

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

```
Walmart_Retail_Analysis_Report.R x Data2 x semester_store1 x gr x walmart x
Source on Save Run Source
101 summary(walmart_lm1)
102
103 walmart_lm1 = lm(weekly_sales ~ Holiday_Flag + Temperature + CPI , semester_store1)
104 summary(walmart_lm1)
105
106 walmart_lm3 = lm(weekly_sales ~ Temperature + CPI , semester_store1)
107 summary(walmart_lm3)
108
109
110
111 ### Change dates into days by creating new variable
112
113 Data2= walmart
114 Data2$weekdays = weekdays(Data2$Date)
115 View(Data2)
116
115:12 (Top Level) R Script
```

Console Terminal Background Jobs

R 4.2.2 ~ /

Multiple R-squared: 0.1378, Adjusted R-squared: 0.1192
F-statistic: 7.407 on 3 and 139 DF, p-value: 0.0001222

```
> walmart_lm3 = lm(weekly_sales ~ Temperature + CPI , semester_store1)
> summary(walmart_lm3)
```

call:
lm(formula = weekly_sales ~ Temperature + CPI, data = semester_store1)

Residuals:

Min	1Q	Median	3Q	Max
-312205	-85704	-9198	57222	830489

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-233190	616327	-0.378	0.70574

Environment History Connections Tutorial

Import Dataset 596 MiB

R Global Environment

Name	Description	Version
Q3_2012_sales	45 obs. of 2 variables	
Q3_2012_Sales	0 obs. of 2 variables	
scatter.1	Large gg (9 elements, 1.4 MB)	
semester_store1	143 obs. of 7 variables	
store_sales	45 obs. of 4 variables	
Store_sales	45 obs. of 4 variables	

Files Plots Packages Help Viewer Presentation

Install Update

Name	Description	Version
backports	Reimplementations of functions introduced since R-3.0.0	1.4.1
base64enc	Tools for base64 encoding	0.1-3
bitops	Bitwise Operations	1.0-7
brio	Basic R Input Output	1.1.3
broom	Convert Statistical Objects into Tidy Tibbles	1.0.3
bslib	Custom 'Bootstrap' 'Sass' Themes for 'shiny' and 'rmarkdown'	0.4.2
cachem	Cache R Objects with Automatic Pruning	1.0.6
callr	Call R from R	3.7.3
car	Companion to Applied Regression	3.1-1
carData	Companion to Applied Regression Data Sets	3.0-5
caret	Classification and Regression Training	6.0-93
cellranger	Translate Spreadsheet Cell Ranges to Rows and Columns	1.1.0
class	Functions for Classification	7.3-20
cli	Helpers for Developing Command Line Interfaces	3.5.0
clock	Date-Time Types and Tools	0.6.1
cluster	"Finding Groups in Data": Cluster Analysis Extended Rousseeuw et al.	2.1.4

Walmart_Retail_Analysis Report.R x Data2 x semester_store1 x gr x walmart x

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Go to file/function Addins Project: (None)

```
60 walmart2$month_year <- substr(walmart2$Date,1,7)
61 Q3_2012 <- filter(walmart2,month_year=="2012-07"| month_year=="2012-08"|month_yea
62 Q2_2012<- filter(walmart2,month_year=="2012-04"|month_year=="2012-05"|month_year=
63
64 Q3_2012_sales <- summarise(group_by(Q3_2012,store),sum(weekly_sales))
65
66 Q2_2012_sales<- summarise(group_by(Q2_2012,store),sum(weekly_sales))
67
68
69 Q3_2012_Growthrate = merge ( Q2_2012_sales , Q3_2012_sales , by = 'store')
70 Q3_2012_Growthrate = mutate(Q3_2012_Growthrate, Growth_Rate = ((Q3_2012_sales$`su
71 gr = arrange(Q3_2012_Growthrate, desc(Growth_Rate))
72 view(gr)
73
74 ### Store 15 has highest growth rate in Q3 2012: 13.3307760
75
76
```

115:12 (Top Level) R Script

Console Terminal Background Jobs

R 4.2.2 ~ /

```
$ weekly_Sales: num 1643691 1641957 1611968 1409728 1554807 ...
$ Holiday_Flag: int 0 1 0 0 0 0 0 0 0 ...
$ Temperature : num 42.3 38.5 39.9 46.6 46.5 ...
$ Fuel_Price : num 2.57 2.55 2.51 2.56 2.62 ...
$ CPI : num 211 211 211 211 211 ...
$ Unemployment: num 8.11 8.11 8.11 8.11 8.11 ...
> head(walmart)
  Store      Date weekly_Sales Holiday_Flag Temperature Fuel_Price    CPI
1    1 05-02-2010    1643691           0      42.31      2.572 211.0964
2    1 12-02-2010    1641957           1      38.51      2.548 211.2422
3    1 19-02-2010    1611968           0      39.93      2.514 211.2891
4    1 26-02-2010    1409728           0      46.63      2.561 211.3196
5    1 05-03-2010    1554807           0      46.50      2.625 211.3501
6    1 12-03-2010    1439542           0      57.79      2.667 211.3806
unemployment
1      8.106
2      8.106
```

Environment History Connections Tutorial

Import Dataset 596 MiB

R Global Environment

Object	Details
Q3_2012_sales	45 obs. of 2 variables
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RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins Project: (None)

Walmart_Retail_Analysis_Report.R x Data2 x semester_store1 x gr x walmart x

Source on Save Run Source

```
84 walmart_Holiday$hflag = ifelse(walmart_Holiday$Date %in% SuperBowl, "SB", ifelse(
85 aggregate(weekly_Sales~hflag,data=walmart_Holiday, mean)
86
87 ### Thanks giving have highest sales than mean. Mean sales in non-holiday season
88
89 ### For Store 1 - Build prediction models to forecast demand
90
91 library(dplyr)
92
93 semester_store1 = select(filter(walmart, store==1),-1)
94 view(semester_store1)
95 str(semester_store1)
96 head(semester_store1)
97
98 ## Linear Model
99
```

115:12 (Top Level) R Script

Console Terminal Background Jobs

R 4.2.2 ~\

```
$ CPI : num 211 211 211 211 211 ...
$ Unemployment: num 8.11 8.11 8.11 8.11 8.11 ...
> head(walmart)
  store    date weekly_Sales Holiday_Flag Temperature Fuel_Price    CPI
1     1 05-02-2010    1643691           0         42.31      2.572 211.0964
2     1 12-02-2010    1641957           1         38.51      2.548 211.2422
3     1 19-02-2010    1611968           0         39.93      2.514 211.2891
4     1 26-02-2010    1409728           0         46.63      2.561 211.3196
5     1 05-03-2010    1554807           0         46.50      2.625 211.3501
6     1 12-03-2010    1439542           0         57.79      2.667 211.3806
unemployment
1      8.106
2      8.106
3      8.106
4      8.106
5      8.106
```

Environment History Connections Tutorial

Import Dataset 596 MIB List

R Global Environment

Object	Value
Q3_2012_sales	45 obs. of 2 variables
Q3_2012_Sales	0 obs. of 2 variables
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Files Plots Packages Help Viewer Presentation

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cluster	"Finding Groups in Data": Cluster Analysis Extended	2.1.4

27°C Haze 5:58 PM 05-Feb-23

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Go to file/function Addins

Walmart_Retail_Analysis_Report.R x Data2 x semester_store1 x gr x walmart x

```
65
66 Q2_2012_sales<- summarise(group_by(Q2_2012,store),sum(weekly_sales))
67
68
69 Q3_2012_Growthrate = merge ( Q2_2012_sales , Q3_2012_sales , by = 'store')
70 Q3_2012_Growthrate = mutate(Q3_2012_Growthrate, Growth_Rate = ((Q3_2012_sales$sum
71 gr = arrange(Q3_2012_Growthrate, desc(Growth_Rate))
72 View(gr)
73
74 ### Store 15 has highest growth rate in Q3 2012: 13.3307760
75
76 ###Find out holidays which have higher sales than the mean sales in non-holiday s
77
78 SuperBowl = as.Date(c("2010-02-12","2011-02-11","2012-02-10","2013-02-08"))
79 LabourDay = as.Date(c("2010-09-10", "2011-09-09", "2012-09-07", "2013-09-06"))
80 Thanksgiving = as.Date(c("2010-11-26", "2011-11-25", "2012-11-22", "2013-11-20"))
81
115:12 (Top Level) R Script
```

Console Terminal Background Jobs

```
R 4.2.2 . ~/
> Growth = arrange(Q3_2012_Growthrate, desc(Growth_Rate))
> View(Growth)
> walmart_2=walmart
> walmart_2$month_Year<- substr(walmart_2$Date, 1, 7)
> Q3_2012 <- filter(walmart_2,month_Year == "2012-07" | month_Year== "2012-08" | month_
Year== "2012-09")
> walmart_2$month_Year= substr(walmart_2$Date, 1, 7)
> Q3_2012 = filter(walmart_2,month_Year == "2012-07" | month_Year== "2012-08" | month_Y
ear== "2012-09")
> Q2_2012 = filter(walmart_2,month_Year == "2012-04" | month_Year== "2012-05" | month_
Year== "2012-06")
> Q3_2012_sales = summarise(group_by(Q3_2012,store),sum(weekly_sales))
> Q2_2012_sales = summarise(group_by(Q2_2012,store),sum(weekly_sales))
> Growth = arrange(Q3_2012_Growthrate, desc(Growth_Rate))
> View(Growth)
> walmart<- read.csv("walmart_store_sales.csv", header = T)
```

Environment History Connections Tutorial

Import Dataset 596 MiB

R Global Environment

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Q3_2012_sales	45 obs. of 2 variables	
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Go to file/function Addins

```
Walmart_Retail_Analysis_Report.R x Data2 x semester_store1 x gr x walmart x
Source on Save Run Source
50 arrange(store_sales, desc(sales_sd))
51
52 ### Store 14 has highest standard deviation: 317569.95
53
54 ## Q3- which store/s has good quarterly growth rate in Q3'2012?
55 # creating copy of walmart
56
57 walmart2= walmart
58
59
60 walmart2$month_year <- substr(walmart2$Date,1,7)
61 Q3_2012 <- filter(walmart2, month_year=="2012-07" | month_year=="2012-08" | month_year=="2012-09")
62 Q2_2012 <- filter(walmart2, month_year=="2012-04" | month_year=="2012-05" | month_year=="2012-06")
63
64 Q3_2012_sales <- summarise(group_by(Q3_2012, store), sum(weekly_sales))
65
66
115:12 (Top Level) R Script
```

```
Console Terminal Background Jobs
R 4.2.2 ~ /
44 44 43293088
45 45 112395341
> store_sales$sales_mean = aggregate(weekly_sales~store, data=walmart, mean)$weekly_sales
> store_sales$sales_sd = aggregate(weekly_sales~store, data=walmart, sd)$weekly_sales
> str(store_sales)
'data.frame': 45 obs. of 4 variables:
 $ store : Factor w/ 45 levels "1","2","3","4",...: 1 2 3 4 5 6 7 8 9 10 ...
 $ weekly_sales: num 2.22e+08 2.75e+08 5.76e+07 3.00e+08 4.55e+07 ...
 $ sales_mean : num 1555264 1925751 402704 2094713 318012 ...
 $ sales_sd : num 155981 237684 46320 266201 37738 ...
> arrange(store_sales, desc(sales_sd))
 store weekly_sales sales_mean sales_sd
1 14 288999911 2020978.4 317569.95
2 10 271617714 1899424.6 302262.06
3 20 301397792 2107676.9 275900.56
```

Environment History Connections Tutorial

Import Dataset 596 MiB

R Global Environment

Name	Description	Version
Q3_2012_sales	45 obs. of 2 variables	
Q3_2012_sales	0 obs. of 2 variables	
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Files Plots Packages Help Viewer Presentation

Install Update

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cluster	"Finding Groups in Data": Cluster Analysis Extended	2.1.4

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Go to file/function Addins

```
Walmart_Retail_Analysis_Report.R x Data2 x semester_store1 x gr x walmart x
Source on Save Run Source
35
36
37 ### Q1- which store has max sales?
38
39 store_sales <- aggregate(weekly_sales~store, data = walmart, sum)
40 store_sales
41 which.max(store_sales$weekly_sales)
42
43 ## store 20 has max sale , Ammount-301397792
44
45 ## Q2- which store has maximum standard deviation
46
47 store_sales$sales_mean <- aggregate(weekly_sales~store,data= walmart, mean)$weekl
48 store_sales$sales_sd <- aggregate(weekly_sales~store, data=walmart,sd)$weekly_sal
49 str(store_sales)
50 arrange(store_sales, desc(sales_sd))
51
```

115:12 (Top Level)

R Script

Console Terminal Background Jobs

```
R 4.2.2 ~ /
> store_sales<- aggregate(weekly_sales~store, data = walmart,sum)
> store_sales
  store weekly_sales
1      1      222402809
2      2      275382441
3      3       57586735
4      4      299543953
5      5      45475689
6      6      223756131
7      7       81598275
8      8      129951181
9      9       77789219
10     10      271617714
11     11      193962787
12     12      144287230
13     13      286517704
```

Environment History Connections Tutorial

Import Dataset 598 MiB

R Global Environment

Q3_2012_sales	45 obs. of 2 variables
Q3_2012_sales	0 obs. of 2 variables
scatter.1	Large gg (9 elements, 1.4 MB)
semester_store1	143 obs. of 7 variables
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Files Plots Packages Help Viewer Presentation

Install Update

Name	Description	Version
<input type="checkbox"/> abind	Combine Multidimensional Arrays	1.4-5
<input type="checkbox"/> arules	Mining Association Rules and Frequent Itemsets	1.7-5
<input type="checkbox"/> askpass	Safe Password Entry for R, Git, and SSH	1.1
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```
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Source on Save Run Source
20
21 library("dplyr")
22 library("lubridate")
23 library("zoo")
24
25 #Data visualization
26
27 library("grid")
28 library("vcd")
29 library("ggplot2")
30 library("plotly")
31
32 ## Converting Date column into Date format
33
34 walmart$Date = as.Date(walmart$Date,format="%d-%m-%Y")
35
36
115:12 (Top Level) R Script
```

```
Console Terminal x Background Jobs x
R 4.2.2 ~ /
> walmart<- read.csv("walmart_store_sales.csv", header = T)
> view(walmart)
> str(walmart)
'data.frame': 6435 obs. of 8 variables:
 $ Store : int 1 1 1 1 1 1 1 1 1 1 ...
 $ Date : chr "05-02-2010" "12-02-2010" "19-02-2010" "26-02-2010" ...
 $ weekly_Sales: num 1643691 1641957 1611968 1409728 1554807 ...
 $ Holiday_Flag: int 0 1 0 0 0 0 0 0 0 0 ...
 $ Temperature : num 42.3 38.5 39.9 46.6 46.5 ...
 $ Fuel_Price : num 2.57 2.55 2.51 2.56 2.62 ...
 $ CPI : num 211 211 211 211 211 ...
 $ Unemployment: num 8.11 8.11 8.11 8.11 8.11 ...
> head(walmart)
  Store Date weekly_Sales Holiday_Flag Temperature Fuel_Price CPI
1 1 05-02-2010 1643691 0 42.31 2.572 211.0964
2 1 12-02-2010 1641957 1 38.51 2.548 211.2422
```

Environment History Connections Tutorial

R Global Environment 598 MiB

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Go to file/function Addins

```
Walmart_Retail_Analysis_Report.R x Data2 x semester_store1 x gr x walmart x
Source on Save Run Source
1 ### Uploading and Reading the Dataset
2
3 walmart<- read.csv("walmart_store_sales.csv",header = TRUE)
4 view(walmart)
5 str(walmart)
6 head(walmart)
7 class(walmart)
8
9 ### Descriptive Statistics
10
11 summary(walmart)
12
13 ### Checking NA values
14
15 colsums(is.na(walmart))
16
17
115:12 (Top Level) R Script
```

Console Terminal Background Jobs

R 4.2.2 ~

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-2427856	1752958	-1.385	0.1683
Holiday_Flag	89376	49338	1.811	0.0723 .
Temperature	-2160	922	-2.343	0.0206 *
Fuel_Price	-24337	47335	-0.514	0.6080
CPI	16632	6786	2.451	0.0155 *
Unemployment	80209	58727	1.366	0.1742

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 146500 on 137 degrees of freedom
Multiple R-squared: 0.1495, Adjusted R-squared: 0.1184
F-statistic: 4.815 on 5 and 137 DF, p-value: 0.0004359

```
> walmart_lm1 = lm(weekly_sales ~ Holiday_Flag + Temperature ++ CPI , semester_store1)
```

Environment History Connections Tutorial

Import Dataset 597 MiB

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<input type="checkbox"/>	bitops	Bitwise Operations	1.0-7
<input type="checkbox"/>	brio	Basic R Input Output	1.1.3
<input type="checkbox"/>	broom	Convert Statistical Objects into Tidy Tibbles	1.0.3
<input type="checkbox"/>	bslib	Custom 'Bootstrap' 'Sass' Themes for 'shiny' and 'rmarkdown'	0.4.2
<input type="checkbox"/>	cachem	Cache R Objects with Automatic Pruning	1.0.6
<input type="checkbox"/>	callr	Call R from R	3.7.3
<input type="checkbox"/>	car	Companion to Applied Regression	3.1-1
<input type="checkbox"/>	carData	Companion to Applied Regression Data Sets	3.0-5
<input type="checkbox"/>	caret	Classification and Regression Training	6.0-93
<input type="checkbox"/>	cellranger	Translate Spreadsheet Cell Ranges to Rows and Columns	1.1.0

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Store	Date	Weekly_Sales	Holiday_Flag	Temperature	Fuel_Price	CPI	Unemployment	Wee
1	2010-02-05	1643691	0	42.31	2.572	211.0964	8.106	F
2	2010-02-12	1641957	1	38.51	2.548	211.2422	8.106	F
3	2010-02-19	1611968	0	39.93	2.514	211.2891	8.106	F
4	2010-02-26	1409728	0	46.63	2.561	211.3196	8.106	F
5	2010-03-05	1554807	0	46.50	2.625	211.3501	8.106	F
6	2010-03-12	1439542	0	57.79	2.667	211.3806	8.106	F
7	2010-03-19	1472516	0	54.58	2.720	211.2156	8.106	F
8	2010-03-26	1404430	0	51.45	2.732	211.0180	8.106	F
9	2010-04-02	1594968	0	62.27	2.719	210.8204	7.808	F

Showing 1 to 9 of 6,435 entries, 9 total columns

```
R 4.2.2 ~|
      Estimate Std. Error t value Pr(>|t|)
(Intercept) -233190      616327  -0.378  0.70574
Temperature  -2769         877   -3.157  0.00195 **
CPI           9156        2872    3.187  0.00177 **
---
signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 147900 on 140 degrees of freedom
Multiple R-squared:  0.1139,    Adjusted R-squared:  0.1012
F-statistic: 8.998 on 2 and 140 DF,  p-value: 0.0002107

> Data2= walmart
> Data2$weekdays = weekdays(Data2$Date)
> view(Data2)
> load("~/RData")
>
```

Project (None)

Environment	History	Connections	Tutorial
Import Dataset 596 MiB			
List			
R Global Environment			
Q3_2012_sales	45 obs. of 2 variables		
Q3_2012_sales	0 obs. of 2 variables		
scatter.1	Large gg (9 elements, 1.4 MB)		
semester_store1	143 obs. of 7 variables		
store_sales	45 obs. of 4 variables		
Store_sales	45 obs. of 4 variables		

Files	Plots	Packages	Help	Viewer	Presentation
Install Update					
<input type="checkbox"/>	Name	Description	Version		
<input type="checkbox"/>	backports	Reimplementations of functions introduced since R-3.0.0	1.4.1		
<input type="checkbox"/>	base64enc	Tools for base64 encoding	0.1-3		
<input type="checkbox"/>	bitops	Bitwise Operations	1.0-7		
<input type="checkbox"/>	brio	Basic R Input Output	1.1.3		
<input type="checkbox"/>	broom	Convert Statistical Objects into Tidy Tibbles	1.0.3		
<input type="checkbox"/>	bslib	Custom 'Bootstrap' 'Sass' Themes for 'shiny' and 'rmarkdown'	0.4.2		
<input type="checkbox"/>	cachem	Cache R Objects with Automatic Pruning	1.0.6		
<input type="checkbox"/>	callr	Call R from R	3.7.3		
<input type="checkbox"/>	car	Companion to Applied Regression	3.1-1		
<input type="checkbox"/>	carData	Companion to Applied Regression Data Sets	3.0-5		
<input type="checkbox"/>	caret	Classification and Regression Training	6.0-93		
<input type="checkbox"/>	cellranger	Translate Spreadsheet Cell Ranges to Rows and Columns	1.1.0		
<input type="checkbox"/>	class	Functions for Classification	7.3-20		
<input type="checkbox"/>	cli	Helpers for Developing Command Line Interfaces	3.5.0		
<input type="checkbox"/>	clock	Date-Time Types and Tools	0.6.1		
<input type="checkbox"/>	cluster	"Finding Groups in Data": Cluster Analysis Extended Rousseeuw et al.	2.1.4		

FileEditCodeViewPlotsSessionBuildDebugProfileToolsHelp

Walmart_Retail_Analysis Report.RData2semester_store1grwalmart

Filter

	Store	sum(Weekly_Sales).x	sum(Weekly_Sales).y	Growth_Rate
1	7	7290859	8262787	13.3307760
2	16	6564336	7121542	8.4683781
3	35	10838313	11322421	4.4666372
4	26	13155336	13675692	3.9554775
5	39	20214128	20715116	2.4784040
6	41	17659943	18093844	2.4346377
7	44	4306406	4411251	2.4784040
8	24	17684219	17976378	1.6520877
9	40	12727738	12873195	1.1428413
10	23	18488883	18641489	0.8253951

Showing 1 to 10 of 45 entries, 4 total columns

ConsoleTerminalBackground Jobs

R 4.2.2 ~/
Estimate Std. Error t value Pr(>|t|)
(Intercept) -233190 616327 -0.378 0.70574
Temperature -2769 877 -3.157 0.00195 **
CPI 9156 2872 3.187 0.00177 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 147900 on 140 degrees of freedom
Multiple R-squared: 0.1139, Adjusted R-squared: 0.1012
F-statistic: 8.998 on 2 and 140 DF, p-value: 0.0002107

> Data2= walmart
> Data2\$weekdays = weekdays(Data2\$Date)
> view(Data2)
> load("~/RData")
> |

EnvironmentHistoryConnectionsTutorial

Import Dataset 596 MIB

List

R Global Environment

Q3_2012_sales 45 obs. of 2 variables

Q3_2012_sales 0 obs. of 2 variables

scatter.1 Large gg (9 elements, 1.4 MB)

semester_store1 143 obs. of 7 variables

store_sales 45 obs. of 4 variables

Store_sales 45 obs. of 4 variables

FilesPlotsPackagesHelpViewerPresentation

InstallUpdate

Name	Description	Version
backports	Reimplementations of functions introduced since R-3.0.0	1.4.1
base64enc	Tools for base64 encoding	0.1-3
bitops	Bitwise Operations	1.0-7
brio	Basic R Input Output	1.1.3
broom	Convert Statistical Objects into Tidy Tibbles	1.0.3
bslib	Custom 'Bootstrap' 'Sass' Themes for 'shiny' and 'rmarkdown'	0.4.2
cachem	Cache R Objects with Automatic Pruning	1.0.6
callr	Call R from R	3.7.3
car	Companion to Applied Regression	3.1-1
carData	Companion to Applied Regression Data Sets	3.0-5
caret	Classification and Regression Training	6.0-93
cellranger	Translate Spreadsheet Cell Ranges to Rows and Columns	1.1.0
class	Functions for Classification	7.3-20
cli	Helpers for Developing Command Line Interfaces	3.5.0
clock	Date-Time Types and Tools	0.6.1
cluster	"Finding Groups in Data": Cluster Analysis Extended Rousseeuw et al.	2.1.4