Data Tables

Table of variable data

Instead of creating different scripts, you can create a data table to quickly test different values for formulas. You can create a one-variable data array or a two-variable data array.

Let's say you own a bookstore and have 100 books in stock. You sell a certain % of the higher price of $50 and a certain % of the lower price of $20. If you sell 60% of the higher price, cell D10 below calculates a total profit of 60 * $50 + 40 * $20 = $3800.

One variable data array

To create a table of variable data, perform the following steps.

1. Select cell B12 and type =D10 (refer to the total profit cell).

 2. Enter the different percentages in column A.

3. Select the range A12:B17.

We will calculate the total profit if you sell 60% for the highest price, 70% for the highest price, etc.

	A	B	C	D	E
1	**Book Store**				
2					
3		total number of books	% sold for the highest price		
4		100	60%		
5					
6			number of books	unit profit	
7		highest price	60	$50	
8		lower price	40	$20	
9					
10			total profit	$3,800	
11					
12			$3,800		
13	60%				
14	70%				
15	80%				
16	90%				
17	100%				
18					

4. On the Data tab, in the Forecast group, click Analyze What if.
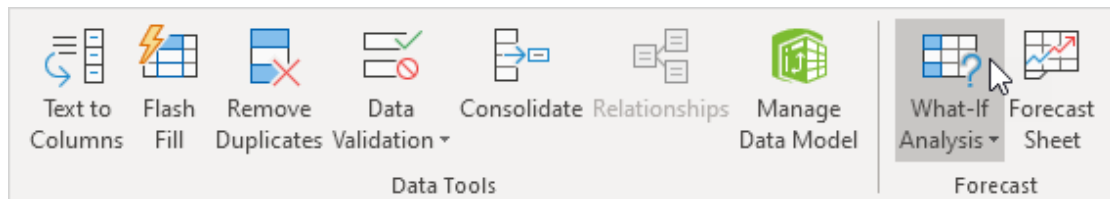
5. Click Data Table.
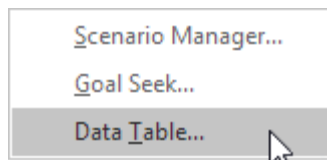
6. Click the 'Column input cell' box (percentages are in a column) and select cell C4.

We choose cell C4 because the percentages are reported in cell C4 (% sold for the highest price). Along with the formula in cell B12, Excel now knows to replace cell C4 with 60% to calculate total profit, replace cell C4 with 70% to calculate total profit, etc.

Data Table	?	✕
Row input cell:		
Column input cell:	C4	
OK	Cancel	
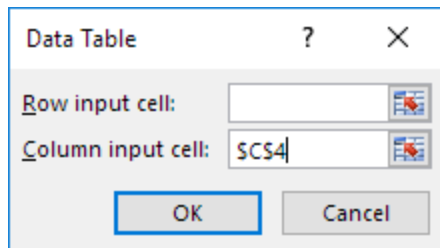
Note: This is a variable data array, so we leave the row input cell blank.

7. Click OK.

Result.

B13	▾	⋮	✕	✓	*fx*	{=TABLE(,C4)}	

	A	B	C	D	E
1	**Book Store**				
2					
3		total number of books	% sold for the highest price		
4		100	60%		
5					
6			number of books	unit profit	
7		highest price	60	$50	
8		lower price	40	$20	
9					
10			total profit	$3,800	
11					
12		$3,800			
13	60%	$3,800			
14	70%	$4,100			
15	80%	$4,400			
16	90%	$4,700			
17	100%	$5,000			
18					

Conclusion: if you sell 60% for the highest price, you get a total profit of $3800, if you sell 70% for the highest price, you get a total profit of $4100, etc.

Note: the formula bar indicates that the cells contain an array formula. Therefore, you cannot delete a single result. To delete the results, select the range B13:B17 and press **Delete**.
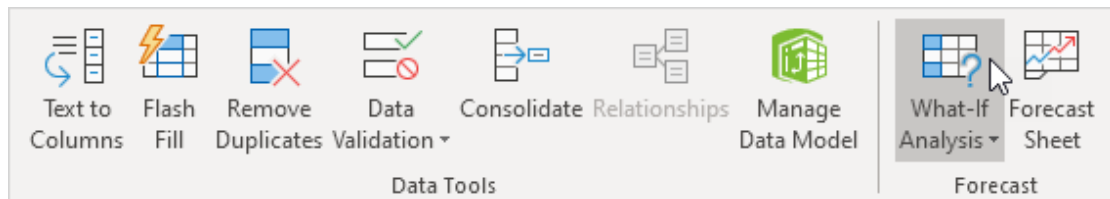
Array of two data variables

To create a two-variable data array, perform the following steps.

1. Select cell A12 and type =D10 (refer to total profit cell).

2. Enter the different unit gains (highest value) in row 12.

3. Enter the different percentages in column A.
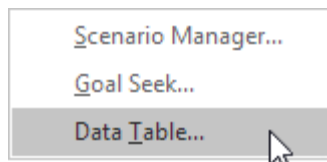
4. Select the range A12:D17.

We will calculate the total profit for the different combinations of "unit profit (highest price)" and "% sold for the highest price".

5. On the Data tab, in the Forecast group, click Analyze What if.
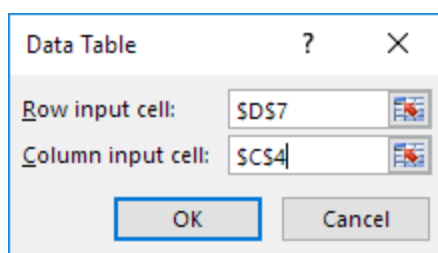

6. Click Data Table.

7. Click on the 'Insert Row Cell' box (unit profits are in a row) and select cell D7.

8. Click the 'Column input cell' box (percentages are in a column) and select cell C4.

We choose cell D7 because unit earnings are reported in cell D7.

We choose cell C4 because the percentages refer to cell C4. Along with the formula in cell A12, Excel now knows to replace cell D7 with $50 and cell C4 with 60% to calculate the total profit, replace cell D7 with $50 and cell C4 with 70 % to calculate total profit etc.

Data Table	?	×
Row input cell:	D7	
Column input cell:	C4	
OK	Cancel	

9. Click OK.

Result.

B13		⋮	×	✓	fx	{=TABLE(D7,C4)}

	A	B	C	D	E
1	**Book Store**				
2					
3		total number of books	% sold for the highest price		
4		100	60%		
5					
6			number of books	unit profit	
7		highest price	60	$50	
8		lower price	40	$20	
9					
10			total profit	$3,800	
11					
12	$3,800	$50	$60	$70	
13	60%	$3,800	$4,400	$5,000	
14	70%	$4,100	$4,800	$5,500	
15	80%	$4,400	$5,200	$6,000	
16	90%	$4,700	$5,600	$6,500	
17	100%	$5,000	$6,000	$7,000	
18					

Bottom line: if you sell 60% for the highest price, with a unit profit of $50, you get a total profit of $3800, if you sell 80% for the highest price, with a unit profit of $60, you get a total profit of $5200, etc.

Note: the formula bar indicates that the cells contain an array formula. Therefore, you cannot delete a single result. To delete the results, select the range B13:D17 and press **Delete**.

Exercise 1

Create a data table showing the monthly payments for loan terms ranging from 1 to 6 years. The number of payments will range from 12 to 72

Exercise 2

Create an array of data with 2 variables. Show monthly payments for loan terms ranging from 1 to 6 years and interest rates from 2% to 6%