plotting_figures.r

```
# Code used for creating the REcol page "plotting figures"

class (cars)  # data.frame - the function class checks the type of the object
(vector, matrix, data.frame, list)
names (cars)  # "speed" "dist" - names of the variables (columns) in the data
frame cars
dim (cars)    # 40 2 - it has 40 rows (samples) and 2 columns (variables)
cars$speed    # returns vector with values of the first column (variable
speed)
cars$dist     # returns vector with values of the second column (variable
dist)

setwd ('c:\\Users\\Zeleny\\Dropbox\\uceni\\Recol\\materials\\')

png (file = 'plotting_1.png', height = 550, width = 550, units = 'px',
pointsize = 16)
plot (x = cars$speed, y = cars$dist)
dev.off ()

png (file = 'plotting_2.png', height = 550, width = 550, units = 'px',
pointsize = 16)
plot (dist ~ speed, data = cars)
dev.off ()

plot (dist ~ speed)

png (file = 'plotting_3.png', height = 550, width = 550, units = 'px',
pointsize = 16)
plot (dist ~ speed, data = cars,
      xlab = 'Speed [mph]', ylab = 'Distance [ft]',  # 1
      pch = 21,                                      # 2
      col = 'tomato', bg = 'yellow',                 # 3
      xlim = c(0, 25),                               # 4
      main = 'Scatterplot')                          # 5
dev.off ()


plot (dist ~ speed, data = cars,                     # a) data to be used,
      xlim = c(0, 25),                               #    define range of the
x-axis,
      axes = FALSE, ann = FALSE, type = 'n')         #    make sure nothing
will be actually plotted
points (dist ~ speed, data = cars,                   # b) add data points,
        pch = 21, col = 'tomato', bg = 'yellow')     #    with given symbols
and colours
title (xlab = 'Speed [mph]', ylab = 'Distance [ft]', # c) add x- and y-labels,
       main = 'Scatterplot')                         #    add main title to
the plot
box ()                                               # d) add box around the
plot
axis (1)                                             # e) add axis 1 (bottom
horizontal)
axis (2)                                             # f) add axis 2 (left
vertical)
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```r
# plot sequentially
png (file = 'plotting_4.png', height = 633, width = 950, units = 'px',
pointsize = 16)
par (mfrow = c(2,3))
# a)
plot (dist ~ speed, data = cars,                    # data to be used
      xlim = c(0, 25),                              # define range of the x-
axis
      axes = FALSE, ann = FALSE, type = 'n')
par (xpd = T); legend ('topleft', legend = 'a)', bty = 'n', inset = -.3, cex =
2); par (xpd = F)
# b)
plot (dist ~ speed, data = cars,                    # data to be used
      xlim = c(0, 25),                              # define range of the x-
axis
      axes = FALSE, ann = FALSE, type = 'n')
points (dist ~ speed, data = cars,
        pch = 21, col = 'tomato', bg = 'yellow')    # add data points with
given symbols and colours
par (xpd = T); legend ('topleft', legend = 'b)', bty = 'n', inset = -.3, cex =
2); par (xpd = F)

# c)
plot (dist ~ speed, data = cars,                    # data to be used
      xlim = c(0, 25),                              # define range of the x-
axis
      axes = FALSE, ann = FALSE, type = 'n')
points (dist ~ speed, data = cars,
        pch = 21, col = 'tomato', bg = 'yellow')    # add data points with
given symbols and colours
title (xlab = 'Speed [mph]', ylab = 'Distance [ft]', # add x- and y-labels
       main = 'Scatterplot')                        # add main title to the
plot
par (xpd = T); legend ('topleft', legend = 'c)', bty = 'n', inset = -.3, cex =
2); par (xpd = F)

# d)
plot (dist ~ speed, data = cars,                    # data to be used
      xlim = c(0, 25),                              # define range of the x-
axis
      axes = FALSE, ann = FALSE, type = 'n')
points (dist ~ speed, data = cars,
        pch = 21, col = 'tomato', bg = 'yellow')    # add data points with
given symbols and colours
title (xlab = 'Speed [mph]', ylab = 'Distance [ft]', # add x- and y-labels
       main = 'Scatterplot')                        # add main title to the
plot
box ()
par (xpd = T); legend ('topleft', legend = 'd)', bty = 'n', inset = -.3, cex =
2); par (xpd = F)

# e)
plot (dist ~ speed, data = cars,                    # data to be used
      xlim = c(0, 25),                              # define range of the x-
axis
```

```
      axes = FALSE, ann = FALSE, type = 'n')
points (dist ~ speed, data = cars,
        pch = 21, col = 'tomato', bg = 'yellow')     # add data points with
given symbols and colours
title (xlab = 'Speed [mph]', ylab = 'Distance [ft]', # add x- and y-labels
       main = 'Scatterplot')                         # add main title to the
plot
box ()
axis (1)                                             # add axis 1 (bottom
horizontal)
par (xpd = T); legend ('topleft', legend = 'e)', bty = 'n', inset = -.3, cex =
2); par (xpd = F)

# f)
plot (dist ~ speed, data = cars,                     # data to be used
      xlim = c(0, 25),                               # define range of the x-
axis
      axes = FALSE, ann = FALSE, type = 'n')
points (dist ~ speed, data = cars,
        pch = 21, col = 'tomato', bg = 'yellow')     # add data points with
given symbols and colours
title (xlab = 'Speed [mph]', ylab = 'Distance [ft]', # add x- and y-labels
       main = 'Scatterplot')                         # add main title to the
plot
box ()
axis (1)                                             # add axis 1 (bottom
horizontal)
axis (2)
par (xpd = T); legend ('topleft', legend = 'f)', bty = 'n', inset = -.3, cex =
2); par (xpd = F)
dev.off ()

png (file = 'plotting_5.png', height = 550, width = 550, units = 'px',
pointsize = 16)
plot (dist ~ speed, data = cars,                     # a) data to be used,
      xlim = c(0, 25),                               #    define range of the
x-axis,
      axes = FALSE, ann = FALSE, type = 'n')         #    make sure nothing
will be actually plotted
points (dist ~ speed, data = cars,                   # b) add data points,
        pch = 21, col = 'tomato', bg = 'yellow',
        lwd = 2)
title (xlab = 'Speed [mph]', ylab = 'Distance [ft]', # c) add x- and y-labels,
       main = 'Scatterplot', line = 2.5)                       #    add main
title to the plot
box (bty = 'l')                                                # d) add box
around the plot
axis (1, col = 'red', at = seq (0, 25))              # e) add axis 1 (bottom
horizontal)
axis (2, las = 2)                                              # f) add axis 2
(left vertical)
dev.off ()
```