

Home

An intro to R for new programmers

This is an introduction to R. I promise, this will be fun. Since you have never used a programming language before, or any for that matter, you won't be tainted by real programming languages like `Python` or `Java`. This is good - we can teach you the R way of doing things.

What will we do?

- Using the R console - let's dig our claws in
- `vector's - the basic R data structure`
- `data.frame's - weird but familiar`
- `lists`
- `functions`
- Using packages
- Open data from the web! Cat's love open data
- `Reading`

R console

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Vectors

XXXX

Data.frame's

XXXX

Lists

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Functions

XXXX

Using packages

XXXX

Data from the web

Install cowsay

```
install.packages("devtools")
library("devtools")
install_github("sckott/cowsay")
```

Now let's get a cat fact!

```
library("cowsay")
say("catfact", "cat")
```

```
##
##
##  -----
##  A cat can spend five or more hours a day grooming himself.
##  -----
##  \
##  \
##
##      \ *- .
##      )  _.-.
##      .  :  .-
##      :  :  '
##      :  _
##      ; *  _.-. *- .-.-.-
##      _.-. '
##      ;
##      :.
##      .\ .  :  _.-'
##      '  ^+; ;  '  :
##      :  '  |  ;
##      ;  '  :  :.-:  _.- *
##      .*' / .*' ; .*- + ' .*'
##      *- *  *- *  *- *
##
```

A little explanation is in order me thinks. There are a few things going on in the last thing we just did. The say function looks like sorta like this:

```
say <- function(what, by, type){
  <== some ascii art ==>
  url <- "http://catfacts-api.appspot.com/api/facts?number=1"
  what <- fromJSON(url)$facts
  message(sprintf(by, what))
}
```

The first line is a bunch of ascii characters to make a cat. The second line defines the url for the cat facts API. The third line retrieves one cat fact from the cat facts API. And the fourth line prints the messages with a cat.

But what is an API? I'm a cat, I only drink water or milk (preferably milk) - but at least I've heard of an IPA. What the rat's ass (yum) is an API.

Okay, here goes. An API stands for Application Programming Interface. It's just a set of instructions for two computers to talk to each other. It's sorta like if you run into another cat and if you both knew beforehand a lot about each other, you would have a sense for how to behave - if you don't know each other, then best of luck to you Mr. Tickle.

Reading

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Cat's love R