DataCamp: online interactive learning platform for R

Andreas Alfons^{1,2}, Jonathan Cornelissen^{2,3,*}, Dieter De Mesmaeker², Bram Jans², Albert Jorissen², Martijn Theuwissen²

1. Erasmus Universiteit Rotterdam
2. DataCamp
3. Vrije Universiteit Brussel
*Contact author: Jonathan@datacamp.com

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DataCamp [1] is an online interactive learning platform for R. It offers learners the ability to work with R in their browser and receive instant feedback on their statistical analysis (through automated correction). Furthermore, it offers teachers and trainers the possibility to create interactive online courses themselves using R Markdown [2] and using the same syntax as the slidify package [3].

To enable the use of R on the web, DataCamp leverages the functionality of the **Rserve** package with enhanced security provided by the **RAppArmor** package. In terms of web technologies, DataCamp uses open-source frameworks like *AngularJS*, *NodeJS* and *Ruby on Rails*. We briefly discuss the advantages and disadvantages of these technologies to bring R to the web and how they have been used in both DataCamp and our side-projects: <u>Rdocumentation.org</u> and <u>R-Fiddle.org</u>.

The creation of interactive R exercises is easy and transparent through the use of *R Markdown* and the structure imposed by the **slidify** package. We discuss step-by-step how to create these interactive exercises with a focus on how the interactivity is achieved through Submission Correctness Tests, aided by the **datacamp** R package [4]. After the talk, you should be able to create your own interactive course on DataCamp.

Students learning through a web-based interface has many advantages. One key advantage is that large amount of data can be collected on how students are learning. It's our goal to collect useful information that allows teachers to improve their courses and grade their students in a data-driven way. By partnering with the *Coursera* courses of Dr. Mine Çetinkaya-Rundel [5] and Prof. Dr. Eric Zivot [6], in the last 2 months DataCamp has taught over 30.000 students who submitted over 1 million exercises about basic R, basic statistics and computational finance. We discuss the key insights on online learning for R based on this data.

References

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