Example Sweave Document

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Contents

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
-39.701  -6.533   0.833   9.876  35.833

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  25.1416     3.1582   7.961 3.08e-12 ***
x            -0.3099     0.2692  -1.151    0.252
---
Signif. codes:  0 âĂŸ***âĂŹ 0.001 âĂŸ**âĂŹ 0.01 âĂŸ*âĂŹ 0.05 âĂŸ.âĂŹ 0.1 âĂŸ âĂŹ 1

Residual standard error: 14.46 on 98 degrees of freedom
Multiple R-squared: 0.01334,        Adjusted R-squared: 0.003276
F-statistic: 1.325 on 1 and 98 DF,  p-value: 0.2524
```

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

	Estimate	Std. Error	t value	Pr($>$|t|)
(Intercept)	25.1416	3.1582	7.9608	0.0000
x	-0.3099	0.2692	-1.1512	0.2524

Table 1: Example Table

2.3 A Plot

Plots intergrate easily, using the LATEXfloat package as can be seen in figure ˜**??**. However I like to make them as pngs and then include.
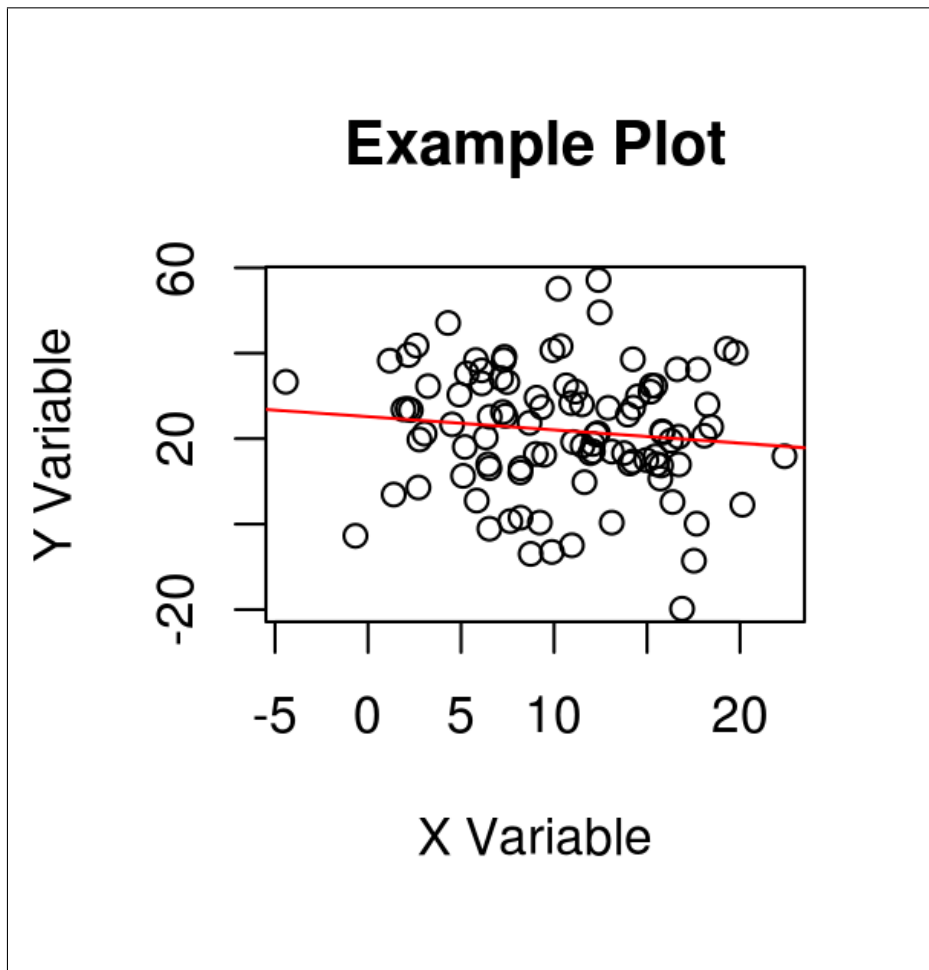
```
null device
          1
```

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 complate 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.

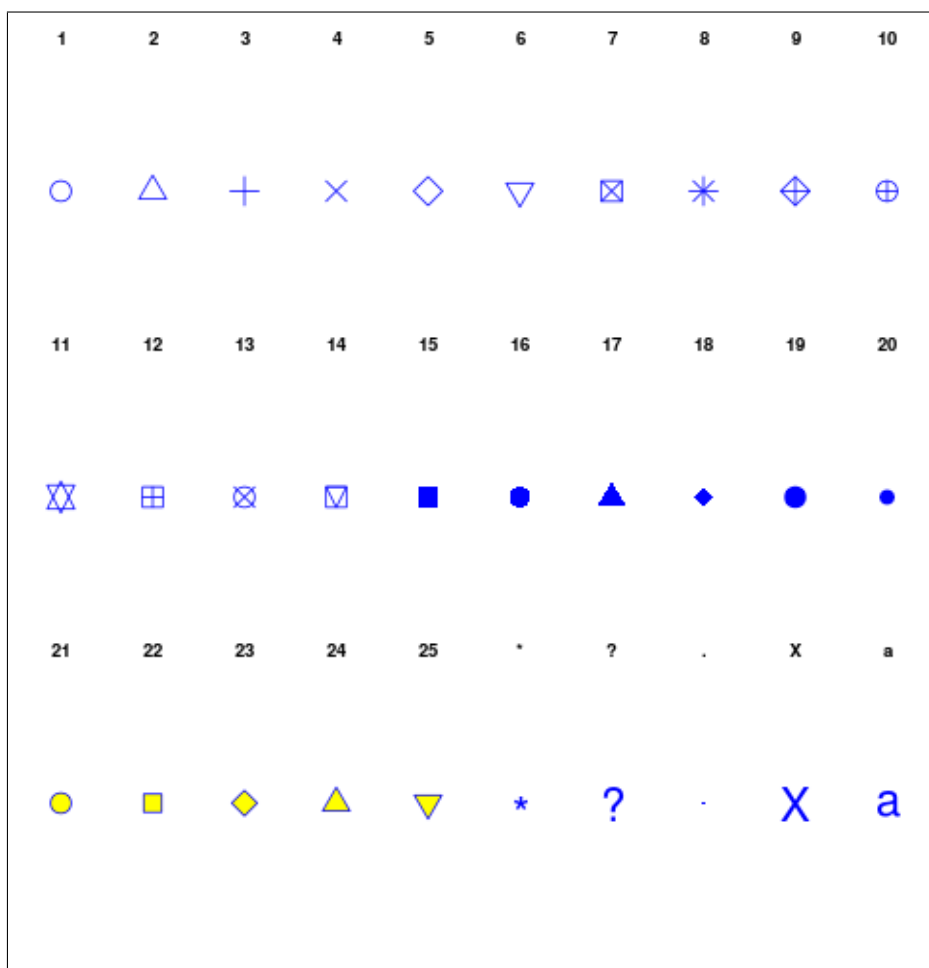```
null device
          1
```



**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
```