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R programming

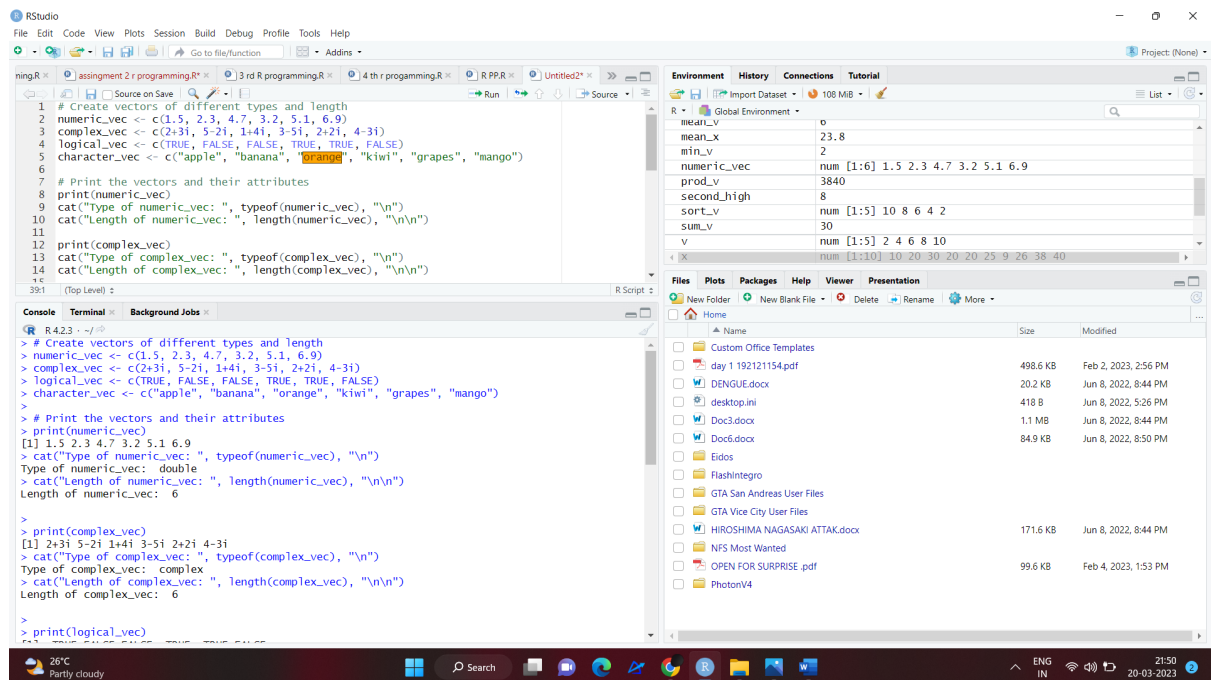
Assessment 1 - SET 1

1. Write a R program to create a vector of a specified type and length.
Create

vector of numeric, complex, logical and character types of length 6 with
your own examples. print the vector, type, and length.

Use this vector for Below program

x = c(10, 20, 30, 20, 20, 25, 9, 26, 38, 40)



The screenshot shows the RStudio interface. The script editor contains the following R code:

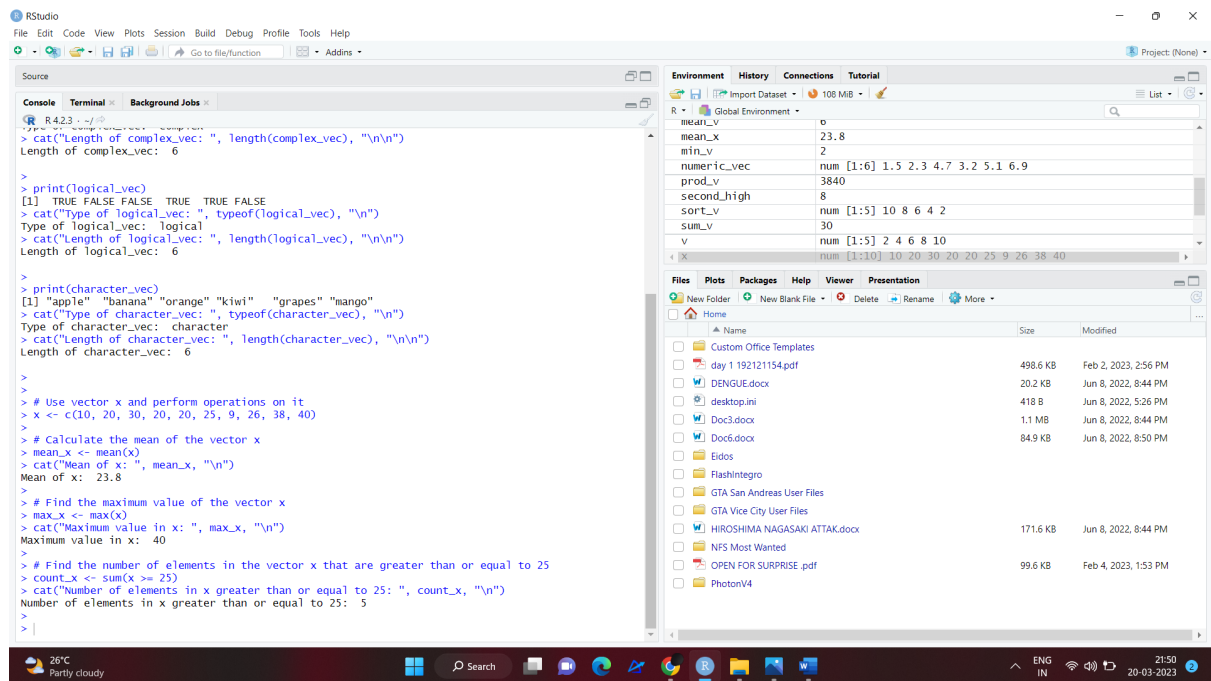
```
1 # Create vectors of different types and length
2 numeric_vec <- c(1.5, 2.3, 4.7, 3.2, 5.1, 6.9)
3 complex_vec <- c(2+3i, 5-2i, 1+4i, 3-5i, 2+2i, 4-3i)
4 logical_vec <- c(TRUE, FALSE, FALSE, TRUE, TRUE, FALSE)
5 character_vec <- c("apple", "banana", "orange", "kiwi", "grapes", "mango")
6
7 # Print the vectors and their attributes
8 print(numeric_vec)
9 cat("Type of numeric_vec: ", typeof(numeric_vec), "\n")
10 cat("Length of numeric_vec: ", length(numeric_vec), "\n\n")
11
12 print(complex_vec)
13 cat("Type of complex_vec: ", typeof(complex_vec), "\n")
14 cat("Length of complex_vec: ", length(complex_vec), "\n\n")
15
16 print(logical_vec)
```

The console output shows the execution of the code:

```
> # Create vectors of different types and length
> numeric_vec <- c(1.5, 2.3, 4.7, 3.2, 5.1, 6.9)
> complex_vec <- c(2+3i, 5-2i, 1+4i, 3-5i, 2+2i, 4-3i)
> logical_vec <- c(TRUE, FALSE, FALSE, TRUE, TRUE, FALSE)
> character_vec <- c("apple", "banana", "orange", "kiwi", "grapes", "mango")
>
> # Print the vectors and their attributes
> print(numeric_vec)
[1] 1.5 2.3 4.7 3.2 5.1 6.9
> cat("Type of numeric_vec: ", typeof(numeric_vec), "\n")
Type of numeric_vec: double
> cat("Length of numeric_vec: ", length(numeric_vec), "\n\n")
Length of numeric_vec: 6
>
> print(complex_vec)
[1] 2+3i 5-2i 1+4i 3-5i 2+2i 4-3i
> cat("Type of complex_vec: ", typeof(complex_vec), "\n")
Type of complex_vec: complex
> cat("Length of complex_vec: ", length(complex_vec), "\n\n")
Length of complex_vec: 6
>
> print(logical_vec)
```

The Environment pane on the right shows the objects created in the global environment:

Object	Value
numeric_vec	double [1:6] 1.5 2.3 4.7 3.2 5.1 6.9
complex_vec	complex [1:6] 2+3i 5-2i 1+4i 3-5i 2+2i 4-3i
logical_vec	logical [1:6] TRUE FALSE FALSE TRUE TRUE FALSE
character_vec	character [1:6] "apple" "banana" "orange" "kiwi" "grapes" "mango"

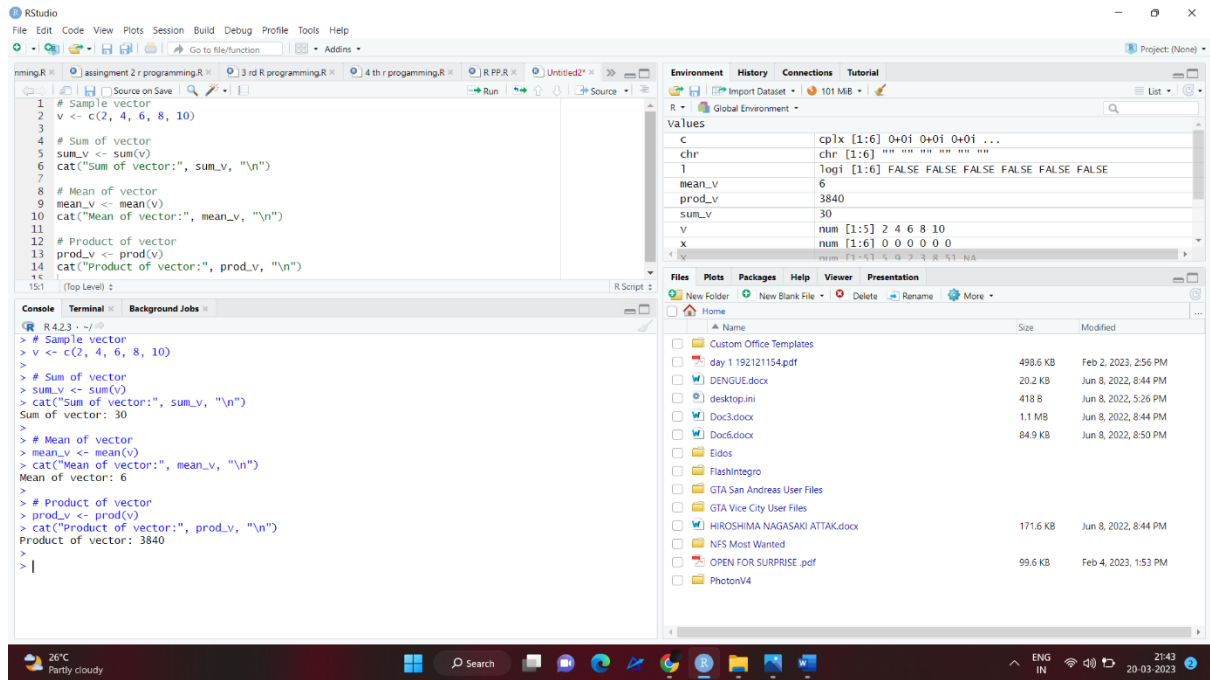


2. Write a R program to find Sum, Mean and Product of a Vector. 3.

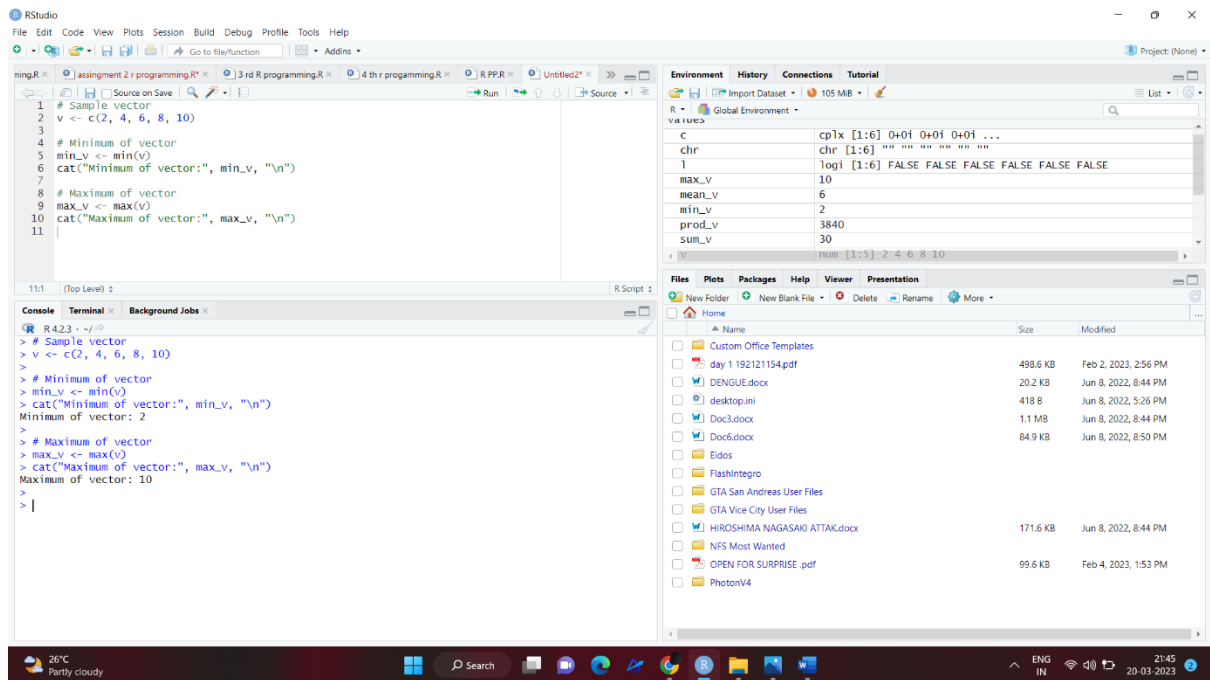
Write a R program to find the minimum and the maximum of a Vector 4.

Write a R program to find second highest value in a given vector.

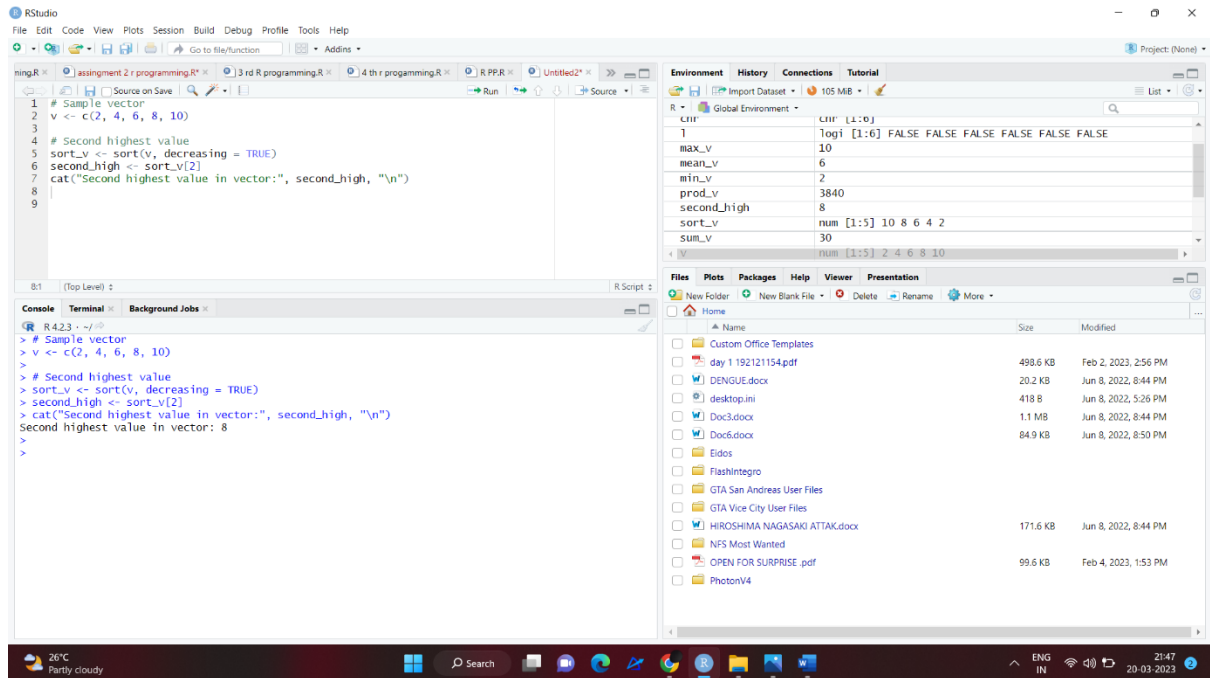
Write a R program to find Sum, Mean and Product of a Vector. 3.



Write a R program to find the minimum and the maximum of a Vector 4.

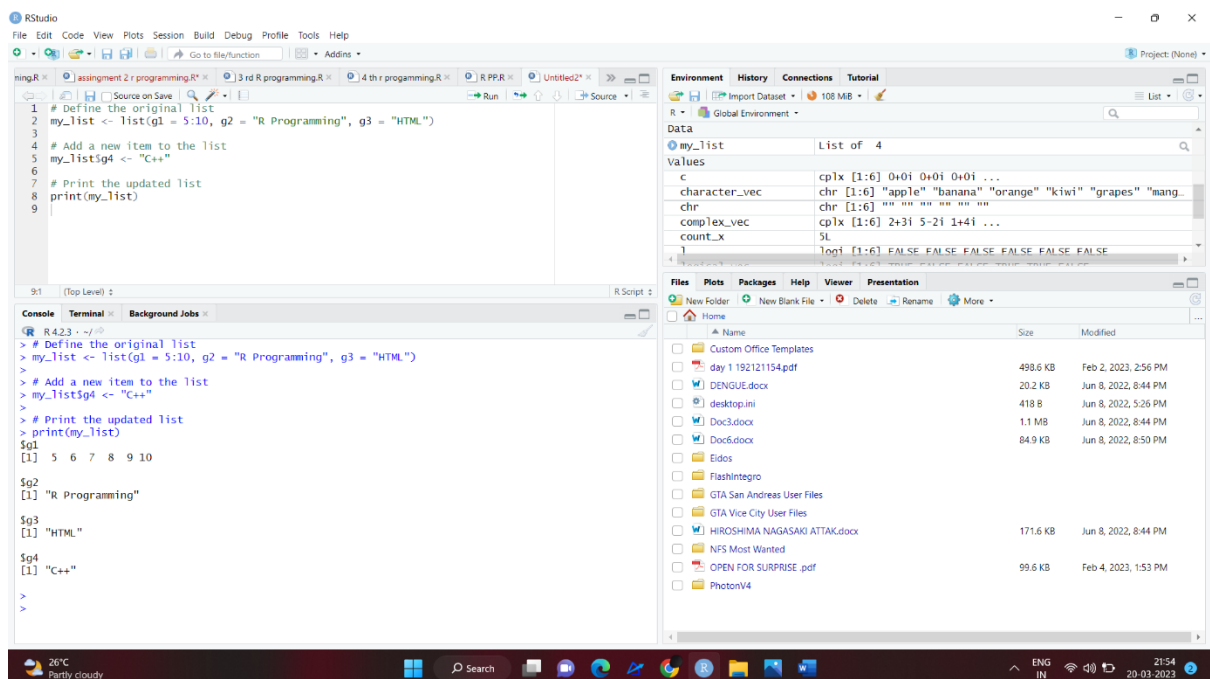


Write a R program to find second highest value in a given vector



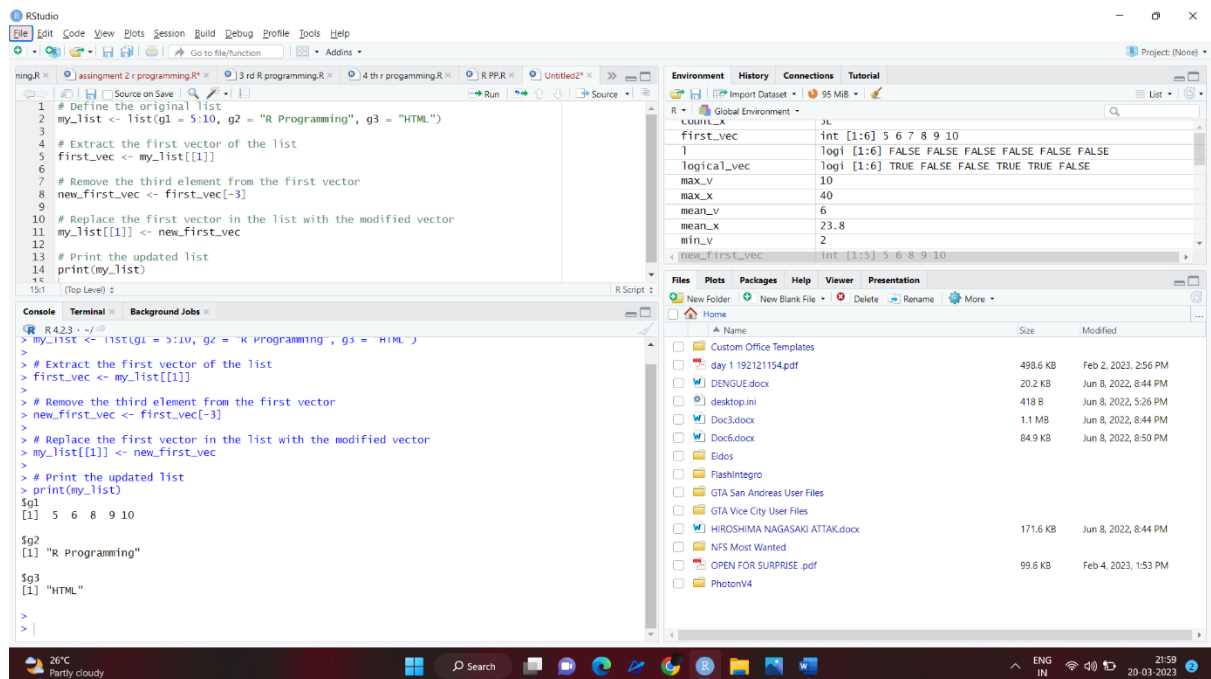
5. Write a R program to add a new item `g4 = "C++"` to a given list.

Sample list: (`g1 = 5:10`, `g2 = "R Programming"`, `g3 = "HTML"`).



6. Write a R program to extract all elements except the third element of the first vector of a given list.

Sample list: (g1 = 5:10, g2 = "R Programming", g3 = "HTML")



The screenshot shows the RStudio interface with the following components:

- Script Editor:** Contains the R code for the task.
- Console:** Shows the execution output of the code.
- Environment:** Displays the objects created in the global environment.

```
1 # Define the original list
2 my_list <- list(g1 = 5:10, g2 = "R Programming", g3 = "HTML")
3
4 # Extract the first vector of the list
5 first_vec <- my_list[[1]]
6
7 # Remove the third element from the first vector
8 new_first_vec <- first_vec[-3]
9
10 # Replace the first vector in the list with the modified vector
11 my_list[[1]] <- new_first_vec
12
13 # Print the updated list
14 print(my_list)
```

Console Output:

```
R 4.2.3 ~\...
> my_list <- list(g1 = 5:10, g2 = "R Programming", g3 = "HTML")
>
> # Extract the first vector of the list
> first_vec <- my_list[[1]]
>
> # Remove the third element from the first vector
> new_first_vec <- first_vec[-3]
>
> # Replace the first vector in the list with the modified vector
> my_list[[1]] <- new_first_vec
>
> # Print the updated list
> print(my_list)
[[
 [1] 5 6 8 9 10

 [2] "R Programming"

 [3] "HTML"
```

Environment:

Object	Class	Value
Count_x	int	[1:6] 5 6 7 8 9 10
first_vec	logi	[1:6] FALSE FALSE FALSE FALSE FALSE
logical_vec	logi	[1:6] TRUE FALSE FALSE TRUE TRUE FALSE
max_x	int	10
max_x	num	40
mean_x	num	6
mean_x	num	23.8
min_x	int	2
new_first_vec	int	[1:5] 5 6 8 9 10

7. Write a R program to create an ordered factor from data consisting of the names of months .

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Project: (None)

Environment History Connections Tutorial

Global Environment

1	1st_vec	int [1:6]	5	6	7	8	9	10
1	logical_vec	logi [1:6]	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
1	max_v	logi [1:6]	TRUE	FALSE	FALSE	TRUE	TRUE	FALSE
1	max_x		10					
1	mean_v		6					
1	mean_x		23.8					
1	min_v		2					
1	mons_v	chr [1:27]	"March"	"April"	"January"	"November"	"January"	"January"
1	new_first_vec	int [1:5]	5	6	8	9	10	

Files Plots Packages Help Viewer Presentation

New Folder New Blank File Delete Rename More

Home

Name	Size	Modified
Custom Office Templates		
day 1 192121154.pdf	498.6 KB	Feb 2, 2023, 2:56 PM
DENGUE.docx	20.2 KB	Jun 8, 2022, 8:44 PM
desktop.ini	418 B	Jun 8, 2022, 5:26 PM
Doc3.docx	1.1 MB	Jun 8, 2022, 8:44 PM
Doc6.docx	84.9 KB	Jun 8, 2022, 8:50 PM
Eidos		
FlashIntegro		
GTA San Andreas User Files		
GTA Vice City User Files		
HIROSHIMA NAGASAKI ATTACK.docx	171.6 KB	Jun 8, 2022, 8:44 PM
NFS Most Wanted		
OPEN FOR SURPRISE.pdf	99.6 KB	Feb 4, 2023, 1:53 PM
PhotonV4		

```
1 mons_v = c("March", "April", "January", "November", "January",
2           "September", "October", "September", "November", "August", "February",
3           "January", "November", "November", "February", "May", "August", "February",
4           "July", "December", "August", "August", "September", "November", "September",
5           "February", "April")
6 print("Original vector:")
7 print(mons_v)
8 f = factor(mons_v)
9 print("Ordered factors of the said vector:")
10 print(f)
11 print(table(f))
12
```

Console

```
> mons_v = c("March", "April", "January", "November", "January",
+           "September", "October", "September", "November", "August", "February",
+           "January", "November", "November", "February", "May", "August", "February",
+           "July", "December", "August", "August", "September", "November", "September",
+           "February", "April")
> print("Original vector:")
[1] "Original vector:"
> print(mons_v)
[1] "March" "April" "January" "November" "January" "September" "October"
[8] "September" "November" "November" "February" "January" "November" "November"
[15] "February" "May" "August" "February" "July" "December" "August"
[22] "August" "September" "November" "September" "February" "April"
> f = factor(mons_v)
> print("Ordered factors of the said vector:")
[1] "Ordered factors of the said vector:"
> print(f)
[1] March April January November January September October September November
[10] August February January November November February May August February
[19] July December August August September November September February April
11 Levels: April August December February January July March May November ... September
> print(table(f))
f
April 2 August 4 December 1 February 4 January 3 July 1 March 1 May 1 November 5
October 1 September 4
```

Terminal

Background Jobs

R 4.2.3 ~ /

26°C Partly cloudy

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