MICROSOFT EXCEL

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Introduction to PivotTables

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3 Introduction

When you have a lot of data, it can sometimes be difficult to analyze all of the information in your worksheet. PivotTables can help make your worksheets more manageable by summarizing your data and allowing you to manipulate it in different ways.

4 Using pivot tables to answer questions

Consider the example below. Let's say we wanted to answer the question **What is the amount sold by each salesperson?** Answering it could be time consuming and difficult; each salesperson appears on multiple rows, and we would need to total all of their different orders individually. We could use the **Subtotal** command to help find the total for each salesperson, but we would still have a lot of data to work with.

	A	В	С	D	E	
1	Salesperson	Region	Account	Order Amount	Month	
2	Albertson, Kathy	East	29386	\$925.00	January	
3	Albertson, Kathy	East	74830	\$875.00	February	
4	Albertson, Kathy	East	90099	\$500.00	February	
5	Albertson, Kathy	East	74830	\$350.00	March	
6	Brennan, Michael	West	82853	\$400.00	January	
7	Brennan, Michael	West	72949	\$850.00	January	
8	Brennan, Michael	West	90044	\$1,500.00	January	
9	Brennan, Michael	West	82853	\$550.00	February	
10	Brennan, Michael	West	72949	\$400.00	March	
11	Davis, William	South	55223	\$235.00	February	
12	Davis, William	South	10354	\$850.00	January	
13	Davis, William	South	50192	\$600.00	March	
14	Davis, William	South	27589	\$250.00	January	
15	Dumlao, Richard	West	67275	\$400.00	January	
16	Dumlao, Richard	West	41828	\$965.00	February	

5 Using pivot tables to answer questions

Fortunately, a PivotTable can instantly **calculate** and **summarize** the data in a way that will make it much easier to read. When we're done, the PivotTable will look something like this:

Once you've created a PivotTable, you can use it to answer different questions by rearranging or **pivoting**—the data. For example, let's say we wanted to answer **What is the total amount sold in each month?** We could modify our **livotTable to look like this:**

Row Labels	Sum of Order Amount
Albertson, Kathy	\$2,650.00
Brennan, Michael	\$3,700.00
Da∨is, William	\$1,935.00
Dumlao, Richard	\$1,490.00
Flores, Tia	\$4,565.00
Post, Melissa	\$1,690.00
Thompson, Shannon	\$3,160.00
Walters, Chris	\$4,375.00
Grand Total	\$23,565.00

Row Labels	Sum of Order Amount
January	\$9,090.00
February	\$9,160.00
March	\$5,315.00
Grand Total	\$23,565.00

 Select the table or cells (including column headers) you want to include in your PivotTable.

	A	В	С	D	E	
1	Salesperson	Region	Account	Order Amount	Month	
2	Albertson, Kathy	East	29386	\$925.00	January 🖌	
3	Albertson, Kathy	East	74830	\$875.00	February	
4	Albertson, Kathy	East	90099	\$500.00	February	
5	Albertson, Kathy	East	74830	\$350.00	March	
6	Brennan, Michael	West	82853	\$400.00	January	
7	Brennan, Michael	West	72949	\$850.00	January	
8	Brennan, Michael	West	90044	\$1,500.00	January	
9	Brennan, Michael	West	82853	\$550.00	February	
10	Brennan, Michael	West	72949	\$400.00	March	
11	Davis, William	South	55223	\$235.00	February	
12	Davis, William	South	10354	\$850.00	January	
13	Davis, William	South	50192	\$600.00	March	
14	Davis, William	South	27589	\$250.00	January	
15	Dumlao, Richard	West	67275	\$400.00	January	
16	Dumlao, Richard	West	41828	\$965.00	February	

2. From the Insert tab, click the PivotTable command.



The **Create PivotTable** dialog box will appear. Choose your settings, then click **OK**. In our example, we'll use **Table1** as our source data and place the PivotTable on a **new worksheet**.

4. A blank **PivotTable** and **Field List** will appear on a new worksheet.

	А	В	С	D	E			alala — X
1							PIVOT I able F	ielas 🏹 🐴
2							Choose fields to add t	o report: 🛛 🗘 🔻
3								
4		PivotTable	1				Search	م
5							Salesperson	
6	To build	a report,	choose				Region	
7	fields fr	om the Pi∨	otTable				Account	
8		Field List					Order Amount	
9								
10							MORE TABLES	
10		-						
12								
14								
15							Drag fields between a	reas below:
16								
17							I HEIEKS	COLONING
18								
19								
20								
21							ROWS	Σ VALUES
22						$\ \ $		
23						$\ $		
24						ГЦ		
25								
	•	Sheet1	🕂	: •	Þ		Defer Layout Upd	ate UPDATE

5. Once you create a PivotTable, you'll need to decide which fields to add. Each field is simply a column header from the source data. In the PivotTable Field List, check the box for each field you want to add. In our example, we want to know the total amount sold by each salesperson, so we'll check the Salesperson and Order Amount fields.

PivotTable Fields	- ×
Choose fields to add to report:	Ø.*
Search	Q
✓ Salesperson	_
Region	
Account	
🖌 Order Amount	•
Month	
MORE TABLES	

¹⁰ Creating a PivotTable

6. The selected fields will be added to one of the four areas below. In our example, the **Salesperson** field has been added to the **Rows** area, while **Order Amount** has been added to **Values**.

Alternatively, you can **drag and drop** fields directly into the desired area.

PivotTable Fields					
Choose fields to add to repo	ort: 🗘 👻				
Search	٩				
 Salesperson Region Account Order Amount Month MORE TABLES 					
Drag fields between areas b	elow:				
T FILTERS					
■ ROWS	Σ VALUES				
Salesperson 🔻	Sum of Order Amo ▼				
Defer Layout Update	UPDATE				

7. The PivotTable will calculate and summarize the selected fields. In our example, the PivotTable shows the **amount sold by each** salesperson.

	A	В	A	Discotto bila discla	
1				Pivot lable Field	IS TA
2				Choose fields to add to rep	ort: 🗘 🔻
3	Row Labels 🛛 🗸	Sum of Order Amount			
4	Albertson, Kathy	2650		Search	٩
5	Brennan, Michael	3700		✓ Salesperson	
6	Da∨is, William	1935		Region	
7	Dumlao, Richard	1490		Account	
8	Flores, Tia	4565		✓ Order Amount	
9	Post, Melissa	1690		Month	
10	Thompson, Shannon	3160		MORE TABLES	
11	Walters, Chris	4375			
12	Grand Total	23565			
13				Drag fields between areas b	below:
14					
15				T FILTERS	
16					
17					
18					
19					
20					Σ VALUES
21				Salesperson 🔻	Sum of Order Amo 🔻
22					
23					
24					
25					
~~	Sheet1 1s	t Quarter Sales 🛛 🕂		Defer Layout Update	UPDATE

Just like with normal spreadsheets, you can sort the data in a PivotTable using the **Sort & Filter** command on the Home tab. You can also apply any type of **number formatting** you want. For example, you may want to change the number format to **Currency**. However, be aware that some types of formatting may disappear when you modify the PivotTable.

Row Labels	🕂 Sum of Order Amount
Flores, Tia	\$4,565.00
Walters, Chris	\$4,375.00
Brennan, Michael	\$3,700.00
Thompson, Shannon	\$3,160.00
Albertson, Kathy	\$2,650.00
Da∨is, William	\$1,935.00
Post, Melissa	\$1,690.00
Dumlao, Richard	\$1,490.00
Grand Total	\$23,565.00

you change any of the data in your source worksheet, the PivotTable will not update automatically. To manually update it, select the PivotTable and then go to Analyze → Refresh.

Pivoting Data

One of the best things about PivotTables is that they can quickly **pivot**—or reorganize—your data, allowing you to examine your worksheet in several ways. Pivoting data can help you answer **different questions** and even **experiment** with your data to discover new trends and patterns.

Pivoting Data : Adding columns

So far, our PivotTable has only shown **one column** of data at a time. In order to show **multiple columns**, you'll need to add a field to the **Columns** area.

 Drag a field from the Field List into the Columns area. In our example, we'll use the Month field.



Pivoting Data : Adding columns

2. The PivotTable will include multiple columns. In our example, there is now a column for each person's **monthly sales**, in addition to the **grand total**.

	A	В	С	D	E			
1							PIVOT I able F	ielas * ^
2							Choose fields to add t	o report: 🛛 🗸 🔻
3	Sum of Order Amount	Colum -						
4	Row Labels 🛛 🖓	January	February	March	Grand Total		Search	م
5	Flores, Tia	1655	985	1925	4565		✓ Salesnerson	_
6	Walters, Chris	355	2755	1265	4375		Region	
7	Brennan, Michael	2750	550	400	3700		Account	
8	Thompson, Shannon	1140	1720	300	3160		Order Amount	
9	Albertson, Kathy	925	1375	350	2650		✓ Month	
10	Da∨is, William	1100	235	600	1935		MORE TABLES	
11	Post, Melissa	765	575	350	1690			
12	Dumlao, Richard	400	965	125	1490			_
13	Grand Total	9090	9160	5315	23565		Drag fields between a	areas below:
14							T FILTERS	
15								Month -
16								
17								
18								
19								
20							ROWS	Σ VALUES
21							Salesperson 🔻	Sum of Order 🔻
22								
23								
24						Ш		

Pivoting Data : Changing a row or column

Changing a row or column can give you a completely different perspective on your data. All you have to do is **remove** the field in question, then **replace** it with another.

16

1. Drag the field you want to remove out of its **current area**. You can also **uncheck** the appropriate box in the **Field List**. In this example, we've removed the **Month** and **Salesperson** fiel ds.

	PivotTable Field Choose fields to add to report Search Search Salesperson Region Account Order Amount Month MORE TABLES	s • × ort: • •
	Drag fields between areas b	elow:
Salesperson	■ ROWS Salesperson	∑ VALUES Sum of Order Amo ▼
•	Defer Layout Update	UPDATE

17 Pivoting Data : Changing a row or column

2. Drag a **new field** into the **desired area**. In our example, we'll place the **Region** field under **Rows**.

PivotTable Field Choose fields to add to repo	s 💌 🗙
Search Salesperson Region Alcount O der Amount Month MORI TABLES	
▼ F .TERS	IIII COLUMNS ∑ VALUES Sum of Order Amo ▼
Defer Layout Update	UPDATE

18 Pivoting Data : Changing a row or column

3. The PivotTable will adjust—or pivot—to show the new data. In our example, it now shows the **amount sold by each region**.

		A	В			_			
	1				Pivot i able Field	S	Ť		
	2				Choose fields to add to rep	ort:	45 v		
	3	Row Labels 🚽 Sum of Order Amount			-				
	4	East	4340		Search	<u>^</u>			
	5	North	3160		Salesperson		_		
/	6	South	10875		✓ Region				
	7	West	5190		Account				
	8	Grand Total	23565		✓ Order Amount				
	9				Month				
	10				MORE TABLES		- 18		
	11								
	12								
	13	Drag fields between areas below:		elow:					
	14				T FILTERS		- 1		
	15						_		
	16								
	17								
	18			_					
	19			_			- 1		
	20			_	ROWS	Σ VALUES			
	21				Region 🔻	Sum of Order Am	0 🔻		
	22			_					
	23								
	24								

19 Practice

Open our practice workbook.

- Create a PivotTable in a separate sheet.
- We want to answer the question What is the total amount sold in each region? To do this, select Region and Order Amount. When you're finished, your workbook should look like this:

Row Labels 🔻	Sum of Order Amount
East	4340
North	3160
South	10875
West	5190
Grand Total	23565

In the **Rows** area, remove **Region** and replace it with **Sølesperson**.

Add Month to the Columns area.

Change the number format of cells **B5:E13** to **Currency**. **Note**: ou might have to make columns C and D wider in order to see the values.

20 Solution

	A5	• : $\times \checkmark f_x$ Albertson, Kathy							~	
	1	A	В	С	D	E	-	PivotTable	Fields * *	
	2							Choose fields to a	add to	
	3	Sum of Order Amount	Column Labels	-					report:	
	4	Row Labels	January	February	March	Grand Total		Search	Q	
/	5	Albertson, Kathy	\$925.0	0 \$1,375.00	\$350.00	\$2,650.00				
	6	Brennan, Michael	\$2,750.0	0 \$550.00	\$400.00	\$3,700.00		✓ Salesperson		
	7	Davis, William	\$1,100.0	0 \$235.00	\$600.00	\$1,935.00		Region		
	8	Dumlao, Richard	\$400.0	0 \$965.00	\$125.00	\$1,490.00		Account		
	9	Flores, Tia	\$1,655.0	0 \$985.00	\$1,925.00	\$4,565.00	1			
	10	Post, Melissa	\$765.0	0 \$575.00	\$350.00	\$1,690.00		✓ Month		
	11	Thompson, Shannon	\$1,140.0	0 \$1,720.00	\$300.00	\$3,160.00		MORE TABLES		
	12	Walters, Chris	\$355.0	0 \$2,755.00	\$1,265.00	\$4,375.00		MORE PROCES		
	13	Grand Total	\$9,090.0	0 \$9,160.00	\$5,315.00	\$23,565.00				
	14									
	15							Drag fields between areas below:		
1	16							T FILTERS	COLUMNS	
/	17						_		Manth =	
	18						_		Month •	
	19						_			
	20									
	21						_	ROWS	Σ VALUES	
	22							Salespers 🔻	Sum of Or	
	23							Suespers	Sumorona	
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	25									
	20	Sheet1 1st Ouer	rter Sales	* 4				Defer Layout U	Jpda UPDATE	
-	Provid	Sileet I Ist Quar		: 4					- 400%	
	Ready							E	+ 100%	

