

# How can I create a legend outside of a plot in R?

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## RECOMMENDED CITATION

stats writer (2024). *How can I create a legend outside of a plot in R?*. PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=139132>

To create a legend outside of a plot in R, you can use the "legend" function and specify the coordinates of where you want the legend to be placed. This function allows you to customize the location, text, and appearance of the legend, making it a useful tool for adding explanatory information to your plots. Additionally, you can use the "par" function to adjust the margins of your plot to make room for the legend. This technique is particularly helpful when creating complex and informative visualizations in R.

## Draw a Legend Outside of a Plot in R

The easiest way to draw a legend outside of a plot in base R is to add extra space to the right of the plot by using the following syntax:

```
par(mar=c(5, 4, 4, 8), xpd=TRUE)
```

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

Step 1: Create the Data

First, let's create some data to work with:

```
#create data frames
```

```
df1 <- data.frame(x=c(1, 2, 3, 4, 5, 6, 7),  
y=c(2, 7, 19, 26, 24, 29, 31))
```

```
df2 <- data.frame(x=c(1, 2, 3, 4, 5, 6, 7),  
y=c(4, 4, 7, 9, 12, 13, 8))
```

## Step 2: Create a Plot with a Legend Outside of Plot

Next, let's create a plot and add a legend outside of the plot in the top right corner:

```
#add extra space to the right of the plot
```

```
par(mar=c(5, 4, 4, 8), xpd=TRUE)
```

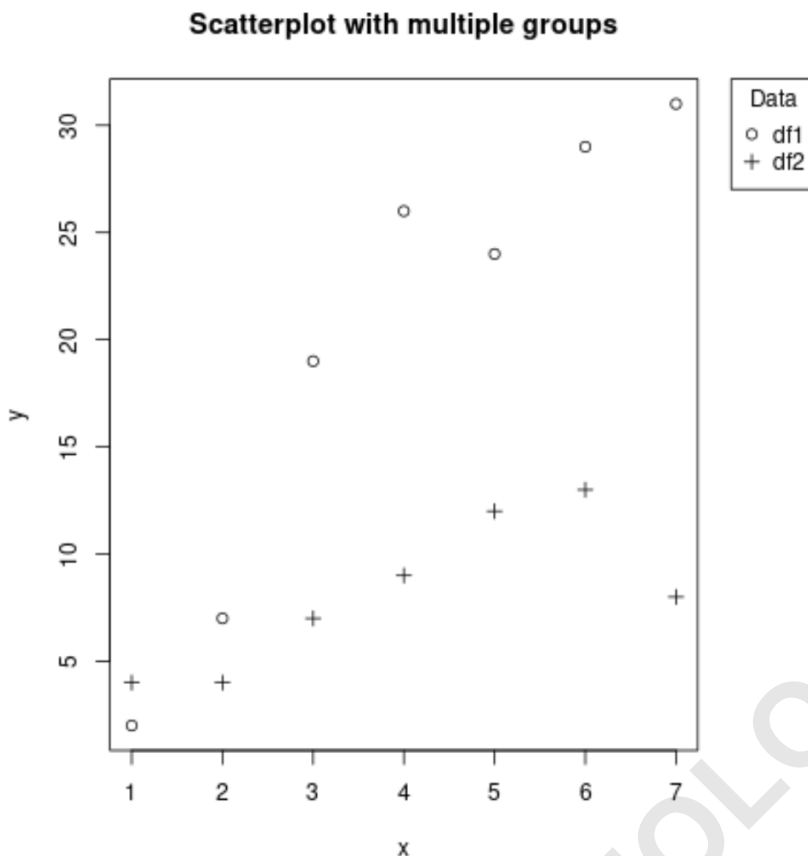
```
#plot both data frames
```

```
plot(y ~ x, df1, pch=1, main="Scatterplot with multiple  
groups")
```

```
points(y ~ x, df2, pch=3)
```

```
#add legend outside of plot
```

```
legend("topright", inset=c(-0.2, 0),  
legend=c("df1","df2"), pch=c(1,3), title="Data")
```



### Step 3: Modify the Legend Location

The `inset(x, y)` argument can be used to control the location of the legend to the right of the plot. For example, we can make the `x` argument more negative to push the legend even further to the right:

```
#add extra space to the right of the plot
```

```
par(mar=c(5, 4, 4, 8), xpd=TRUE)
```

```
#plot both data frames
```

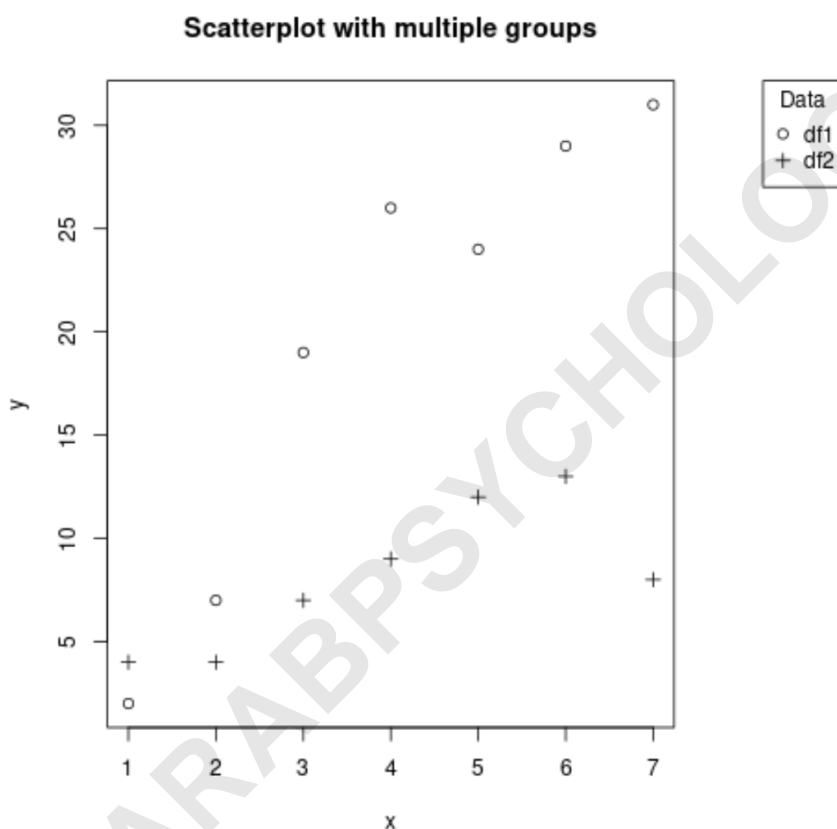
```
plot(y ~ x, df1, pch=1, main="Scatterplot with multiple
```

groups")

points(y ~ x, df2, pch=3)

#add legend outside of plot

```
legend("topright", inset=c(-0.3, 0),  
legend=c("df1", "df2"), pch=c(1,3), title="Data")
```



We can also make the y argument more positive to push the legend lower:

#add extra space to the right of the plot

```
par(mar=c(5, 4, 4, 8), xpd=TRUE)
```

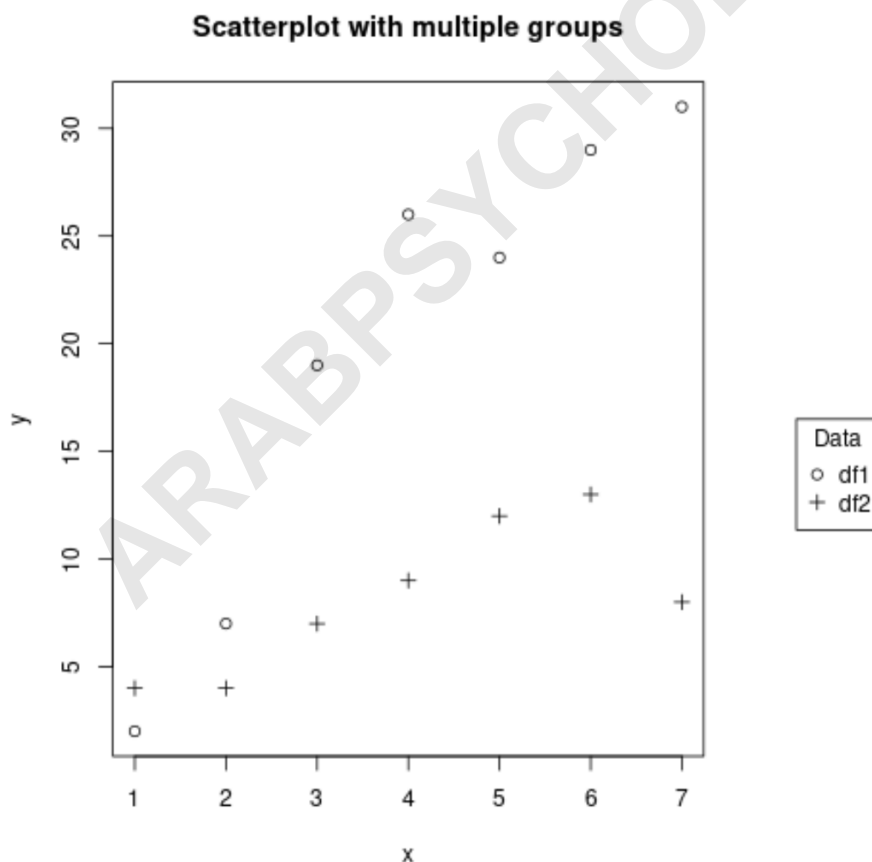
```
#plot both data frames
```

```
plot(y ~ x, df1, pch=1, main="Scatterplot with multiple  
groups")
```

```
points(y ~ x, df2, pch=3)
```

```
#add legend outside of plot
```

```
legend("topright", inset=c(-0.3, .5),  
legend=c("df1", "df2"), pch=c(1,3), title="Data")
```



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