

Introduction to building R packages

Workshop details

- date: September 23rd, 2019
- time: 10:45 - 14:45 (GMT+2)
- location: RTZ103¹
- presenters: Mihai Constantin & Giuseppe Arena

Introduction

[R](#) is a [popular](#) open-source programming language for data analysis and visualization, with more than 300k questions asked on [StackOverflow](#) and more than 20k on [CrossValidated](#). Arguably, one of the core strengths of R is the possibility of [extending the language](#) with new functionality in the form of *packages*. To date, R features [14918 such packages](#) contributed by an active community of enthusiastic R users.

During this workshop we are going to get familiar with the [process of building an R package](#). More specifically, we are going to:

1. take existing R code and refactor it as functions
2. create an R package from these functions
3. add documentation to the package
4. discuss and implement basic unit testing
5. publish the package code to [GitHub](#) (i.e., either as a public or private repository)

If time allows us, we are going to briefly touch upon slightly more advanced topics (i.e., collation order, how to debug your package, the [S3 system](#) for object-oriented programming, and using native code in your package).

What to expect?

A very hands-on session with minimal slides and plenty of code examples. You worry not, we are going to start from scratch and provide you with open-access resources that you can later use on your own. Make sure you bring your laptop!

Prerequisites

Knowledge prerequisites:

- good command of R (e.g., you can install the `devtools` R package, write R scripts, create functions, change working directories, load packages, solve common errors etc.)

¹ We move to RT003 after 12:30.

- reasonable familiarity with your operating system (i.e., you can set an environment variable and install the software listed below)

Software prerequisites²:

- R (i.e., version 3.6.1 or greater) → [download link](#)
- RStudio (i.e., version 1.2.1335 or greater) → [download link](#)
- Rtools (i.e., version 3.5) → [download link for Windows](#) | [download link for Mac](#)
- Git (i.e., version 2.23.0) → [download link](#)
- a free code editor of your choice (i.e., we recommend [Visual Studio Code](#))

Accounts:

- please create an account on GitHub (i.e., <https://github.com>). We will use GitHub to save the package code and demonstrate how your collaborators can install the package directly from your GitHub repository. You may also use a private repository if you wish to keep your code private.

We look forward to seeing you!

Mihai & Giuseppe

² Please make sure you install the software indicated before the workshop. We will not cover the installation during the workshop. If you run into errors during the installation contact us at m.a.constantin@uvt.nl or drop by S.802 (TSB).