Why check an R package?

DEVELOPING R PACKAGES

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datacamp

What should you check?

An R package check includes:

- If the package can be installed

- Description information is correct

- Dependencies

- Code syntax errors

- Documentation is complete

- Tests run

- Vignettes build

Running a check

```r
check("simutils")
```

Errors, warnings, and notes

```
...
* DONE

Status: 1 ERROR
See
  'C:/Users/ncrane/AppData/Local/Temp/RtmpWwK0AG/simutils.R
check/00check.log'
for details.


R CMD check results
1 error  | 0 warnings | 0 notes
checking for file 'simutils/DESCRIPTION' ... ERROR
Required field missing or empty:
  'License'
```

Let's practice!

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Errors, warnings and notes

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Package dependencies

```
check("simutils")
```

```
...
Updating simutils documentation
Loading simutils
Error in (function (dep_name, dep_ver = NA, dep_compare = NA)  :
 Dependency package sasMap not available.
...
```

Documentation

```
check("simutils")
```

```
...
* checking Rd \usage sections ... WARNING
Undocumented arguments in documentation object 'sample_from_data'
  'replace'


Functions with \usage entries need to have the appropriate \alias
entries, and all their arguments documented.
The \usage entries must correspond to syntactically valid R code.
See chapter 'Writing R documentation files' in the 'Writing R
Extensions' manual.

...
```

```
check("simutils")
```

```
...
* checking examples ... ERROR
Running examples in 'simutils-Ex.R' failed
The error most likely occurred in:

> base::assign(".ptime", proc.time(), pos = "CheckExEnv")
> ### Name: sample_from_data
> ### Title: Sample from data
> ### Aliases: sample_from_data
>
> ### ** Examples
>
> sample_from_data(airuality, size=10)
Error in sample_from_data(airuality, size = 10) :
  object 'airuality' not found
...
```

PDF documentation

```
check("simutils", manual = TRUE)
```

```
...
pdflatex not found! Not building PDF manual or vignettes.
If you are planning to release this package, please run a check
with manual and vignettes beforehand.

...
```

Tests

```
check("simutils")
```

```
...
* checking tests ...
  Running 'testthat.R'
Warning message:
running command '"C:/PROGRA~1/R/R-34~1.2/bin/x64/R" CMD BATCH --vanilla
"testthat.R" "testthat.Rout"' had status 1
 ERROR
Running the tests in 'tests/testthat.R' failed.


...
```

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Differences in package dependencies

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The Depends field

```
search()
```

```
 [1] ".GlobalEnv"        "tools:rstudio"      "package:stats"
 [4] "package:graphics"  "package:grDevices"  "package:utils"
 [7] "package:datasets"  "package:methods"    "Autoloads"
[10] "package:base"
```

```
library(tidyverse)
search()
```

```
 [1] ".GlobalEnv"        "package:dplyr"      "package:purrr"
 [4] "package:readr"     "package:tidyr"      "package:tibble"
 [7] "package:ggplot2"   "package:tidyverse"  "tools:rstudio"
[10] "package:stats"     "package:graphics"   "package:grDevices"
[13] "package:utils"     "package:datasets"   "package:methods"
[16] "Autoloads"         "package:base"
```

Imports

```
Package: simutils
Title: Simulation Analysis Tools
Version: 1.0.0.0
Authors@R: c(
    person("Nic", "Crane", email = "ncrane@mango-solutions.com", role = c("aut", "cre")),
    person("Aimee", "Gott", email = "agott@mango-solutions.com", role = c("aut", "ctb")))
Description: A series of tools for simulation analysis used for learning about
    distributions.
Depends:
    R (>= 3.4.2)
License: GPL-2
LazyData: true
RoxygenNote: 6.0.1
Imports: dplyr,
    purrr
Suggests: testthat,
    knitr,
    rmarkdown
VignetteBuilder: knitr
```

Suggests

```
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    person("Nic", "Crane", email = "ncrane@mango-solutions.com", role = c("aut", "cre")),
    person("Aimee", "Gott", email = "agott@mango-solutions.com", role = c("aut", "ctb")))
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    rmarkdown
VignetteBuilder: knitr
```

Adding a dependency

```
use_package("dplyr")  ## adds to imports
```

```
use_package("ggplot2", "suggests") ## adds to suggests
```

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Building packages with continuous integration

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Building with devtools

Build the source:

```
build("simutils")
```

Build the binary:

```
build("simutils", binary = TRUE)
```

What is continuous integration?

- Automatically runs checks when code changed

- Used with version control

- Runs every time you make an update

Adding continuous integration for a package

```
use_travis("simutils")
```

Let's practice!

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