

# 14Graficos\_cheatsheet.R

moka

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```
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# Fecha: 12.04.2023  
# Objetivo: Data plotting  
# Referencia: Basado en R Programming Fundamentals, StanfordOnline XDFS112
```

```
library(dplyr)  
# Limpiar el espacio de trabajo  
rm(list=ls())
```

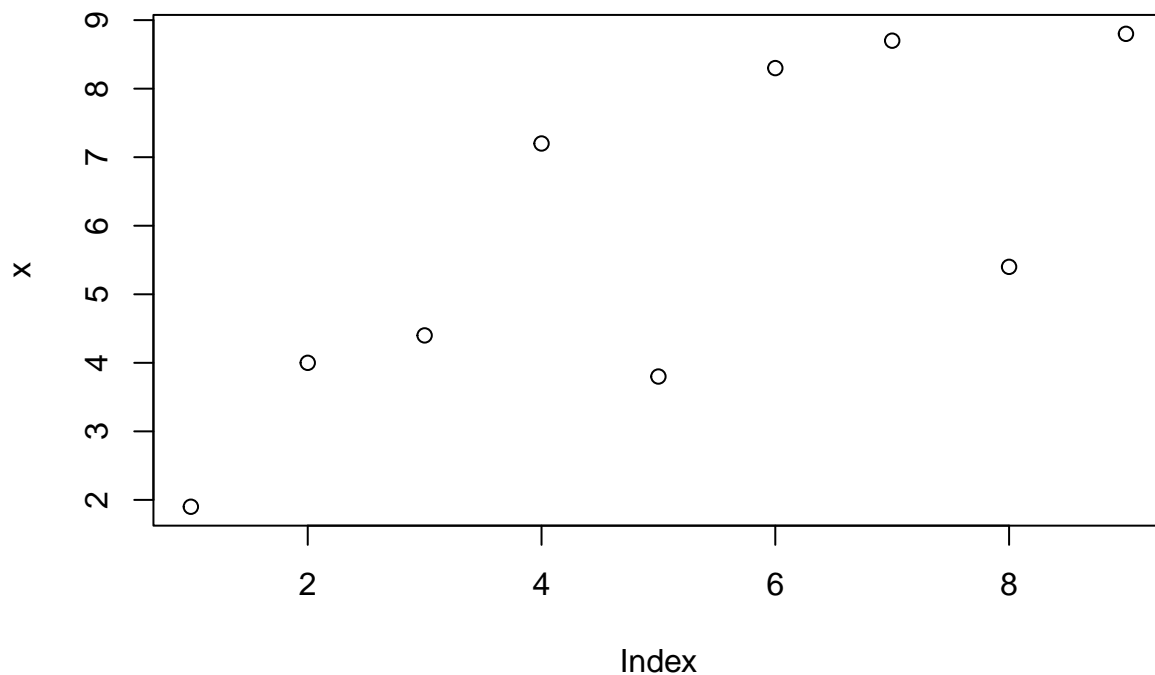
```
# Configurar el directorio
```

```
midirectorio<-setwd("~/Dropbox/0.POST-PHD/GOALS/2.CODE/R/Ecomienza/14Graficos")  
midirectorio
```

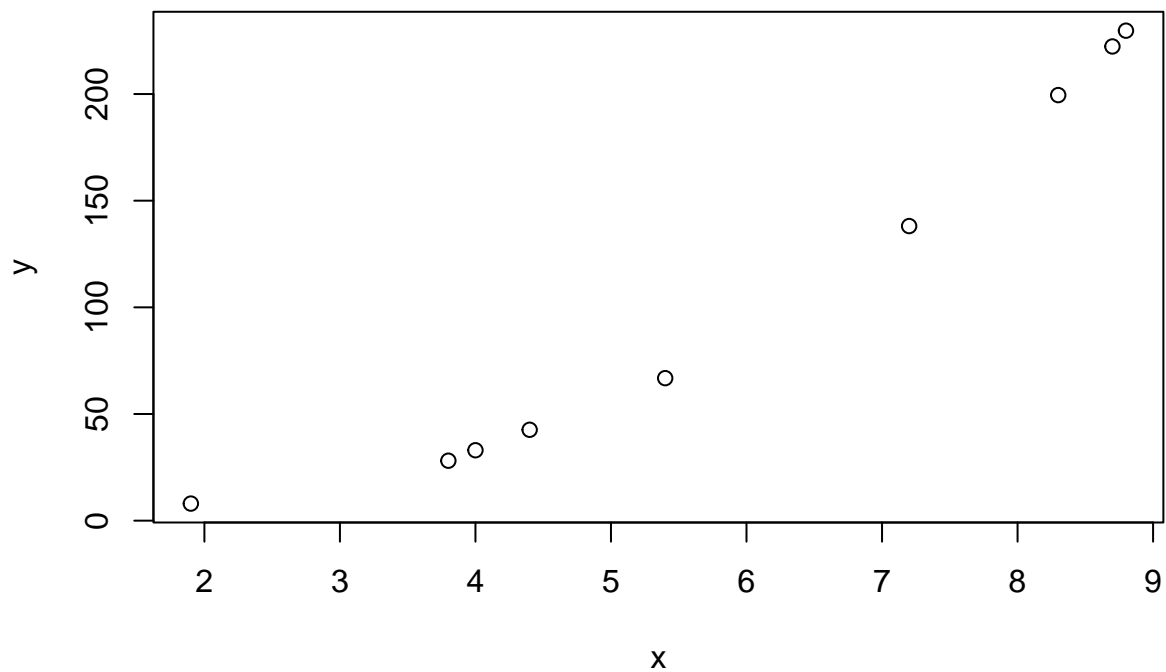
```
## [1] "/Users/moka/Dropbox/0.POST-PHD/GOALS/2.CODE/R/Ecomienza/14Graficos"
```

```
# Funcion plot.
```

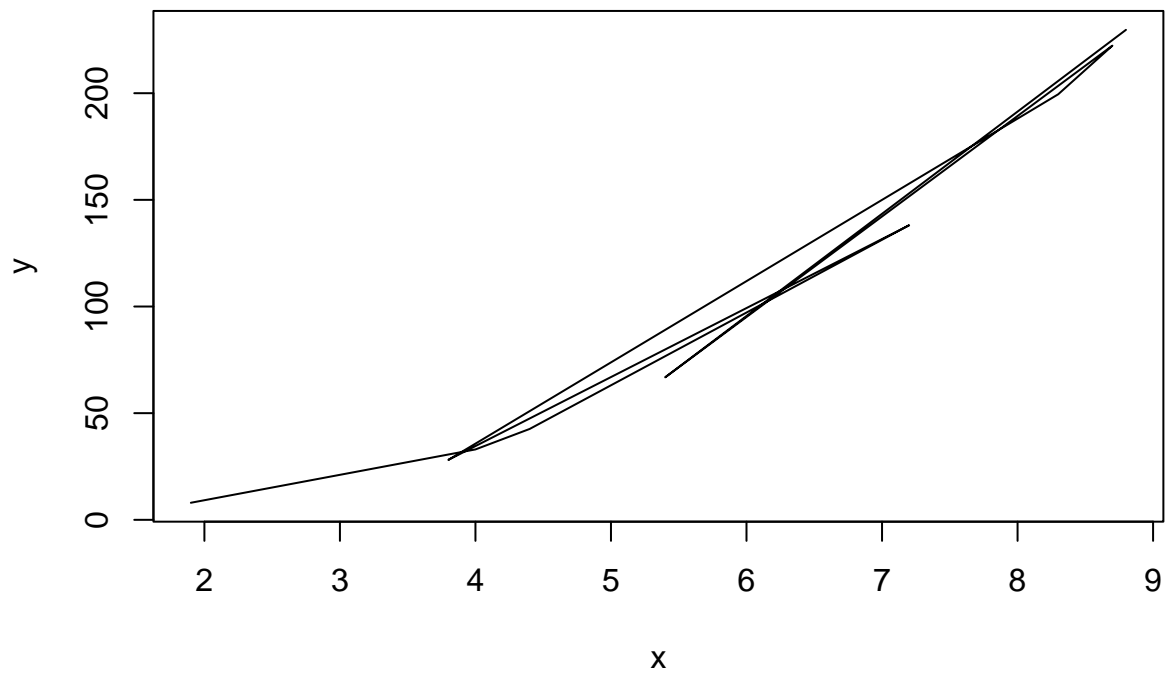
```
x<-c(1.9,4.0,4.4,7.2,3.8,8.3,8.7,5.4,8.8)  
plot(x) # we only gave one vector, amnd R takes the order as given in the vector
```



```
y<-c(8,33,42.6,138.1,28.1,199.5,222.3,66.8,229.7)  
plot(x,y) # En este caso tenemos
```



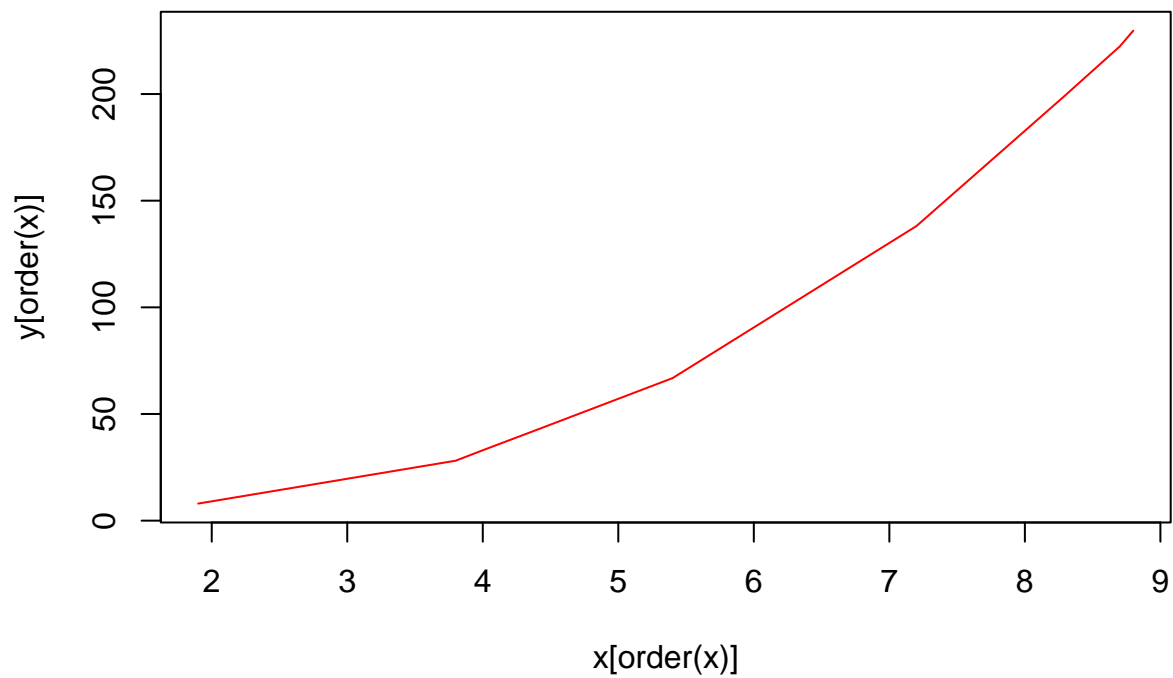
```
plot(x,y,type="l") # En este caso tenemos un grafico que no tiene sentido porque el orden que R esta to
```



```
# Entonces necesitamos ordenar los valores
order(x)
```

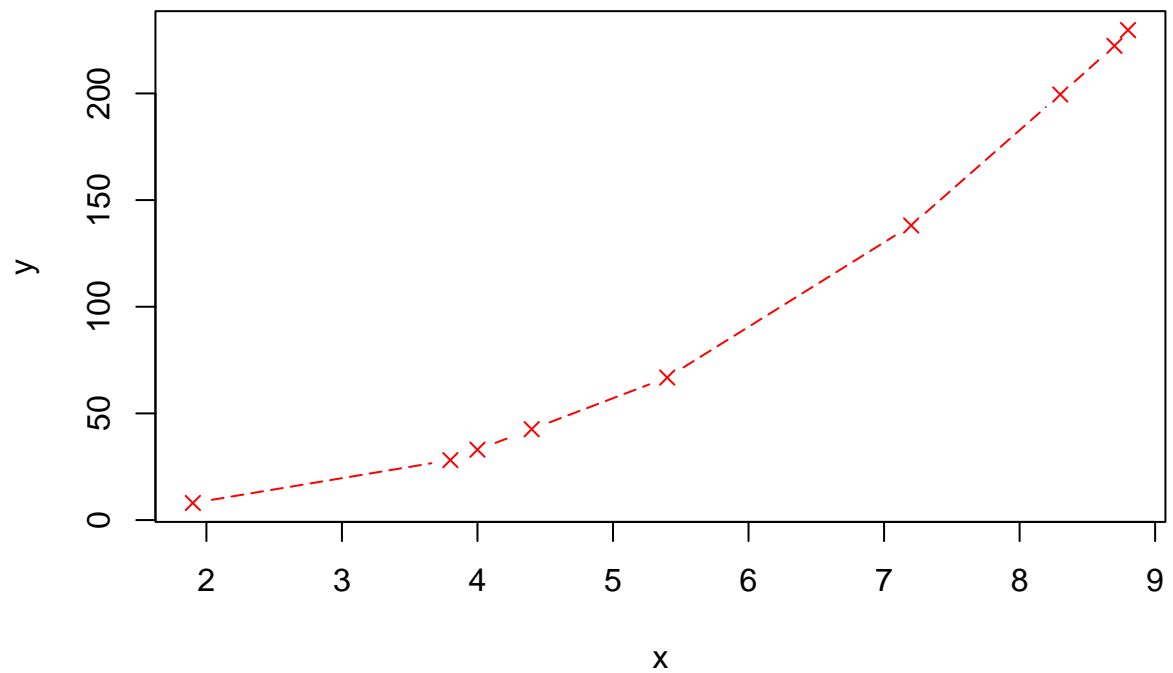
```
## [1] 1 5 2 3 8 4 6 7 9
```

```
plot(x[order(x)],y[order(x)],type='l',col="red")
```

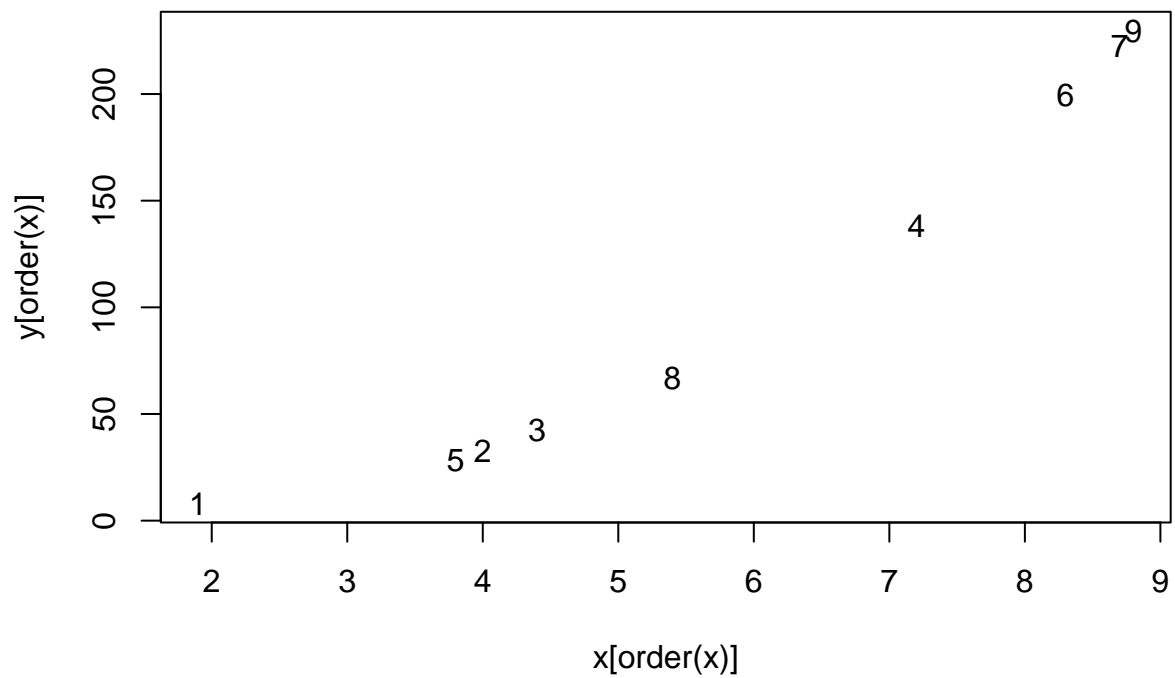


```
# Hay muchas mas opciones
?plot
plot(x[order(x)],y[order(x)],type='b',col="red",xlab="x",ylab="y",main="Example",lty=5,pch=4)
```

### Example



```
plot(x[order(x)],y[order(x)],type='n')
text(x[order(x)],y[order(x)],order(x))
```

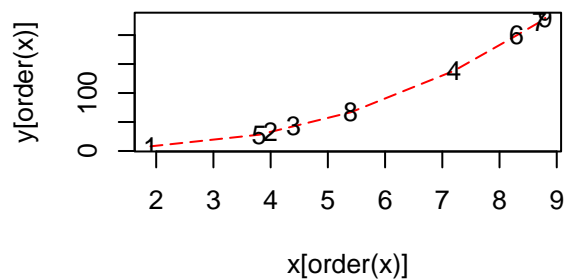
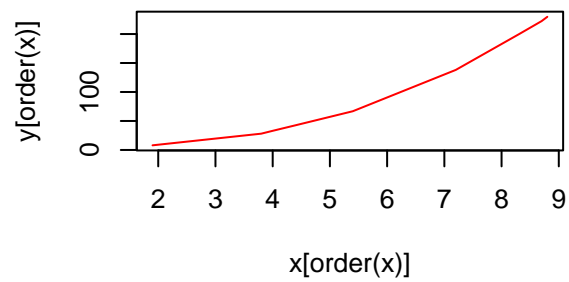
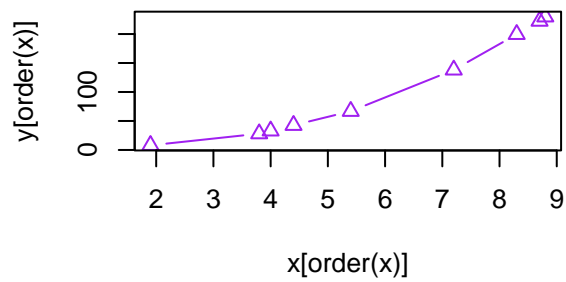


```
# Grid of plots
```

```
par(mfrow=c(2,2))
plot(x[order(x)],y[order(x)],type='b',col="purple",pch=2)
plot(x[order(x)],y[order(x)],type='l',col="red",pch=5)
plot(x[order(x)],y[order(x)],type='l',col="red",pch=5,lty=5)
text(x,y,1:9)
par("mfrow")
```

```
## [1] 2 2
```

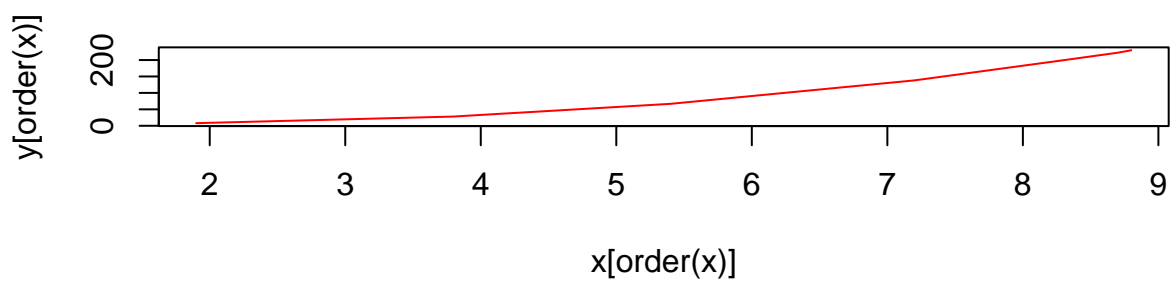
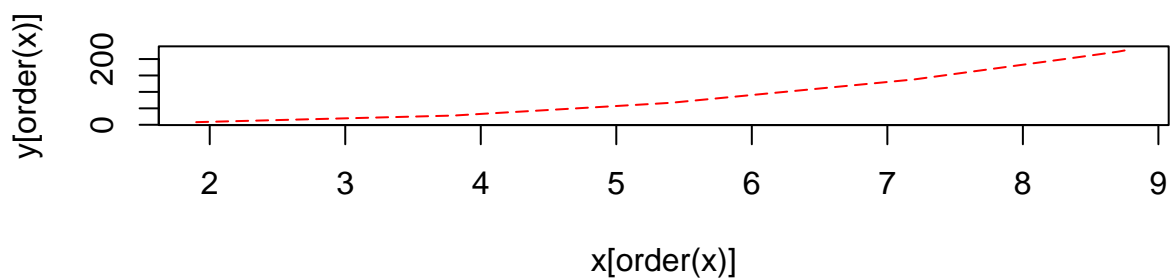
```
?par
par(mfrow=c(1,1))
```



```
plot(x[order(x)],y[order(x)],type='l',col="red",pch=5,lty=5)

par(mfrow=c(1,2))
plot(x[order(x)],y[order(x)],type='l',col="red",pch=5,lty=5)
plot(x[order(x)],y[order(x)],type='l',col="red",pch=5)

par(mfcol=c(2,1))
plot(x[order(x)],y[order(x)],type='l',col="red",pch=5,lty=5)
plot(x[order(x)],y[order(x)],type='l',col="red",pch=5)
```



*#The function par has the following default parameters*  
par()

```
## $xlog
## [1] FALSE
##
## $ylog
## [1] FALSE
##
## $adj
## [1] 0.5
##
## $ann
## [1] TRUE
##
## $ask
## [1] FALSE
##
## $bg
## [1] "transparent"
##
## $bty
## [1] "o"
##
## $cex
## [1] 1
##
## $cex.axis
## [1] 1
##
## $cex.lab
## [1] 1
##
## $cex.main
## [1] 1.2
##
## $cex.sub
## [1] 1
##
## $cin
## [1] 0.15 0.20
##
## $col
## [1] "black"
##
## $col.axis
## [1] "black"
##
## $col.lab
## [1] "black"
##
## $col.main
## [1] "black"
##
```

```

## $col.sub
## [1] "black"
##
## $cra
## [1] 10.8 14.4
##
## $crt
## [1] 0
##
## $csi
## [1] 0.2
##
## $cxy
## [1] 0.2125095 116.7980488
##
## $din
## [1] 6.5 4.5
##
## $err
## [1] 0
##
## $family
## [1] ""
##
## $fg
## [1] "black"
##
## $fig
## [1] 0.0 1.0 0.0 0.5
##
## $fin
## [1] 6.50 2.25
##
## $font
## [1] 1
##
## $font.axis
## [1] 1
##
## $font.lab
## [1] 1
##
## $font.main
## [1] 2
##
## $font.sub
## [1] 1
##
## $lab
## [1] 5 5 7
##
## $las
## [1] 0
##

```

```

## $lend
## [1] "round"
##
## $lheight
## [1] 1
##
## $ljoin
## [1] "round"
##
## $lmitre
## [1] 10
##
## $lty
## [1] "solid"
##
## $lwd
## [1] 1
##
## $mai
## [1] 1.02 0.82 0.82 0.42
##
## $mar
## [1] 5.1 4.1 4.1 2.1
##
## $mex
## [1] 1
##
## $mfcol
## [1] 2 1
##
## $mfg
## [1] 2 1 2 1
##
## $mfrow
## [1] 2 1
##
## $mgp
## [1] 3 1 0
##
## $mkh
## [1] 0.001
##
## $new
## [1] FALSE
##
## $oma
## [1] 0 0 0 0
##
## $omd
## [1] 0 1 0 1
##
## $omi
## [1] 0 0 0 0
##

```



```

## $page
## [1] TRUE
##
## $pch
## [1] 1
##
## $pin
## [1] 5.26 0.41
##
## $plt
## [1] 0.1261538 0.9353846 0.4533333 0.6355556
##
## $ps
## [1] 12
##
## $pty
## [1] "m"
##
## $smo
## [1] 1
##
## $srt
## [1] 0
##
## $tck
## [1] NA
##
## $tcl
## [1] -0.5
##
## $usr
## [1] 1.624 9.076 -0.868 238.568
##
## $xaxp
## [1] 2 9 7
##
## $xaxs
## [1] "r"
##
## $xaxt
## [1] "s"
##
## $xpd
## [1] FALSE
##
## $yaxp
## [1] 0 200 4
##
## $yaxs
## [1] "r"
##
## $yaxt
## [1] "s"
##

```

```
## $ylbias
## [1] 0.2

# More about plot function

# If we want to know the different plot functions, we can use apropos.
apropos("plot")

## [1] ".rs.api.savePlotAsImage" ".rs.replayNotebookPlots"
## [3] ".rs.reticulate.hookedMatplotlibModules" ".rs.reticulate.matplotlib.onLoaded"
## [5] ".rs.reticulate.matplotlib.showHook" "assocplot"
## [7] "autoplot" "barplot"
## [9] "barplot.default" "benchplot"
## [11] "biplot" "boxplot"
## [13] "boxplot.default" "boxplot.matrix"
## [15] "boxplot.stats" "cdplot"
## [17] "coplot" "draw_key_boxplot"
## [19] "draw_key_dotplot" "fourfoldplot"
## [21] "geom_boxplot" "geom_dotplot"
## [23] "GeomBoxplot" "GeomDotplot"
## [25] "ggplot" "ggplot_add"
## [27] "ggplot_build" "ggplot_gtable"
## [29] "ggplotGrob" "interaction.plot"
## [31] "is.ggplot" "lag.plot"
## [33] "last_plot" "matplot"
## [35] "monthplot" "mosaicplot"
## [37] "plot" "plot"
## [39] "plot.default" "plot.design"
## [41] "plot.ecdf" "plot.function"
## [43] "plot.new" "plot.spec.coherency"
## [45] "plot.spec.phase" "plot.stepfun"
## [47] "plot.ts" "plot.window"
## [49] "plot.xy" "preplot"
## [51] "qplot" "qqplot"
## [53] "quickplot" "recordPlot"
## [55] "replayPlot" "savePlot"
## [57] "screepplot" "set_last_plot"
## [59] "spineplot" "Splot"
## [61] "stat_boxplot" "StatBoxplot"
## [63] "sunflowerplot" "termplot"
## [65] "ts.plot"

# For time series object, we use plot.ts()

# Histograms

birth<-load("~/Dropbox/0.POST-PHD/GOALS/2.CODE/R/Ecomienza/datos/procesados/birthn.Rdata")
head(birthn)

##   year month date_of_month day_of_week births
## 1 2000     1             1           6   9083
## 2 2000     1             2           7   8006
## 3 2000     1             3           1  11363
## 4 2000     1             4           2  13032
## 5 2000     1             5           3  12558
## 6 2000     1             6           4  12466
```

```

str(birthn)

## 'data.frame': 5479 obs. of 5 variables:
## $ year : int 2000 2000 2000 2000 2000 2000 2000 2000 2000 2000 ...
## $ month : int 1 1 1 1 1 1 1 1 1 ...
## $ date_of_month: int 1 2 3 4 5 6 7 8 9 10 ...
## $ day_of_week : int 6 7 1 2 3 4 5 6 7 1 ...
## $ births : int 9083 8006 11363 13032 12558 12466 12516 8934 7949 11668 ...

attach(birthn)

## The following objects are masked from birthn (pos = 3):
##
## births, date_of_month, day_of_week, month, year

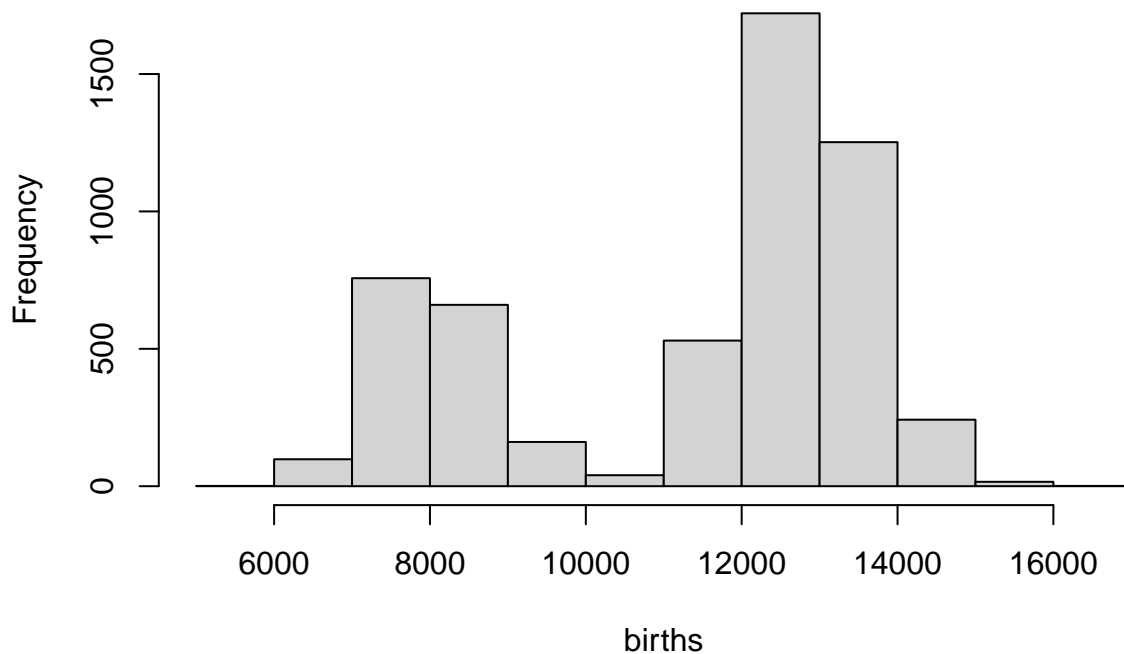
summary(birthn)

## year month date_of_month day_of_week births
## Min. :2000 Min. : 1.000 Min. : 1.00 Min. :1 Min. : 5728
## 1st Qu.:2003 1st Qu.: 4.000 1st Qu.: 8.00 1st Qu.:2 1st Qu.: 8740
## Median :2007 Median : 7.000 Median :16.00 Median :4 Median :12343
## Mean :2007 Mean : 6.523 Mean :15.73 Mean :4 Mean :11350
## 3rd Qu.:2011 3rd Qu.:10.000 3rd Qu.:23.00 3rd Qu.:6 3rd Qu.:13082
## Max. :2014 Max. :12.000 Max. :31.00 Max. :7 Max. :16081

birthsn=as.numeric(birthn$births)
hist(births)

```

**Histogram of births**



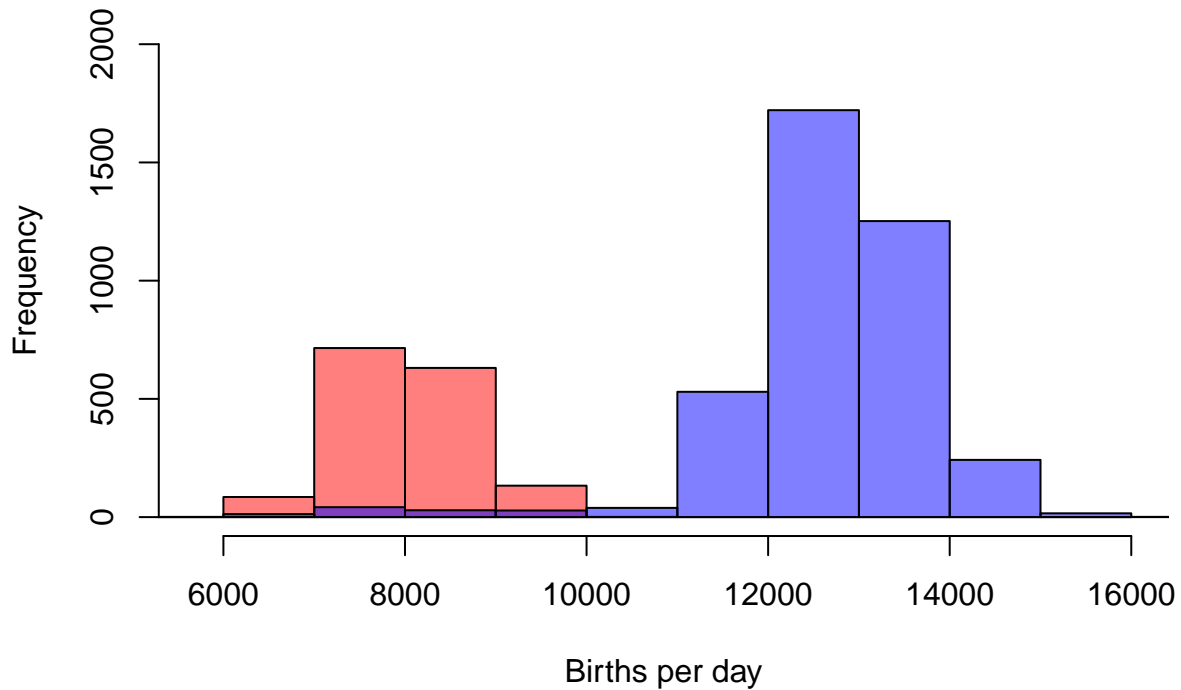
```

# We do two histograms overlaying
# Days of the week, and days of the weekend.
# Weekends: red
hist(births[day_of_week>5],breaks=seq(5000,16000,by=1000),col=rgb(1,0,0,0.5),xlim=c(5700,16000),ylim=c(

```

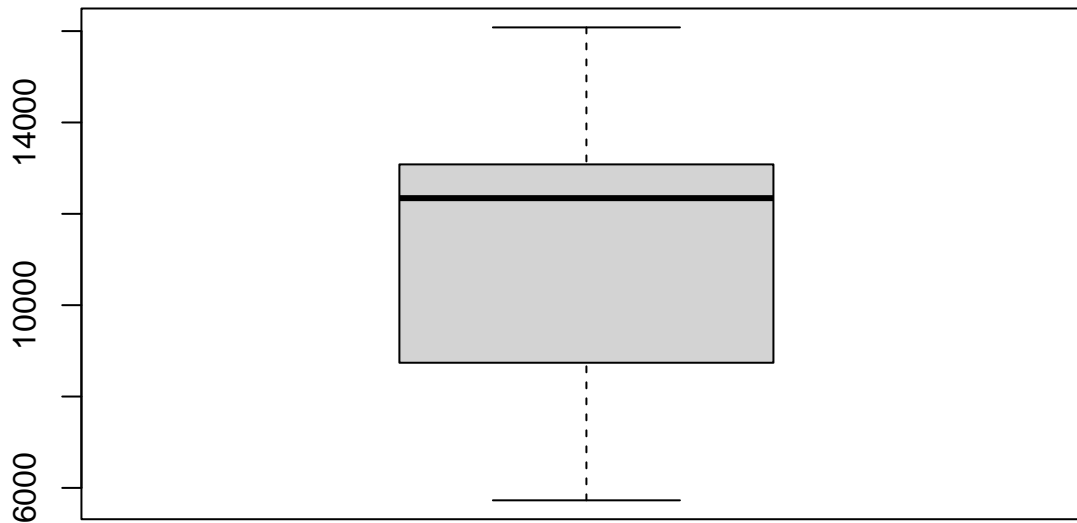
```
# Weekdays: mauve
hist(births[day_of_week<6],breaks=seq(5000,17000,by=1000),col=rgb(0,0,1,0.5),add=T)
```

## Overlapping Histograms

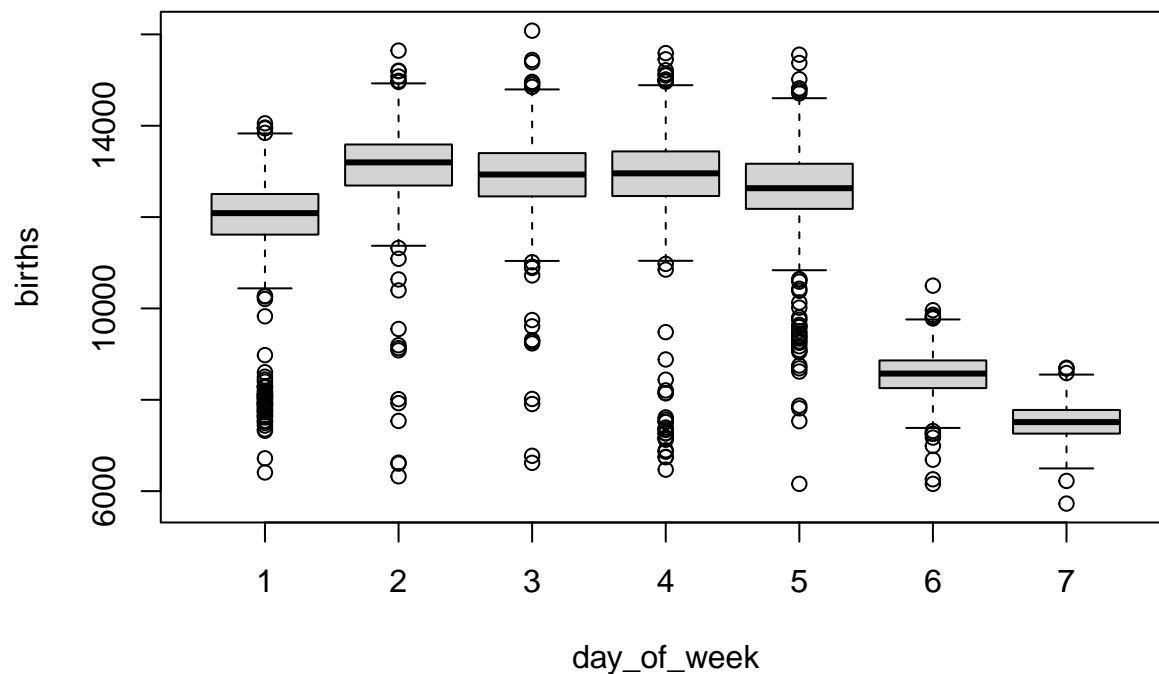


```
# Boxplots
```

```
boxplot(births)
```



```
boxplot(births~day_of_week)
```



```
# Barplot
```

```
meansperday<- birthn %>%
  group_by(day_of_week) %>%
  summarise(ave=mean(births)) %>%
  arrange()
vectormeans <- meansperday %>% .$ave
vectormeans
```

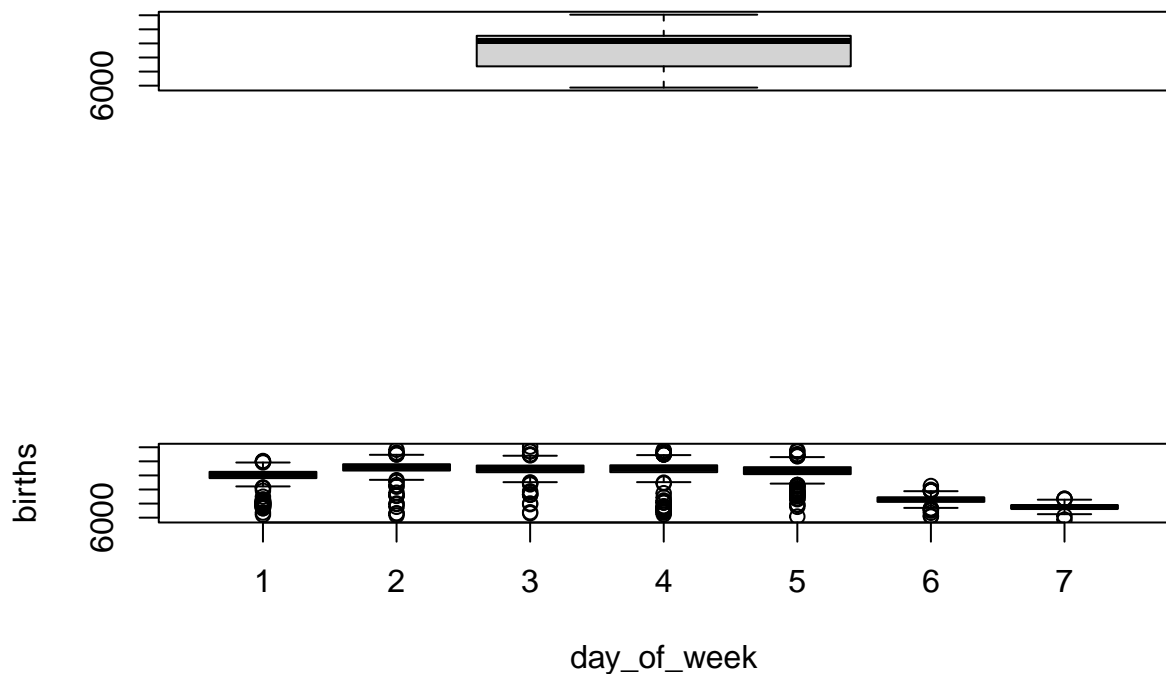
```
## [1] 11897.830 13122.444 12910.766 12845.826 12596.162 8562.573 7518.377
```

```
pdf("weekbars.pdf") # We can add this line to get the pdf file of our graph
bp=barplot(vectormeans,xlab="Day of the week")
axis(at=bp,labels=c("M","T","W","Th","F","Sa","Su"),side=1)
dev.off()
```

```
## RStudioGD
```

```
## 2
```

```
dir()
```



```
## [1] "14Graficos_cheatsheet_files"      "14Graficos_cheatsheet.aux"      "14Graficos_cheatsheet.html"
## [4] "14Graficos_cheatsheet.pdf"        "14Graficos_cheatsheet.R"        "14Graficos_cheatsheet.spin.R"
## [7] "14Graficos_cheatsheet.spin.Rmd"   "14Graficos_conceptos.aux"       "14Graficos_conceptos.tex"
## [10] "14Graficos_lab.aux"               "14Graficos_lab.tex"             "14Graficos_solution.R"
## [13] "weekbars.pdf"
```

?dev.off

```
# Note: you can use Rmarkdown to get a report
# No quitar el comentario de la linea inferior. Solamente copiar en la consola para que ejecute
#rmarkdown::render("14Graficos_cheatsheet.R",c("pdf_document","html_document"))
```