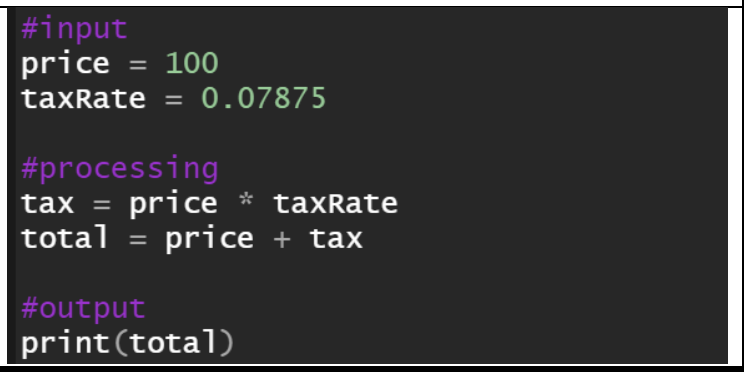
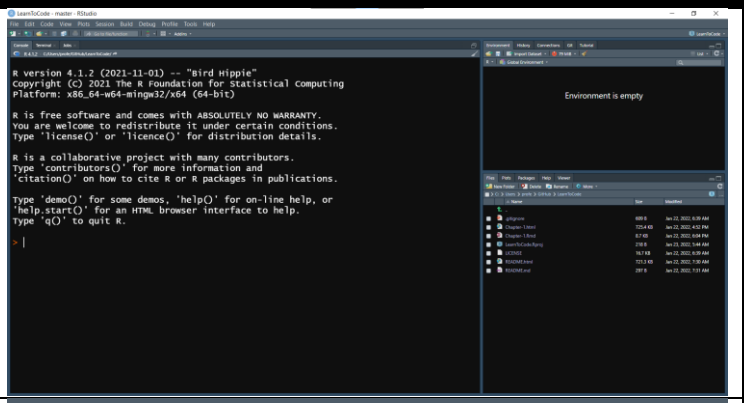
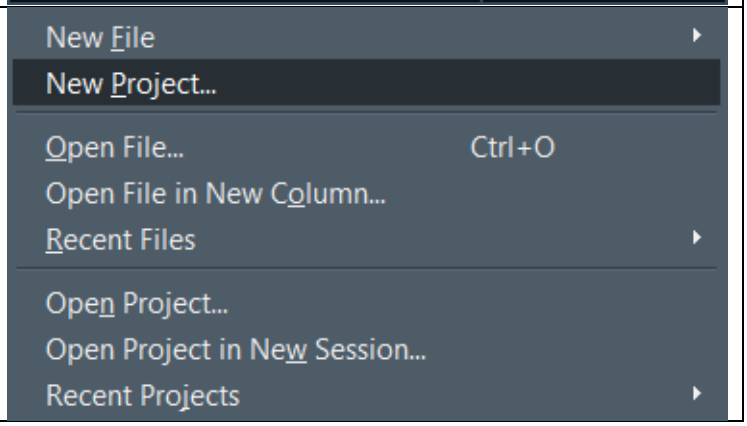
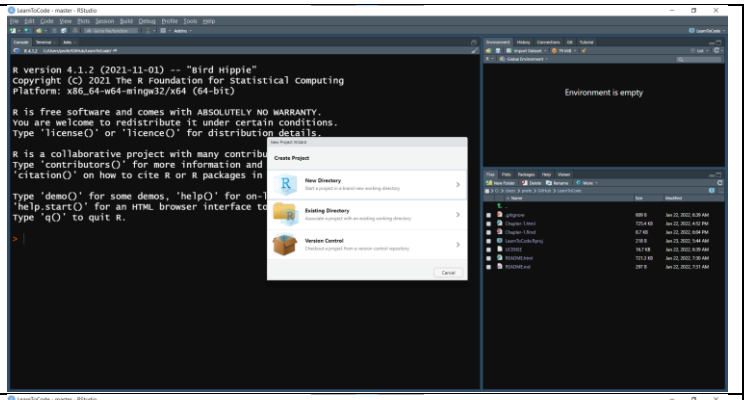
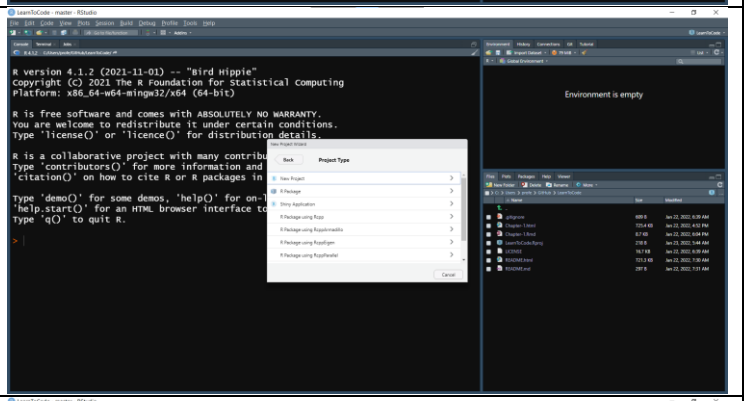
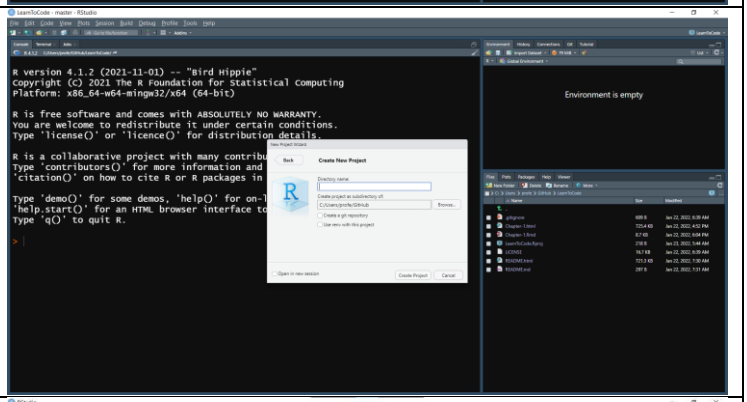
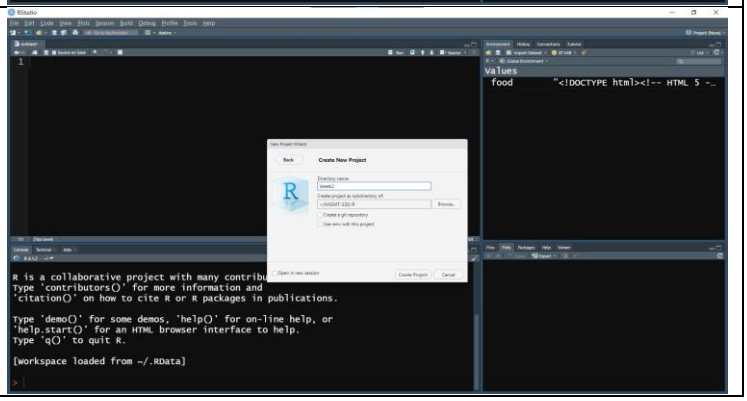
Visual Tutorial: Where to Code R

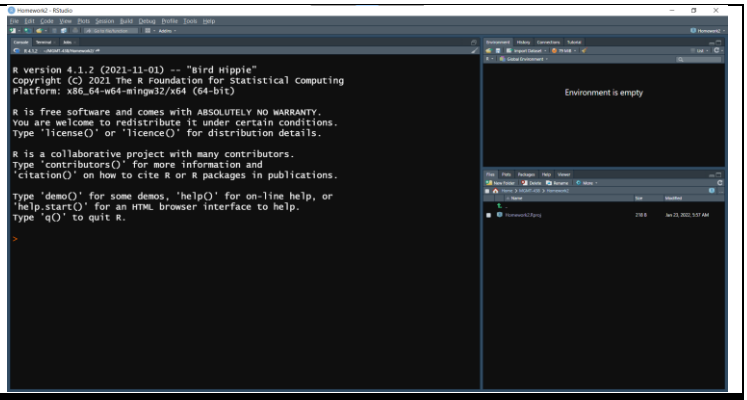
by ProfessorF

I'm assuming you've done the software installation tutorial. So, the next question you're probably asking is: <u>How</u> do I program in R? But there's another question you need to answer 1st: <u>Where</u> do I program R? The answer is RStudio.

ACTION	REACTION
Assume you want to write an R program to calculate the total cost of a $100 shoe at a 7.875% sales tax rate. On the right is the R code. If you're confused, don't worry. I'll eventually teach you how to write the code. Our immediately concern is where do we put the code?	
A. Running RSTUDIO and Creating a Project Folder	
1. Run RStudio on your computer.	
2. Locate the menu item: *File > New Project…*	

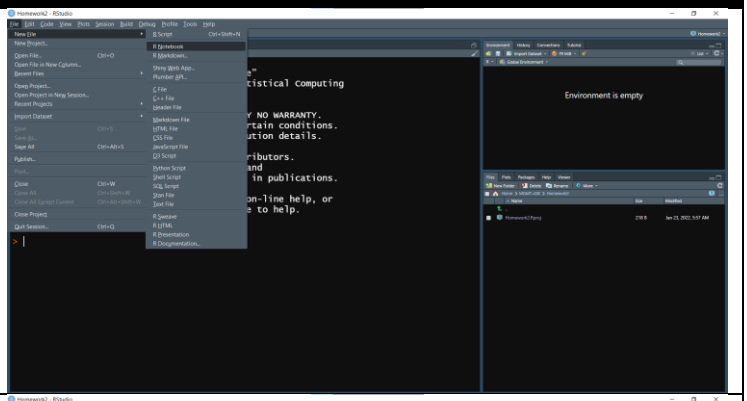
3. Click on *New Project…*	
4. Click on *New Directory*	
5. Click on *New Project* (top item on list)	
6. Click the *Browse* button and select a folder on your computer, e.g., ~/MGMT-330-R then 7. Enter a Directory name:, e.g., Week2 Note: • I already had a folder named MGMT-330-R	

8. Click the *Create Project* button



B. Creating an R Notebook to hold your code

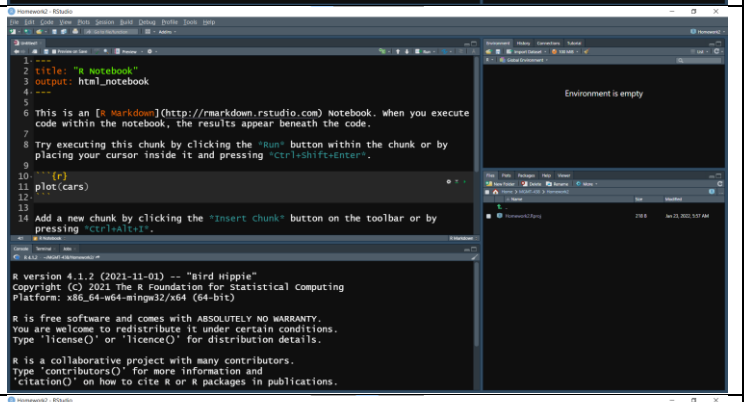
1. Locate the Menu Item *File* > *New File* > *R Notebook*



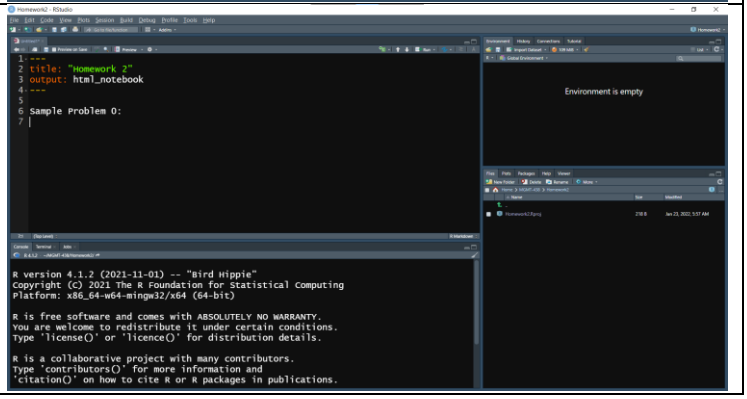
2. Click on *R Notebook*

Notes:

- The upper-left panel is your editor where you will enter all your code.
- For the early half of the semester we'll be using Notebooks for coding. Notebooks allows you to easily mix comments with code, and to print out your homework.



3. Delete all the boilerplate after "output:"
4. Change the title to something appropriate, e.g., Homework 2
5. Place your cursor somewhere after the --- and enter a comment, e.g., Sample Problem 0:

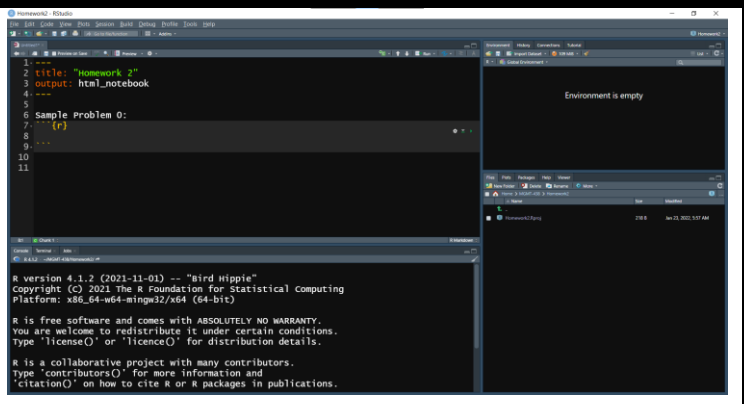


C. Creating a Code Chunk and Entering Code

1. Create a new Code Chunk by either:
    a. Typing CTRL-ALT-I on Windows (Mac & Linux users have a different keyboard shortcut)
    b. Typing:
    ```` ```{r} ````
    ```` ``` ````
    c. Code (menu) > Insert Chunk

Note:

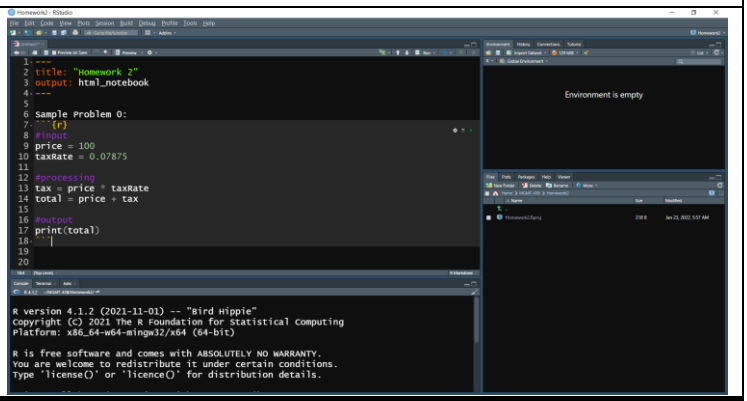
- in b., those are back-quotes, not single quotes.



2. Enter each line from the sample code on Page 1/Row 1, paying attention to the capitalization of letters (also known as *case*).

Notes:

- R is a case-sensitive language, so a *variable* like `taxRate` is not the same thing as `taxrate`, or `Taxrate` or `TaxRate` or `TAXRATE` and you will get errors if you misspell a variable—errors that are hard to find for beginners!

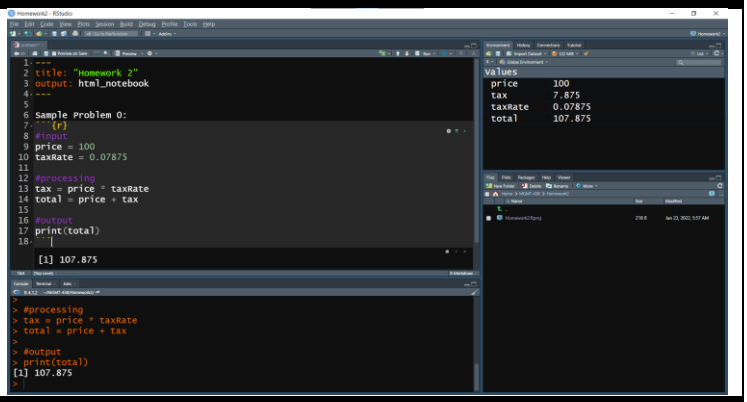


D. Running your Code Chunk

1. Click on the green button in the upper-right corner of your code chunk

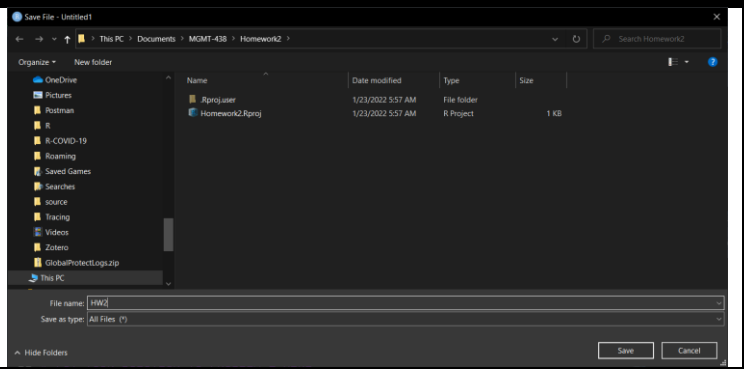
Note:

- The answer appears after your code chunk: `[1] 107.875`
- The answer also appears in the console window in the lower left.



E. Saving your Notebook

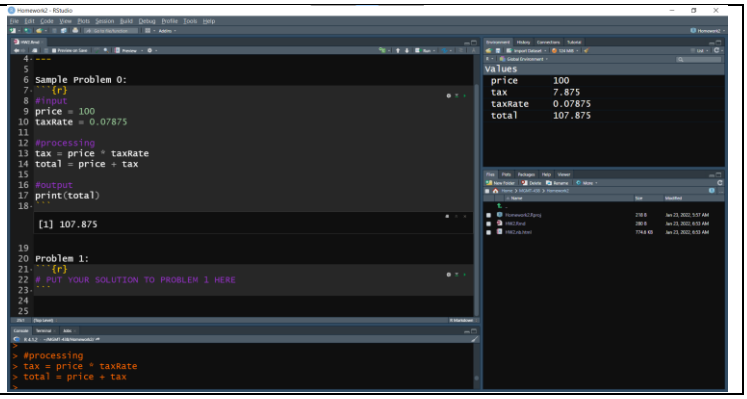
1. Click *File* (menu) > *Save*
2. Enter a file name, e.g., HW2



3. Click the *Save* button.

Important Note:

- You should see *filename*.Rmd in the lower-right file panel, e.g., HW2.Rmd
- After saving, you can quit, start up R, open your project, and just click on HW2.Rmd to continue adding to it.



Important ending notes:

1. If you're doing this as part of a class, you will typically create a new project every week, i.e, you will do Parts A-E each week.
2. For homeworks, you will generally create a code chunk for each problem, numbering the problem before the code chunk (see *Problem 1:* below):