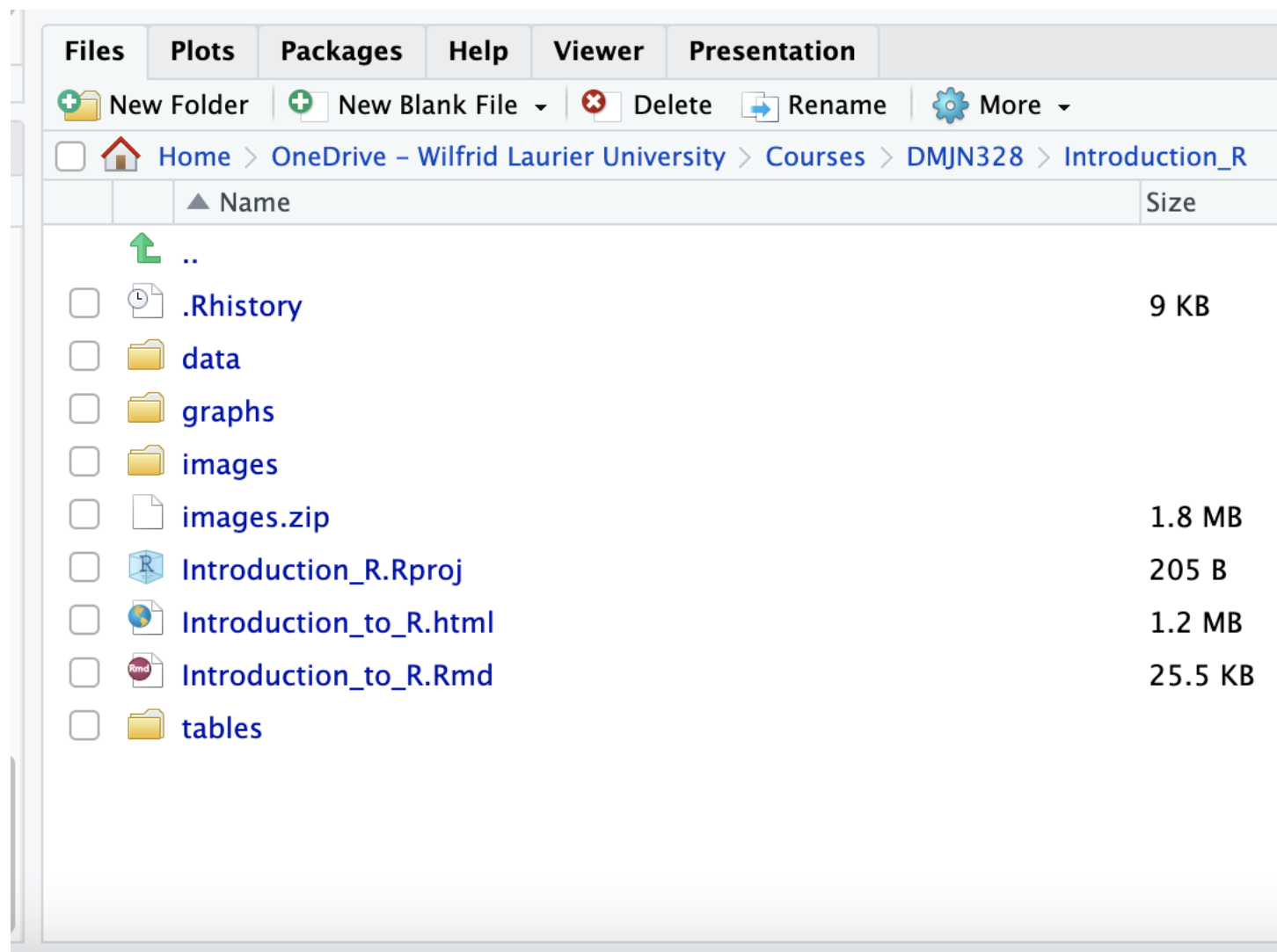# Introduction to R

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Introduction

In the previous section, we coded an R script step-by-step to learn about how to program in R. This was saved as an `.R` file. But look at the directory you are in, in the bottom right pane of the RStudio cloud window.

You will see your `.R` script that you saved yesterday, but also the HTML file that is the guide for the script *and* an `.rmD` file that has the same prefix `introduction_to_R.Rmd` as the HTML file.

```
include_graphics(path="images/files.png")
```

You can open that file up by selecting `File > Open` and take a peek.

R Markdown

Markdown is *really* useful. It's a *very* lightweight scripting language that lets you focus on writing rather than on writing and formatting (e.g. selecting text, formatting it, bolding it, etc. etc.).

With just a few very basic commands in a markdown document, you can produce all kinds of documents with proper formatting: e.g. HTML, PDFs, Word, etc.

`RMarkdown` is a flavor of `Markdown` that lets you integrate R code, and its results, into a `Markdown` document and then quickly convert that into all kinds of useful documents.

I will be using RMarkdown to produce the HTML documents as guides for the class. I probably will ask you to submit assignments in the form of RMarkdown documents, so it will be useful to learn how to use it.

Making it work

An `Rmarkdown` document starts with a header section, like the one in this file that has specified fields for author, title, date, etc. Those are the main ones. You can also specify what

For now, open up a new `RMarkdown` document in the YAML header and set the following fields:

1. author to be your name
2. title, pick a title,
3. pick output to be an HTML document.
4. date

Copy the formatting form this document into your own.

Then, below that, just start writing some text.

To `compile` the R Markdown document. cliock on the `knit` button.

You can italicize text like this. *Hi there! NIce to meet you!*

You can boldface text like this, **Nice to meet you too!**

You an set a blockquote like this:

> These are some very fancy words.

You can also embed a clickable URL like this, to the Globe and Mail

Embedding R Code

Most importantly you can embed R code write into the RMarkdown document with `code chunks`.

The keyboard shortcut is OPT-CMD-I on a Mac and CTL-ALT-I on a PC.

For each code cunk you should give it a label, after the r. And then you just write the R code you want.

```r
print("hello world")
```

```
## [1] "hello world"
```

In the same way as in regular R, you can store the results with the `<` operator.

```r
output<-print("hello world")
```

```
## [1] "hello world"
```

And then you can call it later.

```
output
```

```
## [1] "hello world"
```

RMarkdown templates

When you select `File > New File > RMarkdown` you will get a template that will rock and roll pretty much right away.

Changing output

To really show you the power of this, watch what happens when you set different outputs. You can even specify different types of files to produce.