

Part one of an Excel tutorial using the the Alberta “Sunshine List” Data

Given that most of you are on Macs, your Excel interfaces will be different from mine. Still, the tutorial and screenshots will give you a good enough idea how to proceed. If you’re stuck and unable to find what you’re looking for, use Excel’s “Help” menu.

- 1) Alberta’s release of public-sector salaries of employees earning more than \$100,000 lead to stories like [this one](#) on the CBC.
- 2) Go to the Public Disclosure of Salary and Severance [website](#)
- 3) Scroll to the bottom to the “Alberta Open Data Portal” option

Relations	buchanan,Clay	ALUM FNMR	2	2013	\$100,909.90	\$0.00	\$40,209.57	\$0.00
Aboriginal Relations	Coxson,Kathryn M	Mgr Negotiation Support	Manager	2013	\$102,378.93	\$0.00	\$26,623.70	\$0.00
Aboriginal Relations	Crossen,Peter	Director FNDF	Senior Manager	2013	\$125,626.08	\$0.00	\$32,052.32	\$0.00
Aboriginal Relations	Davey,Eric	Consultation Manager	Manager	2013	\$102,739.78	\$0.00	\$27,134.64	\$0.00

This data is also available in a number of open formats on the [Alberta Open Data Portal](#)

- 4) Download the csv (Comma Separate Value) file.
- 5) Save the file in a folder you’ve created for this exercise.
- 6) Save the file as an Excel file.
- 7) Paste the sunshine list’s URL into the first available cell in the spreadsheet’s first row, in this case, I1

	Connections	Sort & Filter	Data Tools			
	http://data.alberta.ca/data/public-disclosure-salary-and-severance					
D	E	F	G	H	I	J
	BaseSalary	CashBenefit	NonCashBenefits	Severance	http://data.alberta.ca/d	
r	122419.6	0	30849.14	0		
	101668.2	0	25849.12	0		
ager 2	158863.9	0	42010.03	0		

- 8) Name the worksheet, “Original”.

28	2013	Senior Adv	Senior Manager
29	2013	Exec Dir AI	Executive Manager 1
30	2013	Director, N	Senior Manager
31	2013	Tribunal Se	Senior Manager

9)

- 10) Copy the table, paste it into a new worksheet, which we'll rename "WorkingCopy" (**Note:** when naming worksheets, don't put any spaces between the words. This ensures that you stay within Excel's word limit when naming worksheets.)

original Relations	2013
original Relations	2013
original Relations	2013
original Relations	2013
original Relations	2013
original Relations	2013
original Relations	2013
original Relations	2013
original Relations	2013

11)

- 12) Delete the URL from I1, since we already have it in the table's original version.

- 13) Reformat the numbers in columns E,F,G and H as currency, with no decimal points.

Year	Position Title	Position Class	Base Salary	Cash Benefits	Non-Cash Benefits	Severance
2013	Director & Senior Manager		122419.6	0	30849.14	0
2013	Fin. Account Manager		101668.2	0	25849.12	0
2013	ADM. & Exec. Manager 2		158863.9	0	42010.03	0
2013	Mgr, Status Manager		102677.2	3942.59	26061.25	0
2013	Sr. Advisor Senior Manager		118851.8	0	30446.91	0
2013	Metis Sett Senior Manager		117023.3	0	29539.55	0

14)

15) Before we proceed further, apply the filter and use the drop-down menus for each column to get to know the data.

16) Sort the columns with the currency in descending order to get a rough idea of who's making what.

17) You'll notice that the version of the salaries database available for download, is missing the employee names. Annoying, to be sure! When publicly available data is missing crucial information, don't be afraid to ask for a version that contains the data you want. Given that we're stuck with what we've got, let's keep going. Performing basic calculations and eventually creating a pivot table with this data will allow us to see patterns that, at the very least, could lead to interesting questions or story ideas.

18) Since benefits are part of a person’s earnings, let’s combine the values in BaseSalary, CashBenefits and NonCashBenefits columns.

19) Insert a new column to the left of the Severance column, call it “TotalSalary”, and add the values from the three columns identified in the previous step.

	D	E	F	G	H	I
	PositionClass	BaseSalary	CashBenefits	NonCashBenefits	Total Salary	Severance
	Senior Manager	\$122,420	\$0	\$30,849	=E2+F2+G2	
	Manager	\$101,668	\$0	\$25,849		
	Executive Manager 2	\$158,864	\$0	\$42,811		

20) (**Note:** For more on calculations, please consult Digging Deeper’s Appendix A, beginning on page 281.) Before hitting the “Enter” key, make sure your formula resembles the one in the formula bar (which you should be sure to activate) in the

	G	H	I
enefits	NonCashBenefits	Total Salary	Severance
	\$0	\$153,269	\$0

screenshot above.

21) Copy the formula to the bottom. Make sure that Excel performs the calculations on all the fields in the column by double-clicking on the bottom right corner of the cell, or scrolling to the bottom. If it stops mid-way, drag or double-click on the cell handle on the cell where the copying stopped.

22) Sorting the new salary column in descending order will produce a different result for the highest income earner than the sorting of the BaseSalary column produced. This is because of the cash and on-cash benefits.

23) Wouldn't it be interesting to see what percentage of the base salary and these benefits constitute. To do this, let's create a new field to the left of the Total Salary field.

	G	H	I
Benefits	NonCashBenefits	Total Benefits	Total Salary
	\$0	\$30,849	\$153,269
	\$0	\$25,849	\$127,517
	\$0	\$42,010	\$200,874
	\$3,943	\$26,061	\$132,681
	\$0	\$30,447	\$149,299
	\$0	\$29,540	\$146,563

24) We'll add the cash and non-cash benefits in this column.

	D	E	F	G	H	I	J
	PositionClass	BaseSalary	CashBenefits	NonCashBenefits	Total Benefits	Total Salary	Sever.
	Senior Manager	\$122,420	\$0	\$30,849	=F2+G2	\$153,269	
	Manager	\$101,668	\$0	\$25,849		\$127,517	
	Executive & Res	Executive Manager 2	\$158,864	\$0	\$42,010	\$200,874	

25) Hit enter, and copy the formula to the bottom.

26) We can also sort this column in descending order to see who earned the most generous benefits. Of course, to find out the identity of the individual, you'll have to plug the information into the Sunshine List's search engine. An extra and time-consuming step that probably explains why the Alberta government excluded the names from the downloadable csv file.

27) Next, let's figure out whose benefits package constituted the largest percentage of the base salary, a detail that could lead to an interesting story about benefits, or at least some intelligent questions.

28) To do this, create a new column to the left of Total Benefits, and call it ``Benefit Percent of Base Salary``

29) The calculation to obtain the percentage is a simple division (page 285 of Digging Deeper)

E	F	G	H	I	J	K
BaseSalary	CashBenefits	NonCashBenefits	Total Benefits	Benefit Percent of Base Salary	Total Salary	Severance
\$122,420	\$0	\$30,849	\$30,849	=H2/E2	\$153,269	\$0
\$101,668	\$0	\$25,849	\$25,849		\$127,517	\$0
\$158,864	\$0	\$42,010	\$42,010		\$200,874	\$0

30) Reformat the number as a percent with one decimal place.

E	F	G	H	I	J	K	L
BaseSalary	CashBenefits	NonCashBenefits	Total Benefits	Benefit Percent of Base Salary	Total Salary	Severance	
\$122,420	\$0	\$30,849	\$30,849	25.2%	\$0	\$153,269	\$0
\$101,668	\$0	\$25,849	\$25,849			\$127,517	\$0
\$158,864	\$0	\$42,010	\$42,010				
\$102,677	\$3,943	\$26,061					
\$118,852	\$0	\$30,447					
\$117,023	\$0	\$29,540					
\$168,989	\$0	\$46,270					
\$102,379	\$0	\$26,624					
\$125,626	\$0	\$32,052					
\$102,740	\$0	\$27,135					
\$120,297	\$0	\$31,078					
\$102,660	\$6,000	\$26,359					
\$157,305	\$0	\$41,133					
\$146,080	\$0	\$38,143					
\$119,311	\$0	\$30,871					
\$127,612	\$0	\$31,797					
\$102,345	\$0	\$27,386					
\$114,041	\$6,000	\$29,763					
\$136,978	\$6,000	\$35,004					
\$102,740	\$10,788	\$2,156					
\$156,788	\$23,905	\$41,960					
\$114,560	\$4,827	\$28,579					
\$103,246	\$0	\$27,483					
\$112,197	\$0	\$28,542					
\$102,740	\$0	\$25,823					

31) Copy the formula to the bottom and sort the column in descending order.

	E	F	G	H	I	J	K
	BaseSalary	CashBenefits	NonCashBenefits	Total Benefits	Benefit Percent of Base Salary	Total Salary	Severance
	\$0	\$0		\$0	#DIV/0!	\$0	\$189,575
	\$0	\$0	\$0	\$0	#DIV/0!	\$0	\$100,000
	\$7,390	\$47,917	\$5,414	\$53,331	721.6%	\$60,721	\$335,630
	\$30,974	\$49,632	\$10,212	\$59,843	193.2%	\$90,817	\$103,088
	\$28,846	\$43,324	\$4,318	\$47,642	165.2%	\$76,488	\$81,460
	\$22,370	\$30,004	\$4,417	\$34,420	153.9%	\$56,790	\$109,391
	\$136,850	\$158,932	\$43,136	\$202,068	147.7%	\$338,918	\$440,777

32)

33) Filter out the error signs, which are indicating that Excel cannot perform math on cell references that are missing values.

	H	I	J
	Total Benefits	Benefit Percent of Base Salary	Total Salary
	\$0	#DIV/0!	
	\$0	#DIV/0!	
	\$5,414	\$53,331	721.6%
	10,212	\$59,843	193.2%
	4,318	\$47,642	165.2%

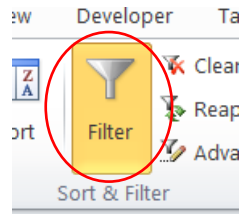
34) Once you've applied the filter, de-select the error from your drop-down menu (**NOTE: DON'T DELETE THESE ROWS. THERE IS NO NEED TO DELETE IN EXCEL. WE SIMPLY FILTER OUT THE VALUES WE DON'T WANT**)

	H	I	J	K
	Total Benefits	Benefit Percent of Base Salary	Total Salary	Severance
14	\$53,331	721.6%	\$60,721	\$335,630
12	\$59,843	193.2%	\$90,817	\$103,088
18	\$47,642	165.2%	\$76,488	\$81,460

35)

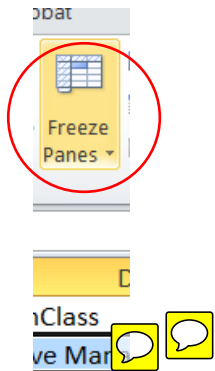
36) We can also determine the averages of the columns that contain the money values.

37) Let's first clear the filter, and then lose it by clicking on the filter icon.



38)

39) Let's place the average calculation at the bottom of the table. Before scrolling, let's "freeze" the first row, so the labels stay visible while we're heading downwards.



40)

41) Create an "Average" row, but be sure to separate it from the table. That way it doesn't get sorted accidentally.

A6387							Average
	A	B	C	D	E	F	
1	Ministry	Year	PositionTitle	PositionClass	BaseSalary	CashBenefits	No
5384	Justice and Solicitor General	2012	Medical Examiner	Executive Manager 1	\$353,744	\$0	
5385	Justice and Solicitor General	2013	Legal Counsel	Senior Manager	\$188,655	\$0	
5386							
5387	Average						
5388							
5389							

42)

Begin the calculation in column E6387.

C	D	E	F	G
	PositionClass	BaseSalary	CashBenefits	NonCashBe
er	Executive Manager 1	\$353,744	\$0	\$
	Senior Manager	\$188,655	\$0	\$

=average(E2:E6385)

Show		Zoom	
fx =AVERAGE(E2:E6385)			
C	D	E	F
	PositionClass	BaseSalary	CashBenefits
	Executive Manager 1	\$353,744	\$0
	Senior Manager	\$188,655	\$0
		\$122,699	

43)

44) So the average base salary is \$122,699. A handy reference when comparing higher pay cheques. Copy the formula in columns F,G,H and the rest of the columns to get their averages. You do this by placing the cursor over thick black box at the bottom right of the cell in the screen shot above and dragging it to your right.

Show		Zoom		Window		Ma
fx =AVERAGE(E2:E6385)						
E	F	G	H	I	J	K
BaseSalary	CashBenefits	NonCashBenefits	Total Benefits	Benefit Percent of Base Salary	Total Salary	Severance
\$353,744	\$0	\$4,908	\$4,908	1.4%	\$358,652	\$0
\$188,655	\$0	\$2,127	\$2,127	1.1%	\$190,782	\$0
\$122,699	\$2,454	\$29,663	\$32,112	#DIV/0!	\$154,811	

45) You'll notice that we didn't include severances. For this column, it's better to simply include the cell range containing the relatively few values for employees who got severances.

46) You'll also notice that we obtained an error message in column I. For the purposes of this exercise, just leave it.

47) Now we have the averages, which can be used for comparisons. For instance, let's take the non-cash benefits, as we did in class. Divide the top cash benefit

F	G	H
CashBenefits	NonCashBenefits	Total Benefits
\$0	\$107,456	\$107,456
\$1,250	\$106,488	\$107,738
\$1,250	\$96,789	\$98,039

48)

49) By the average

	G	
CashBenefits	NonCashBenefits	Total
\$0		
\$1,250	\$29,663	\$30,913

50)

=G2/G6387

51)

52) Be sure to reform the value as a number with one decimal point.

3.6

53)

54) This means, that the deputy minister of the Executive Council earned a non-cash benefit that was **3.6 times** higher than the average.

Ministry	Year	PositionTitle	PositionClass	BaseSalary	CashBenefits	NonCashBenefits	Total Benefits
Executive Council	2013	DM, Executive Council	Senior Official	\$342,631	\$0	\$107,456	\$107,456

55)

56) Let's stop right here. In the second part of the tutorial, we'll create a pivot table to help us see more trends that would lead to stories.