

# Simple example of Sweave

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## 1 Introduction

Just a simple introduction to Sweave.

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

## [1] 5

print("hello")

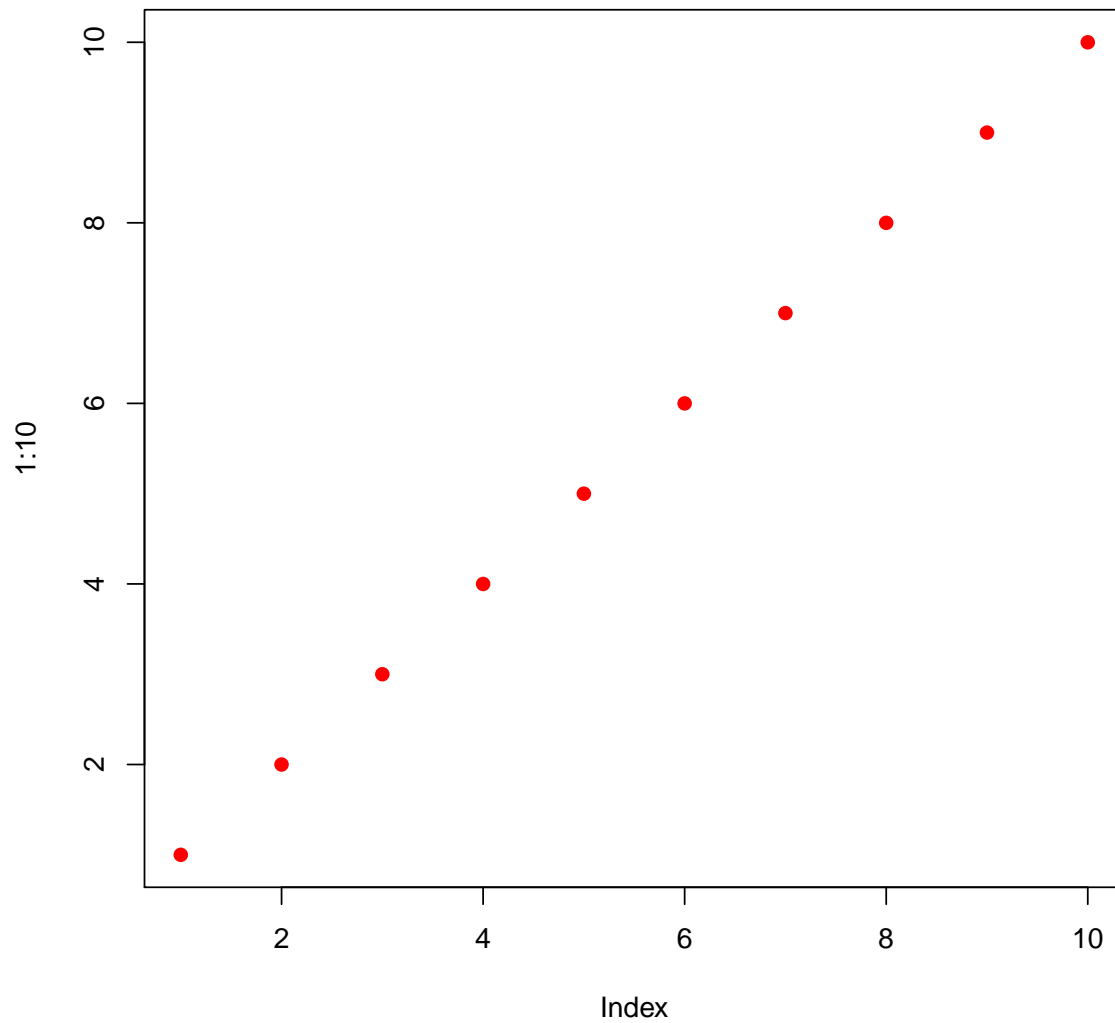
## [1] "hello"
```

We can call R commands from the text. For example  $a+b=5$

## 2 Including a Plot

Now for a plot. Note we include `fig=TRUE`, which prints the plot within the document

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



Thats it.... simple hey!

## 2.1 More on Plots

To make the plot a little nicer, we can add a caption. Also lets change the size of the plot to be 4" in height and 6" in width

```
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)
```

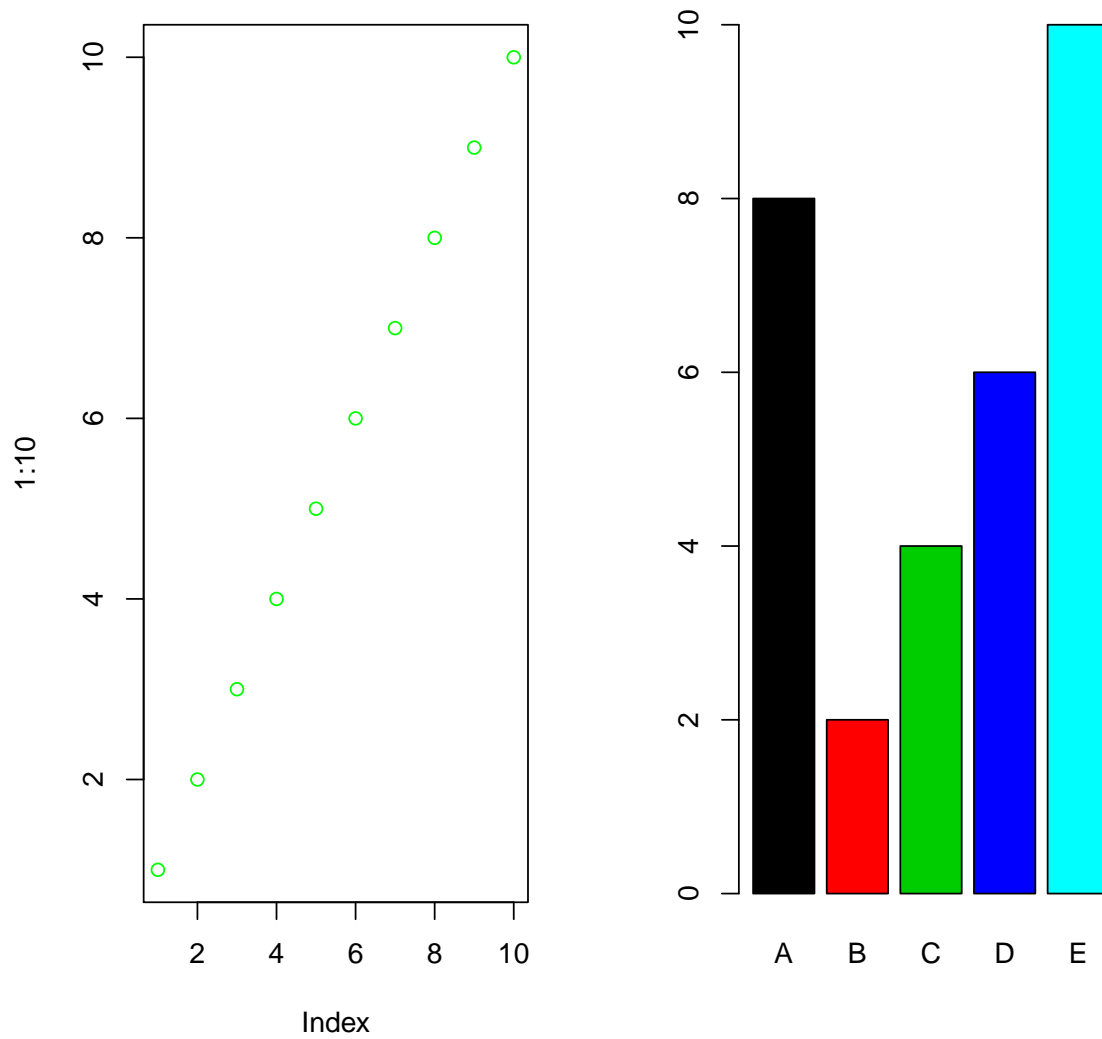


Figure 1: Plot of 1:10 and a bar plot beside it in a figure that is 4x6 inches

## 2.2 Creating a table

Lets include a table using the dataset, which is included in the default core installation of R. It contains the height and weight of 15 women.

```
require(xtable)

## Loading required package: xtable

myTable<-summary(women)
```

We can manually encode a table in latex

```
## $ 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    $\\
```

But it is much easier to use the package *xtable*. We use the function `require` to load the package.

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

## % latex table generated in R 3.5.1 by xtable 1.8-3 package
## % Wed Oct 17 13:06:22 2018
## \begin{tabular}{rll}
##   \hline
##   & height & weight \\
##   \hline
## X & Min.      :58.0    & Min.      :115.0    \\
## X.1 & 1st Qu.:61.5    & 1st Qu.:124.5    \\
## X.2 & Median :65.0    & Median :135.0    \\
## X.3 & Mean   :65.0    & Mean   :136.7    \\
## X.4 & 3rd Qu.:68.5    & 3rd Qu.:148.0    \\
## X.5 & Max.   :72.0    & Max.   :164.0    \\
##   \hline
## \end{tabular}
```

## 2.3 More on tables

Let make the table nice. Lets exclude the row numbers and include a caption on the table. We can also tag the table so we reference Table ?? in the text

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

## % latex table generated in R 3.5.1 by xtable 1.8-3 package
## % Wed Oct 17 13:06:22 2018
## \begin{table}[ht]
```

```

## \centering
## \begin{tabular}{ll}
##   \hline
##     height & weight \\
##   \hline
## 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   \\
##   \hline
## \end{tabular}
## \caption{Summary of women data}
## \label{Table:women}
## \end{table}

```

### 3 SessionInfo

```
sessionInfo();

## R version 3.5.1 (2018-07-02)
## Platform: x86_64-w64-mingw32/x64 (64-bit)
## Running under: Windows 10 x64 (build 17134)
##
## Matrix products: default
##
## locale:
## [1] LC_COLLATE=German_Germany.1252 LC_CTYPE=German_Germany.1252
## [3] LC_MONETARY=German_Germany.1252 LC_NUMERIC=C
## [5] LC_TIME=German_Germany.1252
##
## attached base packages:
## [1] stats      graphics  grDevices  utils      datasets  methods    base
##
## other attached packages:
## [1] xtable_1.8-3 knitr_1.20
##
## loaded via a namespace (and not attached):
## [1] compiler_3.5.1 magrittr_1.5   tools_3.5.1   stringi_1.1.7
## [5] highr_0.7       stringr_1.3.1 evaluate_0.11
```