Enterprise R Package Development - Demo

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October 3, 2019

Starting from Scratch

- Create a new project at github (www.github.com)
  - `https://github.com/bertcarnell/dogfoodcon_package`
  - add a description - `A demonstration package for DogFoodCon`
  - Public
  - Initialize the repository with a `README`
  - Do not include a `.gitignore` or `license`
- Clone the repository to your system
  - `C:\developer\repositories\dogfoodconpackage`

```
package_dir <- file.path("C:", "developer", "repositories", "dogfoodconpackage")
usethis::create_package(package_dir, open = FALSE)
```

```
## <U+2714> Setting active project to 'C:/developer/repositories/dogfoodconpackage'
## <U+2714> Creating 'R/'
## <U+2714> Creating 'man/'
## <U+2714> Writing 'DESCRIPTION'
## <U+2714> Writing 'NAMESPACE'
```

Edit the DESCRIPTION file and add License

```
x <- c("Package: dogfoodconpackage",
  "Title: A Demonstration Package for DogFoodCon",
  "Version: 0.0.1",
  "Authors@R:
      person(given = 'Rob',
             family = 'Carnell',
             role = c('aut', 'cre'),
             email = 'bertcarnell@gmail.com')",
  "Description: This package demonstrates the R package development process",
  "License: What license it uses",
  "Encoding: UTF-8",
  "LazyData: true")
writeLines(text = x, con = file.path(package_dir, "DESCRIPTION"))
usethis::use_mit_license(name = "Robert Carnell")
```

```
## <U+2714> Setting License field in DESCRIPTION to 'MIT + file LICENSE'
## <U+2714> Writing 'LICENSE.md'
## <U+2714> Adding '^LICENSE\\.md$' to '.Rbuildignore'
## <U+2714> Writing 'LICENSE'
```

Add travis.ci and code coverage

```
usethis::use_travis(browse = FALSE)
```

```
## <U+2714> Writing '.travis.yml'
## <U+2714> Adding '^\\.travis\\.yml$' to '.Rbuildignore'
## <U+25CF> Turn on travis for your repo at https://travis-ci.org/profile/bertcarnell
## <U+25CF> Add a Travis build status badge by adding the following line to your README:
##   [![Travis build status](https://travis-ci.org/bertcarnell/dogfoodconpackage.svg?branch=mast
er)](https://travis-ci.org/bertcarnell/dogfoodconpackage)
```

```
usethis::use_coverage(type = "codecov")
```

```
## <U+2714> Adding 'covr' to Suggests field in DESCRIPTION
## <U+2714> Writing 'codecov.yml'
## <U+2714> Adding '^codecov\\.yml$' to '.Rbuildignore'
## <U+25CF> Add a Coverage status badge by adding the following line to your README:
##   [![Coverage status](https://codecov.io/gh/bertcarnell/dogfoodconpackage/branch/master/grap
h/badge.svg)](https://codecov.io/github/bertcarnell/dogfoodconpackage?branch=master)
## <U+25CF> Add to '.travis.yml':
##   after_success:
##     - Rscript -e 'covr::codecov()'
```

```
# add to the travis.yml
x <- readLines(file.path(package_dir, ".travis.yml"))
x <- c(x, "", "after_success:",
       "  - Rscript -e 'covr::codecov()'")
writeLines(text = x, con = file.path(package_dir, ".travis.yml"))
```

Update the README with Badges

```
x <- c("# dogfoodconpackage",
"A demonstration package for DogFoodCon",
"",
"[![Travis build status](https://travis-ci.org/bertcarnell/dogfoodconpackage.svg?branch=master)]
(https://travis-ci.org/bertcarnell/dogfoodconpackage)",
"[![Coverage status](https://codecov.io/gh/bertcarnell/dogfoodconpackage/branch/master/graph/bad
ge.svg)](https://codecov.io/github/bertcarnell/dogfoodconpackage?branch=master)")
writeLines(text = x, con = file.path(package_dir, "README.md"))
```

Create an R function with Roxygen2 comments

```r
x <- c("#' Print at Dog Food Con",
"#'",
"#' @export",
"#'",
"#' @examples",
"#' print_hello()",
"print_hello <- function()",
"{",
"  print('Hello DogFoodCon')",
"}",
"")
writeLines(text = x, con = file.path(package_dir, "R", "print_hello.R"))
```

Create Tests using testthat

```r
usethis::use_testthat()
```

```
## <U+2714> Adding 'testthat' to Suggests field in DESCRIPTION
## <U+2714> Creating 'tests/testthat/'
## <U+2714> Writing 'tests/testthat.R'
```

```r
x <- c("context('test-print_hello')",
"",
"test_that('print_hello works', {expect_output(print_hello())})",
"")
writeLines(text = x, con = file.path(package_dir, "tests", "testthat", "test-print_hello.R"))
```

Run R CMD check

```r
devtools::document(pkg = package_dir)
```

```
## Updating dogfoodconpackage documentation
```

```
## Updating roxygen version in C:\developer\repositories\dogfoodconpackage/DESCRIPTION
```

```
## Writing NAMESPACE
```

```
## Loading dogfoodconpackage
```

```
## Writing NAMESPACE
## Writing print_hello.Rd
```

```r
devtools::test(pkg = package_dir)
```

```
## Loading dogfoodconpackage
```

```
## Testing dogfoodconpackage
```

```
## v | OK F W S | Context
##
/ |  0         | test-print_hello
- |  1         | test-print_hello
v |  1         | test-print_hello
##
## == Results ========================================================================
=========
## Duration: 0.1 s
##
## OK:       1
## Failed:   0
## Warnings: 0
## Skipped:  0
```

```
devtools::check(pkg = package_dir, args = "--no-install")
```

```
## Updating dogfoodconpackage documentation
```

```
## Writing NAMESPACE
```

```
## Loading dogfoodconpackage
```

```
## Writing NAMESPACE
## -- Building --------------------------------------------------------------- dogfoodconp
ackage --
## Setting env vars:
## * CFLAGS    : -Wall -pedantic
## * CXXFLAGS  : -Wall -pedantic
## * CXX11FLAGS: -Wall -pedantic
## ----------------------------------------------------------------------------------------
---------
```

```
## WARNING: Rtools is required to build R packages, but is not currently installed.
##
## Please download and install Rtools 3.5 from http://cran.r-project.org/bin/windows/Rtools/.
```

```
##

    checking for file 'C:\developer\repositories\dogfoodconpackage/DESCRIPTION' ...

    checking for file 'C:\developer\repositories\dogfoodconpackage/DESCRIPTION' ...

v   checking for file 'C:\developer\repositories\dogfoodconpackage/DESCRIPTION' (1.2s)
##



-   preparing 'dogfoodconpackage': (829ms)
##

    checking DESCRIPTION meta-information ...

    checking DESCRIPTION meta-information ...

v   checking DESCRIPTION meta-information
##



-   checking for LF line-endings in source and make files and shell scripts
##



-   checking for empty or unneeded directories
##



-   building 'dogfoodconpackage_0.0.1.tar.gz'
##


##
-- Checking ----------------------------------------------------------------------- dogfoodconpack
age --
## Setting env vars:
## * _R_CHECK_CRAN_INCOMING_REMOTE_: FALSE
## * _R_CHECK_CRAN_INCOMING_       : FALSE
## * _R_CHECK_FORCE_SUGGESTS_      : FALSE
## -- R CMD check -------------------------------------------------------------
##


-   using log directory 'C:/Users/HB82795/AppData/Local/Temp/RtmpUP71FT/dogfoodconpackage.Rcheck'
(1.2s)
## -   using R version 3.5.1 (2018-07-02)
## -   using platform: x86_64-w64-mingw32 (64-bit)
```

```
##

-   using session charset: ISO8859-1
##


-   using options '--no-install --no-manual --as-cran'
##



    checking for file 'dogfoodconpackage/DESCRIPTION' ...

    checking for file 'dogfoodconpackage/DESCRIPTION' ...

v   checking for file 'dogfoodconpackage/DESCRIPTION'
## -   this is package 'dogfoodconpackage' version '0.0.1'
## -   package encoding: UTF-8
##

    checking if this is a source package ...

    checking if this is a source package ...

v   checking if this is a source package
##      checking if there is a namespace ...

v   checking if there is a namespace
##



v   checking for .dll and .exe files
##      checking for hidden files and directories ...

    checking for hidden files and directories ...

v   checking for hidden files and directories
##

    checking for portable file names ...

    checking for portable file names ...

v   checking for portable file names
##

v   checking serialization versions
##

Warning in normalizePath(path.expand(path), winslash, mustWork) :

    Warning in normalizePath(path.expand(path), winslash, mustWork) :
```

```
##      path[1]="C:/Users/HB82795/AppData/Local/Temp/RtmpUP71FT/dogfoodconpackage.Rcheck/dogfood
conpackage": The system cannot find the file specified
##

Warning in normalizePath(path.expand(path), winslash, mustWork) :

   Warning in normalizePath(path.expand(path), winslash, mustWork) :
##      path[1]="C:/Users/HB82795/AppData/Local/Temp/RtmpUP71FT/dogfoodconpackage.Rcheck/dogfood
conpackage": The system cannot find the file specified
##



   checking package directory ...

v  checking package directory
##

   checking DESCRIPTION meta-information ...

   checking DESCRIPTION meta-information ...

N  checking DESCRIPTION meta-information (607ms)
##     Malformed Description field: should contain one or more complete sentences.
##



   checking top-level files ...

   checking top-level files ...

v  checking top-level files
##     checking for left-over files ...

   checking for left-over files ...

v  checking for left-over files
##     checking index information ...

v  checking index information
##     checking package subdirectories ...

   checking package subdirectories ...

v  checking package subdirectories
##     checking R files for non-ASCII characters ...

   checking R files for non-ASCII characters ...

v  checking R files for non-ASCII characters
##     checking R files for syntax errors ...

   checking R files for syntax errors ...
```

```
v   checking R files for syntax errors
##      checking dependencies in R code ...

    checking dependencies in R code ...

v   checking dependencies in R code
##      checking S3 generic/method consistency ...

    checking S3 generic/method consistency ...

v   checking S3 generic/method consistency (747ms)
##      checking replacement functions ...

    checking replacement functions ...

v   checking replacement functions (367ms)
##      checking foreign function calls ...

    checking foreign function calls ...

v   checking foreign function calls (388ms)
##      checking R code for possible problems ...

    checking R code for possible problems ...

v   checking R code for possible problems (4.3s)
##

    checking Rd files ...

    checking Rd files ...

v   checking Rd files
##      checking Rd metadata ...

    checking Rd metadata ...

v   checking Rd metadata
##      checking Rd line widths ...

    checking Rd line widths ...

v   checking Rd line widths
##      checking Rd cross-references ...

    checking Rd cross-references ...

v   checking Rd cross-references (549ms)
##      checking for missing documentation entries ...

    checking for missing documentation entries ...

v   checking for missing documentation entries (508ms)
```

```
##     checking for code/documentation mismatches ...

   checking for code/documentation mismatches ...

v  checking for code/documentation mismatches (490ms)
##     checking Rd \usage sections ...

   checking Rd \usage sections ...

v  checking Rd \usage sections (1.3s)
##


   checking

   checking Rd contents

   checking Rd contents ...

   checking Rd contents ...

v  checking Rd contents (372ms)
##



-  checking examples ... SKIPPED
##

   checking for unstated dependencies in 'tests' ...

   checking for unstated dependencies in 'tests' ...

v  checking for unstated dependencies in 'tests'
## -  checking tests ... SKIPPED
##




##

   See
##      'C:/Users/HB82795/AppData/Local/Temp/RtmpUP71FT/dogfoodconpackage.Rcheck/00check.log'
##    for details.
##
##


##
```

```
## -- R CMD check results ---------------------- dogfoodconpackage 0.0.1 ----
## Duration: 15.4s
##
## > checking DESCRIPTION meta-information ... NOTE
##   Malformed Description field: should contain one or more complete sentences.
##
## 0 errors v | 0 warnings v | 1 note x
```

```
devtools::build(pkg = package_dir)
```

```
## WARNING: Rtools is required to build R packages, but is not currently installed.
##
## Please download and install Rtools 3.5 from http://cran.r-project.org/bin/windows/Rtools/.
```

```
##

   checking for file 'C:\developer\repositories\dogfoodconpackage/DESCRIPTION' ...

   checking for file 'C:\developer\repositories\dogfoodconpackage/DESCRIPTION' ...

v  checking for file 'C:\developer\repositories\dogfoodconpackage/DESCRIPTION' (1.1s)
##



-  preparing 'dogfoodconpackage': (1.3s)
##

   checking DESCRIPTION meta-information ...

   checking DESCRIPTION meta-information ...

v  checking DESCRIPTION meta-information
##



-  checking for LF line-endings in source and make files and shell scripts
##



-  checking for empty or unneeded directories
##



-  building 'dogfoodconpackage_0.0.1.tar.gz'
##


##
```

```
## [1] "C:/developer/repositories/dogfoodconpackage_0.0.1.tar.gz"
```