

CHESTER ISMAY

LEARNING R IN CHEMISTRY AT REED COLLEGE

Contents

	<i>Introduction</i>	5
	<i>Starting The Labs</i>	5

1	<i>Lab 1: Light</i>	9
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2	<i>Bibliography</i>	11
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Introduction

In the HTML version of this book, you can also download the PDF version of the book by clicking on PDF button in the top toolbar of the page. HTML is the preferred format but the PDF format may be preferred for some readers. Links to the different GIFs directly found in the HTML version are provided in the PDF version.

This resource is designed to assist students in CHEM 101/102 in using RStudio and R Markdown to complete their labs. (A more general reference to the specifics of R, RStudio and R Markdown is available in a different free book [here](#)). This resource will show you GIFs explaining how to do some common procedures you'll need to do to complete labs. In addition, it will provide more details about the specifics of the different lab templates available in the **chemistr** R package. Each chapter of this book will correspond to each of the different labs.

If further clarification is needed on any other aspect of the book, please email me with a reference to the error/area where more guidance is necessary. More advanced users are encouraged to create a GitHub issue [here](#). Pull requests on GitHub for typos or improvements are also welcome and you can easily do so by clicking on the Edit button near Search at the top of the HTML version of the book.

This book will evolve and be updated as needed based on feedback. You can always check the date below to see when the book was last updated. It is recommended that you use Google Chrome as your browser since GIFs sometimes do not load automatically with other browsers.

Starting The Labs

Logging in and initial screen

The RStudio Server provides a web-based way to run analyses in R. This means that you will only need an internet connection and a web browser to run your analyses. Your professor or administrator will provide you with a link to the web location of your RStudio Server. After entering the link, you'll see a page that looks something like:

After logging in with your username and password, you should see a layout similar to what follows.

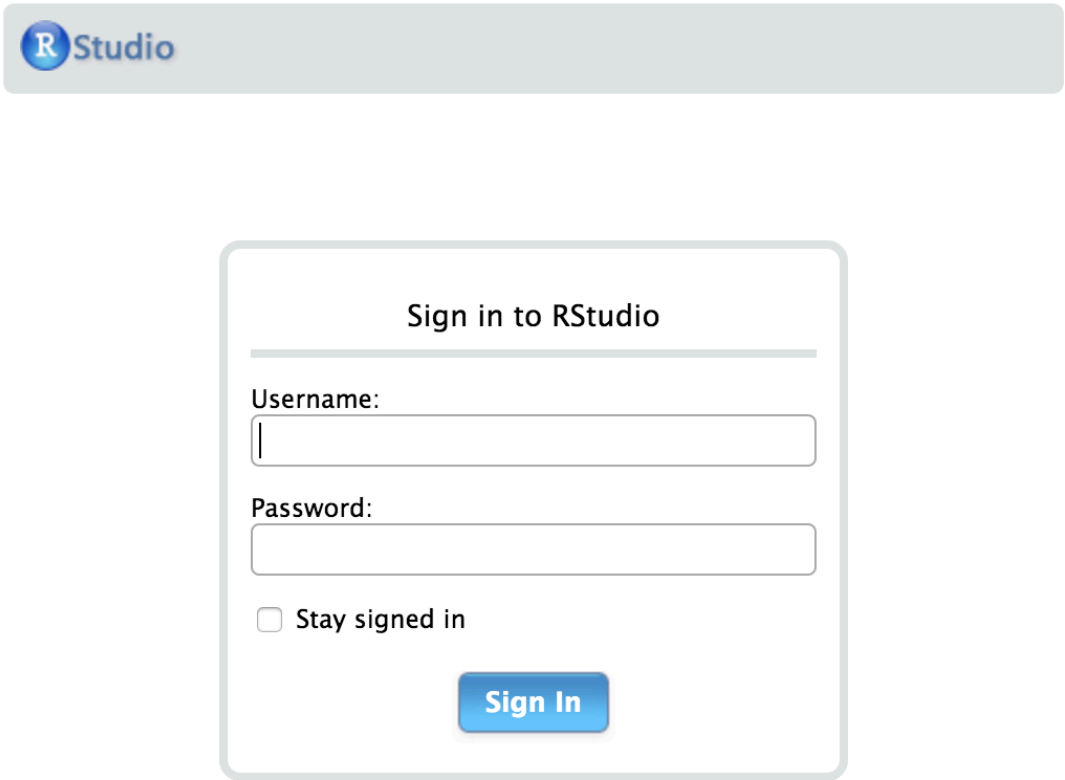


Figure 1: Login page for RStudio Server

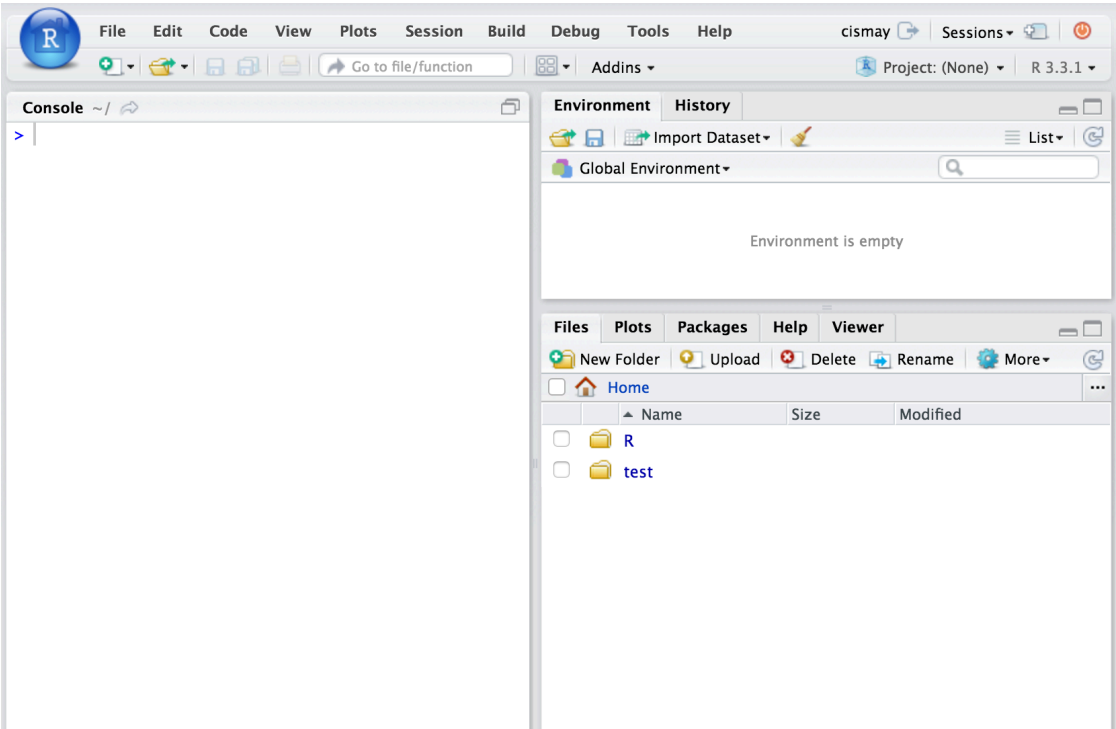


Figure 2: Initial page for RStudio Server

Basic Workflow with RStudio

A good habit to get into whenever you start a new project with R code is to create a new RStudio project to go along with it. RStudio project files have the extension **.Rproj** and store metadata that goes along with the documents you've saved and information about the R environment you are working in. More information about RStudio projects is available from RStudio, Inc. [here](https://www.rstudio.com/blog/2015/06/18/projects/).

If you are sharing homework or lab assignments with your instructor using RStudio Server, for example, it might make sense to create an RStudio project, share it with your instructor, and then create new folders for each lab. We will follow this example below.

The GIF below shows you how to create a new RStudio project called **initial** and also your first R Markdown file. Note that you also may see a description about what version of R is running on your initial login like shown in the GIF below in the Console pane.

https://raw.githubusercontent.com/ismayc/rbasics-book/gh-pages/gifs/proj_rmd.gif

We have our **first__rmarkdown.Rmd** file set up.

Sharing Projects on RStudio Server Pro

You will now see an example of how to share this project with another user. This will enable you and collaborators (other students, your instructor, etc.) to work on the **Rmd** file at the same time. This is similar to working on a Google Doc at the same time as someone else.

RStudio Server comes in a couple different formats and you'll need to make sure you (or your IT administrator) have installed RStudio Server Pro to use the Shared Projects feature. You can find more information from RStudio, Inc. on this [here](https://www.rstudio.com/blog/2015/06/18/projects/). Below is an example GIF of sharing this **initial.Rproj** project file with another user of the RStudio Server.

https://raw.githubusercontent.com/ismayc/rbasics-book/gh-pages/gifs/share_proj.gif

Both myself and **bottk** can now work together on this project. We can type our commentary and code into **first__rmarkdown.Rmd** or other files and save files to the common folder where **initial.Rproj** resides.

Book was last updated:

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## [1] "By cismay on Friday, September 02, 2016 18:08:04 PDT"
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1

Lab 1: Light

2

Bibliography