

# Excel Challenge

Our goal is to create the following Personnel Spreadsheet. Instructions: Do as much of the enhancements as possible. If you get stuck, move on to the next enhancement and keep track of where you having issues.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Personnel Data																
2																	
3	Name	Sex	Dept	Hire Date	Seniority (yrs)	Anniv-ersary	Seniority (rank)	Job Code	Job Title	Rt	2013 Rating	Raise?	Bonus?	2013 Salary	2014 Salary	Incr. %	2014 Bonus
4	Amber	F	Sales	7-Jan-2013	0.6		25	S02	Salesperson	3	At Expectations	TRUE	FALSE	\$50,000	\$51,000	2%	\$0
5	Bill	M	Sales	25-Oct-2010	2.8		16	S02	Salesperson	4	Exceeds Expectations	TRUE	TRUE	\$40,000	\$41,200	3%	\$2,000
6	Cherise	F	IT	19-Mar-2012	1.4		21	GA05	Help Desk	3	At Expectations	TRUE	FALSE	\$41,000	\$41,820	2%	\$0
7	Derek	M	Finance	6-Jan-2012	1.6		20	GA01	Accountant	2	Needs Improvement	FALSE	FALSE	\$57,000	\$57,000	0%	\$0
8	Elias	M	Security	23-Jul-2009	4.0		12	GA06	Officer	3	At Expectations	TRUE	FALSE	\$39,000	\$39,780	2%	\$0
9	Fadhi	M	Sales	16-Nov-2010	2.7		17	S01	Sales Manager	4	Exceeds Expectations	TRUE	TRUE	\$70,000	\$72,100	3%	\$2,000
10	Gwen	F	HR	17-Feb-2007	6.5		6	H02	Generalist	3	At Expectations	TRUE	FALSE	\$51,500	\$52,530	2%	\$0
11	Harry	F	IT	22-Apr-2008	5.3	Five Year	7	GA05	Help Desk	2	Needs Improvement	FALSE	FALSE	\$50,000	\$50,000	0%	\$0
12	Ivy	F	Finance	23-Jun-2012	1.1		22	GA01	Accountant	3	At Expectations	TRUE	FALSE	\$42,500	\$43,350	2%	\$0
13	Joan	F	Sales	24-Sep-2005	7.9		3	S02	Salesperson	3	At Expectations	TRUE	FALSE	\$43,000	\$43,860	2%	\$0
14	Ken	M	IT	20-Jan-2007	6.5		5	GA04	Programmer	5	Exceptional	TRUE	TRUE	\$62,000	\$64,480	4%	\$5,000
15	Larry	M	Admin	13-Feb-2006	7.5		4	GA02	Admin Assistant	4	Exceeds Expectations	TRUE	TRUE	\$29,000	\$29,870	3%	\$2,000
16	Mike	M	IT	23-Mar-2010	3.4		14	GA04	Programmer	3	At Expectations	TRUE	FALSE	\$57,000	\$58,140	2%	\$0
17	Nolan	M	Admin	14-Mar-2009	4.4		10	GA02	Admin Assistant	3	At Expectations	TRUE	FALSE	\$24,000	\$24,480	2%	\$0
18	Olivia	F	Admin	13-Feb-2009	4.5		9	GA07	COO	3	At Expectations	TRUE	FALSE	\$105,000	\$107,100	2%	\$0
19	Penny	F	Admin	6-Apr-2013	0.3		26	GA02	Admin Assistant	4	Exceeds Expectations	TRUE	TRUE	\$33,000	\$33,990	3%	\$2,000
20	Quentin	M	Admin	19-Jun-2003	10.1	Ten Year	1	GA03	CEO	3	At Expectations	TRUE	FALSE	\$155,000	\$158,100	2%	\$0
21	Rasheed	M	Sales	2-Jan-2009	4.6		8	S02	Salesperson	3	At Expectations	TRUE	FALSE	\$45,000	\$45,900	2%	\$0
22	Shanika	F	Sales	19-Sep-2012	0.9		24	S01	Sales Manager	5	Exceptional	TRUE	TRUE	\$72,000	\$74,880	4%	\$5,000
23	Tom	M	IT	2-Jan-2010	3.6		13	GA05	Help Desk	3	At Expectations	TRUE	FALSE	\$47,000	\$47,940	2%	\$0
24	Ursula	F	Finance	27-Oct-2004	8.8		2	GA01	Accountant	3	At Expectations	TRUE	FALSE	\$51,000	\$52,020	2%	\$0
25	Vera	F	Sales	3-Oct-2011	1.8		18	S02	Salesperson	1	Unsatisfactory	FALSE	FALSE	\$43,500	\$43,500	0%	\$0
26	Wallace	M	HR	3-Jul-2009	4.1		11	H02	Generalist	3	At Expectations	TRUE	FALSE	\$51,000	\$52,020	2%	\$0
27	Xavier	M	Sales	3-Sep-2012	0.9		23	S02	Salesperson	3	At Expectations	TRUE	FALSE	\$46,000	\$46,920	2%	\$0
28	Yusuf	M	Security	2-Jan-2012	1.6		19	GA06	Officer	3	At Expectations	TRUE	FALSE	\$32,000	\$32,640	2%	\$0
29	Zack	M	HR	24-Jun-2010	3.1		15	H01	Recruiter	4	Exceeds Expectations	TRUE	TRUE	\$59,500	\$61,285	3%	\$2,000

- The cells above should be entered on a worksheet named "Personnel Data"
- Grey columns are calculated columns and should have their protection set to "Locked". White columns should be "Unlocked"
- Validation lists should be set up on a separate worksheet named "Validation." Use Names for any validations/lookups

A	B	C	D	E	F	G	H	I	J	K
Department	Dept	Job Code	Job Title	Job Description			Rating	Description	Raise Eligible	Bonus Eligible
HR	HR	H01	Recruiter	Finding qualified applicants and managing candidate selection			1	Unsatisfactory	FALSE	FALSE
Finance	HR	H02	Generalist	Handling personnel issues and benefits questions			2	Needs Improvement	FALSE	FALSE
Sales	Finance	GA01	Accountant	Tracking accounts receivable and payable			3	At Expectations	TRUE	FALSE
Admin	Sales	S01	Sales Manager	Supervising sales persons and setting quotas			4	Exceeds Expectations	TRUE	TRUE
IT	Sales	S02	Salesperson	Selling company product			5	Exceptional	TRUE	TRUE
Security	Sales	S03	VP of Sales	Running the Sales department						
	Admin	GA02	Admin Assistant	Supporting department personnel						
	Admin	GA03	CEO	Running the company						
	Admin	GA07	COO	Running all administrative departments						
	IT	GA04	Programmer	Programming and modifying company systems						
	IT	GA05	Help Desk	Providing support to staff and customers						
	Security	GA06	Officer	Ensuring physical security						

- Set up the white columns this way, (paying attention to the format shown in the list above):
  - Name** is a free form column. Any name can be entered, but duplicate names should be highlighted in red.
  - Sex** is either M or F. This should be controlled via data validation
  - Dept** should be valid when compared against the Department list on worksheet "Validation"
  - Hire Date** should contain any legitimate value from 6/19/2003 (when company founded) to today.
  - Job Code** should be valid when compared against the Job Code list on worksheet "Validation." However, it must also be a valid job code for the Department. *(We don't want Programmers in the Sales department!)*
  - Rt#** (rating number) should be valid when compared against the rating numbers
  - 2013 Salary** must not be negative. It must also not be greater than one million dollars.

5. Set up the grey columns this way:

- Seniority (yrs)** should be the number of years that have passed since the person was hired. There are approximately 365.25 days per year. That is good enough precision to calculate years to one decimal place.
- Anniversary** is challenging. Every July, the company allows employees celebrating a special anniversary **any time during that year** to select a gift. There are major and minor anniversaries. Every five years, an employee has a special anniversary, but every ten years, the employee has a **very** special anniversary. Thus, we need to flag whether we are celebrating a five-year or ten-year anniversary as follows:

Year of hire	Anniversary
5 years ago	Five-year (minor)
10 years ago	Ten-year (major)
15 years ago	Five-year (minor)
20 years ago	Ten-year (major)
25 years ago	Five-year (minor) ...and so on

*Hint: You will probably need to use at least the IF, MOD, YEAR, and AND functions*

- Seniority (rank)** should be a ranked listing where the most senior employee is set to 1, and the second most senior employee is set to 2, and so on.
- Job Title** should be derived from the **Job Code** column.
- 2013 Rating, Raise, and Bonus** should be derived from the **Rt#** column.
- 2014 Salary** should be calculated from the **2013 Salary, Rt#, and Raise?** columns according to the following rules:
  - You only get a raise if you are eligible. (Look in the **Raise?** column.)
  - If eligible, it is based on performance rating.
  - If an employee's performance rating was 3, they should get a 2% raise.
  - If an employee's performance rating was 4, they should get a 3% raise.
  - If an employee's performance rating was 5, they should get a 4% raise.

Note: If one's 2014 salary is the same as their 2013 salary, the value should automatically be displayed in **boldface** type.

- Incr. %** is just a straight comparison of the 2014 salary against the 2013 salary.
- 2014 Salary** should be made available to only bonus-eligible employees. If their performance rating was a 4, they should get a \$2000 bonus; if it was a 5, they should get a \$5000 bonus.

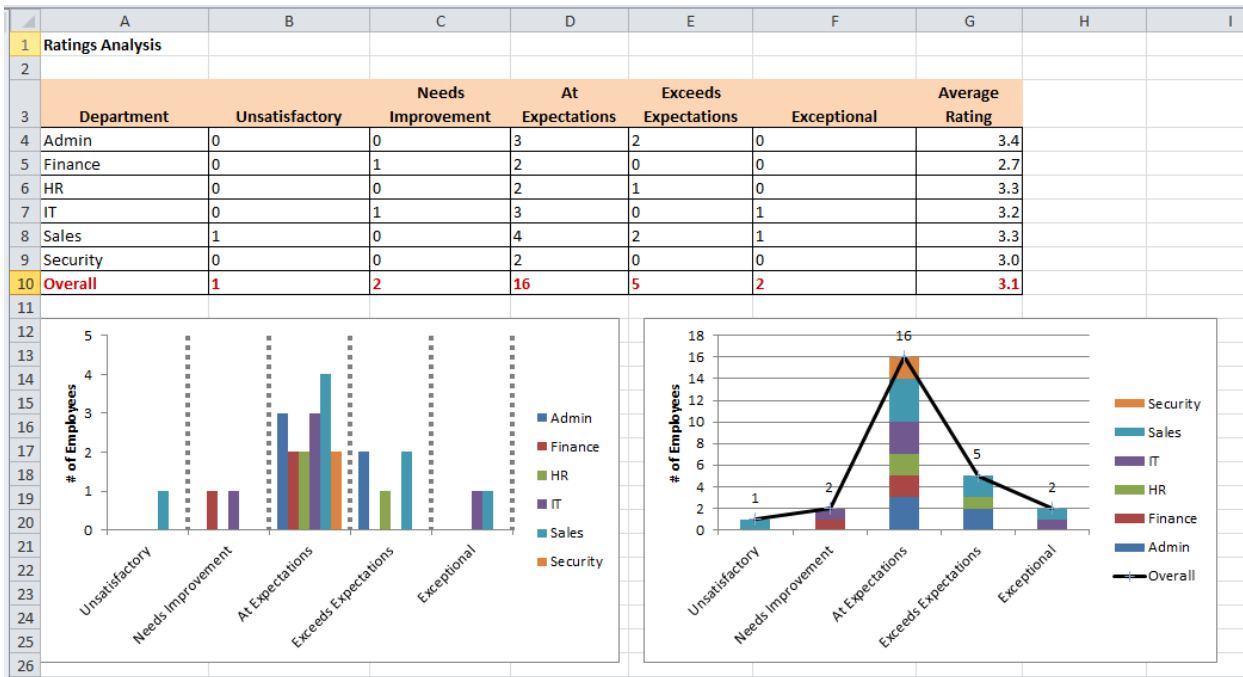
6. Columns L and M are not always useful to be displayed. Select these columns and Group them (on the Data tab). Repeat this operation for columns E through G. Now you can collapse these column groups or expand them using the + or - signs

	A	B	C	D	H	I	J	K	L	M	N	O	P	Q
1	<b>Personnel Data</b>													
2														
3	<b>Name</b>	<b>Sex</b>	<b>Dept</b>	<b>Hire Date</b>	<b>Job Code</b>	<b>Job Title</b>	<b>Rt#</b>	<b>2013 Rating</b>	<b>Raise?</b>	<b>Bonus?</b>	<b>2013 Salary</b>	<b>2014 Salary</b>	<b>Incr. %</b>	<b>2014 Bonus</b>
4	Amber	F	Sales	7-Jan-2013	S02	Salesperson	3	At Expectations	TRUE	FALSE	\$50,000	\$51,000	2%	\$0
5	Bill	M	Sales	25-Oct-2010	S02	Salesperson	4	Exceeds Expectations	TRUE	TRUE	\$40,000	\$41,200	3%	\$2,000
6	Cherise	F	IT	19-Mar-2012	GA05	Help Desk	3	At Expectations	TRUE	FALSE	\$41,000	\$41,820	2%	\$0
7	Derek	M	Finance	6-Jan-2012	GA01	Accountant	2	Needs Improvement	FALSE	FALSE	\$57,000	\$57,000	0%	\$0
8	Elias	M	Security	23-Jul-2009	GA06	Officer	3	At Expectations	TRUE	FALSE	\$39,000	\$39,780	2%	\$0

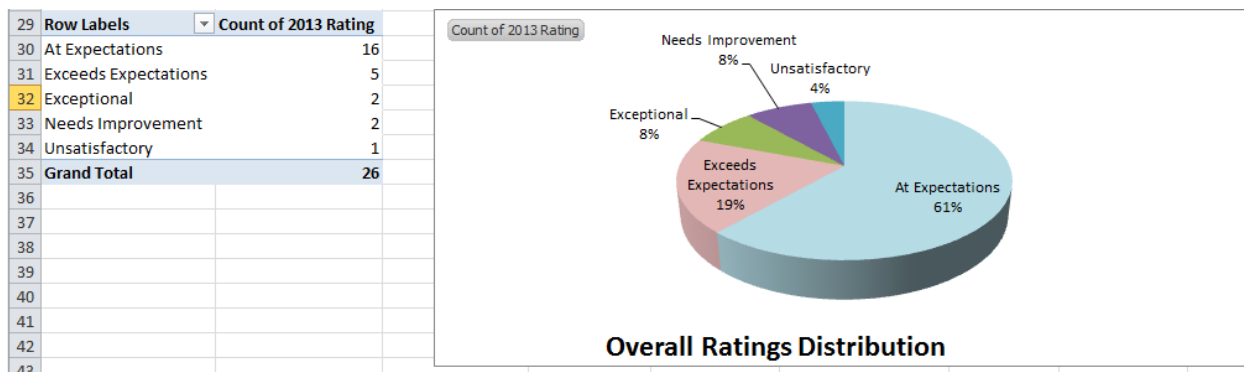
- Apply a filter to the Personnel Data that will display only those employees in the Sales and Finance departments whose Performance Rating was greater than 3.
- Click on Amber's hire date. Go to the Formulas tab and click Trace Dependents to see which cells rely on that column for a calculation. Then click Remove Arrows. Go to the **Seniority (Rank)** and click Trace Precedents to see which cells are used to calculate this value. Then click Remove Arrows again.

9. Go to the Review tab and select Protect Sheet. Do not specify a password. See how this protects your formulas.

10. On a new worksheet, set up a table to aggregate ratings by department as shown below. Create the two different graphs from this data.



11. Set up a pivot table from the raw data as shown below. Create the pie chart below.



12. On another new worksheet, set up a pivot table on the data as shown below

	A	B	C	D	E	F	G	H	I	J
1	Seniority and Salary Analysis									
2										
3	Row Labels	# of Employees	Sum of 2013 Salary	% of 2013 Payroll	Sum of 2014 Salary	% of 2014 Payroll	Average of Incr. %	Most Junior Staff (yrs)	Most Senior Staf (yrs)	% Female
4	Admin	5	\$346,000	24.79%	\$353,540	24.79%	2.4%	0.3	10.1	40%
5	Finance	3	\$150,500	10.78%	\$152,370	10.69%	1.3%	1.1	8.8	40%
6	HR	3	\$162,000	11.60%	\$165,835	11.63%	2.3%	3.1	6.5	20%
7	IT	5	\$257,000	18.41%	\$262,380	18.40%	2.0%	1.4	6.5	20%
8	Sales	8	\$409,500	29.33%	\$419,360	29.41%	2.3%	0.6	7.9	60%
9	Security	2	\$71,000	5.09%	\$72,420	5.08%	2.0%	1.6	4.0	0%
10	<b>Grand Total</b>	<b>26</b>	<b>\$1,396,000</b>	<b>100.00%</b>	<b>\$1,425,905</b>	<b>100.00%</b>	<b>2.1%</b>	<b>0.3</b>	<b>10.1</b>	<b>42%</b>

Note that column J is not part of the pivot table, but is next to it.

13. Click on the Admin cell (A4) and add a comment using the Review tab. Add the comment "Skewed due to CEO and COO." Practice showing and hiding the comment.

14. Create a Gender Analysis on the data as shown below

12	Gender Analysis				
13			2014 Salary Information		
14	Department	% Female	Average F Salary	Average M Salary	F Salary Compared to M Salary
15	Admin	40%	\$70,545	\$70,817	-0.4%
16	Finance	40%	\$47,685	\$57,000	-16.3%
17	HR	20%	\$52,530	\$56,653	-7.3%
18	IT	20%	\$45,910	\$56,853	-19.2%
19	Sales	60%	\$53,310	\$51,530	3.5%
20	Security	0%	N/A	\$36,210	N/A
21	Overall	42%	\$54,005	\$55,457	-2.6%

Any time there is more than a 10% difference between female and male salaries, highlight it as shown above. Prove that your Conditional Formatting works, by changing the CEO's salary to \$120,000.

12	Gender Analysis				
13			2014 Salary Information		
14	Department	% Female	Average F Salary	Average M Salary	F Salary Compared to M Salary
15	Admin	40%	\$70,545	\$58,917	19.7%
16	Finance	40%	\$47,685	\$57,000	-16.3%
17	HR	20%	\$52,530	\$56,653	-7.3%
18	IT	20%	\$45,910	\$56,853	-19.2%
19	Sales	60%	\$53,310	\$51,530	3.5%
20	Security	0%	N/A	\$36,210	N/A
21	Overall	42%	\$54,005	\$53,077	1.7%

15. Create this pivot table that lets you look at ratings and salaries by Job Title, and lets you alter the population between all employees, male employees, and female employees.

Sex	(All)			
Row Labels	Average of Rt#	Min of 2014 Salary	Average of 2014 Salary	Max of 2014 Salary
Admin	3.4	\$24,480	\$70,708	\$158,100
Admin Assistant	3.7	\$24,480	\$29,447	\$33,990
CEO	3.0	\$158,100	\$158,100	\$158,100
COO	3.0	\$107,100	\$107,100	\$107,100
Finance	2.7	\$43,350	\$50,790	\$57,000
Accountant	2.7	\$43,350	\$50,790	\$57,000
HR	3.3	\$52,020	\$55,278	\$61,285
Generalist	3.0	\$52,020	\$52,275	\$52,530
Recruiter	4.0	\$61,285	\$61,285	\$61,285
IT	3.2	\$41,820	\$52,476	\$64,480
Help Desk	2.7	\$41,820	\$46,587	\$50,000
Programmer	4.0	\$58,140	\$61,310	\$64,480
Sales	3.3	\$41,200	\$52,420	\$74,880
Sales Manager	4.5	\$72,100	\$73,490	\$74,880
Salesperson	2.8	\$41,200	\$45,397	\$51,000
Security	3.0	\$32,640	\$36,210	\$39,780
Officer	3.0	\$32,640	\$36,210	\$39,780