

How can I calculate a weighted average in VBA, and could you provide an example?

Authored by
stats writer

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A weighted average in VBA is a mathematical formula used to calculate the average value of a set of data, taking into consideration the different weights assigned to each data point. This can be useful in situations where certain data points have more influence or importance than others. To calculate a weighted average in VBA, you would need to use the SUMPRODUCT function, which multiplies each data point by its corresponding weight, adds them together, and then divides by the sum of the weights. An example of this would be: `=SUMPRODUCT(A2:A10, B2:B10)/SUM(B2:B10)`, where A2:A10 represents the data points and B2:B10 represents their corresponding weights. This formula can be customized to fit different scenarios and can be used to calculate weighted averages for various purposes.

Calculate Weighted Average in VBA (With Example)

You can use the following basic syntax to calculate a weighted average using VBA:

```
Sub FindWeightedAverage()
```

```
Range("E2") = _
```

```
WorksheetFunction.SumProduct(Range("B2:B7"),
```

```
Range("C2:C7")) / _
```

```
WorksheetFunction.Sum(Range("C2:C7"))
```

```
End Sub
```

This particular example calculates a weighted average using cells in the range B2:B7 as the values and cells in the range C2:C7 as the weights.

The weighted average is then displayed in cell E2.

The following example shows how to use this syntax in practice.

Example: Calculate Weighted Average Using VBA

Suppose we would have the following dataset in Excel that shows various sales made by employees at some company:

	A	B	C	D	E	F
1	Employee	Price	Amount			
2	A	8	1			
3	A	5	3			
4	A	6	2			
5	B	7	2			
6	B	12	5			
7	B	14	4			
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

Suppose we would like to calculate the weighted average of price, using the values in the Amount column as the values and the values in the Price column as the weights:

We can create the following macro to do so:

Sub FindWeightedAverage()

Range("E2") = _

WorksheetFunction.SumProduct(Range("B2:B7"),

Range("C2:C7")) / _

WorksheetFunction.Sum(Range("C2:C7"))

End Sub

When we run this macro, we receive the following output:

	A	B	C	D	E	F
1	Employee	Price	Amount		Weighted Avg.	
2	A	8	1		9.705882	
3	A	5	3			
4	A	6	2			
5	B	7	2			
6	B	12	5			
7	B	14	4			
8						
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Notice that cell E2 contains a value of 9.705882.

We can verify this is correct by manually computing the weighted average.

Recall that we use the following formula for weighed average:

$$\text{Weighed Average} = \sum w_i X_i / \sum w_i$$

w_i = the weight values X_i = the data values

We can plug in the values from our dataset into this

formula to calculate the weighted average of price:

Weighed Average = $\sum w_i X_i$ / $\sum w_i$
Weighed Average = $(1*8 + 3*5 + 2*6 + 2*7 + 5*12 + 4*14) / (1+3+2+2+5+4)$
Average for Student A = 9.705882

This matches the value that we calculated using the macro.