

# Example Sweave Document

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## 1 Introduction

This is an introduction to some resources that are useful for learning R.

## 2 The R code that produced this report

It is important to appreciate that R is free and open source software. This means that any code you write can be viewed and modified by others. In some cases we need to protect our Intellectual Property and the following statement

is an attempt to ascribe copyright to our work, even though it remains open source.

“I support the philosophy of Reproducible Research [2], and where possible I provide data and code in the statistical software R that will allow analyses to be reproduced. This document is prepared automatically from the associated Sweave (RNW) file. If you do not have access to the RNW file please contact me.”

## 2.1 func

I'll use the following packages:

```
> if(!require(xtable)) install.packages('xtable', repos = 'http://cran.csiro.au')
> require(xtable)
> #require(ggplot2)
> #require(ProjectTemplate)
```

## 2.2 Some Code

```
> x<-rnorm(100,10,5)
> y<-rnorm(100,20,15)
> fit <- lm(y~x)
> summary(fit)
```

Call:

```
lm(formula = y ~ x)
```

Residuals:

Min	1Q	Median	3Q	Max
-31.482	-7.235	1.037	10.652	28.990

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	13.1925	2.8366	4.651	1.03e-05 ***
x	0.7194	0.2464	2.920	0.00434 **

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 13.37 on 98 degrees of freedom

Multiple R-squared: 0.08004, Adjusted R-squared: 0.07065

F-statistic: 8.526 on 1 and 98 DF, p-value: 0.004343

Using the xtable package allows results to be displayed in tables and has built in support for some R objects, so summarising the linear fit above in Table ~1.

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	13.1925	2.8366	4.6509	0.0000
x	0.7194	0.2464	2.9200	0.0043

Table 1: Example Table

### 2.3 A Plot

Plots intergrate easily, using the  $\text{\LaTeX}$ float package as can be seen in figure ~??. However I like to make them as pngs and then include.

```
null device
      1
```

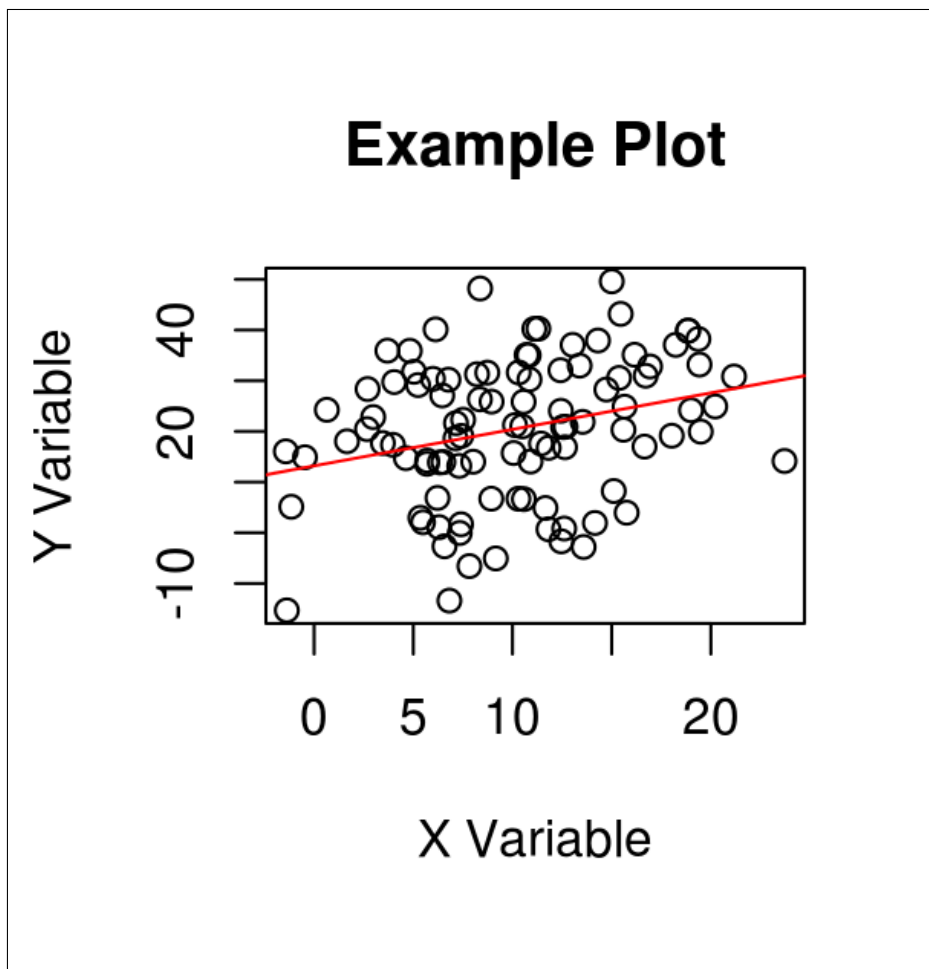


Figure 1: aPlot.png

### 3 Remembering the points

This blog post <http://www.win-vector.com/blog/2012/04/how-to-remember-point-shape-codes-in-r/> says:

I suspect I am not unique in not being able to remember how to control the point shapes in R. Part of this is a documentation problem: no package ever seems to write the shapes down. All packages just use the usual set that derives from S-Plus and was carried through base-graphics, to grid, lattice and ggplot2. The quickest way out of this is to know how to generate an example plot of the shapes quickly. We show how to do this in ggplot2. This is trivial- but you get tired of not having it immediately available.

I like it but it is not as complete as the plot shown in Figure 2 from the ‘R for Beginners’ document by Emmanuel Paradis [1]. I also find I often get disoriented using ggplot2.

```
null device
      1
```

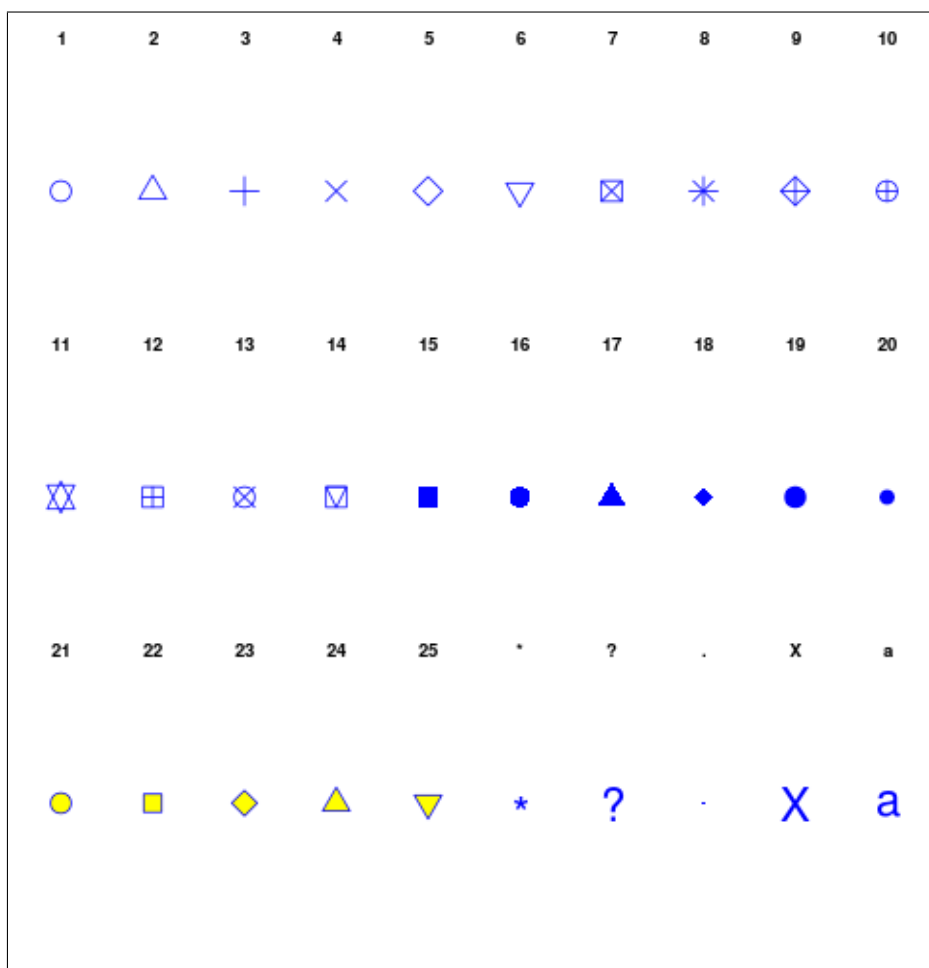


Figure 2: pchopts.png

## 4 Conclusion

In conclusion, sweave rocks.

## References

- [1] Emmanuel Paradis. R for Beginners. 2002.
- [2] Roger~D Peng. Reproducible research in computational science. *Science (New York, N.Y.)*, 334(6060):1226–7, December 2011.

## 5 System State

```
> sessionInfo()

R version 2.15.1 (2012-06-22)
Platform: x86_64-pc-linux-gnu (64-bit)

locale:
 [1] LC_CTYPE=en_US.UTF-8 LC_NUMERIC=C           LC_TIME=C
 [4] LC_COLLATE=C         LC_MONETARY=C       LC_MESSAGES=C
 [7] LC_PAPER=C           LC_NAME=C           LC_ADDRESS=C
[10] LC_TELEPHONE=C       LC_MEASUREMENT=C   LC_IDENTIFICATION=C

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

other attached packages:
[1] xtable_1.7-0

loaded via a namespace (and not attached):
[1] tools_2.15.1
```