Buillding packages: Self-Study Exercises

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The AdvancedR package contains the sources of the nidemo package. The exercises below will take the nidemo package code as a starting point, so you will want to have the source for this package at hand. If you have installed the AdvancedR pacakge, you can find the sources for nidemo as follows:

```
> system.file("packages", package = "AdvancedR")

[1] "/tmp/Rinst2381276910/AdvancedR/packages"
```

The main goal of this excercise is to learn how to add unit tests to the nidemo package, by making use of the unit testing framework provided by the RUnit package.

In the following excercises, we will be creating unit tests for two functions `alpha_freq_R` and `demo_which` from the nidemo package. The `alpha_freq_R` function returns a named array containing the number of occurances of each character in a given file. The `demo_which` function returns the TRUE indices of a logical vector.

Exercise 1
Build and install the nidemo package and test out both `alpha_freq_R` and `demo_which` functions.

Exercise 2
Create unit tests for functions `alpha_freq_R` and `demo_which` and save them to the inst/unitTests folder of the nidemo package.
Hint: write tests that check for...

- *Correctness of output*

- *Exception conditions*

Hint:

- *RUnit relies on file naming conventions; place your tests in files whose names match the pattern* `".+_test\\.R$"`

- *RUnit relies on function naming conventions; each unit test function should match* `"^test.+"`. *Each test should be a function with no arguments.*

The `writeRUnitRunner` creates a `.test` function that makes use of functions from the RUnit package to create a test suite, run the test suite and summarize results.

Exercise 3

- *Since we are making use of functions from the RUnit package, add RUnit to the Suggests field of the DESCRIPTION file.*

- *Create a `.test` function that runs all the unit tests for nidemo using the `writeRUnitRunner` function and save it to the R folder of the nidemo package.*

Exercise 4

Create an R script in the tests folder of the nidemo package that calls the `.test` function.
Hint: `.test` is not exported from the nidemo package. Use :::

Exercise 5

Run R CMD check and verfiy that the nidemo passes all the unit tests.