GEOG 491/891: Special Topics - Spatial Analysis in R

Week 02.03: Our first "wildcard Friday"

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Today's schedule

- Open discussion

- Writing your own function

- Exercies in programmatic and systematic thinking

Anything to discuss? Questions?

Writing your own function

syntax is a bit weird, so let's break it down

```r
myfirstfunction <- function(x, y){
  return(x + y)
}
```

then call the function (make sure it's in memory first)

```r
myfirstfunction(4, 8)
```

Today's task: the importance of programmatic/algorthmic/systematic thinking

Task 1:

- In small groups, figure out how you'd do the following:

- Write a function that takes two integers. If **both are even** or **both are odd**, the function returns **TRUE**. Otherwise, it returns **FALSE**

- FIRST, do it ON PAPER

- THEN, implement it in code

Task 2.

The problem:

- I've given you a raster file of Missisquoi Bay in Lake Champlain (assume you can read it with: `rater::raster("file name and path go here")`)
- Each cell has a value corresponding to the concentration of cyanobacteria
- I want you to tell me the area of the Bay (in m^2) that correspond to the following health risk categories from the World Health Organization
  - Low: < 0.0002 micrograms/L
  - Medium: >= 0.0002 and < 0.001 micorgrams/L
  - High: >= 0.001 and < 0.1 micrograms/L
  - Very high: >= 0.1 micrograms/L

The big picture questions:

1. What do the algorithm(s) look like?

Review and next class

- Any questions?

- This week's readings/tasks:

  - Chapter 3 in textbook

  - Watch video posted to Canvas (https://www.youtube.com/watch?v=iv8rSLsi1xo)

  - Practice, practice, practice