# 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:

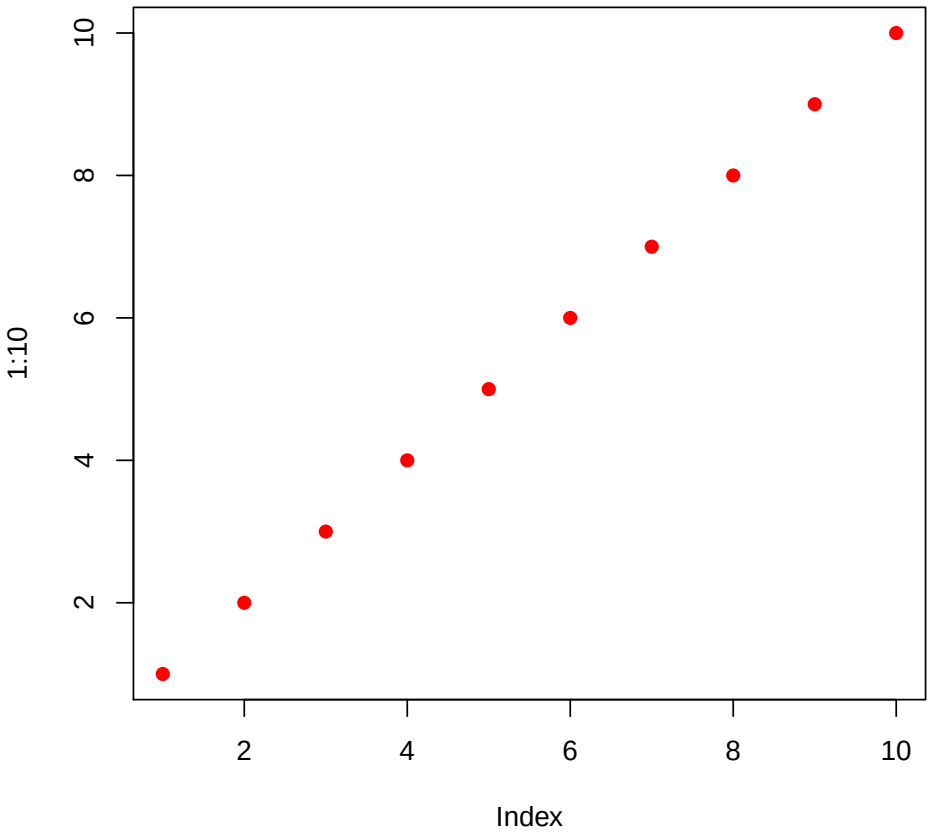
```
> a=1
> b=4
> a+b
> print("hello")
```

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)
```

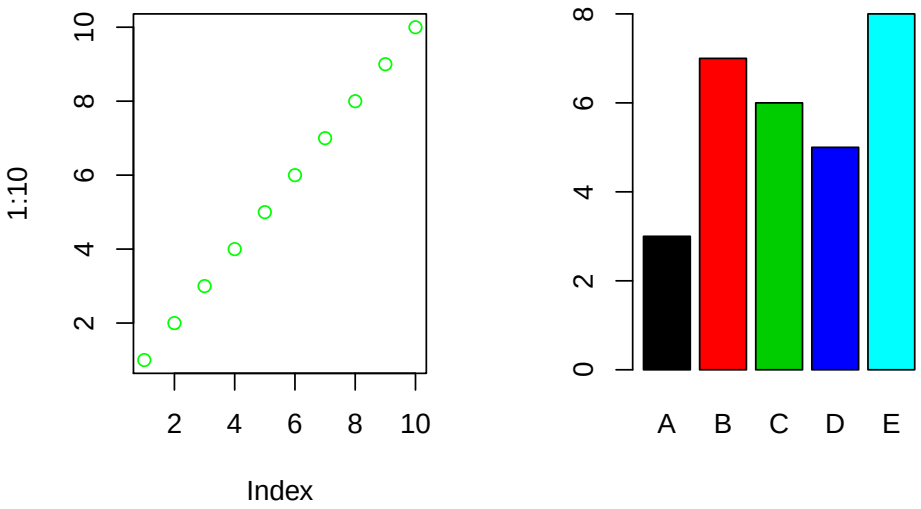



Figure 1: Figure 1:10 using a barplot inside a 4x6 inches figure

# 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 3.0.2 (2013-09-25)
Platform: i386-w64-mingw32/i386 (32-bit)

locale:
[1] LC_COLLATE=Spanish_Spain.1252  LC_CTYPE=Spanish_Spain.1252
[3] LC_MONETARY=Spanish_Spain.1252 LC_NUMERIC=C
[5] LC_TIME=Spanish_Spain.1252

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

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

loaded via a namespace (and not attached):
[1] tools_3.0.2
```