SESSION 5: Data Management Using R

Assignment 3

Table of Contents

1. Introduction

This assignment will help you understand the concepts learnt in the session.

2. Objective

This assignment will test your skills on Performing SET operations in R.

3. Prerequisites

Not applicable.

4. Associated Data Files

Not applicable.

5. Problem Statement

1. Test whether two vectors are exactly equal (element by element)

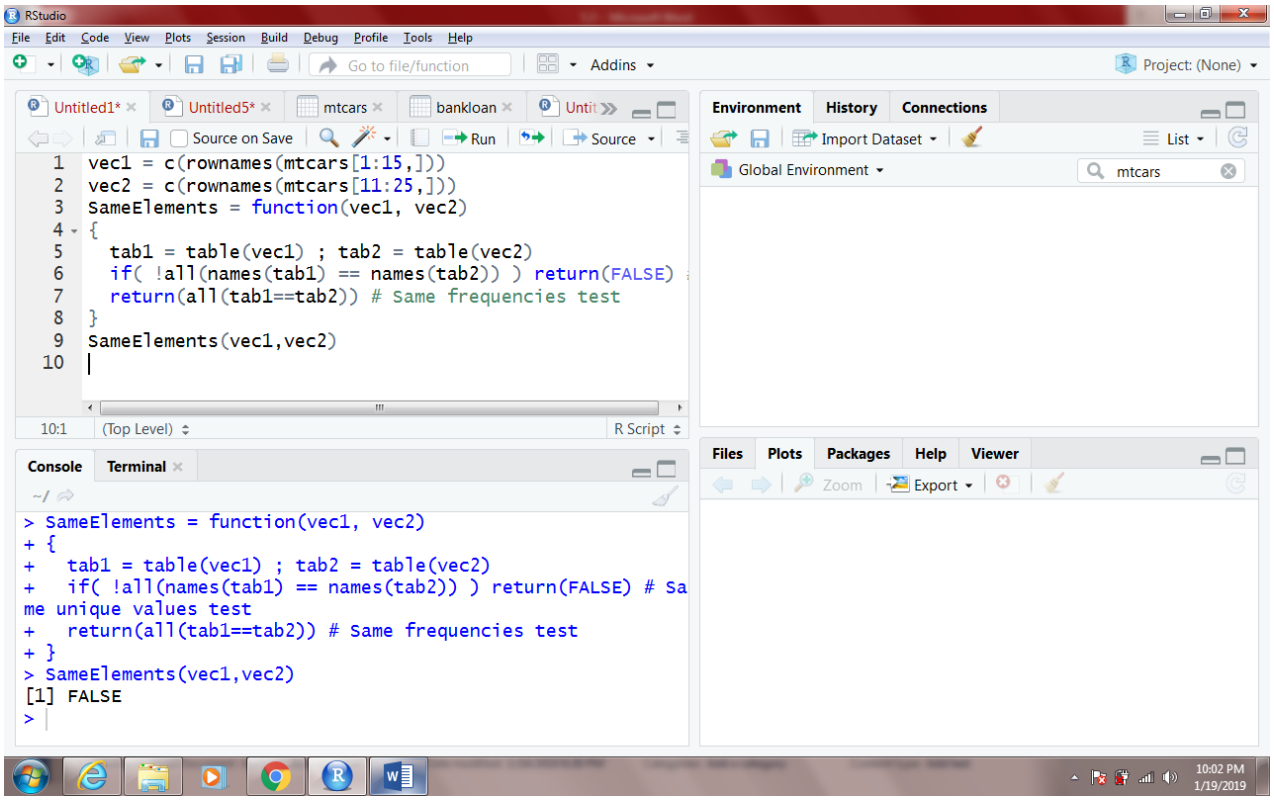
```
vec1 = c(rownames(mtcars[1:15,]))
vec2 = c(rownames(mtcars[11:25,]))
```

Ans –

```
vec1 = c(rownames(mtcars[1:15,]))
vec2 = c(rownames(mtcars[11:25,]))
SameElements = function(vec1, vec2)
{
  tab1 = table(vec1) ; tab2 = table(vec2)
  if( !all(names(tab1) == names(tab2)) ) return(FALSE) # Same unique values test
  return(all(tab1==tab2)) # Same frequencies test
```

}

Same Elements (vec1,vec2)



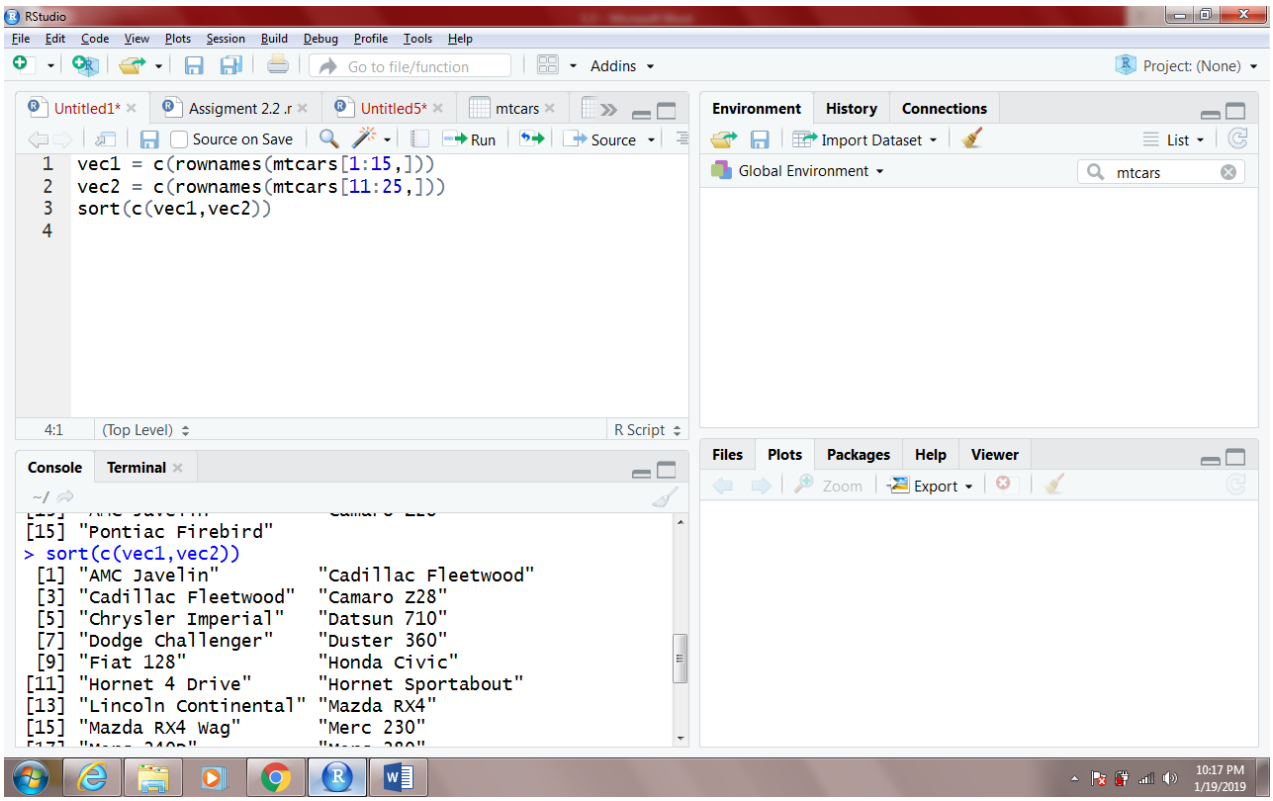
2. Sort the character vector in ascending order and descending order vec1 = c(rownames(mtcars[1:15,]))

   vec2 = c(rownames(mtcars[11:25,]))

   Ans. vec1 = c(rownames(mtcars[1:15,]))

   vec2 = c(rownames(mtcars[11:25,]))

   sort(c(vec1,vec2))

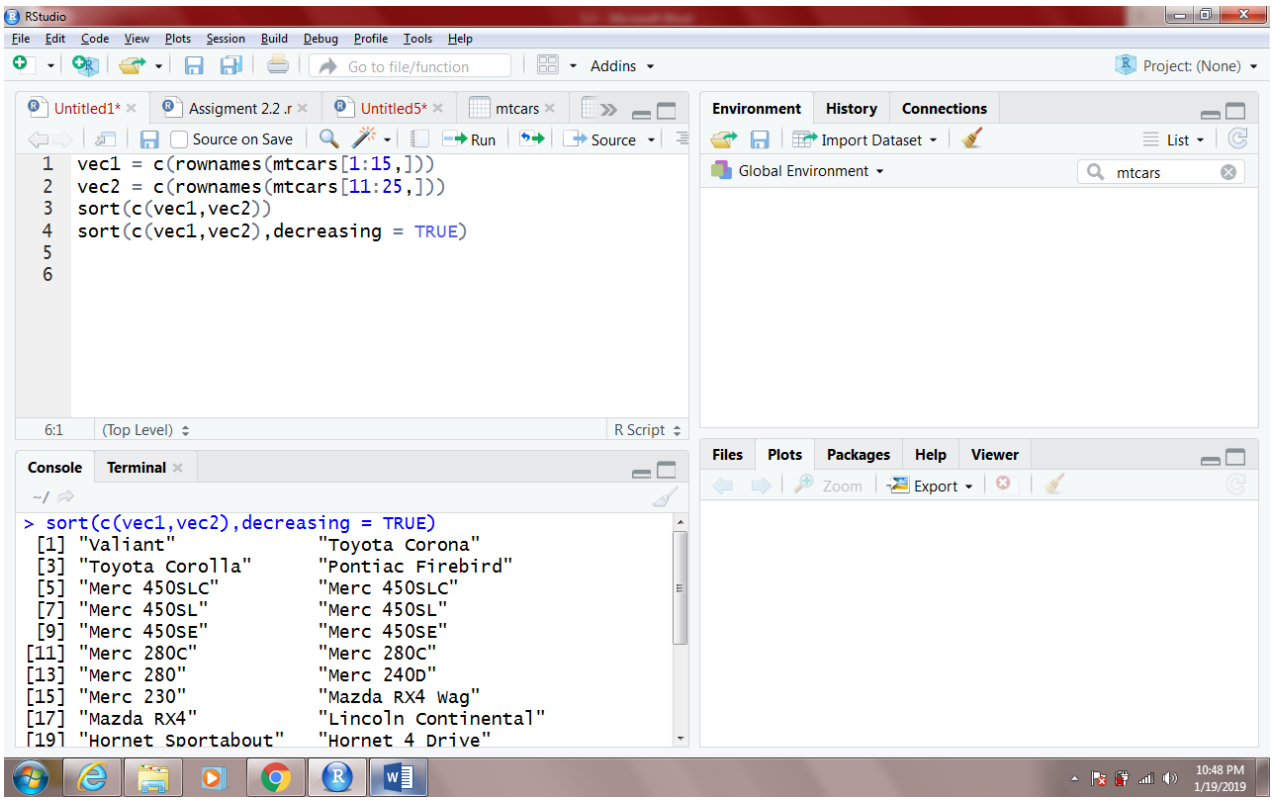


vec1 = c(rownames(mtcars[1:15,]))

vec2 = c(rownames(mtcars[11:25,]))

sort(c(vec1,vec2))

sort(c(vec1,vec2),decreasing = TRUE)


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
Untitled1*
Assigment 2.2 .r
Untitled5*
mtcars
Source on Save
Run
Source
vec1 = c(rownames(mtcars[1:15,]))
vec2 = c(rownames(mtcars[11:25,]))
sort(c(vec1,vec2))
sort(c(vec1,vec2),decreasing = TRUE)
6:1
(Top Level)
R Script
Environment
History
Connections
Import Dataset
List
Global Environment
mtcars
Console
Terminal
> sort(c(vec1,vec2),decreasing = TRUE)
[1] "Valiant" "Toyota Corona"
[3] "Toyota Corolla" "Pontiac Firebird"
[5] "Merc 450SLC" "Merc 450SLC"
[7] "Merc 450SL" "Merc 450SL"
[9] "Merc 450SE" "Merc 450SE"
[11] "Merc 280C" "Merc 280C"
[13] "Merc 280" "Merc 240D"
[15] "Merc 230" "Mazda RX4 Wag"
[17] "Mazda RX4" "Lincoln Continental"
[19] "Hornet Sportabout" "Hornet 4 Drive"
Files
Plots
Packages
Help
Viewer
Zoom
Export
10:48 PM
1/19/2019

3. What is the major difference between str c() and paste() show an example.

Ans - The difference is is that `str_c` treats blanks as blanks (not as NAs) and recycles more appropriately.

1. paste0(..., collapse = NULL)is a wrapper for paste(..., sep = "", collapse = NULL), which means there is no separator. In other words, with paste0() you can not apply some sort of separator, while you do have that option with paste(), whereas a single space is the default. str_c(..., sep = "", collapse = NULL) is equivalent to paste(), which means you do have the option to customize your desired separator. The difference is for str_c() the default is no separator, so it acts just like paste0() as a default.

2. Paste() and paste0() are both functions from the base package, whereas str_c() comes from the stringr package.

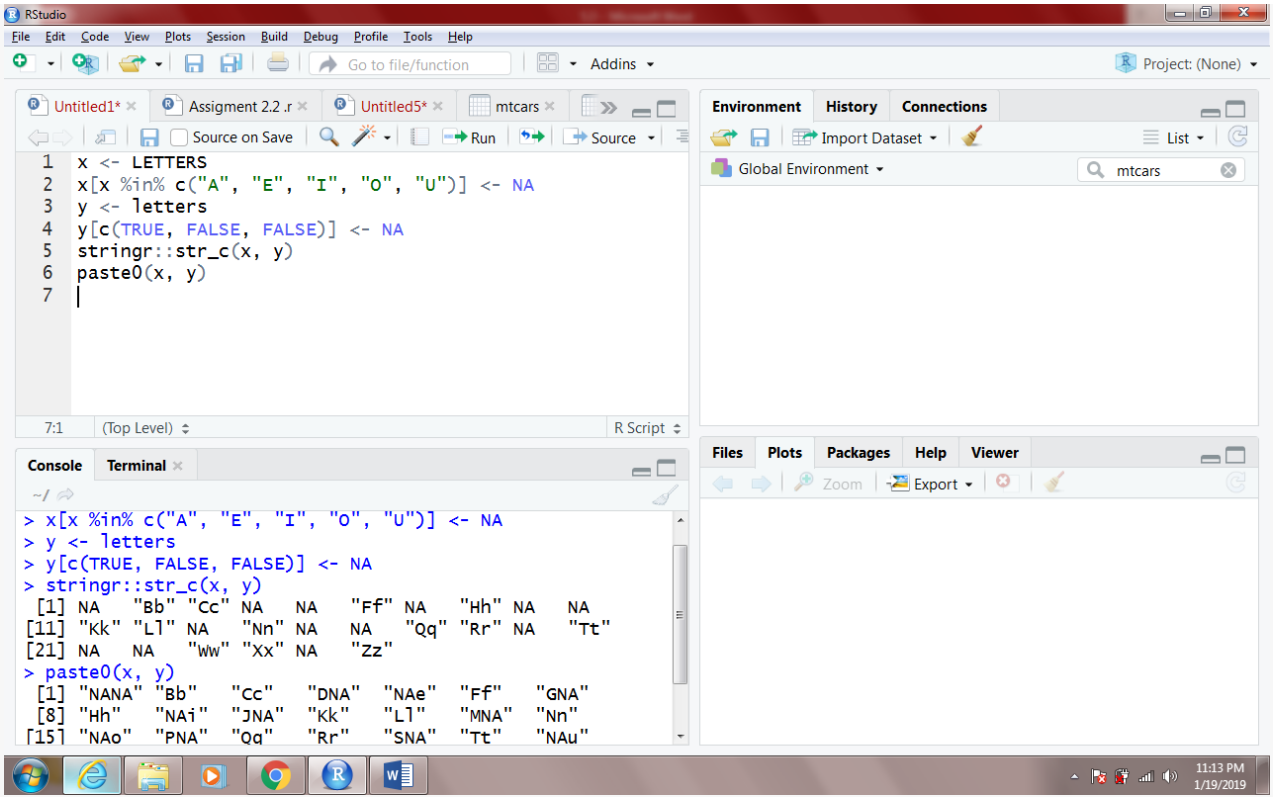
`str_c()` treats missing values properly

Example –

```
x <- LETTERS
x[x %in% c("A", "E", "I", "O", "U")] <- NA
y <- letters
y[c(TRUE, FALSE, FALSE)] <- NA
stringr::str_c(x, y)
paste0(x, y)
```

`str_c()` warns on inexact recycling

```
paste0(month.abb, letters)
stringr::str_c(month.abb, letters)
```


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
Untitled1*
Assigment 2.2 .r
Untitled5*
mtcars
Source on Save
Run
Source
x <- LETTERS
x[x %in% c("A", "E", "I", "O", "U")] <- NA
y <- letters
y[c(TRUE, FALSE, FALSE)] <- NA
stringr::str_c(x, y)
paste0(x, y)
7:1
(Top Level)
R Script
Environment
History
Connections
Import Dataset
List
Global Environment
mtcars
Console
Terminal
~/
> x[x %in% c("A", "E", "I", "O", "U")] <- NA
> y <- letters
> y[c(TRUE, FALSE, FALSE)] <- NA
> stringr::str_c(x, y)
[1] NA "Bb" "Cc" NA NA "Ff" NA "Hh" NA NA
[11] "Kk" "Ll" NA "Nn" NA NA "Qq" "Rr" NA "Tt"
[21] NA NA "Ww" "Xx" NA "Zz"
> paste0(x, y)
[1] "NANA" "Bb" "Cc" "DNA" "NAe" "Ff" "GNA"
[8] "Hh" "NAi" "JNA" "Kk" "Ll" "MNA" "Nn"
[15] "NAo" "PNA" "Qq" "Rr" "SNA" "Tt" "NAu"
Files
Plots
Packages
Help
Viewer
Zoom
Export
11:13 PM
1/19/2019

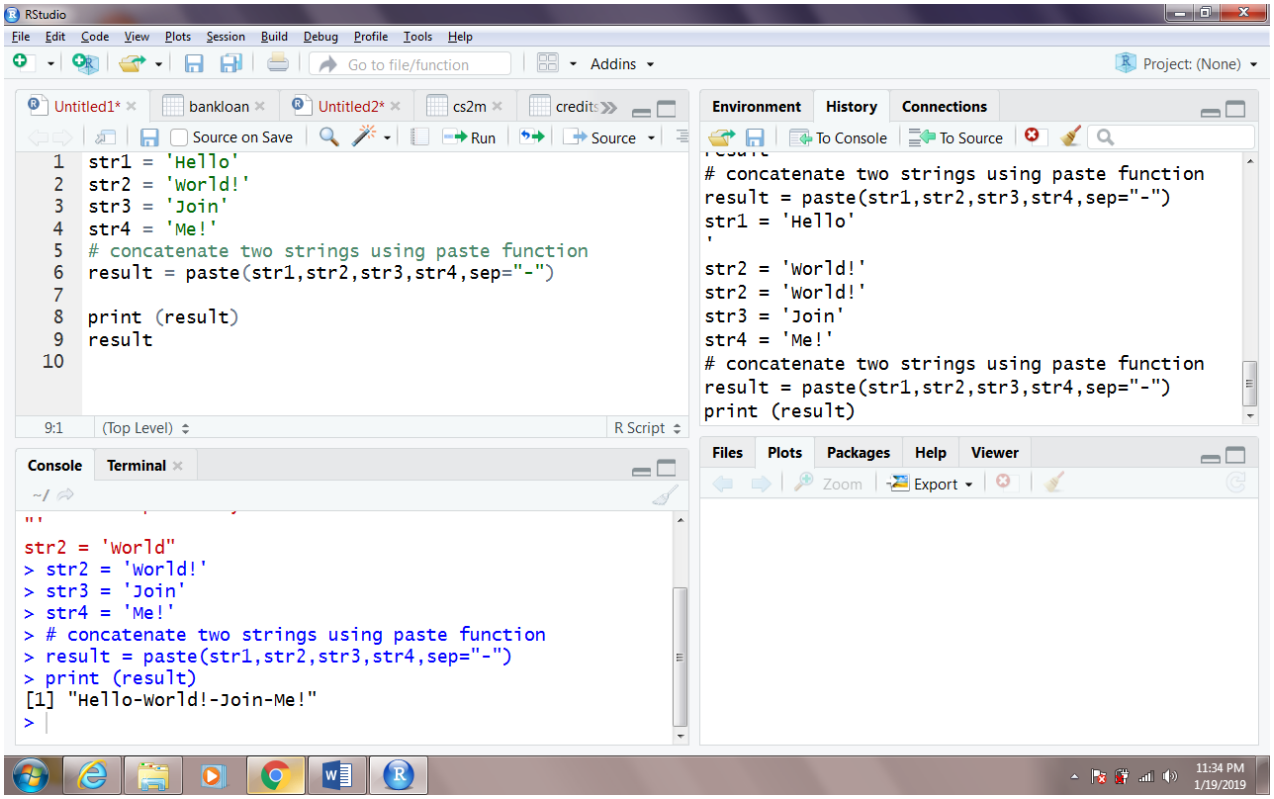
4. Introduce a separator when concatenating the strings

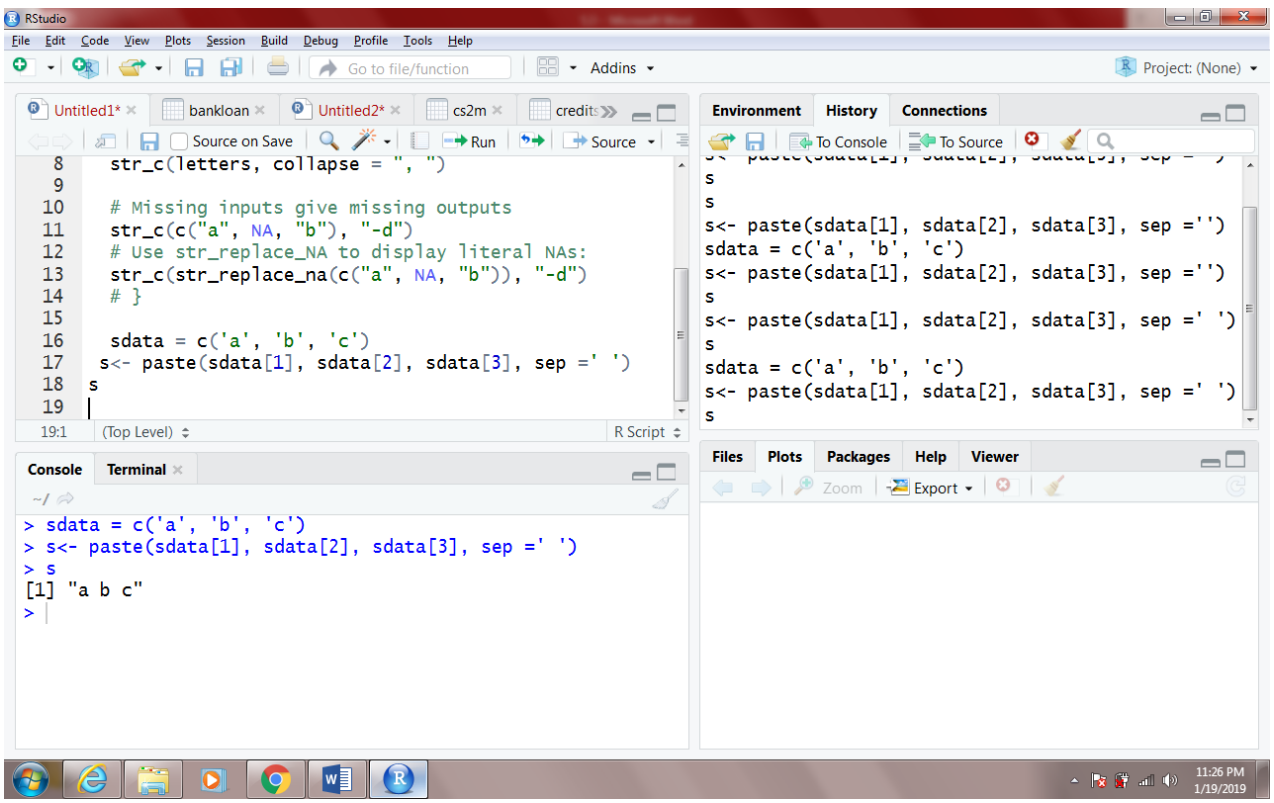
```
str_c("Letter: ", letters)
str_c("Letter", letters, sep = ": ")
str_c(letters, " is for", "...")
str_c(letters[-26], " comes before ", letters[-1])

str_c(letters, collapse = "")
str_c(letters, collapse = ", ")

# Missing inputs give missing outputs
str_c(c("a", NA, "b"), "-d")
# Use str_replace_NA to display literal NAs:
str_c(str_replace_na(c("a", NA, "b")), "-d")
# }
```

```
str1 = 'Hello'
str2 = 'World!'
str3 = 'Join'
str4 = 'Me!'
# concatenate two strings using paste function
result = paste(str1,str2,str3,str4,sep="-")
```


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* bankloan Untitled2* cs2m credits
Source on Save Run Source
str1 = 'Hello'
str2 = 'World!'
str3 = 'Join'
str4 = 'Me!'
# concatenate two strings using paste function
result = paste(str1,str2,str3,str4,sep="-")
print (result)
result
Console Terminal
str2 = 'World"
> str2 = 'World!'
> str3 = 'Join'
> str4 = 'Me!'
> # concatenate two strings using paste function
> result = paste(str1,str2,str3,str4,sep="-")
> print (result)
[1] "Hello-World!-Join-Me!"
Environment History Connections
Files Plots Packages Help Viewer


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* bankloan Untitled2* cs2m credits
Source on Save Run Source
str_c(letters, collapse = ", ")
# Missing inputs give missing outputs
str_c(c("a", NA, "b"), "-d")
# Use str_replace_NA to display literal NAs:
str_c(str_replace_na(c("a", NA, "b")), "-d")
# }
sdata = c('a', 'b', 'c')
s<- paste(sdata[1], sdata[2], sdata[3], sep =' ')
s
Console Terminal
> sdata = c('a', 'b', 'c')
> s<- paste(sdata[1], sdata[2], sdata[3], sep =' ')
> s
[1] "a b c"
Environment History Connections
Files Plots Packages Help Viewer

6. Expected Format

1. R file should be submitted where applicable.
2. R file should be in PDF or in .r format
3. Proper screenshots of the outputs should be submitted as well
4. The r codes, if submitted in any other format, will be subjected to deduction in marks

Note: Your solution will not be entertained if it is any other format, e.g., .zip, .doc, .rtf etc.

7. Approximate Time to Complete Task

30 mins.