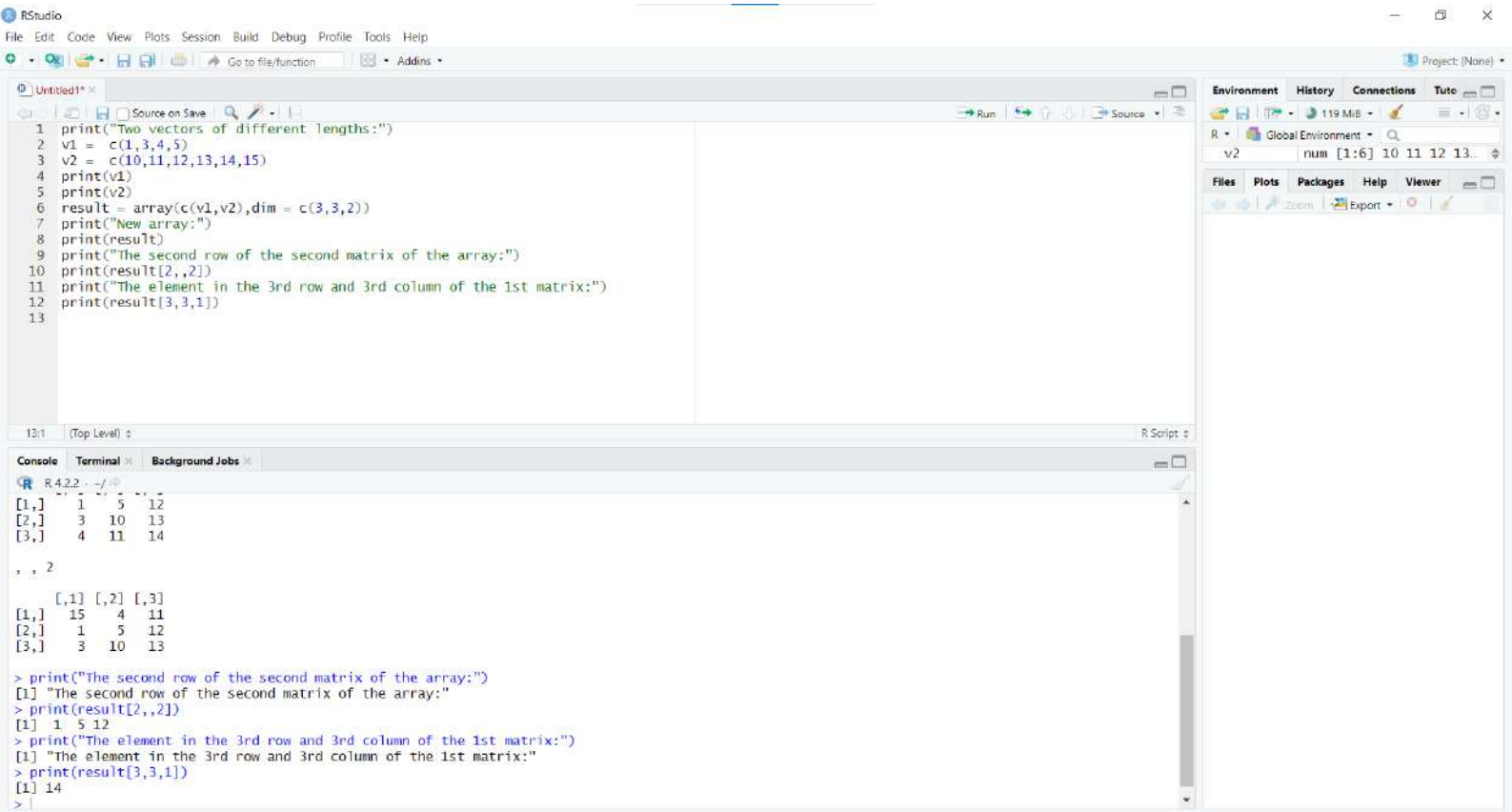
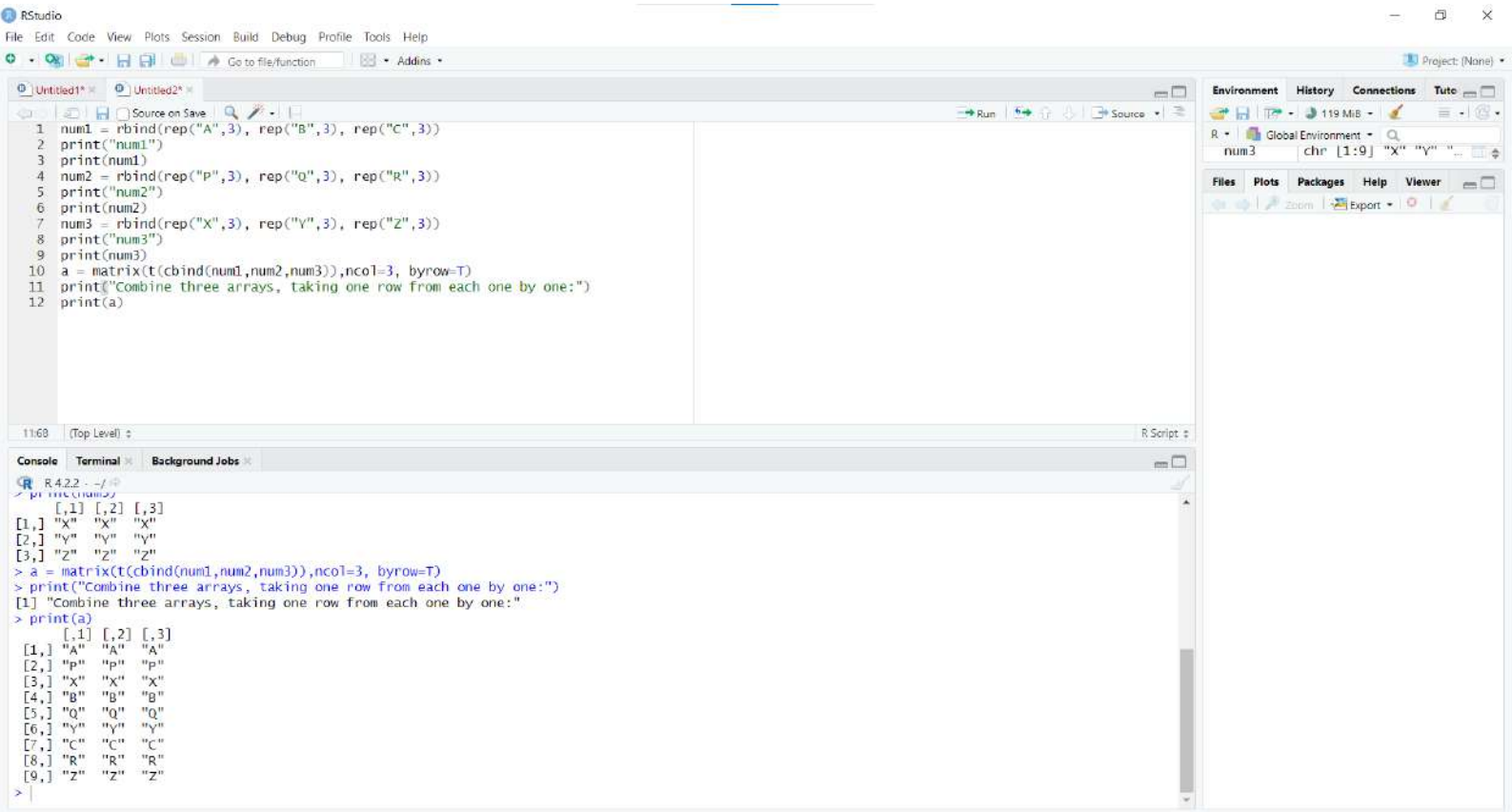
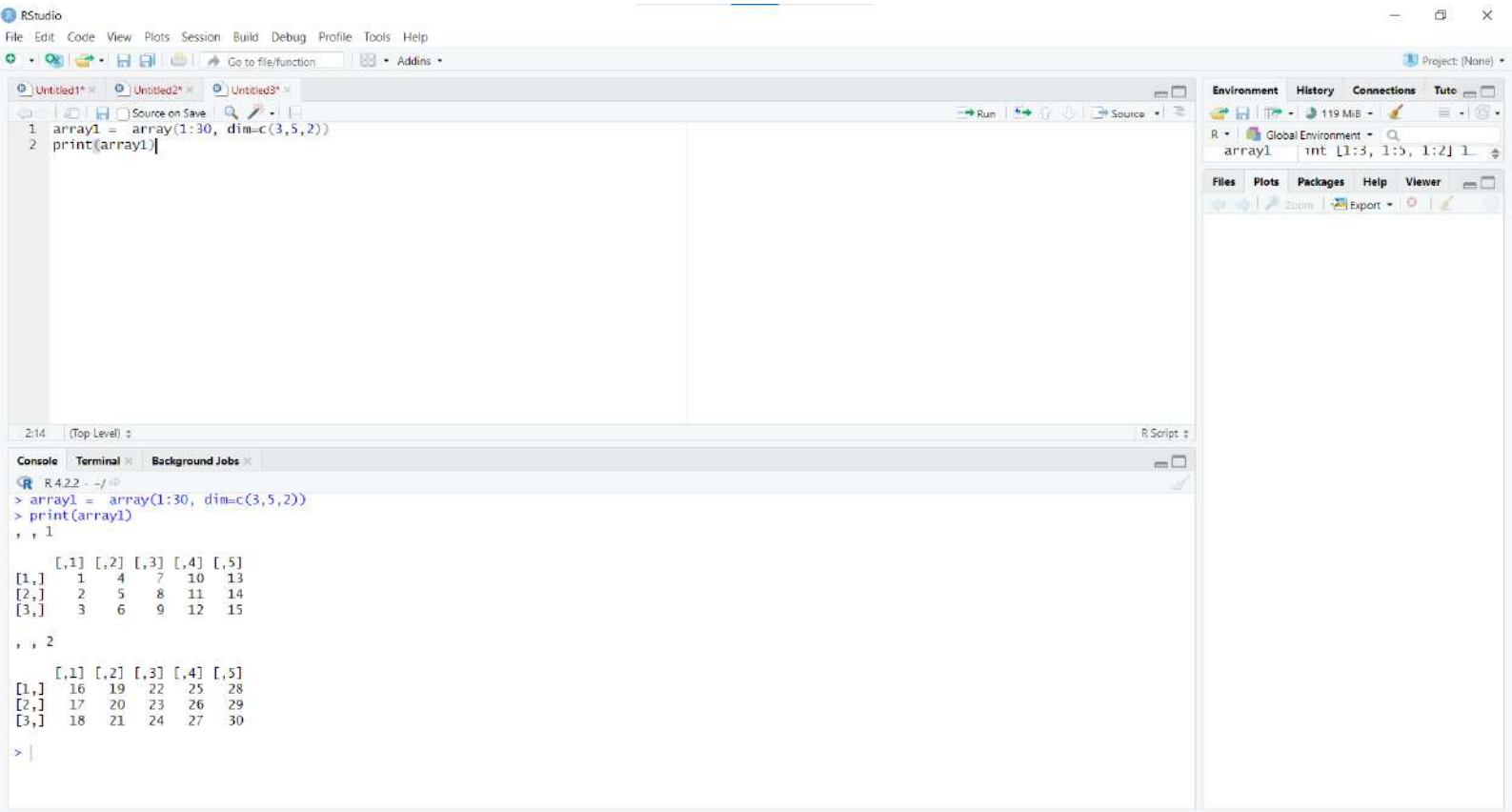
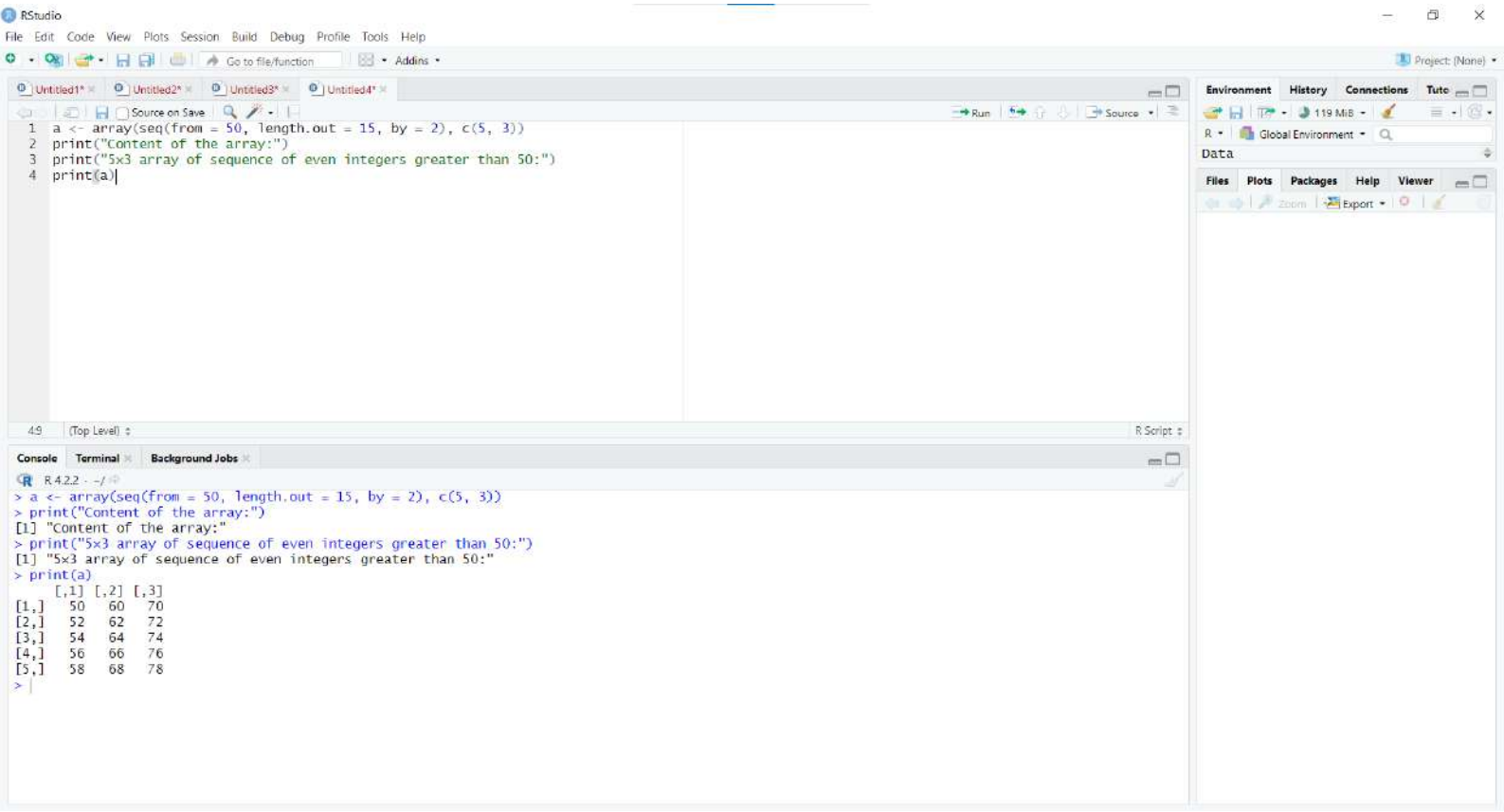
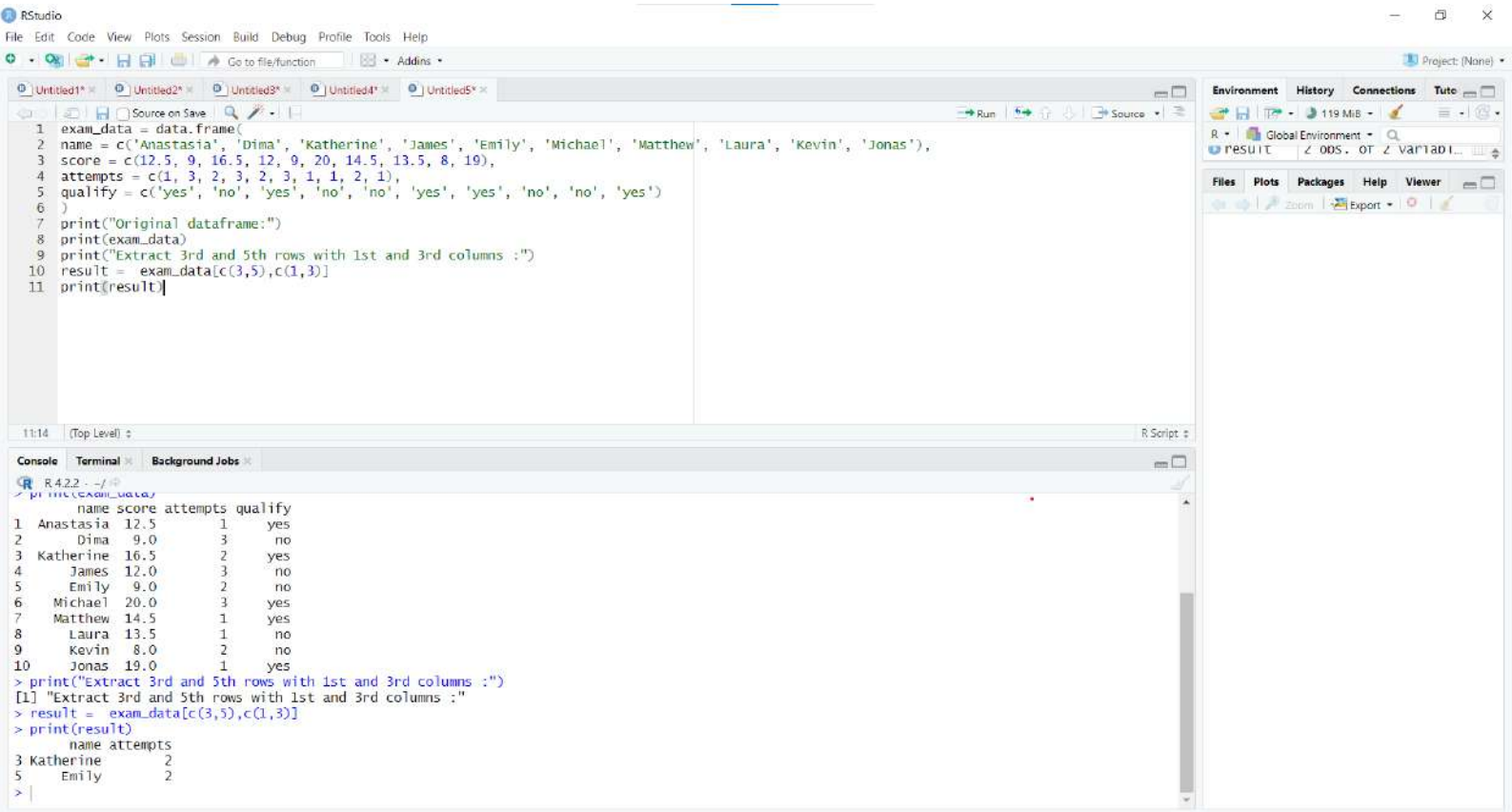
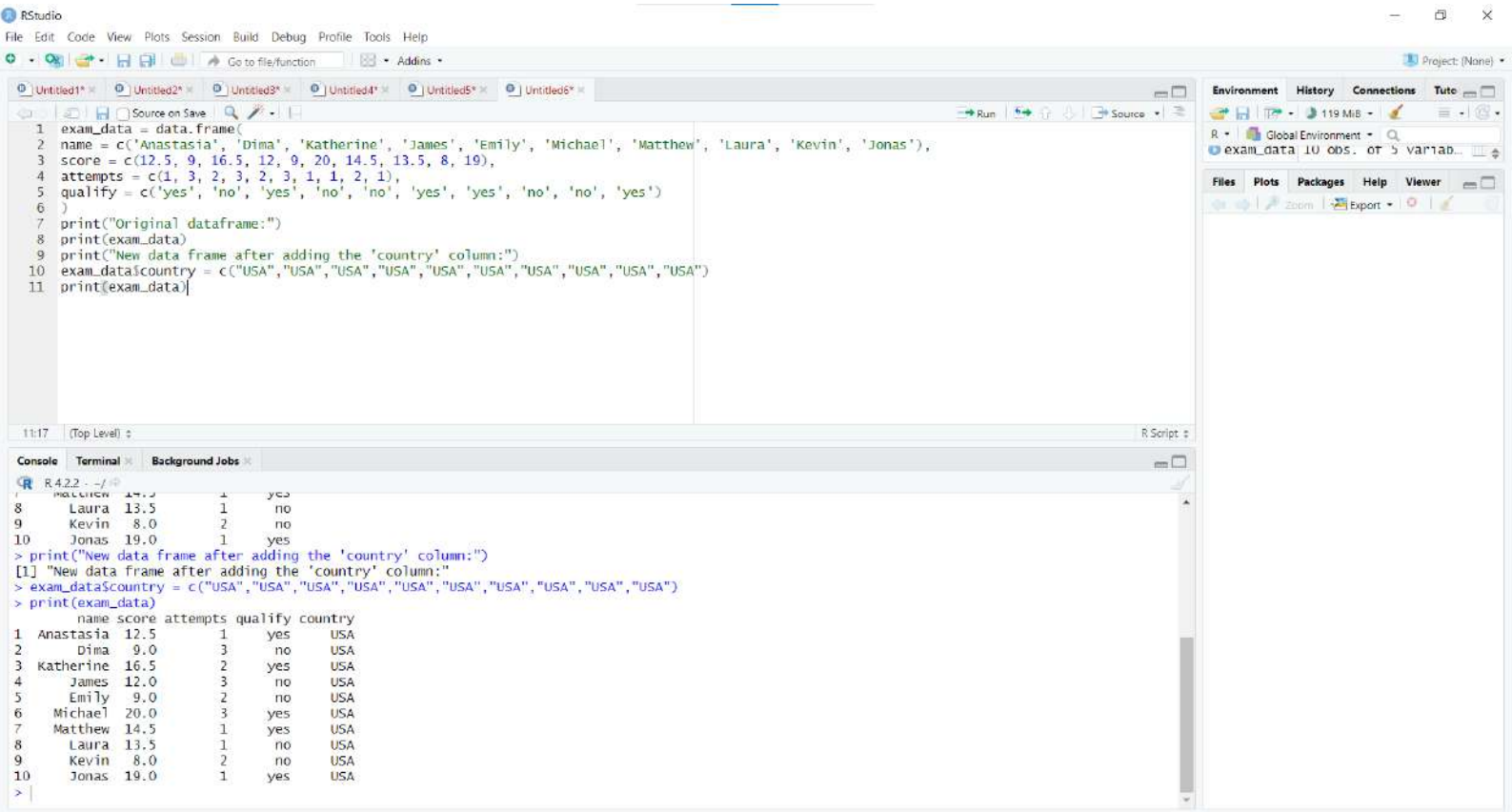

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1*
Source on Save
Run
Source
print("Two vectors of different lengths:")
v1 = c(1,3,4,5)
v2 = c(10,11,12,13,14,15)
print(v1)
print(v2)
result = array(c(v1,v2),dim = c(3,3,2))
print("New array:")
print(result)
print("The second row of the second matrix of the array:")
print(result[2,,2])
print("The element in the 3rd row and 3rd column of the 1st matrix:")
print(result[3,3,1])
13:1 (Top Level)
R Script
Environment History Connections Tute
Global Environment
v2 num [1:6] 10 11 12 13..
Files Plots Packages Help Viewer
Export
Console Terminal Background Jobs
R 4.2.2 · ~/
[1,] 1 5 12
[2,] 3 10 13
[3,] 4 11 14
, , 2
[,1] [,2] [,3]
[1,] 15 4 11
[2,] 1 5 12
[3,] 3 10 13
> print("The second row of the second matrix of the array:")
[1] "The second row of the second matrix of the array:"
> print(result[2,,2])
[1] 1 5 12
> print("The element in the 3rd row and 3rd column of the 1st matrix:")
[1] "The element in the 3rd row and 3rd column of the 1st matrix:"
> print(result[3,3,1])
[1] 14
>

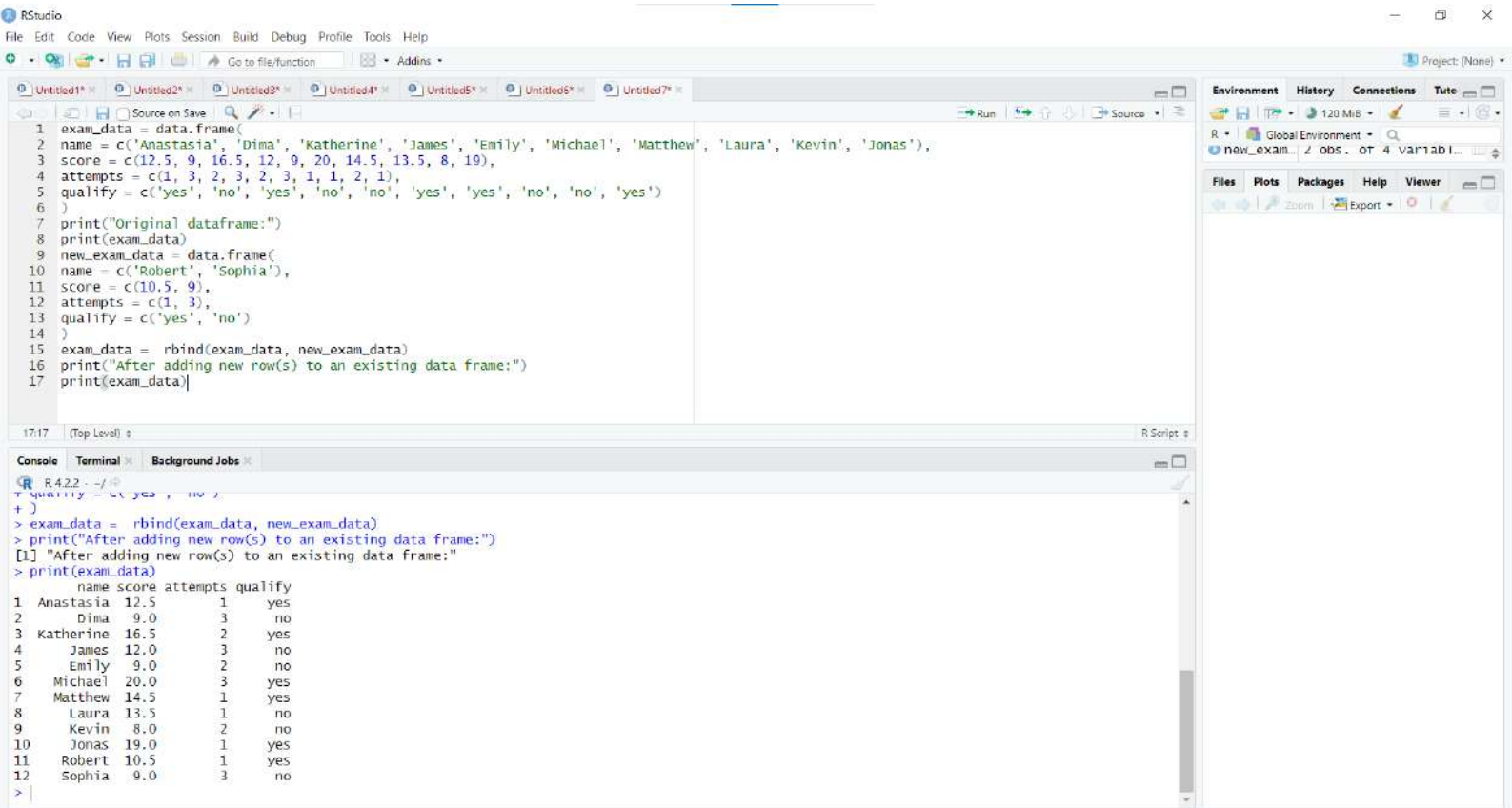

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* Untitled2*
Source on Save
Run Source
1 num1 = rbind(rep("A",3), rep("B",3), rep("C",3))
2 print("num1")
3 print(num1)
4 num2 = rbind(rep("P",3), rep("Q",3), rep("R",3))
5 print("num2")
6 print(num2)
7 num3 = rbind(rep("X",3), rep("Y",3), rep("Z",3))
8 print("num3")
9 print(num3)
10 a = matrix(t(cbind(num1,num2,num3)),ncol=3, byrow=T)
11 print("Combine three arrays, taking one row from each one by one:")
12 print(a)
11:68 (Top Level) R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
[,1] [,2] [,3]
[1,] "X" "X" "X"
[2,] "Y" "Y" "Y"
[3,] "Z" "Z" "Z"
> a = matrix(t(cbind(num1,num2,num3)),ncol=3, byrow=T)
> print("Combine three arrays, taking one row from each one by one:")
[1] "Combine three arrays, taking one row from each one by one:"
> print(a)
[,1] [,2] [,3]
[1,] "A" "A" "A"
[2,] "P" "P" "P"
[3,] "X" "X" "X"
[4,] "B" "B" "B"
[5,] "Q" "Q" "Q"
[6,] "Y" "Y" "Y"
[7,] "C" "C" "C"
[8,] "R" "R" "R"
[9,] "Z" "Z" "Z"
Environment History Connections Tute
119 MiB
Global Environment
num3 chr [1:9] "X" "Y" "...
Files Plots Packages Help Viewer
Zoom Export

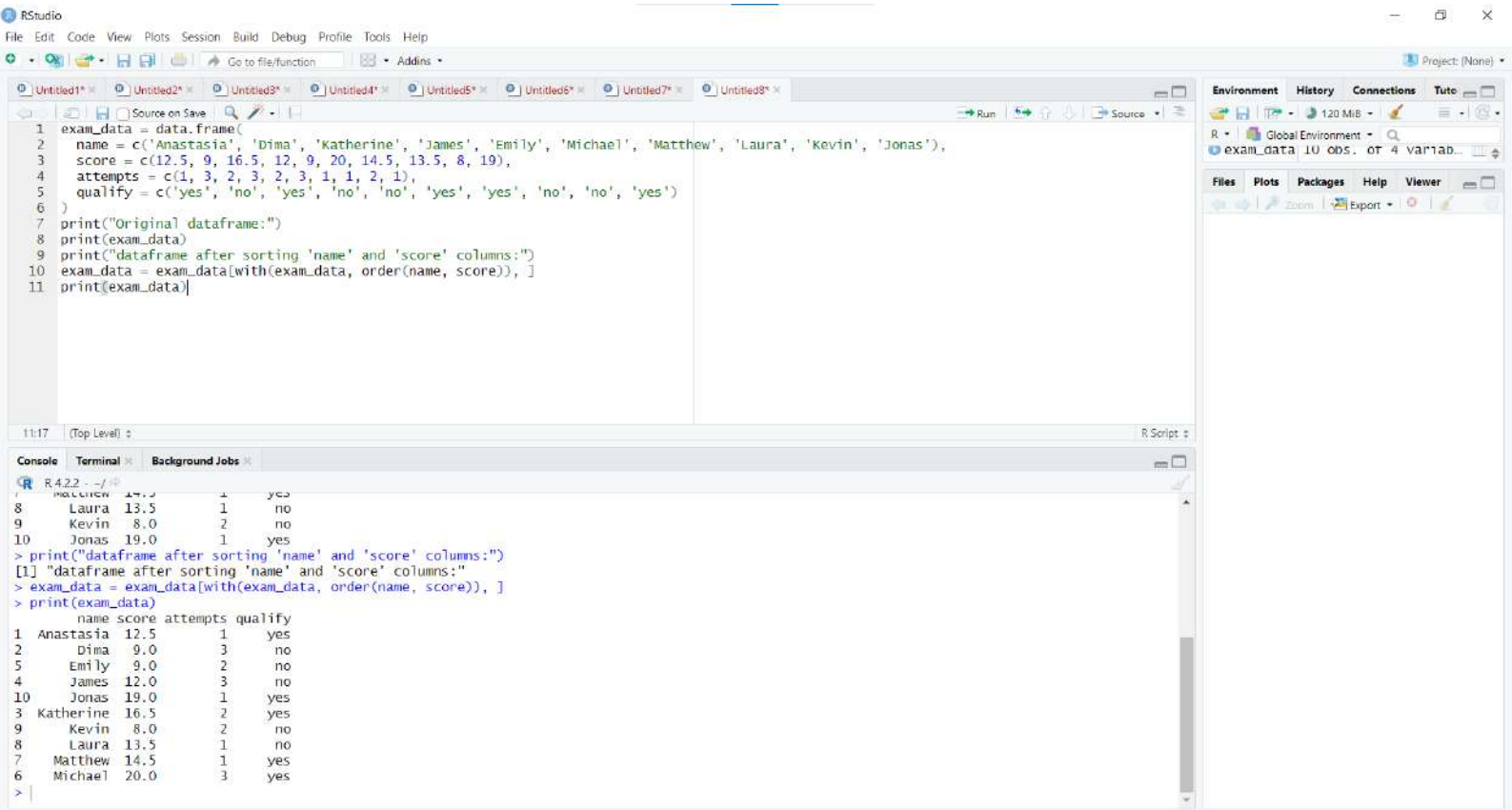

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* Untitled2* Untitled3*
Source on Save
Run
Source
1 array1 = array(1:30, dim=c(3,5,2))
2 print(array1)
2:14 (Top Level)
R Script
Environment History Connections Tute
Global Environment
array1 int [1:3, 1:5, 1:2] 1...
Files Plots Packages Help Viewer
Export
Console Terminal Background Jobs
R 4.2.2 · ~/
> array1 = array(1:30, dim=c(3,5,2))
> print(array1)
, , 1
[,1] [,2] [,3] [,4] [,5]
[1,] 1 4 7 10 13
[2,] 2 5 8 11 14
[3,] 3 6 9 12 15
, , 2
[,1] [,2] [,3] [,4] [,5]
[1,] 16 19 22 25 28
[2,] 17 20 23 26 29
[3,] 18 21 24 27 30
>

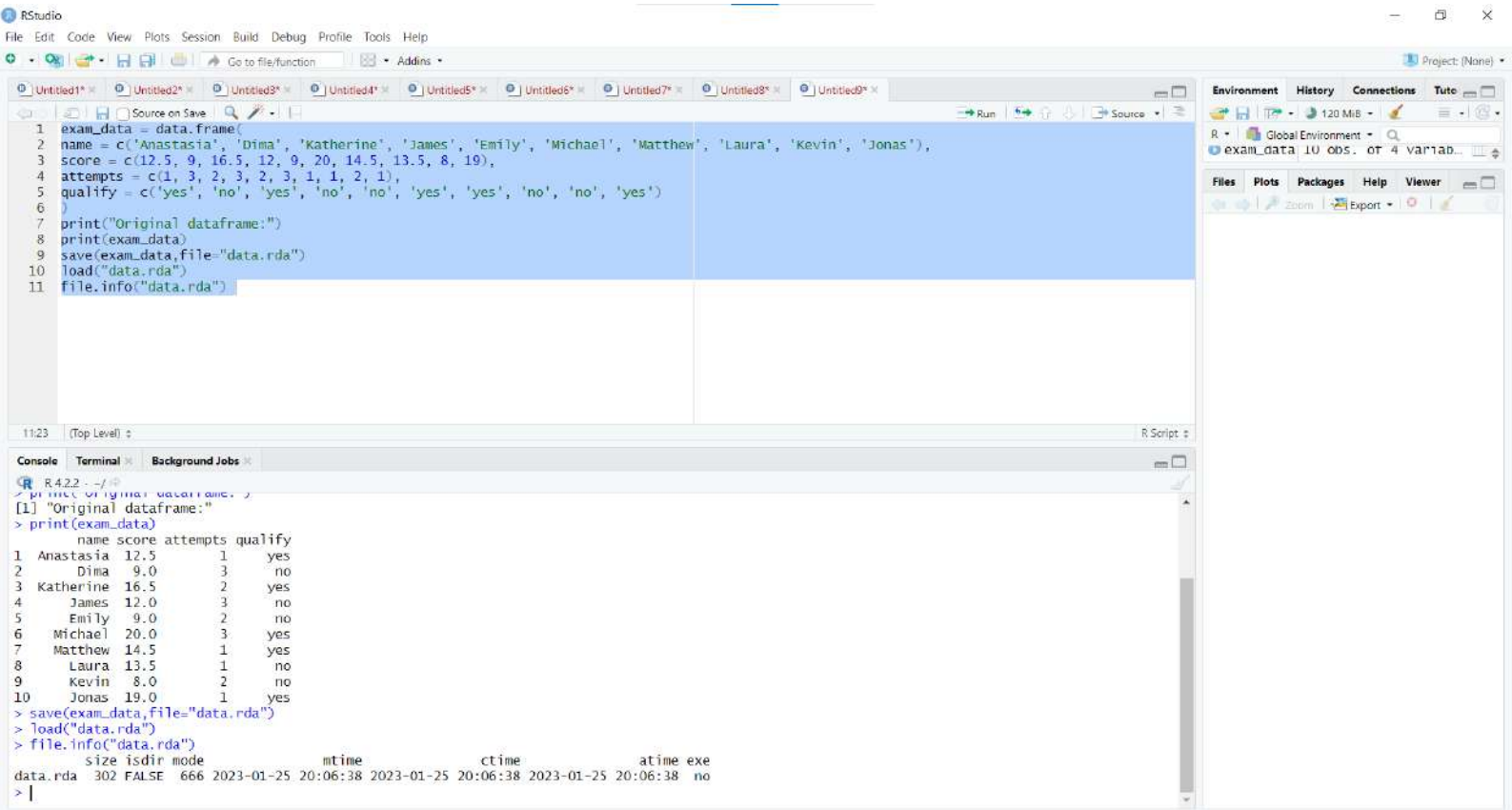

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* Untitled2* Untitled3* Untitled4*
Source on Save
Run Source
1 a <- array(seq(from = 50, length.out = 15, by = 2), c(5, 3))
2 print("Content of the array:")
3 print("5x3 array of sequence of even integers greater than 50:")
4 print(a)
4:9 (Top Level) R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
> a <- array(seq(from = 50, length.out = 15, by = 2), c(5, 3))
> print("Content of the array:")
[1] "Content of the array:"
> print("5x3 array of sequence of even integers greater than 50:")
[1] "5x3 array of sequence of even integers greater than 50:"
> print(a)
[,1] [,2] [,3]
[1,] 50 60 70
[2,] 52 62 72
[3,] 54 64 74
[4,] 56 66 76
[5,] 58 68 78
>
Environment History Connections Tute
Global Environment
Data
Files Plots Packages Help Viewer
Export

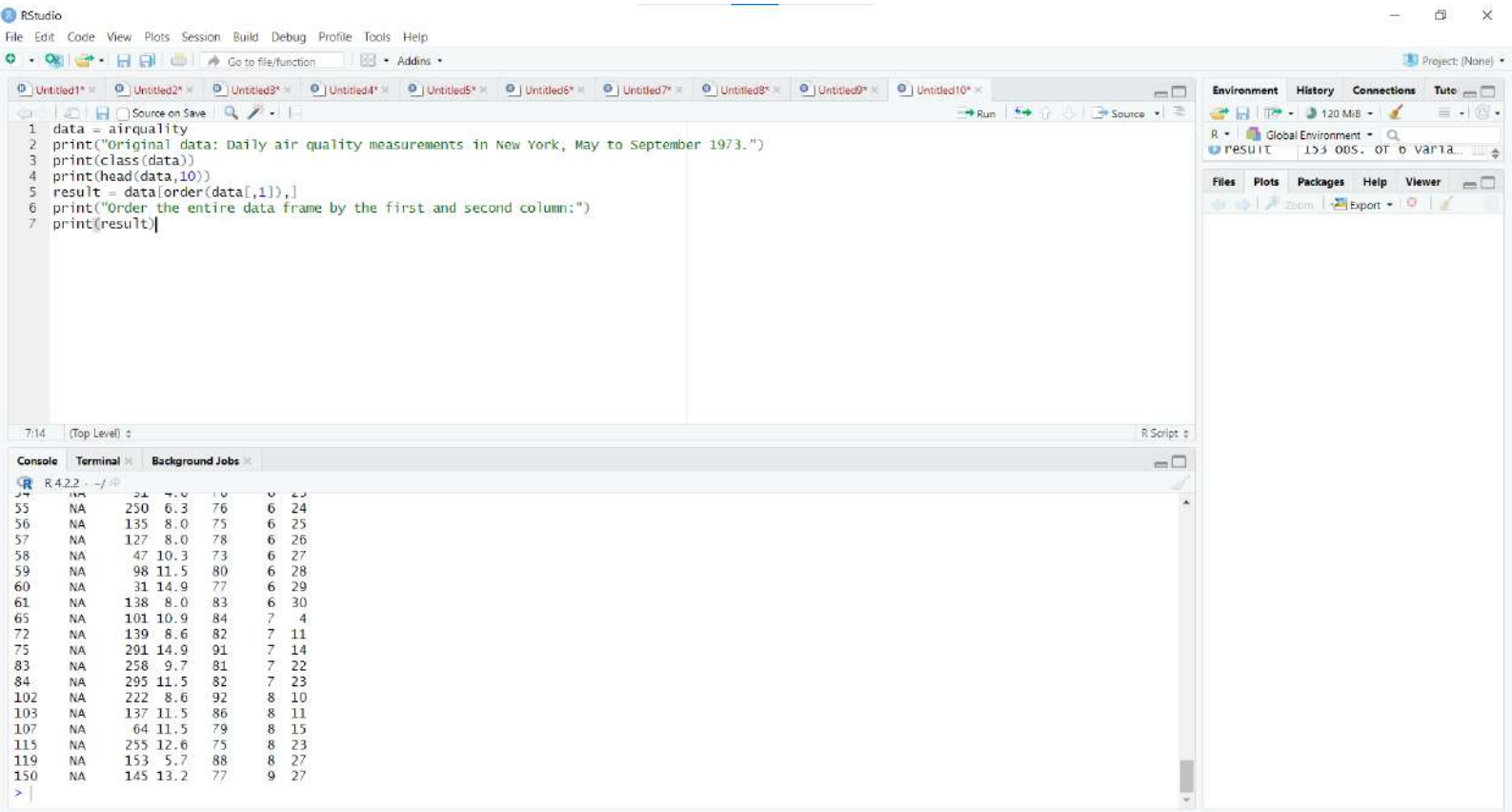

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* Untitled2* Untitled3* Untitled4* Untitled5*
Source on Save
Run Source
exam_data = data.frame(
name = c('Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'),
score = c(12.5, 9, 16.5, 12, 9, 20, 14.5, 13.5, 8, 19),
attempts = c(1, 3, 2, 3, 2, 3, 1, 1, 2, 1),
qualify = c('yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes')
)
print("Original dataframe:")
print(exam_data)
print("Extract 3rd and 5th rows with 1st and 3rd columns :")
result = exam_data[c(3,5),c(1,3)]
print(result)
11:14 (Top Level)
R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
name score attempts qualify
1 Anastasia 12.5 1 yes
2 Dima 9.0 3 no
3 Katherine 16.5 2 yes
4 James 12.0 3 no
5 Emily 9.0 2 no
6 Michael 20.0 3 yes
7 Matthew 14.5 1 yes
8 Laura 13.5 1 no
9 Kevin 8.0 2 no
10 Jonas 19.0 1 yes
> print("Extract 3rd and 5th rows with 1st and 3rd columns :")
[1] "Extract 3rd and 5th rows with 1st and 3rd columns :"
> result = exam_data[c(3,5),c(1,3)]
> print(result)
name attempts
3 Katherine 2
5 Emily 2
Environment History Connections Tute
Global Environment
result 2 obs. of 2 variabl...
Files Plots Packages Help Viewer
Export

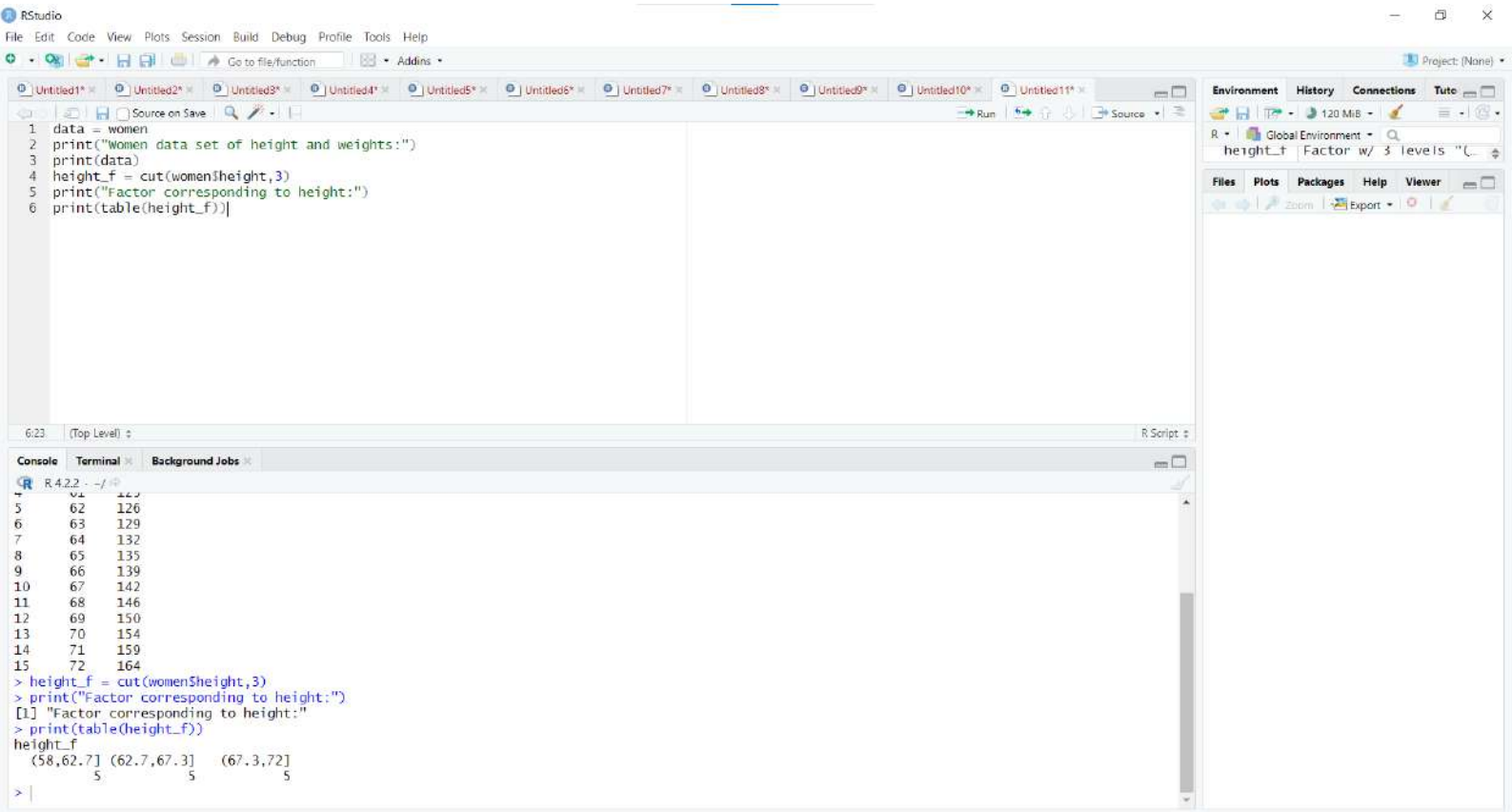

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* Untitled2* Untitled3* Untitled4* Untitled5* Untitled6*
Source on Save
Run
Source
1 exam_data = data.frame(
2 name = c('Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'),
3 score = c(12.5, 9, 16.5, 12, 9, 20, 14.5, 13.5, 8, 19),
4 attempts = c(1, 3, 2, 3, 2, 3, 1, 1, 2, 1),
5 qualify = c('yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes')
6)
7 print("Original dataframe:")
8 print(exam_data)
9 print("New data frame after adding the 'country' column:")
10 exam_data$country = c("USA","USA","USA","USA","USA","USA","USA","USA","USA","USA")
11 print(exam_data)
11:17 (Top Level)
R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
8 Laura 13.5 1 no
9 Kevin 8.0 2 no
10 Jonas 19.0 1 yes
> print("New data frame after adding the 'country' column:")
[1] "New data frame after adding the 'country' column:"
> exam_data$country = c("USA","USA","USA","USA","USA","USA","USA","USA","USA","USA")
> print(exam_data)
name score attempts qualify country
1 Anastasia 12.5 1 yes USA
2 Dima 9.0 3 no USA
3 Katherine 16.5 2 yes USA
4 James 12.0 3 no USA
5 Emily 9.0 2 no USA
6 Michael 20.0 3 yes USA
7 Matthew 14.5 1 yes USA
8 Laura 13.5 1 no USA
9 Kevin 8.0 2 no USA
10 Jonas 19.0 1 yes USA
>
Environment History Connections Tute
119 MiB
Global Environment
exam_data 10 obs. of 5 variab...
Files Plots Packages Help Viewer
Zoom
Export

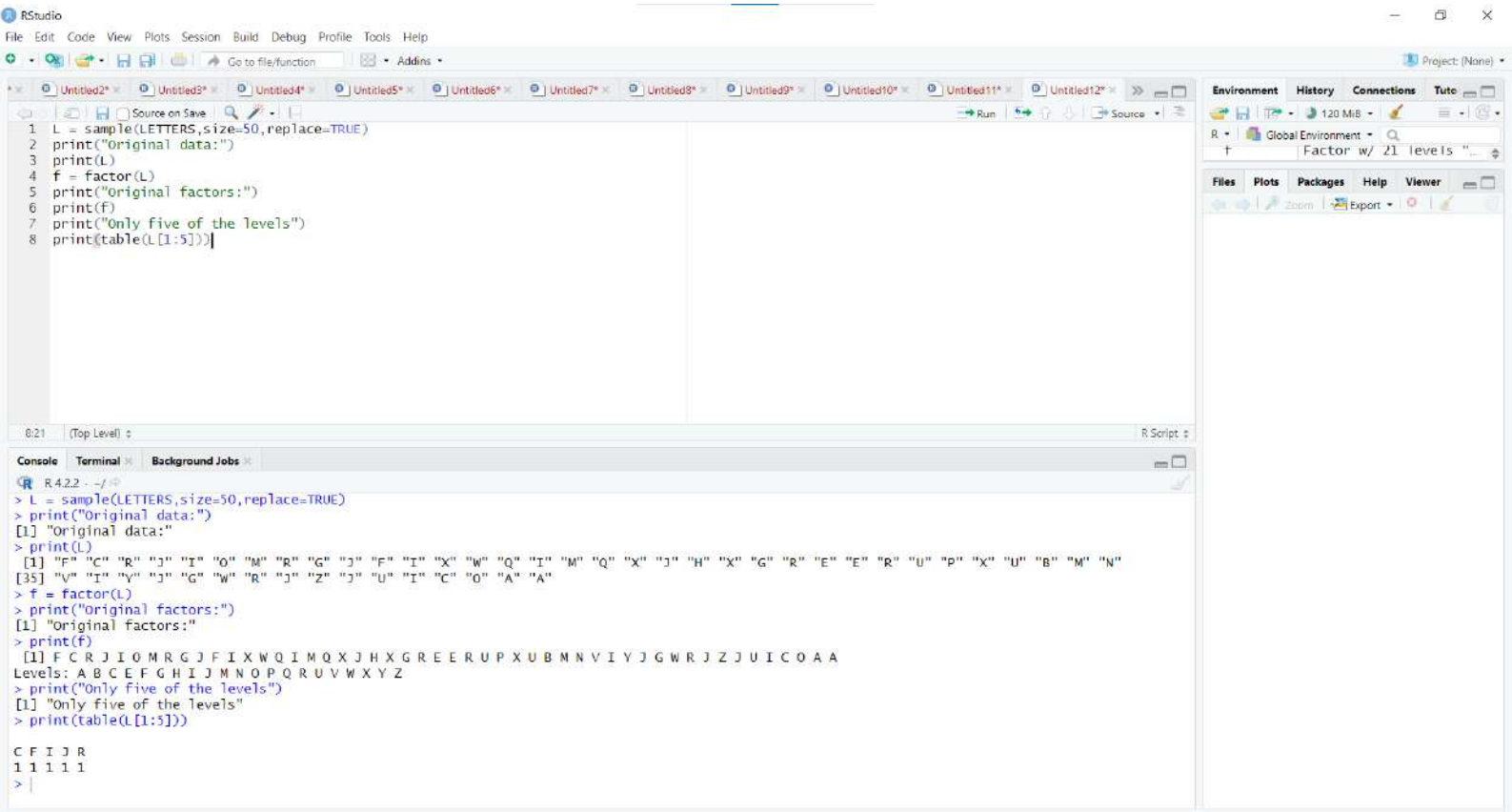

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled7*
Source on Save
Run
Source
exam_data = data.frame(
name = c('Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'),
score = c(12.5, 9, 16.5, 12, 9, 20, 14.5, 13.5, 8, 19),
attempts = c(1, 3, 2, 3, 2, 3, 1, 1, 2, 1),
qualify = c('yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes')
)
print("Original dataframe:")
print(exam_data)
new_exam_data = data.frame(
name = c('Robert', 'Sophia'),
score = c(10.5, 9),
attempts = c(1, 3),
qualify = c('yes', 'no')
)
exam_data = rbind(exam_data, new_exam_data)
print("After adding new row(s) to an existing data frame:")
print(exam_data)
17:17
(Top Level)
R Script
Console
Terminal
Background Jobs
R 4.2.2 · ~/
+)
> exam_data = rbind(exam_data, new_exam_data)
> print("After adding new row(s) to an existing data frame:")
[1] "After adding new row(s) to an existing data frame:"
> print(exam_data)
name score attempts qualify
1 Anastasia 12.5 1 yes
2 Dima 9.0 3 no
3 Katherine 16.5 2 yes
4 James 12.0 3 no
5 Emily 9.0 2 no
6 Michael 20.0 3 yes
7 Matthew 14.5 1 yes
8 Laura 13.5 1 no
9 Kevin 8.0 2 no
10 Jonas 19.0 1 yes
11 Robert 10.5 1 yes
12 Sophia 9.0 3 no
Environment
History
Connections
Tute
120 MiB
Global Environment
new_exam... 2 obs. of 4 variabl...
Files
Plots
Packages
Help
Viewer
Export

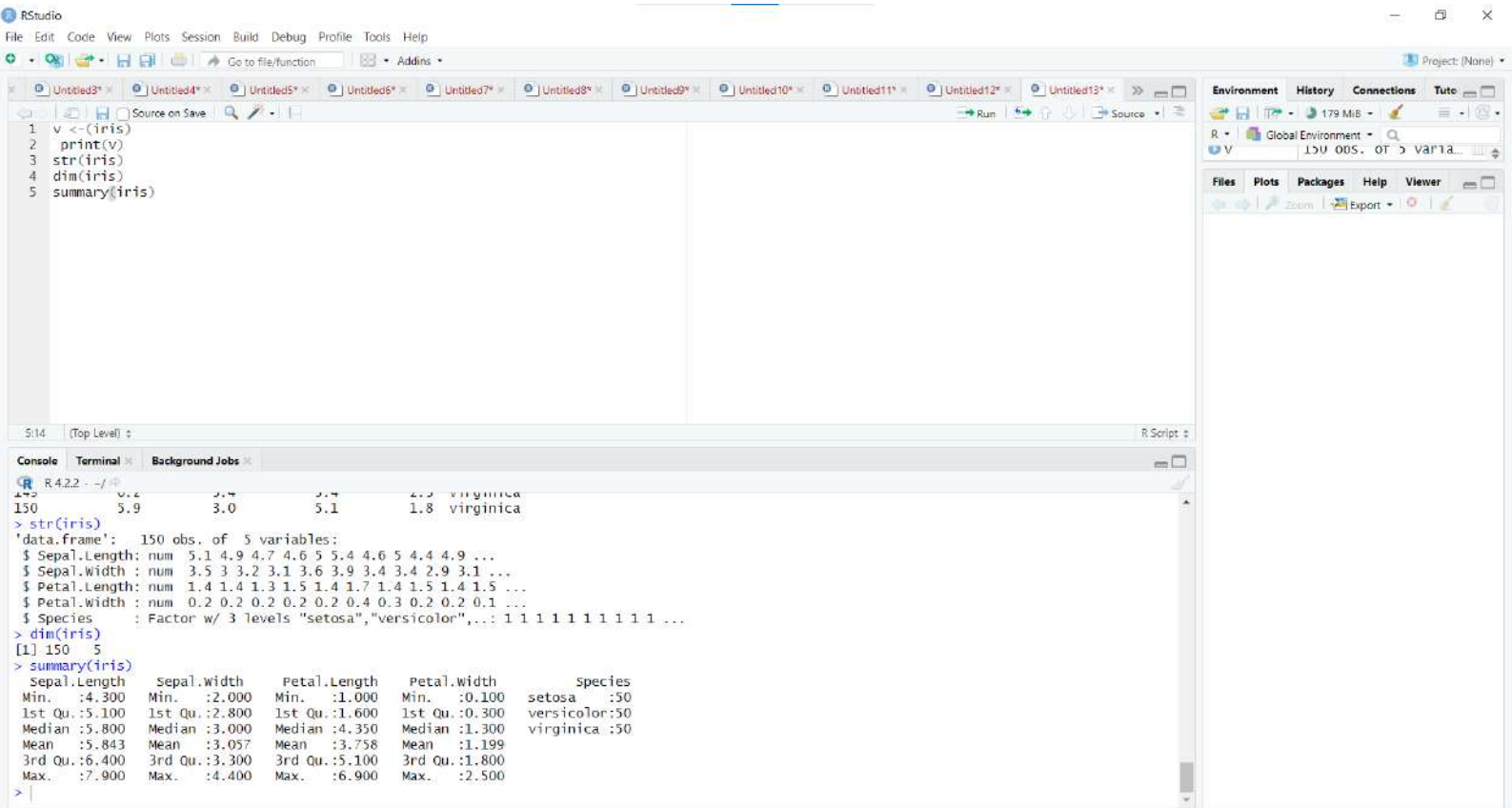

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* Untitled2* Untitled3* Untitled4* Untitled5* Untitled6* Untitled7* Untitled8*
Source on Save
Run
Source
exam_data = data.frame(
name = c('Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'),
score = c(12.5, 9, 16.5, 12, 9, 20, 14.5, 13.5, 8, 19),
attempts = c(1, 3, 2, 3, 2, 3, 1, 1, 2, 1),
qualify = c('yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes')
)
print("Original dataframe:")
print(exam_data)
print("dataframe after sorting 'name' and 'score' columns:")
exam_data = exam_data[with(exam_data, order(name, score)),]
print(exam_data)
11:17 (Top Level)
R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
8 Laura 13.5 1 no
9 Kevin 8.0 2 no
10 Jonas 19.0 1 yes
> print("dataframe after sorting 'name' and 'score' columns:")
[1] "dataframe after sorting 'name' and 'score' columns:"
> exam_data = exam_data[with(exam_data, order(name, score)),]
> print(exam_data)
name score attempts qualify
1 Anastasia 12.5 1 yes
2 Dima 9.0 3 no
5 Emily 9.0 2 no
4 James 12.0 3 no
10 Jonas 19.0 1 yes
3 Katherine 16.5 2 yes
9 Kevin 8.0 2 no
8 Laura 13.5 1 no
7 Matthew 14.5 1 yes
6 Michael 20.0 3 yes
>
Environment History Connections Tute
120 MiB
Global Environment
exam_data 10 obs. of 4 variab...
Files Plots Packages Help Viewer
Zoom
Export


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled9*
Source on Save
Run
Source
exam_data = data.frame(
name = c('Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'),
score = c(12.5, 9, 16.5, 12, 9, 20, 14.5, 13.5, 8, 19),
attempts = c(1, 3, 2, 3, 2, 3, 1, 1, 2, 1),
qualify = c('yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes')
)
print("Original dataframe:")
print(exam_data)
save(exam_data,file="data.rda")
load("data.rda")
file.info("data.rda")
11:23
(Top Level)
R Script
Console
Terminal
Background Jobs
R 4.2.2 · ~/
[1] "Original dataframe:"
> print(exam_data)
name score attempts qualify
1 Anastasia 12.5 1 yes
2 Dima 9.0 3 no
3 Katherine 16.5 2 yes
4 James 12.0 3 no
5 Emily 9.0 2 no
6 Michael 20.0 3 yes
7 Matthew 14.5 1 yes
8 Laura 13.5 1 no
9 Kevin 8.0 2 no
10 Jonas 19.0 1 yes
> save(exam_data,file="data.rda")
> load("data.rda")
> file.info("data.rda")
size isdir mode mtime ctime atime exe
data.rda 302 FALSE 666 2023-01-25 20:06:38 2023-01-25 20:06:38 2023-01-25 20:06:38 no
Environment
History
Connections
Tute
Global Environment
exam_data 10 obs. of 4 variab...
Files
Plots
Packages
Help
Viewer
Export


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* Untitled2* Untitled3* Untitled4* Untitled5* Untitled6* Untitled7* Untitled8* Untitled9* Untitled10*
Source on Save
Run
Source
1 data = airquality
2 print("Original data: Daily air quality measurements in New York, May to September 1973.")
3 print(class(data))
4 print(head(data,10))
5 result = data[order(data[,1]),]
6 print("Order the entire data frame by the first and second column:")
7 print(result)
7:14 (Top Level)
R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
55 NA 250 6.3 76 6 24
56 NA 135 8.0 75 6 25
57 NA 127 8.0 78 6 26
58 NA 47 10.3 73 6 27
59 NA 98 11.5 80 6 28
60 NA 31 14.9 77 6 29
61 NA 138 8.0 83 6 30
65 NA 101 10.9 84 7 4
72 NA 139 8.6 82 7 11
75 NA 291 14.9 91 7 14
83 NA 258 9.7 81 7 22
84 NA 295 11.5 82 7 23
102 NA 222 8.6 92 8 10
103 NA 137 11.5 86 8 11
107 NA 64 11.5 79 8 15
115 NA 255 12.6 75 8 23
119 NA 153 5.7 88 8 27
150 NA 145 13.2 77 9 27
>
Environment History Connections Tute
120 MiB
R Global Environment
result 153 obs. of 6 varia...
Files Plots Packages Help Viewer
Export


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled1* Untitled2* Untitled3* Untitled4* Untitled5* Untitled6* Untitled7* Untitled8* Untitled9* Untitled10* Untitled11*
Source on Save
Run
Source
1 data = women
2 print("Women data set of height and weights:")
3 print(data)
4 height_f = cut(women$height,3)
5 print("Factor corresponding to height:")
6 print(table(height_f))
6:23 (Top Level)
R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
5 62 126
6 63 129
7 64 132
8 65 135
9 66 139
10 67 142
11 68 146
12 69 150
13 70 154
14 71 159
15 72 164
> height_f = cut(women$height,3)
> print("Factor corresponding to height:")
[1] "Factor corresponding to height:"
> print(table(height_f))
height_f
(58,62.7] (62.7,67.3] (67.3,72]
5 5 5
>
Environment History Connections Tute
Global Environment
height_f Factor w/ 3 levels "(...
Files Plots Packages Help Viewer
Zoom
Export


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
Untitled2* Untitled3* Untitled4* Untitled5* Untitled6* Untitled7* Untitled8* Untitled9* Untitled10* Untitled11* Untitled12*
Source on Save
Run
Source
1 L = sample(LETTERS,size=50,replace=TRUE)
2 print("Original data:")
3 print(L)
4 f = factor(L)
5 print("Original factors:")
6 print(f)
7 print("Only five of the levels")
8 print(table(L[1:5]))
8:21 (Top Level)
R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
> L = sample(LETTERS,size=50,replace=TRUE)
> print("Original data:")
[1] "Original data:"
> print(L)
[1] "F" "C" "R" "J" "I" "O" "M" "R" "G" "J" "F" "I" "X" "W" "Q" "I" "M" "Q" "X" "J" "H" "X" "G" "R" "E" "E" "R" "U" "P" "X" "U" "B" "M" "N"
[35] "V" "I" "Y" "J" "G" "W" "R" "J" "Z" "J" "U" "I" "C" "O" "A" "A"
> f = factor(L)
> print("Original factors:")
[1] "Original factors:"
> print(f)
[1] F C R J I O M R G J F I X W Q I M Q X J H X G R E E R U P X U B M N V I Y J G W R J Z J U I C O A A
Levels: A B C E F G H I J M N O P Q R U V W X Y Z
> print("Only five of the levels")
[1] "Only five of the levels"
> print(table(L[1:5]))
C F I J R
1 1 1 1 1
>
Environment History Connections Tute
120 MiB
R
Global Environment
Factor w/ 21 levels "...
Files Plots Packages Help Viewer
Zoom
Export


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled3* Untitled4* Untitled5* Untitled6* Untitled7* Untitled8* Untitled9* Untitled10* Untitled11* Untitled12* Untitled13*
Source on Save
Run
Source
1 v <-(iris)
2 print(v)
3 str(iris)
4 dim(iris)
5 summary(iris)
5:14 (Top Level)
R Script
Environment History Connections Tute
Global Environment
Files Plots Packages Help Viewer
Export
Console Terminal Background Jobs
R 4.2.2 · ~/
150 5.9 3.0 5.1 1.8 virginica
> str(iris)
'data.frame': 150 obs. of 5 variables:
$ Sepal.Length: num 5.1 4.9 4.7 4.6 5 5.4 4.6 5 4.4 4.9 ...
$ Sepal.Width : num 3.5 3 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 ...
$ Petal.Length: num 1.4 1.4 1.3 1.5 1.4 1.7 1.4 1.5 1.4 1.5 ...
$ Petal.Width : num 0.2 0.2 0.2 0.2 0.2 0.4 0.3 0.2 0.2 0.1 ...
$ Species : Factor w/ 3 levels "setosa","versicolor",..: 1 1 1 1 1 1 1 1 1 1 ...
> dim(iris)
[1] 150 5
> summary(iris)
Sepal.Length Sepal.Width Petal.Length Petal.Width Species
Min. :4.300 Min. :2.000 Min. :1.000 Min. :0.100 setosa :50
1st Qu.:5.100 1st Qu.:2.800 1st Qu.:1.600 1st Qu.:0.300 versicolor:50
Median :5.800 Median :3.000 Median :4.350 Median :1.300 virginica :50
Mean :5.843 Mean :3.057 Mean :3.758 Mean :1.199
3rd Qu.:6.400 3rd Qu.:3.300 3rd Qu.:5.100 3rd Qu.:1.800
Max. :7.900 Max. :4.400 Max. :6.900 Max. :2.500
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