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#####
# 7. DATA VISUALIZATION
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## 7.1. Plot time-series and smooth
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## get data
Currency = read.table("http://edu.sablab.net/data/txt/currency.txt",
                      header=T,as.is=T)

## initiate window
windows(8,5) # try x11()
## plot the currency behaviour for the last 10 years
plot(Currency$EUR)

## let's make it more beautiful
windows(8,5)
plot(Currency$EUR,col=3,pch=19,
      main="EUR/USD ratio for 11 years",
      ylab="EUR/USD",
      xlab="Measures (working days)")

## add smoothing. Try different "f"
smooth = lowess(Currency$EUR,f=0.1)
lines(smooth,col=2,lwd=2)
## add 1 level
abline(h=1,col=4,lty=2)

## (*) add years
year=1999 # an initial year
while (year<=2009){ # loop for all the years up to now
  idx=grep(paste("^",year,sep=""),Currency$Date) # take the indexes of the
measures for the "year"
  average=mean(Currency$EUR[idx]) # calculate the average ratio for the "year"
  abline(v=min(idx),col=1,lty=3) # draw the year separator
  lines(x=c(min(idx),max(idx)),y=c(average,average),col=2) # draw the average
ratio for the "year"
  text(median(idx),max(Currency$EUR),sprintf("%d",year),font=2) # write the
years
  text(median(idx),average+0.05,sprintf("%.2f",average),col=2,font=2,cex=0.8) #
write the average ratio
  year=year+1;
}

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## 7.2. Mouse phenom :)
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## load data
Mice=read.table("http://edu.sablab.net/data/txt/mice.txt",
                header=T,sep="\t")

str(Mice)

## initiate window
windows(10,8)
par(mfrow=c(2,2))

## plot a factorial data
plot(Mice$Strain,las=2,
      col=rainbow(nlevels(Mice$Strain)),cex.names =0.7)
title("Number of mice from each strain")
```

