



EXPLANATION ON CALCULATORS BUILT IN EXCEL

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INTRODUCTION

The purpose of this report is to give explanation on each calculators on how have done it and how it works and to also explain some of the special functions on excel which have been used in building the calculators.

SS1.1

One of the first thing before starting the calculators was to import data into my spreadsheet and where I got the datas I imported into my spread sheet was from datas on moodle. How I imported the data was by first getting the data from moodle and copy the amount of data I think is needed then save my data into a notepad before going to my excel to import them from my notepad which is shown below

Sweet import - Notepad
File Edit Format View Help
1061,Alaska Pacific University,AK,IIB,454,382,362,382,567,485,471,487,6,11,9,4,32
1063,Univ.Alaska-Fairbanks,AK,I,686,560,432,508,914,753,572,677,74,125,118,48,484
1065,Univ.Alaska-Southeast,AK,IIA,533,494,329,415,716,663,442,559,9,26,20,9,70
11462,Univ.Alaska-Anchorage,AK,IIA,612,507,414,498,825,681,557,670,115,124,181,21,392
1002,Alabama Agri.&Mech. Univ.,AL,IIA,442,369,310,350,530,444,376,423,59,77,102,24,262
1004,University of Montevallo,AL,IIA,441,385,310,388,542,473,383,477,57,33,35,2,127
1008,Athens State College,AL,IIB,466,394,351,396,558,476,427,478,20,18,30,0,68
1009,Auburn University- Main,AL,I,580,437,374,455,692,527,451,546,366,354,301,66,1109
1012,Birmingham Southern College,AL,IIB,498,379,322,401,655,501,404,523,34,25,27,3,89
1016,Univ. of North Alabama,AL,IIB,506,412,359,411,607,508,445,503,67,40,66,27,200
1019,Huntingdon College,AL,IIB,339,303,287,301,421,371,347,366,8,15,19,2,44
1020,Jacksonville State Univ.,AL,IIA,461,389,338,386,585,496,436,493,186,42,66,58,272
1024,Livingston University,AL,IIB,360,304,258,300,433,369,313,363,27,25,33,4,89
1029,University of Mobile,AL,IIB,354,321,277,291,436,401,346,363,17,19,31,19,86
1033,Oakwood College,AL,IIB,301,290,283,290,375,363,355,362,18,28,28,3,77
1036,Samford University,AL,IIA,565,425,363,449,710,556,476,578,83,46,77,9,215
1041,Spring Hill College,AL,IIB,431,352,311,373,518,425,374,449,23,17,14,1,55
1044,Stillman College,AL,IIB,321,288,251,272,388,354,312,335,13,18,18,10,59
1047,Troy State University-Main,AL,IIA,462,385,322,350,560,467,392,426,25,59,100,19,204
1050,Tuskegee University,AL,IIA,410,352,306,327,487,415,362,387,57,65,85,45,254
1051,University of Alabama,AL,I,605,447,382,463,746,563,483,580,267,206,206,76,762
1052,Univ. Alabama at Birmingham,AL,I,633,445,366,461,786,569,475,587,106,163,107,19,406
1055,Univ. Alabama in Huntsville,AL,IIA,636,443,375,451,771,540,455,548,72,87,98,7,282
1057,University of South Alabama,AL,IIA,542,426,370,418,645,514,450,504,119,103,142,64,4:
8310,Auburn Univ. at Montgomery,AL,IIA,519,422,343,403,621,507,411,483,56,54,63,28,201
1085,Univ. Ark. at Monticello,AR,IIB,453,363,330,349,561,448,402,428,23,24,48,22,117
1086,Univ. Arkansas at Pine Bluff,AR,IIB,406,366,332,335,505,457,415,419,40,33,71,46,192
1088,Arkansas College (Lyon College),AR,IIB,499,*,330,399,618,*,402,488,14,5,21,2,42
1089,Arkansas Tech University,AR,IIB,439,381,337,374,550,479,427,471,44,71,52,13,180
1090,Arkansas State Univ.-Main,AR,IIA,520,433,342,398,646,541,431,498,103,87,141,63,394
1092,Univ. of Central Arkansas,AR,IIA,521,416,339,395,632,507,416,482,93,89,82,76,340
1094,University of the Ozarks,AR,IIB,309,280,274,285,428,383,376,391,14,9,15,2,40
1098,Henderson State University,AR,IIB,447,375,341,375,561,480,435,477,55,42,33,25,155
1099,Hendrix College,AR,IIB,485,399,362,421,664,534,453,562,24,26,14,1,65
1100,John Brown University,AR,IIB,372,338,304,341,478,414,375,426,23,22,10,3,58

The Data's from Moodle before putting into excel and this are saved to my notepad.

The screenshot shows the Microsoft Excel interface with the 'calculators.xlsx - Excel' file open. The 'Data' tab is selected in the ribbon. In the 'Get & Transform Data' section of the ribbon, there is a red oval highlighting the 'From File' dropdown menu. A red arrow points from the 'File' icon in the top-left corner of the ribbon towards this highlighted area. Below the ribbon, a data table is visible with columns labeled D through N and rows numbered 1 to 22.

How the data was imported into excel by right clicking Data on the top menu on excel and left clicking on the top left corner Get Data and next is to click on File and from TEXT/CV

The screenshot shows the Microsoft Excel interface with the 'calculators.xlsx - Excel' file open. The 'Data' tab is selected in the ribbon. The 'Imported Data' sheet is active. The data table has been transformed, with columns now labeled Column1 through Column14. The first row contains column headers: Column1, Column2, Column3, Column4, Column5, Column6, Column7, Column8, Column9, Column10, Column11, Column12, Column13, and Column14. The data rows below follow this new structure.

Imported data

SS1.2

Below are the variety of formats have used /inputed into my calculators.

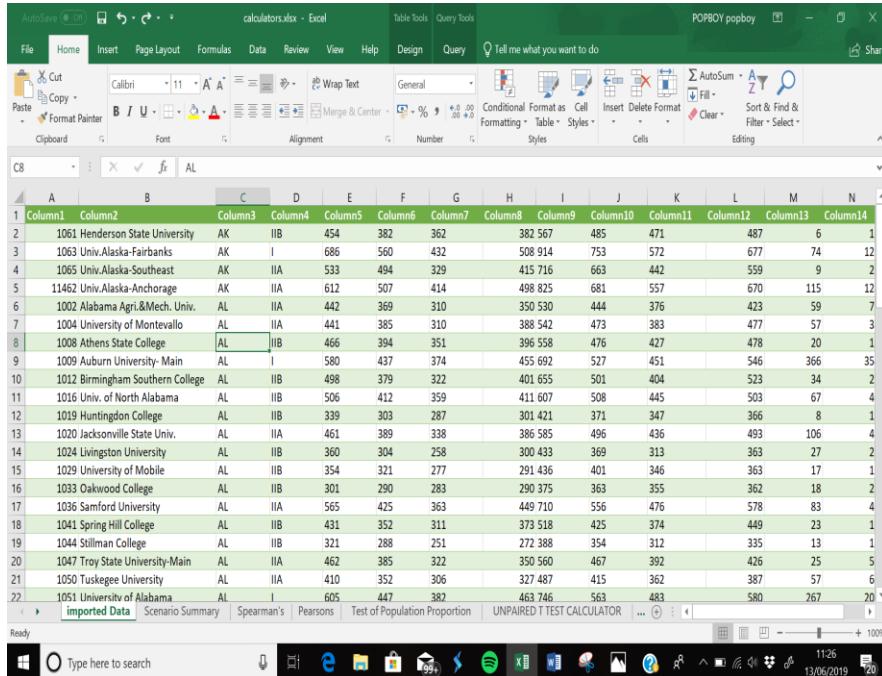
	S ROUTE	T ROUTE	S^2	T^2	MEAN - S	MEAN - T	Ns	Nt	Total Ns+Nt	Ns multiply Nt
2	£ 7.00	£ 10.00	49.00	100	8.714285714	9.222222222			9	23
3	£ 9.00	£ 10.00	81.00	100						
4	£ 8.00	£ 11.00	64.00	121	MEAN (S - T)					
5	£ 10.00	£ 7.00	100.00	49	0.507936508					
6	£ 10.00	£ 7.00	100.00	49						
7	£ 8.00	£ 11.00	64.00	121						
8	£ 11.00	£ 10.00	121.00	100						
9	£ 8.00	£ 9.00	64.00	81						
10	£ 9.00	£ 8.00	81.00	64						
11	£ 9.00	£ 8.00	81.00	0	SQR of S (ΣS^2)	SQR of T (ΣT^2)				
12	£ 9.00	£ 8.00	81.00	0	14884	6889				
13	£ 8.00	£ 6.00	64.00	0						
14	£ 8.00	£ 6.00	64.00	0	ΣS^2 MINUS (ΣS^2) ² /Ns	ΣT^2 MINUS (ΣT^2) ² /Nt				
15	£ 10.00	£ 10.00	100.00	0	18.85714286	19.55555556				
16			0.00	0						
17			0.00	0						
18			0.00	0						
19			0.00	0						
20			0.00	0						
21			0.00	0						
22			0.00	0						
23			0.00	0						
24			0.00	0						
25			0.00	0						
26			0.00	0						
27			0.00	0						
28			0.00	0						

Inputting the british currency into my data.

Using the Long date format

	S ROUTE	T ROUTE	S^2	T^2	MEAN - S	MEAN - T	Ns	Nt	Total Ns+Nt	Ns multiply Nt
2	07 January 1900	10 January 1900	49.00	100	8.714285714	9.222222222			9	23
3	07 January 1900	10 January 1900	81.00	100						
4	08 January 1900	11 January 1900	64.00	121	MEAN (S - T)					
5	10 January 1900	07 January 1900	100.00	49	0.507936508					
6	10 January 1900	07 January 1900	100.00	49						
7	08 January 1900	11 January 1900	64.00	121						
8	11 January 1900	10 January 1900	121.00	100						
9	08 January 1900	09 January 1900	64.00	81						
10	09 January 1900	08 January 1900	81.00	64						
11	07 January 1900		49.00	0	SQR of S (ΣS^2) ²	SQR of T (ΣT^2) ²				
12	09 January 1900		81.00	0	14884	6889				
13	08 January 1900		64.00	0						
14	08 January 1900		64.00	0	ΣS^2 MINUS (ΣS^2) ² /Ns	ΣT^2 MINUS (ΣT^2) ² /Nt				
15	10 January 1900		100.00	0	18.85714286	19.55555556				
16			0.00	0						
17			0.00	0						
18			0.00	0						
19			0.00	0						
20			0.00	0						
21			0.00	0						
22			0.00	0						
23			0.00	0						
24			0.00	0						
25			0.00	0						
26			0.00	0						
27			0.00	0						
28			0.00	0						

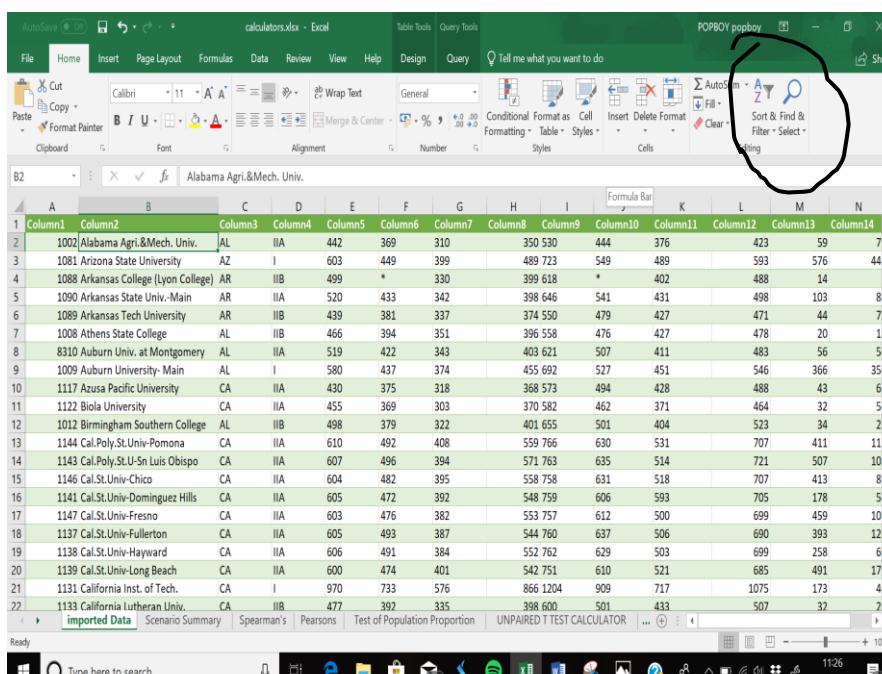
SS1.3



A screenshot of Microsoft Excel showing a large dataset of university information. The data is unsorted, with rows containing various university names and their corresponding codes and scores.

Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10	Column11	Column12	Column13	Column14
1061	Henderson State University	AK	IIB	454	382	362	382	567	485	471	487	6	1
1063	Univ.Alaska-Fairbanks	AK	I	686	560	432	508	914	753	572	677	74	12
1065	Univ.Alaska-Southeast	AK	IIA	533	494	329	415	716	663	442	559	9	2
11462	Univ.Alaska-Anchorage	AK	IIA	612	507	414	498	825	681	557	670	115	12
1002	Alabama Agri.&Mech. Univ.	AL	IIA	442	369	310	350	530	444	376	423	59	7
1004	University of Montevallo	AL	IIA	441	385	310	388	542	473	383	477	57	3
1008	Athens State College	AL	IIB	466	394	351	396	558	476	427	478	20	1
1009	Auburn University- Main	AL	I	580	437	374	455	692	527	451	546	366	35
1012	Birmingham Southern College	AL	IIB	498	379	322	401	655	501	404	523	34	2
1016	Univ. of North Alabama	AL	IIB	506	412	359	411	607	508	445	503	67	4
1019	Huntingdon College	AL	IIB	339	303	287	301	421	371	347	366	8	1
1020	Jacksonville State Univ.	AL	IIA	461	389	338	386	585	496	436	493	106	4
1024	Livingston University	AL	IIB	360	304	258	300	433	369	313	363	27	2
1029	University of Mobile	AL	IIB	354	321	277	291	436	401	346	363	17	1
1033	Oakwood College	AL	IIB	301	290	283	290	375	363	355	362	18	2
1036	Samford University	AL	IIB	565	425	363	449	710	556	476	578	83	4
1041	Spring Hill College	AL	IIB	431	352	311	373	518	425	374	449	23	1
1044	Stillman College	AL	IIB	321	288	251	272	388	354	312	335	13	1
1047	Troy State University-Main	AL	IIB	462	385	322	350	560	467	392	426	25	5
1050	Tuskegee University	AL	IIA	410	352	306	327	487	415	362	387	57	6
1051	Universit of Alabama	AL	I	605	447	382	463	746	563	483	580	267	20

This is my imported data that are not sorted yet and want I want is to arrange column 2 of my data which is nthe names of the universities or college to be arranged alphabetically which is shown below in the next diagram

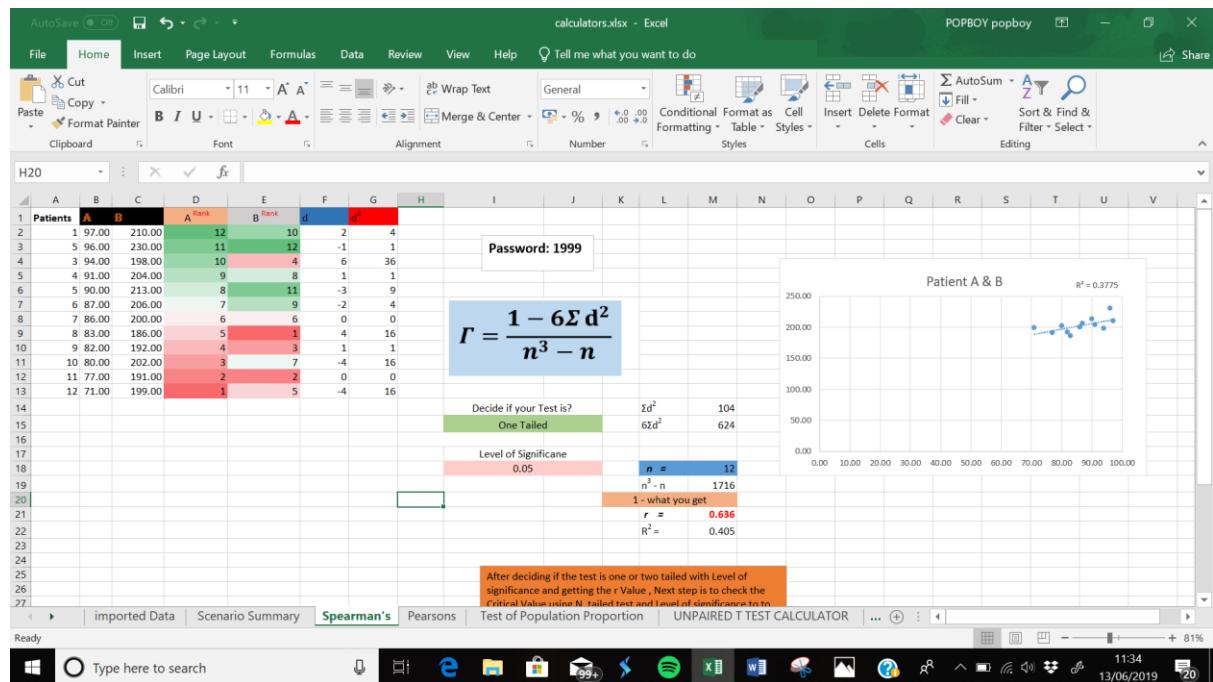


A screenshot of Microsoft Excel showing the same dataset as the previous image, but with the first row selected (Column1 and Column2). The 'Sort & Filter' button in the ribbon is circled with a black oval.

Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10	Column11	Column12	Column13	Column14
1002	Alabama Agri.&Mech. Univ.	AL	IIA	442	369	310	350	530	444	376	423	59	7
1081	Arizona State University	AZ	I	603	449	399	489	723	549	489	593	576	44
1088	Arkansas College (Lyon College)	AR	IIB	499	*	330	399	618	*	402	488	14	
1090	Arkansas State Univ.-Main	AR	IIA	520	433	342	398	646	541	431	498	103	8
1089	Arkansas Tech University	AR	IIB	439	381	337	374	550	479	427	471	44	7
1008	Athens State College	AL	IIB	466	394	351	396	558	476	427	478	20	1
8310	Auburn Univ. at Montgomery	AL	IIA	519	422	343	403	621	507	411	483	56	5
1009	Auburn University- Main	AL	I	580	437	374	455	692	527	451	546	366	35
1117	Azusa Pacific University	CA	IIA	430	375	318	368	573	494	428	488	43	6
1122	Biola University	CA	IIA	455	369	303	370	582	462	371	464	32	5
1012	Birmingham Southern College	AL	IIB	498	379	322	401	655	501	404	523	34	2
1144	Cal.Poly.St.Univ-Pomona	CA	IIA	610	492	408	559	766	630	531	707	411	11
1143	Cal.Poly.St.Univ Luis Obispo	CA	IIB	607	496	394	571	763	635	514	721	507	10
1146	Cal.St.Univ-Chico	CA	IIA	604	482	395	558	756	631	518	707	413	8
1141	Cal.St.Univ-Dominguez Hills	CA	IIA	605	472	392	548	759	606	593	705	178	5
1147	Cal.St.Univ-Fresno	CA	IIA	603	476	382	553	757	612	500	699	459	10
1137	Cal.St.Univ-Fullerton	CA	IIA	605	493	387	544	760	637	506	690	393	12
1138	Cal.St.Univ-Hayward	CA	IIA	606	491	384	552	762	629	503	699	258	6
1139	Cal.St.Univ-Long Beach	CA	IIA	600	474	401	542	751	610	521	685	491	17
1131	California Inst. of Tech.	CA	I	970	733	576	866	1204	909	717	1075	173	4
1133	California Lutheran Univ.	CA	IIB	477	392	335	398	600	501	433	507	32	2

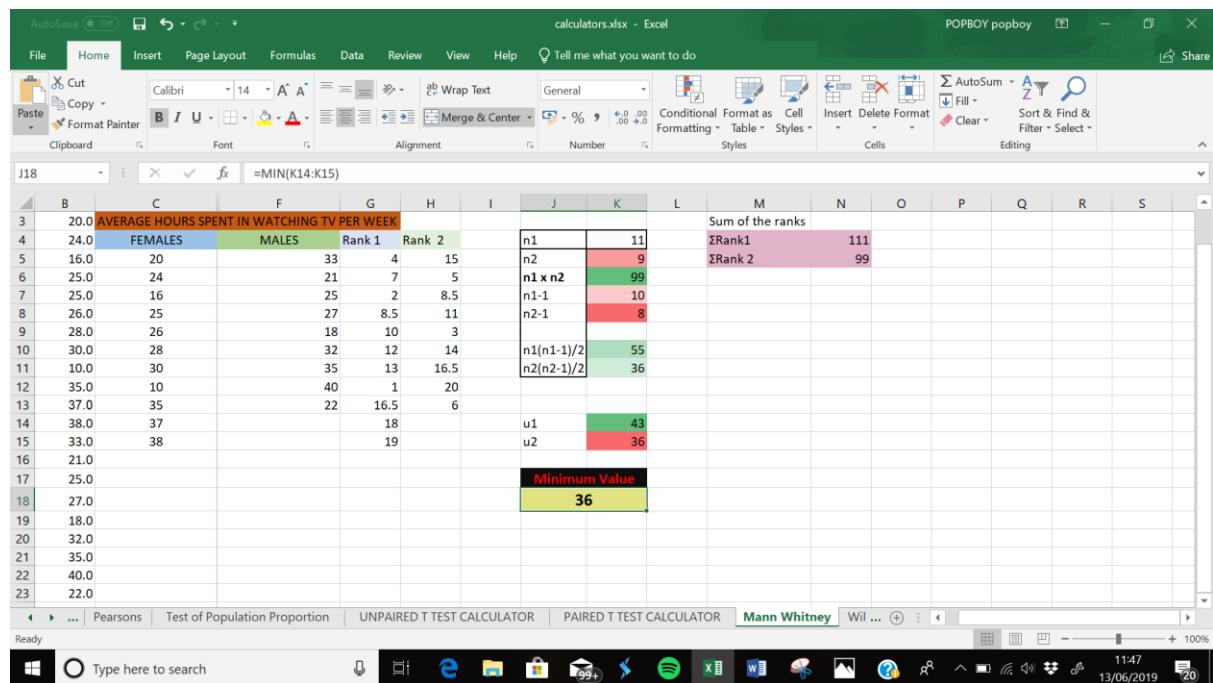
My data was sorted by

clicking on the first cell then clicking on sort and filter, and telling excel to sort Alphabetically from A – Z and below is another data which I sorted by using the sort and filter to sort the numbers from the largest numbers to the smallest.



SS1.4

In my Spreadsheet I have used a range of conditional format and comments which after I get a results I need my calculator will tell me if the data is good enough for the arguments or significant enough to reject hypothesis or accept, and all comments used in all calculators will be explained below



As shown above in the Mann Whitney Calculator after getting the two U's/U values excel will then give out the minimum value between the two which is shown above in cell K14 (43) and K15(36) which then excel tells the minimum values between them which is 36.

The formula to do this is “=MIN” which then the numbers will be highlighted, so excel can give the minimum value between the range of numbers.

Another conditional formatting is using the data bars in the Wilcoxon calculator to make it very easy to visualize values in a range of cells. A longer bar represents a higher value. which is shown below

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2															
3	x	y	Difference	Positive	Abs diff	Rank	Signed Rank			Absolute Value					
4	700	640	60	1	60	4		4 Sum of Positive	46	46					
5	530	500	30	1	30	2		2 Sum of Negative	-73	-73					
6	440	476	-36	-1	36	3									
7	372	462	-90	-1	90	5									
8	810	920	-110	-1	110	8									
9	188	688	500	-1	500	13									
10	672	762	-90	-1	90	5									
11	432	995	-563	-1	563	15									
12	664	644	20	1	20	1									
13	343	222	121	1	121	9									
14	654	333	321	1	321	12									
15	222	123	99	1	99	7									
16	200	754	-554	-1	554	14									
17	486	286	200	1	200	11									
18	305	444	-139	-1	139	10									
19															
20															
21															

The data bar is used in cell I4 and I5 , which is telling me 46 is bigger than -73 showing green for 46 and red for -73 but what I needed was to do an absolute value to put the same number in positive then use

the icon sets to represent the smaller and larger value in Cell J4 and J5 the red triangle facing down means 46 is the lower number out of the range of number displayed.

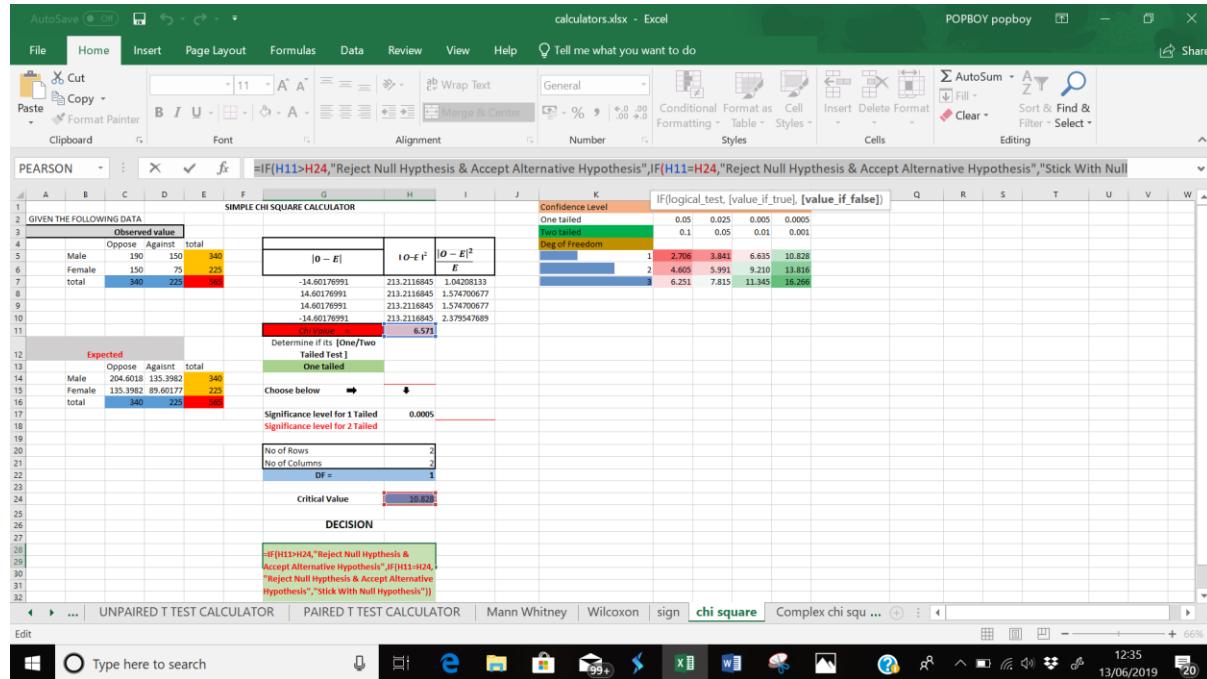
Lastly the last two comments used in my calculators are in my chi simple and chi complex square calculators the comments shown is to tell the user if results gotten from the chi value and the critical value obtained from the critical value table is significant to conclude

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1																							
2	GIVEN THE FOLLOWING DATA:																						
3	Observed value																						
4	Oppose	Against	total																				
5	Male	190	150	340																			
6	Female	150	75	225																			
7	total	340	225	565																			
8																							
9																							
10																							
11																							
12	Expected																						
13	Oppose	Against	total																				
14	Male	204.0103	135.3982	340																			
15	Female	125.3982	85.0017	210																			
16	total	340	225	565																			
17																							
18																							
19																							
20																							
21																							
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29																							
30																							
31																							
32																							

deo go for a accept the Null hypothesis or reject hypothesis or claims made.

In my Simple chi square calculator, after getting the chi value and Excel getting the critical value from the critical value table which have built in my calculator. Cell H25 Will tell if the my result is significant enough or Not to Accept my null or Reject alternative and to do that I have used the IF function to tell excel if Cell H11 is greater than or equals to cell H24 means it is significant and if not it should display not significant, to do this I typed in
=IF(H11>H24,"Significant",IF(H11=H24,"Significant","Not Significant"))

and also used the same IF function to do same with the decision rule below



To do this I typed in "**=IF(H11>H24,"Reject Null Hypothesis & Accept Alternative Hypothesis",IF(H11=H24,"Reject Null Hypothesis & Accept Alternative Hypothesis","Stick With Null")**"

SS1.5,SS2.1,SS2.2

The screenshot shows a Microsoft Excel spreadsheet titled "calculators.xlsx". In the top ribbon, the "Review" tab is selected. On the far right of the ribbon, there is a "Protect" section with options like "Unprotect Sheet", "Protect Workbook", "Allow Edit Ranges", "Unshare Workbook", "Start Inkling", and "Hide Ink". Below the ribbon, a password dialog box is open, stating: "The cell or chart you're trying to change is on a protected sheet. To make a change, unprotect the sheet. You might be requested to enter a password." The "OK" button is visible in the dialog.

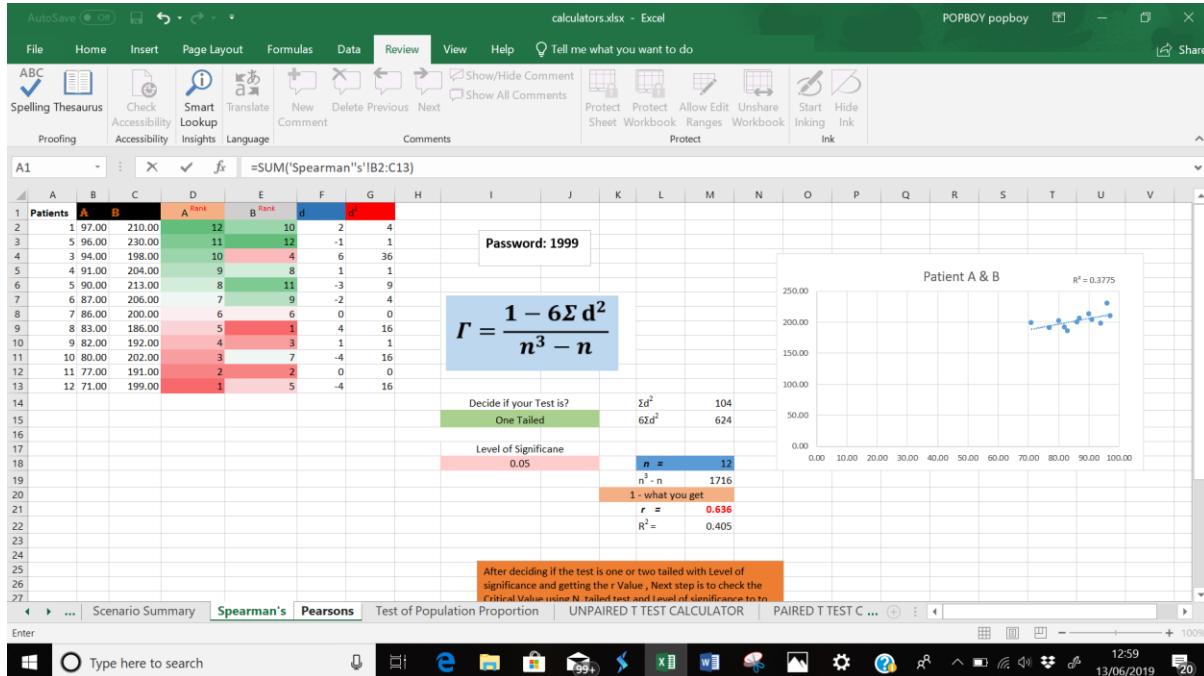
The main worksheet contains data in columns A through G. Column A is labeled "Patients" and has values from 1 to 13. Columns B and C are labeled "A" and "B" respectively, with corresponding numerical values. Column D is labeled "A Rank" and column E is labeled "B Rank", both containing ranks from 1 to 12. Column F contains the formula $d = |A - B|$, and column G contains the formula d^2 . Cell L4 contains the formula for Spearman's rank correlation coefficient: $\Gamma = \frac{1 - 6 \sum d^2}{n^3 - n}$.

Below the formula, there is a section for statistical calculations: "Decide if your Test is?" (One Tailed), "Level of Significance" (0.05), "n" (12), "n³ - n" (1716), "r" (0.636), and "R²" (0.405). A note at the bottom of this section says: "After deciding if the test is one or two tailed with Level of Significance and getting the r Value, Next step is to check the Critical Value using N-Tailed test and your calculated r to know if it is significant or not."

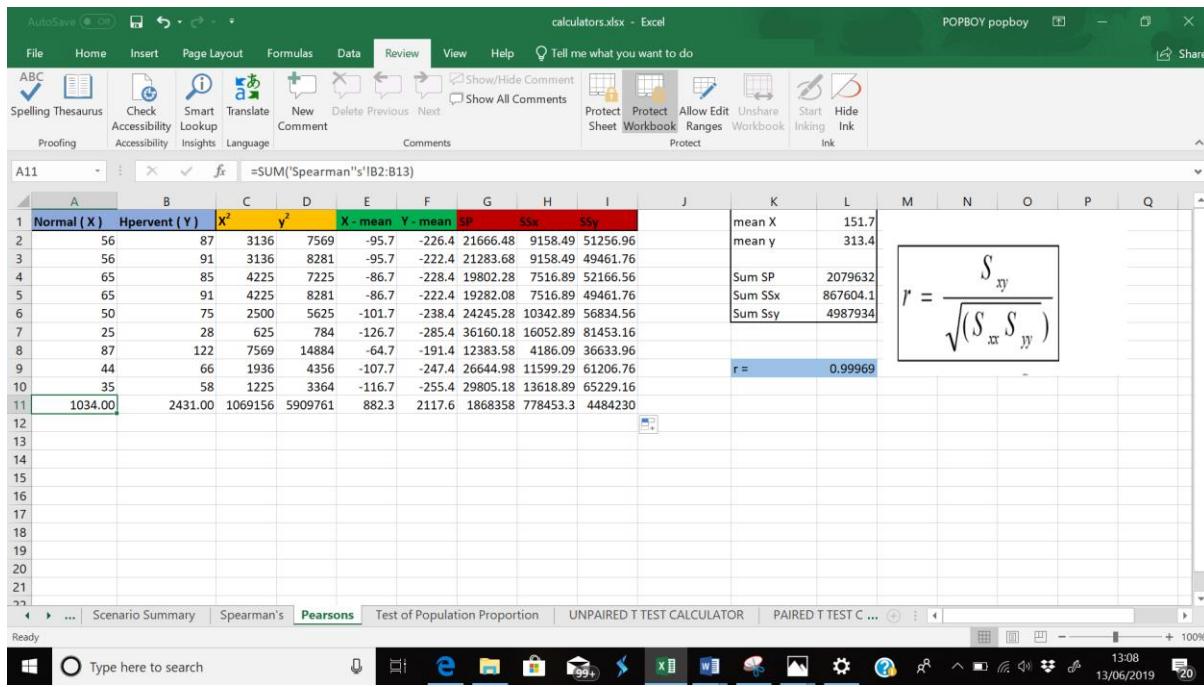
Protecting my worksheet which is the spearmans sheet calculator is to protect it from someone else having access to it and to protect my worksheet I went to review which is displayed above then click on protect work sheet and protect workbook which then display this below by not allowing any the user to do any of the list shown unless they unprotect the worksheet and before having access to the sheet a password is required,before they can edit any of the information displayed

This screenshot shows the same Excel spreadsheet as the previous one, but the "Protect Sheet" dialog box is now open. The dialog box has a "Password to unprotect sheet:" field, a checked checkbox for "Protect worksheet and contents of locked cells", and a list of options under "Allow all users of this worksheet to:". The "Insert columns" option is selected. Other options include "Select locked cells", "Select unlocked cells", "Format cells", "Format columns", "Format rows", "Insert rows", "Insert hyperlinks", "Delete columns", and "Delete rows". The "OK" and "Cancel" buttons are at the bottom of the dialog.

Linking data between Worksheets, I linked the data in my spearmens sheet and pearsons sheet but using the sum of the all values under row B and C into Pearsons which is displayed below



And this is the first process in linking the sum of all values from B2 to C13 and after then trying out another method by summing up each Cell B and C



Using the the sum function and clicking on the sheets and cells I want excel to sum up, the formula to this is “=SUM('Spearman's'!B2:B13)” and “=SUM('Spearman's'!C2:C13)”.

SS3.1

The **ABS** function in **Excel** has just one purpose - to get the absolute value of a number. Where number is the number you want to get the absolute value of. It can be represented by a value, cell **reference** or another formula. Using the abs function have helped me with my Wilcoxon and sign test calculators

calculated.xlsx - Excel

POPBOY popboy

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

ABC ✓ Spelling Thesaurus Check Accessibility Smart Lookup Translate New Comment Delete Previous Next Show/Hide Comment Show All Comments Protect Protect Sheet Workbook Range Unshare Workbook Start Inking Ink Profiling Accessibility Insights Language Comments Protect Ink

PEARSON × ✓ =ABS(C4)

Wilcoxon Signed rank test

x	y	Difference	Positive	Abs diff	Rank	Signed Rank		Absolute Value
700	640	60		1=ABS(C4)	4	4 Sum of Positive	46	46
530	500	30	1	30	2	2 Sum of Negative	73	73
440	476	-36	-1	36	3	-3		
372	462	-90	-1	90	5	-5	N	15
810	920	-110	-1	110	8	-8	Test statistics T	46
188	688	-500	-1	500	13	-13		
672	762	-90	-1	90	5	-5		
432	995	-563	-1	563	15	-15		
664	644	20	1	20	1	1		
343	222	121	1	121	9	9		
654	333	321	1	321	12	12		
222	123	99	1	99	7	7		
200	754	-554	-1	554	14	-14		
486	286	200	1	200	11	11		
305	444	-139	-1	139	10	-10		
19								
20								
21								

UNPAIRED T TEST CALCULATOR PAIRED T TEST CALCULATOR Mann Whitney Wilcoxon sign chi square Complex chi squ ...

13:20 13/06/2019

The absolute value was used in my Wilcoxon and sign text to display the value without any sign in my CELL E4 have used the absolute value to tell excel to make cell C4 an absolute value which then I

highlighted down and all the values that are negative have been positive. Which is

“=ABS(C4)”

and for the Sign test I used it to give me absolute value for the two result which is displayed below “=ABS(J4)”. **Absolute value of cell J4 highlighted below**

SS3.3

Using the if Function for my sign test

SIGN RANK TEST						
x	y	Difference	abs	Ranks	Positive/negative	Sign Ranks
8	5	3	3	7	1	7
7	5	2	2	6	1	6
9	2	7	7	9	1	9
7	6	1	1	3	1	3
8	9	-1	1	3	-1	-3
7	6	1	1	3	1	3
9	5	4	4	8	1	8
6	5	1	1	3	1	3
5	6	-1	1	3	-1	-3
3	5	-2	2	6	-1	-6

SUM OF
Positive (+) 39
Negative (-) -12
Absolute Value 12

So T value is 12
N = Number of Pairs of scores used 10

Determine if its One/Two Tailed Test
One Tailed

I used the if function to tell excel if cell C3 is greater than 0 It should display 1 and if is not it should display -1 in cell F3 and then highlighted it down for it to display on the remaining cells

Also used VLOOKUP, which is an Excel function to lookup and retrieve data from a specific column in table. VLOOKUP supports approximate and exact matching, and wildcards (* ?) for partial matches. The "V" stands for "vertical". Lookup values must appear in the first column of the table, with lookup columns to the right.

=VLOOKUP (value, table, col_index, [range_lookup])

value - The value to look for in the first column of a table.

table - The table from which to retrieve a value.

col_index - The column in the table from which to retrieve a value.

range_lookup - [optional] TRUE = approximate match (default). FALSE = exact match. But my range lookup function was to make it go to the exact column I want it to go and to do the column I used the IF function.

Which have worked effectively with my Chi and Chi complex calculators

The screenshot shows a Microsoft Excel spreadsheet titled "calculators.xlsx". The active sheet is "chi square". The formula in cell H17 is =IF(H17=L2,"2",IF(H17=M2,"3",IF(H17=N2,"4",IF(H17=O2,"5",IF(H18=L3,"2",IF(H18=M3,"3",IF(H18=N3,"4",IF(H18=O3,"5")))))))). This formula uses nested IF functions to check the value in H17 against columns L2 through O3. If H17 matches L2, it returns 2; if it matches M2, it returns 3, and so on. The formula is used to determine the critical value from a table in column K.

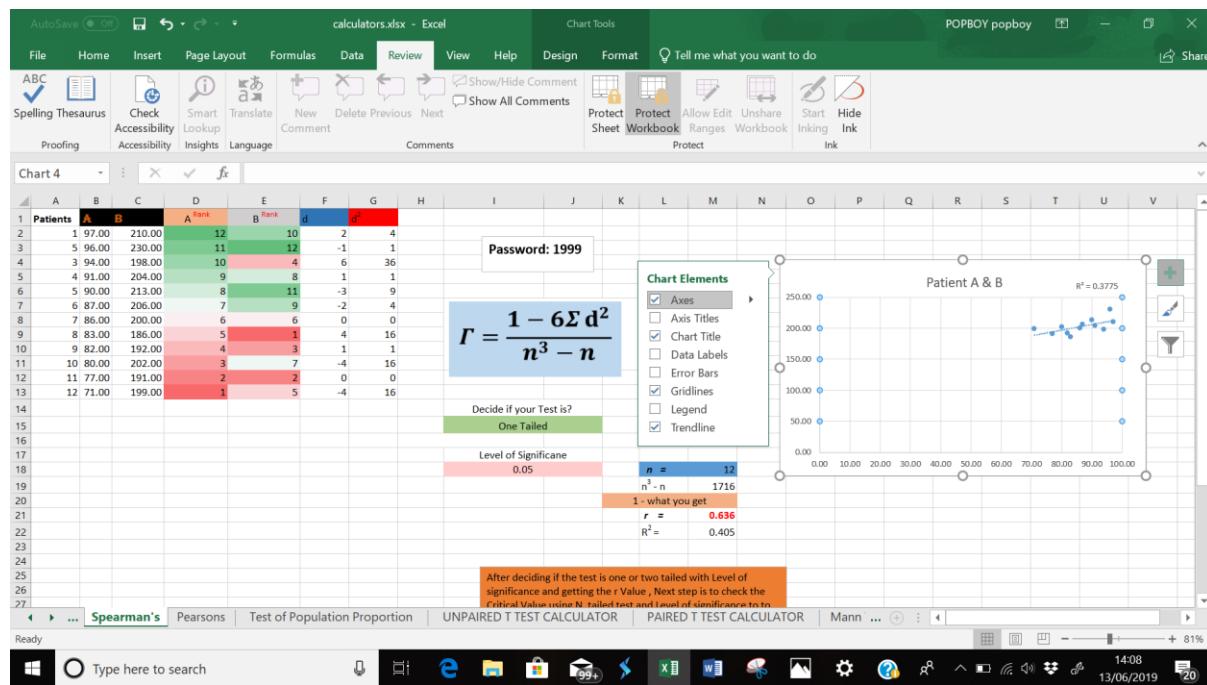
Using the IF function have told excel if cell H17 which is where the level of significance for 1 tailed test will be chosen is equals to any cell from L2 to O3 depending on the level of significance chosen that it should go to the column where it should be for example if level of significance is 0.05 1 tailed test that is =IF(H17=L2(which is 0.05 one tailed test on the critical value it should go to column 2).

And for VLOOKUP function have used it to get the critical value from the table below which is =VLOOKUP(H22,K5:O7,H23) H22 meaning the cell with the degrees of freedom, and highlighting the whole table which is K5:O7, and the column where I want the critical value to be gotten from which is done using the if function explained above and VLOOKUP is displayed below

The screenshot shows the same Microsoft Excel spreadsheet as the previous one, but with a different formula highlighted. The formula in cell H23 is =VLOOKUP(H22,K5:O7,H23). This formula uses the VLOOKUP function to find the critical value in column K based on the degrees of freedom in H22 and the table range K5:O7.

SS4.2

Charts provide a visual representation of your data, making it easier to analyze. For example, I created a scatter graph for my spearmens calculator to see if there is a pattern between A and B if there is a correlation between how the doctors rating from different patients



Conclusion

In conclusion have learnt new functions on excel and improved in my excel sheets , learning how to import data , telling excel to give comments after a results and creating at least a critical functional critical table on the chi square which I found interesting