POWER QUERY

WITH EXCEL
DR. ALVIN ANG

COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

CONTENTS

I. Example 1: Data Cleansing 4

A. Previewing Data 4

B. Importing Data 5

C. Remove Blank Top Row 7

D. Remove Blank Columns 9

E. Data Cleansing 10

1. Replacing null from Gender column 10
2. Replacing NULL from Department Column 10
3. Removing Staff with No Salary 11

F. Backtracing Steps to Undo 12

G. Creating a New Column Called Country 13

H. Close and Load 17

I. Refresh Data After Updates… 18

II. Example 2: Unpivoting Web Scrapped Data Table 19

III. Example 3: Combing a Bunch of Data Files into One Sheet (Similar to SQL UNION) 23

A. Importing All Files 23

B. Remove the .xlsx 26

C. Add a Date Column 27

D. What if a New File was Added? REFRESH! 29

IV. Example 4: Joining and Appending Tables 31

A. Make First Row as Headers for Both Year 11 and 12 34

B. Add Custom Column of YEAR 35

C. Append Queries – Union Both Tables 36

D. Merging / SQL Left Join Students Table to Courses 38

E. Replicate Table and Filter Only Female with >= 3 Credits 40

F. Creating a New Query Group 43

G. Close and Load To… 45

About Dr. Alvin Ang 48

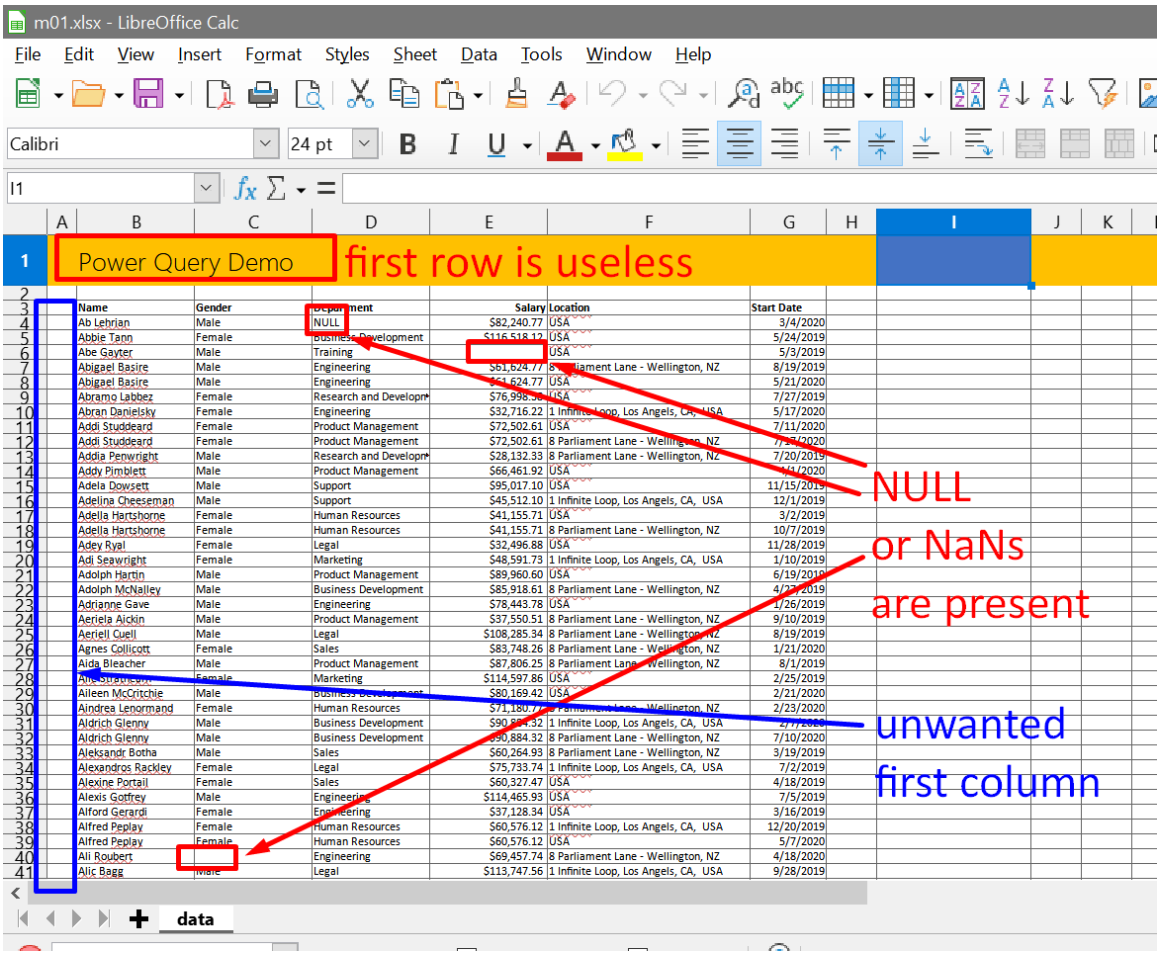
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

I. EXAMPLE 1: DATA CLEANSING

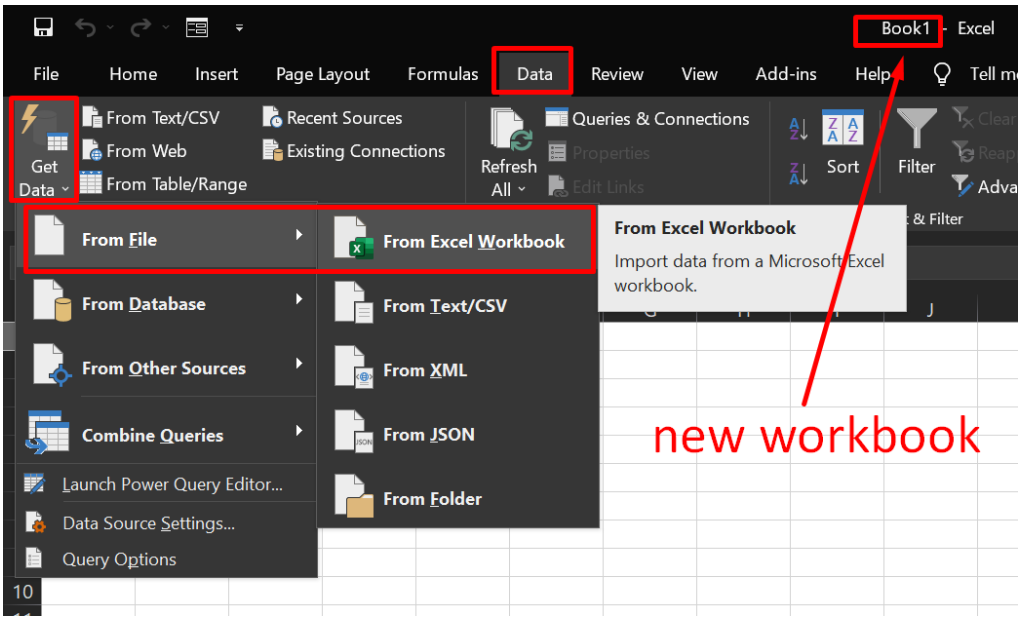
https://www.alvinang.sg/s/m01.xlsx

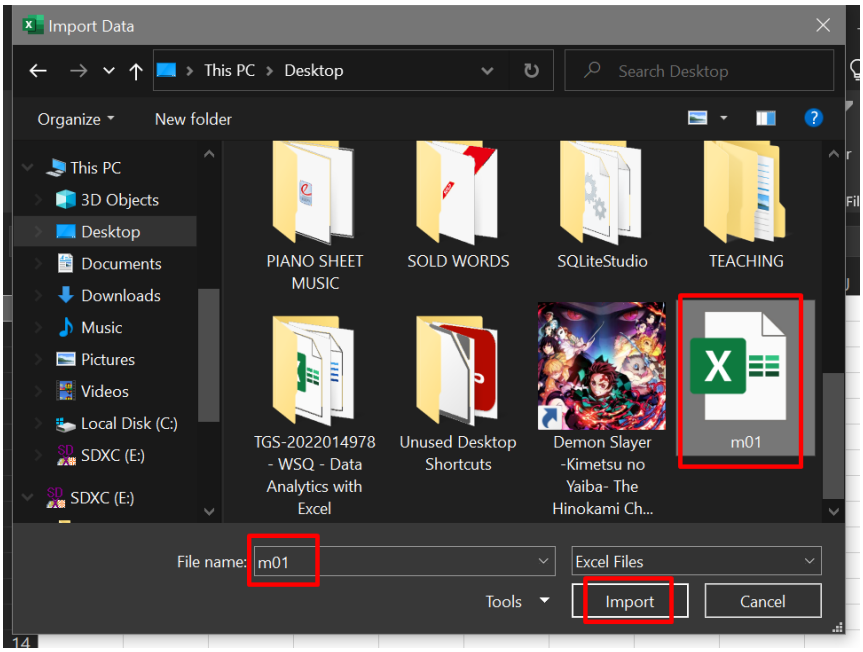
A. PREVIEWING DATA



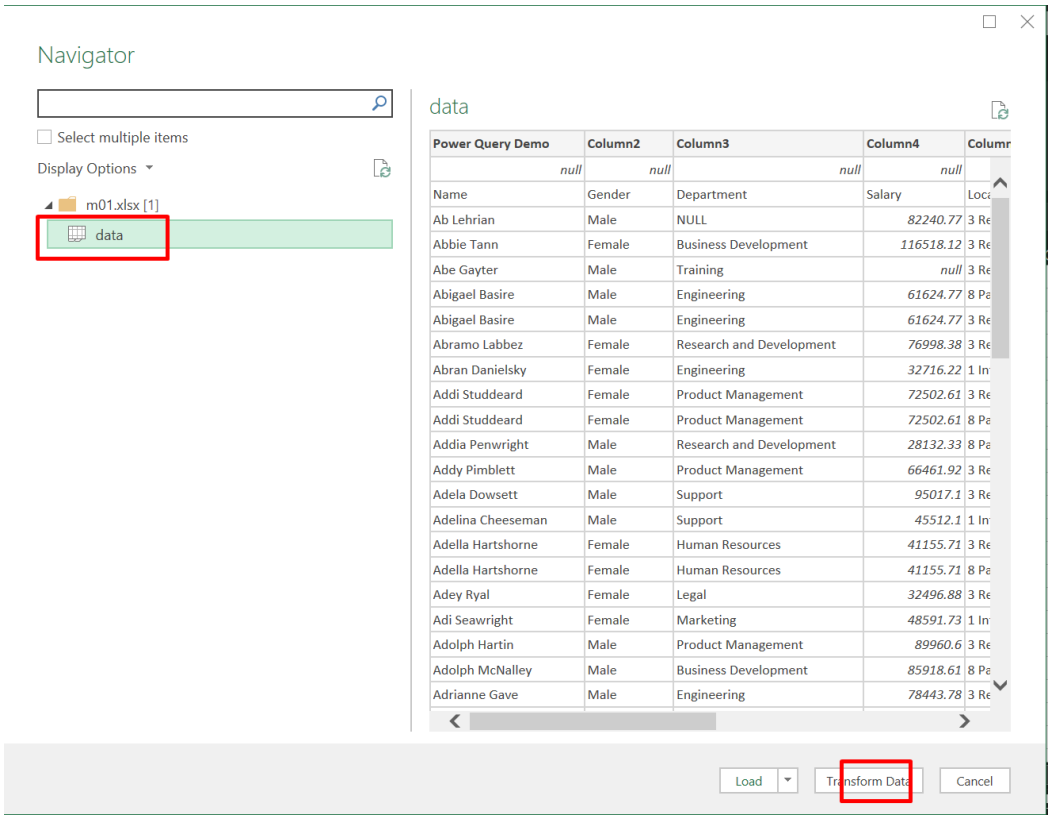
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

B. IMPORTING DATA





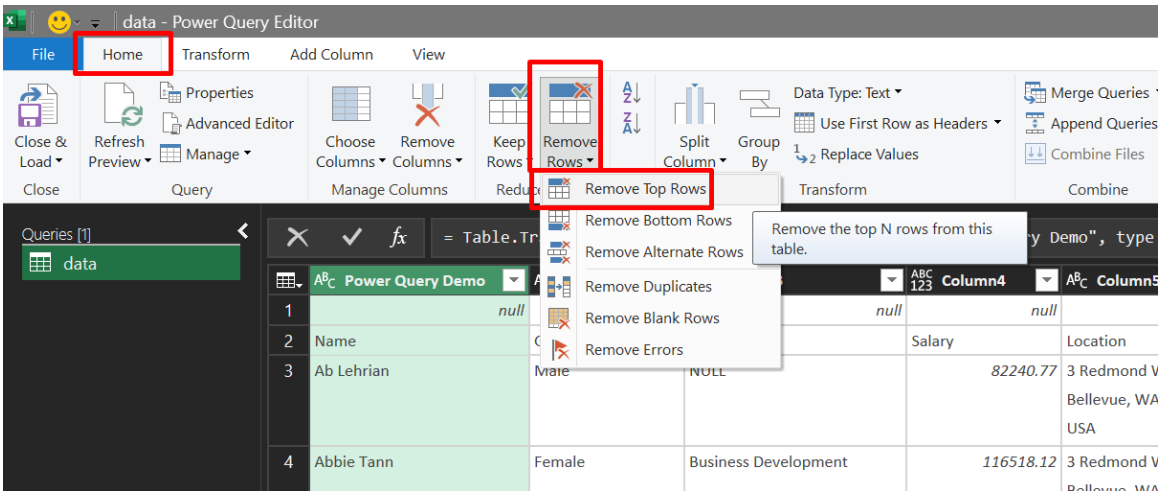
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

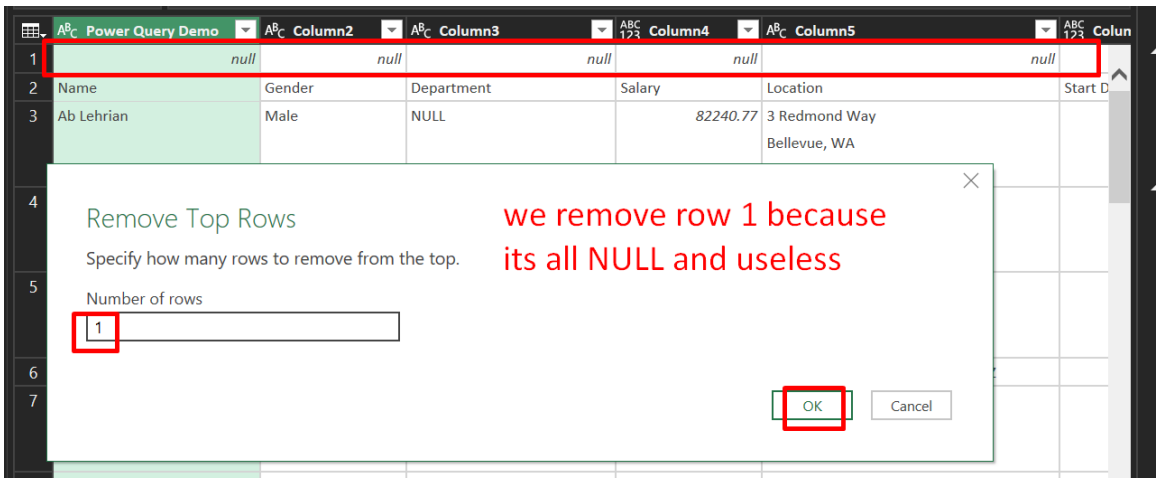


Power Query Demo	Column2	Column3	Column4	Columr
null	null	null	null	
Name	Gender	Department	Salary	Loca
Ab Lehrian	Male	NULL	82240.77	3 Re
Abbie Tann	Female	Business Development	116518.12	3 Re
Abe Gayter	Male	Training	null	3 Re
Abigael Basire	Male	Engineering	61624.77	8 Pa
Abigael Basire	Male	Engineering	61624.77	3 Re
Abramo Labbez	Female	Research and Development	76998.38	3 Re
Abran Danielsky	Female	Engineering	32716.22	1 In
Addi Studdeard	Female	Product Management	72502.61	3 Re
Addi Studdeard	Female	Product Management	72502.61	8 Pa
Addia Penwright	Male	Research and Development	28132.33	8 Pa
Addy Pimblett	Male	Product Management	66461.92	3 Re
Adela Dowsett	Male	Support	95017.1	3 Re
Adelina Cheeseman	Male	Support	45512.1	1 In
Adella Hartshorne	Female	Human Resources	41155.71	3 Re
Adella Hartshorne	Female	Human Resources	41155.71	8 Pa
Adey Ryal	Female	Legal	32496.88	3 Re
Adi Seawright	Female	Marketing	48591.73	1 In
Adolph Hartin	Male	Product Management	89960.6	3 Re
Adolph McNalley	Male	Business Development	85918.61	8 Pa
Adrianne Gave	Male	Engineering	78443.78	3 Re

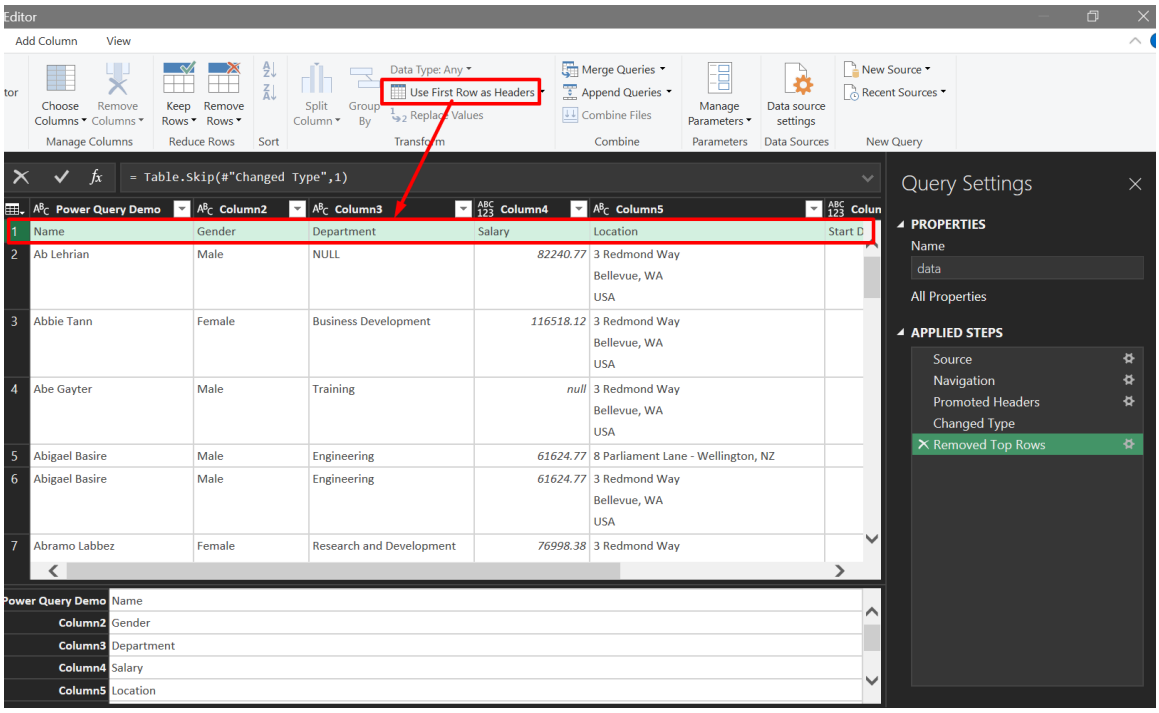
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

C. REMOVE BLANK TOP ROW



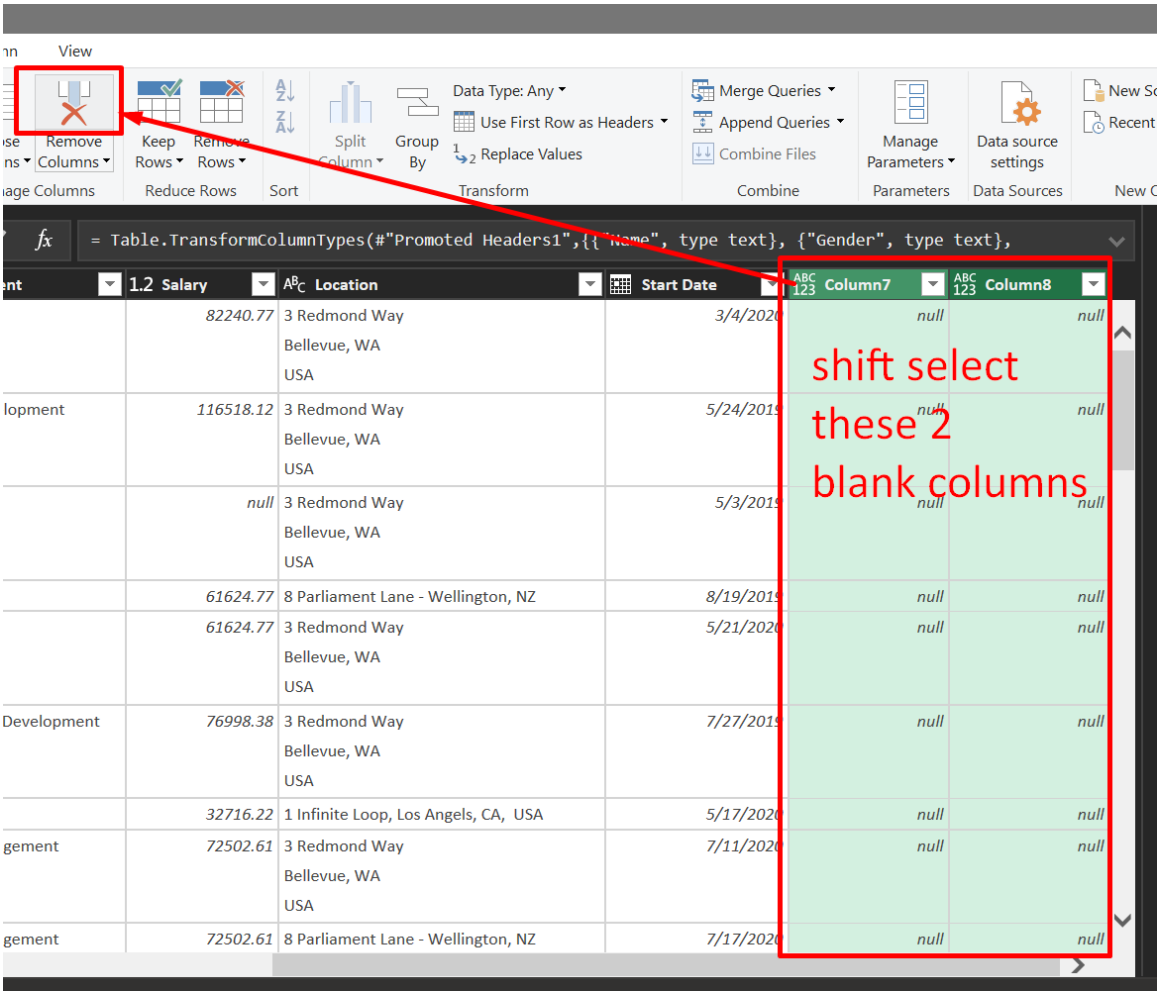


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG



COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

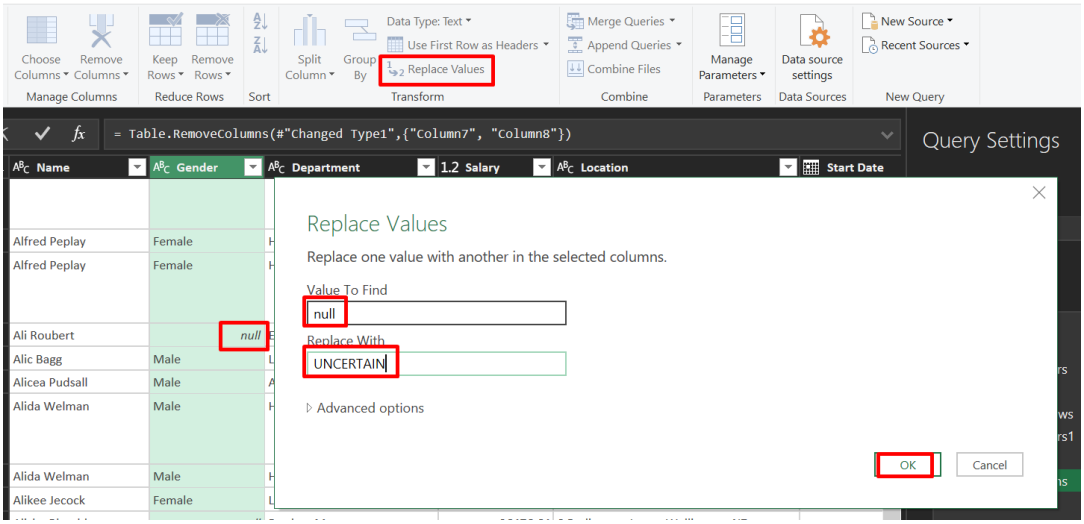
D. REMOVE BLANK COLUMNS



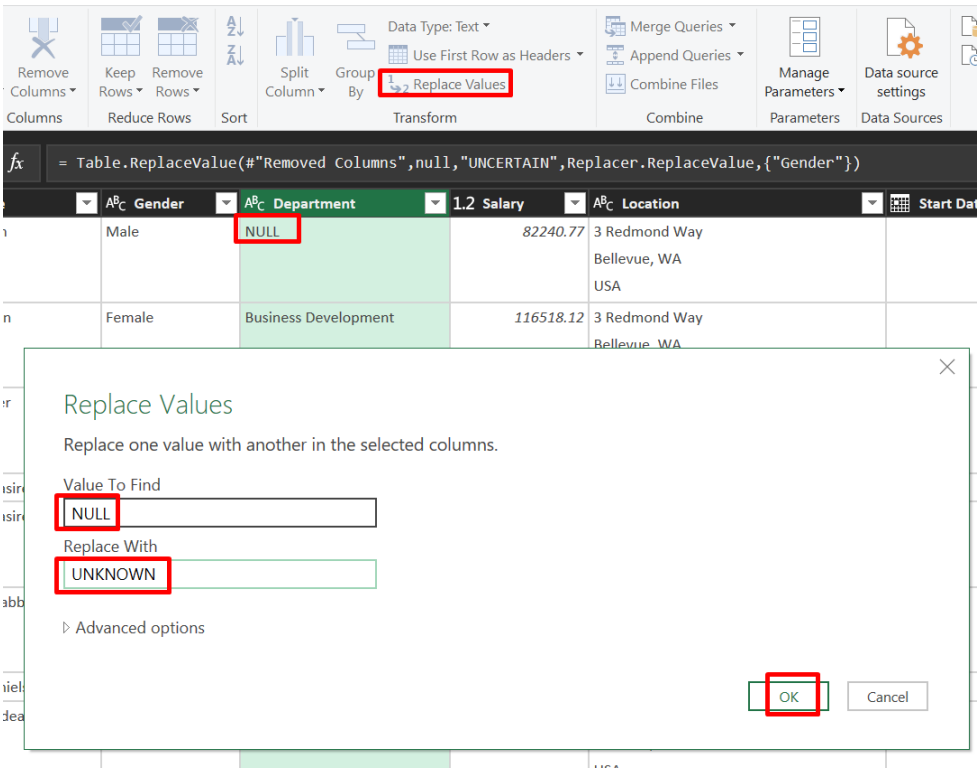
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

E. DATA CLEANSING

1. REPLACING NULL FROM GENDER COLUMN

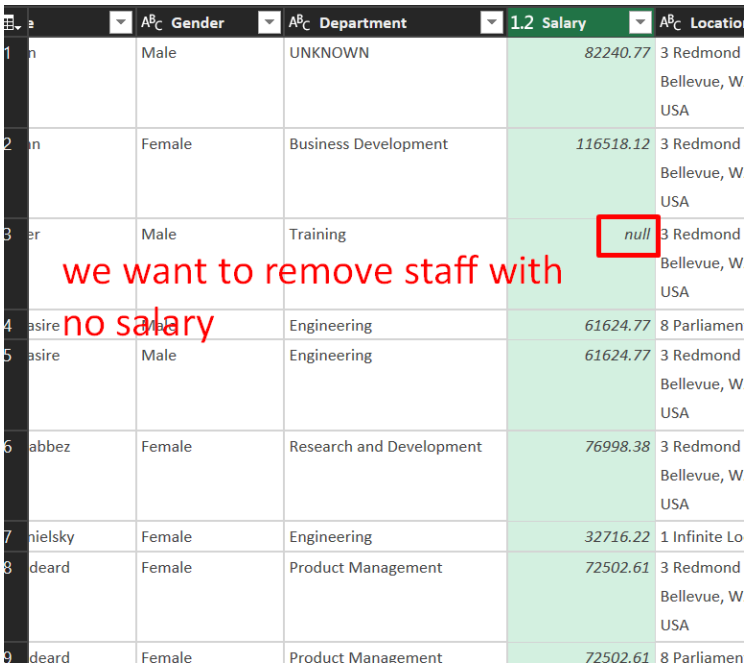


2. REPLACING NULL FROM DEPARTMENT COLUMN

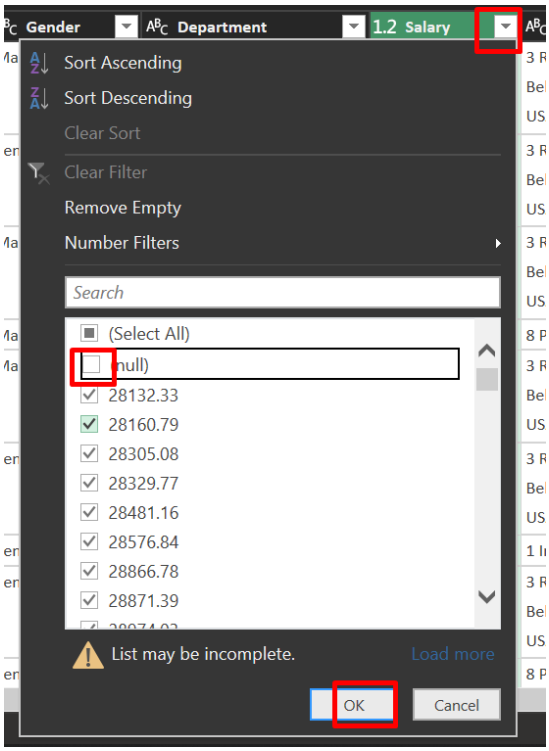


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

3. REMOVING STAFF WITH NO SALARY

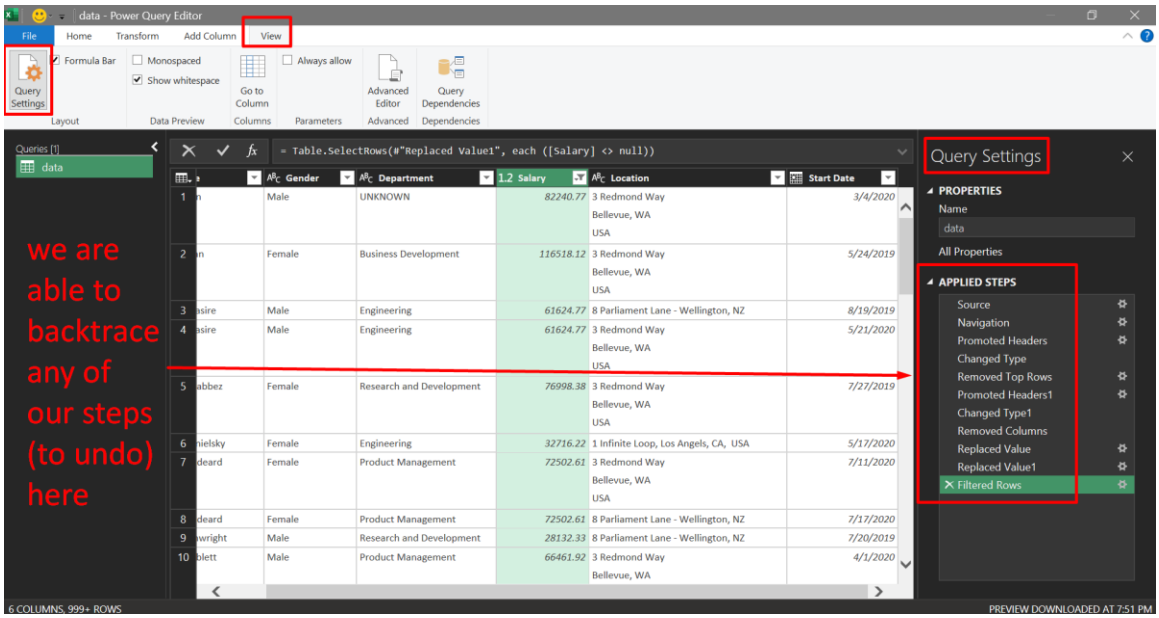


	Gender	Department	1.2 Salary	Locatio
1	Male	UNKNOWN	82240.77	3 Redmond Bellevue, W USA
2	Female	Business Development	116518.12	3 Redmond Bellevue, W USA
3	Male	Training	null	3 Redmond Bellevue, W USA
4	Male	Engineering	61624.77	8 Parliamen
5	Male	Engineering	61624.77	3 Redmond Bellevue, W USA
6	Female	Research and Development	76998.38	3 Redmond Bellevue, W USA
7	Female	Engineering	32716.22	1 Infinite Lo
8	Female	Product Management	72502.61	3 Redmond Bellevue, W USA
9	Female	Product Management	72502.61	8 Parliamen



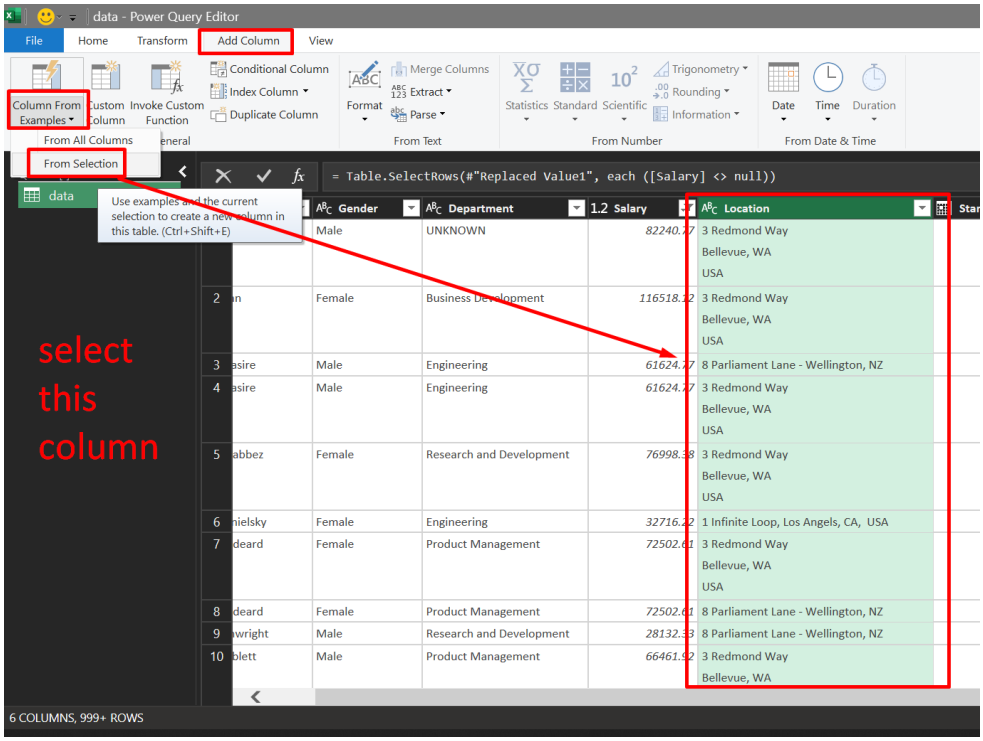
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

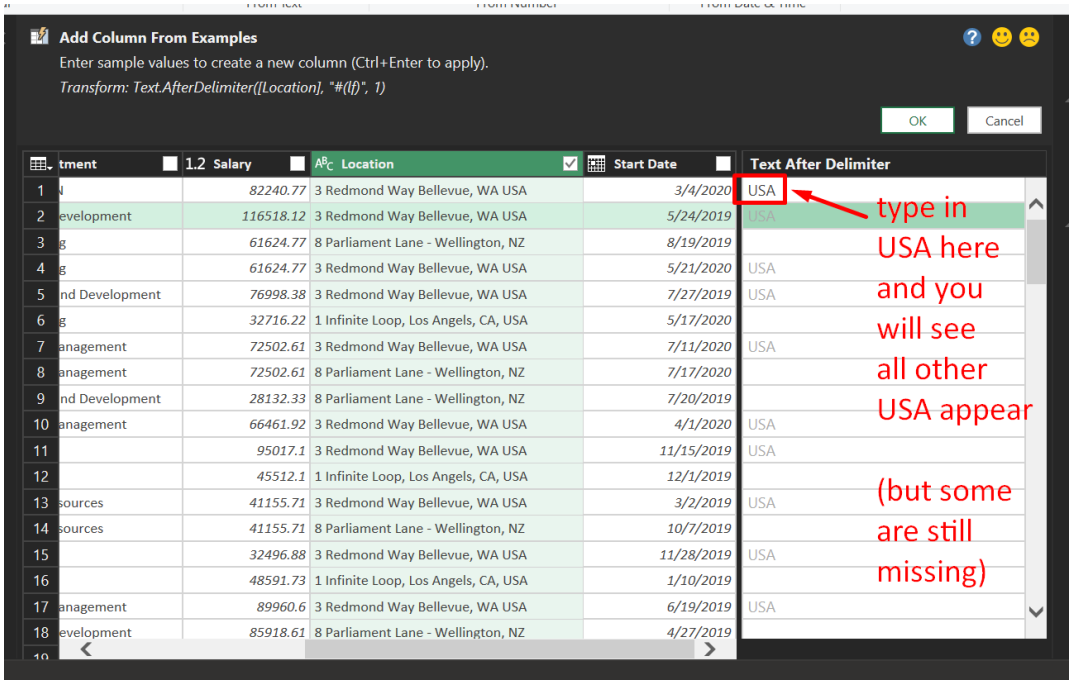
F. BACKTRACING STEPS TO UNDO



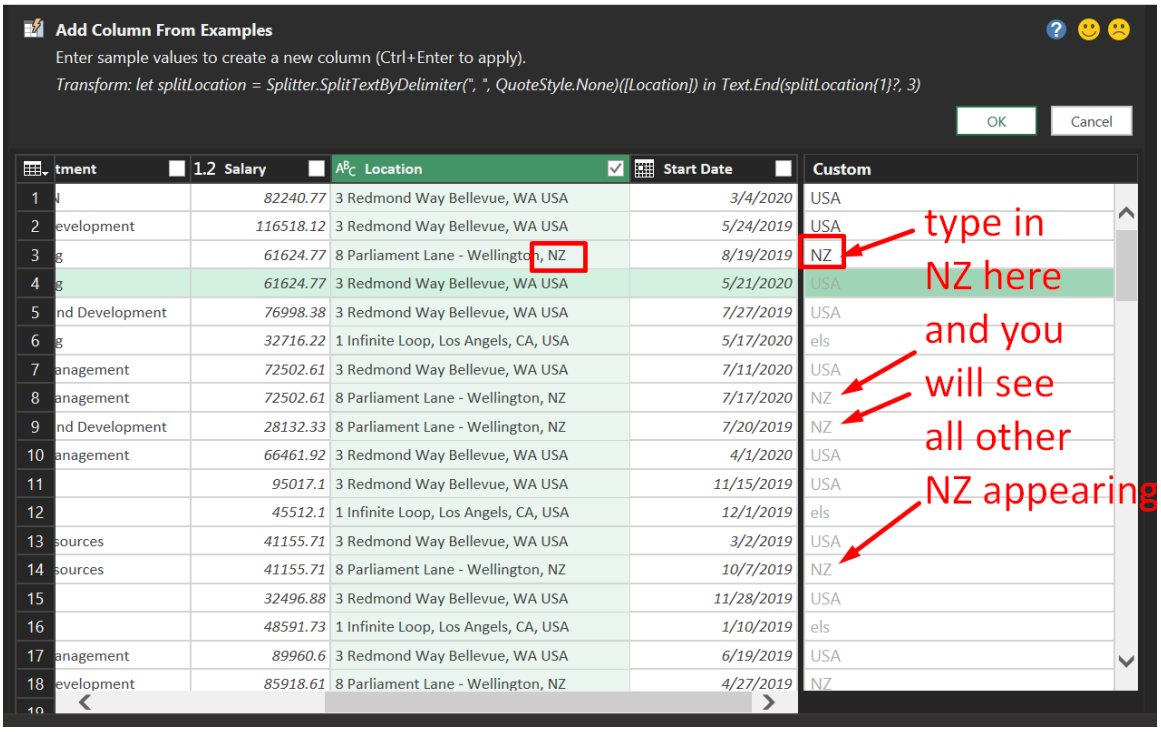
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

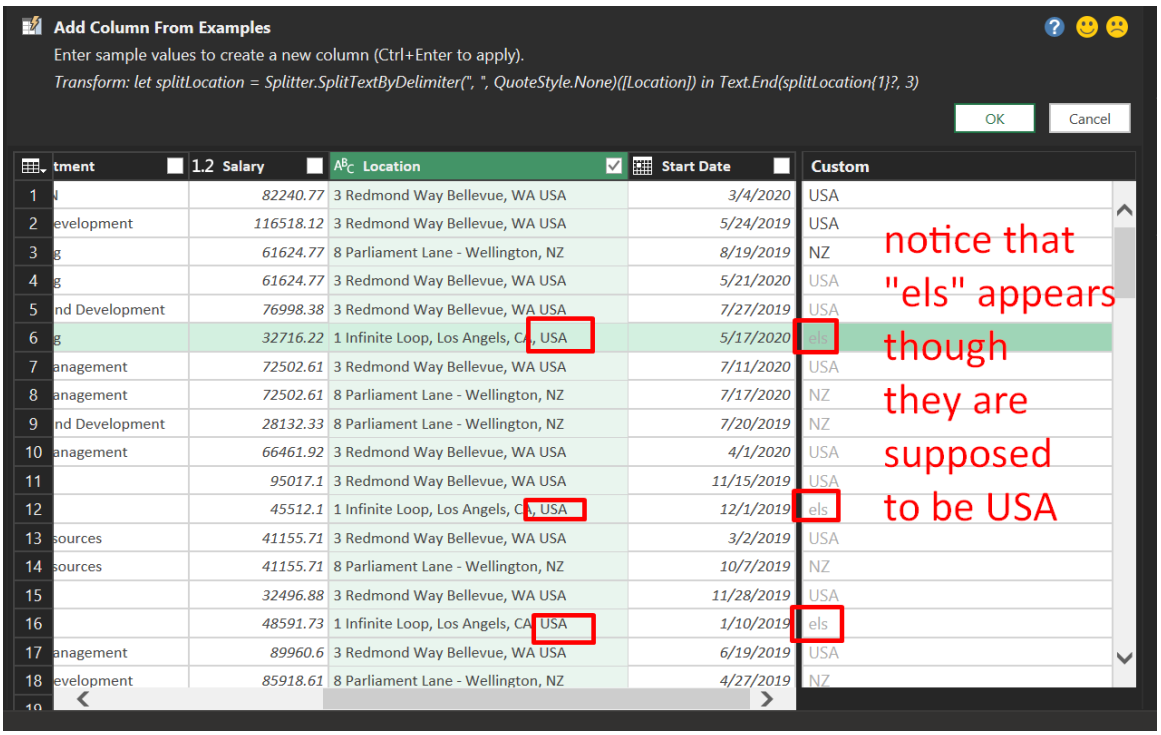
G. CREATING A NEW COLUMN CALLED COUNTRY



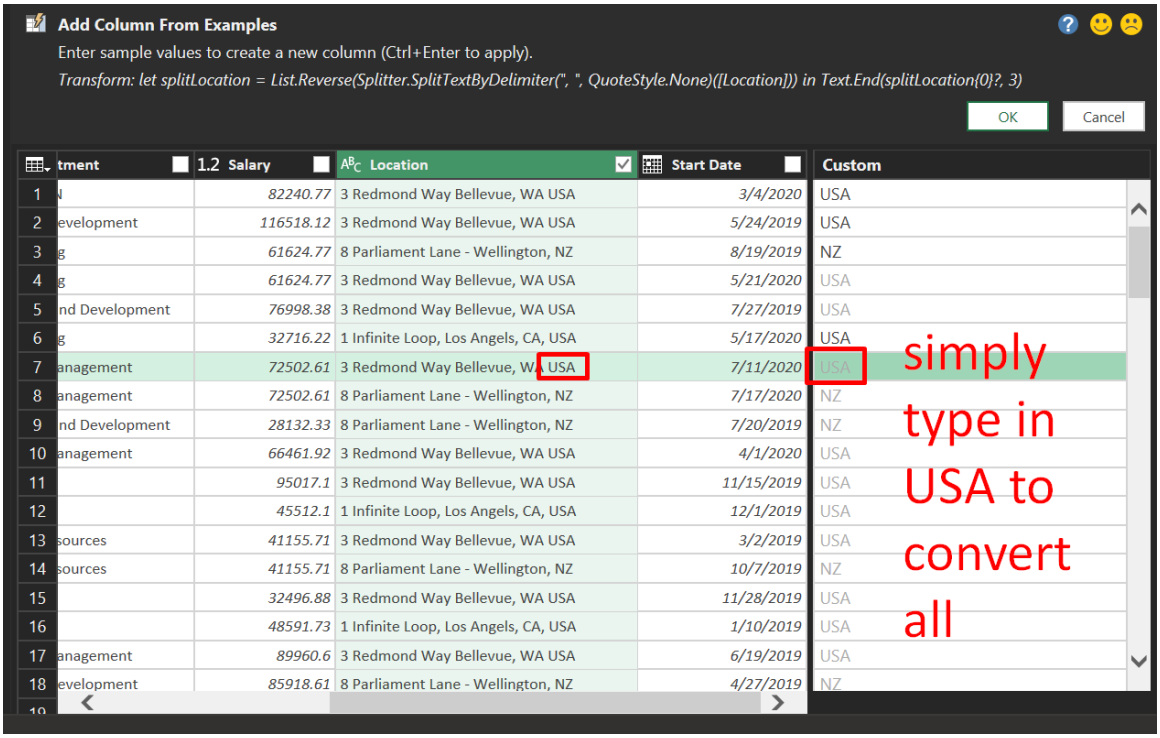


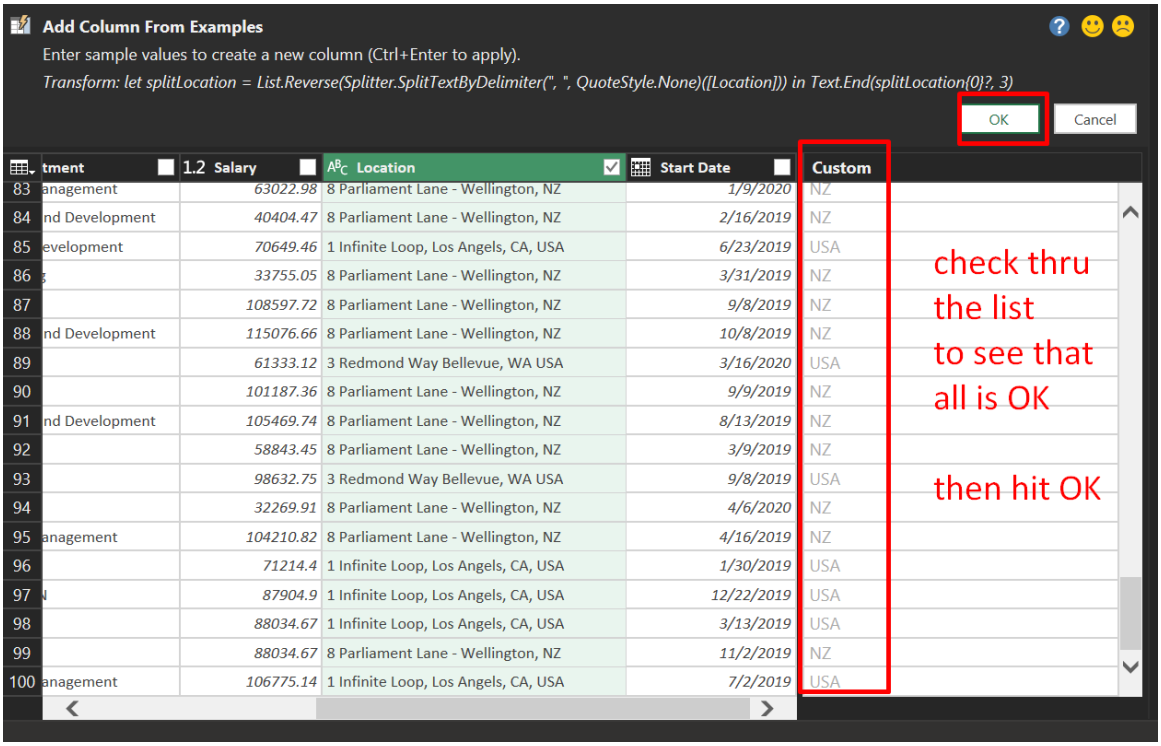
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG



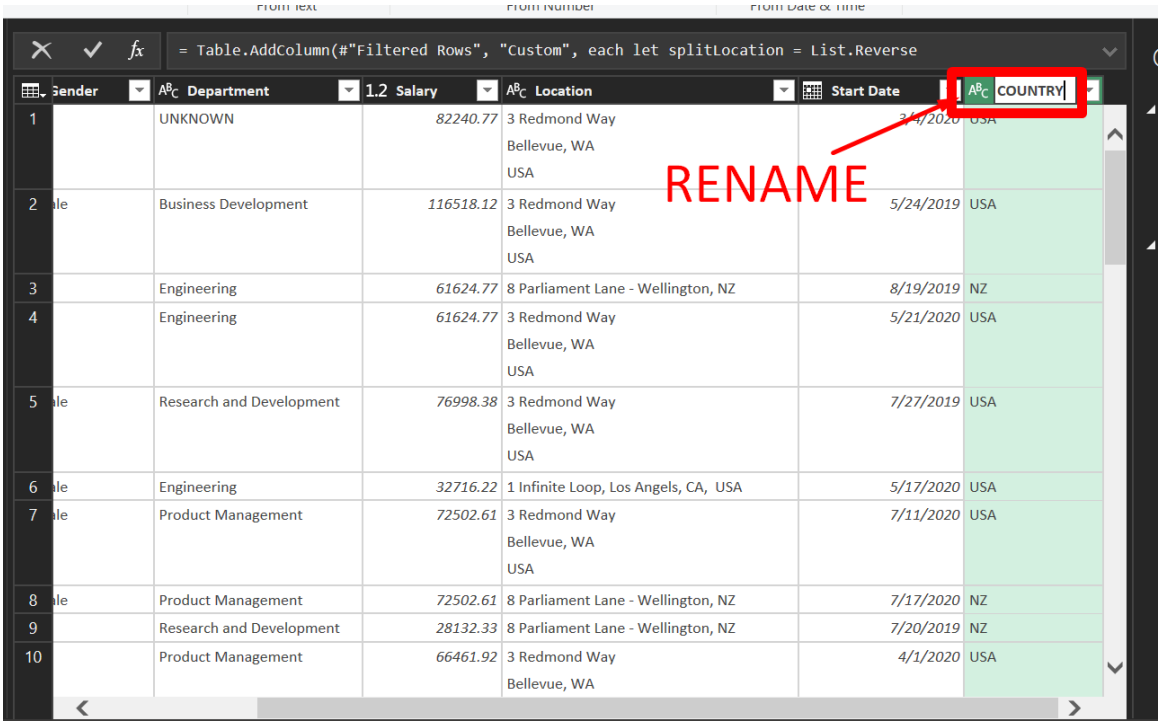


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG





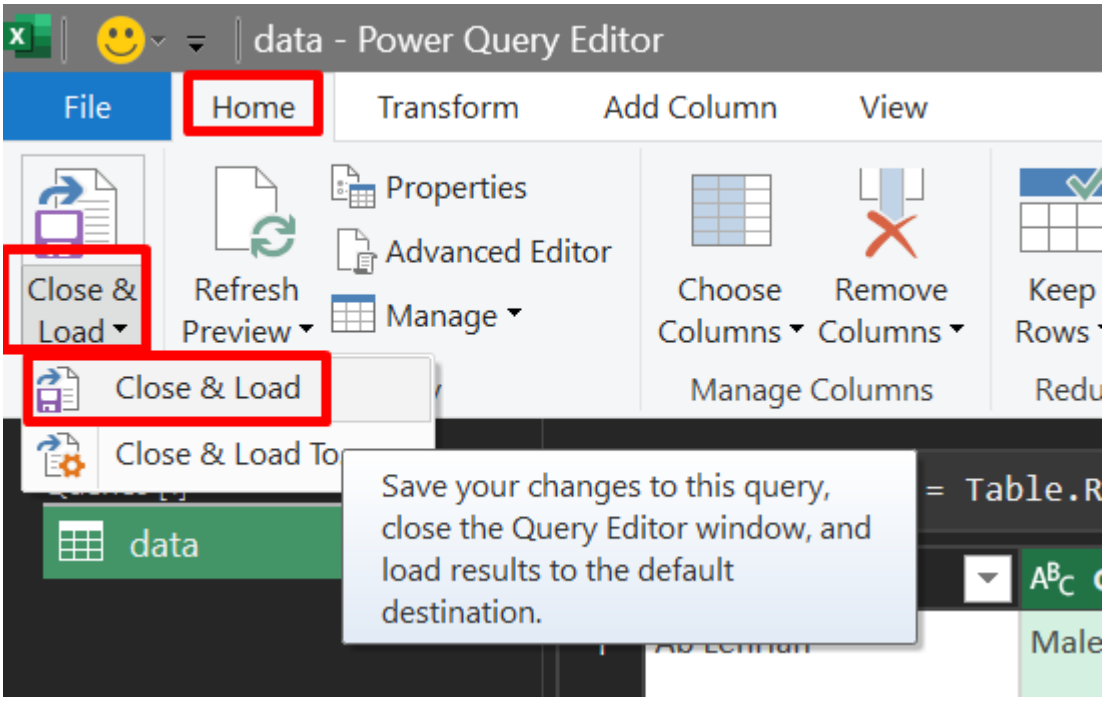
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

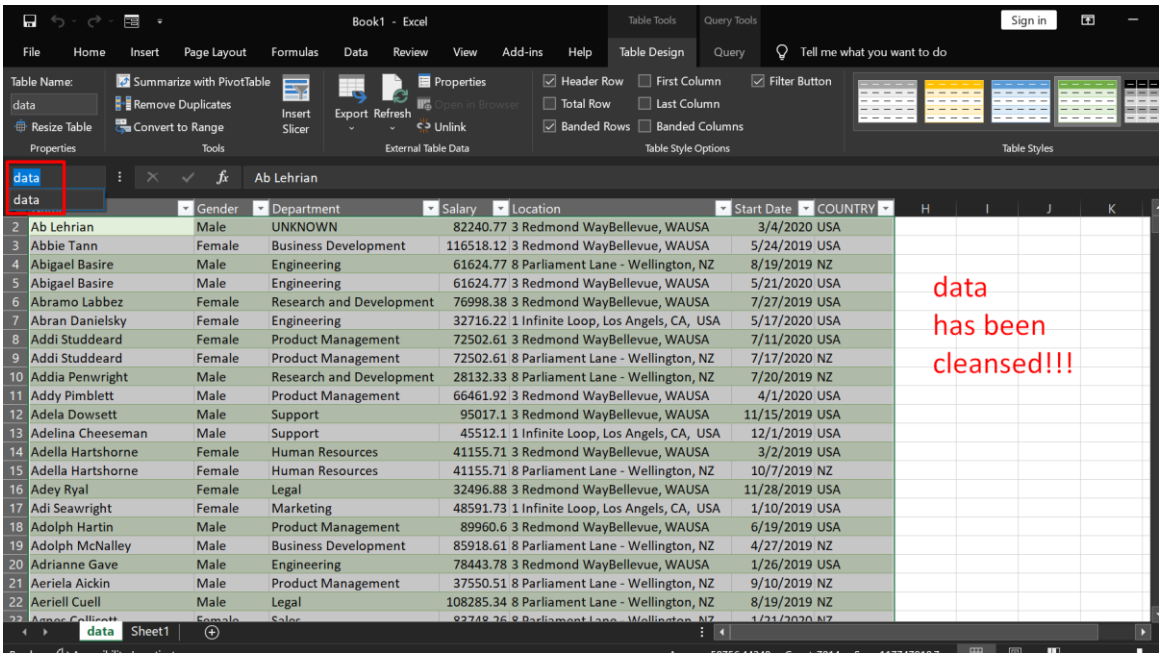


	Gender	Department	Salary	Location	Start Date	COUNTRY
1		UNKNOWN	82240.77	3 Redmond Way Bellevue, WA USA	3/4/2020	USA
2	ale	Business Development	116518.12	3 Redmond Way Bellevue, WA USA	5/24/2019	USA
3		Engineering	61624.77	8 Parliament Lane - Wellington, NZ	8/19/2019	NZ
4		Engineering	61624.77	3 Redmond Way Bellevue, WA USA	5/21/2020	USA
5	ale	Research and Development	76998.38	3 Redmond Way Bellevue, WA USA	7/27/2019	USA
6	ale	Engineering	32716.22	1 Infinite Loop, Los Angels, CA, USA	5/17/2020	USA
7	ale	Product Management	72502.61	3 Redmond Way Bellevue, WA USA	7/11/2020	USA
8	ale	Product Management	72502.61	8 Parliament Lane - Wellington, NZ	7/17/2020	NZ
9		Research and Development	28132.33	8 Parliament Lane - Wellington, NZ	7/20/2019	NZ
10		Product Management	66461.92	3 Redmond Way Bellevue, WA	4/1/2020	USA

COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

H. CLOSE AND LOAD

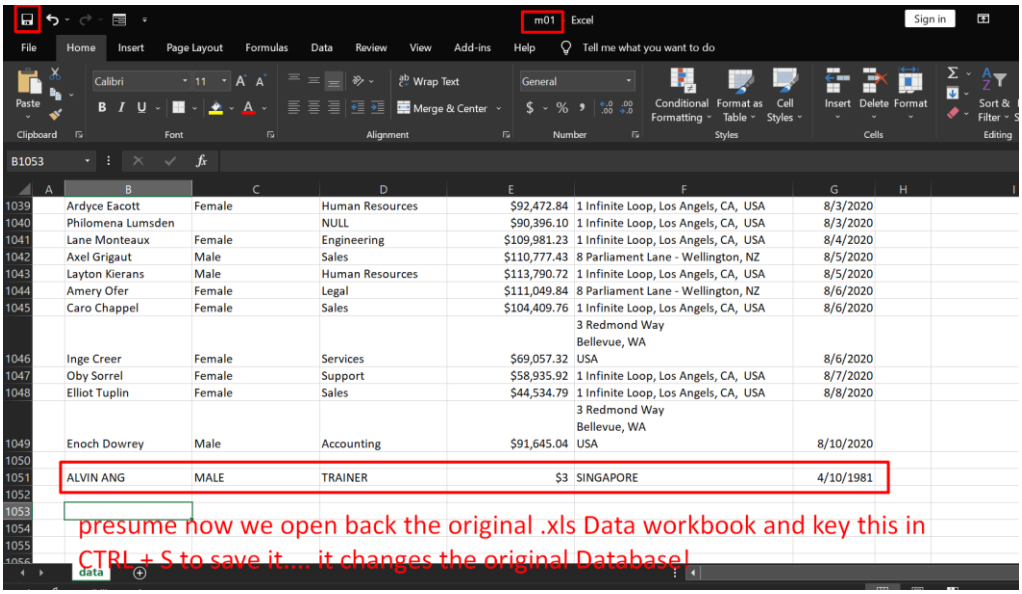


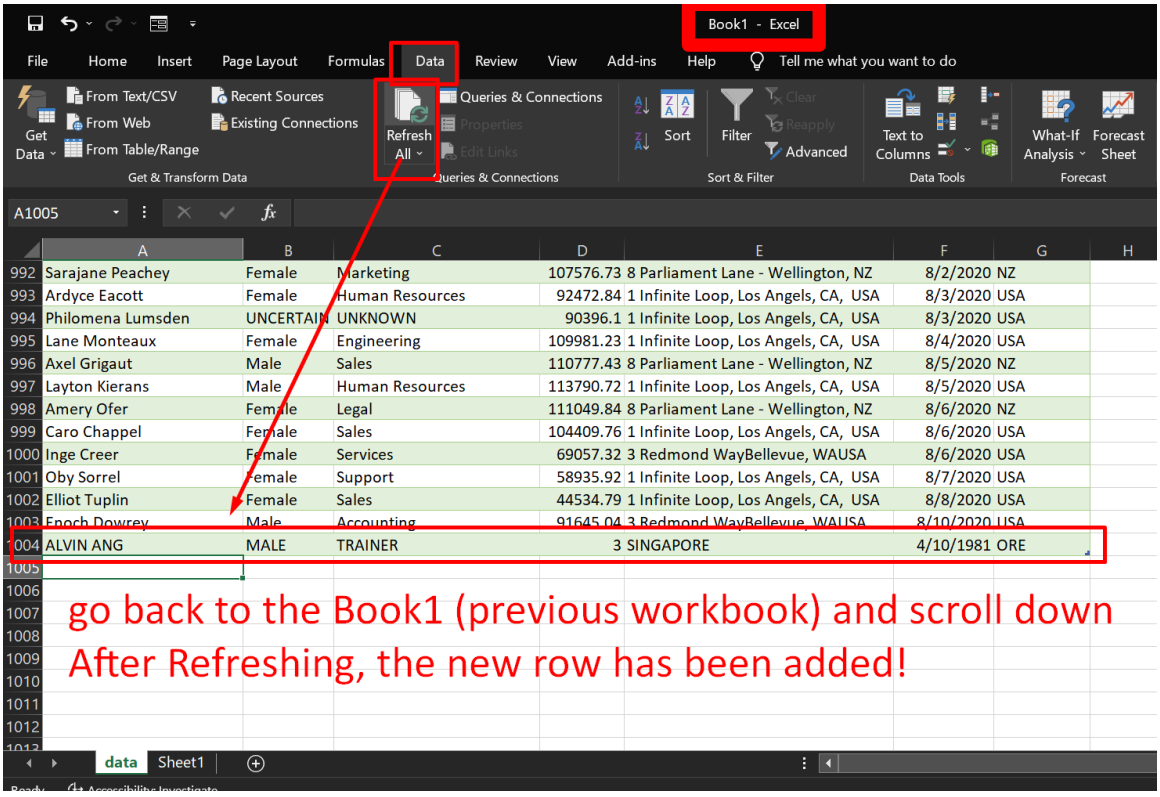


	Gender	Department	Salary	Location	Start Date	COUNTRY
Ab Lehrian	Male	UNKNOWN	82240.77	3 Redmond WayBellevue, WAUSA	3/4/2020	USA
Abbie Tann	Female	Business Development	116518.12	3 Redmond WayBellevue, WAUSA	5/24/2019	USA
Abigael Basire	Male	Engineering	61624.77	8 Parliament Lane - Wellington, NZ	8/19/2019	NZ
Abigael Basire	Male	Engineering	61624.77	3 Redmond WayBellevue, WAUSA	5/21/2020	USA
Abramo Labbez	Female	Research and Development	76998.38	3 Redmond WayBellevue, WAUSA	7/27/2019	USA
Abran Danielsky	Female	Engineering	32716.22	1 Infinite Loop, Los Angels, CA, USA	5/17/2020	USA
Addi Studdeard	Female	Product Management	72502.61	3 Redmond WayBellevue, WAUSA	7/11/2020	USA
Addi Studdeard	Female	Product Management	72502.61	8 Parliament Lane - Wellington, NZ	7/17/2020	NZ
Addia Penwright	Male	Research and Development	28132.33	8 Parliament Lane - Wellington, NZ	7/20/2019	NZ
Addy Pimblett	Male	Product Management	66461.92	3 Redmond WayBellevue, WAUSA	4/1/2020	USA
Adela Dowsett	Male	Support	95017.1	3 Redmond WayBellevue, WAUSA	11/15/2019	USA
Adelina Cheeseman	Male	Support	45512.1	1 Infinite Loop, Los Angels, CA, USA	12/1/2019	USA
Adella Hartshorne	Female	Human Resources	41155.71	3 Redmond WayBellevue, WAUSA	3/2/2019	USA
Adella Hartshorne	Female	Human Resources	41155.71	8 Parliament Lane - Wellington, NZ	10/7/2019	NZ
Adey Ryal	Female	Legal	32496.88	3 Redmond WayBellevue, WAUSA	11/28/2019	USA
Adi Seawright	Female	Marketing	48591.73	1 Infinite Loop, Los Angels, CA, USA	1/10/2019	USA
Adolph Hartin	Male	Product Management	89960.6	3 Redmond WayBellevue, WAUSA	6/19/2019	USA
Adolph McNalley	Male	Business Development	85918.61	8 Parliament Lane - Wellington, NZ	4/27/2019	NZ
Adrianne Gave	Male	Engineering	78443.78	3 Redmond WayBellevue, WAUSA	1/26/2019	USA
Aeriela Aickin	Male	Product Management	37550.51	8 Parliament Lane - Wellington, NZ	9/10/2019	NZ
Aeriell Cuell	Male	Legal	108285.34	8 Parliament Lane - Wellington, NZ	8/19/2019	NZ

COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

I. REFRESH DATA AFTER UPDATES...

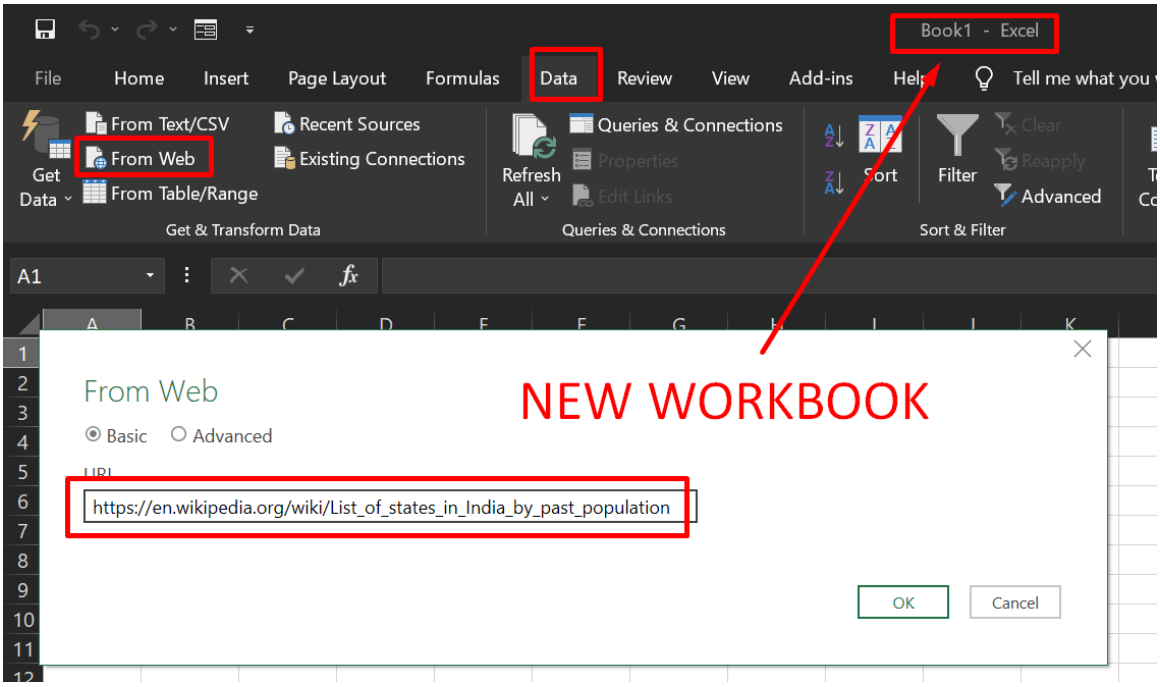


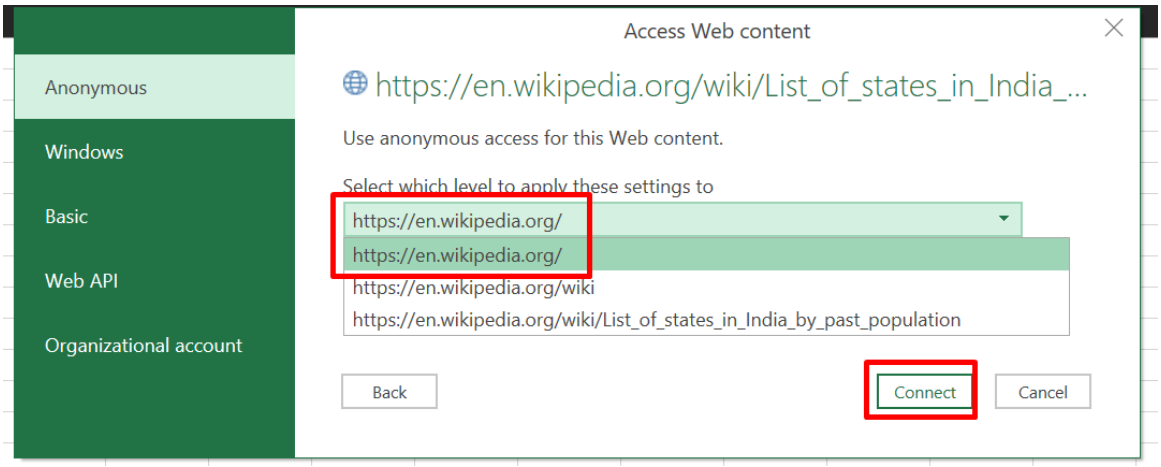


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

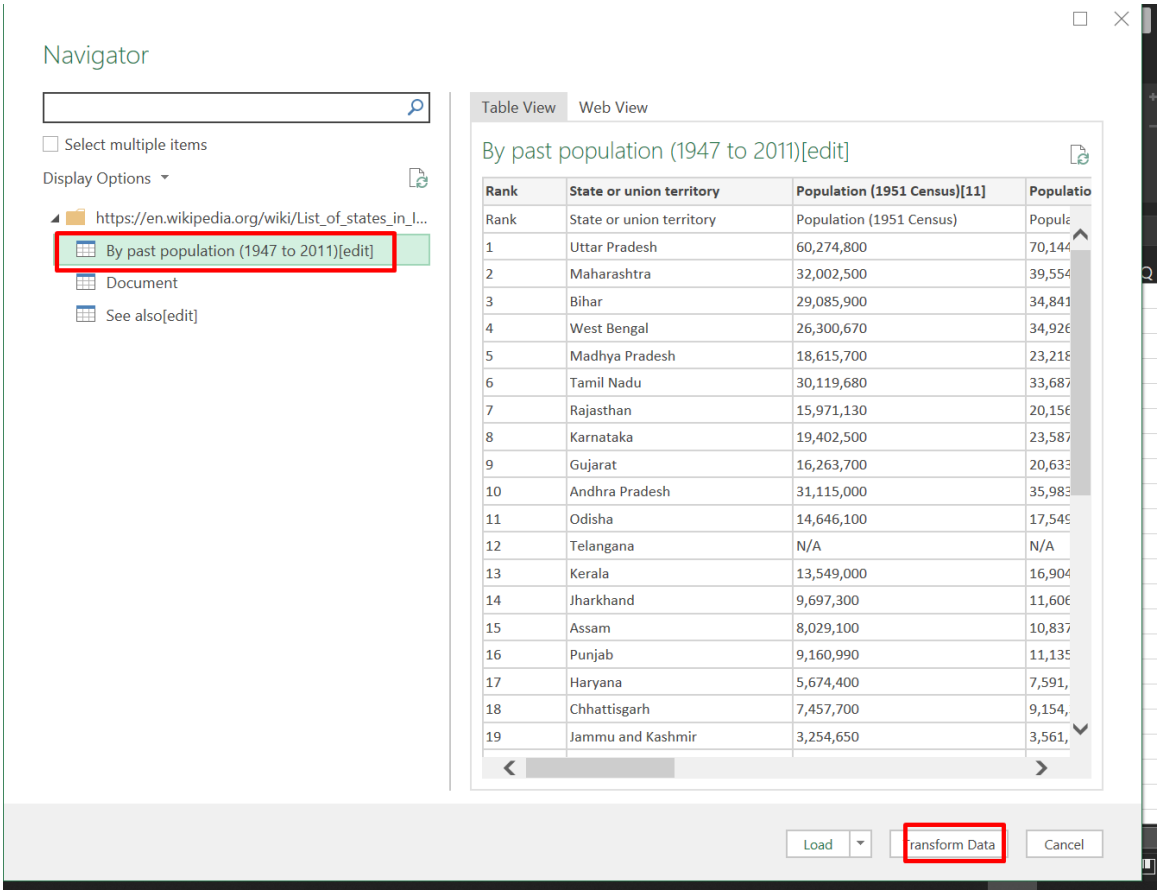
II. EXAMPLE 2: UNPIVOTING WEB SCRAPPED DATA TABLE

https://en.wikipedia.org/wiki/List_of_states_in_India_by_past_population

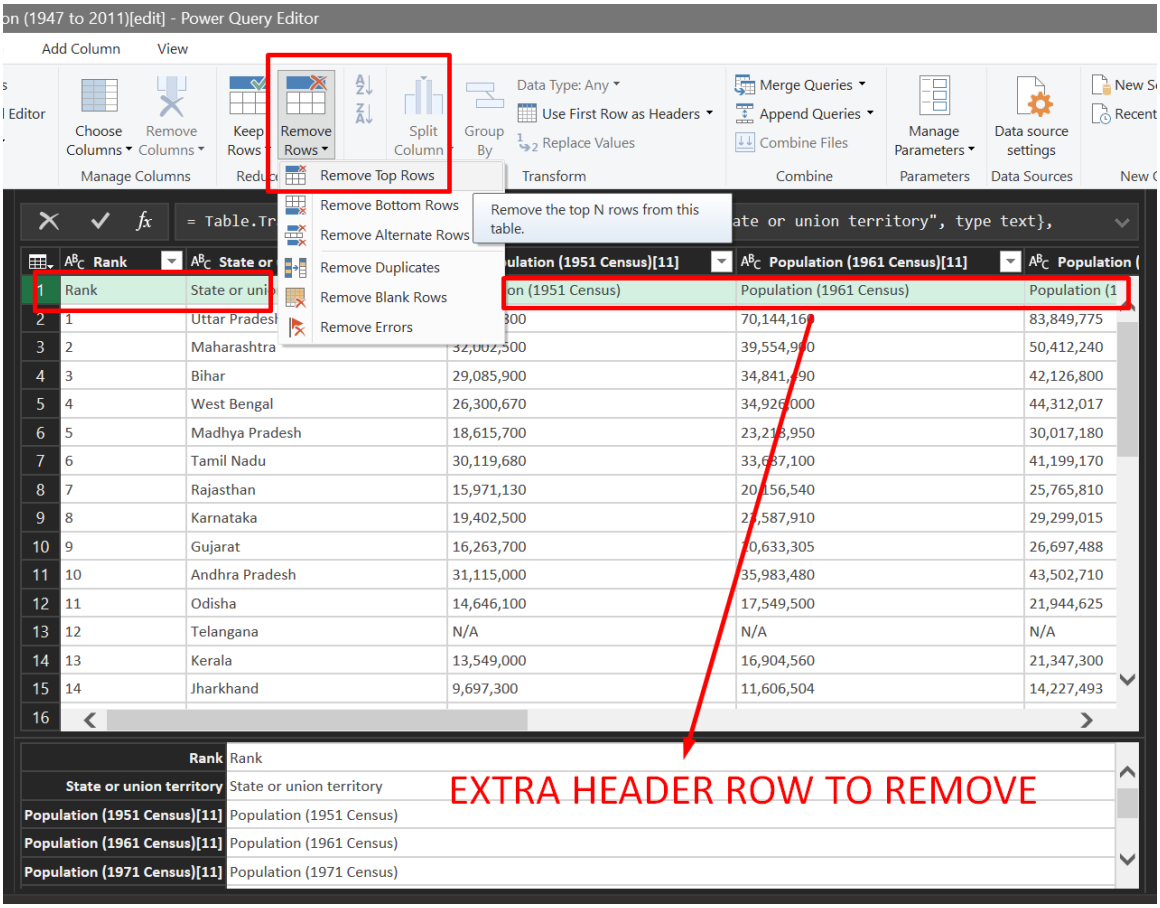


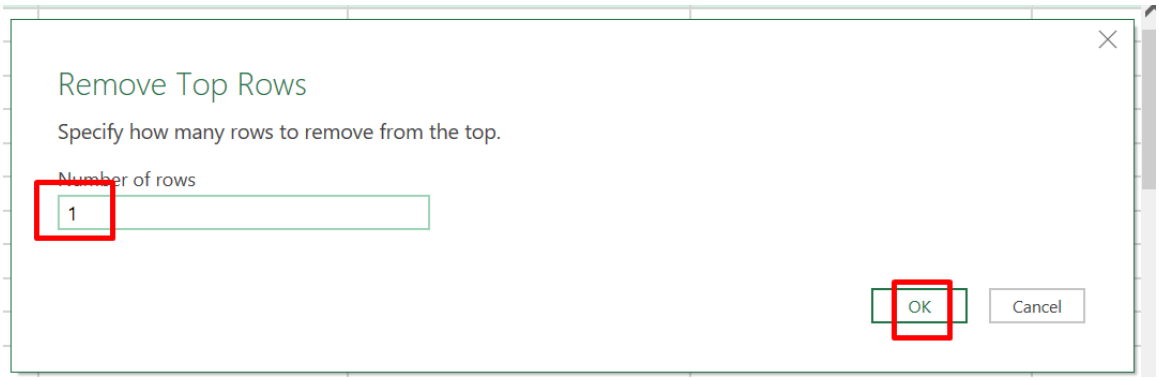


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

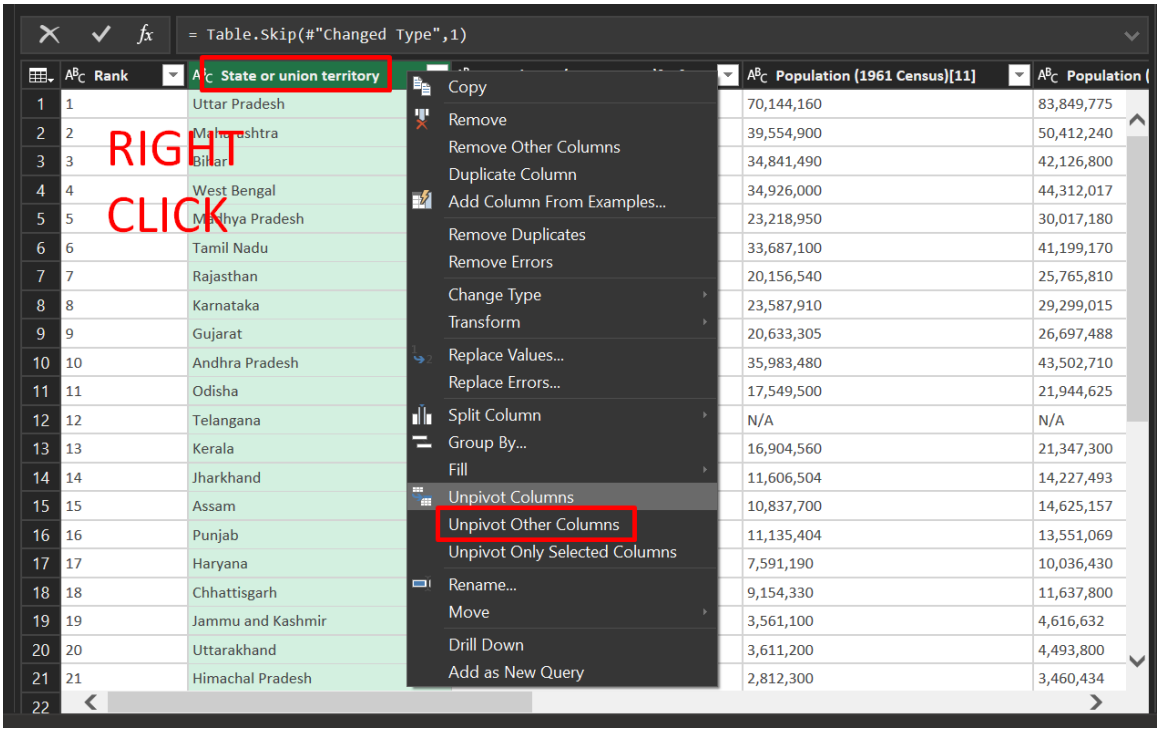


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

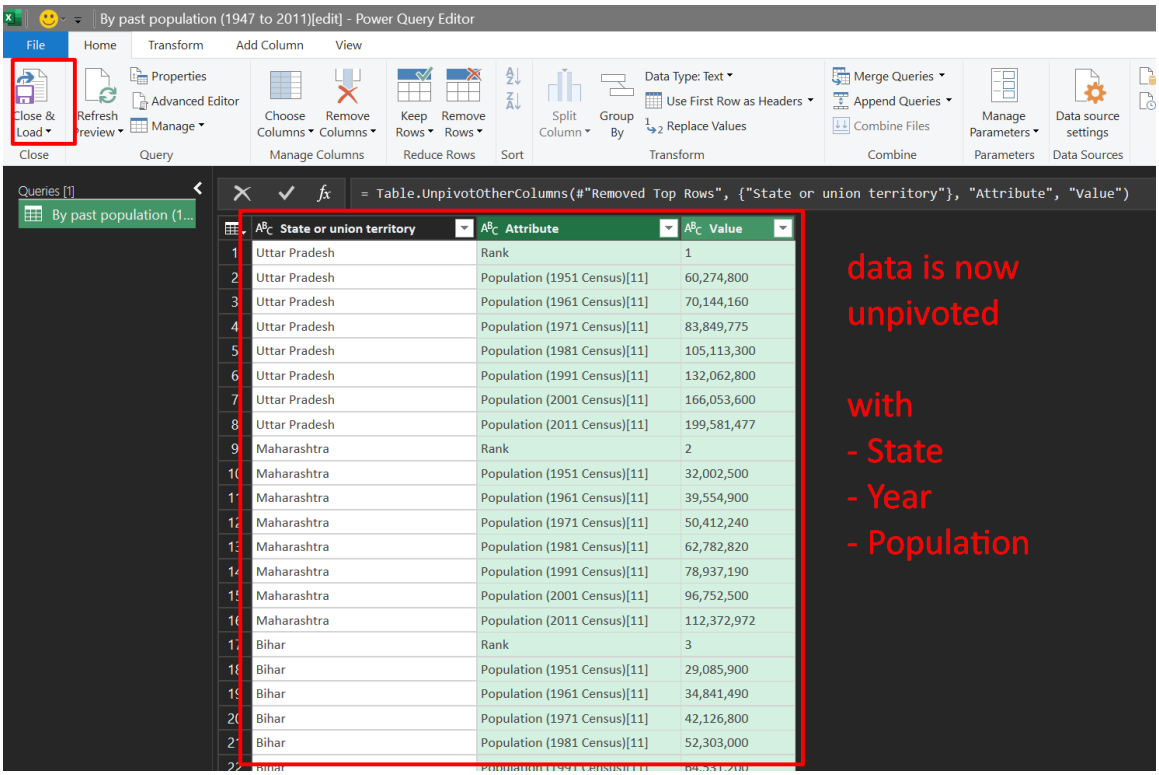




COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG



	Rank	State or union territory	Population (1961 Census)[11]	Population (
1	1	Uttar Pradesh	70,144,160	83,849,775
2	2	Maharashtra	39,554,900	50,412,240
3	3	Bihar	34,841,490	42,126,800
4	4	West Bengal	34,926,000	44,312,017
5	5	Madhya Pradesh	23,218,950	30,017,180
6	6	Tamil Nadu	33,687,100	41,199,170
7	7	Rajasthan	20,156,540	25,765,810
8	8	Karnataka	23,587,910	29,299,015
9	9	Gujarat	20,633,305	26,697,488
10	10	Andhra Pradesh	35,983,480	43,502,710
11	11	Odisha	17,549,500	21,944,625
12	12	Telangana	N/A	N/A
13	13	Kerala	16,904,560	21,347,300
14	14	Jharkhand	11,606,504	14,227,493
15	15	Assam	10,837,700	14,625,157
16	16	Punjab	11,135,404	13,551,069
17	17	Haryana	7,591,190	10,036,430
18	18	Chhattisgarh	9,154,330	11,637,800
19	19	Jammu and Kashmir	3,561,100	4,616,632
20	20	Uttarakhand	3,611,200	4,493,800
21	21	Himachal Pradesh	2,812,300	3,460,434
22				



	State or union territory	Attribute	Value
1	Uttar Pradesh	Rank	1
2	Uttar Pradesh	Population (1951 Census)[11]	60,274,800
3	Uttar Pradesh	Population (1961 Census)[11]	70,144,160
4	Uttar Pradesh	Population (1971 Census)[11]	83,849,775
5	Uttar Pradesh	Population (1981 Census)[11]	105,113,300
6	Uttar Pradesh	Population (1991 Census)[11]	132,062,800
7	Uttar Pradesh	Population (2001 Census)[11]	166,053,600
8	Uttar Pradesh	Population (2011 Census)[11]	199,581,477
9	Maharashtra	Rank	2
10	Maharashtra	Population (1951 Census)[11]	32,002,500
11	Maharashtra	Population (1961 Census)[11]	39,554,900
12	Maharashtra	Population (1971 Census)[11]	50,412,240
13	Maharashtra	Population (1981 Census)[11]	62,782,820
14	Maharashtra	Population (1991 Census)[11]	78,937,190
15	Maharashtra	Population (2001 Census)[11]	96,752,500
16	Maharashtra	Population (2011 Census)[11]	112,372,972
17	Bihar	Rank	3
18	Bihar	Population (1951 Census)[11]	29,085,900
19	Bihar	Population (1961 Census)[11]	34,841,490
20	Bihar	Population (1971 Census)[11]	42,126,800
21	Bihar	Population (1981 Census)[11]	52,303,000

COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

III. EXAMPLE 3: COMBING A BUNCH OF DATA FILES INTO ONE SHEET (SIMILAR TO SQL UNION)

https://www.alvinang.sg/s/project-alpha.xlsx

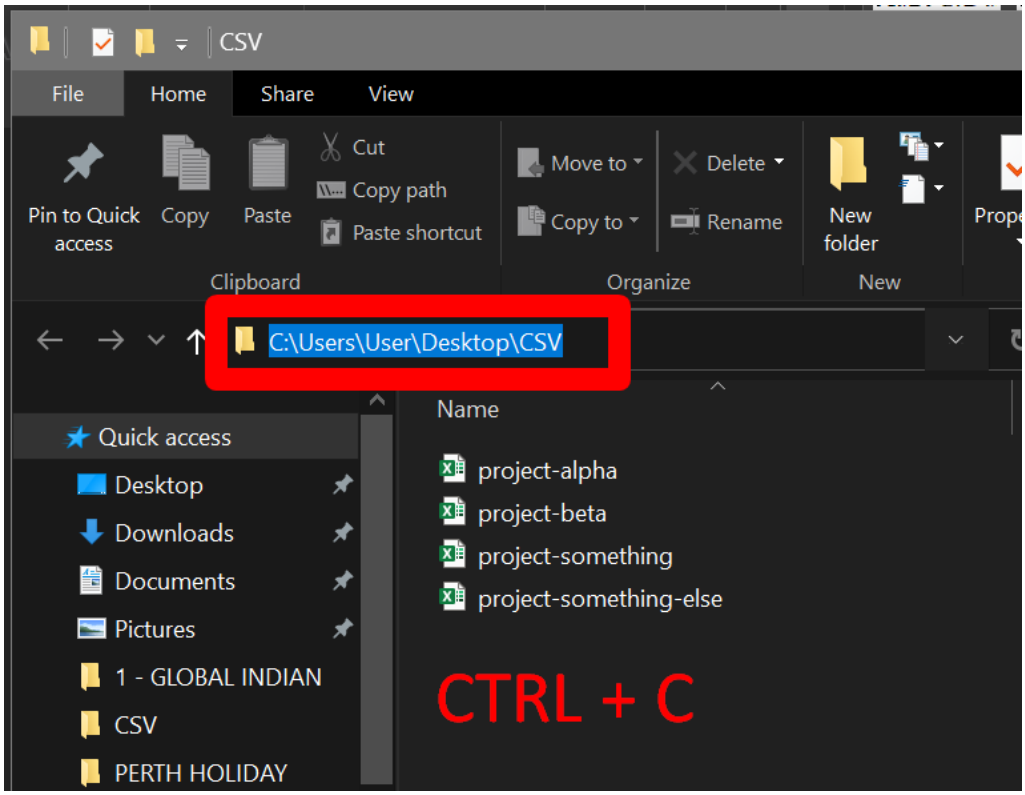
https://www.alvinang.sg/s/project-beta.xlsx

https://www.alvinang.sg/s/project-something.xlsx

https://www.alvinang.sg/s/project-something-else.xlsx

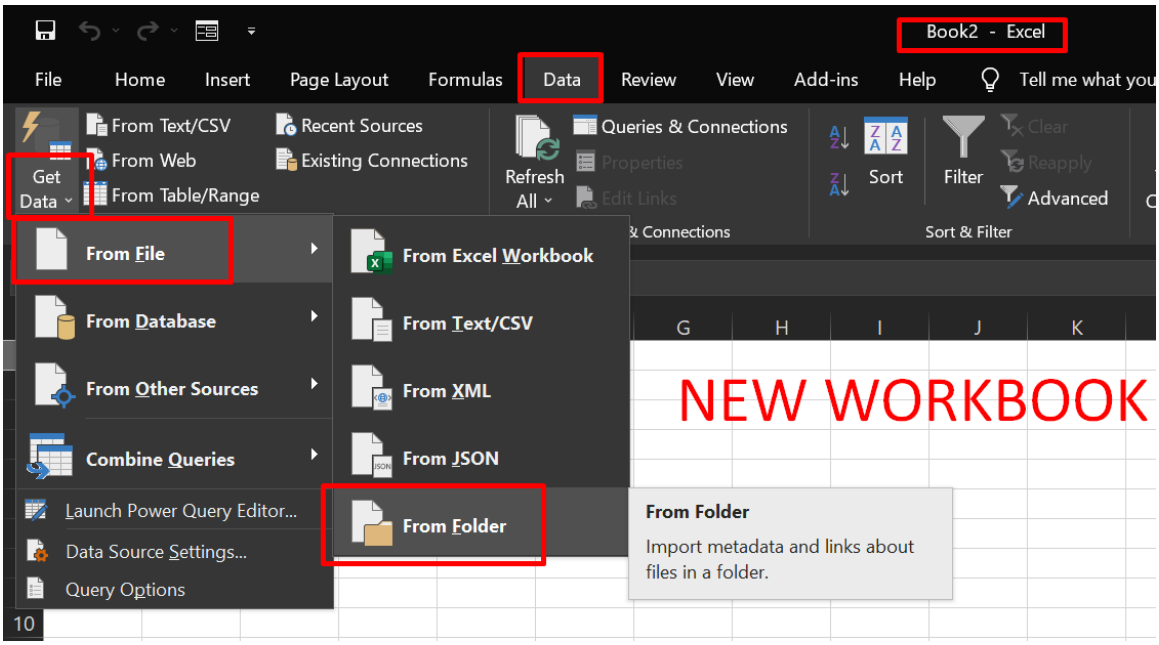
Download all the files ABOVE and place them all in ONE FOLDER

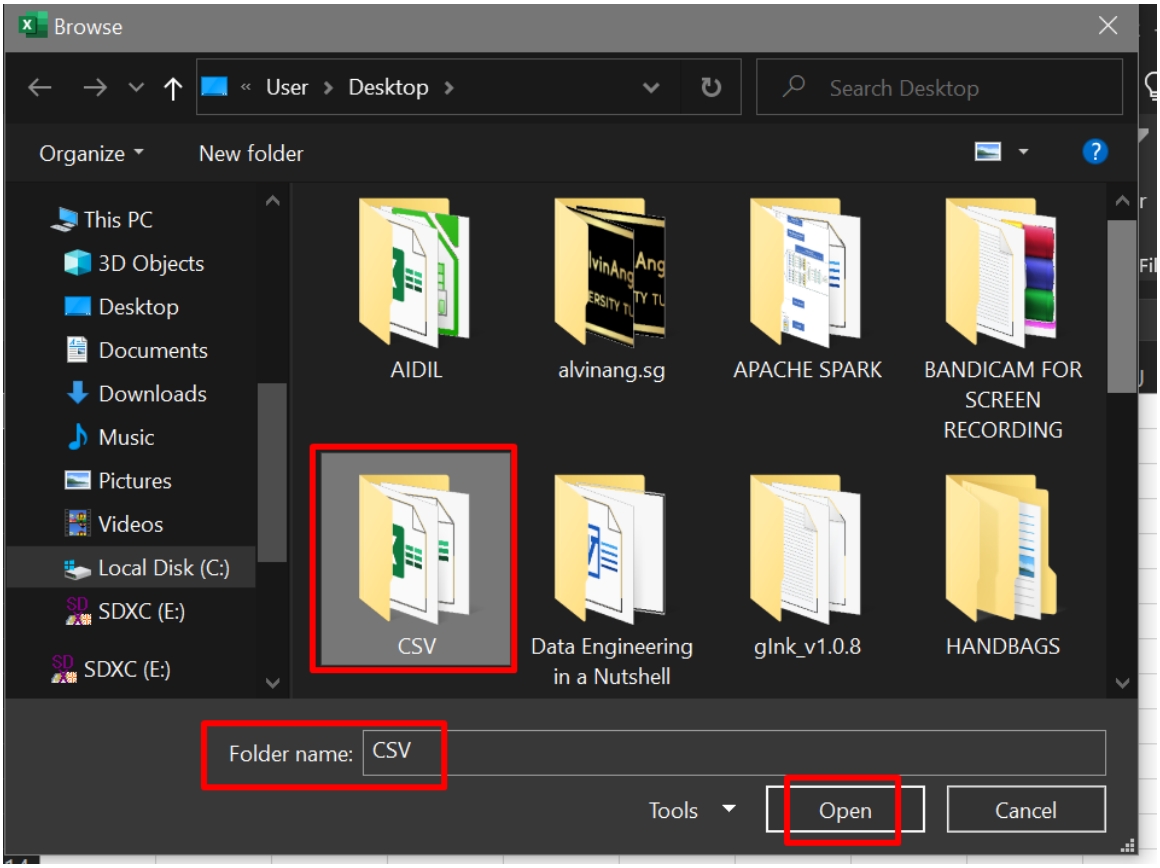
A. IMPORTING ALL FILES



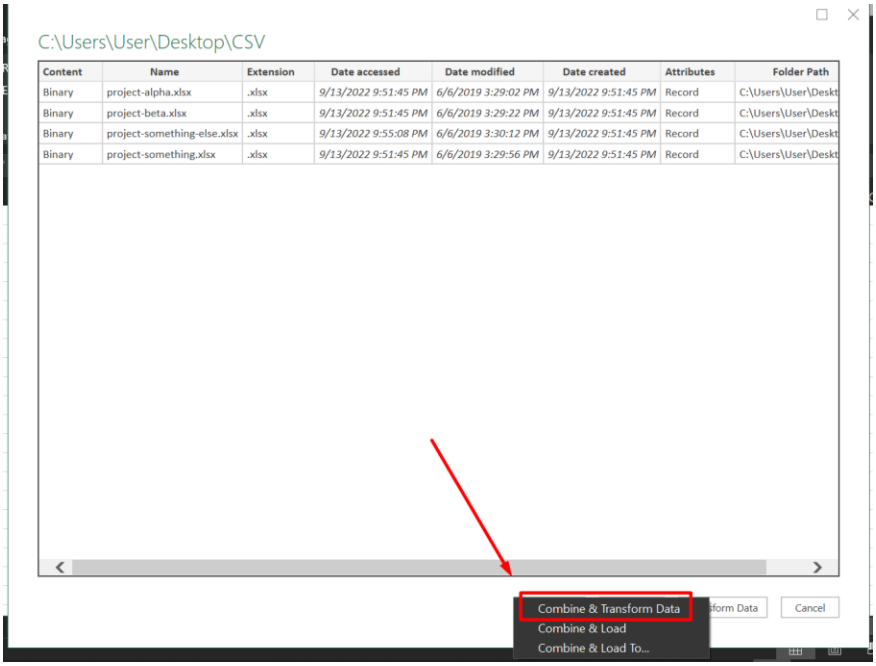
C:\Users\User\Desktop\CSV

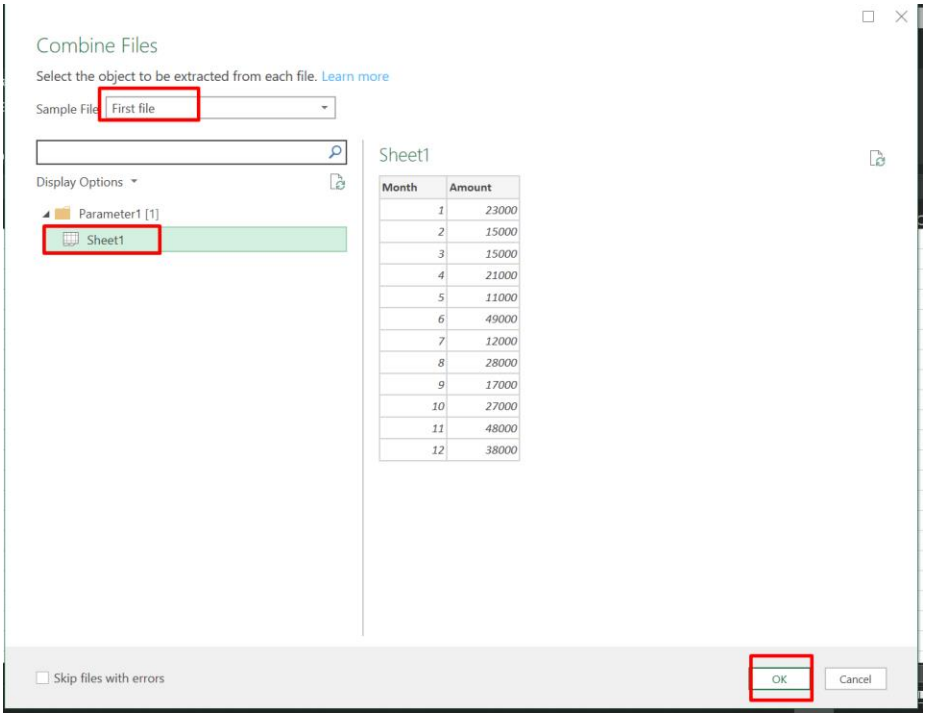
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG





COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

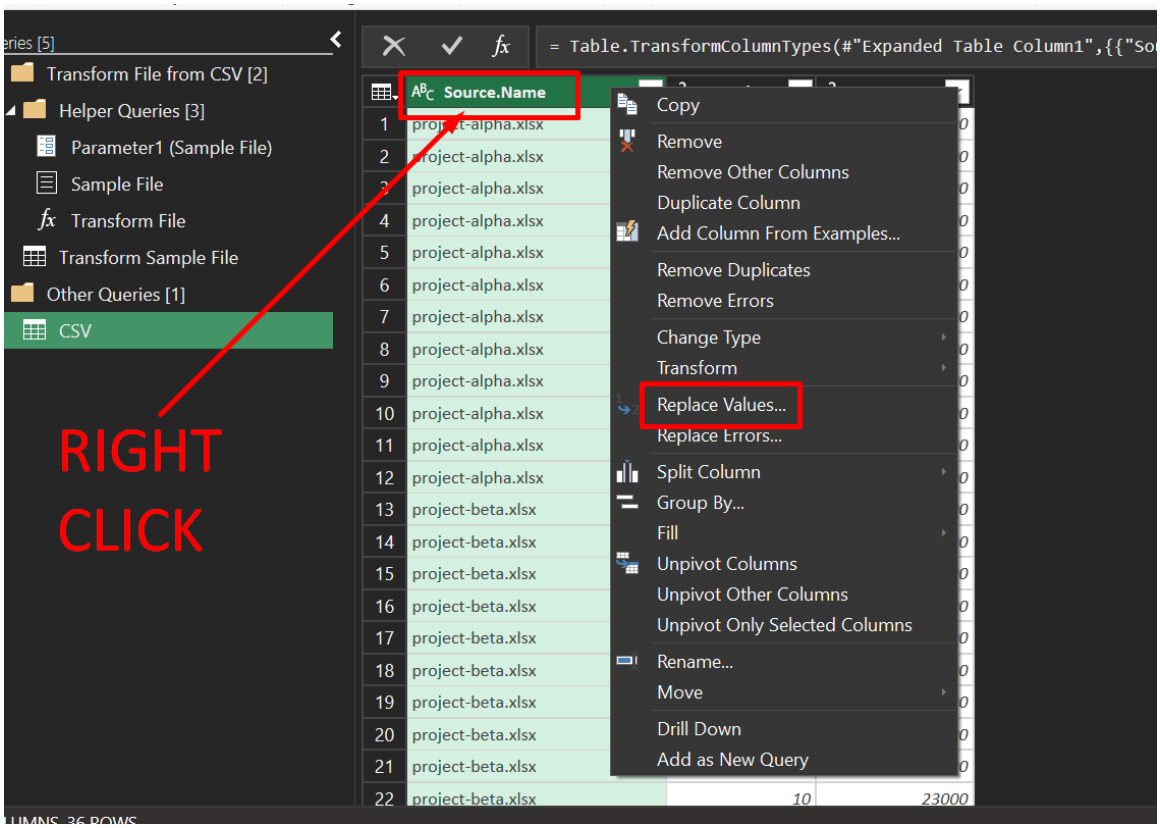


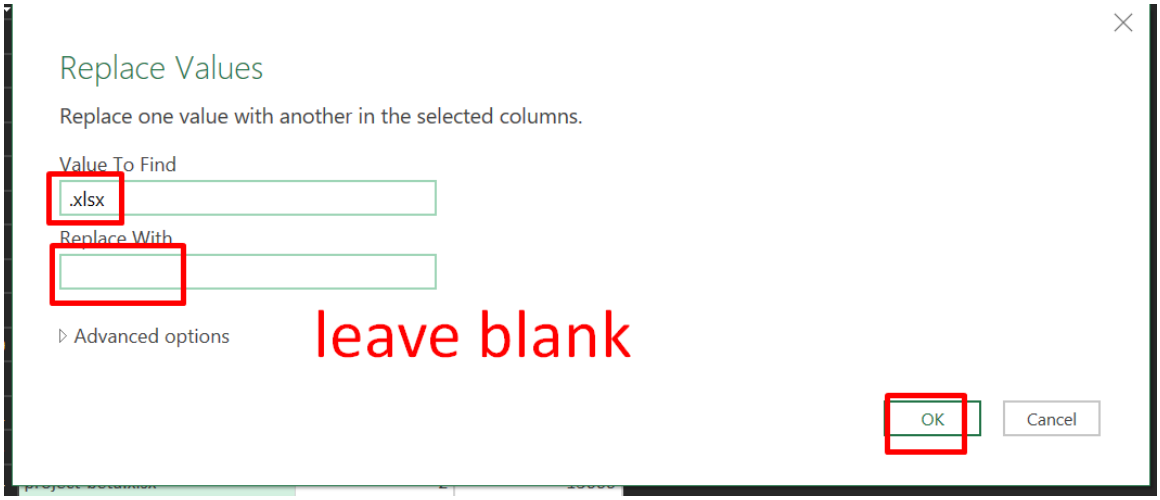


Above just shows a Sample First File….

COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

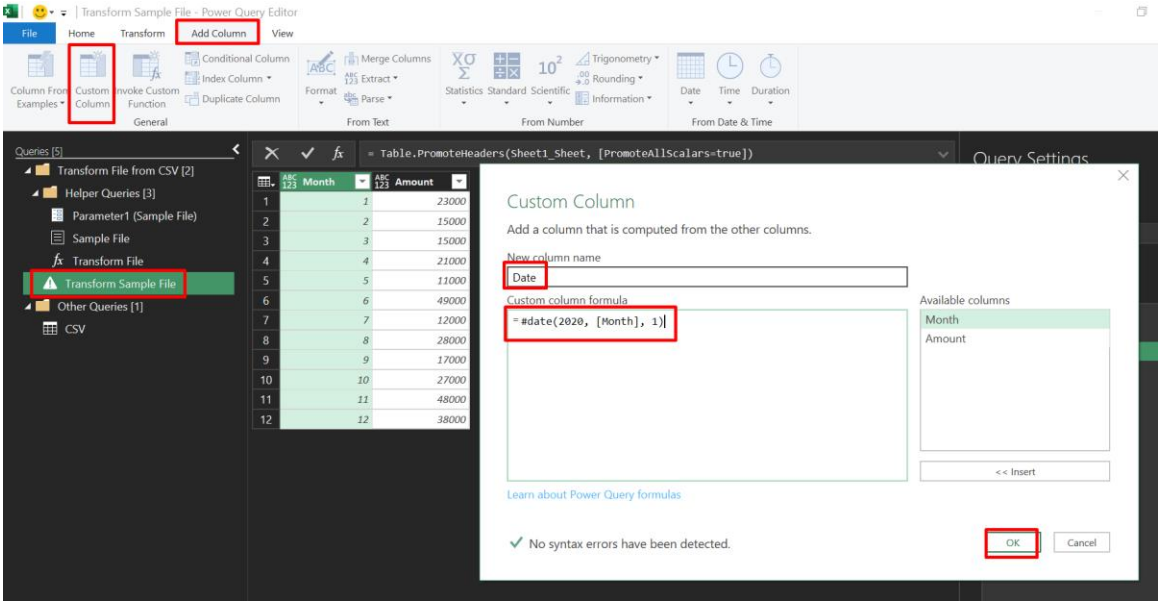
B. REMOVE THE .XLSX

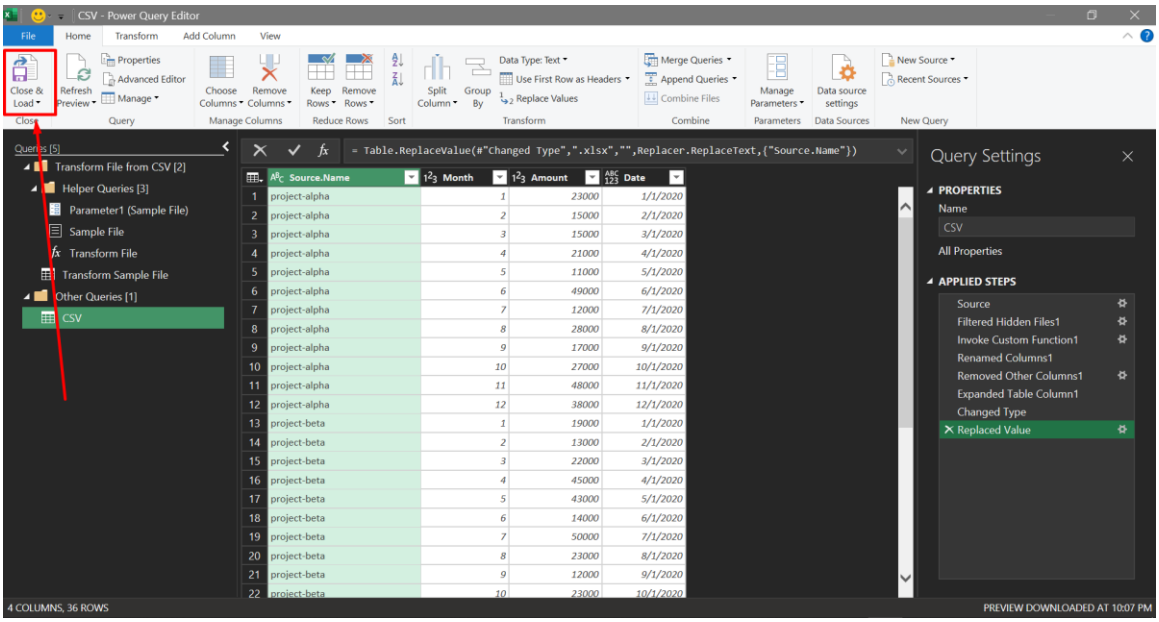




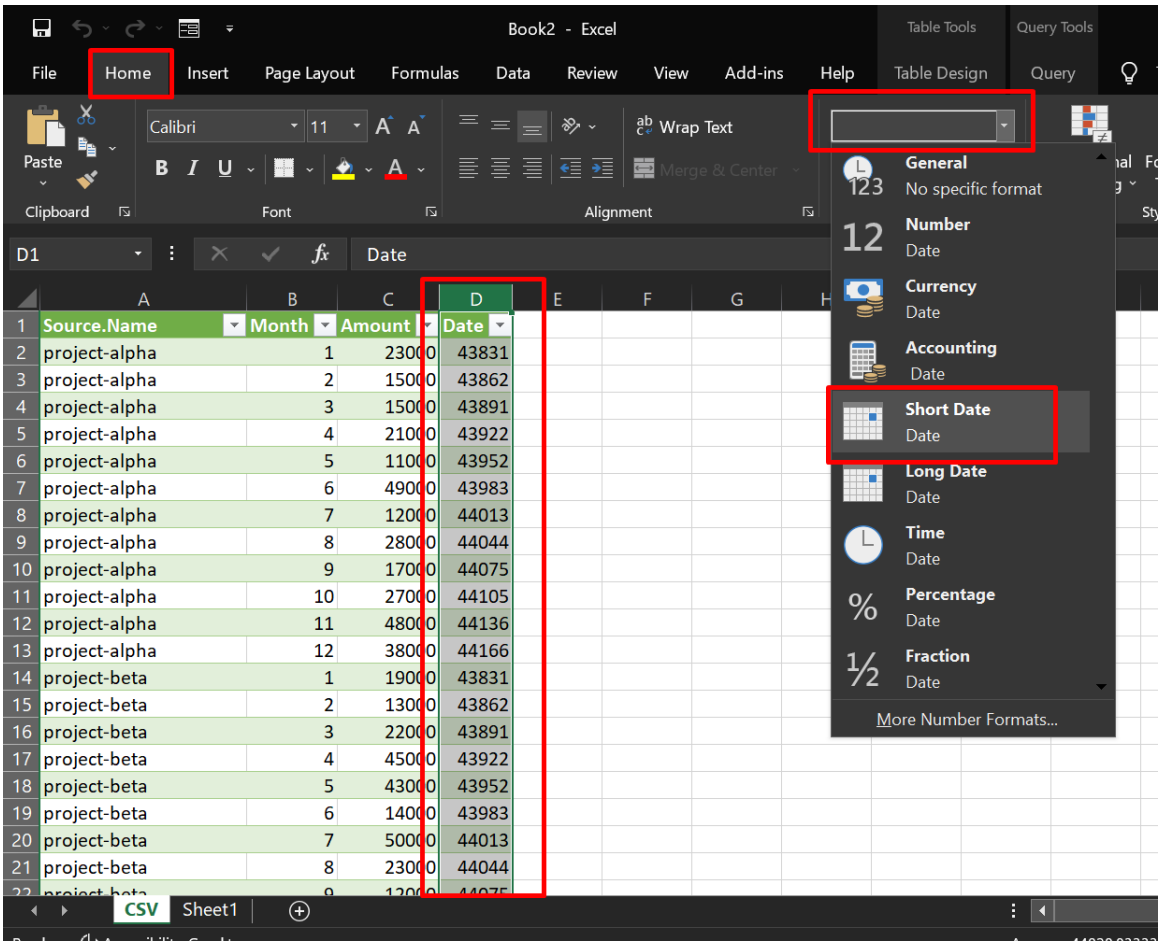
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

C. ADD A DATE COLUMN





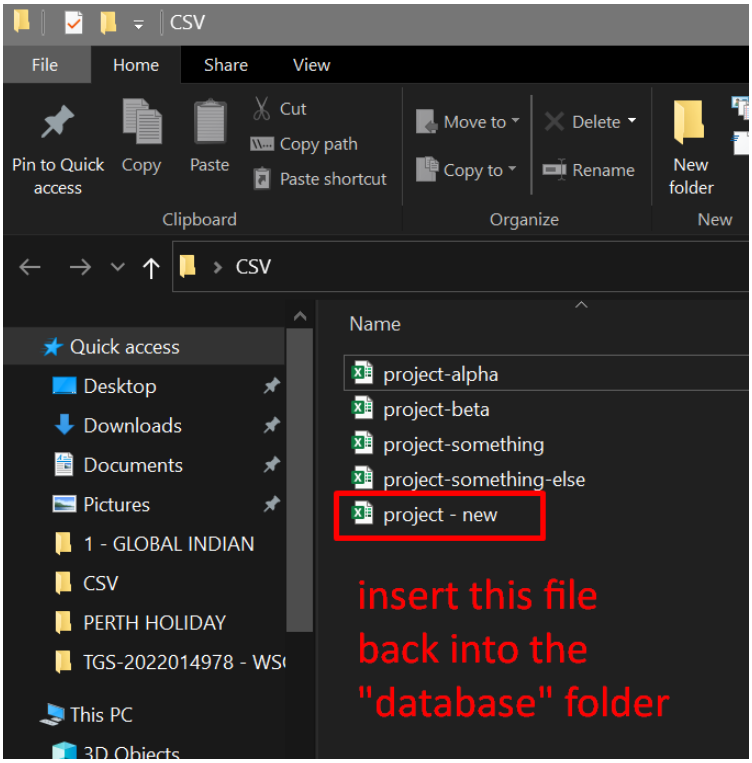
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

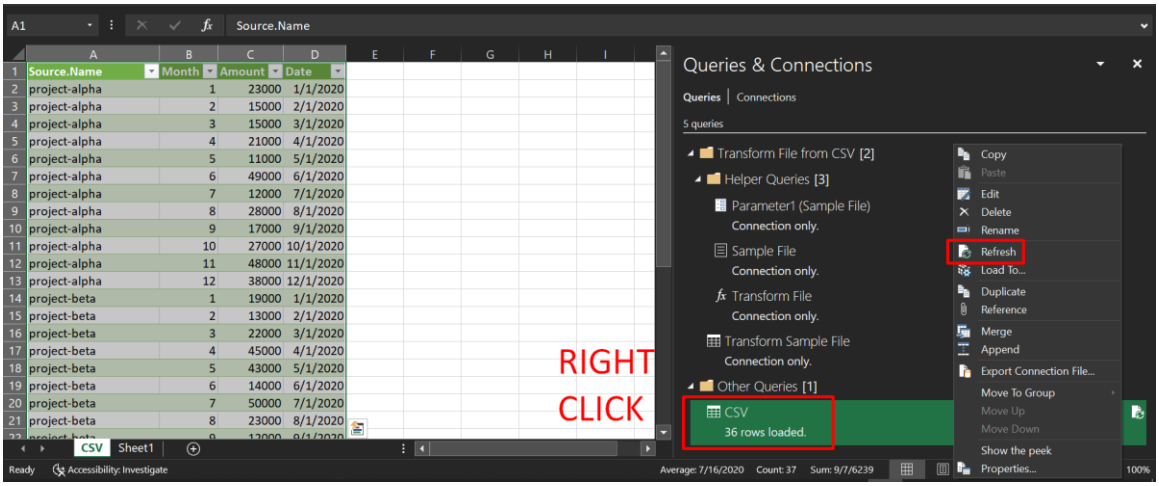


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

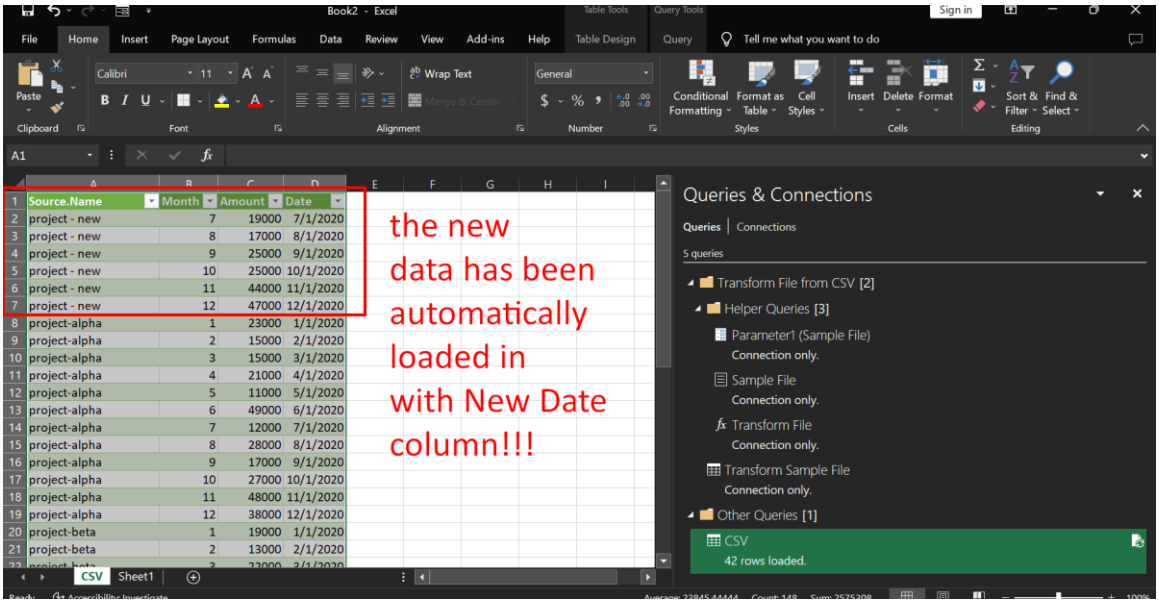
D. WHAT IF A NEW FILE WAS ADDED? REFRESH!

We now have a new file we want to add in : https://www.alvinang.sg/s/project-new.xlsx





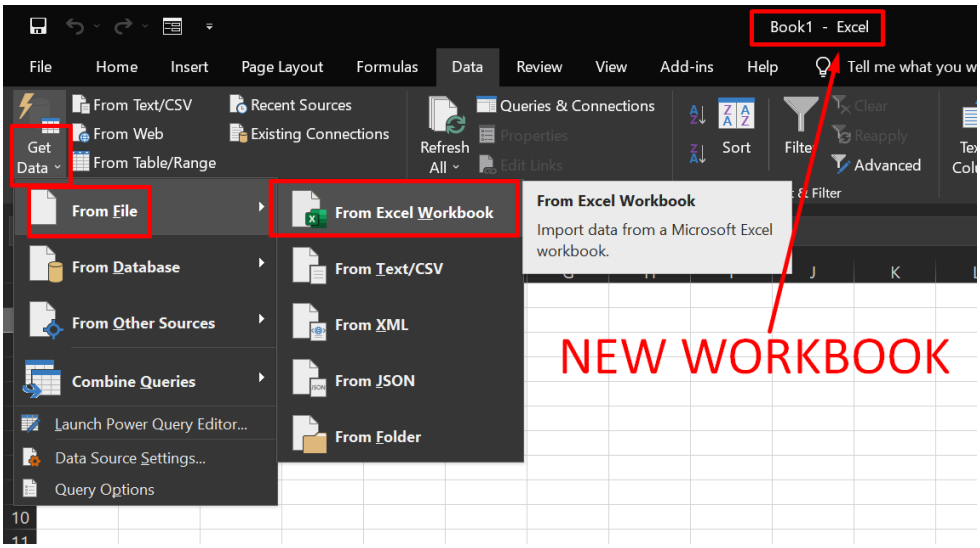
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

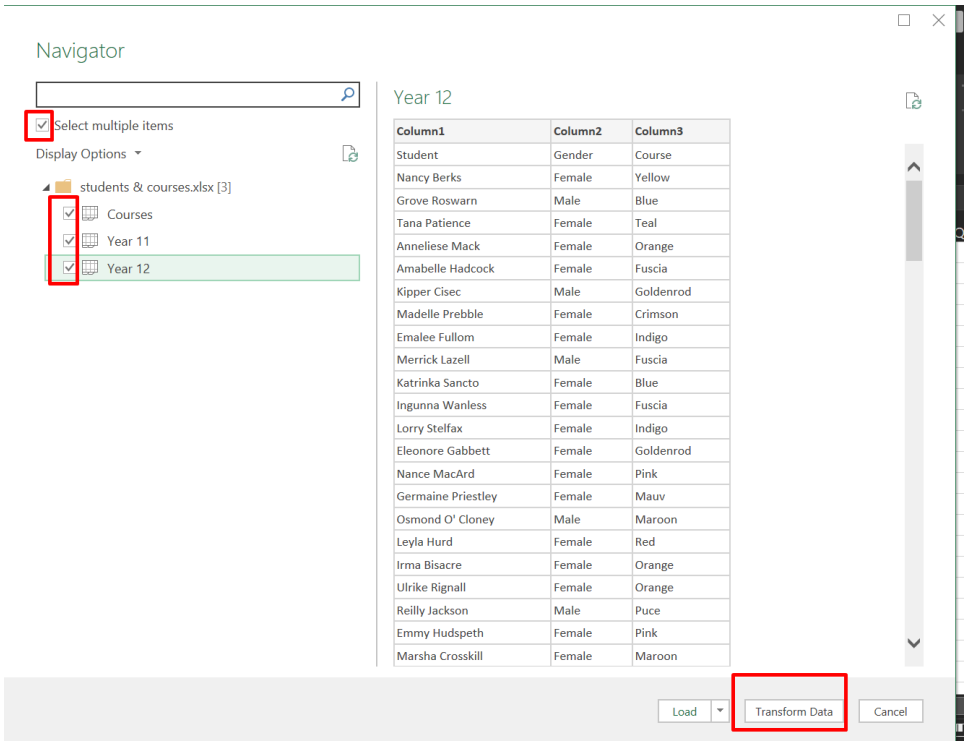


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

IV. EXAMPLE 4: JOINING AND APPENDING TABLES

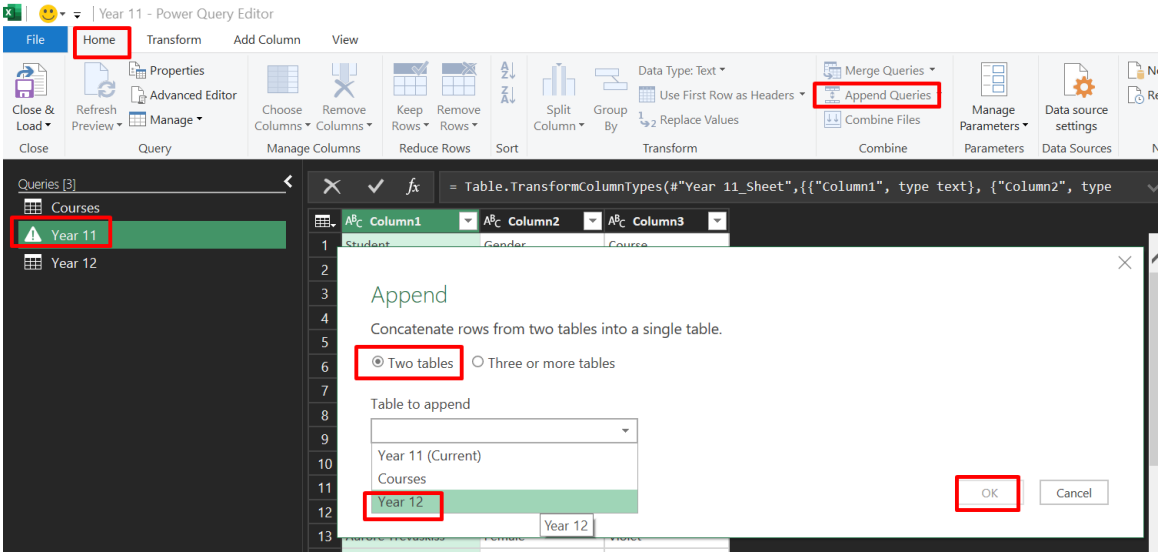
https://www.alvinang.sg/s/students-courses.xlsx

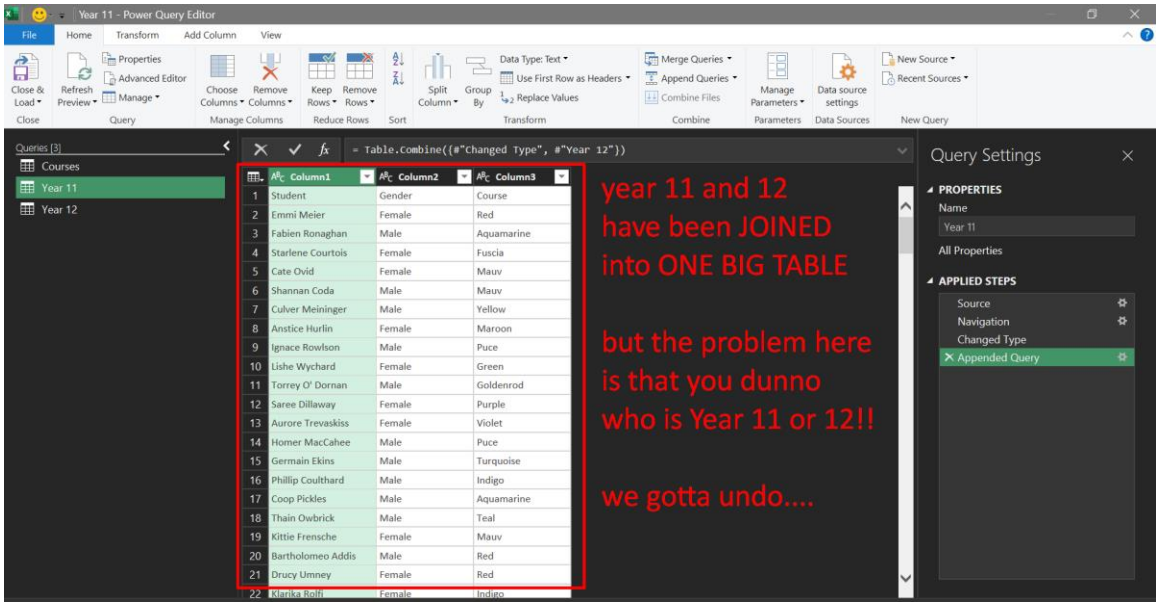




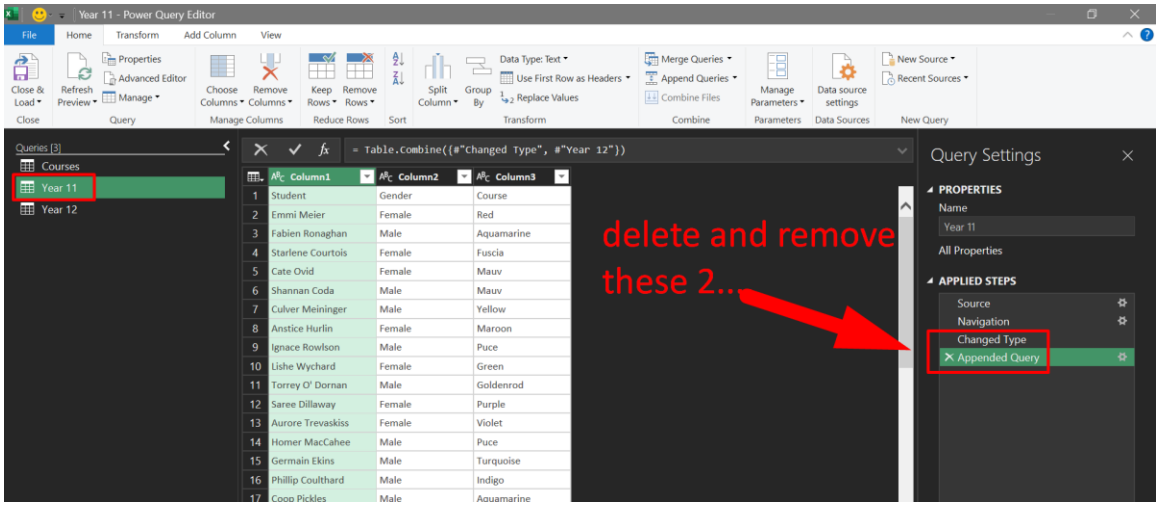
Column1	Column2	Column3
Student	Gender	Course
Nancy Berks	Female	Yellow
Grove Roswarn	Male	Blue
Tana Patience	Female	Teal
Anneliese Mack	Female	Orange
Amabelle Hadcock	Female	Fuscia
Kipper Cisec	Male	Goldenrod
Madelle Prebble	Female	Crimson
Emalee Fullom	Female	Indigo
Merrick Lazell	Male	Fuscia
Katrinka Sancto	Female	Blue
Ingunna Wanless	Female	Fuscia
Lorry Stelfax	Female	Indigo
Eleonore Gabbett	Female	Goldenrod
Nance MacArd	Female	Pink
Germaine Priestley	Female	Mauv
Osmond O' Cloney	Male	Maroon
Leyla Hurd	Female	Red
Irma Bisacre	Female	Orange
Ulrike Rignall	Female	Orange
Reilly Jackson	Male	Puce
Emmy Hudspeth	Female	Pink
Marsha Crosskill	Female	Maroon

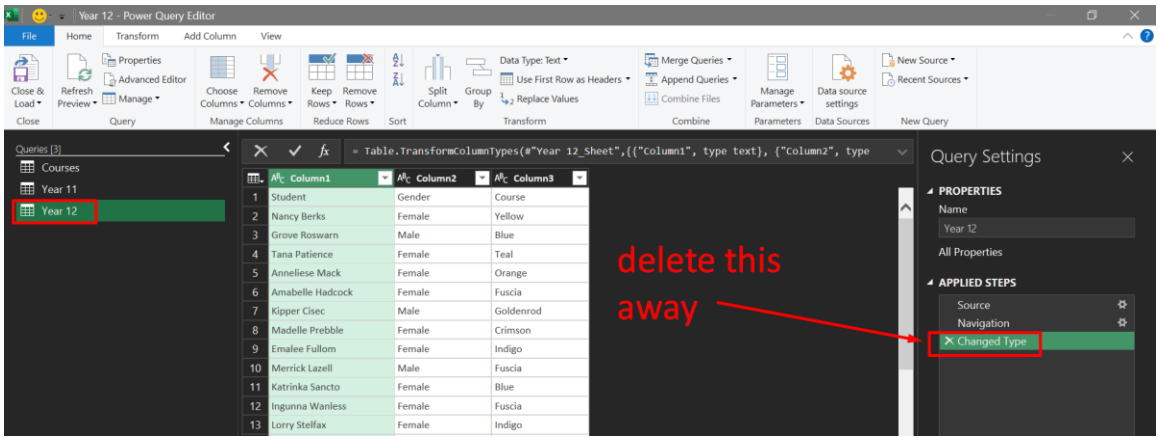
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG





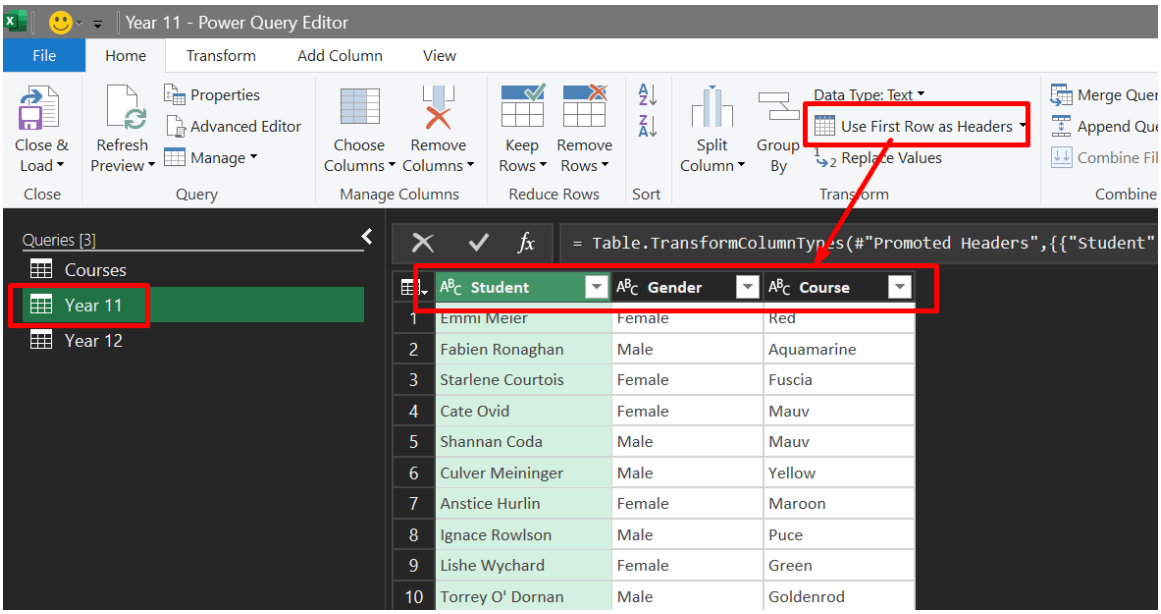
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

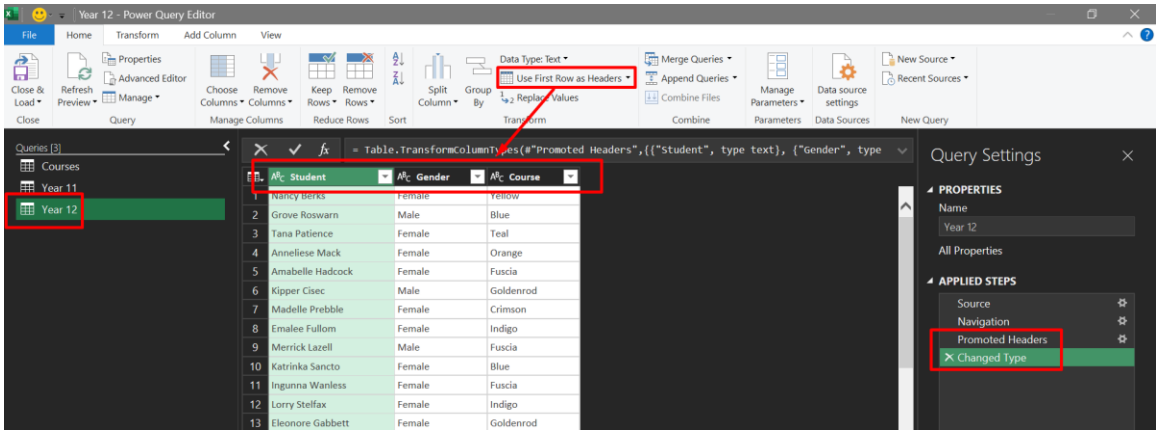




COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

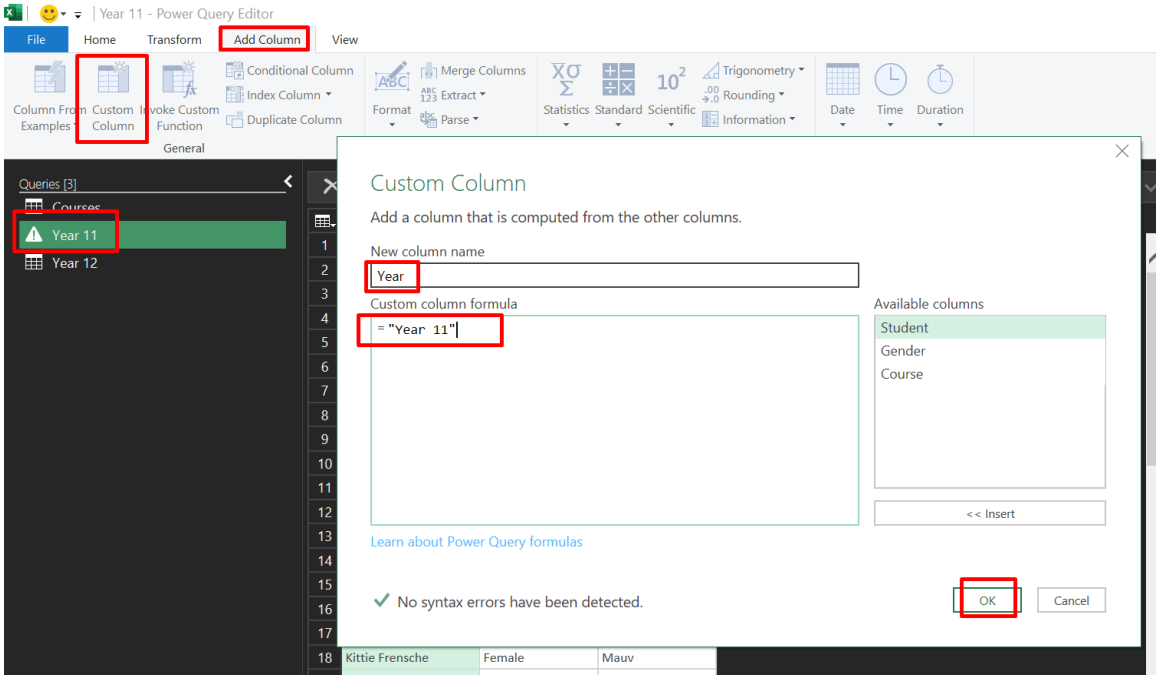
A. MAKE FIRST ROW AS HEADERS FOR BOTH YEAR 11 AND 12

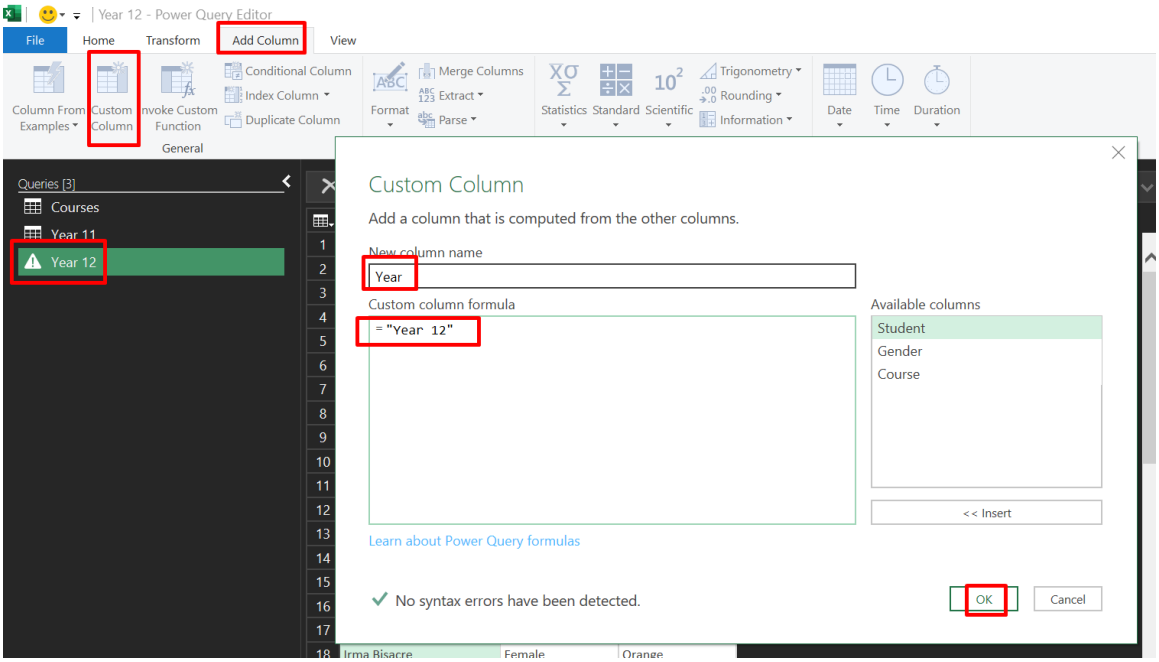




COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

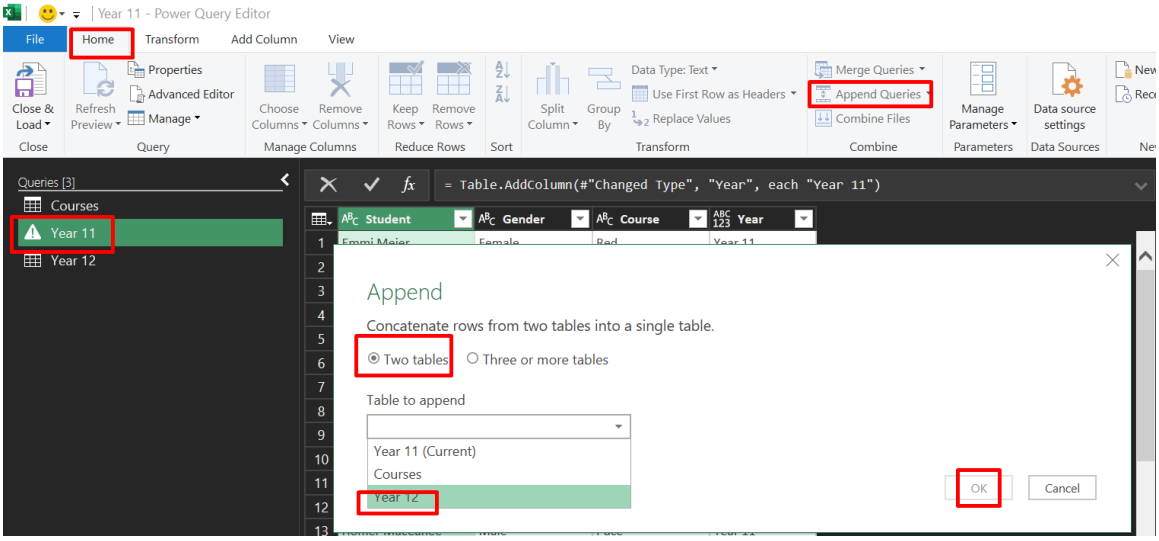
B. ADD CUSTOM COLUMN OF YEAR

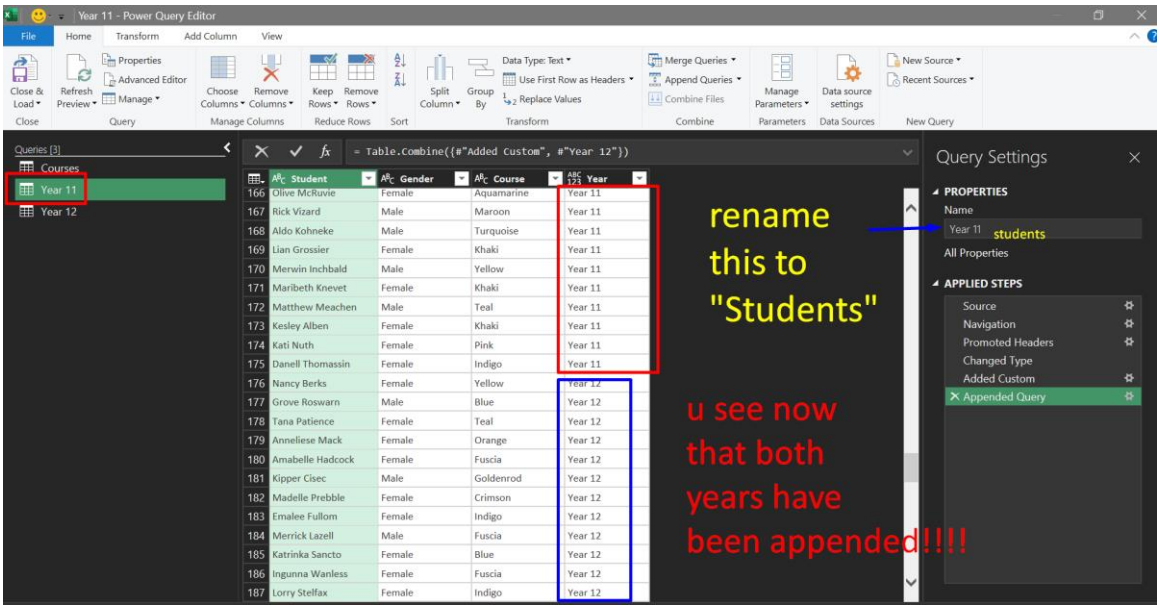




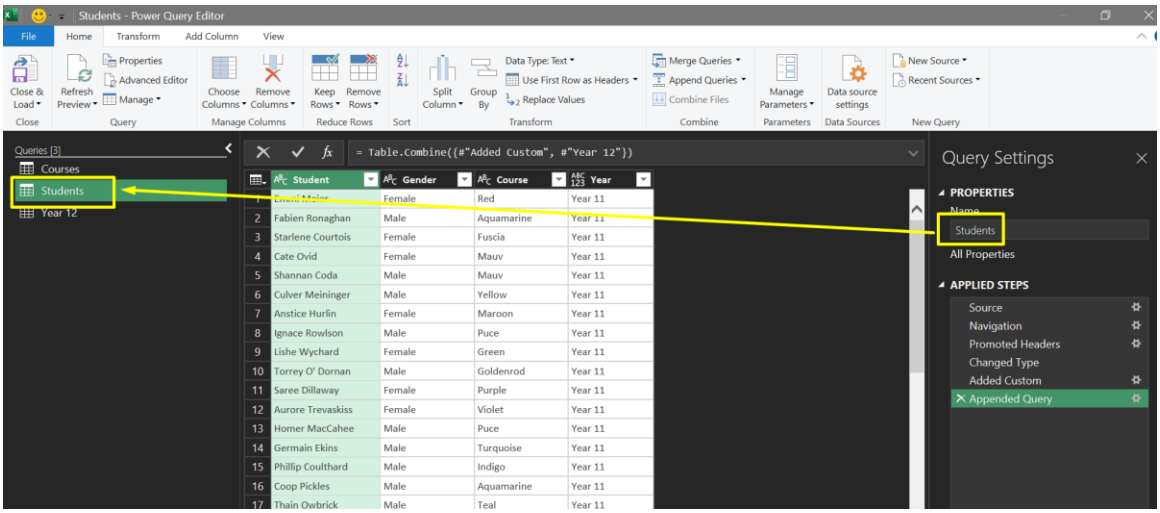
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

C. APPEND QUERIES – UNION BOTH TABLES



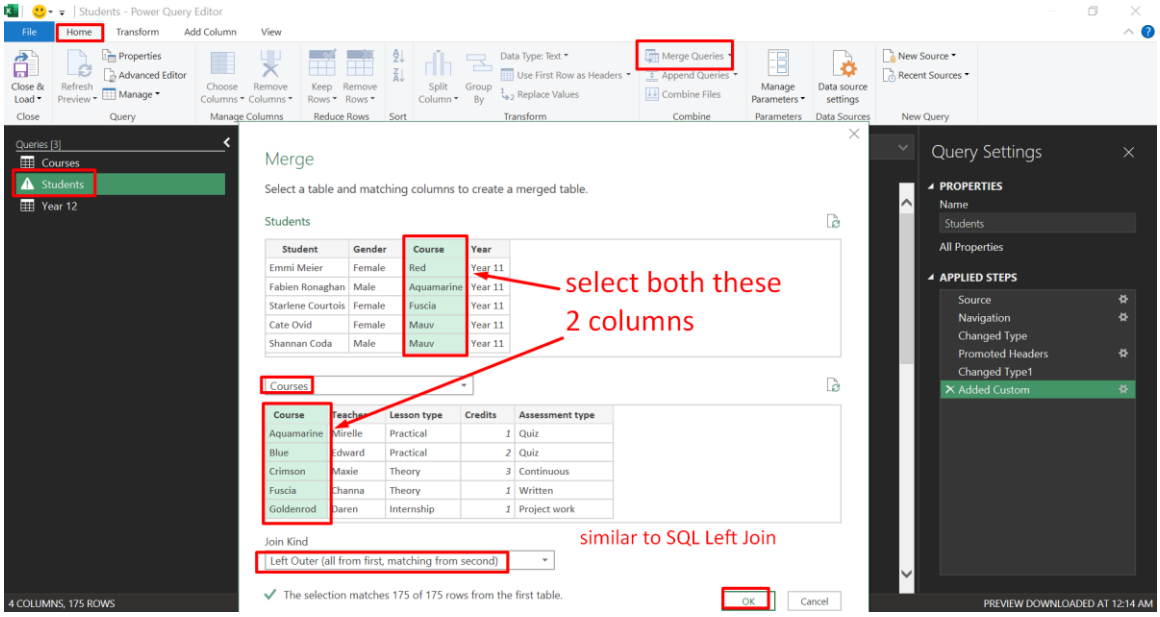


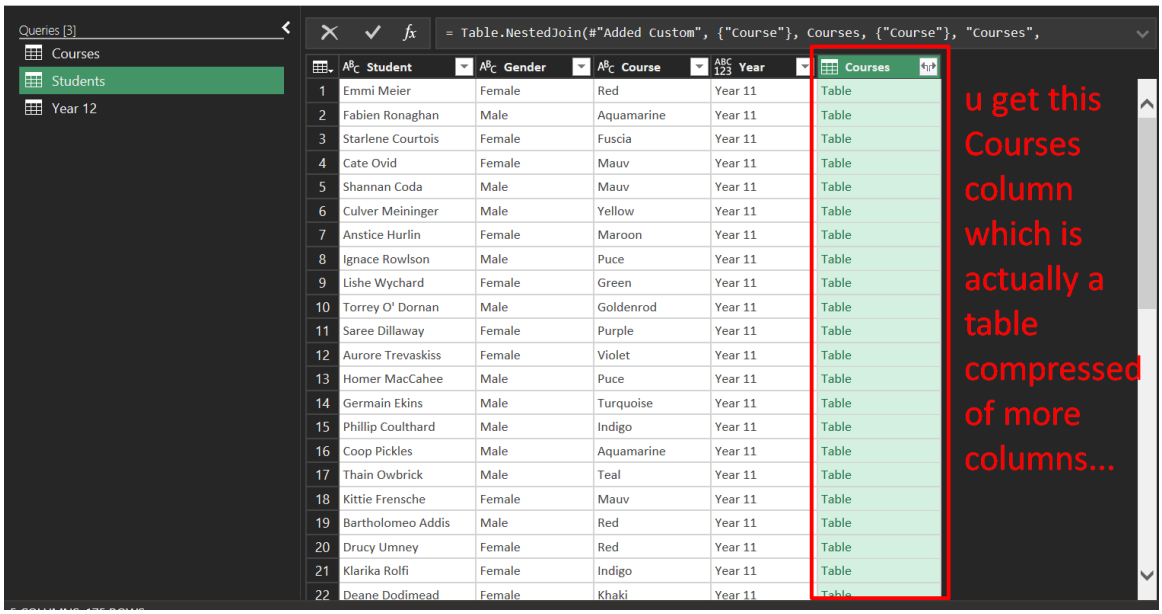
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG



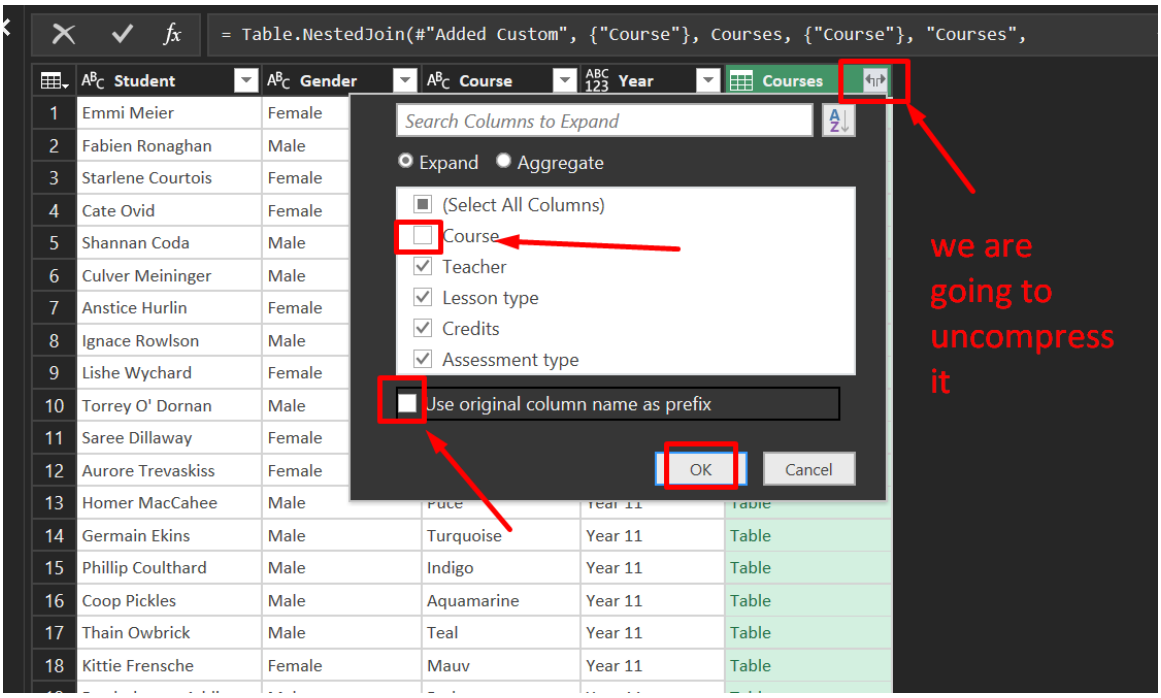
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

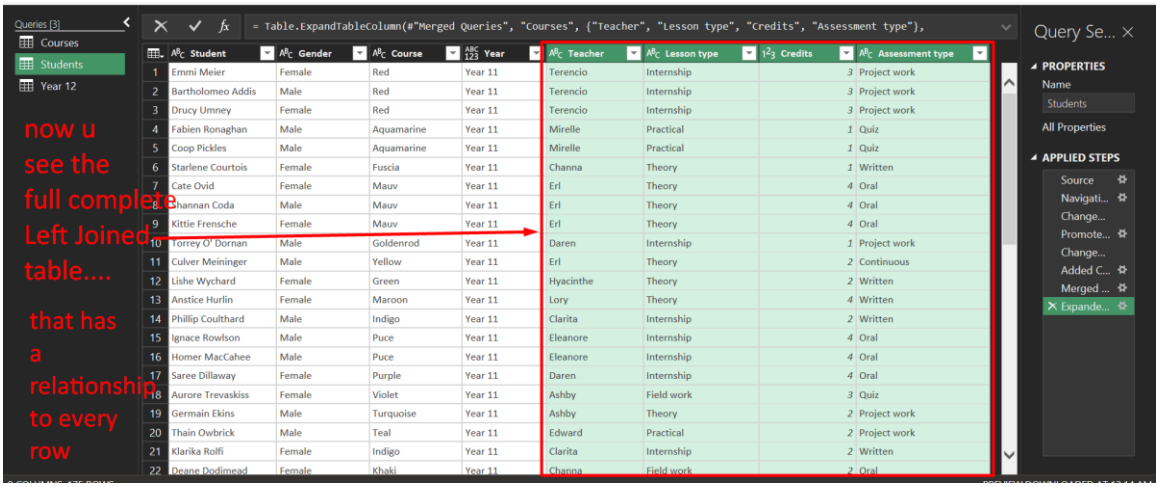
D. MERGING / SQL LEFT JOIN STUDENTS TABLE TO COURSES





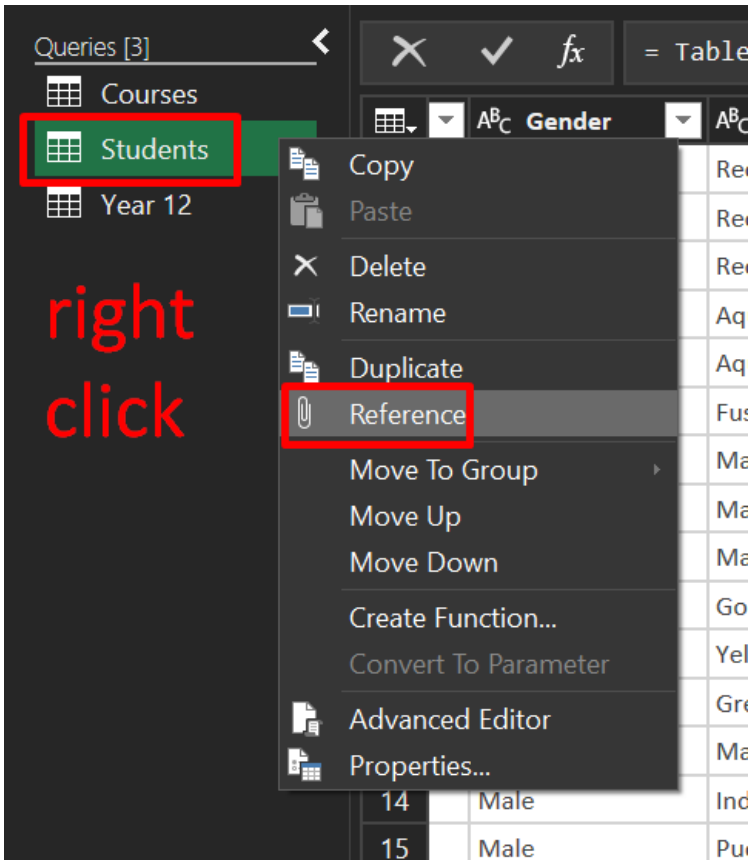
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

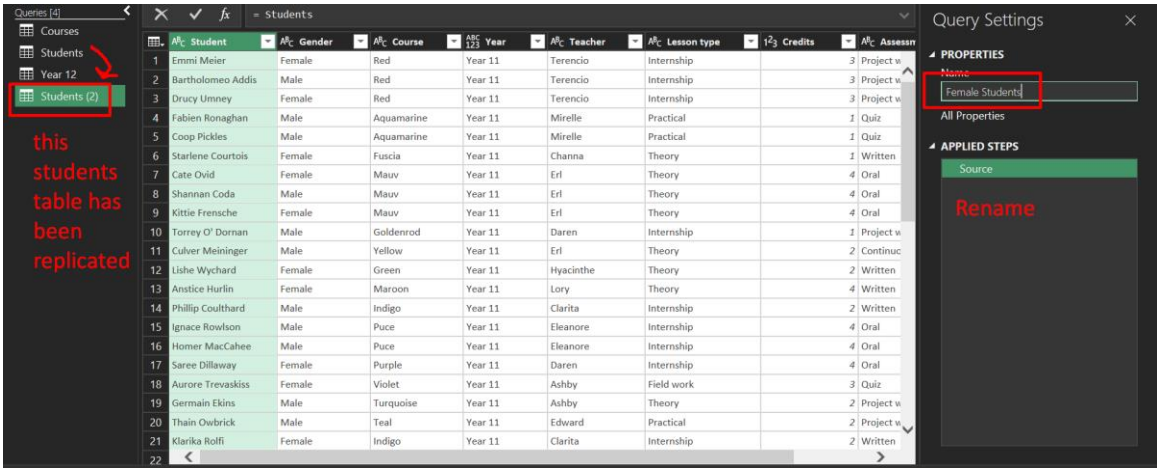




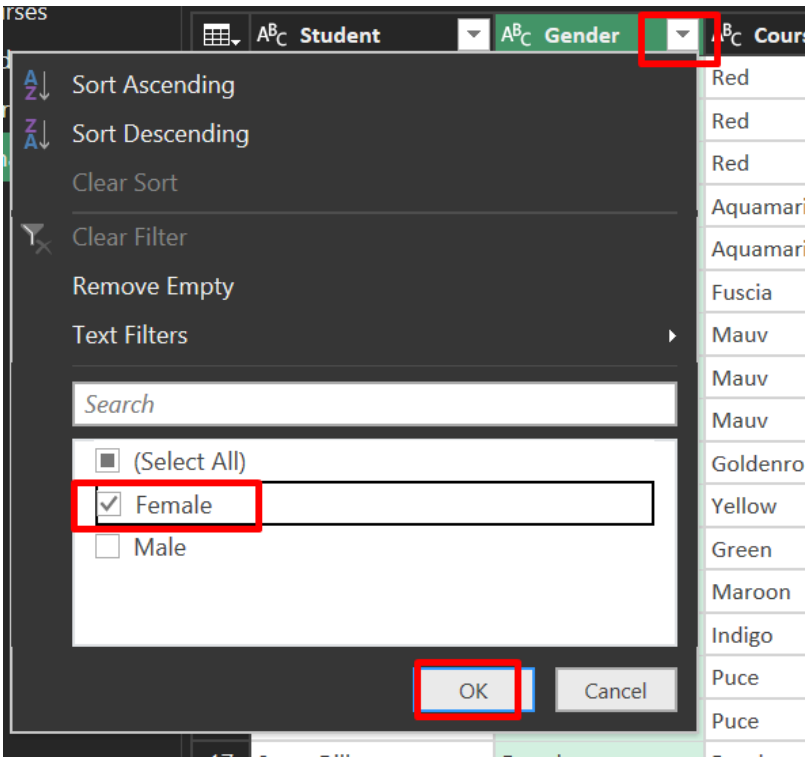
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

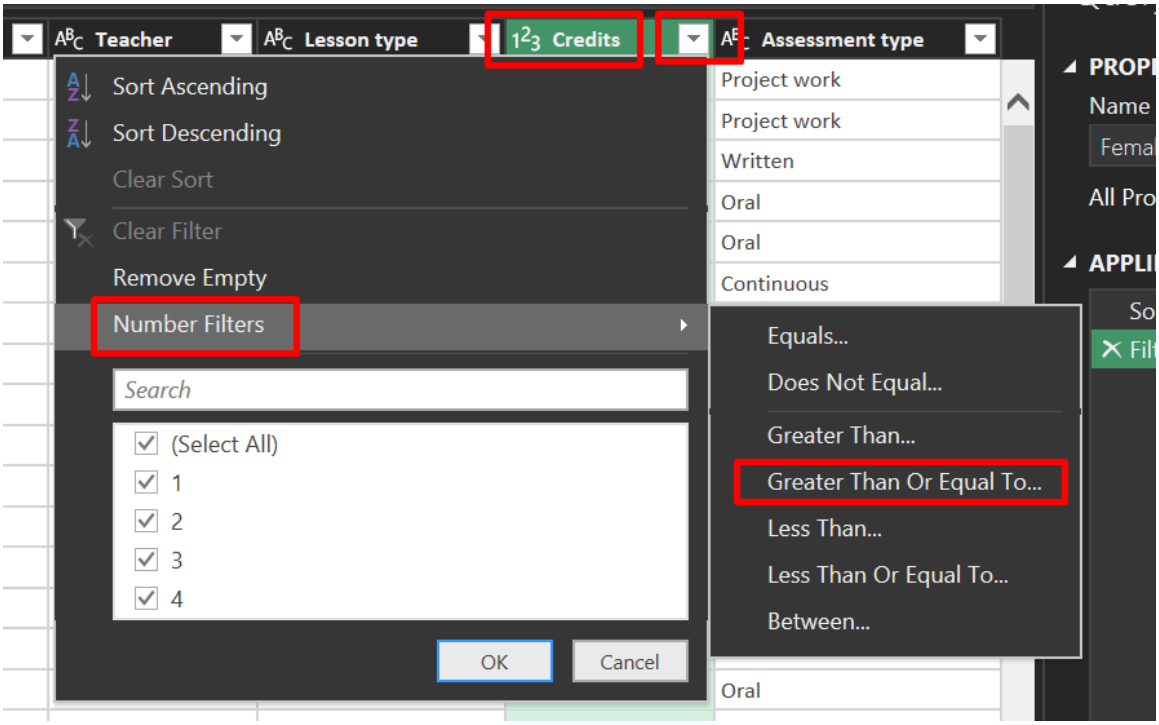
E. REPLICATE TABLE AND FILTER ONLY FEMALE WITH >= 3 CREDITS



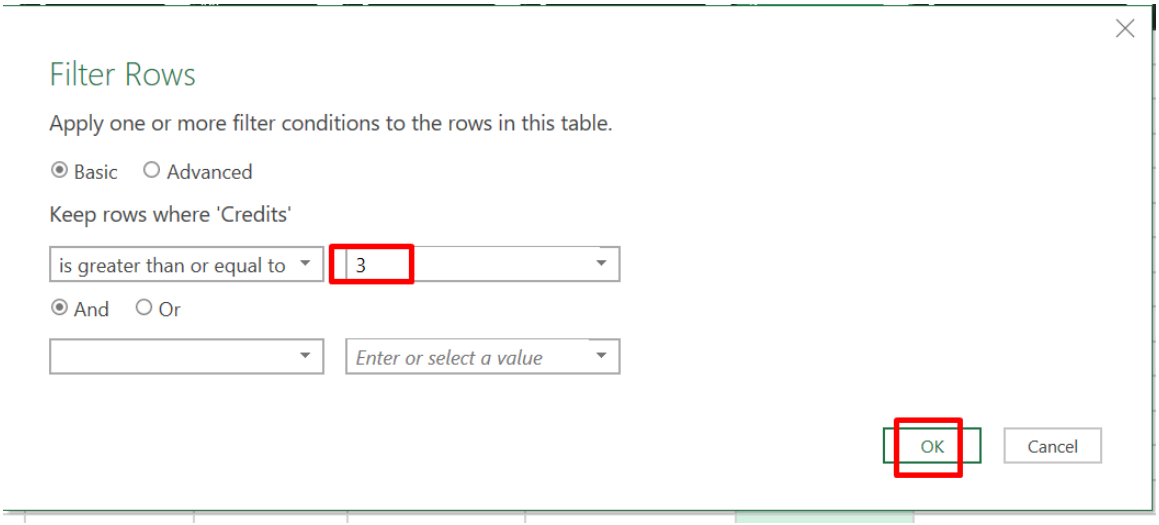


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG



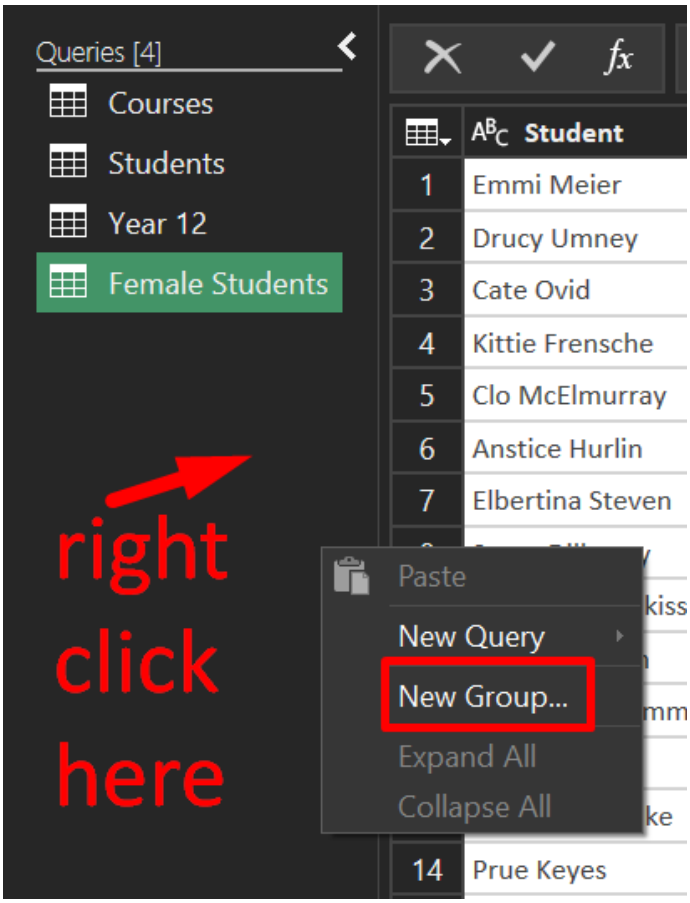


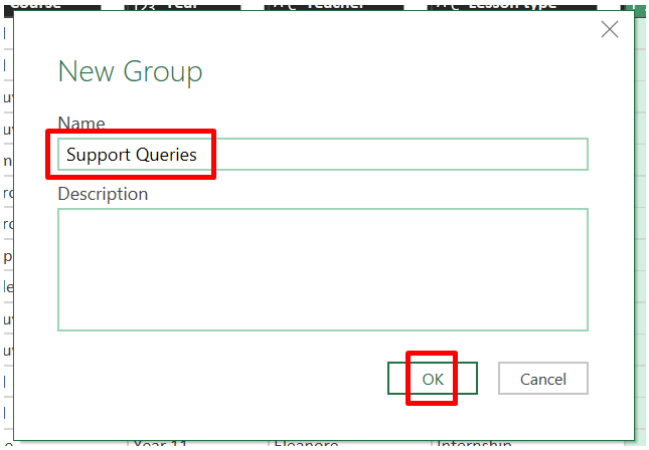
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG



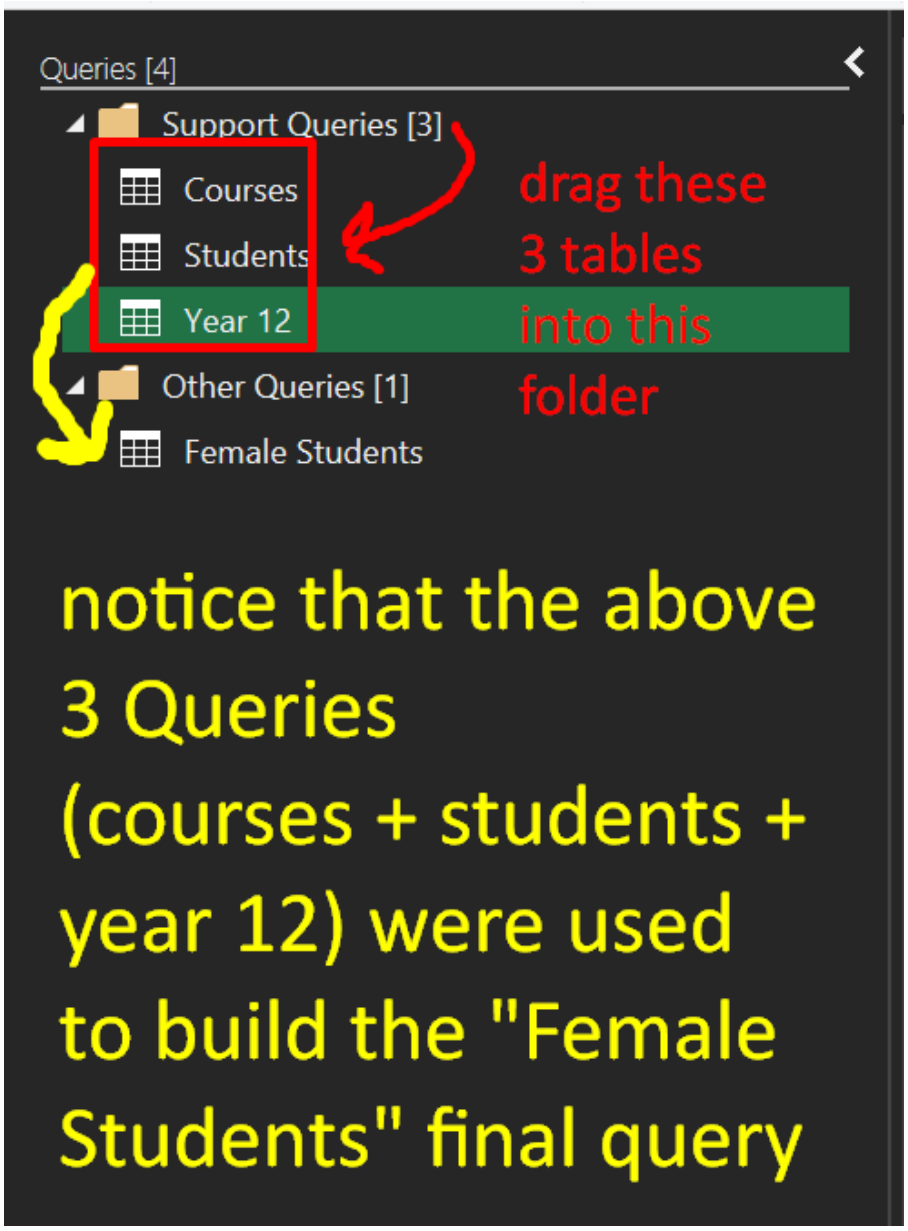
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

F. CREATING A NEW QUERY GROUP



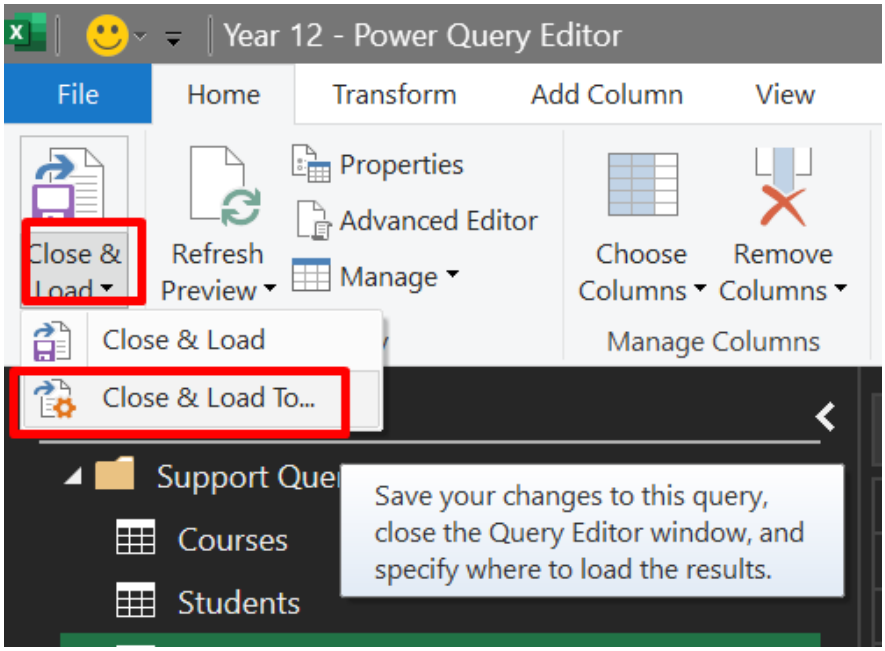


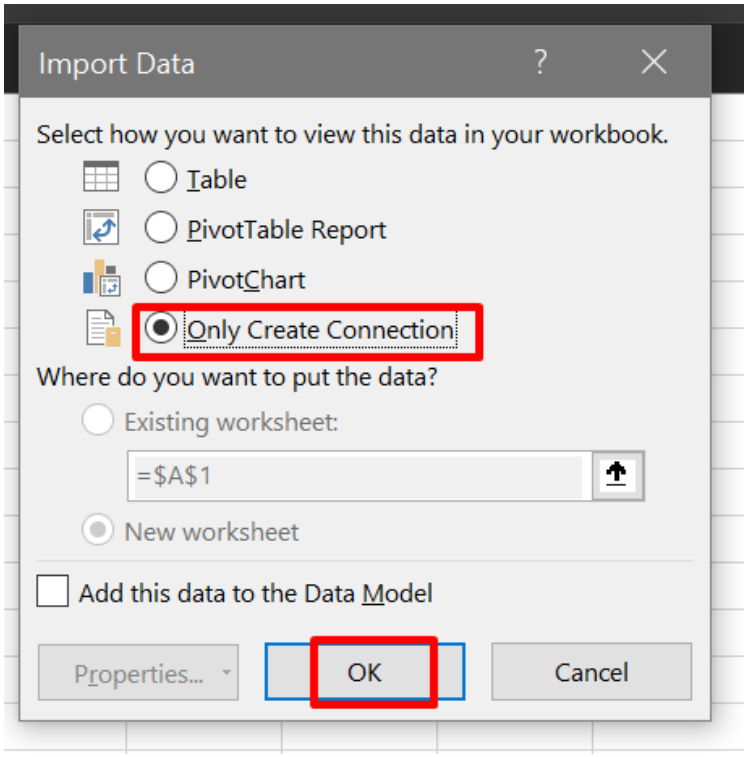
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG



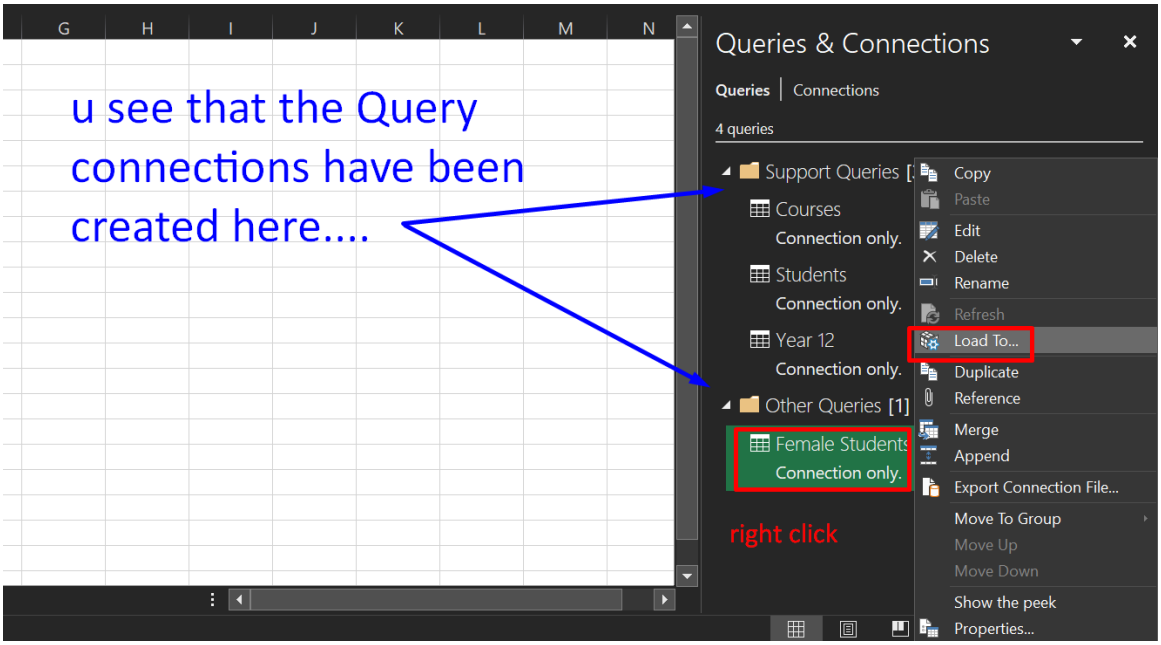
COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

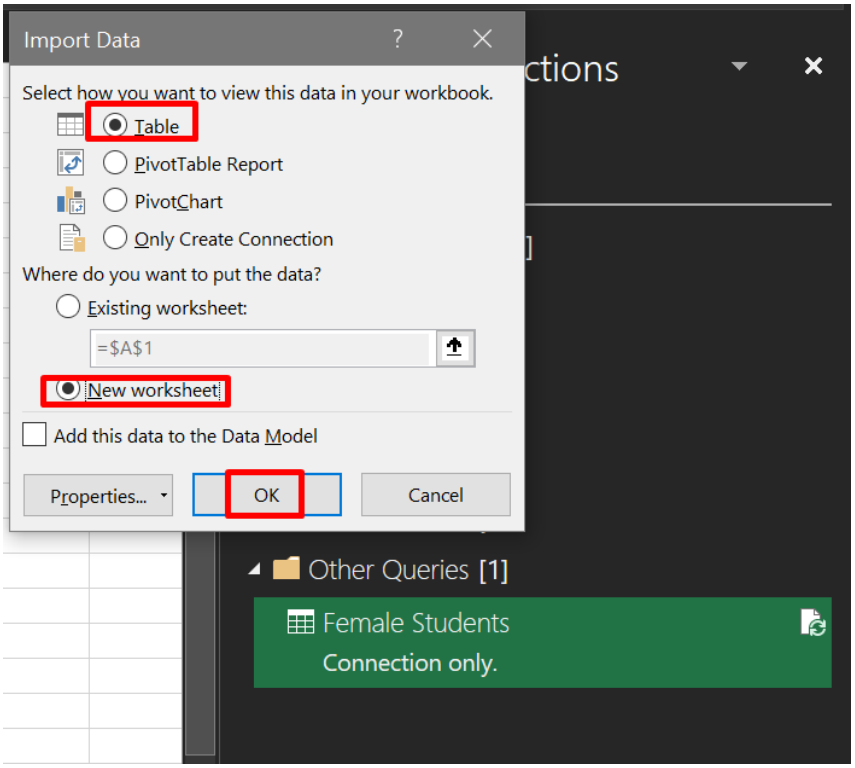
G. CLOSE AND LOAD TO….



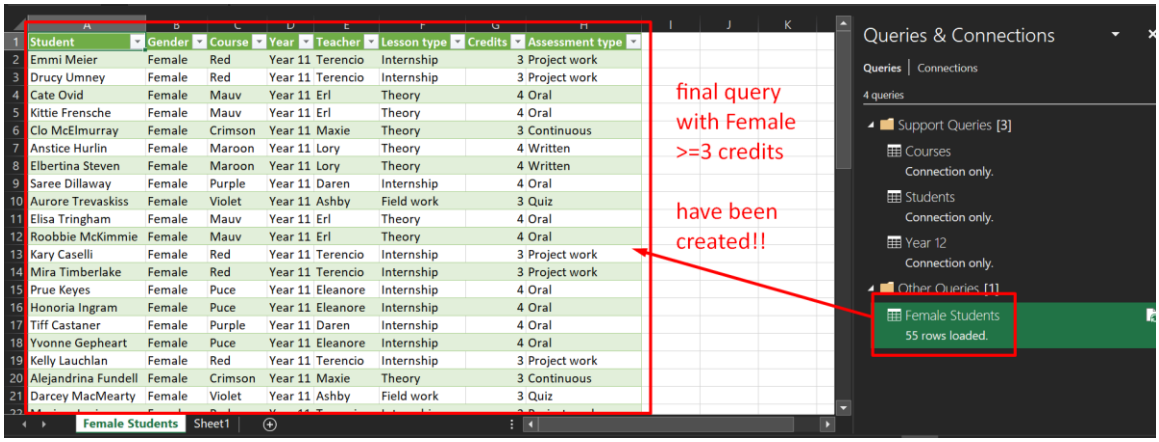


COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG





COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG



Student	Gender	Course	Year	Teacher	Lesson type	Credits	Assessment type
Emmi Meier	Female	Red	Year 11	Terencio	Internship	3	Project work
Drucy Umney	Female	Red	Year 11	Terencio	Internship	3	Project work
Cate Ovid	Female	Mauv	Year 11	Erl	Theory	4	Oral
Kittie Frensche	Female	Mauv	Year 11	Erl	Theory	4	Oral
Clo McElmurray	Female	Crimson	Year 11	Maxie	Theory	3	Continuous
Anstice Hurlin	Female	Maroon	Year 11	Lory	Theory	4	Written
Elbertina Steven	Female	Maroon	Year 11	Lory	Theory	4	Written
Saree Dillaway	Female	Purple	Year 11	Daren	Internship	4	Oral
Aurore Trevaskiss	Female	Violet	Year 11	Ashby	Field work	3	Quiz
Elisa Tringham	Female	Mauv	Year 11	Erl	Theory	4	Oral
Roobbie McKimmie	Female	Mauv	Year 11	Erl	Theory	4	Oral
Kary Caselli	Female	Red	Year 11	Terencio	Internship	3	Project work
Mira Timberlake	Female	Red	Year 11	Terencio	Internship	3	Project work
Prue Keyes	Female	Puce	Year 11	Eleanore	Internship	4	Oral
Honoria Ingram	Female	Puce	Year 11	Eleanore	Internship	4	Oral
Tiff Castaner	Female	Purple	Year 11	Daren	Internship	4	Oral
Yvonne Gepheart	Female	Puce	Year 11	Eleanore	Internship	4	Oral
Kelly Lauchlan	Female	Red	Year 11	Terencio	Internship	3	Project work
Alejandrina Fundell	Female	Crimson	Year 11	Maxie	Theory	3	Continuous
Darcey MacMearty	Female	Violet	Year 11	Ashby	Field work	3	Quiz

COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG

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.

COPYRIGHTED BY DR ALVIN ANG
WWW.ALVINANG.SG