Assignment 2: Coding Basics

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OVERVIEW

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

Directions

1. Change "Student Name" on line 3 (above) with your name.
2. Work through the steps, **creating code and output** that fulfill each instruction.
3. Be sure to **answer the questions** in this assignment document.
4. When you have completed the assignment, **Knit** the text and code into a single PDF file.
5. After Knitting, submit the completed exercise (PDF file) to the dropbox in Sakai. Add your first and last name into the file name (e.g., "FirstLast_A02_CodingBasics.Rmd") prior to submission.

Basics Day 1

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

2. Compute the mean and median of this sequence.

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

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

```
#1.
# this is a sequence of Green Devil responses to survey.
response_rate_GD <- seq( 1, 100, 4) # from, to, by
seq( 1, 100, 4) # from, to, by
```

```
## [1]  1  5  9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89 93 97
```

```
#2.

mean(response_rate_GD)
```

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

```
median(response_rate_GD)
```

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

```
#I am running summary stats data on response rates

#3.
mean(response_rate_GD)> median(response_rate_GD)
```

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

```
#this is a simple comparison of summary stats.
```

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.

```
#data_frame
#student_test_score
student <- c ('Sam', 'LD', 'Phil', 'Abbey', 'Jarius', 'Geroldine')
Score <- c ( 100 , 90 , 80 , 70 , 60 , 40 )
passed_test <- c( "TRUE", "TRUE", "TRUE", "TRUE", "TRUE", "FALSE")

student_test_score <- data.frame(student, Score, passed_test)
```

9. QUESTION: How is this data frame different from a matrix?

   Answer: A data frame allows for multiple forms of data to be analyzed on a table while a matrix is used to analyze same type of data.

10. Create a function with an if/else statement. Your function should determine whether a 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. Hint: Use `print`, not `return`. The name of your function should be informative.

11. Apply your function to the vector with test scores that you created in number 5.

```
# ( student_test_score) <- function( x ) {ifelse x >= 50,  print(TRUE), print(FALSE)}
```

12. QUESTION: Which option of `if` and `else` vs. `ifelse` worked? Why?

   Answer: ifelse worked becuase there