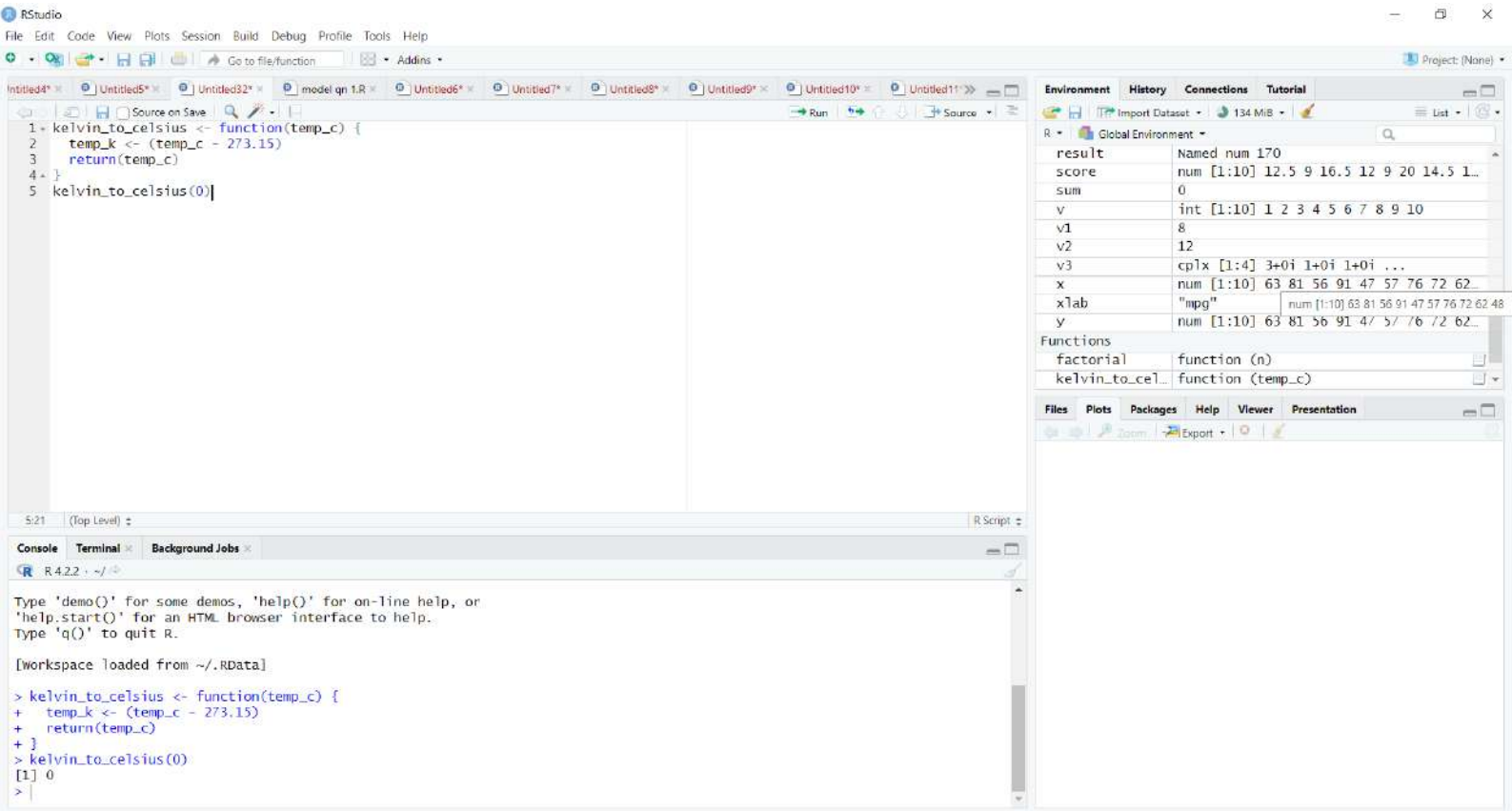
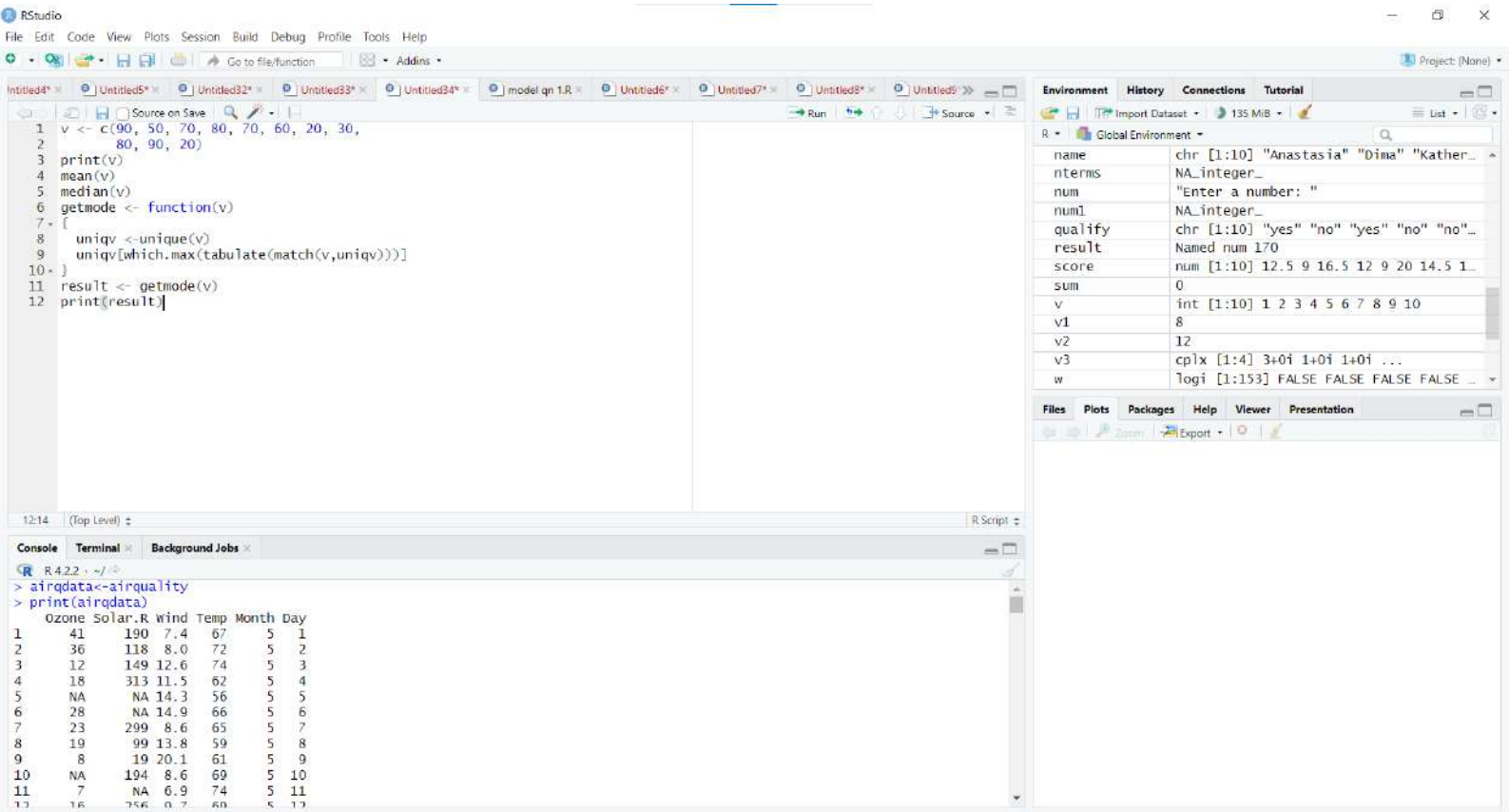
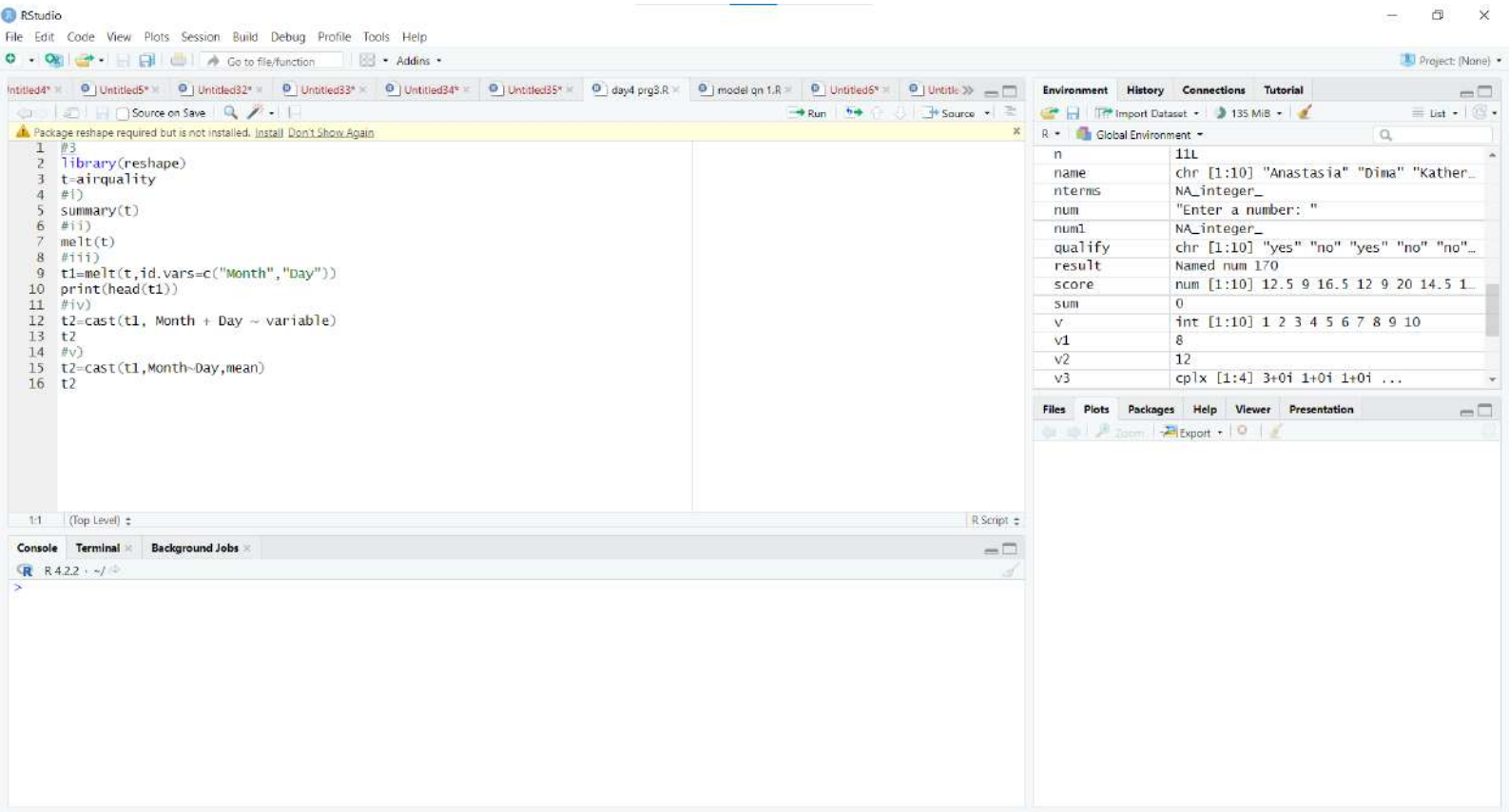

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled4* Untitled5* Untitled32* model qn 1.R Untitled6* Untitled7* Untitled8* Untitled9* Untitled10* Untitled11*
Source on Save
Run
Source
1 kelvin_to_celsius <- function(temp_c) {
2 temp_k <- (temp_c - 273.15)
3 return(temp_c)
4 }
5 kelvin_to_celsius(0)
5:21 (Top Level)
R Script
Environment History Connections Tutorial
Import Dataset
134 MiB
List
Global Environment
result Named num 170
score num [1:10] 12.5 9 16.5 12 9 20 14.5 1…
sum 0
v int [1:10] 1 2 3 4 5 6 7 8 9 10
v1 8
v2 12
v3 cplx [1:4] 3+0i 1+0i 1+0i ...
x num [1:10] 63 81 56 91 47 57 76 72 62…
xlab "mpg"
num [1:10] 63 81 56 91 47 57 76 72 62 48
y num [1:10] 63 81 56 91 47 57 76 72 62…
Functions
factorial function (n)
kelvin_to_cel… function (temp_c)
Files Plots Packages Help Viewer Presentation
Export
Console Terminal Background Jobs
R 4.2.2 · ~/
Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.
[Workspace loaded from ~/.RData]
> kelvin_to_celsius <- function(temp_c) {
+ temp_k <- (temp_c - 273.15)
+ return(temp_c)
+ }
> kelvin_to_celsius(0)
[1] 0
>


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled4* Untitled5* Untitled32* Untitled33* Untitled34* model qn 1.R Untitled6* Untitled7* Untitled8* Untitled9*
Source on Save
Run
Source
v <- c(90, 50, 70, 80, 70, 60, 20, 30,
80, 90, 20)
print(v)
mean(v)
median(v)
getmode <- function(v)
{
uniqv <-unique(v)
uniqv[which.max(tabulate(match(v,uniqv)))]
}
result <- getmode(v)
print(result)
12:14 (Top Level) R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
> airqdata<-airquality
> print(airqdata)
Ozone Solar.R Wind Temp Month Day
1 41 190 7.4 67 5 1
2 36 118 8.0 72 5 2
3 12 149 12.6 74 5 3
4 18 313 11.5 62 5 4
5 NA NA 14.3 56 5 5
6 28 NA 14.9 66 5 6
7 23 299 8.6 65 5 7
8 19 99 13.8 59 5 8
9 8 19 20.1 61 5 9
10 NA 194 8.6 69 5 10
11 7 NA 6.9 74 5 11
Environment History Connections Tutorial
Import Dataset 135 MiB List
R Global Environment
name chr [1:10] "Anastasia" "Dima" "Kather…
nterms NA_integer_
num "Enter a number: "
num1 NA_integer_
qualify chr [1:10] "yes" "no" "yes" "no" "no"…
result Named num 170
score num [1:10] 12.5 9 16.5 12 9 20 14.5 1…
sum 0
v int [1:10] 1 2 3 4 5 6 7 8 9 10
v1 8
v2 12
v3 cplx [1:4] 3+0i 1+0i 1+0i ...
w logi [1:153] FALSE FALSE FALSE FALSE …
Files Plots Packages Help Viewer Presentation
Zoom Export


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
Untitled4*
Untitled5*
Untitled32*
Untitled33*
Untitled34*
Untitled35*
day4 prg3.R
model qn 1.R
Untitled6*
Untitle
Source on Save
Run
Source
Package reshape required but is not installed. Install Don't Show Again
1 #3
2 library(reshape)
3 t=airquality
4 #i)
5 summary(t)
6 #ii)
7 melt(t)
8 #iii)
9 t1=melt(t,id.vars=c("Month","Day"))
10 print(head(t1))
11 #iv)
12 t2=cast(t1, Month + Day ~ variable)
13 t2
14 #v)
15 t2=cast(t1,Month~Day,mean)
16 t2
1:1
(Top Level)
R Script
Console
Terminal
Background Jobs
R 4.2.2 · ~/
>
Environment
History
Connections
Tutorial
Import Dataset
135 MiB
List
R
Global Environment
n 11L
name chr [1:10] "Anastasia" "Dima" "Kather…
nterms NA_integer_
num "Enter a number: "
num1 NA_integer_
qualify chr [1:10] "yes" "no" "yes" "no" "no"…
result Named num 170
score num [1:10] 12.5 9 16.5 12 9 20 14.5 1…
sum 0
v int [1:10] 1 2 3 4 5 6 7 8 9 10
v1 8
v2 12
v3 cplx [1:4] 3+0i 1+0i 1+0i ...
Files
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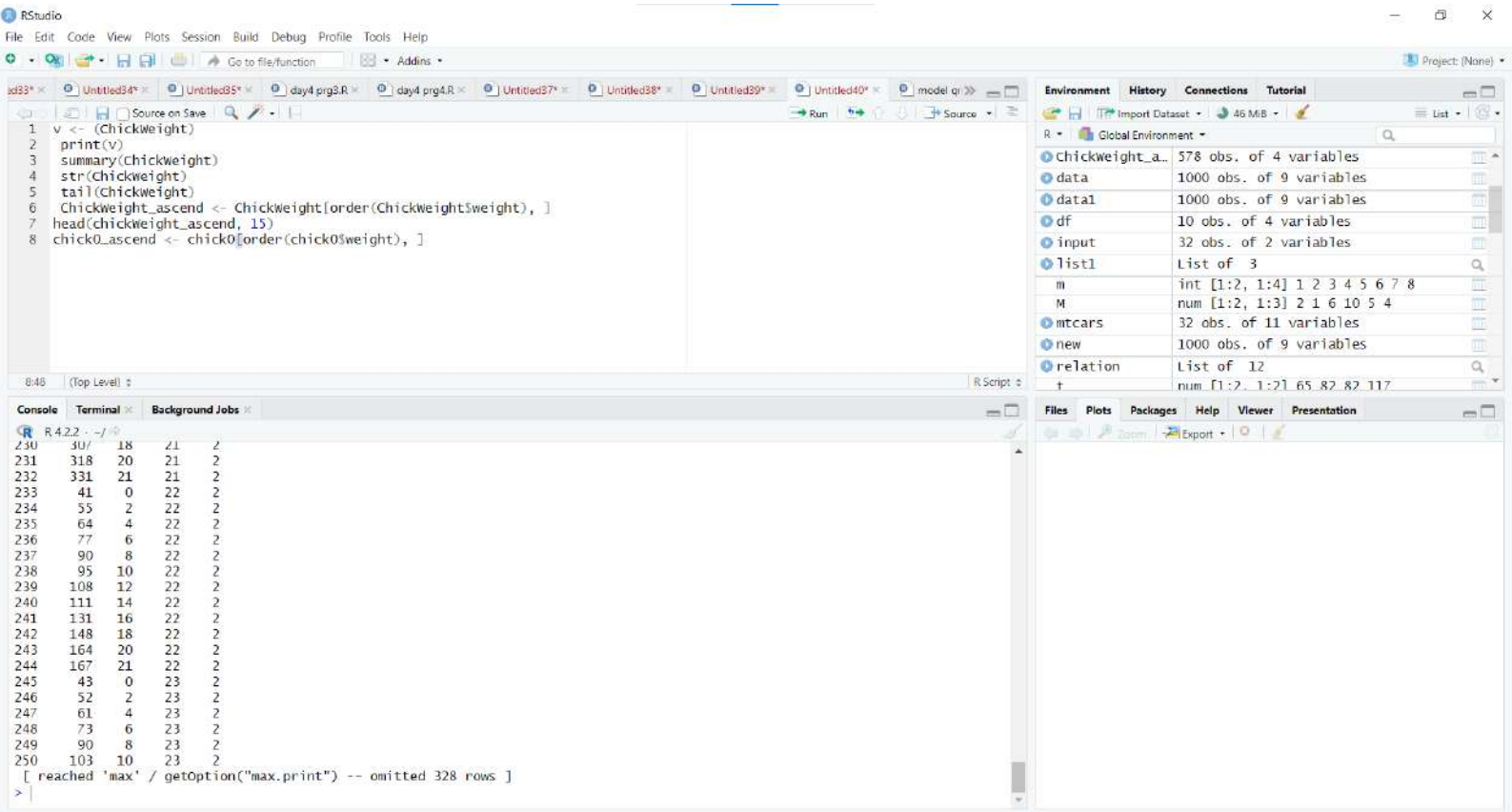
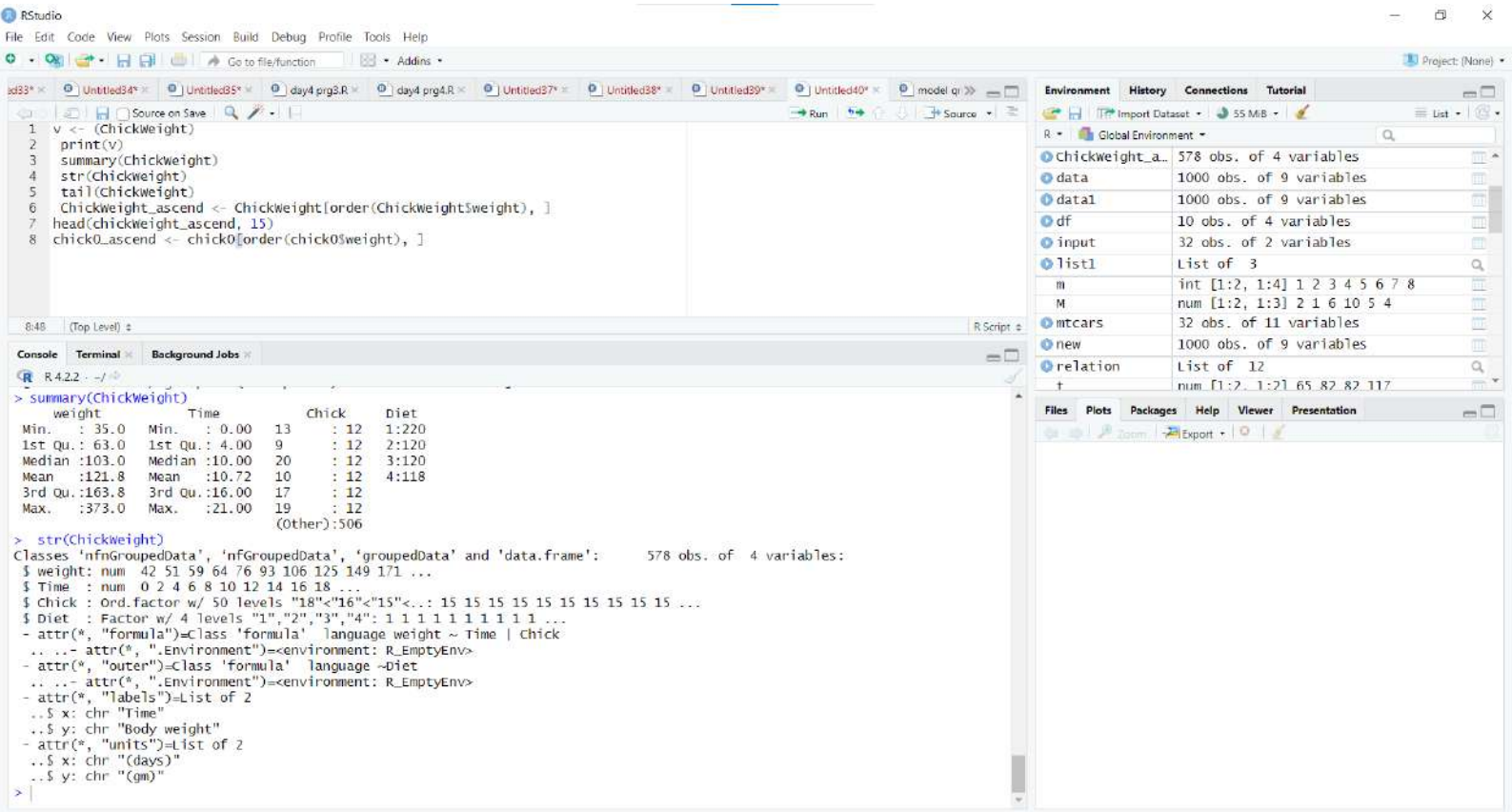
Export


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled34* Untitled35* day4 prg3.R day4 prg4.R Untitled37* Untitled38* Untitled39* Untitled40* model qi
Source on Save
Run
Source
v <- (ChickWeight)
print(v)
summary(ChickWeight)
str(ChickWeight)
tail(ChickWeight)
ChickWeight_ascend <- ChickWeight[order(ChickWeight$weight),]
head(chickWeight_ascend, 15)
chick0_ascend <- chick0[order(chick0$weight),]
8:48 (Top Level) R Script
Environment History Connections Tutorial
Import Dataset 46 MiB List
Global Environment
ChickWeight_a... 578 obs. of 4 variables
data 1000 obs. of 9 variables
data1 1000 obs. of 9 variables
df 10 obs. of 4 variables
input 32 obs. of 2 variables
list1 List of 3
m int [1:2, 1:4] 1 2 3 4 5 6 7 8
M num [1:2, 1:3] 2 1 6 10 5 4
mtcars 32 obs. of 11 variables
new 1000 obs. of 9 variables
relation List of 12
t num [1:2, 1:21] 65 82 82 117
Console Terminal Background Jobs
R 4.2.2 · ~/
230 307 18 21 2
231 318 20 21 2
232 331 21 21 2
233 41 0 22 2
234 55 2 22 2
235 64 4 22 2
236 77 6 22 2
237 90 8 22 2
238 95 10 22 2
239 108 12 22 2
240 111 14 22 2
241 131 16 22 2
242 148 18 22 2
243 164 20 22 2
244 167 21 22 2
245 43 0 23 2
246 52 2 23 2
247 61 4 23 2
248 73 6 23 2
249 90 8 23 2
250 103 10 23 2
[reached 'max' / getOption("max.print") -- omitted 328 rows]
>
Files Plots Packages Help Viewer Presentation
Zoom Export


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled34* Untitled35* day4 prg3.R day4 prg4.R Untitled37* Untitled38* Untitled39* Untitled40* model qr
Source on Save
Run
Source
1 v <- (ChickWeight)
2 print(v)
3 summary(ChickWeight)
4 str(ChickWeight)
5 tail(ChickWeight)
6 ChickWeight_ascend <- ChickWeight[order(ChickWeight$weight),]
7 head(chickWeight_ascend, 15)
8 chick0_ascend <- chick0[order(chick0$weight),]
8:48 (Top Level)
R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
> summary(ChickWeight)
weight Time Chick Diet
Min. : 35.0 Min. : 0.00 13 : 12 1:220
1st Qu.: 63.0 1st Qu.: 4.00 9 : 12 2:120
Median :103.0 Median :10.00 20 : 12 3:120
Mean :121.8 Mean :10.72 10 : 12 4:118
3rd Qu.:163.8 3rd Qu.:16.00 17 : 12
Max. :373.0 Max. :21.00 19 : 12
(Other):506
> str(ChickWeight)
Classes 'nfnGroupedData', 'nfGroupedData', 'groupedData' and 'data.frame': 578 obs. of 4 variables:
$ weight: num 42 51 59 64 76 93 106 125 149 171 ...
$ Time : num 0 2 4 6 8 10 12 14 16 18 ...
$ Chick : Ord.factor w/ 50 levels "18"<"16"<"15"<..: 15 15 15 15 15 15 15 15 15 15 ...
$ Diet : Factor w/ 4 levels "1","2","3","4": 1 1 1 1 1 1 1 1 1 1 ...
- attr(*, "formula")=Class 'formula' language weight ~ Time | Chick
.. ..- attr(*, ".Environment")=<environment: R_EmptyEnv>
- attr(*, "outer")=Class 'formula' language ~Diet
.. ..- attr(*, ".Environment")=<environment: R_EmptyEnv>
- attr(*, "labels")=List of 2
..$ x: chr "Time"
..$ y: chr "Body weight"
- attr(*, "units")=List of 2
..$ x: chr "(days)"
..$ y: chr "(gm)"
>
Environment History Connections Tutorial
Import Dataset
55 MiB
List
R
Global Environment
ChickWeight_a... 578 obs. of 4 variables
data 1000 obs. of 9 variables
data1 1000 obs. of 9 variables
df 10 obs. of 4 variables
input 32 obs. of 2 variables
list1 List of 3
m int [1:2, 1:4] 1 2 3 4 5 6 7 8
M num [1:2, 1:3] 2 1 6 10 5 4
mtcars 32 obs. of 11 variables
new 1000 obs. of 9 variables
relation List of 12
t num [1:2, 1:21] 65 82 82 117
Files Plots Packages Help Viewer Presentation
Zoom
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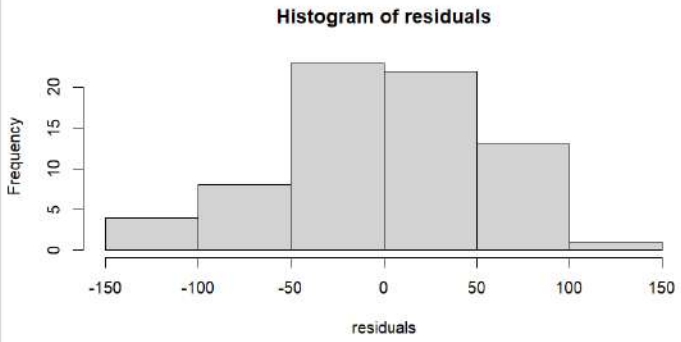
RStudio

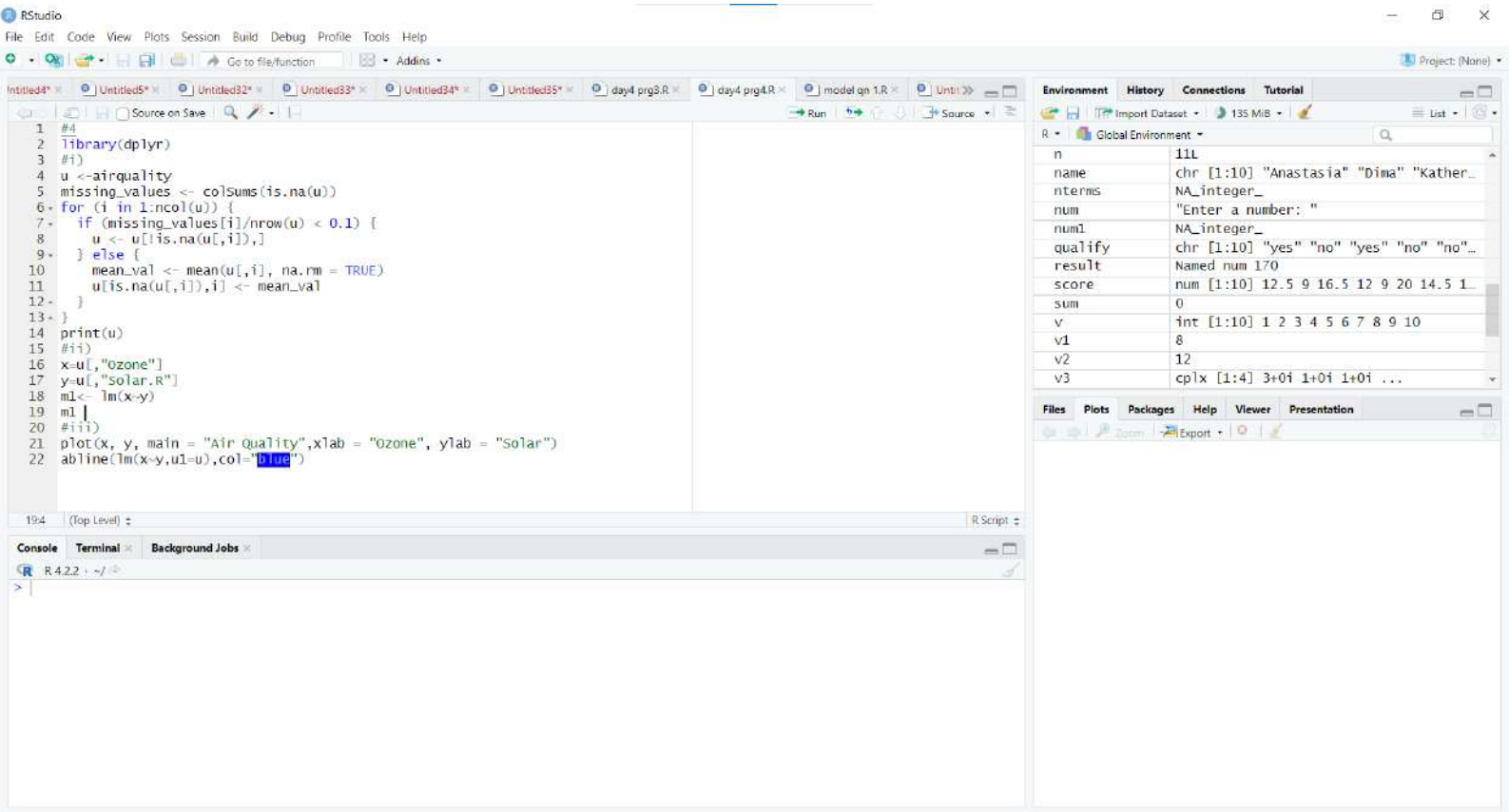
File Edit Code View Plots Session Build Debug Profile Tools Help

```
residuals <- resid(lm(weight ~ feed, chickwts))
hist(residuals)
```

```
> boxplot(weight~feed,data=chickwts, main="Chicken Weights",
+         ylab="Weight (grams)", xlab="Feed type")
> residuals <- resid(lm(weight ~ feed, chickwts))
> hist(residuals)
>
```

cold	56L
f	Factor w/ 21 levels "A","B","C","E",..: 5 3 15 9 8 12 10 1...
geeks	num [1:4] 23 56 20 63
L	chr [1:50] "F" "C" "R" "J" "I" "O" "M" "R" "G" "J" "F" "I"...
labels	chr [1:4] "Mumbai" "Pune" "Chennai" "Bangalore"
mean	77.8823529411765
n	11L
name	chr [1:10] "Anastasia" "Dima" "Katherine" "James" "Emily" ...
nterms	NA_integer_
num	"Enter a number: "
num1	NA_integer_
qualify	chr [1:10] "yes" "no" "yes" "no" "no" "yes" "yes" "no" "no...
residuals	Named num [1:71] 18.8 -0.2 -24.2 66.8 56.8 ...




RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
Untitled4* Untitled5* Untitled32* Untitled33* Untitled34* Untitled35* day4 prg3.R day4 prg4.R model qn 1.R
Source on Save
Run
Source
#4
library(dplyr)
#i)
u <-airquality
missing_values <- colSums(is.na(u))
for (i in 1:ncol(u)) {
if (missing_values[i]/nrow(u) < 0.1) {
u <- u[!is.na(u[,i]),]
} else {
mean_val <- mean(u[,i], na.rm = TRUE)
u[is.na(u[,i]),i] <- mean_val
}
}
print(u)
#ii)
x=u["Ozone"]
y=u["Solar.R"]
ml<- lm(x~y)
ml
#iii)
plot(x, y, main = "Air Quality",xlab = "Ozone", ylab = "Solar")
abline(lm(x~y,u1=u),col="blue")
19:4 (Top Level)
R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
>
Environment History Connections Tutorial
Import Dataset
135 MiB
List
R
Global Environment
n 111
name chr [1:10] "Anastasia" "Dima" "Kather…
nterms NA_integer_
num "Enter a number: "
num1 NA_integer_
qualify chr [1:10] "yes" "no" "yes" "no" "no"…
result Named num 170
score num [1:10] 12.5 9 16.5 12 9 20 14.5 1…
sum 0
v int [1:10] 1 2 3 4 5 6 7 8 9 10
v1 8
v2 12
v3 cplx [1:4] 3+0i 1+0i 1+0i ...
Files Plots Packages Help Viewer Presentation
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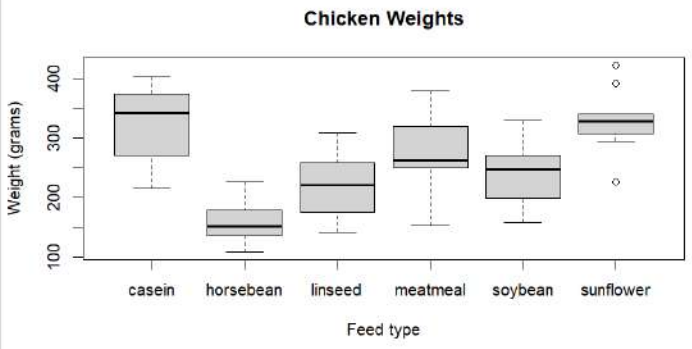
RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

```
boxplot(weight~feed,data=chickwts, main="Chicken Weights",
        ylab="Weight (grams)", xlab="Feed type")
```

```
> boxplot(weight~feed,data=chickwts, main="Chicken Weights",
+         ylab="Weight (grams)", xlab="Feed type")
>
```

Environment	
ChickWeight_ascend	578 obs. of 4 variables
data	1000 obs. of 9 variables
data1	1000 obs. of 9 variables
df	10 obs. of 4 variables
input	32 obs. of 2 variables
list1	List of 3
m	int [1:2, 1:4] 1 2 3 4 5 6 7 8
M	num [1:2, 1:3] 2 1 6 10 5 4
mtcars	32 obs. of 11 variables
new	1000 obs. of 9 variables
relation	List of 12
t	num [1:2, 1:21] 65 82 82 117



RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function | Addins | Project: (None)

Untitled38* | Untitled39* | Untitled40* | Untitled41* | Untitled42* | Untitled43* | model c

Source on Save | Run | Source

```
1 ChickWeight <- ChickWeight
2 levels(ChickWeight$Diet) <- c("Diet 1","Diet 2","Diet 3","Diet 4")
```

2:67 (Top Level) | R Script

Console | Terminal | Background Jobs

R 4.2.2 · ~/

```
> boxplot(weight~feed,data=chickwts, main="Chicken Weights",
+         ylab="Weight (grams)", xlab="Feed type")
> residuals <- resid(lm(weight ~ feed, chickwts))
> hist(residuals)
> ChickWeight <- ChickWeight
> levels(ChickWeight$Diet) <- c("Diet 1","Diet 2","Diet 3","Diet 4")
>
```

Environment | History | Connections | Tutorial

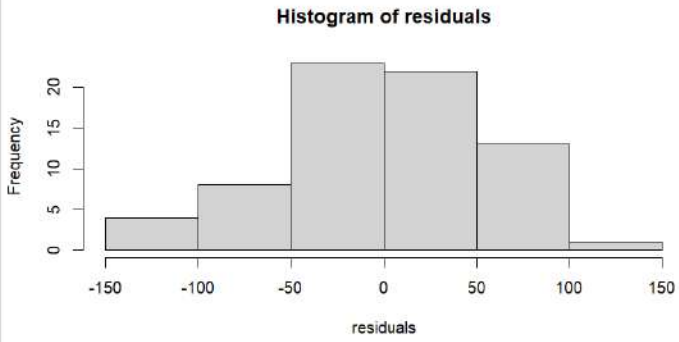
Import Dataset | 190 MiB | List

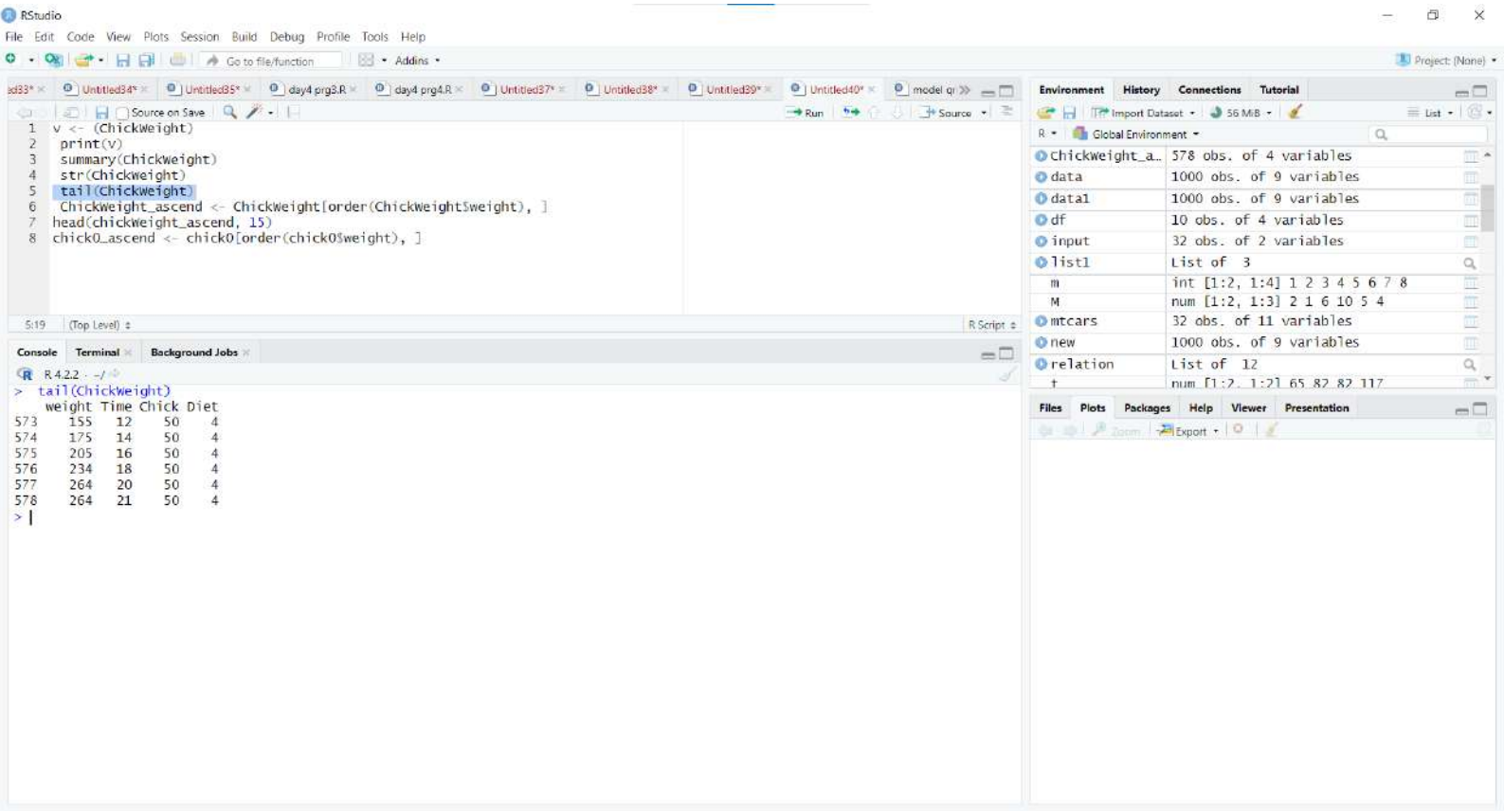
R | Global Environment

ChickWeight	578 obs. of 4 variables
ChickWeight_ascend	578 obs. of 4 variables
data	1000 obs. of 9 variables
data1	1000 obs. of 9 variables
df	10 obs. of 4 variables
input	32 obs. of 2 variables
list1	List of 3
m	int [1:2, 1:4] 1 2 3 4 5 6 7 8
M	num [1:2, 1:3] 2 1 6 10 5 4
mtcars	32 obs. of 11 variables
new	1000 obs. of 9 variables
relation	List of 12

Files | Plots | Packages | Help | Viewer | Presentation

Zoom | Export | Publish




RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Untitled34* Untitled35* day4 prg3.R day4 prg4.R Untitled37* Untitled38* Untitled39* Untitled40* model qi
Source on Save
Run
Source
1 v <- (ChickWeight)
2 print(v)
3 summary(ChickWeight)
4 str(ChickWeight)
5 tail(ChickWeight)
6 ChickWeight_ascend <- ChickWeight[order(ChickWeight$weight),]
7 head(chickWeight_ascend, 15)
8 chick0_ascend <- chick0[order(chick0$weight),]
5:19 (Top Level) R Script
Console Terminal Background Jobs
R 4.2.2 · ~/
> tail(ChickWeight)
weight Time Chick Diet
573 155 12 50 4
574 175 14 50 4
575 205 16 50 4
576 234 18 50 4
577 264 20 50 4
578 264 21 50 4
Environment History Connections Tutorial
Import Dataset 56 MiB List
R Global Environment
ChickWeight_a... 578 obs. of 4 variables
data 1000 obs. of 9 variables
data1 1000 obs. of 9 variables
df 10 obs. of 4 variables
input 32 obs. of 2 variables
list1 List of 3
m int [1:2, 1:4] 1 2 3 4 5 6 7 8
M num [1:2, 1:3] 2 1 6 10 5 4
mtcars 32 obs. of 11 variables
new 1000 obs. of 9 variables
relation List of 12
t num [1:2, 1:21] 65 82 82 117
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Go to file/function | Addins | Project: (None)

Untitled39* | Untitled40* | Untitled41* | Untitled42* | Untitled43* | Untitled44* | model c

Source on Save | Run | Source

```
1  plot(ChickWeight$Time, ChickWeight$weight)
```

1:43 (Top Level) | R Script

Console | Terminal | Background Jobs

R 4.2.2 · ~/

```
> boxplot(weight~feed,data=chickwts, main="Chicken Weights",
+         ylab="Weight (grams)", xlab="Feed type")
> residuals <- resid(lm(weight ~ feed, chickwts))
> hist(residuals)
> ChickWeight <- ChickWeight
> levels(ChickWeight$Diet) <- c("Diet 1","Diet 2","Diet 3","Diet 4")
> plot(ChickWeight$Time, ChickWeight$weight)
>
```

Environment | History | Connections | Tutorial

Import Dataset | 173 MiB | List

R | Global Environment

ChickWeight	578 obs. of 4 variables
ChickWeight_ascend	578 obs. of 4 variables
data	1000 obs. of 9 variables
data1	1000 obs. of 9 variables
df	10 obs. of 4 variables
input	32 obs. of 2 variables
list1	List of 3
m	int [1:2, 1:4] 1 2 3 4 5 6 7 8
M	num [1:2, 1:3] 2 1 6 10 5 4
mtcars	32 obs. of 11 variables
new	1000 obs. of 9 variables
relation	List of 12

Files | Plots | Packages | Help | Viewer | Presentation

Zoom | Export | Publish