

R PLOT GALLERY, WITH CODE

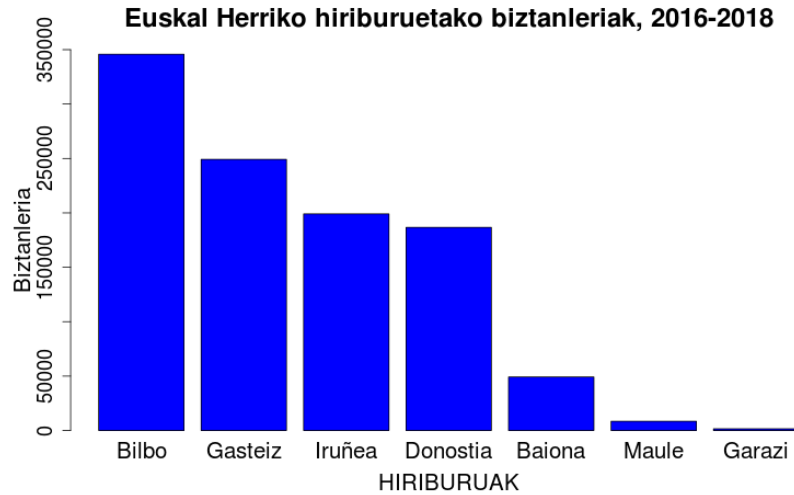
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1 Barplot: Visualize directly quantitative data, font sizes



```
x=c(345821,249176,199066,186665,49207,8499,1580)
barplot(x,xlab="HIRIBURUAK",
names.arg=c("Bilbo","Gasteiz","Iruñea","Donostia","Baiona","Maule","Garazi"),
col=c("blue"),width=1.5,
cex.names=1.7,cex.axis=1.5,cex.main=2,cex.lab=1.7,
main="Euskal Herriko hiriburuetakoko biztanleriak, 2016-2018",
ylab="Biztanleria",ylim=c(0,350000))
```

2 Barplot: Customized axis, multiple plots

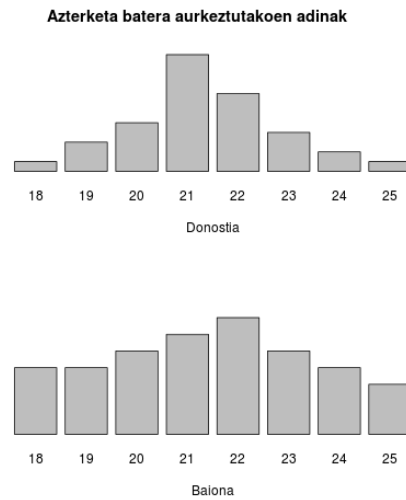


Figure 1: Lower set of data shows bigger dispersion than the upper one.

```

par(mfrow=c(2,1))
x=c(1,3,5,12,8,4,2,1)
y=c(3,3,4,5,6,4,3,2)
barplot(x,xlab="Donostia",
names.arg=c("18","19","20","21","22","23","24","25"), yaxt="n")
barplot(y,xlab="Baiona",
names.arg=c("18","19","20","21","22","23","24","25"), yaxt="n")
title("Azterketa batera aurkeztutako en adinak",line=-2,outer=TRUE)

```

3 Barplot: Customized axis, merged barplots, colors

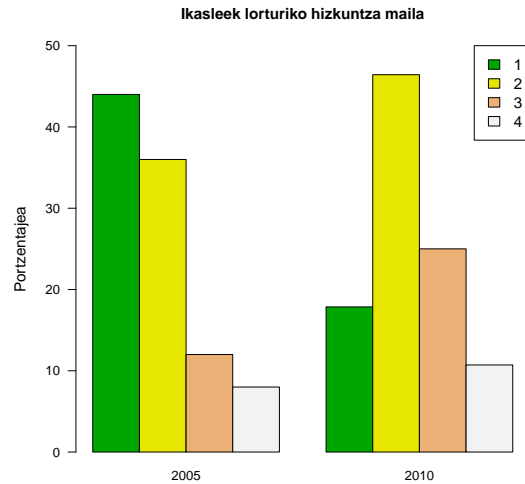


Figure 2: Comparing two qualitative sets of data

```
x=c(1,1,2,2,2,3,1,1,2,2,3,4,1,1,1,1,2,2,2,3,4,2,1,1,1)
y=c(1,1,1,2,2,2,2,2,3,4,2,2,2,1,1,3,3,3,3,3,2,2,2,4,4,2,2,3)
portzentajex=(table(x)/sum(table(x)))*100
portzentajey=(table(y)/sum(table(y)))*100
batera=cbind(portzentajex,portzentajey)
barplot(batera,beside=TRUE,col=terrain.colors(4),
ylim=c(0,50),las=1,ylab="Portzentajea",
main="Ikasleek lorturiko hizkuntza maila",
cex.lab=1.2,names.arg=c("2005","2010"))
legend("topright", c("1","2","3","4"), cex=1.2, fill=terrain.colors(4))
```

4 Barplot: Sorting columns, labels

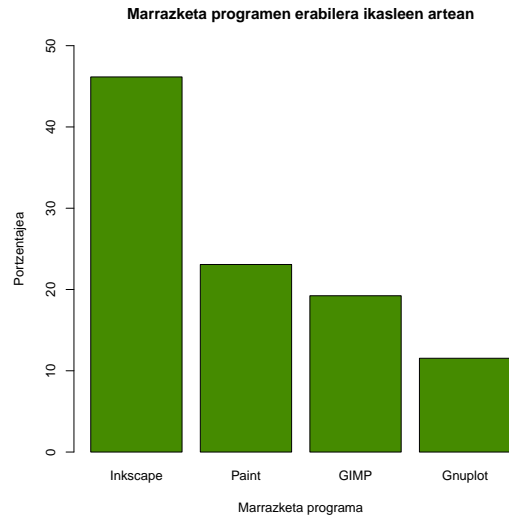
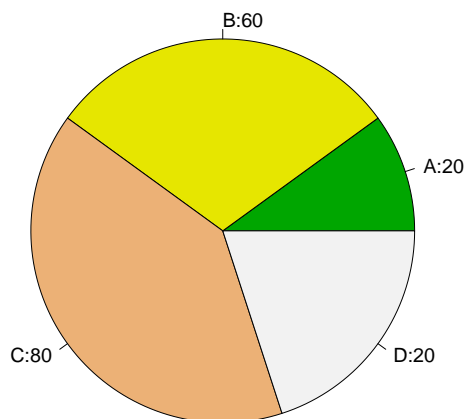


Figure 3: Decreasing columns

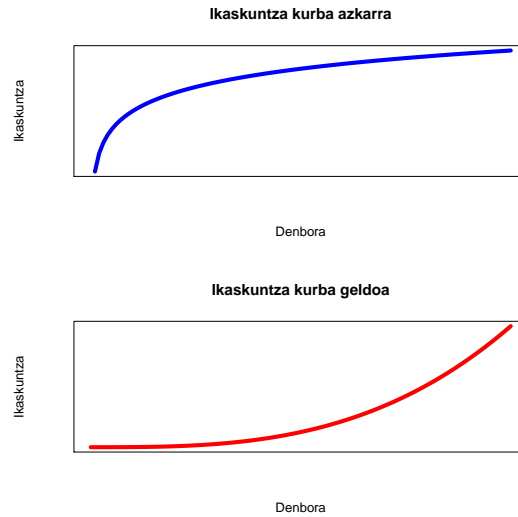
```
x=c("A","B","B","C","B","B","A","D","B","B","A",
    "B","C","C","B","D","C","B","A","B","A","A","B",
    "B","C","D")
sort(table(x))
ikasleprog=sort(table(x),decreasing=TRUE)
erl=prop.table(ikasleprog)*100
barplot(erl,xlab="Marrazketa programa",
names.arg=c("Inkscape","Paint","GIMP","Gnuplot"),
col=c("chartreuse4"),
main="Marrazketa programen erabilera ikasleen artean",
ylab="Portzentajea",ylim=c(0,50))
```

5 Pie chart: Basics



```
x=c(20,60,80,40)
etiketak=c("A:20","B:60","C:80","D:20")
pie(x,labels=etiketak,radius=1.02,col=terrain.colors(4),cex=1.5)
```

6 Line charts: mathematical functions

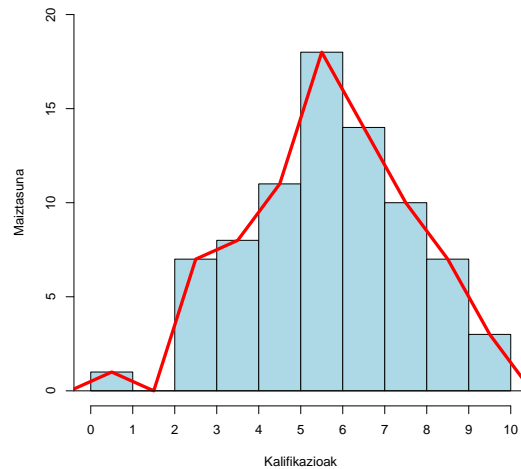


```

par(mfrow=c(2,1))
x=seq(0,100,by=1)
y=log(x)
plot(x,y,xaxt="n",yaxt="n",type="l", col="blue",
lwd=5, xlab="Denbora", ylab="Ikaskuntza", main="Ikaskuntza kurba azkarra")
x=seq(0,1,by=0.01)
y=x^3
plot(x,y,xaxt="n",yaxt="n",type="l", col="red",
lwd=5, xlab="Denbora", ylab="Ikaskuntza", main="Ikaskuntza kurba geldoa")

```

7 Histogram and frequency polygon on it: truncating data, labels and axis

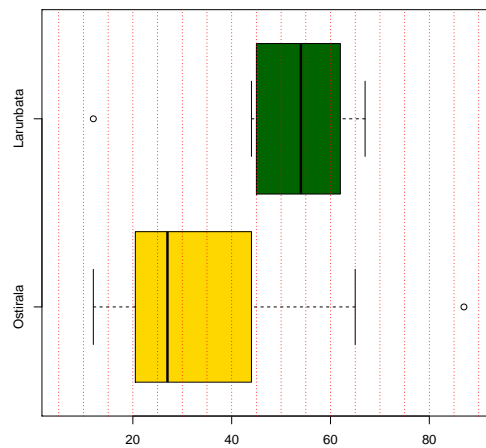


```

> x=rnorm(80,5.5,2)
> x[x>0 & x<10]
 [1] 9.052442 4.078652 2.186152 6.709544 6.522854 5.546687 6.834611 5.866852
 [9] 2.252199 6.229700 3.812257 6.141457 2.645488 4.795087 0.284622 4.365824
[17] 4.574272 8.701396 3.881504 3.362722 8.092296 6.530910 2.752970 7.257054
[25] 6.434219 6.663290 5.703899 4.490146 3.331955 9.566425 5.280711 4.859908
[33] 9.636002 6.661536 7.417307 5.784743 8.898900 7.431592 2.171872 8.458631
[41] 7.103240 5.481109 3.581393 5.733338 6.170822 8.948124 3.526243 8.332856
[49] 5.059596 6.166212 5.779007 5.868737 2.634504 4.555055 5.802278 2.694423
[57] 3.106431 8.467341 4.601853 4.124850 7.053538 6.658924 3.210084 6.205838
[65] 5.749240 7.486454 7.701232 6.568405 5.294136 4.893051 7.324625 5.604459
[73] 5.146773 7.415206 5.150187 5.534858 7.981321 5.314976 4.115921
> y=x[which(x>0 & x<10)]
> y
 [1] 9.052442 4.078652 2.186152 6.709544 6.522854 5.546687 6.834611 5.866852
 [9] 2.252199 6.229700 3.812257 6.141457 2.645488 4.795087 0.284622 4.365824
[17] 4.574272 8.701396 3.881504 3.362722 8.092296 6.530910 2.752970 7.257054
[25] 6.434219 6.663290 5.703899 4.490146 3.331955 9.566425 5.280711 4.859908
[33] 9.636002 6.661536 7.417307 5.784743 8.898900 7.431592 2.171872 8.458631
[41] 7.103240 5.481109 3.581393 5.733338 6.170822 8.948124 3.526243 8.332856
[49] 5.059596 6.166212 5.779007 5.868737 2.634504 4.555055 5.802278 2.694423
[57] 3.106431 8.467341 4.601853 4.124850 7.053538 6.658924 3.210084 6.205838
[65] 5.749240 7.486454 7.701232 6.568405 5.294136 4.893051 7.324625 5.604459
[73] 5.146773 7.415206 5.150187 5.534858 7.981321 5.314976 4.115921
> library(agricolae)
> histo=hist(y,breaks=c(0,1,2,3,4,5,6,7,8,9,10),
col="lightblue",xlab="Kalifikazioak",
ylab="Maiztasuna",main="",xaxt="n",ylim=c(0,20))
> axis(1,seq(0,10,by=1))
> polygon.freq(histo,col="red",lwd=4)

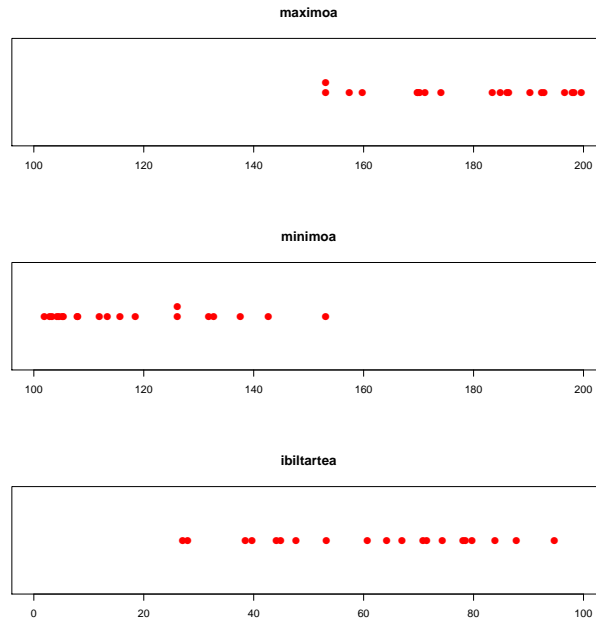
```


8 Boxplots: axis and dotted lines



```
pdf("Rplot_009.pdf")
x=c(12,34 ,87 , 52 , 27 , 19 , 26 , 22 , 36 , 65 , 18)
y=c(12 , 44 , 56 , 64 , 60 , 46 , 52 , 67)
boxplot(x,y,horizontal=T,ylim=c(5,90),names=c("Ostirala","Larunbata"),
col=(c("gold","darkgreen")))
axis(2,at=seq(5,90,by=5),labels=seq(5,90,by=5))
abline(v=seq(5,90,by=5),col="red",lty=3)
dev.off()
```

9 Stripcharts: plot merging and axis



```
> a=matrix(round(runif(20*4,100,200),digits=1),ncol=4)
> a
      [,1] [,2] [,3] [,4]
[1,] 187.5 198.0 196.0 153.1
[2,] 153.1 105.4 115.5 122.8
[3,] 170.2 126.1 131.4 163.3
[4,] 137.6 152.1 186.1 198.3
[5,] 161.5 162.6 132.7 171.2
[6,] 108.0 164.8 186.1 148.7
[7,] 150.4 182.7 107.9 186.4
[8,] 152.7 190.3 126.1 166.0
[9,] 105.2 184.9 168.1 168.7
[10,] 183.4 132.4 176.7 111.9
[11,] 192.4 176.4 186.1 104.6
[12,] 131.8 141.7 159.8 134.5
[13,] 192.8 165.8 118.5 146.7
[14,] 139.8 184.9 101.9 196.6
[15,] 169.5 169.8 149.4 142.7
[16,] 115.7 129.7 140.1 199.6
[17,] 102.9 169.9 165.1 108.9
[18,] 104.2 157.4 147.9 135.6
[19,] 174.1 114.8 119.1 103.3
[20,] 153.1 137.4 127.1 113.4
> max=do.call(pmax, as.data.frame(a))
> max
 [1] 198.0 153.1 170.2 198.3 171.2 186.1 186.4 190.3 184.9 183.4 192.4 159.8
[13] 192.8 196.6 169.8 199.6 169.9 157.4 174.1 153.1
> min=do.call(pmin, as.data.frame(a))
> min
 [1] 153.1 105.4 126.1 137.6 132.7 108.0 107.9 126.1 105.2 111.9 104.6 131.8
[13] 118.5 101.9 142.7 115.7 102.9 104.2 103.3 113.4
> ibil=max-min
> ibil
 [1] 44.9 47.7 44.1 60.7 38.5 78.1 78.5 64.2 79.7 71.5 87.8 28.0 74.3 94.7 27.1
[16] 83.9 67.0 53.2 70.8 39.7
>par(mfrow = c(3,1))
>stripchart(max,pch=16,col="red",cex=1.5,method="stack")
>stripchart(min,pch=16,col="red",cex=1.5,method="stack")
>stripchart(ibil,pch=16,col="red",cex=1.5,method="stack")
```