An R package for Newton's Algorithm

Robin Hood Maid Marion Will Scarlett

October 17, 2014

Abstract

We present the R package 'testpkg', which does some useful things.

1 Introduction

Here is a nice description of the background.

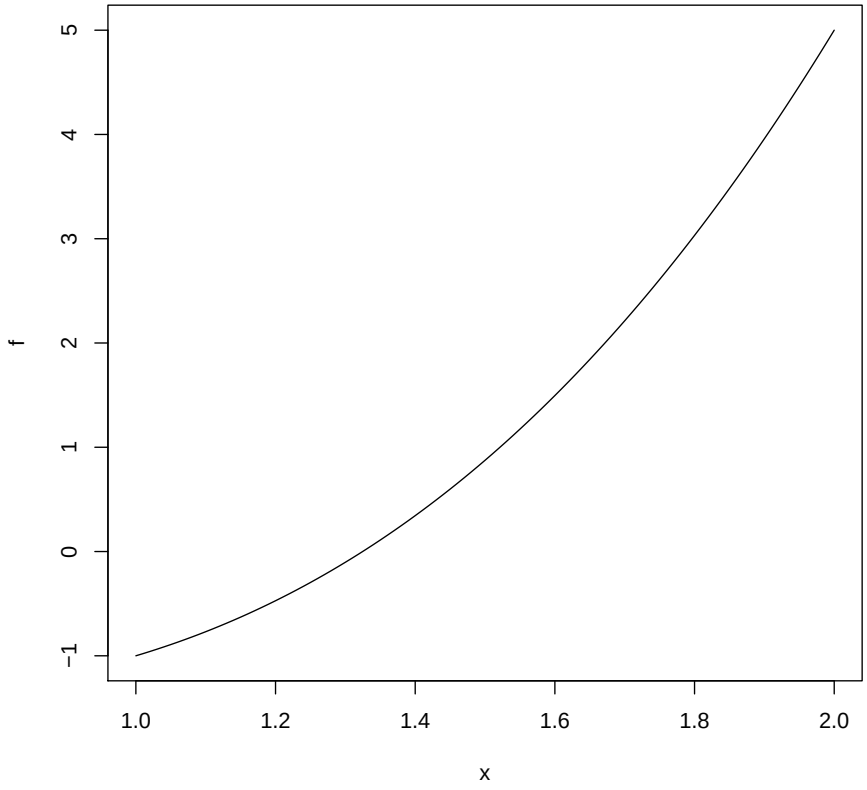
Suppose we wish to find the root of the function $f(x) = x^3 - x - 1$, which lies between 1 and 2.

```
library(testpkg)
f = function(x) x^3 - x - 1
newton(f, start=1)
```

```
##       [,1]
## [1,] 1.325
```

You can do plots and they'll automatically be added to your document.

```
plot(f, 1, 2)
```



2 A Bit About knitr

The code chunks you put in don't have to be displayed (and nor does the output), if they are displayed they don't have to be evalutated. To the next chunk I added the option `eval=FALSE`

```
rnorm(1e6)
```

This code is evaluated, I just choose not to display the output:

```
5+5
```

And finally you might want your code to be evaluated but not displayed (useful for changing options without displaying in your document):

3 LaTeX

LaTeXitself is complicated if you've never used it before, but I'm sure you'll pick it up quickly: there are a lot of guides on the web. I recommend using the `align` environment (in the `amsmath` package) for displayed equations:

$$f(x) = x^3 - x - 1$$
$$g(y) = y^4 + 2y$$

You can cite in two ways using the `natbib` package: (Hood, 2012) and Hood (2012).

References

R. Hood. All about knitR. *Journal of Procrastination*, 16(4):155–177, 2012.