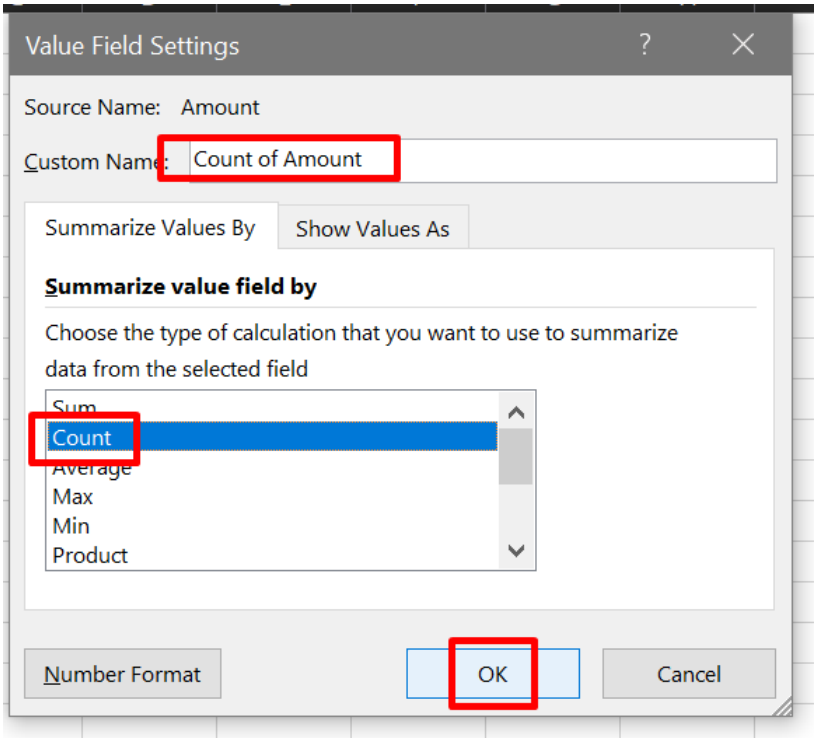
K. FREQUENCY DISTRIBUTION

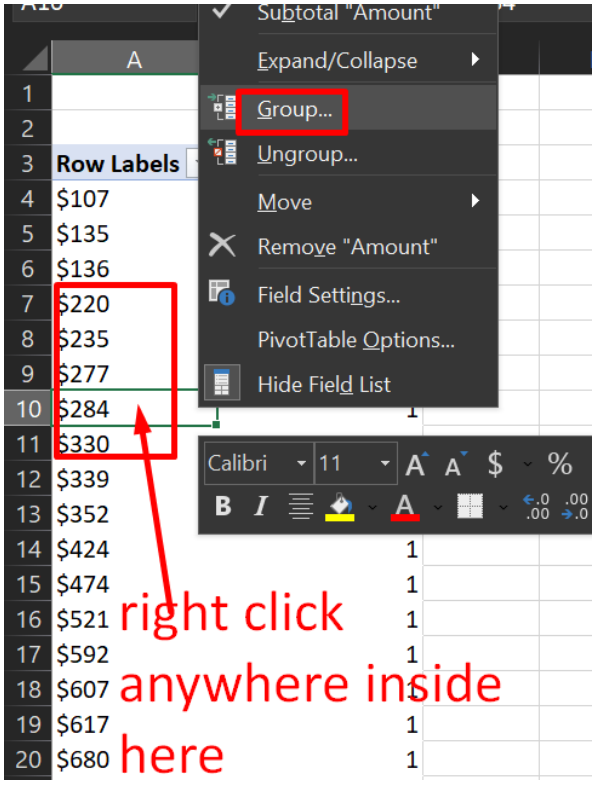
File: https://www.alvinang.sg/s/pivot-table.xlsx

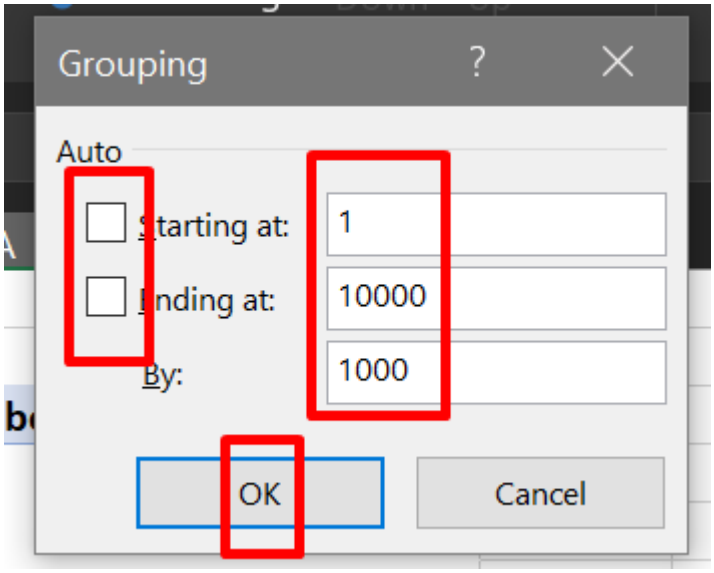


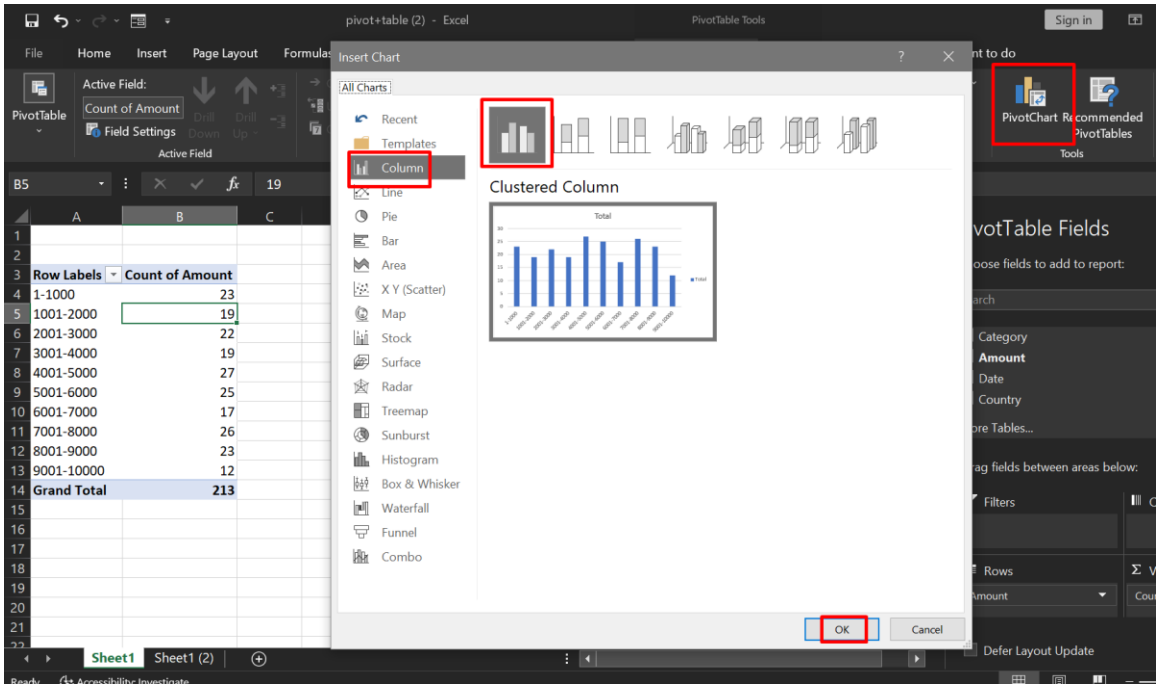




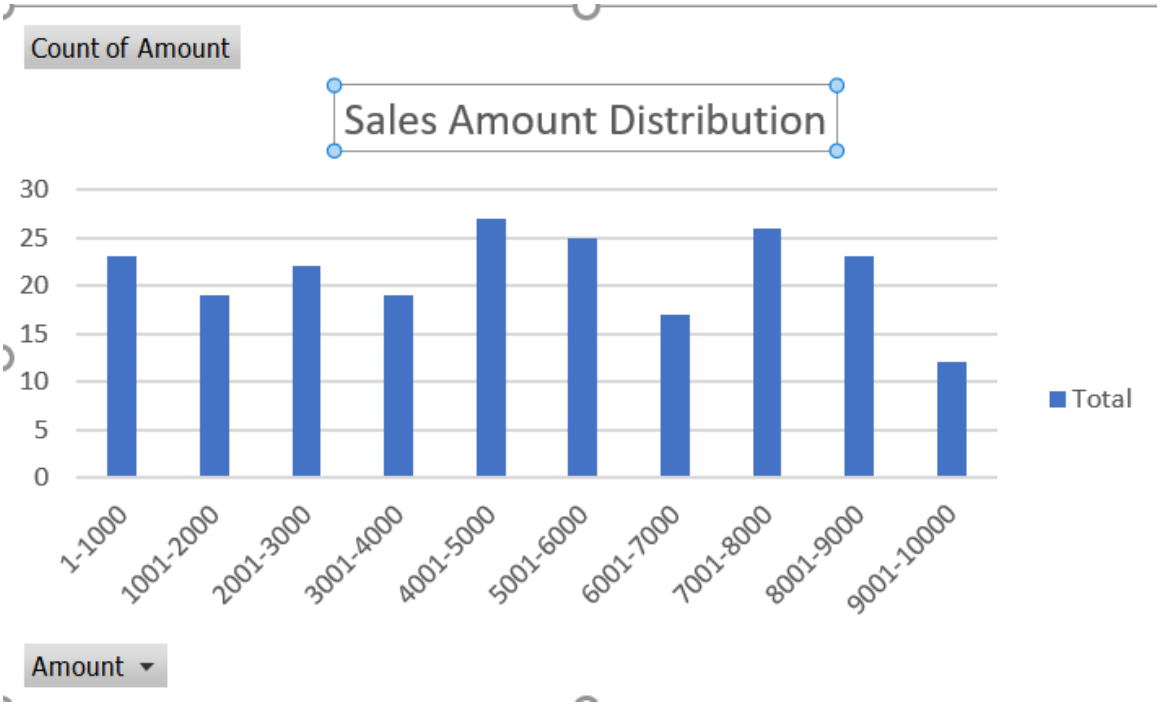




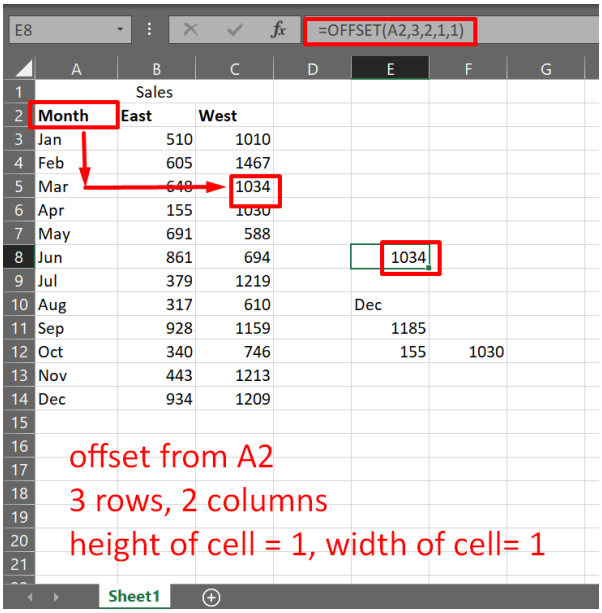


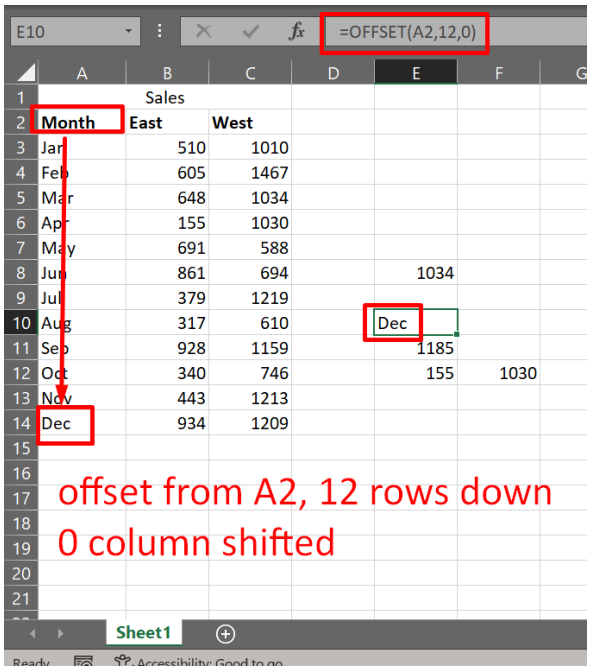


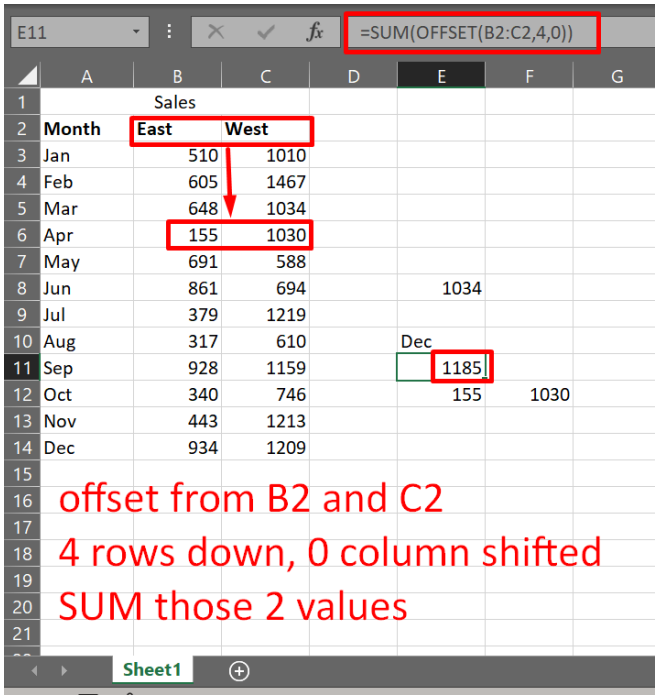
Row Labels	Count of Amount
1-1000	23
1001-2000	19
2001-3000	22
3001-4000	19
4001-5000	27
5001-6000	25
6001-7000	17
7001-8000	26
8001-9000	23
9001-10000	12
Grand Total	213

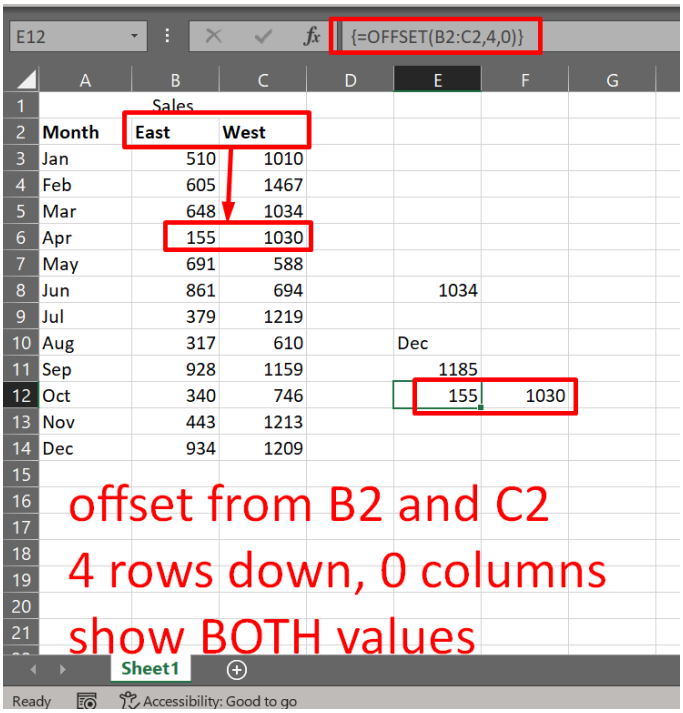


A. OFFSET



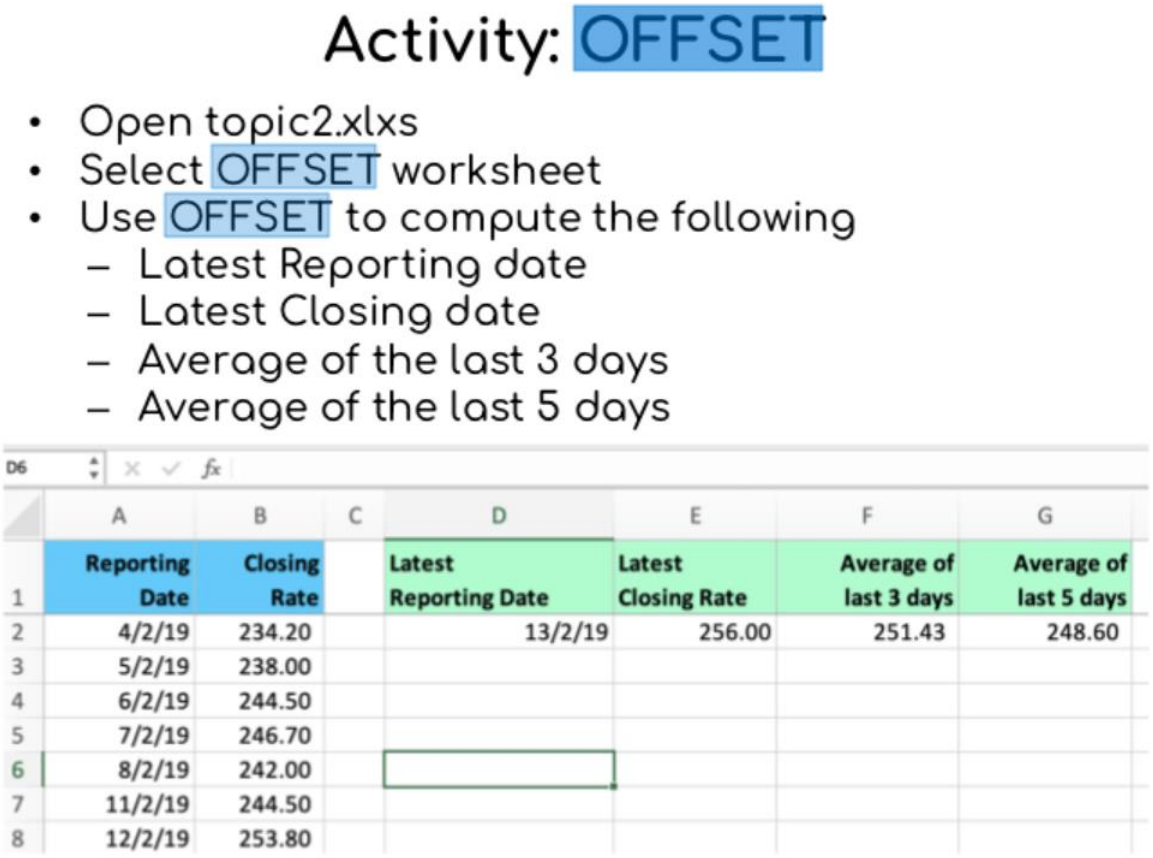






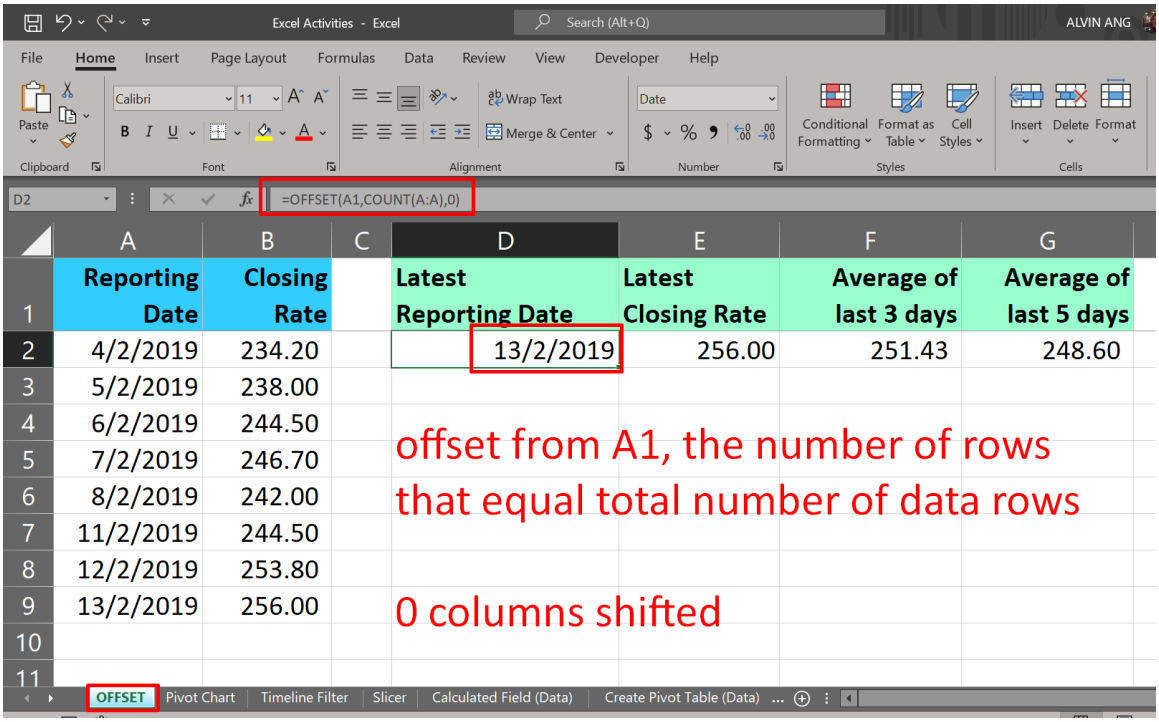
1. ACTIVITY: OFFSET

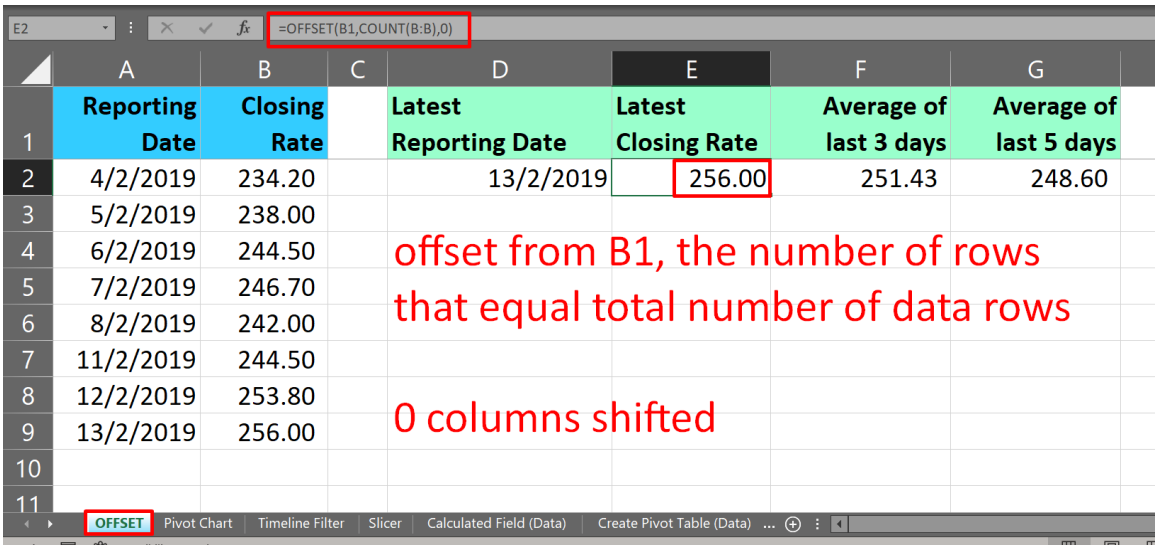
https://www.alvinang.sg/s/Excel-Activities-1.xlsx

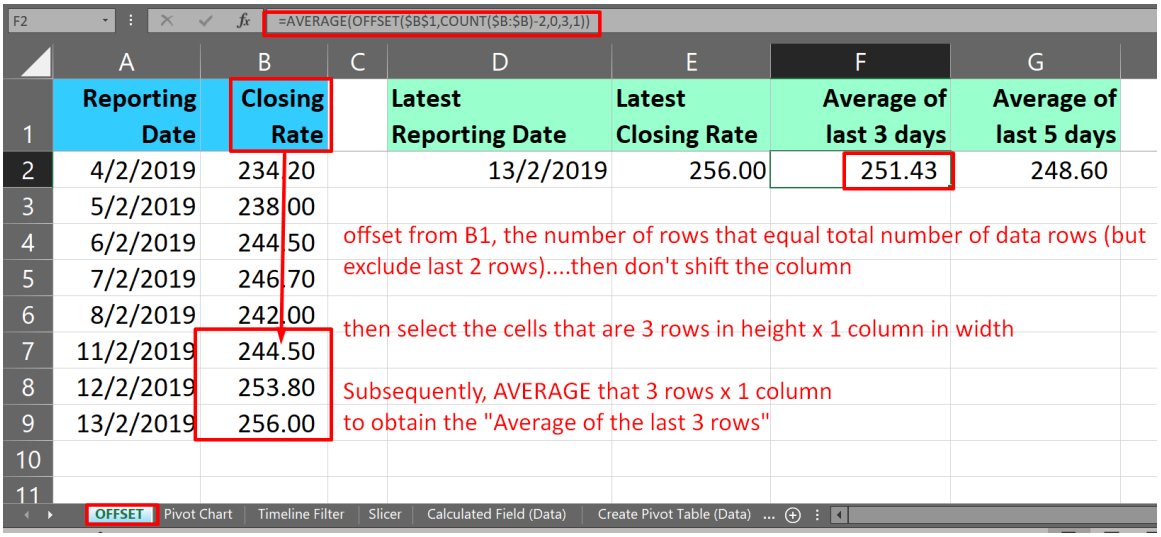


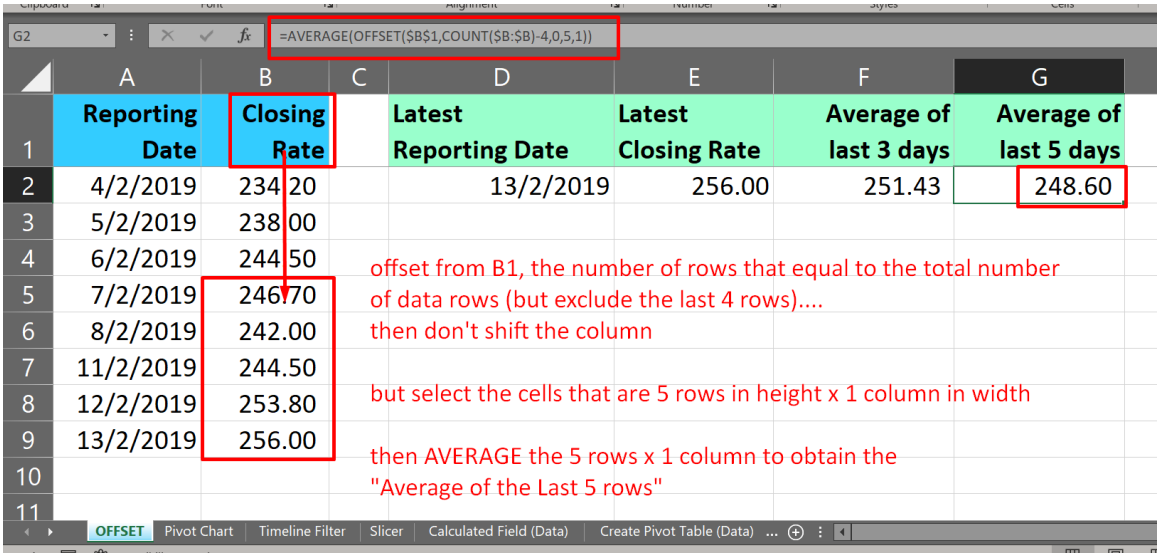
	A	B	C	D	E	F	G
1	Reporting Date	Closing Rate		Latest Reporting Date	Latest Closing Rate	Average of last 3 days	Average of last 5 days
2	4/2/19	234.20		13/2/19	256.00	251.43	248.60
3	5/2/19	238.00					
4	6/2/19	244.50					
5	7/2/19	246.70					
6	8/2/19	242.00					
7	11/2/19	244.50					
8	12/2/19	253.80					

2. ANSWER TO OFFSET ACTIVITY



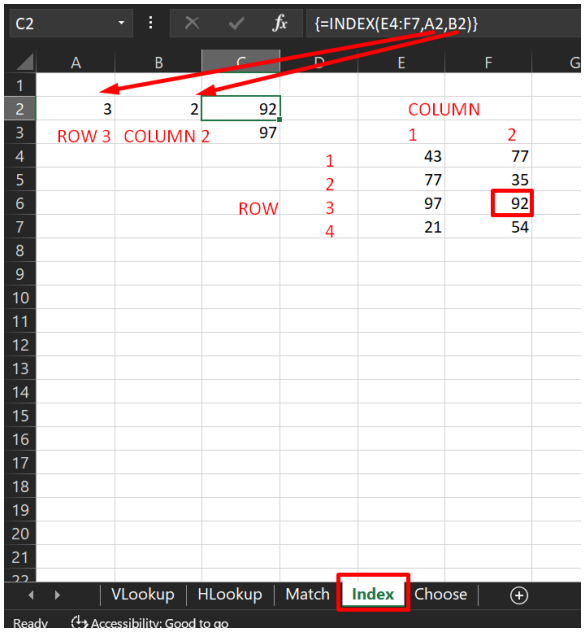


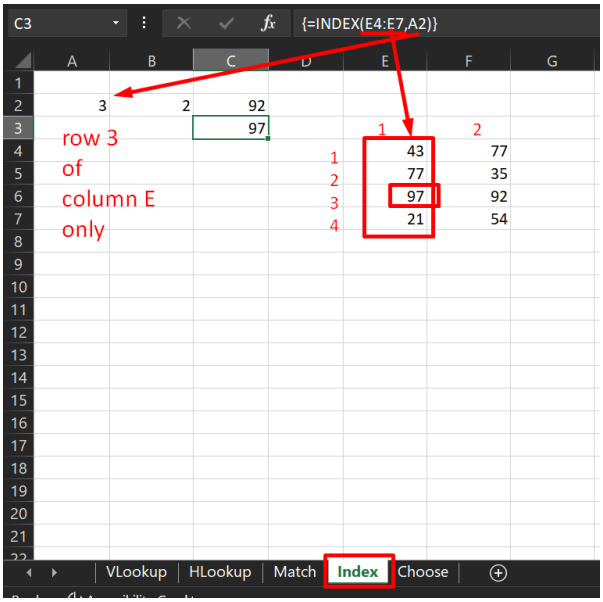




B. INDEX

https://www.alvinang.sg/s/lookup-reference-functions.xlsx





1. ACTIVITY: INDEX

https://www.alvinang.sg/s/Excel-Activities-1.xlsx

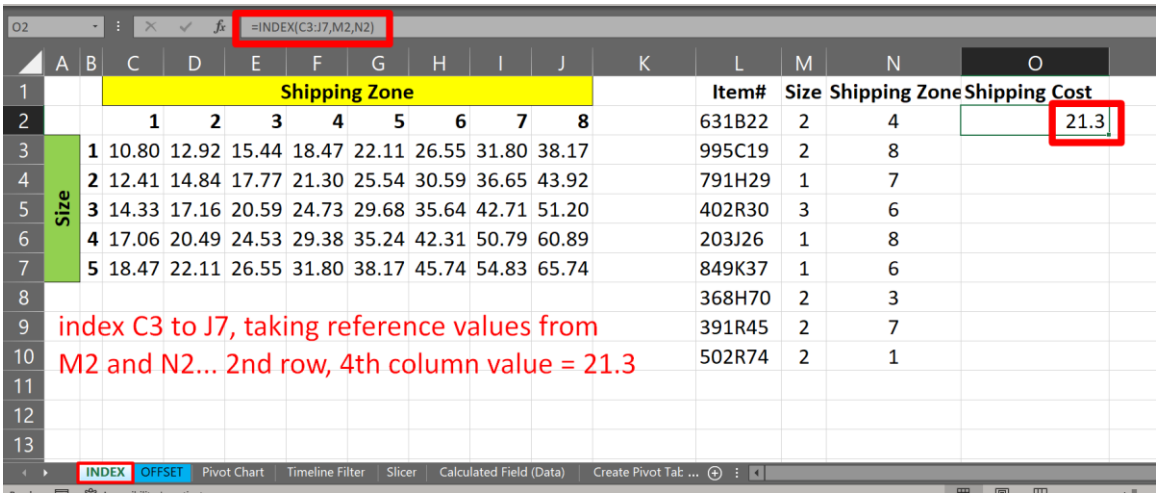
Activity: INDEX

- Open topic2.xlxs
- Select INDEX worksheet
- Compute the Shipping Cost using the INDEX

		Shipping Zone							
		1	2	3	4	5	6	7	8
Size	1	10.80	12.92	15.44	18.47	22.11	26.55	31.80	38.17
	2	12.41	14.84	17.77	21.30	25.54	30.59	36.65	43.92
	3	14.33	17.16	20.59	24.73	29.68	35.64	42.71	51.20
	4	17.06	20.49	24.53	29.38	35.24	42.31	50.79	60.89
	5	18.47	22.11	26.55	31.80	38.17	45.74	54.83	65.74

Item#	Size	Shipping Zone	Shipping Cost
631B22	2	4	21.3
995C19	2	8	
791H29	1	7	
402R30	3	6	
203J26	1	8	
849K37	1	6	
368H70	2	3	
391R45	2	7	
502R74	2	1	
571H52	5	3	

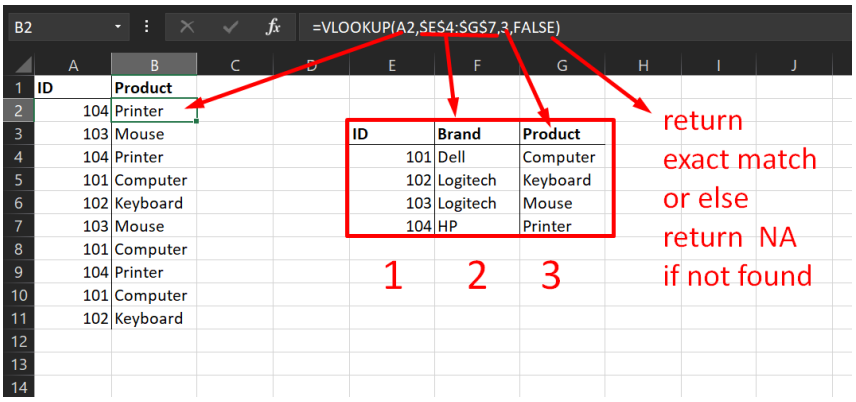
2. ANSWER TO INDEX ACTIVITY



A. OVERVIEW

File: https://www.alvinang.sg/s/lookup-reference-functions.xlsx

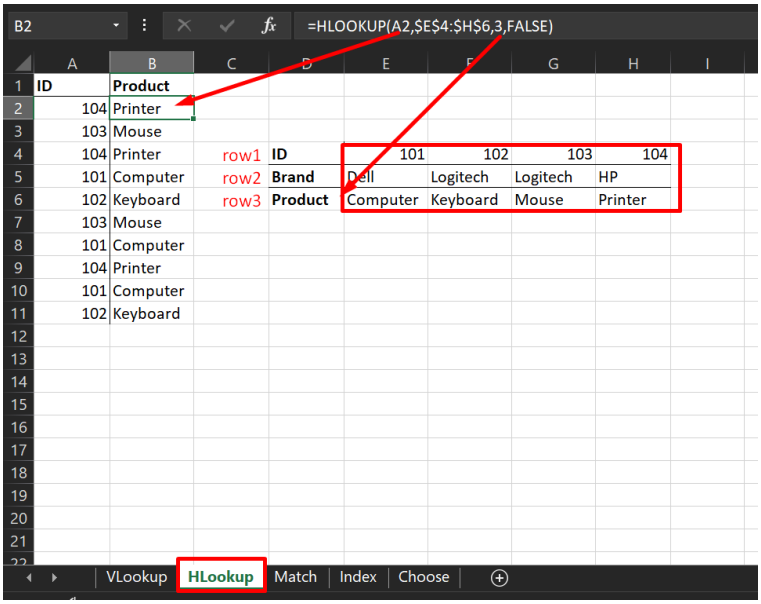
1. VLOOKUP



ID	Product
104	Printer
103	Mouse
104	Printer
101	Computer
102	Keyboard
103	Mouse
101	Computer
104	Printer
101	Computer
102	Keyboard

ID	Brand	Product
101	Dell	Computer
102	Logitech	Keyboard
103	Logitech	Mouse
104	HP	Printer

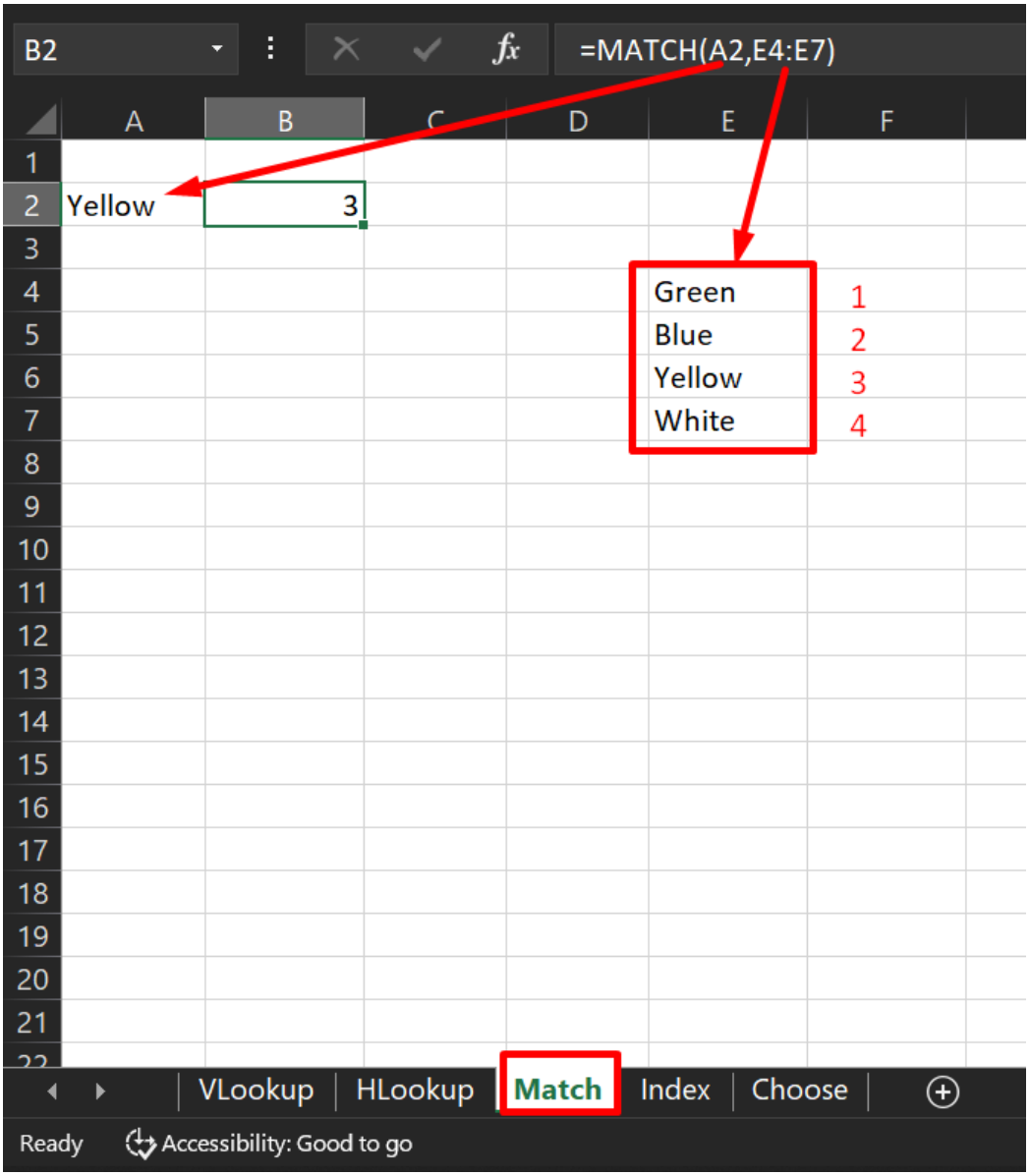
2. HLOOKUP



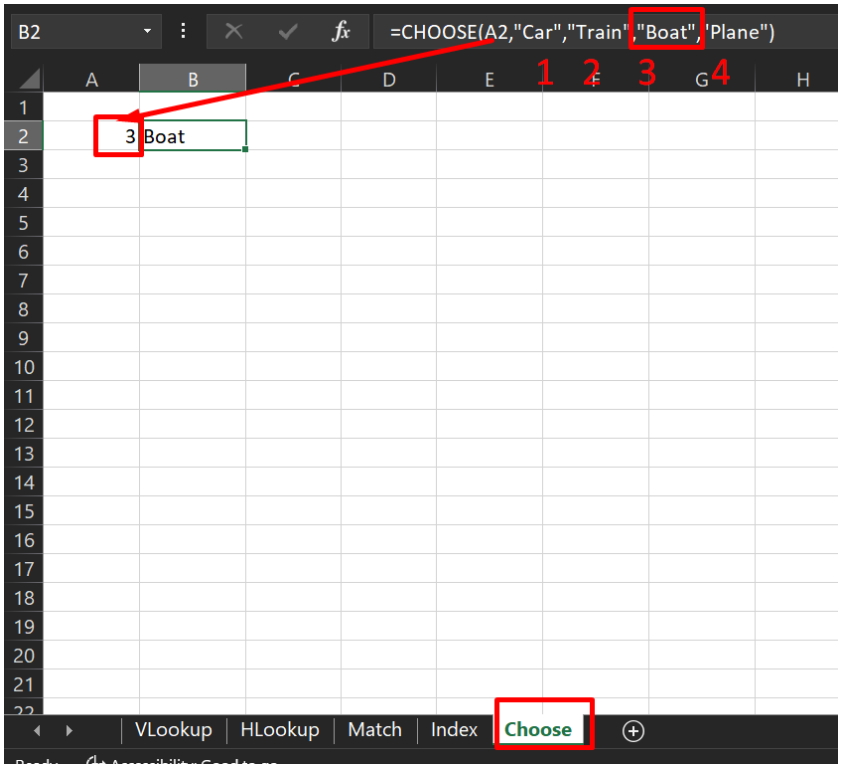
ID	Product
104	Printer
103	Mouse
104	Printer
101	Computer
102	Keyboard
103	Mouse
101	Computer
104	Printer
101	Computer
102	Keyboard

	ID	101	102	103	104
row2	Brand	Dell	Logitech	Logitech	HP
row3	Product	Computer	Keyboard	Mouse	Printer

3. MATCH



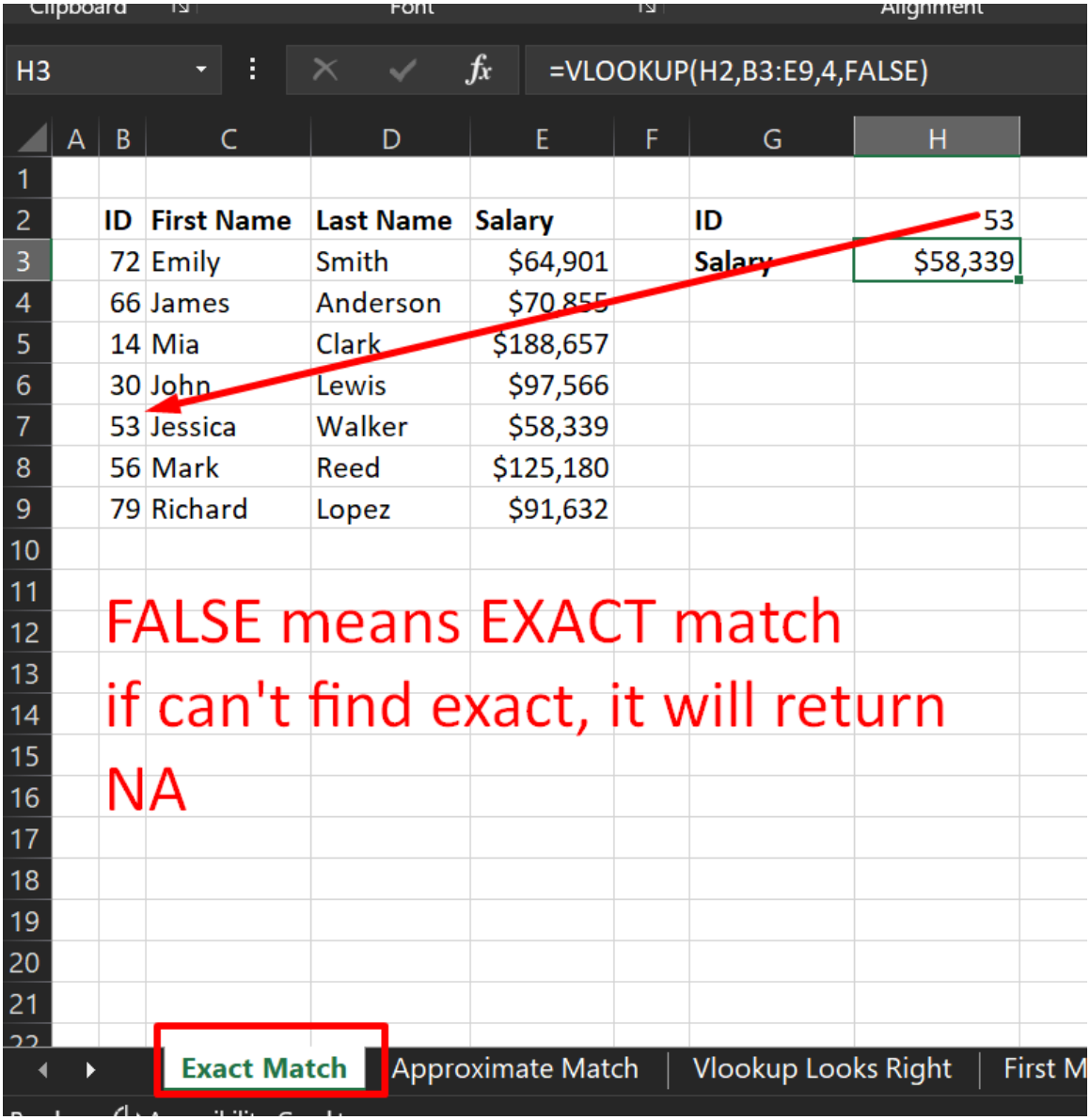
4. CHOOSE



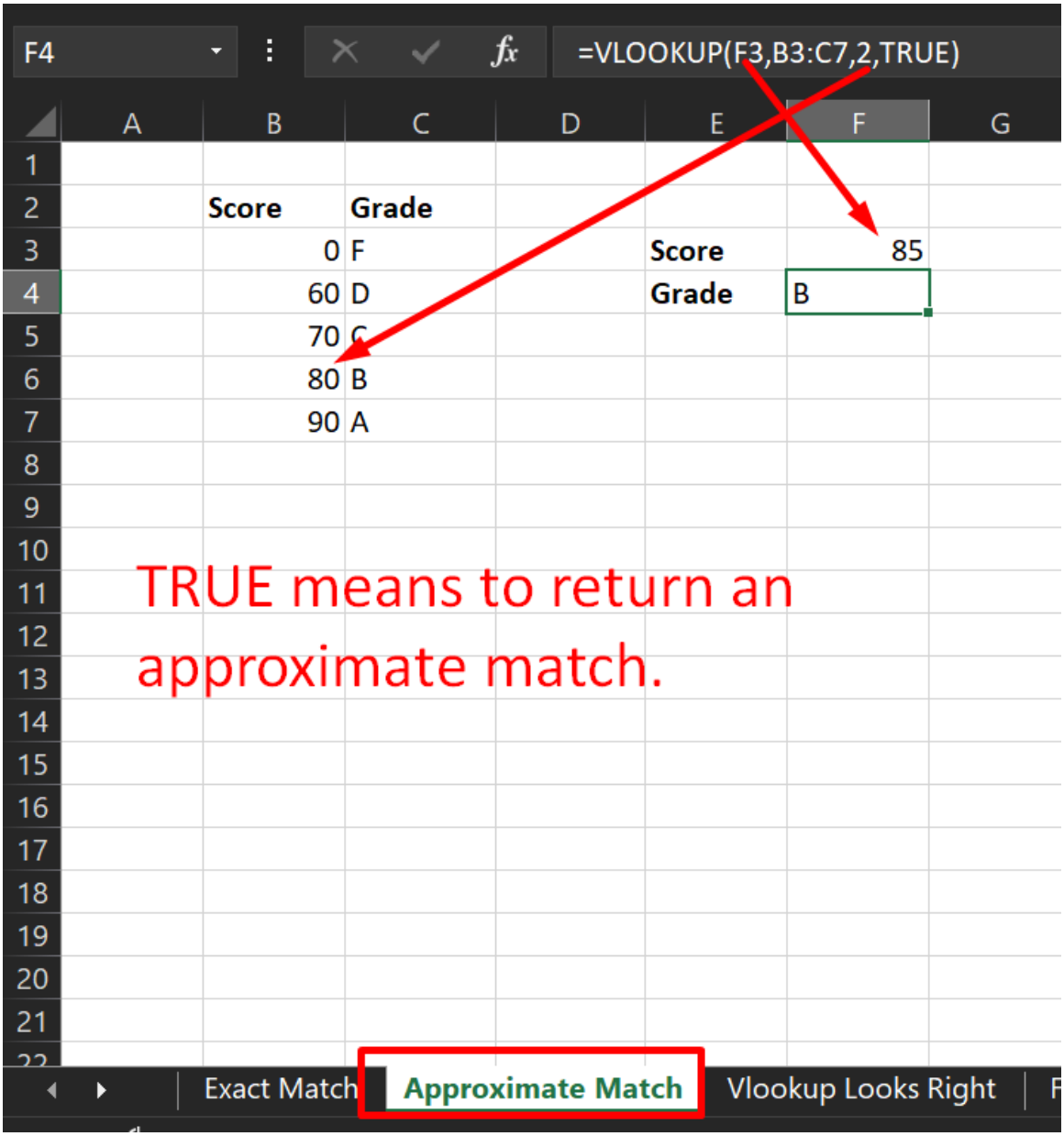
B. SPECIFICS

File: https://www.alvinang.sg/s/vlookup.xlsx

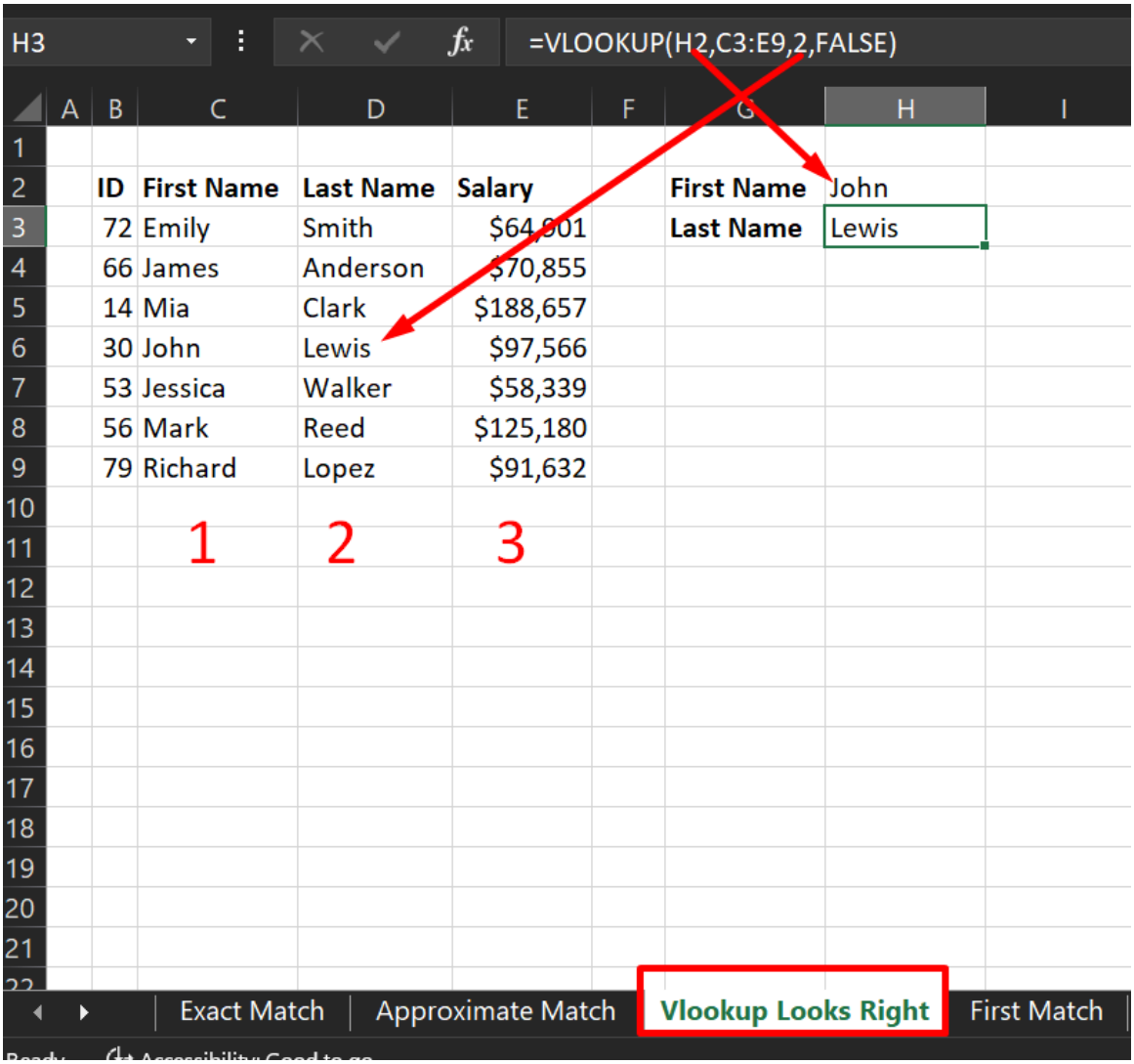
1. EXACT MATCH



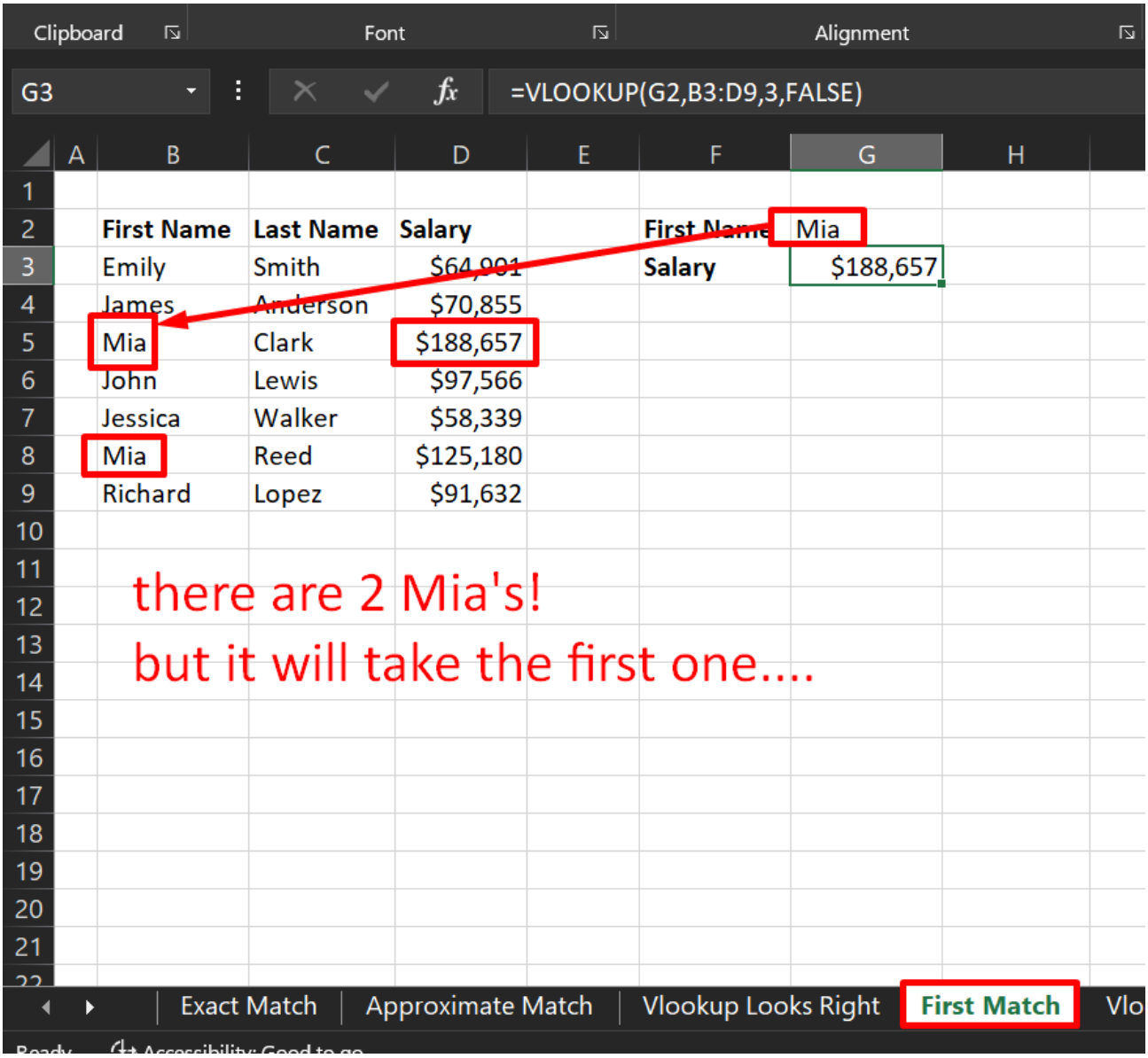
2. APPROXIMATE MATCHH



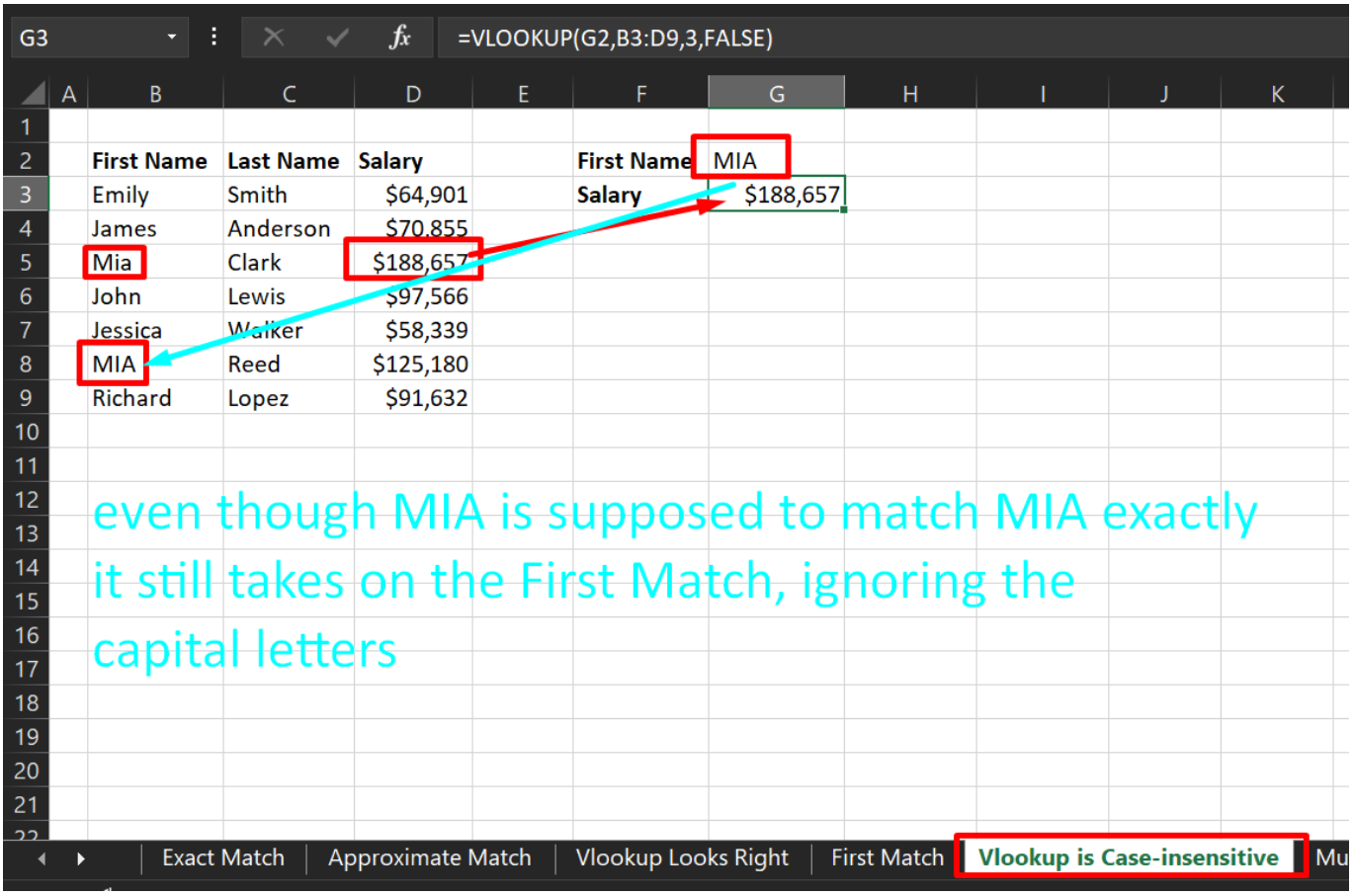
3. VLOOKUP LOOKS RIGHT



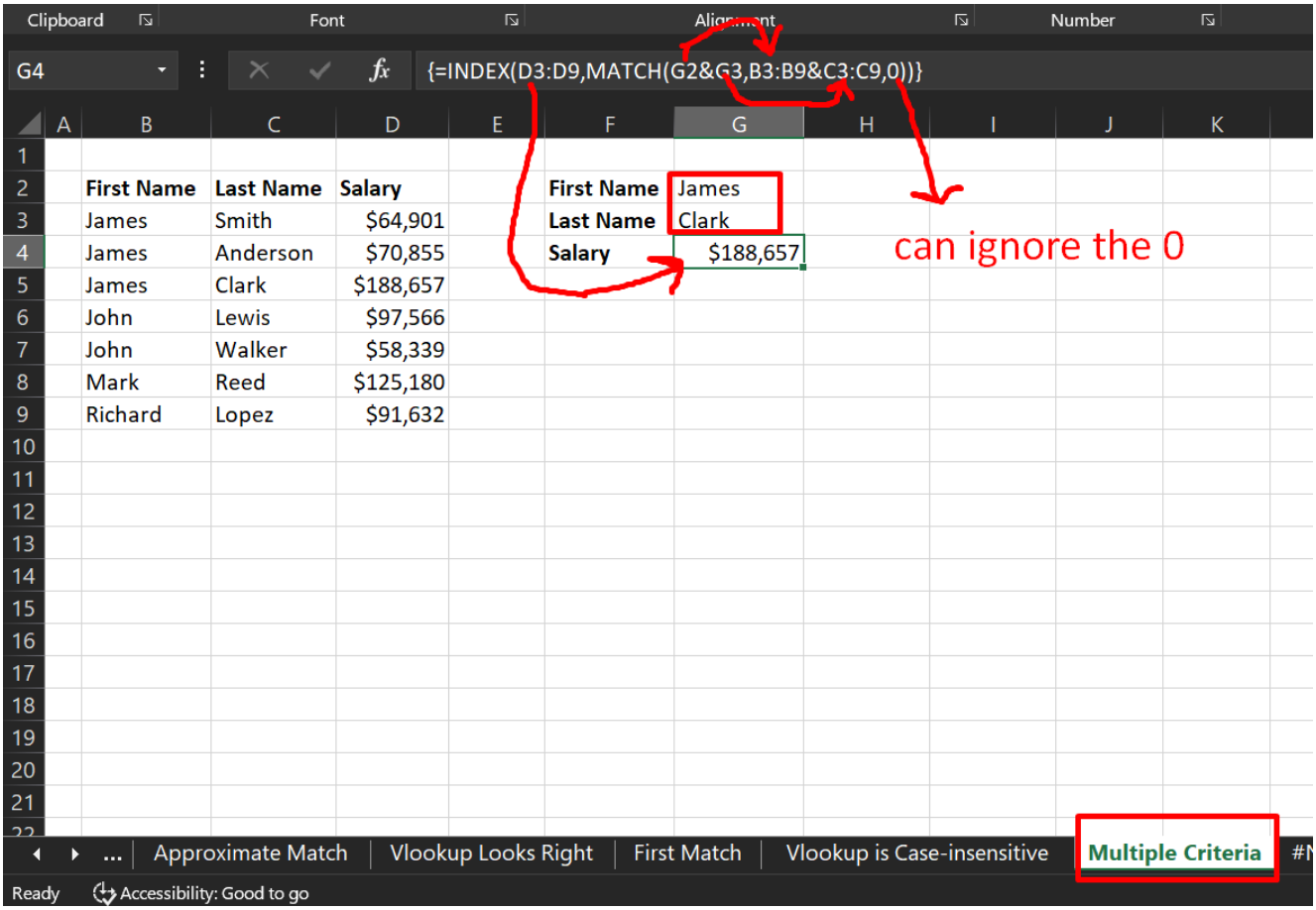
4. FIRST MATCH



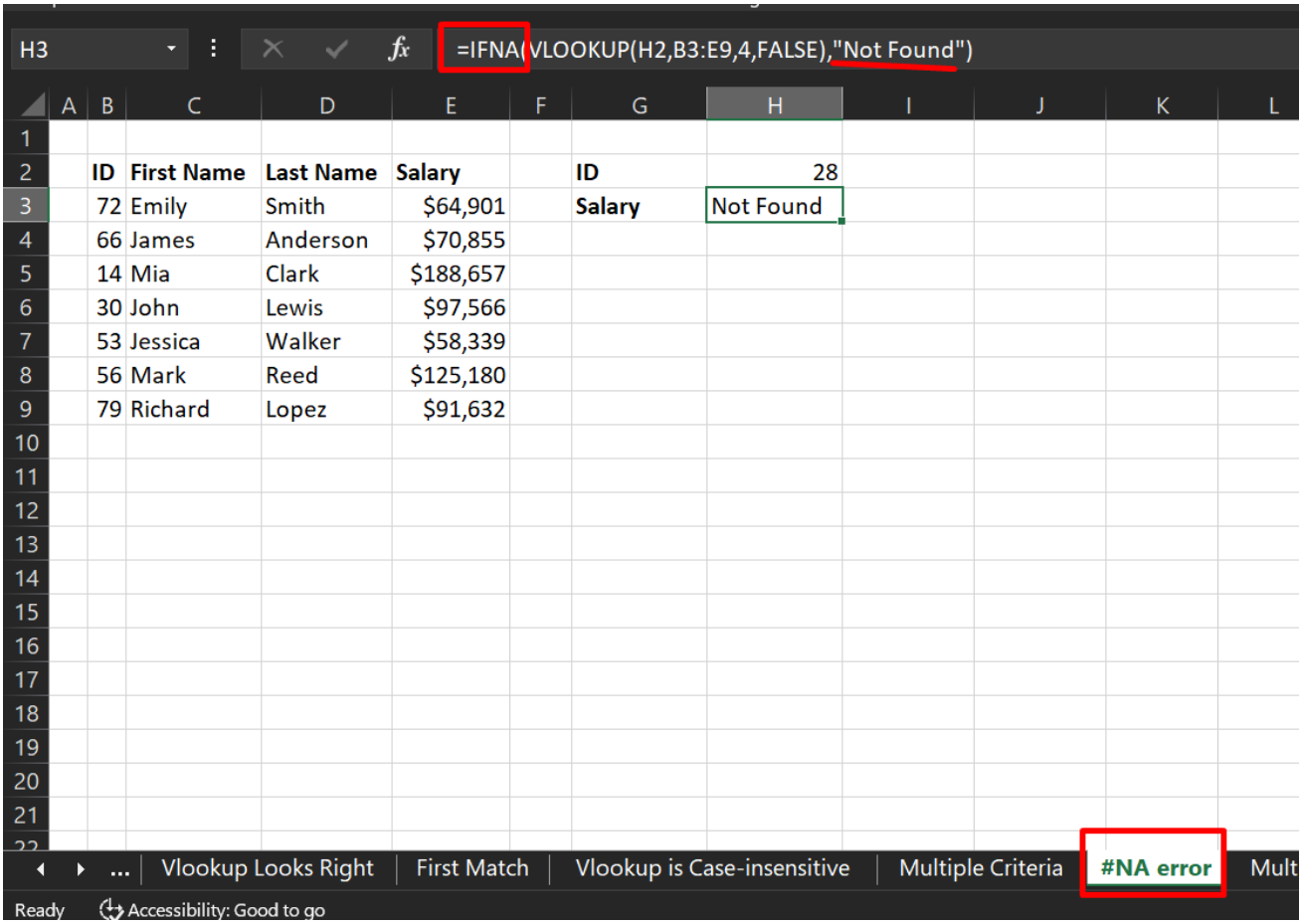
5. CASE INSENSITIVE



6. MULTIPLE CRITERIA



7. NA ERROR



C. ACTIVITY: VLOOKUP / HLOOKUP

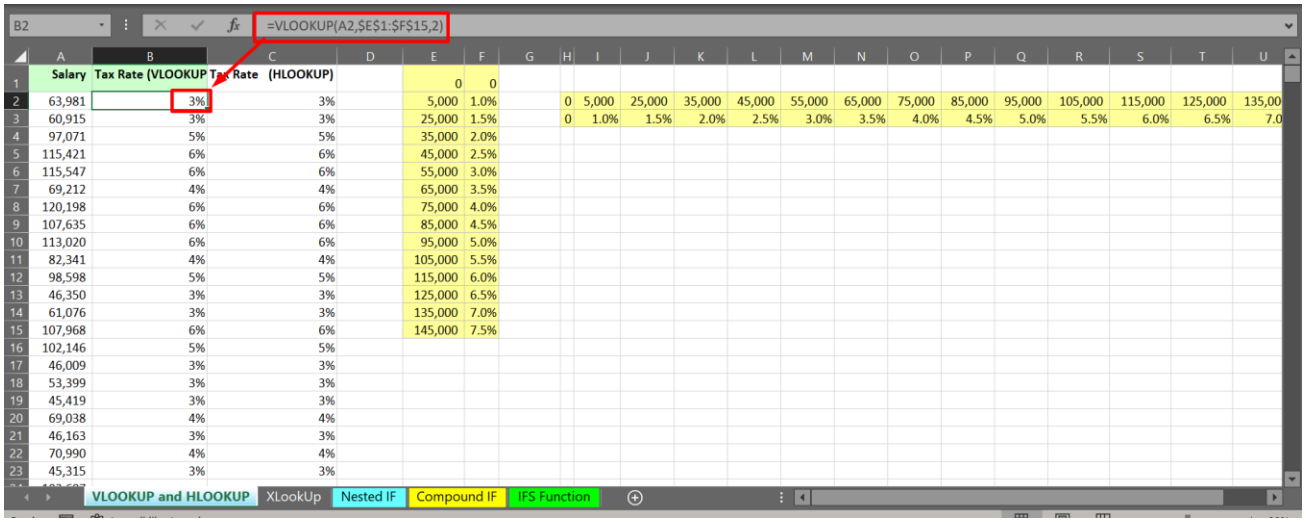
https://www.alvinang.sg/s/Excel-Activities-1.xlsx

Activity: VLOOKUP and HLOOKUP

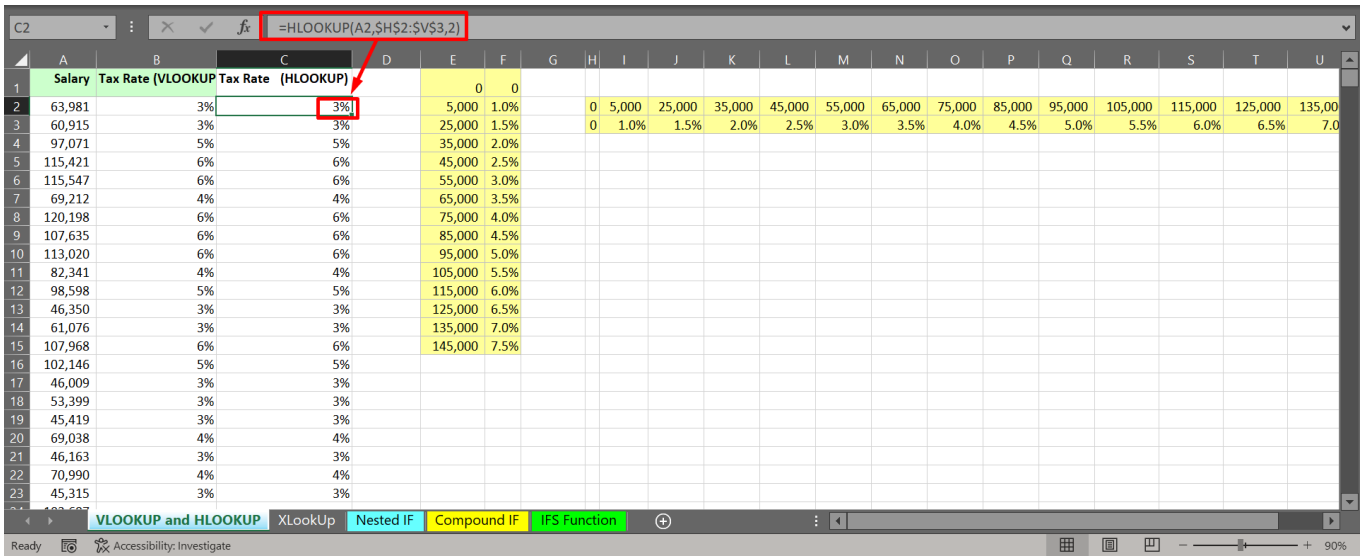
- Open topic2.xlxs
- Select VLOOKUP and HLOOKUP worksheet
- Find the tax rate using the VLOOKUP and HLOOKUP methods

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Employee Name	SS#	Salary	Tax Rate (VLOOKUP)	Tax Rate (HLOOKUP)		0	0						
2	Page, Lisa	247-00-3062	63,981	3%	3%		5,000	1.0%		0	5,000	25,000	35,000	45,0
3	Taylor, Hector	760-00-1779	60,915				25,000	1.5%		0	1.0%	1.5%	2.0%	2.5
4	Dawson, John	801-00-2360	97,071				35,000	2.0%						
5	Duran, Brian	749-00-7626	115,421				45,000	2.5%						
6	Weber, Larry	350-00-7898	115,547				55,000	3.0%						
7	Pratt, Erik	122-00-9650	69,212				65,000	3.5%						
8	O'Connor, Kent	681-00-5012	120,198				75,000	4.0%						
9	Spencer, Boyd	959-00-4354	107,635				85,000	4.5%						
10	Wiggins, Frank	950-00-0069	113,020				95,000	5.0%						
11	Tanner, Timothy	525-00-8270	82,341				105,000	5.5%						
12	Strickland, Rajean	810-00-6566	98,598				115,000	6.0%						
13	Chase, Troy	564-00-2529	46,350				125,000	6.5%						
14	Brewer, Kent	432-00-5963	61,076				135,000	7.0%						

1. ANSWER FOR VLOOKUP ACTIVITY



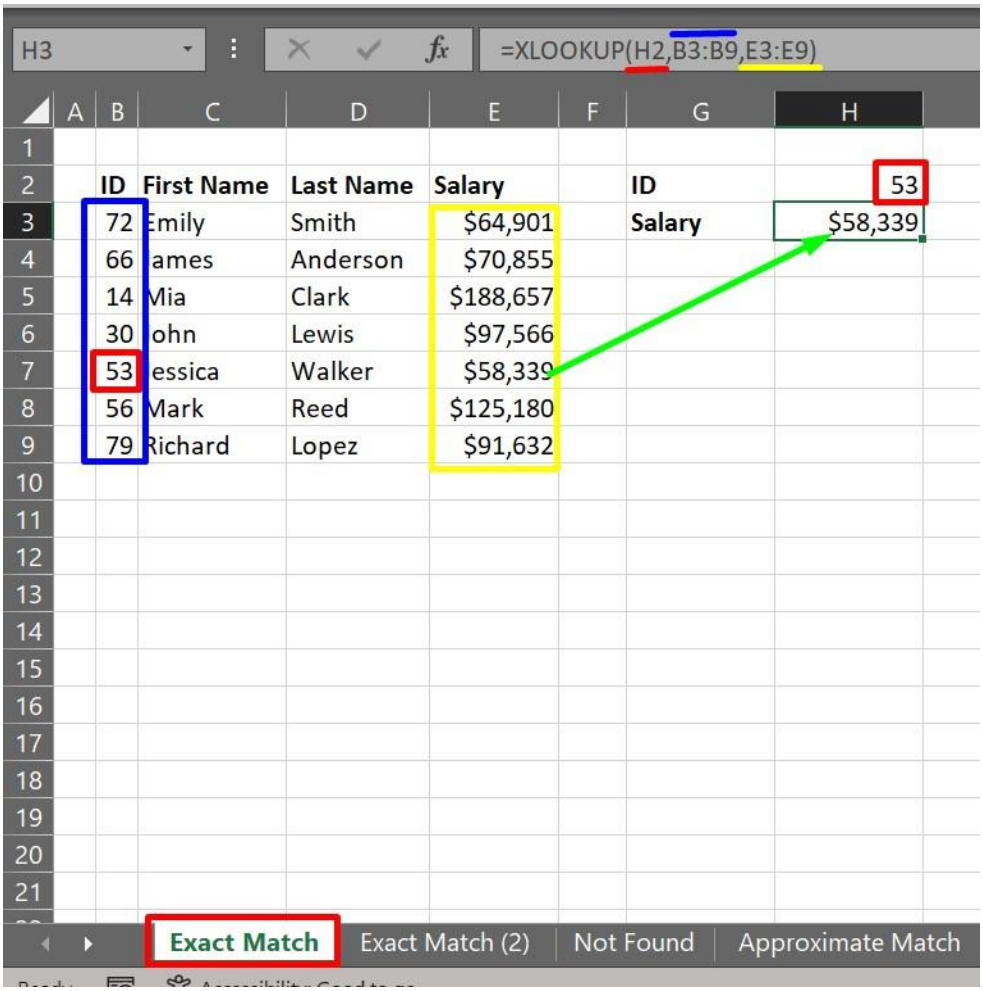
2. ANSWER FOR HLOOKUP ACTIVITY



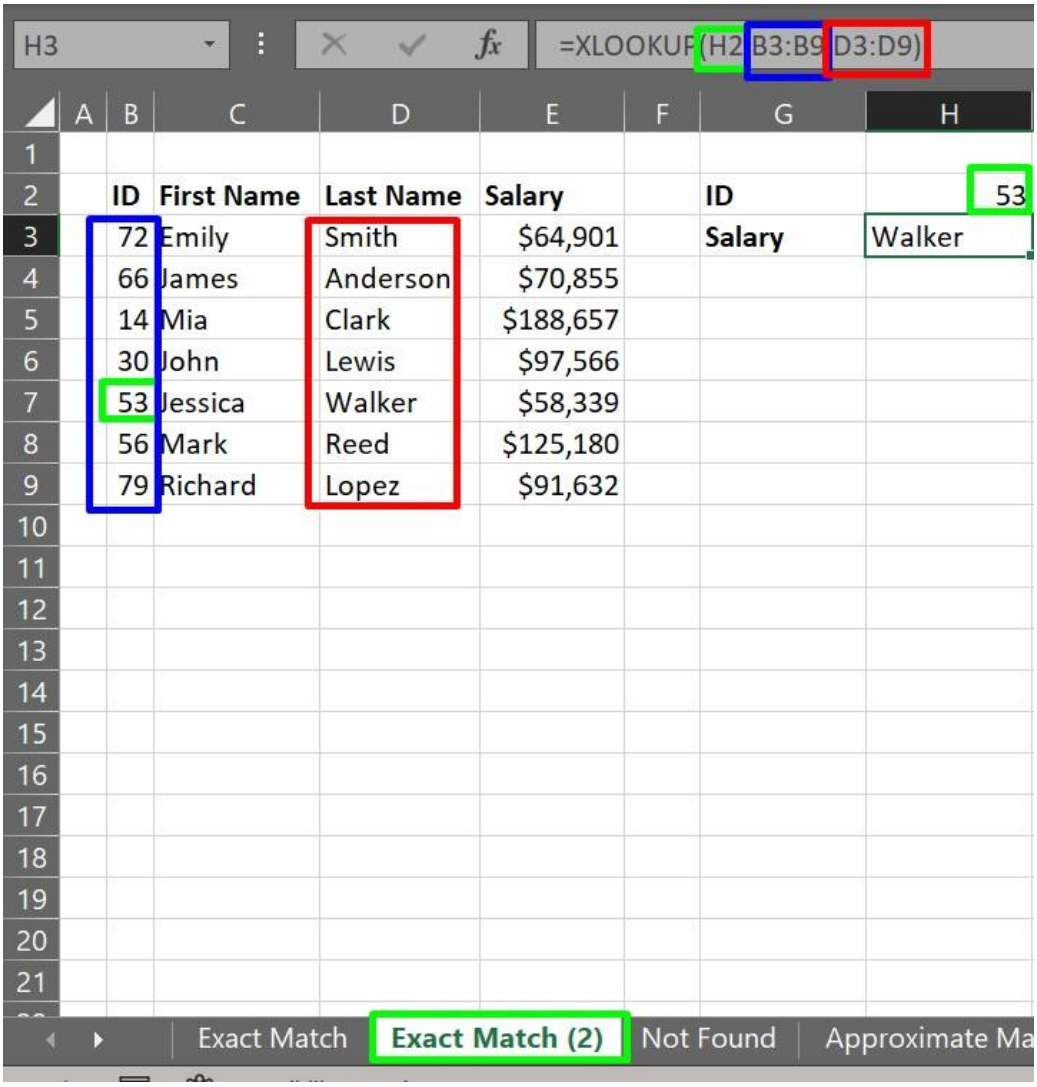
V. XLOOKUP

XLOOKUP only appears in Excel 365 or Excel 2021.

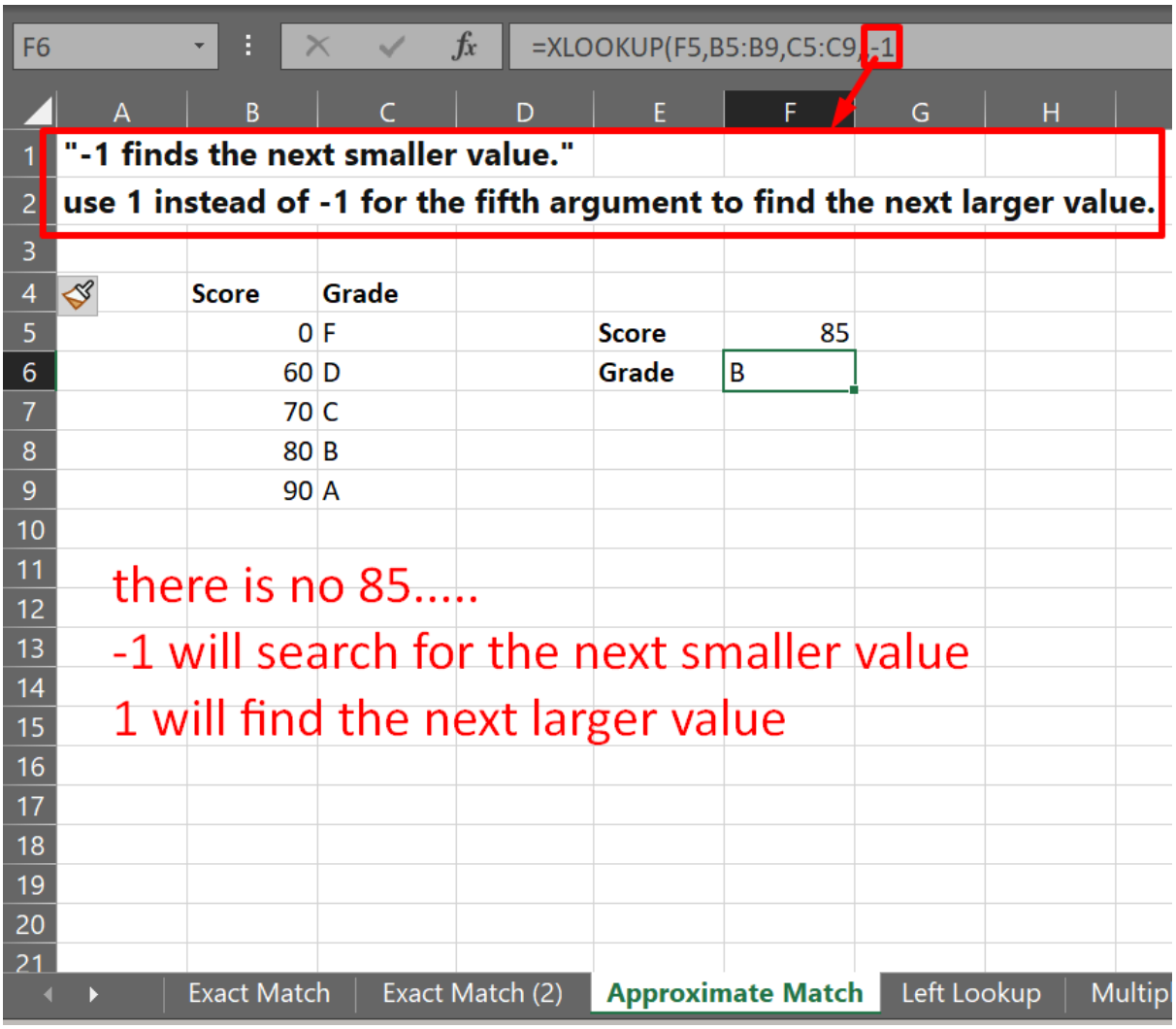
A. EXACT MATCH I



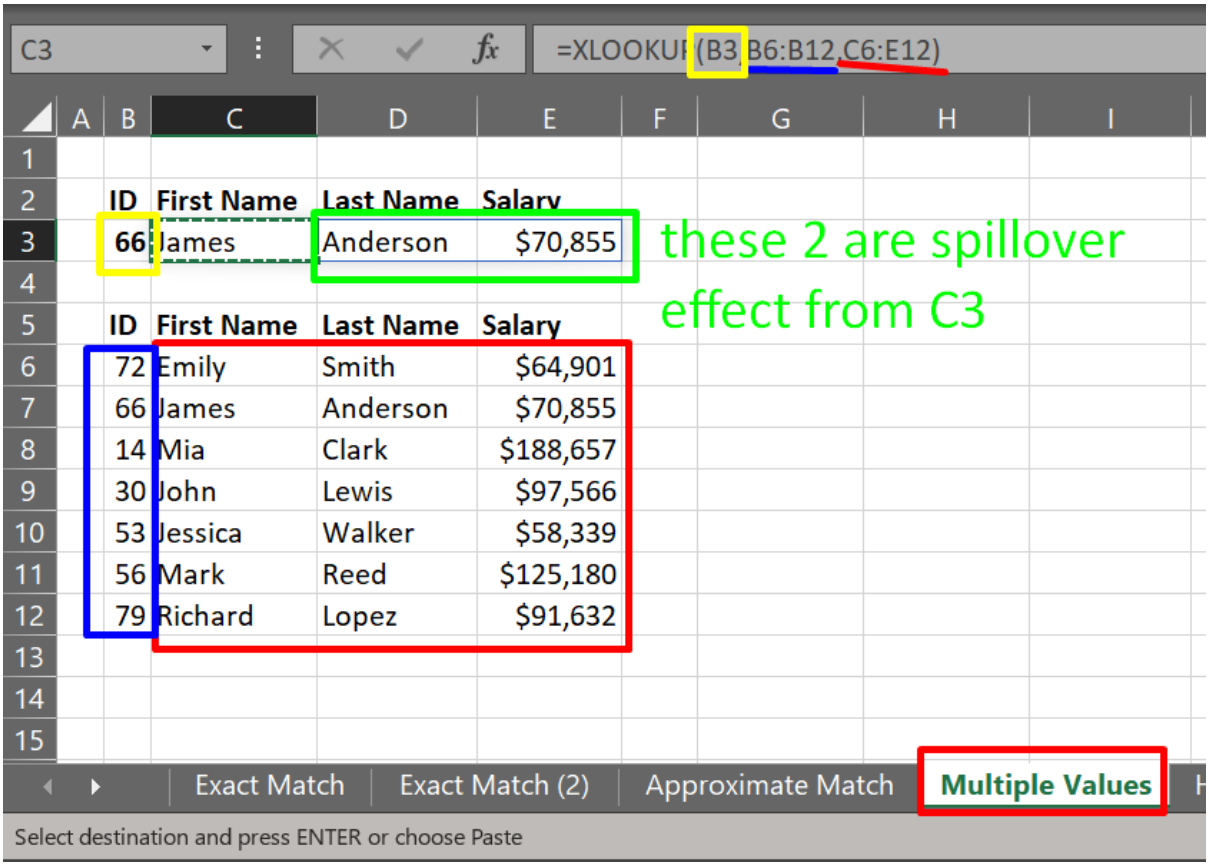
B. EXACT MATCH II



C. APPROXIMATE MATCH



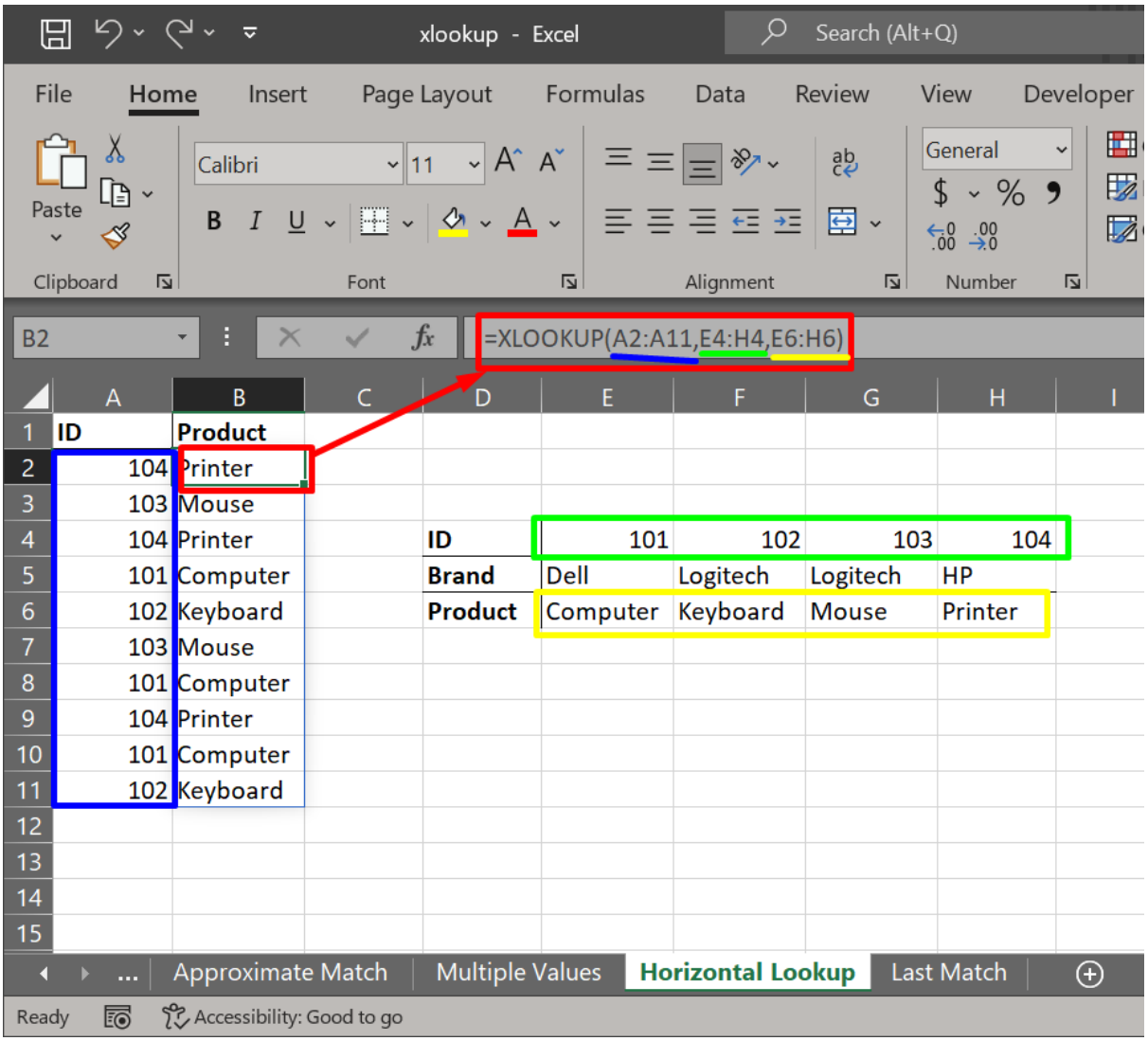
D. MULTIPLE VALUES



ID	First Name	Last Name	Salary
66	James	Anderson	$70,855

ID	First Name	Last Name	Salary
72	Emily	Smith	$64,901
66	James	Anderson	$70,855
14	Mia	Clark	$188,657
30	John	Lewis	$97,566
53	Jessica	Walker	$58,339
56	Mark	Reed	$125,180
79	Richard	Lopez	$91,632

E. HORIZONTAL LOOKUP

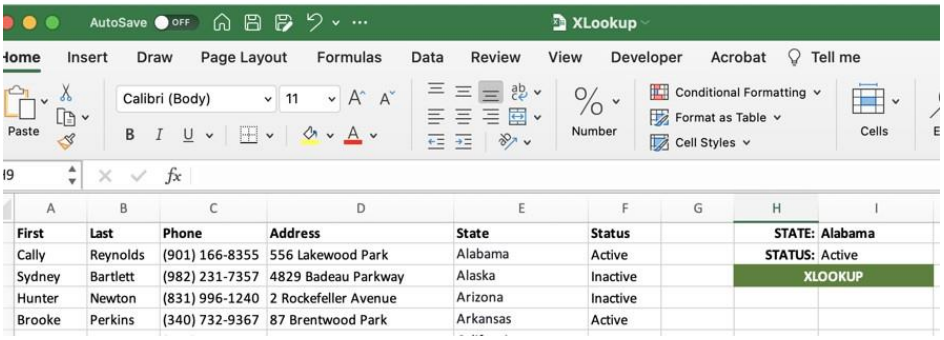


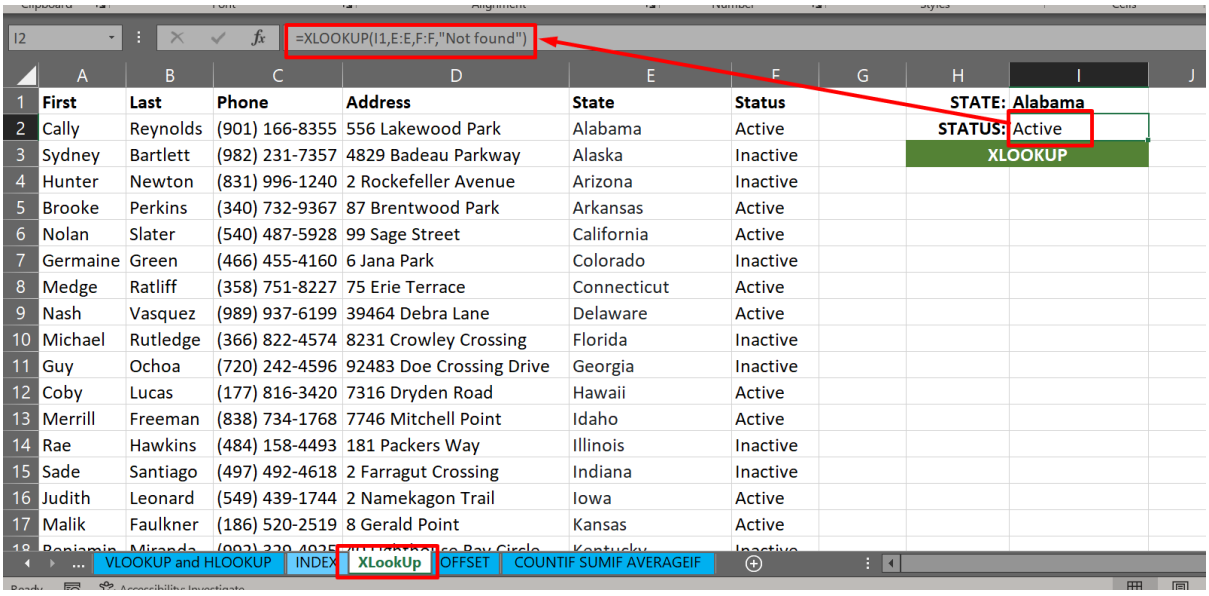
F. ACTIVITY: XLOOKUP

https://www.alvinang.sg/s/Excel-Activities-1.xlsx

Activity: XLOOKUP

- Open topic2.xlxs
- Select XLOOKUP worksheet
- Use XLOOKUP to check the status of a given state in Cell I1





	First	Last	Phone	Address	State	Status
2	Cally	Reynolds	(901) 166-8355	556 Lakewood Park	Alabama	Active
3	Sydney	Bartlett	(982) 231-7357	4829 Badeau Parkway	Alaska	Inactive
4	Hunter	Newton	(831) 996-1240	2 Rockefeller Avenue	Arizona	Inactive
5	Brooke	Perkins	(340) 732-9367	87 Brentwood Park	Arkansas	Active
6	Nolan	Slater	(540) 487-5928	99 Sage Street	California	Active
7	Germaine	Green	(466) 455-4160	6 Jana Park	Colorado	Inactive
8	Medge	Ratliff	(358) 751-8227	75 Erie Terrace	Connecticut	Active
9	Nash	Vasquez	(989) 937-6199	39464 Debra Lane	Delaware	Active
10	Michael	Rutledge	(366) 822-4574	8231 Crowley Crossing	Florida	Inactive
11	Guy	Ochoa	(720) 242-4596	92483 Doe Crossing Drive	Georgia	Inactive
12	Coby	Lucas	(177) 816-3420	7316 Dryden Road	Hawaii	Active
13	Merrill	Freeman	(838) 734-1768	7746 Mitchell Point	Idaho	Active
14	Rae	Hawkins	(484) 158-4493	181 Packers Way	Illinois	Inactive
15	Sade	Santiago	(497) 492-4618	2 Farragut Crossing	Indiana	Inactive
16	Judith	Leonard	(549) 439-1744	2 Namekagon Trail	Iowa	Active
17	Malik	Faulkner	(186) 520-2519	8 Gerald Point	Kansas	Active

ABOUT DR ALVIN ANG

Dr. Alvin Ang earned his Ph.D., Masters and Bachelor degrees from NTU, Singapore. He is a scientist, entrepreneur, as well as a personal/business advisor. More about him at www.AlvinAng.sg.