Sweave Example

Simple example

```
> a=1
> b=4
> a+b
```

```
[1] 5
```

```
> print("hello")
```

```
[1] "hello"
```

We can also include `R code` in the text. Example a+b= 5

1 Sweave's options

Show the result, no `R code`:

```
[1] 5
```

```
[1] "hello"
```

Do not evaluate the `R` code:

```
> a=1
> b=4
> a+b
> print("hello")
```

Evaluate `R` code, do not show results in the console:

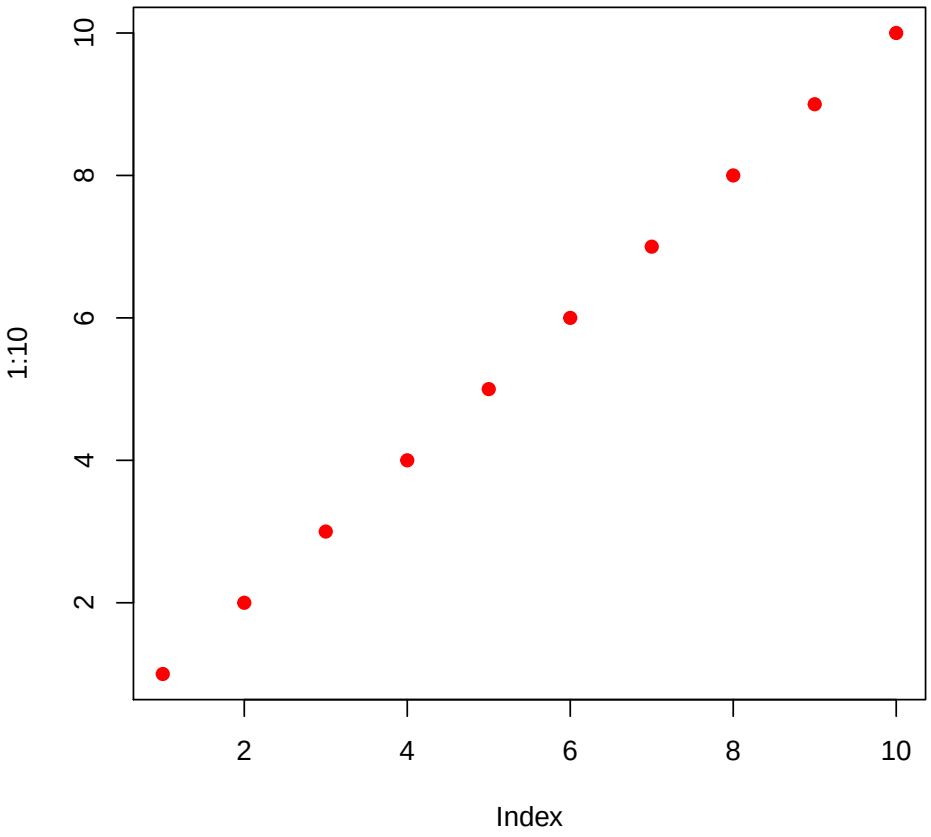
```
> a=1
> b=4
> a+b
> print("hello")
```

NOTE: Let's assume that we are interested in having all chunks with `echo=FALSE, results=hide`. This can be indicated in the preamble using `SweaveOpts` :

2 Figures

A figure can be included in the document by idicating `fig=TRUE`:

```
> plot(1:10, col="red", pch=19)
```


1:10
2
4
6
8
10
Index

2.1 Anything else about figures

A nicer figure can be obtained by adding captions, or changing size:

```
> par(mfrow=c(1,2))
> plot(1:10, col="green", pch=21)
> barplot(height=sample(1:10,5), names=LETTERS[1:5], col=1:5)
```

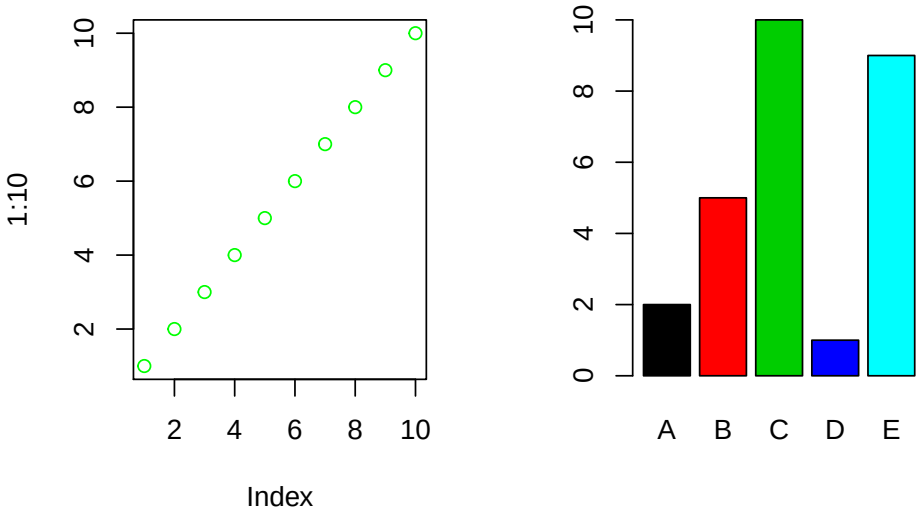


Figure 1: Figure 1:10 using a barplot inside a 4x6 inches figure

3 Creating tables

Let's include a table using the `women` dataset (included by default in `R`)

```
> require(xtable)
> myTable <- summary(women)
```

This table can also be included in LaTeX format:

$Min.$: 58.0	$Min.$: 115.0
$1stQu.$: 61.5	$1stQu.$: 124.5
$Median$: 65.0	$Median$: 135.0
$Mean$: 65.0	$Mean$: 136.7
$3rdQu.$: 68.5	$3rdQu.$: 148.0
$Max.$: 72.0	$Max.$: 164.0

Altough it is even more easy to use the `R` package `xtable`.

```
> xtab<-xtable(myTable)
> print(xtab, floating=FALSE)
```

	height	weight
1	Min. :58.0	Min. :115.0
2	1st Qu.:61.5	1st Qu.:124.5
3	Median :65.0	Median :135.0
4	Mean :65.0	Mean :136.7
5	3rd Qu.:68.5	3rd Qu.:148.0
6	Max. :72.0	Max. :164.0

3.1 More about tables

Nicer tables can be created, for instance, exluding the number of rows, or adding a caption. We can also make reference to this table. Therefore, we reference Table 1 in the text:

```
> xtab2<-xtable(myTable, caption="Summary of women data",
+                        label="Table:women")
> print(xtab2, include.rownames = FALSE)
```

height	weight
Min. :58.0	Min. :115.0
1st Qu.:61.5	1st Qu.:124.5
Median :65.0	Median :135.0
Mean :65.0	Mean :136.7
3rd Qu.:68.5	3rd Qu.:148.0
Max. :72.0	Max. :164.0

Table 1: Summary of women data

4 Creating pdf

Just type (NOTE: this folder must contiain *Sweave.sty* file).

```
> Sweave("SweaveExample.Rnw")
> system("pdflatex SweaveExample.tex")
```

Using `Rstudio` is even easier. Just click 'pdf' button. NOTE: pdf must be closed, if not an error message is obtained.
`cacheSweave` package can be used when computing time is huge.

```
> library(cacheSweave)
> setCacheDir("cache") # por defecto es "."
> Sweave("SweaveExample.tex", driver = cacheSweaveDriver)
```

5 Getting `R` code

R commands can be obtained in a `.R` file by executing:

```
> Stangle("SweaveExample.Rnw")
```

```
Writing to file SweaveExample.R
```

6 SessionInfo

```
> sessionInfo()
```

```
R version 3.0.3 (2014-03-06)
Platform: x86_64-apple-darwin10.8.0 (64-bit)

locale:
[1] es_ES.UTF-8/es_ES.UTF-8/es_ES.UTF-8/C/es_ES.UTF-8/es_ES.UTF-8

attached base packages:
[1] stats     graphics  grDevices utils     datasets  methods   base

other attached packages:
[1] xtable_1.7-4

loaded via a namespace (and not attached):
[1] tools_3.0.3
```