Packages

Wickham: http://r-pkgs.had.co.nz/
Developing Packages with RStudio: https://support.rstudio.com/hc/en-us/articles/200486488-Developing-Packages-with-RStu
Writing an R Package From Scratch: https://hilaryparker.com/2014/04/29/writing-an-r-package-from-scratch

---

Before you begin, make sure the `devtools,roxygen2` packages are installed.

Directory structure

Create a new directory for your package (e.g., `myPackage`). In that directory, you will need to also create a directory for your R functions, called `myPackage/R`. In this directory, each file will contain the code defining a function along with its documentation.

In the same folder, create a text file for the package metadata, called `DESCRIPTION`, that has the following lines:

```
Package: myPackage
Title: An Example Package
Version: 0.1
Authors@R: person("Eric", "Archer", email = "eric.archer@noaa.gov", role = c("aut", "cre"))
Description: This is a test package to demonstrate package creation. This is the metadata DESCRIPTION f
Depends: R (>= 3.1.0)
License: GPL
LazyData: true
```

A shortcut for this process that also creates an associated R project and initializes a repository is `devtools::create(path)`.

Functions and documentation

In your `myPackage/R` folder, create a new script file that will contain a single function. It is often good to name the file the same as the function:

myPackage/R/smrzVector.R

```
smrzVector <- function(x) {
  num.na <- sum(is.na(x))
  mn <- mean(x, na.rm = TRUE)
  md <- median(x, na.rm = TRUE)
  vr <- var(x, na.rm = TRUE)
  c(NAs = num.na, mean = mn, median = md, variance = vr)
}
```

The next step is to document your function using `roxygen` tags:

```
#' @title Summarize A Vector
#' @description Produce standard summary measures for a numeric vector.
#'
#' @param x a vector of numbers
#'
#' @return a vector of summary values
#' @export
```

```
smrzVector <- function(x) {
  num.na <- sum(is.na(x))
  mn <- mean(x, na.rm = TRUE)
  md <- median(x, na.rm = TRUE)
  vr <- var(x, na.rm = TRUE)
  c(NAs = num.na, mean = mn, median = md, variance = vr)
}
```

To parse the tags and create the documentation file, use the `devtools` function:

```
document()
```