Tables/Lists

The feature known as lists in Excel is now called tables.

Tables are a specialized way of defining a range.

Benefits of tables vs ranges:

1. Tables are named ranges
2. Tables use the column headings to determine the nature of the data in the column below. That is, it treats your data like a flat file database
3. Because tables are objects in Excel, there are specialized features related to them, including formatting, filtering, sorting, totals and more.
4. If using a table as a data source for a chart or other information, updates to the table will automatically be included.

Cons of tables:

1. Several features in Excel do not work with them

To create a table:

1. Make certain your range of data has no blank rows or columns. Excel will typically stop the expansion for selecting the range at one of these.
2. On the Home Tab ->Styles->Format as Table OR Insert Tab-> Tables->Table (Be certain to note whether or not your data has a header row)
3. Your data will be formatted in the manner you selected during the setup of the table.

When your data is converted into a table, the range gains special abilities:

1. Integrated autofilter and sort
2. Easy selection
3. Header row remains visible when scrolling
4. Automatic expansion (just add a row or column immediately next to an existing table row or column, and the table expands to include the new information
5. Formatting remains consistent, so adding a row or column doesn't impact alternate row shading.
6. Adding rows to the table automatically updates any object using the table's data
7. Table-specific functions and formatting

In Excel 2010 tables have two contextual tabs. In Excel 2013 they have one.

Tables have Auto Filter in place

P2   =COUNTIF(Table1[@[january]:[Total]],">=50")

id	part_number	january	february	march	april	may	june	july	august	september	october	november	december	Total	Number of Above-Par Months
1	54868-5345	57	25	89	57	25	89	57	25	89	57	25	89	684	9
2	68026-544	24	80	20	24	80	20	24	80	20	24	80	20	496	5
3	0409-3495	71	52	35	71	52	35	71	52	35	71	52	35	632	9
4	24909-301	41	62	41	41	62	41	41	62	41	41	62	41	576	5
5	58132-3331	61	26	84	61	26	84	61	26	84	61	26	84	684	9
6	36000-033	67	37	28	67	37	28	67	37	28	67	37	28	528	5
7	60681-6301	21	47	94	21	47	94	21	47	94	21	47	94	648	5
8	58930-041	51	22	20	51	22	20	51	22	20	51	22	20	372	5
9	59779-252	89	40	88	89	40	88	89	40	88	89	40	88	868	9
10	37000-410	31	91	40	31	91	40	31	91	40	31	91	40	648	5
Total		513	482	539	513								539	6136	66

Added columns can include additional data or calculated values. When you insert a calculated value, the function or formula reflects the column name, not a cell reference, and the entire column is filled with the function or formula.

You can use any kind of function in columns. Some of the most powerful ones use logical arguments to perform a function. This can be helpful for teasing out important information. Examples of these are SUMIF, COUNTIF, AVERAGEIF, SUMIFS, COUNTIFS, AND AVERAGEIFS.

F12		▾ : ✕ ✓ fx	=SUBTOTAL(109,[april])													

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	id	part_number	january	february	march	april	may	june	july	august	september	october	november	december	Total	Number of Above-Par Months	
2	1	54868-5345	57	25	89	57	25	89	57	25	89	57	25	89	684	9	
3	2	68026-544	24	80	20	24	80	20	24	80	20	24	80	20	496	5	
4	3	0409-3495	71	52	35	71	52	35	71	52	35	71	52	35	632	9	
5	4	24909-301	41	62	41	41	62	41	41	62	41	41	62	41	576	5	
6	5	58132-3331	61	26	84	61	26	84	61	26	84	61	26	84	684	9	
7	6	36000-033	67	37	28	67	37	28	67	37	28	67	37	28	528	5	
8	7	60681-6301	21	47	94	21	47	94	21	47	94	21	47	94	648	5	
9	8	58930-041	51	22	20	51	22	20	51	22	20	51	22	20	372	5	
10	9	59779-252	89	40	88	89	40	88	89	40	88	89	40	88	868	9	
11	10	37000-410	31	91	40	31	91	40	31	91	40	31	91	40	648	5	
12	Total		513	482	539	513 ▾								539	6136	66	
13																	

To calculate totals along the bottom row of a table, go to Table Tools Design tab ->Table Style Options ->Total Row. Each cell in the total row allows you to choose a function that will be used on that column. To choose the function, click on the cell in which you want to calculate a value. A drop arrow will appear to the right of the cell. Click on the drop arrow and choose the function you wish to use.

When looking for patterns in data, you might want to check to see how frequently certain values come up. The FREQUENCY function is good for this. To use FREQUENCY, set up a range with benchmarks (or bins). These will serve as the mileposts for your counting.

W	X
	Benchmark
Benchmarks	Frequencies
20	
40	
60	
80	

Select the cells into which you want values placed. Remember that there will always be one more than you have benchmarks (In the case of our data, the values that will be tallied are 0-20, 21-40, 41-60, 61-80 and 80 and up.

The syntax for the function is =FREQUENCY(select months,w2:w5). Then press Ctrl, Shift and Enter at the same time. If you only press Enter, then the function will not work properly. Note that the formatting of the formula/function will be altered as a result of entering data in this way.

| X3 | | | fx | {=FREQUENCY(Table1[[january]:[december]],W2:W5)} | | | | |

◢	U	V	W	X	Y	Z	AA
1			Benchmarks	Benchmark Frequencies			
2			20	8			
3			40	44			
4			60	24			
5			80	20			
6				24			
7							
8							

Database Functions

Excel has built-in database functions. That doesn't mean that it is a good replacement for a true database, but it does mean that Excel does a pretty good job at data management, especially if you are working with a small subset of a larger data group.

One part of using Excel as a database is the creation of what is called a criteria range. A best practice for creating the criteria range is to copy the column titles from your range or table to another location of the spreadsheet. Make certain there is enough room to add actual criteria. Much like the Advanced Filters, this range will allow you to search for values based on equivalence to data in the criteria range, using logical arguments, and using AND OR functions based on the row of the criteria.

=DSUM(Data_2015,Table2[[#Headers],[total]],J1:O2)

	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
a	International	total				date	month	US	Canada	International	total		Sum	
92	4	181					may						1135	
24	3	86												
45	38	118												
50	36	108												

Examples of database functions are DSUM, DMAX, DCOUNT, and DAVERAGE (Use 2015 Daily Data). Here's the thing: Excel doesn't seem to like using the Table Name as the range for database functions. So, you will need to either refer to the cells themselves OR create a named range that is the table.