

How to Draw a Legend Outside of a Plot in R

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RECOMMENDED CITATION

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To draw a legend outside of a plot in R, you can use the `legend()` command to specify the position of the legend outside the plot. This command will create a legend with the labels and colors you have specified and place it outside the plot area. You can also adjust the size, font, and color of the legend to make it more visible and match the style of the plot.

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)
```

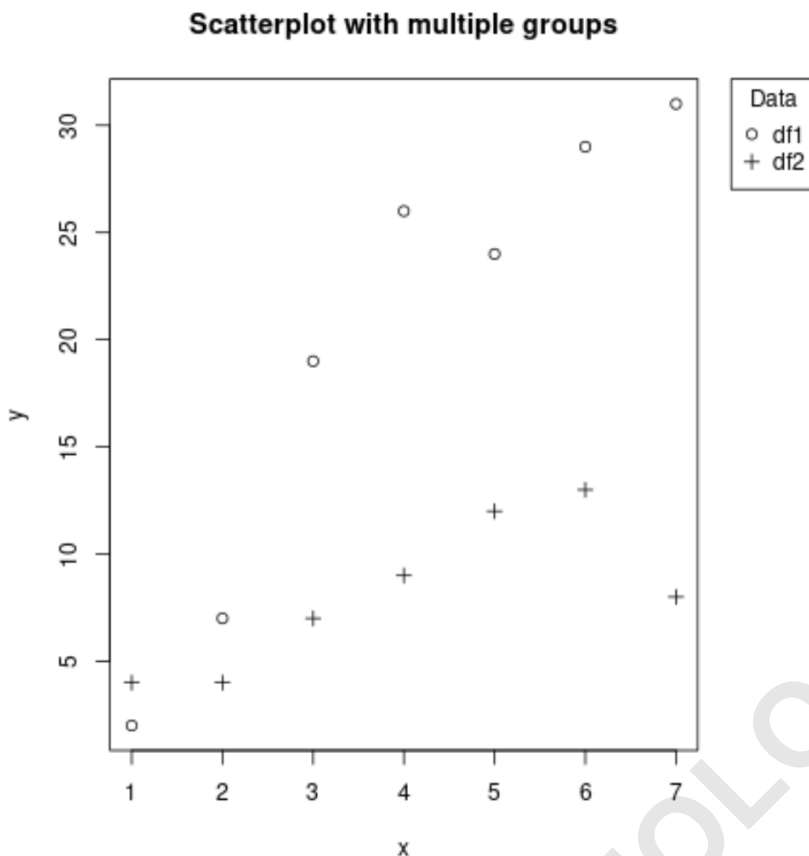
```
#plot both data frames
```

```
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)
```

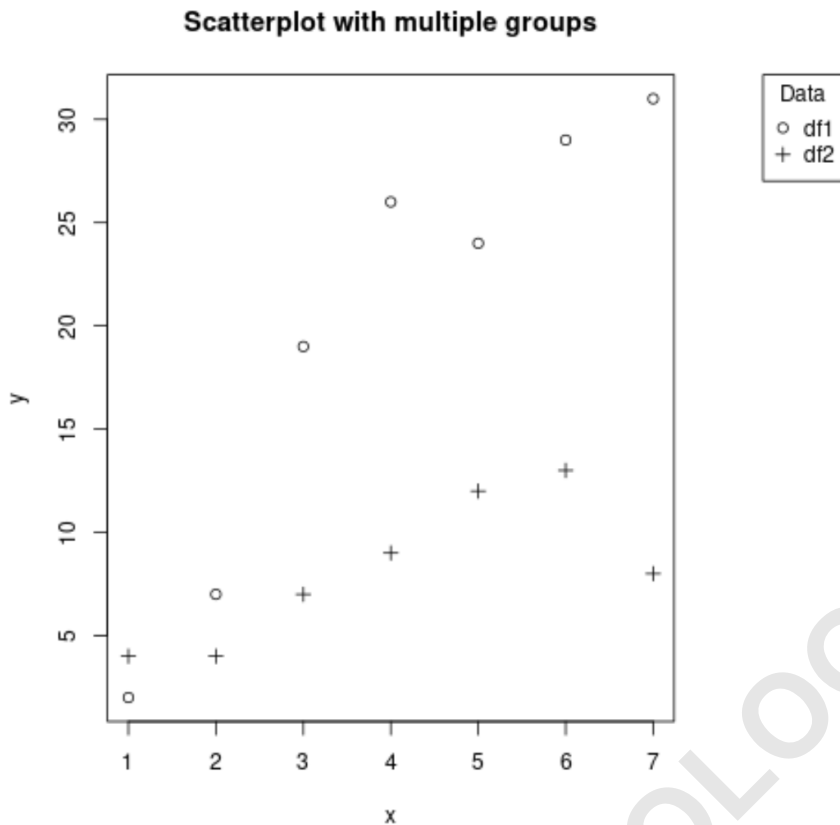
#plot both data frames

```
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")
```

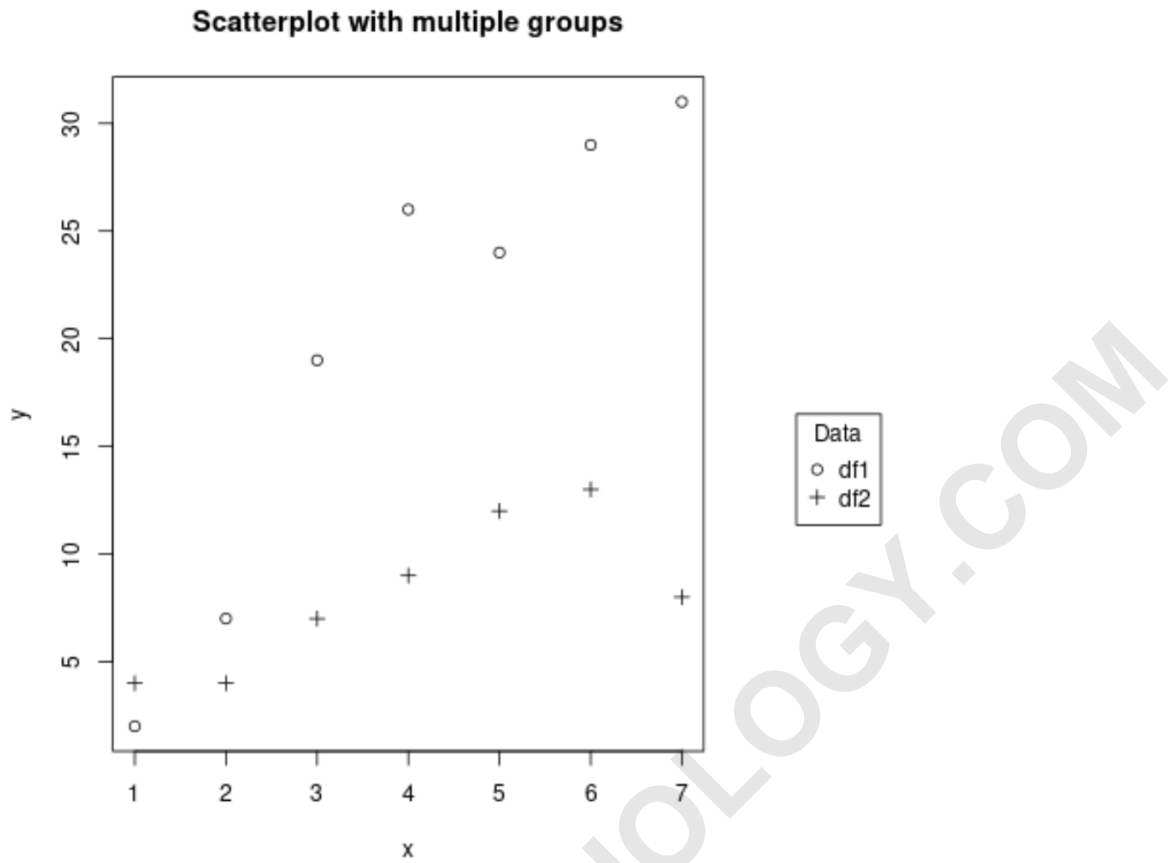


We can also make the `y` argument more positive to push the legend lower:

#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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