How to submit your answers to Econ117 Problem Sets

To grade a problem set we need your code, the resulting output and your interpretation / written answers. You can submit these in two ways:

Option 1: Upload PDF document + R script (using MS Word)	**Option 2:** Upload PDF document created using R Markdown + Rmd script

Any of the above options is fine.

Note that the single PDF file should include **everything**: code, output, and written answers. If you answer questions with hand-written math pictures of it should be included in the PDF document. Even though you are required to submit your script, **we will only grade what we see in the PDF.**

The document below describes in detail how you can use option 1 or option 2 with an example problem set. There are accompanying example documents that we reference throughout this document.

Example:

Suppose a problem set called "PSET X" is assigned to you:

PSET X

Please use the starter script for this PSET to write your code in R. If you are using R Markdown, please follow the format of the starter script in your code.

Question 1:

i) Create a folder called "PSET_X" and ensure that all the files related to this PSet are downloaded there. Set this as your working directory.
ii) Read in the dataset "crunchbase_monthly_export.csv" and call it "data".
iii) View the first 10 rows of the data.
iv) Print the variable names of this dataset.
v) Plot a histogram of the first 10 observations of the variable "funding_rounds".
vi) Based on your plot in iv), the majority of firms have gone through how many funding rounds?

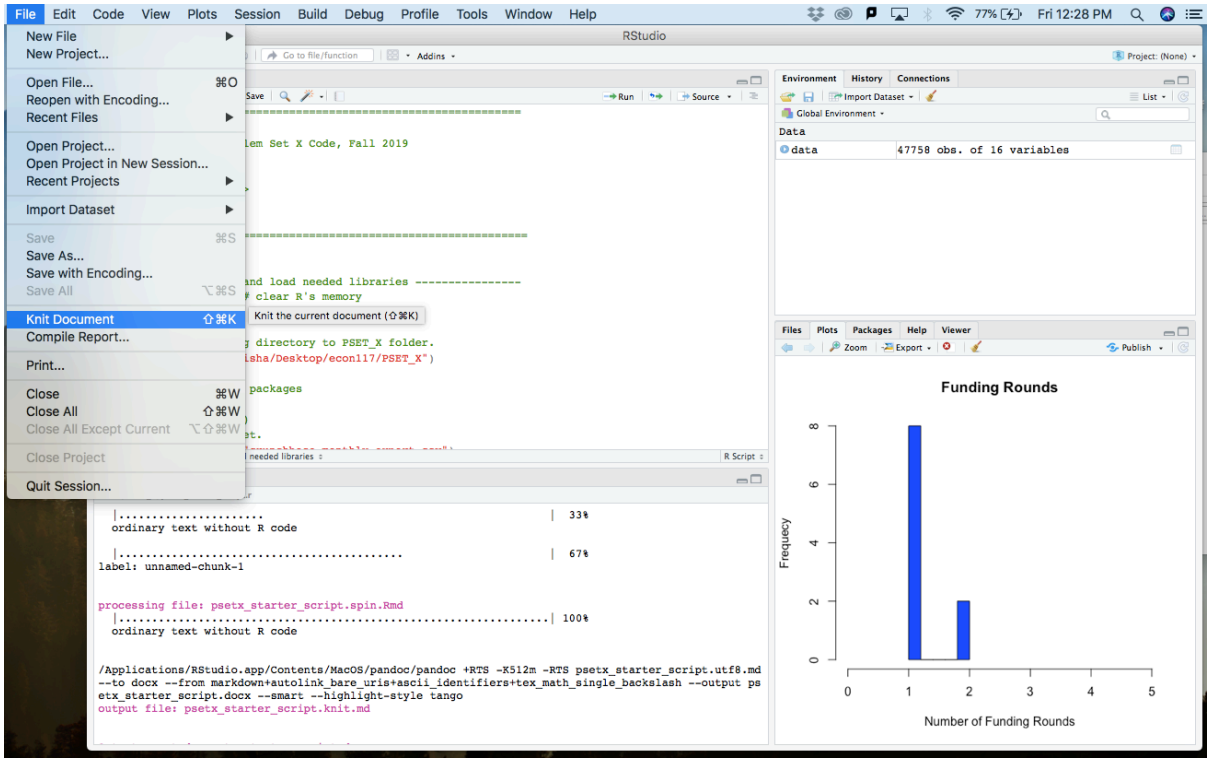
Two Options for submitting Problem Sets:

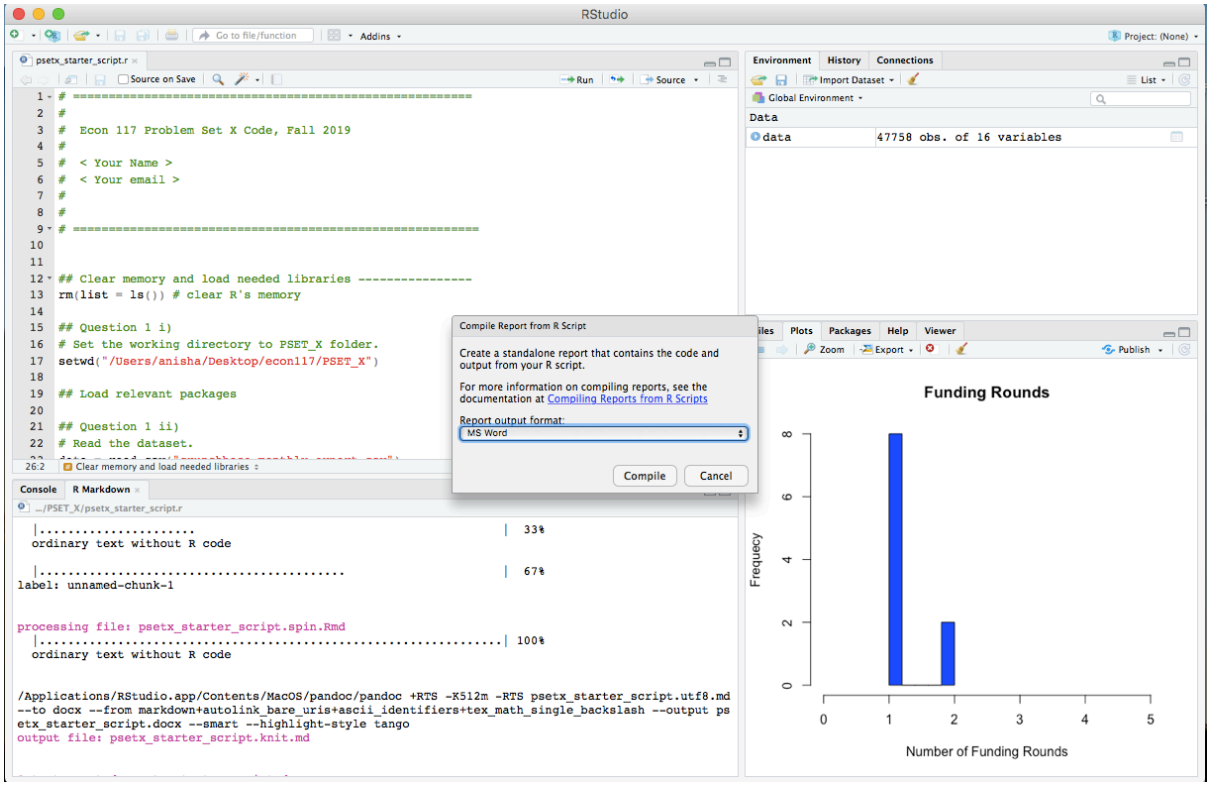
OPTION 1: USING WORD

i) Open the starter script in R. Write your code in the starter script (as shown in the file "psetx_starter_script_filled.r".

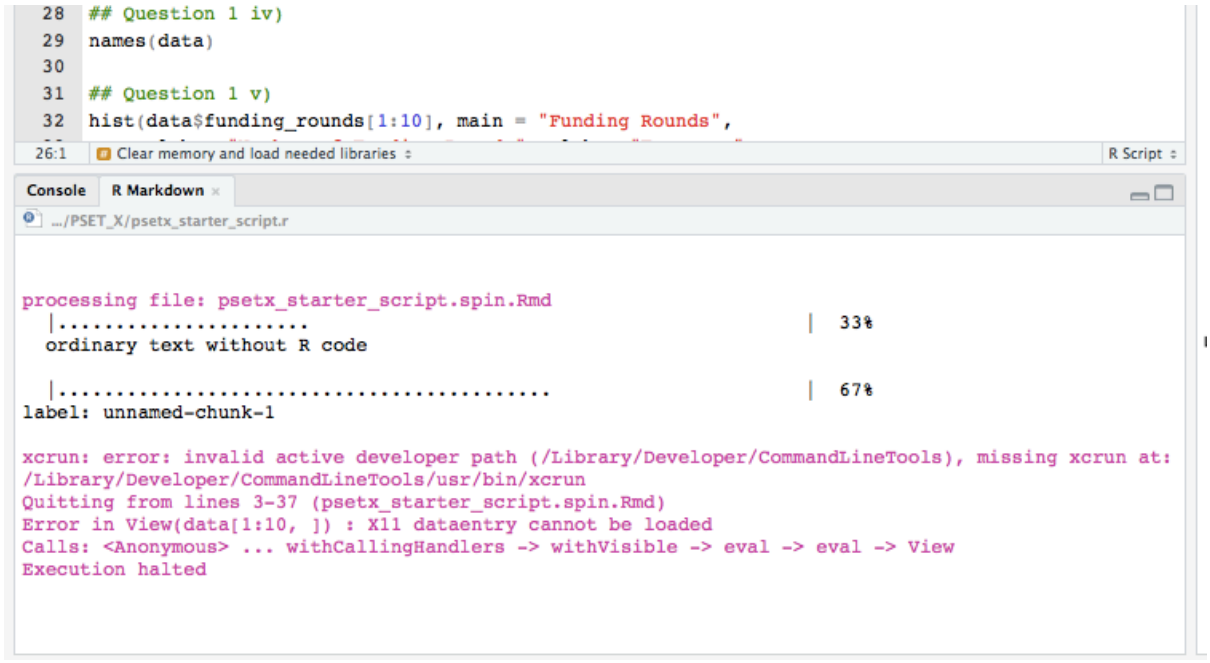
ii) Go to File -> Knit Document -> Report Output Format: MS Word. This will open a new Word document with the formatted code as well as the output from R. Use the "Save As" option to save this file, naming it "PSETX_not_edited.doc". Sometimes, while saving you might be asked by the system to tick the checkbox "Maintain compatibility with previous versions of Word". Look at the document "PSET_not_edited.doc" to get an idea what this looks like.

Sometimes Word might not open automatically, but the Word document will be saved in your working directory.

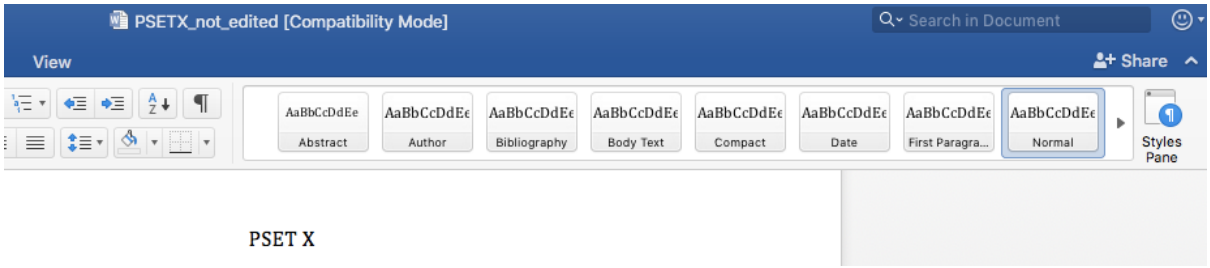




iii) For some questions, such as Question 1 iii), the output will not get printed while knitting. In fact, when you try to "knit" the document, it will show you an error that the execution is halted at the "View" command. In such cases, comment out your command by putting # at the start of that line of code. This way we know you answered iii), yet it does not create an error for you.



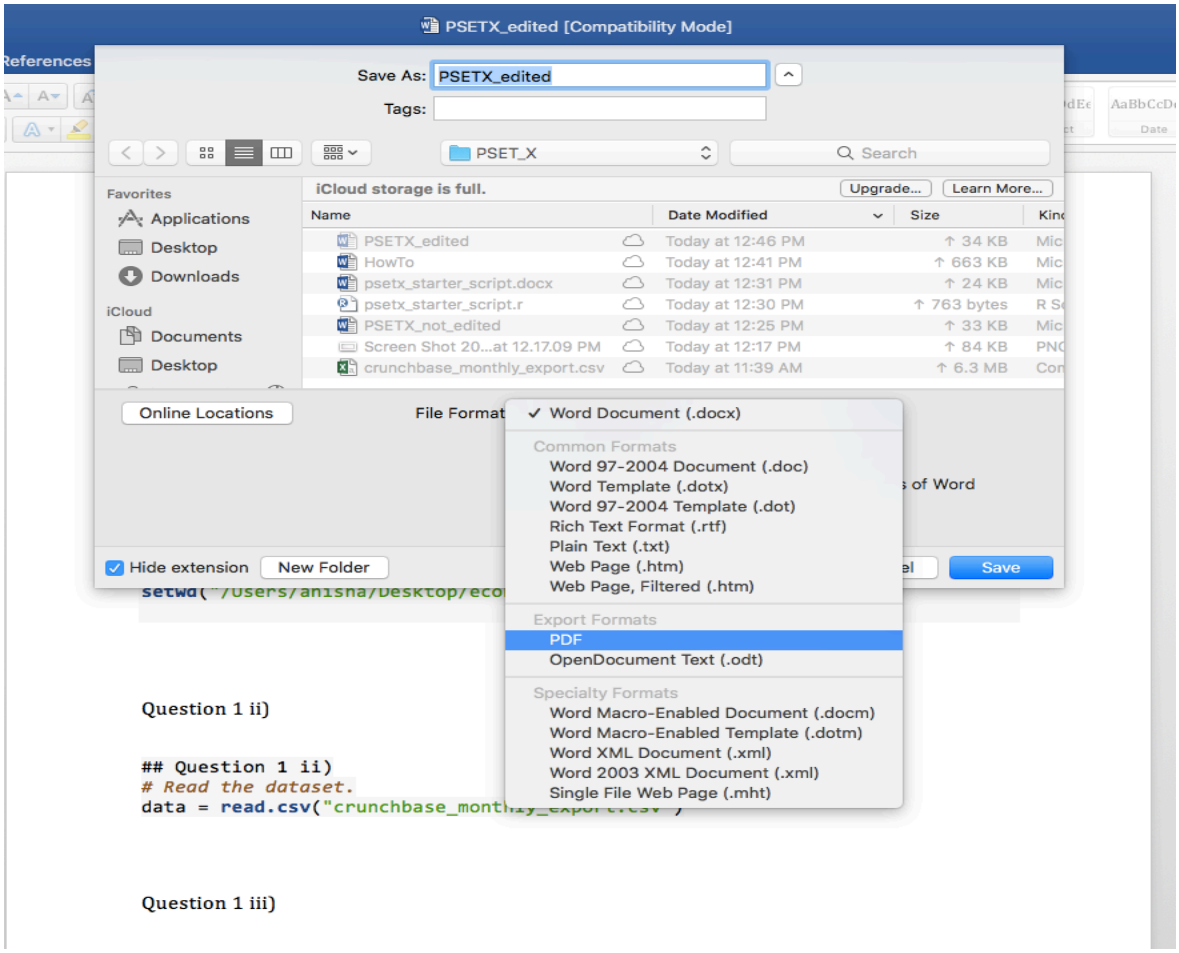
iv) Now add the text answers to this script by changing the font to "Normal" in word.



v) Make sure that the order of the questions is maintained. Each answer should start with the text solution, then the relevant code and then the output. The final word doc should look like the file "PSETX_edited.doc".

vi) Some questions such as vi), don't need any coding and only consist of a text solution. In such cases, just write your answer in the word file.

vii) Convert the word doc into a PDF and save it.



viii) You should then upload on Canvas the "PSETX_edited.pdf" which is the PDF file and also the starter script filled with your answers i.e. "psetx_starter_script.r".

If you run into problems: Knitting directly to Word using the procedure above is convenient and usually speeds things up. However, you ***don't have to*** use the procedure above: copy-pasting your code and output by hand into a Word file and then creating a PDF will be fine. If

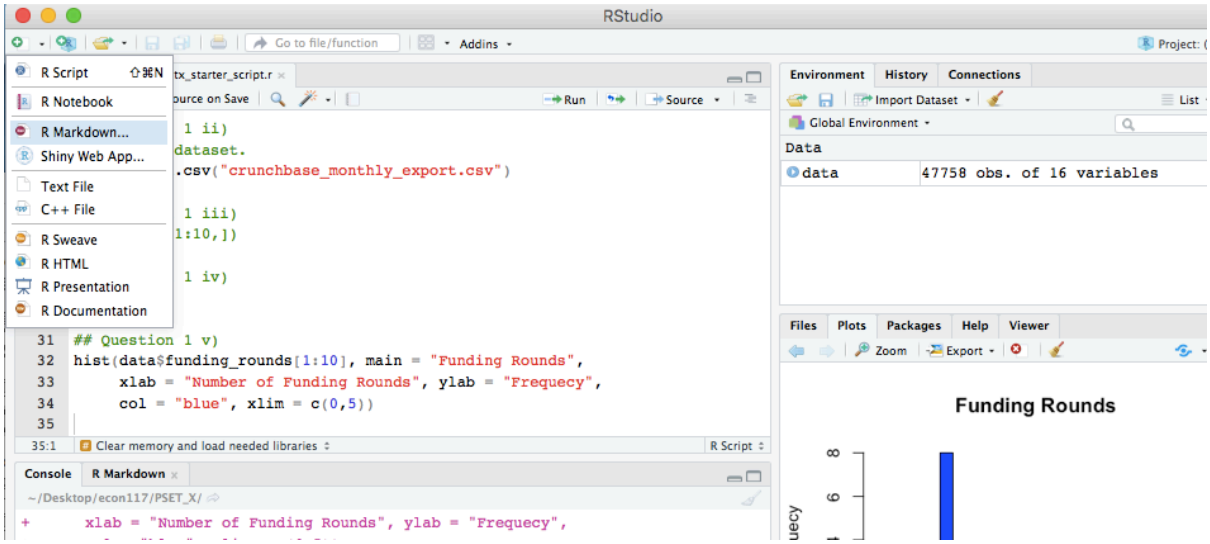
you copy-paste by hand, please **make sure that your final document reads in a similar way** as the file "PSETX_edited.pdf." That is, both output and code corresponding to each question should be found together, and in the order of the question numbers.

OPTION 2: USING R MARKDOWN.

R Markdown can do the entire work of Word, R, and PDF just using R Studio. For students who are more technologically-inclined, learning to use R Markdown and using it to produce problem sets might be a good idea. R Markdown is a functionality of R software that permits creating PDF reports that combine text, math, and R code and output.
It is rather easy to learn, and once you learn how to use it, it becomes a very convenient and elegant way of producing problem sets.

Google "r markdown"; go to https://rmarkdown.rstudio.com; click on "Get Started".

i) In this case, open a new R Markdown script in R Studio.



ii) Type your code as well as the text in the same ".Rmd" file or R Markdown script. Look at "PSETX.Rmd" for an example.

iii) Knit the file. This will automatically create and save a PDF file with the code and the output in your working directory. Save this file. Look at "PSETX_Rmd.pdf" for an example.

iv) Now upload on canvas the .Rmd script (i.e. file "PSET.Rmd") as well as the PDF document (i.e. "PSETX_Rmd.pdf").

If you run into problems: Knitting a pdf directly from R Markdown will require you have some version of LaTeX installed in your computer. It's easy to do so directly through R but if

you want to avoid the hassle you can knit into a Word document or an html document, and then print any of those as a pdf.

To knit into a Word document your heading should look something like this:

```
---
title: "Your Title"
author: "Your Name"
date: "Today"
output: word_document
---
```

To knit into an html document your heading should look something like this:

```
---
title: "Your Title"
author: "Your Name"
date: "Today"
output: html_document
---
```

Finally, note that the R command “View()”–which rather than producing output opens up a new tab in RStudio—can create problems when knitting. It is better to comment out the View command.