Lab 1: R review

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2024-09-05

Goal 1: Start an R Project on RStudio Server on CHPC

https://ondemand.chpc.utah.edu/pun/sys/dashboard/batch_connect/sys/rstudio_server_app/session_contexts/new

Connect to RStudio Session

1. Go to the onDemand RStudio Server url above.

2. Enter the following information into the menu options:

   R version: **R 4.4.0 Geospatial packages** #changed from R 4.0.3 !
   Cluster: notchpeak
   Account and partition: usu-biol4750:notchpeak-shared-freecycle
   Number of cores (per node): 4
   Number of hours: 72
   Memory per job in GB: 16

3. Wait for a moment, and then click on "Connect to RStudio Server"

Use the RStudio menu to connect to Git and start a Project

1. File –> New Project

2. Create Project –> Version Control
3. Create Project from Version Control –> Git Repository URL: https://github.com/saarman/usu-biol4750 Project directory name: usu-biol4750
   Create project as a subdirectory of: ~/
   Click on "Create Project"

4. In "Files" panel, select "lab01-NPS-example.md"

5. File –> Save As. . .

6. Change the name to include your name or initials, and click "Save"

7. Occasionally, throughout the semester, you will want to "Pull" the master version of the class materials from the Git panel:
   Click blue arrow for "Pull"

8. Optional steps include using Git to push your changes. This is optional becuase you will be turning in your work through Canvas, although. . . it would be neat and tidy to have everyone's saved on Git!
   Click on the Commit
   Select the files you want to upload to Git

Add a "commit" message

Click green arrow for "Push" NOTE: You will probably need to figure out Git account and login for this!

Goal 2: Install Course R package

https://bookdown.org/hhwagner1/LandGenCourse_book/how-to-use-this-book.html#course-r-package-landgencourse

```r
if (!require("remotes")) install.packages("remotes")
```

```
## Loading required package: remotes
```

```r
remotes::install_github("hhwagner1/LandGenCourse")
```

```
## Skipping install of 'LandGenCourse' from a github remote, the SHA1 (af8af15d) has not changed since
##   Use 'force = TRUE' to force installation
```

```r
library(LandGenCourse)
```

Enter 1 when prompted.

Any errors?

No errors, everyone is getting the package hhwagner1/LandGenCourse installed.

Something I will need to run every single time:

```r
library(LandGenCourse)
```

Goal 3: Review R Skills

https://bookdown.org/hhwagner1/LandGenCourse_book/basic-r.html#basic-r

```r
if(!requireNamespace("popgraph", quietly = TRUE))
{
  install.packages(c("RgoogleMaps", "geosphere", "proto", "sampling",
                     "seqinr", "spacetime", "spdep"), dependencies=TRUE)
  remotes::install_github("dyerlab/popgraph")
}
if(!requireNamespace("gstudio", quietly = TRUE)) remotes::install_github("dyerlab/gstudio")
```

```
## Warning: replacing previous import 'dplyr::union' by 'raster::union' when
## loading 'gstudio'
```

```
## Warning: replacing previous import 'dplyr::intersect' by 'raster::intersect'
## when loading 'gstudio'
```

```
## Warning: replacing previous import 'dplyr::select' by 'raster::select' when
## loading 'gstudio'
```

Here, I'm getting an error with gstudio. I'll try with the remote syntax, Still getting an error, referencing library(dplyr). Can I load dplyr beforehand? Nope... so I'm trying with the most up-to-date R 4.4.0 Geospatial packages

Solution! Use R 4.4.0 Geospatial packages during Goal 1

Go back to the top, start over, making sure to select **"R 4.4.0 Geospatial packages"** Note change from 4.0.3

Then everything works, yay!

Now going through exercises listed in Review R Skills

https://bookdown.org/hhwagner1/LandGenCourse_book/basic-r.html#basic-r

```r
variable <- 2

class(variable)
```

```
## [1] "numeric"
```

```r
?help

vignette()

x <- .3/3

x
```

```
## [1] 0.1
```

```r
# Practice using the function print()
print(x, digits = 20)
```

```
## [1] 0.099999999999999991673
```

```r
# [1] 0.099999999999999991673

# Pactice using the function round()
round(x, digits = 20)
```
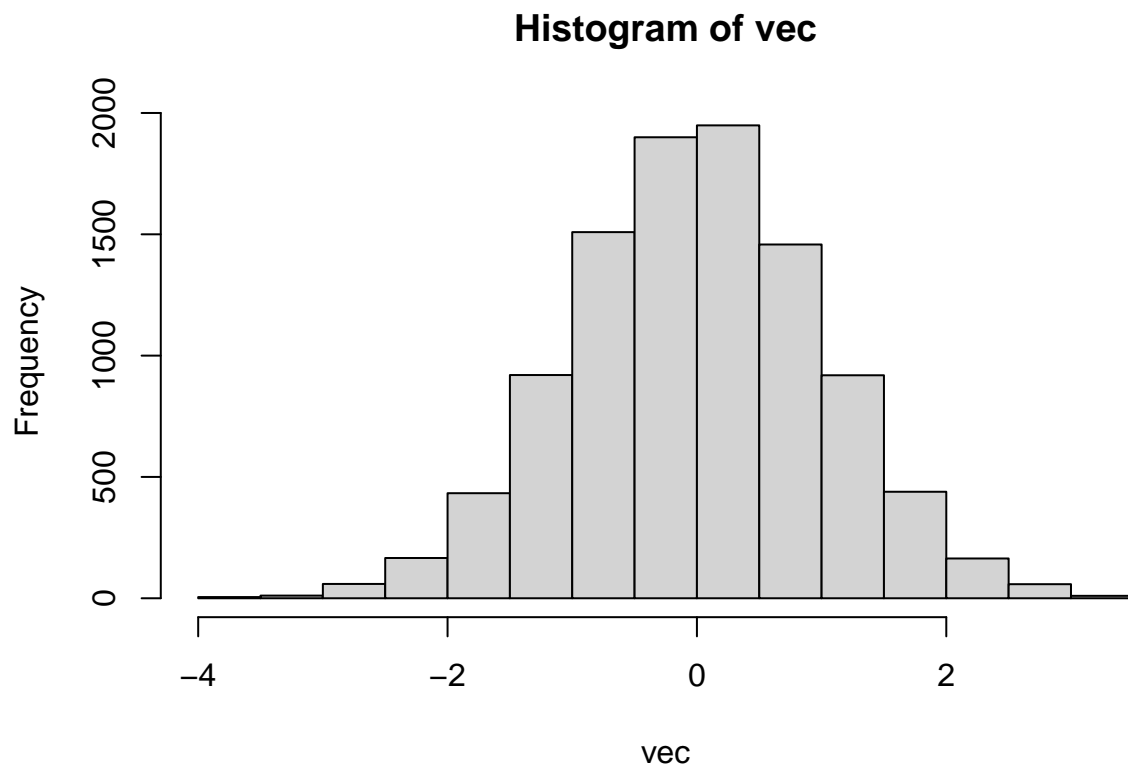
```
## [1] 0.1
```

```r
# [1] 0.1

vec <- rnorm(10000,mean = 0, sd = 1)

hist(vec)
```

Histogram of vec


```
?round
```

```
## Help on topic 'round' was found in the following packages:
##
##   Package              Library
##   base                 /usr/local/lib/R/library
##   terra                /uufs/chpc.utah.edu/common/home/u6036559/R/library-ood-rocker-4.4
##
##
## Using the first match ...
```

```
?rnorm
```