

# Package Development Lab Day 1

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## Create a package

1. Create the package file structure by typing the following in the Console. Choose the path carefully so that you don't create a package inside another project.

```
library(devtools)
create_package("~/covidtime") # you can change the path
```

Your RStudio session will now switch to the new `covidtime` package project.

2. Create a new R script, type in the following function, and save it as `day.R` in the R folder:

```
whatdayisit <- function() {
  format(Sys.Date(), "%A, %B %d, %Y")
}
```

3. Run the following in the Console:

```
library(devtools)
load_all()
```

4. Test the function in the Console:

```
whatdayisit()
```

5. Make some changes and repeat 3. and 4. Some ideas:

- Change `whatdayisit()` so the output begins with `Today is`

Add functions either in the same file or new R files:

- `tomorrow()` returns tomorrow's date
- `yesterday()` returns yesterday's date
- `daysto(date)` returns the number of days until `date`, for example:

```
> daysto("2022-02-01")
```

Time difference of 20 days

Note: do not use any other packages (yet)!

## Document and install

1. Open the DESCRIPTION file and do the following:

- a) Change the Title: line to:

Title: Helps reduce pandemic induced temporal disintegration

- b) Change the Authors@R: line so it includes your name and email address. *Don't remove what looks like an extra comma.* Delete the comment part.

- c) Change the Description: line to:

Description: Tools for regaining temporal orientation.

When you're done it should look like this (with your name and email):

```
Package: covidtime
Title: Helps reduce pandemic induced temporal disintegration
Version: 0.0.0.9000
Authors@R:
  person("first", "last", , "first.last@example.com", role = c("aut", "cre"))
Description: Tools for regaining temporal orientation.
License: 'use_mit_license()', 'use_gpl3_license()' or friends to pick a
  license
Encoding: UTF-8
Roxygen: list(markdown = TRUE)
RoxygenNote: 7.1.2
```

2. Open day.R. Put the cursor inside the function and click “Code... Insert Roxygen Skeleton”. This will create the function documentation structure but you need to fill in the contents.

- a) Change the first line to Returns the current day and date nicely formatted
- b) Change the @return line to @return character string with day and date
- c) After the @examples line add whatdayisit()

When you're done, the documentation part of the file should look like this:

```
#' Returns the current day and date nicely formatted
#'
#' @return character string with day and date
#'
#' @export
#'
#' @examples
#' whatdayisit()
#'
```

3. Run the following in the Console:

```
document()
```

4. Run the following in the Console:

```
install()
```

Check that it appears in your list of packages.

5. Close the project and try using your package!

```
library(covidtime)  
whatdayisit()
```

## (Optional) Store your package on GitHub

This will only work if you have set up git to work with RStudio.

Open the `covidtime` project and run the following in the Console:

```
usethis::use_git()  
usethis::use_github()
```

Now anyone can install your package with `devtools::install_github()`.