PS132B Section 1

Section in 30ish seconds

- Fill out the Office Hour form on Ed Discussion
- Participation Activity
  - Reply to Ed Discussion there is a thread called "Section 1 Activity" with the name of a song that you think everyone should listen to. Include the artist name as well
- Learn some other peoples' names
- Go over the survey results
  - If you put "None at all" or "A little" to coding experience you're the modal respondent

Office Hours

I am deciding when to hold my office hours between the following day/times:

- M: 10-12
- T: 10-12
- W: 2-4pm
- H: 10-12
- F: 2-4

Please fill out the form linked on Ed Discussion

R Installation

The R and RStudio installation instructions are on Ed Discussion

Note: You might need to install tinytex. The instructions to do that are in a thread on Ed Discussion

Make a Friend

```
makeFriendFunction = function(){
  ## 1. Survey the classroom
  ## 2. Find at least one person you have never met
  ## 3. Introduce yourself to that person
  ## 4a. Find some common shared aspect of the
  ## human experience
  ## 5. If appropriate, exchange contact information
}

## Loop the function to make three friends
for(i in 1:3){
  makeFriendFunction()
}
```

What are the answers for the survey questions?

```r
## Makes a vector with the c() function and
## assigns value to x
x = c(1,2,3,4,5,6,7,8)

## prints to the console the "value" of the object x
print(x)
```

```
[1] 1 2 3 4 5 6 7 8
```

```r
## a way to get only the even values
## from the vector x
y = x[seq(2,8,2)]

## prints the value of the vector y
print(y)
```

```
[1] 2 4 6 8
```

What are the answers for the survey questions?

```r
set.seed(123)
## Make a vector of the values 1,3,5,7
x = c(1,3,5,7)

## Make another vector that takes the values of x
## and adds noise from a standard normal distribution
y = x + rnorm(4)

## runs a linear regression of y on x
lm(y ~ x)
```

```
Call:
lm(formula = y ~ x)

Coefficients:
(Intercept)            x
    -0.5267       1.1841
```

What are the answers for the survey questions?

```
## This function removes the last value of a vector
## we might call it dropLast instead of f2
f2 = function(x){
  if(length(x)== 1){
    return(NULL)
  }
  x[-length(x)]
}

x = c(1,2,3,4,5)
print(x)
```

```
[1] 1 2 3 4 5
```

```
f2(x)
```

```
[1] 1 2 3 4
```

What should I take away from today?

- This class succeeds because of you. Everyone in class can learn the material.
- We want to help you learn the material.
- If you do not understand R code, you are not alone in class
- Type examples out. Avoid copy/pastes

Some Concrete Suggestions to see what happens (Problem 1)

The following are all suggestions to see *what* happens without worrying necessarily about *why* it happens.

Learning a language is as much about breaking things/trying something and seeing what happens as anything else early on

- Try changing the number of elements in the vector.
  - What happens if you make x the first 10 numbers?
  - What happens if you make `x = c("A", "B", "C", "D", "E")`
  - What happens if you change the last argument in `seq()` to 4
- Type ?seq into your R console and press enter. What happens?

Some Concrete Suggestions to see what happens (Problem 2)

- Swap the order of y and x. Do you get the same answer? Can you think of why you get the result? Write down some guesses.
- Add `y = c(y, 2,3)` after the the line defining y initially. Run the same `lm()` function. What happens? Can you think of why you get the result? Write down some guesses.
- Does it matter that x is composed of just whole numbers? Experiment by changing the values to fractions.

Some Concrete Suggestions to see what happens (Problem 3)

- Try passing a vector of length 1 to the function. What happens?
  - e.g. `x = c(5)`
- Try passing the function a vector of names. What happens? Remember that we need to put " " around them like this
  - `x = c("Bansak", "Wurster")`
- Amend line 7 to be `x[-(length(x)-3)]`. What happens if you run the same example as in class? What happens if you make `x=c(1,2)`? Do you have any guesses as to why this happens?