Making Pretty Plots

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This document shows a running example of progressively prettier barplots using the data found in the the "Cars93" data set ("Data from 93 Cars on Sale in the USA in 1993"). We're just going to look at the different manufacturers represented in the data set.

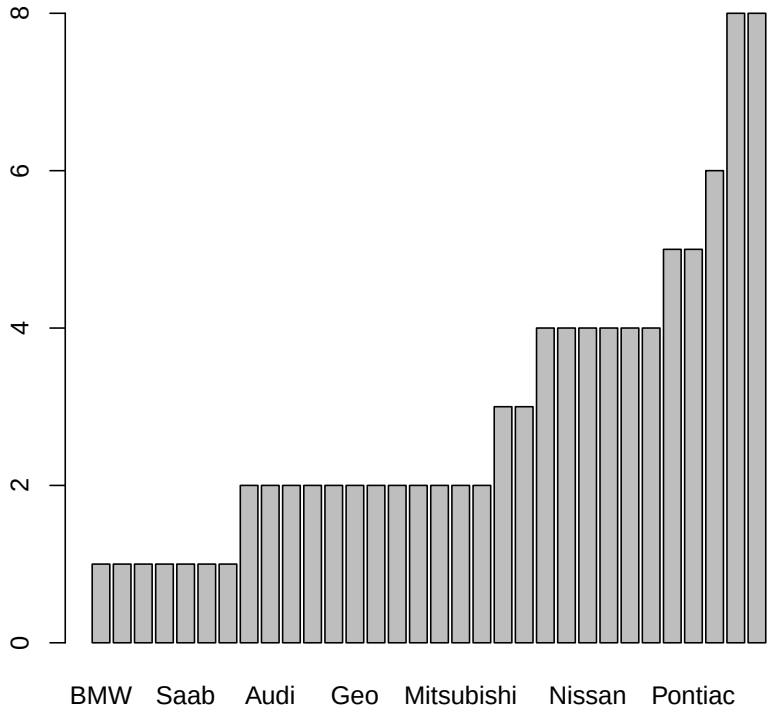
First we'll load the "UsingR" package (which loads the MASS package which contains the data set) and we'll stuff the survey data into a variable. Then we'll make a table from that data, sort it, and stick it into another variable to use in our barplots.

```
> library("UsingR")
> data(Cars93)
> carsTable = sort(table(Cars93$Manufacturer))
```

1 Default Barplot

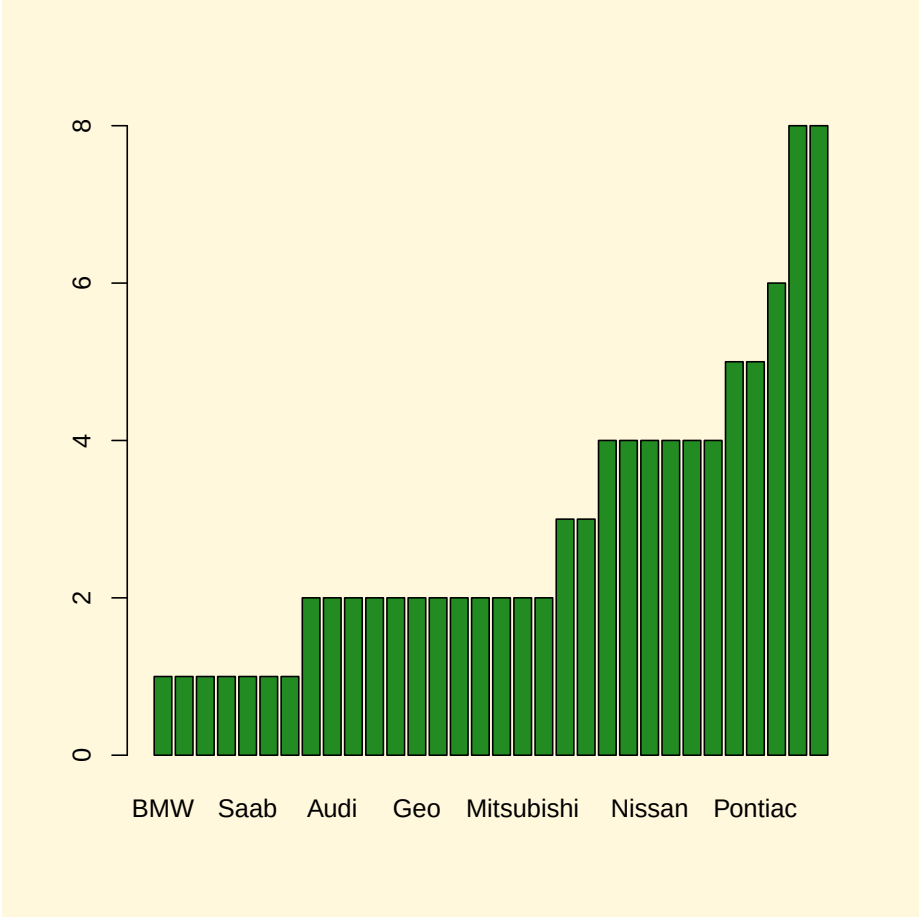
Here's what you get for free:

```
> barplot(carsTable)
```



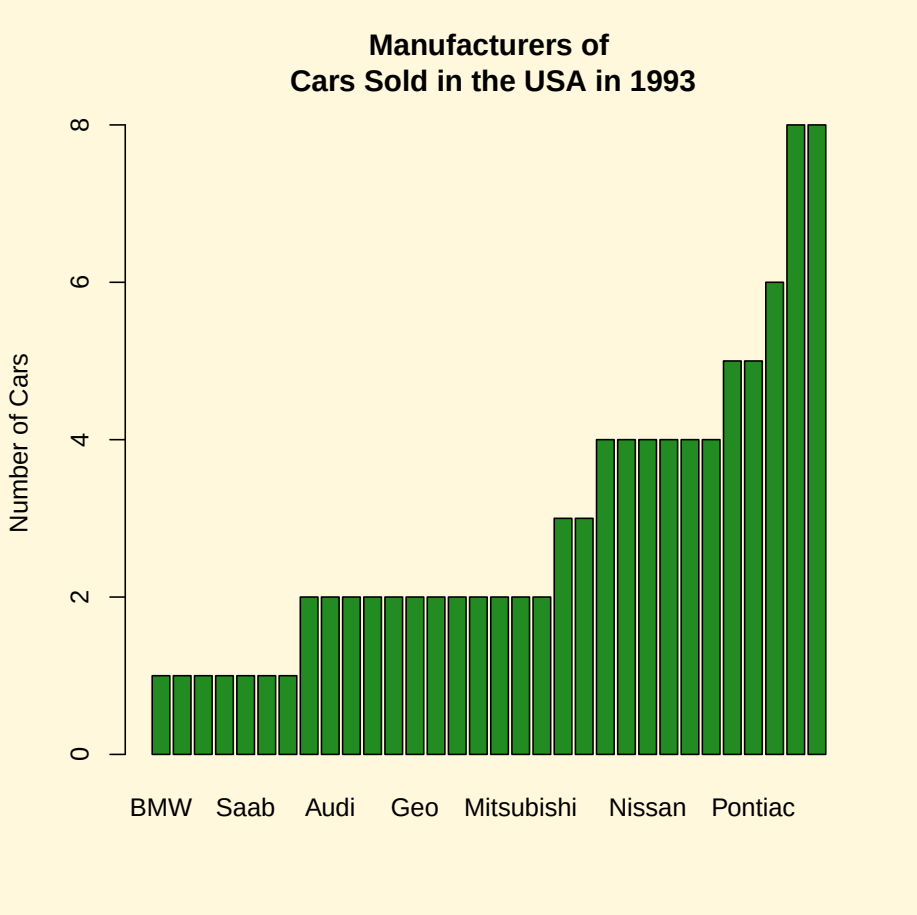
2 Add Some Color

```
> par(bg = "cornsilk1")
> barplot(carsTable, col = "forestgreen")
```



3 Add Some Labels

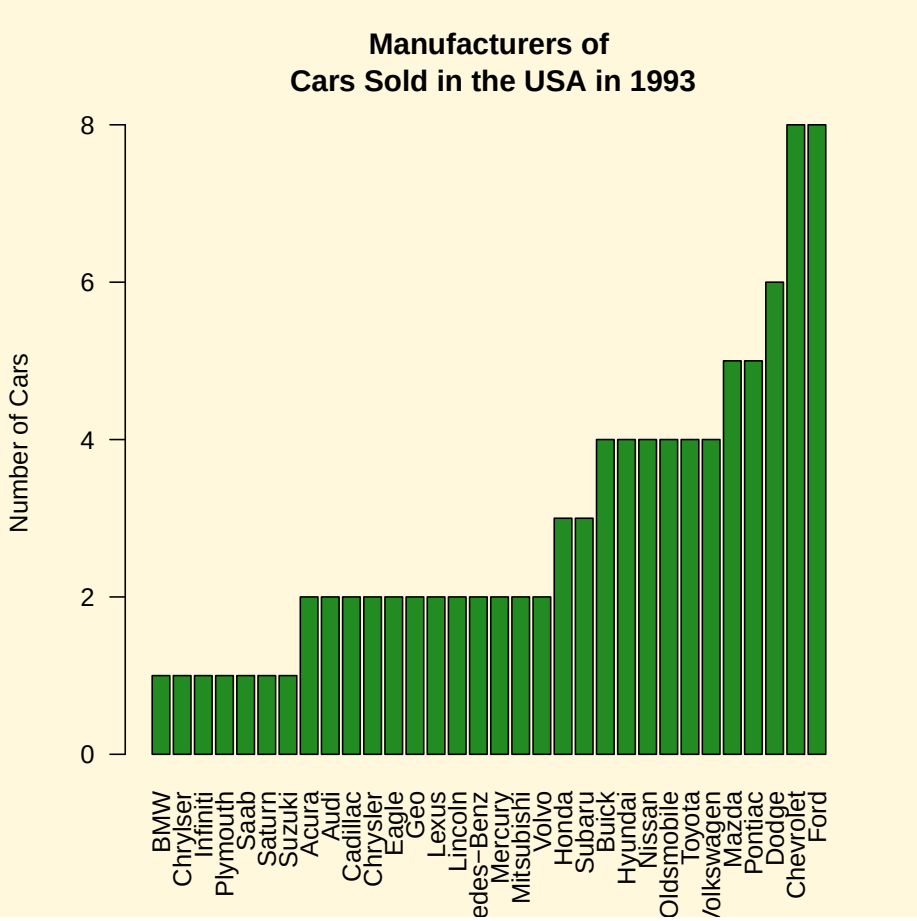
```
> par(bg = "cornsilk1")
> barplot(carsTable, col = "forestgreen", ylab = "Number of Cars",
+     main = "Manufacturers of\n Cars Sold in the USA in 1993")
```



Notice the "\n" in the title, that's how you put a newline into a text string.

4 Rotate The Manufacturer Names

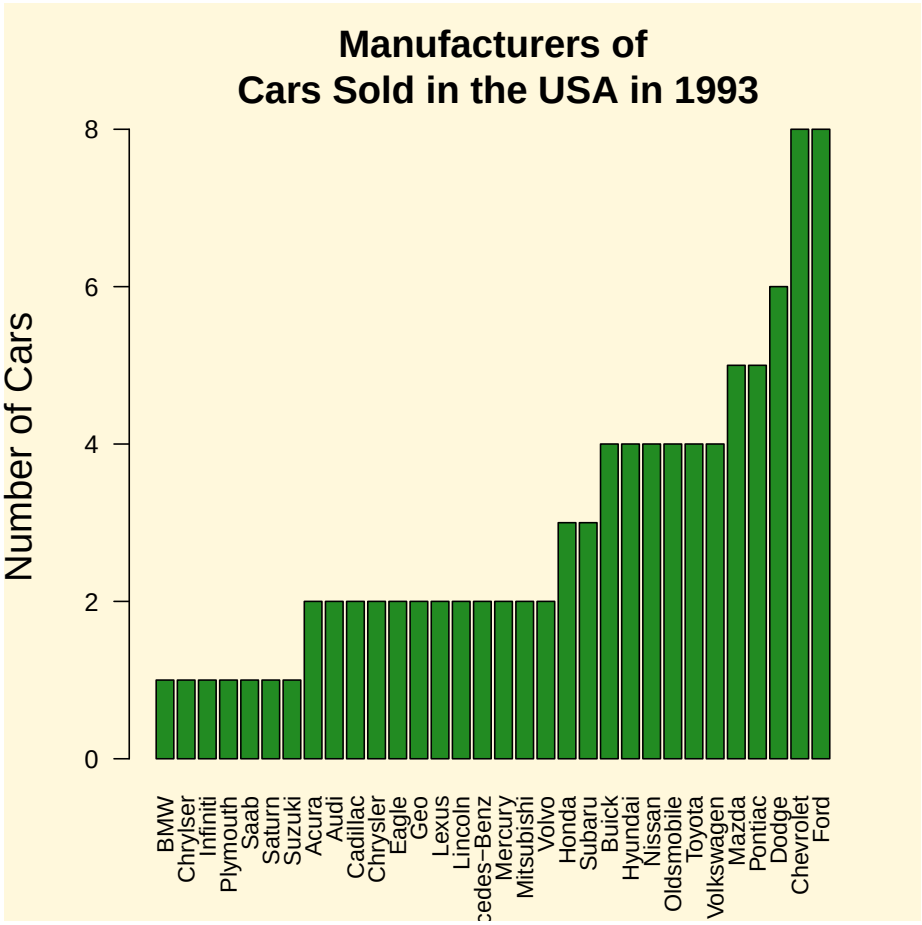
```
> par(bg = "cornsilk1")
> barplot(carsTable, col = "forestgreen", ylab = "Number of Cars",
+     main = "Manufacturers of\n Cars Sold in the USA in 1993",
+     las = 2)
```



The **las** parameter adjusts the rotation of the axis labels. It has 4 possible values: 0,1,2,3. Test out each value to see what it does. See ?hist for more information.

5 Resize The Labels

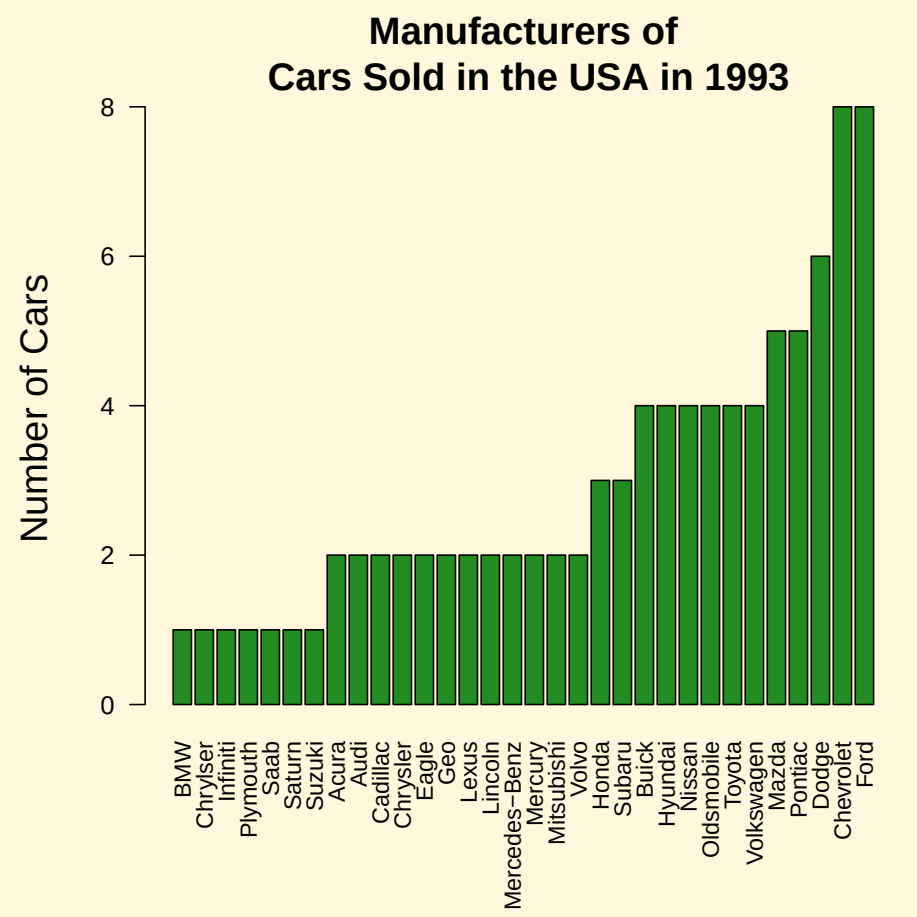
```
> par(bg = "cornsilk1")
> barplot(carsTable, col = "forestgreen", ylab = "Number of Cars",
+     main = "Manufacturers of\n Cars Sold in the USA in 1993",
+     las = 2, cex.lab = 1.5, cex.main = 1.5, cex.names = 0.95)
```



You should experiment with **cex.lab**, **cex.main**, and **cex.names** to see what each one does.

6 Adjust The Margins

```
> par(bg = "cornsilk1")
> par(mar = c(6.75, 4.75, 3.5, 0.5))
> barplot(carsTable, col = "forestgreen", ylab = "Number of Cars",
+     main = "Manufacturers of\n Cars Sold in the USA in 1993",
+     las = 2, cex.lab = 1.5, cex.main = 1.5, cex.names = 0.95)
```

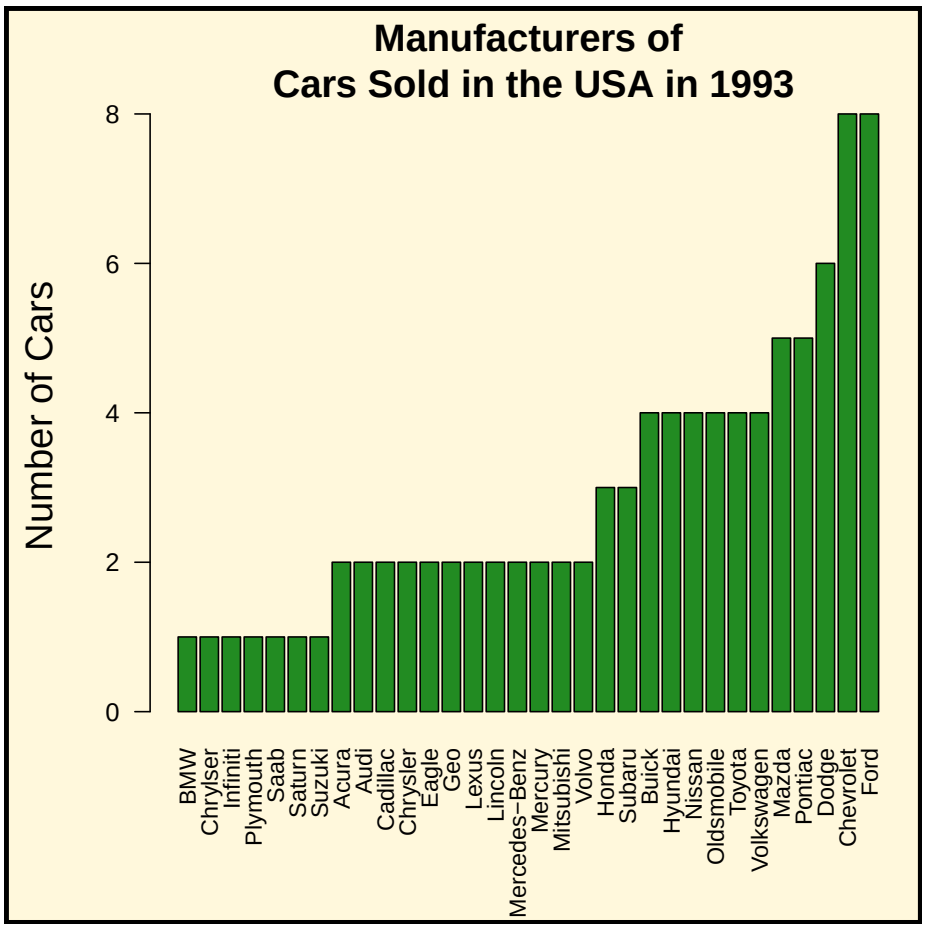


The **mar** function allows you to modify the size of the margin. You should experiment with different values to get the hang of it. The numbers correspond to margins like this:

mar = c(bottom,left,top,right)

7 Put A Box Around The Whole Thing

```
> par(bg = "cornsilk1")
> par(mar = c(6.75, 4.75, 3.5, 0.5))
> barplot(carsTable, col = "forestgreen", ylab = "Number of Cars",
+     main = "Manufacturers of\n Cars Sold in the USA in 1993",
+     las = 2, cex.lab = 1.5, cex.main = 1.5, cex.names = 0.95)
> box(which = "outer", bty = "o", col = "black", lwd = 5)
```



The **box** function adds a box, see ?box for more information.