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Analysis of Environmental Data
Lab 2 Report
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Worked with Juliana Berube

1. Show the R code you used to create vec_2.

```
vec_2 <- vec_1 == 3
```

2. Give two reasons why determining which elements in vec_1 have value 3 by visual inspection is a bad idea?

- There are 12,345 values in the vector…that would take so much time to look through and it would be inefficient.
- Every time you run the code it's going to generate new values in the vector.

3. Why didn't you always get the same count of 3 entries each time?

Each line of code ran a different vector, generating different values.

4. Considering the different vectors generated each time, explain why using a logical test is a safe way to select entries with a value of 3.

The logical test is the best way to select entries with a value of 3 because it will run that function every time a new vector is generated.

5. Explain why performing logical 'by hand' subsetting is very very bad practice. You may want consider re-usability of code, working with different sized data sets, and sharing code with collaborators.

Performing logical by hand is a bad practice for a few reasons. First, each time you run a code it'll generate a new vector, so the number with that value (in this case 3) will change will each run. Secondly, if you have larger datasets, hand counting all of those values will take a long time and could lead to an error in the count (because you may mess up after trying to count the frequency of that value). Finally, if you were to share the code, performing logical by hand wouldn't be possible. The other person wouldn't be able to reproduce what you got. This is because whenever the other person runs the code, a new vector will be generated.

6. Provide the code for your modified loop. It must run as a self-contained example on a fresh R session on my computer.

```
for (i in 1:10)
```

```
{
  print((paste0("This is loop iteration: ", i)))
}
```

7. Provide the code for the modified loop that executes n times. It needs to be a self contained example. I should be able to set the value of n and then run your loop on my computer.

```
for (i in 1:n)
{
  print(i)
}
```

8. Provide the code you used to create the n, vec_1, and the loop. As always, it should run as a stand-alone example in a fresh R session on my computer.

```
n= 17
vec_1 = sample (1:10, n, replace = TRUE)
{print((paste0("The element of vec_1 at index ", (1:n), " is " ,
vec_1)))}
```

9. Provide the code you used to build your function.
- To receive full credit your code must run without error on a new R session and produce output similar to the examples given in the instructions.

```
create_and_print_vec = function(n, min = 1, max = 10)
{
  vec_3 <- sample(min:max, n, replace = TRUE)
  for (i in 1:n)
  print(paste0("The element of at index ", i, " is " ,
vec_3[i]))
}
```