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ECO-634 – Environmental Data Analysis Lab

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Lab Help: Bonnie, John, Matt, Mandy

**R Fundamentals 1**

Q1: The two outputs are different because c(1, 2, 3) is numeric and “c(1, 2, 3)” is a character string.

Q2: c\_1 is a variable because you are storing a value in c\_1 that can later be easily accessed by using the variables name.

Q3: c\_2 is a variable because again we are storing a value that can easily be recalled in R.

Q4: c\_1 and c\_2 have different values because c(1, 2, 3) has a numeric value and was assigned to c\_1, and “c(1, 2, 3)” has a characteristic value and was assigned to c\_2.

Q5: The matrix is 3x1. There are three rows and one column.

Q6: mat\_1[3, 1] returns the value 3

Q7: mat\_2 <- matrix(my\_vec, nrow = 2, ncol = 3)

Q8: mat\_3 <- matrix(my\_vec, nrow = 3, ncol = 2)

Q9: R used rows to fill in the matrix.

Q10: mat\_4 <- matrix(my\_vec, nrow = 4, ncol = 4)

Q11: R gives the warning “… data length [3] is not a sub-multiple or multiple of the number of rows [4]”. R is repeat “1, 2, 3” across the rows but because it is not a multiple of three when it ends and goes to start a new row it picks up from where it left off.

Example: 1, 2, 3, 1

2, 3, 1, 2

Q12:

my\_list\_1[[1]]

1. value (5.2)
2. Subsetting Operation: [[ ]]
3. Calling [[1]] is asking R for the position of 1.

my\_list\_1[[as.numeric(“1”)]]

1. value (5.2)
2. Subsetting Operation: [[ ]]
3. [[as.numeric(“1”)]] is calling for the element under “1” but instead of returning NULL it gives the value of 5.2 because was have asked for the character “1” to be read as a numeric value.

my\_list\_1[[“1”]]

1. NULL
2. Subsetting Operation: [[ ]]
3. The square brackets are calling for the element in the first row but we are giving it a character value and R can not change it to a numeric without being told to do so.

my\_list\_1[[“one”]]

1. value (5.2)
2. Subsetting Operation: [[ ]]
3. Using [[ ]] for the subsetting operator its is calling for the element in row one by name.

my\_list\_1$one

1. value (5.2)
2. Subsetting Operation: $
3. Because you are calling $ as the operator, it is calling the value from row one by name.

my\_list\_1$”one”

1. value (5.2)
2. Subsetting Operation: $
3. $ is calling “one” which is the row name for that value

my\_list\_1$1

1. error: unexpected numeric constant in “my\_list\_1$1”
2. N/A
3. N/A

my\_list\_1$”1”

1. NULL
2. Subsetting Operation: $
3. When you use $ to call for the row name “1” but you get NULL as a response because we are not asking R to read it as numeric and it is reading it as a character.

Q13: None of these lines gave “five point two” as a result because none of the lines are asking for that information, they are only asking from row one. If we wanted “five point two” as a result we would have to ask for row two like, my\_list\_1[[2]].

Q14: my\_list\_1[[“1”]] and my\_list\_1$”1” returned NULL because there is nothing in the list that is a character value of “1” and R can not change a numeric value to a character value.