r markdown

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This tutorial walks you through creating a R Markdown files. R markdown files are a way of combining R code, R output and regular text. This pdf is the output of a R Markdown file.

A What is a markdown file?

You can see all the varied types of output you can make with the R markdown language here. In this class, we'll concentrate on making a pdf like the one you're reading.

For the purposes of this class, I *strongly* encourage you to keep writing your tutorial in a R script. Get everything working, and then go to R markdown to put everything in and write some text that explains your answers. This is how I make these tutorials.

You can program directly in R markdown, but it is very cumbersome and hard to debug.

B. Creating a new markdown file

Before we make a markdown file, be sure you install a package called knitr, as R markdown will not work in its absence.

At the Console prompt type

```r
install.packages("knitr", dependencies = TRUE)
```

This will install the package that "knits" your R Markdown code together. The dependencies option makes sure R installs any other needed packages.

Recall that you need install packages only once – so you are now done installing this package for the rest of the course.

To create a new markdown file, go to file -> new file -> R markdown. On the left, you can choose from "document," "presentation," "shiny" and "from template." For our current purposes, choose "document" and then choose "pdf" from the list at the right. Name however you'd like.

This makes a new file that has a lot of instructions. Read them!

This new file will have the extension .Rmd, which is an R Markdown file.

C. Writing a markdown file

Text you write directly. See much more info here, or the R Markdown Cheat Sheet here.

For code to show up, but not be evaluated, you need to type ' three times then `{r, eval=FALSE}`, followed by code, then close with three more '. (I found it hard to get this to look correct here: see examples here).

For output, you need to type the same, but put just {r} after the first three back ticks.

To get started, you should get rid of everything in the file expect the yaml header which looks what's below (I added `urlcolor:blue` so that the links look ok).

```
---
title: "Lecture 1 Tutorial"
output: pdf_document
urlcolor: blue
---
```

Now type a few things, making sure you type a little text and a little R code to evaluate. You can use the "hello world" program from our first class as an example.

D. Produce the pdf

This is what R calls putting the file together into a pdf. Click the "knit" button at the top. Errors will appear in the Console window. If there are no errors, a pdf will pop up (but it may be a bit slow).

E. What to do with this new knowledge?

You are welcome to use this new type of file if it seems helpful to you. You are not required to use it beyond this tutorial.