R for Data Science Assignment 4

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1. Create a list containing a number, a string, and a logical value.
2. How do you find the length of a list named my_list?
3. Extract the first element of a list using single brackets [ ].
4. Extract the second element from a list directly using double brackets [[ ]].
5. Name the elements of a list explicitly.
6. Access a named element of a list using the $ operator.
7. Create a simple data frame with two columns: Name and Age.
8. Access the age of the second person in a data frame.
9. Find the number of rows in a given data frame.
10. Add a new row to an existing data frame.
11. Create a nested list where one element is itself a list containing a numeric vector and a character vector.
12. Extract the second element from the nested list created above.
13. Write code to convert a character column in a data frame to a factor.
14. Create a logical subset of a data frame to include only rows where age > 20.
15. Add a new column to a data frame representing the age in months.
16. Demonstrate the difference between single bracket [ ] slicing and double bracket [[ ]] referencing with a suitable example.
17. How would you extract multiple rows and columns simultaneously from a data frame?
18. Add a new column using the cbind() function to a data frame.
19. How do you subset a data frame to exclude a particular column?
20. Extract all rows from a data frame where a character column has a specific value.
21. Write a function to merge two lists into one nested list without losing the original list structure.
22. Create a data frame that recycles shorter vectors. Demonstrate and explain the behavior.
23. Write R code to create a data frame from a list containing multiple vectors of unequal length, ensuring no data recycling occurs.
24. Create a list containing a matrix, a logical vector, and a string. Then, extract the second element of the logical vector.
25. Write R code that dynamically adds named elements to an existing list based on user input.
26. Create a function that accepts a data frame and returns a subset with only numeric columns.
27. Create a data frame and write code to reorder its columns alphabetically by column names.
28. Demonstrate how to subset a nested list to extract a deeply nested numeric value.
29. Write a function that takes a data frame as input and adds a factor-type column derived from an existing numeric column.
30. Using logical vectors, subset a data frame to extract rows based on multiple conditions across different columns.

*****Finished*****