Assignment 2: Coding Basics

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OVERVIEW

This exercise accompanies the lessons in Environmental Data Analytics on coding basics.

Directions

1. Rename this file `<FirstLast>_A02_CodingBasics.Rmd` (replacing `<FirstLast>` with your first and last name).
2. Change "Student Name" on line 3 (above) with your name.
3. Work through the steps, **creating code and output** that fulfill each instruction.
4. Be sure to **answer the questions** in this assignment document.
5. When you have completed the assignment, **Knit** the text and code into a single PDF file.
6. After Knitting, submit the completed exercise (PDF file) to Sakai.

Basics Day 1

1. Generate a sequence of numbers from one to 100, increasing by fours. Assign this sequence a name.

```
count4 <- seq(1,100,4)
```

2. Compute the mean and median of this sequence.

```
mean(count4)
```

```
## [1] 49
```

```
median(count4)
```

```
## [1] 49
```

3. Ask R to determine whether the mean is greater than the median.

```
mean(count4) > median(count4)
```

```
## [1] FALSE
```

4. Insert comments in your code to describe what you are doing.

```
#1. Use sequence function to list numbers 1-100, increasing by fours at each step. Assigned this sequen

#2. Calculated the mean and median values of the count4 sequence.

#3. Used the conditional statement ">" to determine whether the mean of count4 was greater than the med
```

Basics Day 2

5. Create a series of vectors, each with four components, consisting of (a) names of students, (b) test scores out of a total 100 points, and (c) whether or not they have passed the test (TRUE or FALSE) with a passing grade of 50.
6. Label each vector with a comment on what type of vector it is.
7. Combine each of the vectors into a data frame. Assign the data frame an informative name.
8. Label the columns of your data frame with informative titles.
9. QUESTION: How is this data frame different from a matrix?

   Answer:

10. Create a function with an if/else statement. Your function should take a **vector** of test scores and print (not return) whether a given test score is a passing grade of 50 or above (TRUE or FALSE). You will need to choose either the `if` and `else` statements or the `ifelse` statement.
11. Apply your function to the vector with test scores that you created in number 5.
12. QUESTION: Which option of `if` and `else` vs. `ifelse` worked? Why?

    Answer: