

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.
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.Created a sequence increasing by 4's from 1-100  
seqby4 <-seq(1,100,4)
```

```
#2. Determined the mean of the sequence  
mean(seqby4)
```

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

```
median(seqby4)
```

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

```
#3. Is mean or median greater  
49>49
```

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

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.

```
names <- c("Sam", "Maria", "John", "Mark")
#character vector
scores <-c(45,90,78,88)
#numeric vector
Passed <- c("False", "True","True", "True")
#character vector
df_test_scores<- as.data.frame(names)
```

```
df_testscores<-cbind(df_test_scores,scores,Passed)
```

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

#Answer:This dataframe contains both numeric and character classes of vectors whereas matrices can only

*#10. Create a function with an if/else statement. Your function should take a **vector** of test scores*

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

```
grade<-function(x){ifelse(x>50,"Pass","Fail")} #requirement,if true, if false
passing_grade<-grade(scores) #apply ifelse statement to scores vector
passing_grade #printed results
```

```
## [1] "Fail" "Pass" "Pass" "Pass"
```

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

Answer: 'ifelse' and 'if' and 'else' are the same. Just ifelse is a neater line of code, so either would've worked.