# Style Guide

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Follow the Google R style guide (https://google.github.io/styleguide/Rguide.html) as much as possible. Note that the Google R style guide is a fork of the Tidyverse style guide (https://style.tidyverse.org/index.html) with some changes most notably with regard to function names. Thus, only flags that relate to function names are allowed when running `lintr`.

## 1 R Objects

- `snake_case` for object names except for function names

## 2 R Functions

- use `BigCamelCase` for function names to distinguish functions from other objects
- append a dot (`.`) at the beginning for unexported functions (`.Foo`)
- append dot Check (`.Check`) at the beginning for unexported functions used for sanity checks (`.CheckFoo`)
- when calling functions from another package use the `::` notation as much as possible (`stats::rnorm(n = 10, mean = 100, sd = 15)`)
- when calling a function, use argument names as much as possible (`stats::rnorm(n = 10, mean = 100, sd = 15)`)

# 3 File and Filenames

- filenames should be in lowercase using dash (`-`) as separator
- capitalize `R` if used as a file extension

## 3.1 Files that Contain Functions

### 3.1.1 Folders

- `.setup/latex/r-scripts` for functions used to process LaTeX output
- `R` and `.setup/r-dependencies` for functions that are part of the package
- `.setup/r-miscellaneous` for useful functions but are not essential to the package

### 3.1.2 Files and Filenames

- use one file per function
- use the function name as part of the filename
- for files under `R` and `.setup/r-dependencies`
  - package name dash function name dot R (`template-foo.R`)
  - if the file contains an unexported function, follow the rules as usual but append the word `dot` at the end of the filename (`template-foo-dot.R`)
  - if the file contains an unexported sanity check function, follow the rules as usual but append the word `check` at the end of the filename (`template-foo-check.R`)

## 3.2 Files Under Test Folders

### 3.2.1 Folders

- `tests/testthat` for unit tests that are part of the package

- `.setup/tests-benchmark` for benchmark tests that are **NOT** part of the package unit tests
- `.setup/tests-external` for external tests that are **NOT** part of the package unit tests

#### 3.2.2 Files and Filenames

- use `setup-test.R` as an optional file for loading setup function or objects. Note that `setup-test.R` is sourced before the `test*.R` files.
- use one file for tests for a single function
- use the function name as part of the filename but convert `BigCamelCase` to lowercase using dash (`-`) as separator
- for files under `tests/testthat`
  - test dash package name dash function name dot R (`test-template-foo.R`)
- for files under `.setup/tests-benchmark`
  - test dash benchmark dash package name dash function name dot R (`test-benchmark-template-foo.R`)
- for files under `.setup/tests-external`
  - test dash external dash package name dash function name dot R (`test-external-template-foo.R`)

## 4 Rcpp Functions

- Save `Rcpp` functions in `.setup/cpp` using filname conventions used for `R` except for the `.cpp` extennsion. Save `Makevars` in `.setup/cpp` as well.
- Use forward declarations of functions in `.setup/cpp/000-forward-declarations.cpp`.
- `Rcpp` files are styled using `clang-format` with the `style=google` flag. Make sure to limit the number of characters to less than 80 for each line especially when using `Roxygen` comments to avoid styling errors.
- `Rcpp` functions are unit tested as `R` functions.

## References

R Core Team. (2023). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. Vienna, Austria. https://www.R-project.org/