

189G Week 2 Discussion

Logistics

- Group formation out!
- Notify me if you or your group mates drop the course
- No quiz this week
- Quiz will last 50 minutes
- Package problems

Overview

- OMSI updates
- qeML package for homework 1
- `sprintf()`
- `evalr()`
- Debugging in R
- Handin with CSIF

OMSI Updates

- In order to avoid confusing between 132 server and 189 server, I will change the local host from pc11.cs.ucdavis.edu to pc12.cs.ucdavis.edu starting next quiz. The port number will remain the same.
- So your command will look like:

```
python3 OmsiGui.py pc12.cs.ucdavis.edu 4000 (your UC  
Davis Email) quiz0_sq23
```

- Use 'handin' to handing hw

qeML package for HW1

- Very powerful R packages for Machine Learning
- decision tree, kNN, SVM, GBoost etc
- Holdout sets, Dimension reduction(PCA), etc
- TL;DR:

Plz browse through the function list on the first page and get familiar with the featured functions in this powerful package

<https://github.com/matloff/qeML>

Troubleshooting for qeML

What I encountered and how I troubleshoot when installing the qeML package:

1. Suspect R version too old -> installed the latest version
2. Still not working -> package not on CRAN but on GitHub
3. Take advantage of that -> successfully installed using `install_github('matloff/qeML')`

Similar functions:

```
githubinstall('qeML')
```

```
devtools - it is on CRAN
```

Website that helped:

<https://stackoverflow.com/questions/25721884/how-should-i-deal-with-package-xxx-is-not-available-for-r-version-x-y-z-wa>

<https://cran.r-project.org/web/packages/githubinstall/vignettes/githubinstall.html>

How I access data

Download the data directory from GitHub page

Use `load()` with the correct path

Why we talk about `sprintf()` and `evalr()`

- User `sprintf()` to format actual strings and function “strings”
I.e.: `require(‘vcd’)`
- and use `evalr()` to evaluate the value of the function “strings”
- R is very good at metaprogramming, so we can take advantage of this feature and build up function in solving an actual problem.
- When executing it, we are simple “executing” the function “strings”

sprintf()

- Originally from the C Library
- Example usage Different from eval(), which is a built-in function of R!
- From qeML Utils function family in C(See next page)
- Example usage in R(I'm using RStudio only due to personal preference, you don't NEED it for this course)
- https://www.tutorialspoint.com/c_standard_library/c_function_sprintf.htm
- <https://www.rdocumentation.org/packages/bas/versions/3.6.2/topics/sprintf>

evalr()

- To be distinguished from eval(), which is a built-in function of R!
- Similar to eval(), evaluates the value of a function

Debugging tools in R

- If we are building functions up using `sprintf()`, then we better know where the bug is if there is one!
- I use `browse()` here
- More to read here:
- <http://adv-r.had.co.nz/Exceptions-Debugging.html>

How to connect to CSIF

<https://docs.google.com/document/d/1Zu6FPeiJv2erSm4ldKM1ncPcGL9Imq3KbHWOHzYsB-E/edit#>

Troubleshooting while accessing CSIF

<http://csifdocs.cs.ucdavis.edu/about-us/csif-general-faq#TOC-Common-error-messages-when-using-SSH-to-connect-to-CSIF-computers>