# How do you quickly create pivot tables in R?

Authored by

**stats writer**

December 9, 2025

In Excel, **pivot tables** offer an easy way to group and summarize data.

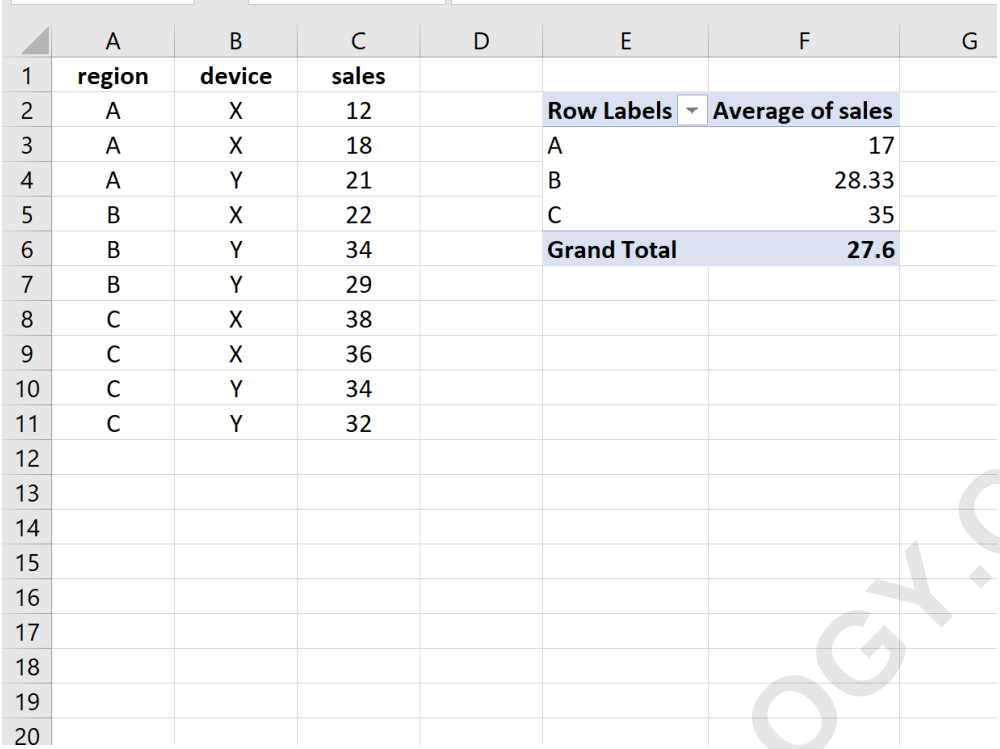
For example, if we have the following dataset in Excel then we can use a pivot table to quickly summarize the total sales by region:

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | **region** | **device** | **sales** | | | |
| 2 | A | X | 12 | | **Row Labels** | **Sum of sales** |
| 3 | A | X | 18 | | A | 51 |
| 4 | A | Y | 21 | | B | 85 |
| 5 | B | X | 22 | | C | 140 |
| 6 | B | Y | 34 | | **Grand Total** | **276** |
| 7 | B | Y | 29 | | | |
| 8 | C | X | 38 | | | |
| 9 | C | X | 36 | | | |
| 10 | C | Y | 34 | | | |
| 11 | C | Y | 32 | | | |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |

This tells us:

Region A had 51 total sales
Region B had 85 total sales
Region C had 140 total sales

Or we could summarize by another metric such as the average sales by region:



| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | region | device | sales | | | | |
| 2 | A | X | 12 | | Row Labels | Average of sales | |
| 3 | A | X | 18 | | A | 17 | |
| 4 | A | Y | 21 | | B | 28.33 | |
| 5 | B | X | 22 | | C | 35 | |
| 6 | B | Y | 34 | | Grand Total | 27.6 | |
| 7 | B | Y | 29 | | | | |
| 8 | C | X | 38 | | | | |
| 9 | C | X | 36 | | | | |
| 10 | C | Y | 34 | | | | |
| 11 | C | Y | 32 | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |

It turns out that we can quickly create similar pivot tables in R by using the **group_by()** and **summarize()** functions from the package.

This tutorial provides several examples of how to do so.

## Example: Create Pivot Tables in R

First, let's create the same dataset in R that we used in the previous examples from Excel:

```
#create data frame
df <- data.frame(region=c('A', 'A', 'A', 'B', 'B', 'B', 'C', 'C', 'C', 'C'),
device=c('X', 'X', 'Y', 'X', 'Y', 'Y', 'X', 'X', 'Y', 'Y'),
sales=c(12, 18, 21, 22, 34, 29, 38, 36, 34, 32))
```

```
#view data frame
df

region device sales
1 A X 12
2 A X 18
3 A Y 21
4 B X 22
5 B Y 34
```

6 B Y 29
7 C X 38
8 C X 36
9 C Y 34
10 C Y 32

Next, let's load the dplyr package and use the **group_by()** and **summarize()** functions to group by region and find the sum of sales by region:

**library(dplyr)**

#find sum of sales by region
df %>%
group_by(region) %>%
summarize(sum_sales = sum(sales))

# A tibble: 3 x 2
region sum_sales

1 A 51
2 B 85
3 C 140

We can see that these numbers match the numbers shown in the introductory Excel example.

We can also calculate the average sales by region:

**#find average sales by region**
**df %>%**
**group_by(region) %>%**
**summarize(mean_sales = mean(sales))**

# A tibble: 3 x 2
region mean_sales

1 A 17
2 B 28.3
3 C 35

Note that we can also group by multiple variables. For example, we could find the sum of sales grouped by region *and* device type:

```
#find sum of sales by region and device type
df %>%
group_by(region, device) %>%
summarize(sum_sales = sum(sales))
```

```
# A tibble: 6 x 3
# Groups: region
region device sum_sales

1 A X 30
2 A Y 21
3 B X 22
4 B Y 63
5 C X 74
6 C Y 66
```