Additional Material for Plotting Bar Charts and Scatter Plot

Data frame for analysis

We will use a data frame (ÇETINKAYA-RUNDEL 2019) comprising information on movies. It contains 600 observations (rows), each representing a movie, and 31 variables (columns). Let us load this data frame by using read.csv function. You can download this data frame from the Code Files link of this tutorial.

```r
movies <- read.csv("moviesData.csv")
paste("Information on", dim(movies)[1], "movies loaded.")
```

## [1] "Information on 600 movies loaded."

In movies data frame, there is one variable named imdb_rating. It contains the IMDB rating (on a scale of 0 to 10) for each of the 651 movies. For example, the movies titled The Godfather, Part II and Disaster Movie have lowest and highest IMDB rating, respectively. This can also be verified by using range function.

```r
minMax <- range(movies$imdb_rating)
paste(movies$title[movies$imdb_rating==minMax[1]], "has lowest IMDB rating of", minMax[1])
```

## [1] "Disaster Movie has lowest IMDB rating of 1.9"

```r
paste(movies$title[movies$imdb_rating==minMax[2]], "has highest IMDB rating of", minMax[2])
```

## [1] "The Godfather, Part II has highest IMDB rating of 9"

Adjusting labels of a bar chart by using par function

First, we will apply the former method by using par function. According to the documentation of R programming language, par can be used to set or query graphical parameters. Parameters can be set by specifying them as arguments to par in tag = value form, or by passing them as a list of tagged values. Here, we pass a tag named mar, which refers to margin. It is a numerical vector of the form c(bottom, left, top, right) which gives the number of lines of margin to be specified on the four sides of the plot.

```r
par(mar=c(11,5,5,2)) # c(bottom, left, top, right)
moviesSub <- movies[1:20,]
barplot(moviesSub$imdb_rating, ylab = "IMDB rating", col = "blue", ylim = c(0,10), main = "Movies' IMDB rating", names.arg = moviesSub$title, las = 2)
```
Movies' IMDB rating

Now, the names are not being truncated, as it is evident from the graph plotted above.

Adjusting labels of a bar chart by using text function

Here, we will add one more function named `text` after the `barplot` function. According to the documentation of R programming language, `text` draws the strings given in the vector labels at the coordinates given by `x` and `y`. The required coordinates can be found out by trial and error method. We will pass the following arguments in this function:

- `coordinates` (x and y) – numeric vectors of coordinates where the text labels should be written.
- `labels` – a character vector or expression specifying the text to be written.
- `xpd` – used to enable things to be drawn outside the plot region.
- `srt` – used to rotate the text by an angle.

```r
x <- barplot(moviesSub$imdb_rating,
             ylab = "IMDB rating",
             ylim = c(0, 10),
             main = "Movies' IMDB rating",
             col = "blue")

labs <- moviesSub$title

text(x = x - 0.95,
     y = -1.25,
     labs,
     xpd = TRUE,
     srt = 50)
```
Movies' IMDB rating

References