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Eco 634

Lab 1: R Fundamentals 1

1. The two outputs are different because adding quotations around the expression tells R that the code is a character data type, not a numeric or integer. Therefore, it will not generate a vector like it did when I ran c(1,2,3) and used the combine function without quotations.
2. C_1 is a function because it utilizes the combine function to assign c_1 to the integers 1, 2, and 3.
3. C_2 is a variable because the quotation marks that surround "c(1, 2, 3)" do not allow R to use the combine function that is used in the first scenario. Therefore, it is a variable since the code simply stores the expression as c_2.
4. C_1 and c_2 have different values because c_1 is a function and c_2 is a variable.
5. The dimensions of the matrix are 3 rows by 2 columns.
6. mat_1[3,1]
7. mat_2 <- matrix(my_vec, nrow = 2, ncol = 3)
8. mat_3 <- matrix(my_vec, nrow= 3, ncol= 2)
9. R uses columns to distribute the values of my_vec.

10.

V1	V2	
1	1	6
2	2	1
3	3	2
4	4	3
5	5	4

11. R used columns to distribute the values of mat_4 and to recycle the values a second time.

12.

a. my_list_1[[1]] -> 5.2
   my_list_1[[as.numeric("1")]] -> 5.2
   my_list_1[["1"]] ->NULL
   my_list_1[["one"]] -> “five point two”
   my_list_1$one -> “five point two”
   my_list_1$"one" -> “five point two”
   my_list_1$1 -> Error: unexpected numeric constant in "my_list_1$1"
   my_list_1$"1" -> NULL

b. my_list_1[[1]] -> position
   my_list_1[[as.numeric("1")]] -> position
   my_list_1[["1"]] -> N/A
   my_list_1[["one"]] -> name
   my_list_1$one -> name
   my_list_1$"one" -> name
   my_list_1$1 -> N/A
   my_list_1$"1" -> N/A

c. my_list_1[[1]] -> R was able to perform this subset because I asked to find [[1]], or the first position in the list, and it recognized that it was 5.2.

   my_list_1[[as.numeric("1")]] -> R was able to perform this subset because the value of the first position, (“1”), is 5.2.

   my_list_1[["one"]] -> R was able to perform this subset because I renamed “five point two” as “one”.

   my_list_1$one -> R was able to perform this subset because I renamed “five point two” as “one”.

   my_list_1$"one" -> R was able to perform this subset because I renamed “five point two” as “one”.

13. The following lines produced “five point two”: my_list_1[["one"]], my_list_1one, my_list_1"one". These produced “five point two” because I renamed the string as “one” using the name function so that R could extract this string when I selected “one”.
14. The following lines produced a “NULL” output: my_list_1[["1"]] and my_list_1$"1". This produced a “NULL” output because R does not recognize “1” as a character. Typically, values that are surrounded by quotes are text characters, not numeric, so R cannot locate numeric values between quotes.