About Data Tables

Data tables are part of a suite of commands sometimes called what-if analysis[1] tools. A data table is a range of cells that shows how changing certain values in your formulas[2] affects the results of the formulas. Data tables provide a shortcut for calculating multiple versions in one operation and a way to view and compare the results of all of the different variations together on your worksheet.

One-variable data tables   For example, use a one-variable data table if you want to see how different interest rates affect a monthly mortgage payment. In the following example, cell D2 contains the payment formula, =PMT(B3/12,B4,-B5), which refers to the input cell B3.

	A	B	C	D
1	**Mortgage Loan Analysis**			**Payments**
2	Down Payment	None		$ 672.68
3	Interest Rate	9.50%	9.00%	$ 643.70
4	Term (months)	360	9.25%	$ 658.14
5	Loan Amount	$80,000	9.50%	$ 672.68

Input cell

List of values that Excel subsitutes in the input cell, B3.

Two-variable data tables   A two-variable data table can show how different interest rates and loan terms will affect the mortgage payment. In the following example, cell C2 contains the payment formula, =PMT(B3/12,B4,-B5), which uses two input cells, B3 and B4.

Column Input cell

List of values that Excel subsitutes in the row input cell, B4.

	A	B	C	D	E
1	**Mortgage Loan Analysis**				
2	Down Payment	None	$ 672.68	180	360
3	Interest Rate	9.50%	9.00%	$811.41	$643.70
4	Term (months)	360	9.25%	$823.35	$658.14
5	Loan Amount	$80,000	9.50%	$835.38	$672.68

Row Input cell

List of values that Excel subsitutes in the column input cell, B3.

Data table calculations Data tables recalculate whenever a worksheet is recalculated, even if they have not changed. To speed up calculation of a worksheet that contains a data table, you can change the **Calculation** options to automatically recalculate the worksheet but not data tables.

1. what-if analysis: A process of changing the values in cells to see how those changes affect the outcome of formulas on the worksheet. For example, varying the interest rate that is used in an amortization table to determine the amount of the payments.

2. formula: A sequence of values, cell references, names, functions, or operators in a cell that together produce a new value. A formula always begins with an equal sign (=).

Create a one-variable data table

You must design one-variable data tables[3] so that input values are listed either down a column (column-oriented) or across a row (row-oriented). Formulas[2] used in a one-variable data table must refer to an input cell[4]

1. Type the list of values you want to substitute in the input cell either down one column or across one row.
2. Do one of the following:
   - If the data table is column-oriented, type the formula in the row above the first value and one cell to the right of the column of values. Type any additional formulas to the right of the first formula.

   - If the data table is row-oriented, type the formula in the column to the left of the first value and one cell below the row of values. Type any additional formulas below the first formula.

3. Select the range of cells that contains the formulas and values you want to substitute.
4. On the **Data** menu, click **Table**.
5. Do one of the following:
   - If the data table is column-oriented, type the cell reference[5] for the input cell in the **Column input cell** box.

   - If the data table is row-oriented, type the cell reference for the input cell in the **Row input cell** box.

2. formula: A sequence of values, cell references, names, functions, or operators in a cell that together produce a new value. A formula always begins with an equal sign (=).

3. data table: A range of cells that shows the results of substituting different values in one or more formulas. There are two types of data tables: one-input tables and two-input tables.

4. input cell: The cell in which each input value from a data table is substituted. Any cell on a worksheet can be the input cell. Although the input cell does not need to be part of the data table, the formulas in data tables must refer to the input cell.

5. cell reference: The set of coordinates that a cell occupies on a worksheet. For example, the reference of the cell that appears at the intersection of column B and row 3 is B3.