

Eco634 Lab 1

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1. The outputs of the two lines are different because the first line is a numeric vector, while the second line is a character vector. When running the first line, the results are the numbers that were input (1, 2, 3), while the second line prints the whole string ("c(1,2,3)").
2. C_1 is a variable. This is because c_1 is being used as storage for the numbers 1,2,3 and it does not contain arithmetic or the function() code that would define a function. In addition, c_1 is saved as a value and not a function in the global environment.
3. C_2 is a variable as well, for the same reasons as listed above. C_1 is a numeric variable and c_2 is a character variable.
4. C_1 and c_2 have different values because c_1 is numeric and c_2 is a character string. The value of c_1 is 1 2 3, while the value of c_2 is "c(1, 2, 3)".
5. The matrix has one column and three rows.
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. Columns
10. mat_4=matrix(my_vec, nrow=5, ncol=5)
11. R produced an error (In matrix(my_vec, nrow = 5, ncol = 5): data length [3] is not a sub-multiple or multiple of the number of rows [5]) because it could not recycle of values of my_vec since there are only 3 values in my_vec. Any matrix including only my_vec would need to be a multiple of 3 to properly recycle the values.
12. A.
 1. value
 2. value
 3. null
 4. value

5. value
6. value
7. error
8. null

B.

1. position
2. position
3. name
4. name
5. name
6. name
7. error
8. name

C.

1. R chose the result based on the position, 1, which returns the value 5.2.
2. The result is 5.2, which R retrieved because it is converting the text value of "1" to a numeric result, which is the 1st position.
3. This returns a NULL value because R is trying to return a character "1", which doesn't exist. This doesn't work the same as the previous line because the value is not specified "as.numeric"
4. This line calls the result by name, "one" which returns the value "five point two". This works because double square brackets will work with names and positions.
5. This result is also "five point two" because it is being called by the name one. The quotes are not necessary in this line because the \$ symbol will only recall names
6. R also chooses "five point two" here because is it still calling the result based on name.
7. This resulted in an error because the line is using the \$ symbol which only calls based on names, of which there is none called 1. 1 is only a position, which cannot be used to subset with the \$ symbol.

8. This is NULL because the line is attempting to call a value under the name "1". This does not return an error because "1" is still a character, but in my_list "1" does not exist, so although the subset is correct, there is no value associated with "1".
13. Lines 4-6 produced the value "five point two", because those lines are calling the value based on the name, which is "one". In my list the value five point two is named "one".
14. Lines 3 and 8 produced a "NULL" value. Lines 3 and 8 are NULL because the code attempted to call the result by a character "1" whereas the value of 1 is numeric, identifying the position and not the title. There is no character title "1", so the result was NULL. Line 2 produced a result because "1" was specified "as.numeric".