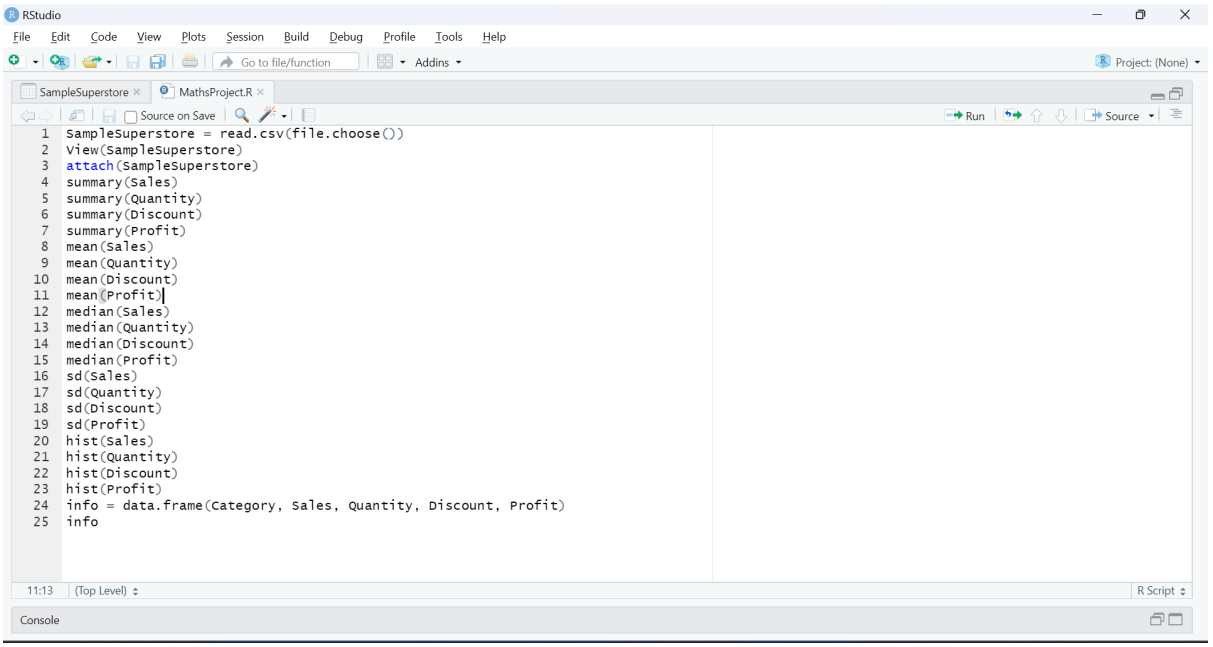
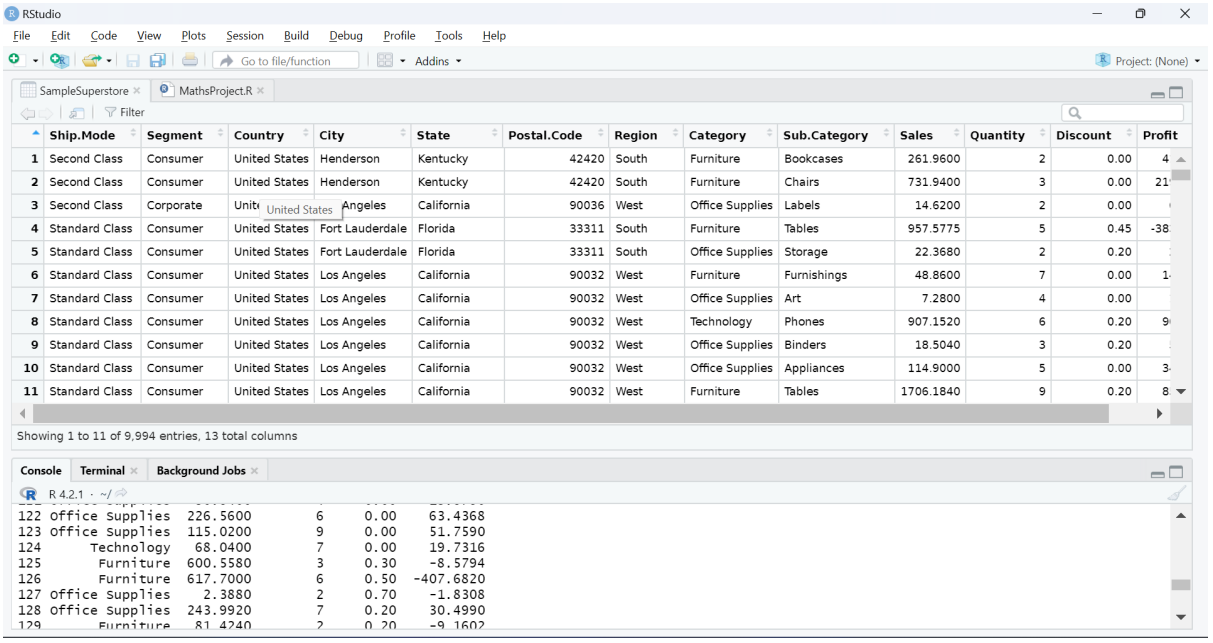
Probability and Statistics Lab Project

Name: Rahul Karthik S
Register Number: 21BEC1851

Program Code:

```
SampleSuperstore = read.csv(file.choose())
View(SampleSuperstore)
attach(SampleSuperstore)
summary(Sales)
summary(Quantity)
summary(Discount)
summary(Profit)
mean(Sales)
mean(Quantity)
mean(Discount)
mean(Profit)
median(Sales)
median(Quantity)
median(Discount)
median(Profit)
sd(Sales)
sd(Quantity)
sd(Discount)
sd(Profit)
hist(Sales)
hist(Quantity)
hist(Discount)
hist(Profit)
info = data.frame(Category, Sales, Quantity, Discount, Profit)
info
```





Output:

```
> SampleSuperstore = read.csv(file.choose())
> View(SampleSuperstore)
> attach(SampleSuperstore)
The following objects are masked from SampleSuperstore (pos = 3):

    Category, City, Country, Discount,
    Postal.Code, Profit, Quantity, Region,
    Sales, Segment, Ship.Mode, State,
    Sub.Category

The following objects are masked from SampleSuperstore (pos = 4):

    Category, City, Country, Discount,
    Postal.Code, Profit, Quantity, Region,
    Sales, Segment, Ship.Mode, State,
    Sub.Category

The following objects are masked from SampleSuperstore (pos = 5):

    Category, City, Country, Discount,
    Postal.Code, Profit, Quantity, Region,
    Sales, Segment, Ship.Mode, State,
    Sub.Category

The following objects are masked from SampleSuperstore (pos = 6):

    Category, City, Country, Discount,
    Postal.Code, Profit, Quantity, Region,
    Sales, Segment, Ship.Mode, State,
    Sub.Category
```

```
The following objects are masked from SampleSuperstore (pos = 7):

    Category, City, Country, Discount,
    Postal.Code, Profit, Quantity, Region,
    Sales, Segment, Ship.Mode, State,
    Sub.Category

> summary(Sales)
     Min.   1st Qu.    Median      Mean   3rd Qu.
    0.444    17.280    54.490   229.858   209.940
     Max.
22638.480
> summary(Quantity)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   1.00    2.00    3.00    3.79    5.00   14.00
> summary(Discount)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 0.0000  0.0000  0.2000  0.1562  0.2000  0.8000
> summary(Profit)
     Min.   1st Qu.    Median      Mean   3rd Qu.
-6599.978     1.729     8.666    28.657    29.364
     Max.
 8399.976
> mean(Sales)
[1] 229.858
> mean(Quantity)
[1] 3.789574
> mean(Discount)
[1] 0.1562027
> mean(Profit)
[1] 28.6569
> median(Sales)
[1] 54.49
> median(Quantity)
[1] 3
> median(Discount)
[1] 0.2
> median(Profit)
[1] 8.6665
> sd(Sales)
[1] 623.2451
> sd(Quantity)
[1] 2.22511
> sd(Discount)
[1] 0.206452
> sd(Profit)
[1] 234.2601
```

```
> hist(Sales)
> hist(Quantity)
> hist(Discount)
> hist(Profit)
> info = data.frame(Category, Sales, Quantity, Discount, Profit)
> info
          Category     Sales Quantity Discount     Profit
1        Furniture  261.9600        2     0.00    41.9136
2        Furniture  731.9400        3     0.00   219.5820
3  Office Supplies   14.6200        2     0.00     6.8714
4        Furniture  957.5775        5     0.45  -383.0310
5  Office Supplies   22.3680        2     0.20     2.5164
6        Furniture   48.8600        7     0.00    14.1694
7  Office Supplies    7.2800        4     0.00     1.9656
8       Technology  907.1520        6     0.20    90.7152
9  Office Supplies   18.5040        3     0.20     5.7825
10 Office Supplies  114.9000        5     0.00    34.4700
11       Furniture 1706.1840        9     0.20    85.3092
12      Technology  911.4240        4     0.20    68.3568
13 Office Supplies   15.5520        3     0.20     5.4432
14 Office Supplies  407.9760        3     0.20   132.5922
15 Office Supplies   68.8100        5     0.80  -123.8580
16 Office Supplies    2.5440        3     0.80    -3.8160
17 Office Supplies  665.8800        6     0.00    13.3176
18 Office Supplies   55.5000        2     0.00     9.9900
19 Office Supplies    8.5600        2     0.00     2.4824
20      Technology  213.4800        3     0.20    16.0110
21 Office Supplies   22.7200        4     0.20     7.3840
22 Office Supplies   19.4600        7     0.00     5.0596
23 Office Supplies   60.3400        7     0.00    15.6884
24       Furniture   71.3720        2     0.30    -1.0196
25       Furniture 1044.6300        3     0.00   240.2649
26 Office Supplies   11.6480        2     0.20     4.2224
27      Technology   90.5700        3     0.00    11.7741
28       Furniture 3083.4300        7     0.50 -1665.0522
29 Office Supplies    9.6180        2     0.70    -7.0532
30       Furniture  124.2000        3     0.20    15.5250
31 Office Supplies    3.2640        2     0.20     1.1016
32 Office Supplies   86.3040        6     0.20     9.7092
33 Office Supplies    6.8580        6     0.70    -5.7150
34 Office Supplies   15.7600        2     0.20     3.5460
35 Office Supplies   29.4720        3     0.20     9.9468
36      Technology 1097.5440        7     0.20   123.4737
37       Furniture  190.9200        5     0.60  -147.9630
38 Office Supplies  113.3280        9     0.20    35.4150
39       Furniture  532.3992        3     0.32   -46.9764
40       Furniture  212.0580        3     0.30   -15.1470
41      Technology  371.1680        4     0.20    41.7564
```

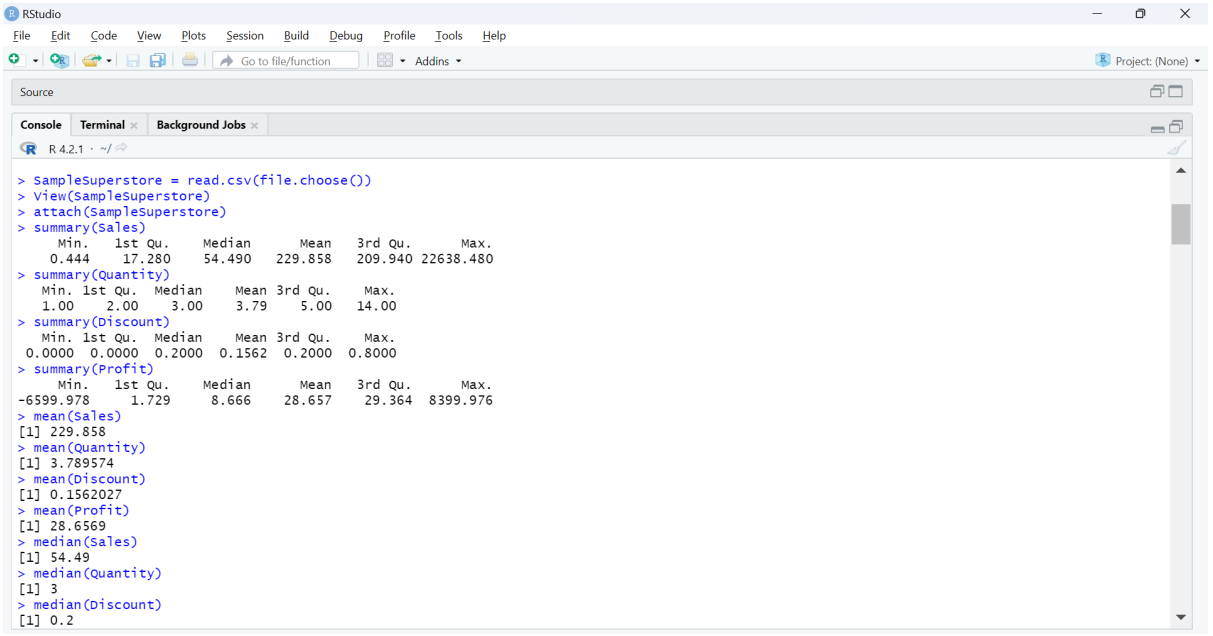
42	Technology	147.1680	4	0.20	16.5564
43	Office Supplies	77.8800	2	0.00	3.8940
44	Office Supplies	95.6160	2	0.20	9.5616
45	Technology	45.9800	2	0.00	19.7714
46	Office Supplies	17.4600	2	0.00	8.2062
47	Office Supplies	211.9600	4	0.00	8.4784
48	Technology	45.0000	3	0.00	4.9500
49	Technology	21.8000	2	0.00	6.1040
50	Office Supplies	38.2200	6	0.00	17.9634
51	Office Supplies	75.1800	6	0.00	35.3346
52	Furniture	6.1600	2	0.00	2.9568
53	Furniture	89.9900	1	0.00	17.0981
54	Office Supplies	15.2600	7	0.00	6.2566
55	Technology	1029.9500	5	0.00	298.6855
56	Office Supplies	208.5600	6	0.00	52.1400
57	Office Supplies	32.4000	5	0.00	15.5520
58	Furniture	319.4100	5	0.10	7.0980
59	Office Supplies	14.5600	2	0.00	6.9888
60	Technology	30.0000	2	0.00	3.3000
61	Office Supplies	48.4800	4	0.20	16.3620
62	Office Supplies	1.6800	1	0.00	0.8400
63	Technology	13.9800	2	0.00	6.1512
64	Office Supplies	25.8240	6	0.20	9.3612
65	Office Supplies	146.7300	3	0.00	68.9631
66	Furniture	79.7600	4	0.00	22.3328
67	Furniture	213.1150	5	0.30	-15.2225
68	Office Supplies	1113.0240	8	0.20	111.3024
69	Technology	167.9680	4	0.20	62.9880
70	Office Supplies	75.8800	2	0.00	35.6636
71	Office Supplies	4.6160	1	0.20	1.7310
72	Office Supplies	19.0500	3	0.00	8.7630
73	Furniture	831.9360	8	0.20	-114.3912
74	Furniture	97.0400	2	0.20	1.2130
75	Office Supplies	72.7840	1	0.20	-18.1960
76	Office Supplies	1.2480	3	0.80	-1.9344
77	Furniture	9.7080	3	0.60	-5.8248
78	Office Supplies	27.2400	3	0.20	2.7240
79	Furniture	19.3000	5	0.60	-14.4750
80	Office Supplies	208.1600	1	0.00	56.2032
81	Office Supplies	16.7400	3	0.00	8.0352
82	Office Supplies	14.9000	5	0.00	4.1720
83	Office Supplies	21.3900	1	0.00	6.2031
84	Office Supplies	200.9840	7	0.20	62.8075
85	Office Supplies	230.3760	3	0.20	-48.9549
86	Furniture	301.9600	2	0.00	33.2156
87	Technology	19.9900	1	0.00	6.7966
88	Office Supplies	6.1600	2	0.00	2.9568
89	Office Supplies	158.3680	7	0.20	13.8572

90	Office Supplies	20.1000	3	0.00	6.6330
91	Technology	73.5840	2	0.20	8.2782
92	Office Supplies	6.4800	1	0.00	3.1104
93	Office Supplies	12.9600	2	0.00	6.2208
94	Furniture	53.3400	3	0.00	16.5354
95	Office Supplies	32.9600	2	0.00	16.1504
96	Office Supplies	5.6820	1	0.70	-3.7880
97	Furniture	96.5300	7	0.00	40.5426
98	Office Supplies	51.3120	3	0.20	17.9592
99	Office Supplies	77.8800	6	0.00	22.5852
100	Office Supplies	64.6240	7	0.20	22.6184
101	Technology	95.9760	3	0.20	-10.7973
102	Office Supplies	1.7880	3	0.80	-3.0396
103	Office Supplies	23.9200	4	0.00	11.7208
104	Technology	238.8960	6	0.20	-26.8758
105	Furniture	102.3600	3	0.20	-3.8385
106	Office Supplies	36.8820	3	0.70	-25.8174
107	Technology	74.1120	8	0.20	17.6016
108	Technology	27.9920	1	0.20	2.0994
109	Office Supplies	3.3040	1	0.20	1.0738
110	Technology	339.9600	5	0.20	67.9920
111	Furniture	41.9600	2	0.00	10.9096
112	Office Supplies	75.9600	2	0.00	22.7880
113	Office Supplies	27.2400	6	0.00	13.3476
114	Office Supplies	40.0960	14	0.20	14.5348
115	Office Supplies	4.7200	2	0.20	1.6520
116	Office Supplies	23.9760	3	0.20	7.4925
117	Office Supplies	130.4640	6	0.20	44.0316
118	Furniture	787.5300	3	0.00	165.3813
119	Office Supplies	157.7940	1	0.70	-115.7156
120	Furniture	47.0400	3	0.00	18.3456
121	Office Supplies	30.8400	4	0.00	13.8780
122	Office Supplies	226.5600	6	0.00	63.4368
123	Office Supplies	115.0200	9	0.00	51.7590
124	Technology	68.0400	7	0.00	19.7316
125	Furniture	600.5580	3	0.30	-8.5794
126	Furniture	617.7000	6	0.50	-407.6820
127	Office Supplies	2.3880	2	0.70	-1.8308
128	Office Supplies	243.9920	7	0.20	30.4990
129	Furniture	81.4240	2	0.20	-9.1602
130	Furniture	238.5600	3	0.00	26.2416
131	Technology	59.9700	5	0.40	-11.9940
132	Office Supplies	78.3040	2	0.20	29.3640
133	Office Supplies	21.4560	9	0.20	6.9732
134	Office Supplies	20.0400	3	0.00	9.6192
135	Office Supplies	35.4400	1	0.00	16.6568
136	Office Supplies	11.5200	4	0.00	3.4560
137	Office Supplies	4.0200	2	0.00	1.9698

138	Office Supplies	76.1760	3	0.20	26.6616
139	Office Supplies	65.8800	6	0.00	18.4464
140	Furniture	43.1200	14	0.00	20.6976
141	Furniture	82.8000	2	0.20	10.3500
142	Office Supplies	8.8200	3	0.00	2.3814
143	Office Supplies	10.8600	3	0.00	5.1042
144	Office Supplies	143.7000	3	0.00	68.9760
145	Office Supplies	839.4300	3	0.00	218.2518
146	Office Supplies	671.9300	7	0.00	20.1579
147	Furniture	93.8880	4	0.20	12.9096
148	Technology	384.4500	11	0.00	103.8015
149	Technology	149.9700	3	0.00	5.9988
150	Furniture	1951.8400	8	0.00	585.5520
151	Office Supplies	171.5500	5	0.00	80.6285
152	Office Supplies	157.9200	5	0.20	17.7660
153	Technology	203.1840	2	0.20	15.2388
154	Office Supplies	58.3800	7	0.00	26.2710
155	Office Supplies	105.5200	4	0.00	48.5392
156	Office Supplies	80.8800	6	0.00	21.0288
157	Office Supplies	6.6300	3	0.00	1.7901
158	Furniture	457.5680	2	0.20	51.4764
159	Office Supplies	14.6200	2	0.00	6.8714
160	Technology	944.9300	7	0.00	236.2325
161	Office Supplies	5.9800	1	0.00	2.6910
162	Technology	54.3840	2	0.20	1.3596
163	Office Supplies	28.4000	5	0.00	13.3480
164	Office Supplies	27.6800	2	0.20	9.6880
165	Office Supplies	9.9360	3	0.20	2.7324
166	Technology	8159.9520	8	0.40	-1359.9920
167	Office Supplies	275.9280	3	0.20	-58.6347
168	Furniture	1740.0600	9	0.30	-24.8580
169	Office Supplies	32.0640	6	0.20	6.8136
170	Office Supplies	177.9800	5	0.80	-453.8490
171	Technology	143.9760	3	0.20	8.9985
172	Office Supplies	20.9400	3	0.00	9.8418
173	Office Supplies	110.9600	2	0.00	53.2608
174	Furniture	340.1440	7	0.20	21.2590
175	Office Supplies	52.4480	2	0.80	-131.1200
176	Office Supplies	20.1600	4	0.20	6.5520
177	Office Supplies	97.2640	4	0.80	-243.1600
178	Furniture	396.8020	7	0.30	-11.3372
179	Office Supplies	15.8800	5	0.20	-3.7715
180	Office Supplies	3.2800	1	0.00	1.4104
181	Office Supplies	24.8160	2	0.20	1.8612
182	Technology	408.7440	7	0.20	76.6395
183	Technology	503.9600	4	0.00	131.0296
184	Technology	149.9500	5	0.00	41.9860
185	Technology	29.0000	2	0.00	7.2500

186	Office Supplies	7.1600	2	0.00	3.4368
187	Technology	176.8000	8	0.00	22.9840
188	Office Supplies	37.2240	3	0.20	3.7224
189	Office Supplies	20.0160	3	0.20	6.2550
190	Furniture	899.1360	4	0.20	112.3920
191	Technology	71.7600	6	0.00	20.0928
192	Office Supplies	51.8400	8	0.00	24.8832
193	Furniture	626.3520	3	0.20	46.9764
194	Office Supplies	19.9000	5	0.00	6.5670
195	Office Supplies	14.2800	7	0.00	6.7116
196	Office Supplies	7.4080	2	0.20	1.2038
197	Office Supplies	6.0480	3	0.20	1.5876
198	Office Supplies	46.2600	3	0.00	12.0276
199	Office Supplies	2.9460	2	0.70	-2.2586
200	Office Supplies	16.0560	3	0.20	5.8203

[reached 'max' / getOption("max.print") -- omitted 9794 rows]


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
Source
Console
Terminal
Background Jobs
R 4.2.1 · ~/
> SampleSuperstore = read.csv(file.choose())
> View(SampleSuperstore)
> attach(SampleSuperstore)
> summary(Sales)
Min. 1st Qu. Median Mean 3rd Qu. Max.
0.444 17.280 54.490 229.858 209.940 22638.480
> summary(Quantity)
Min. 1st Qu. Median Mean 3rd Qu. Max.
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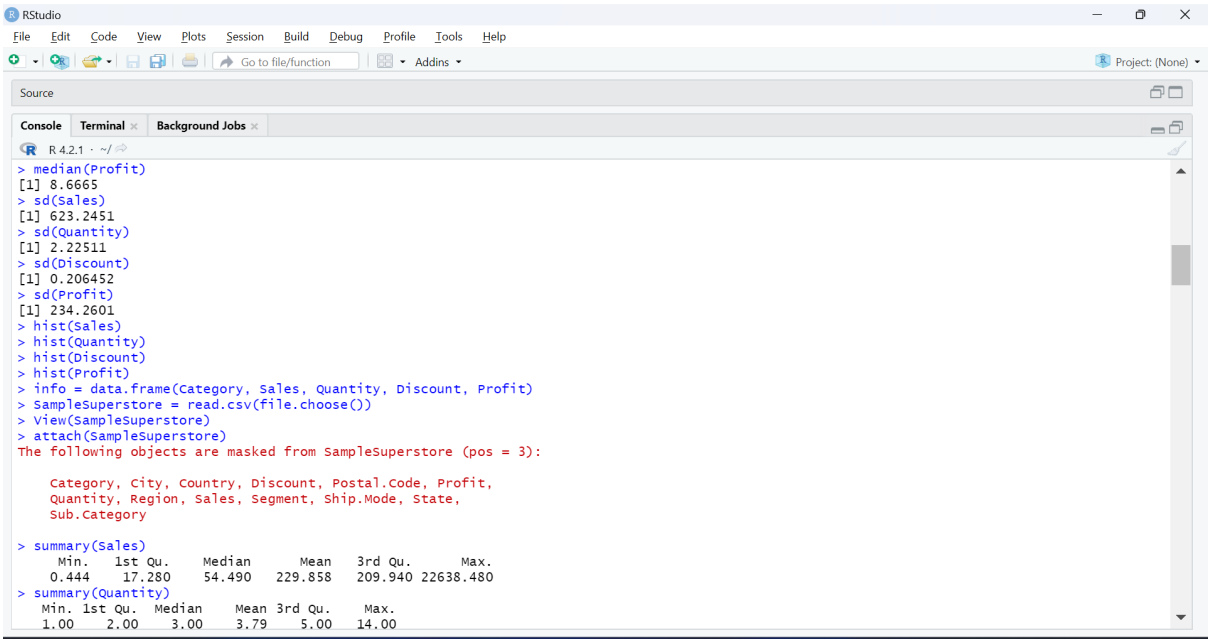
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
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R 4.2.1 · ~/
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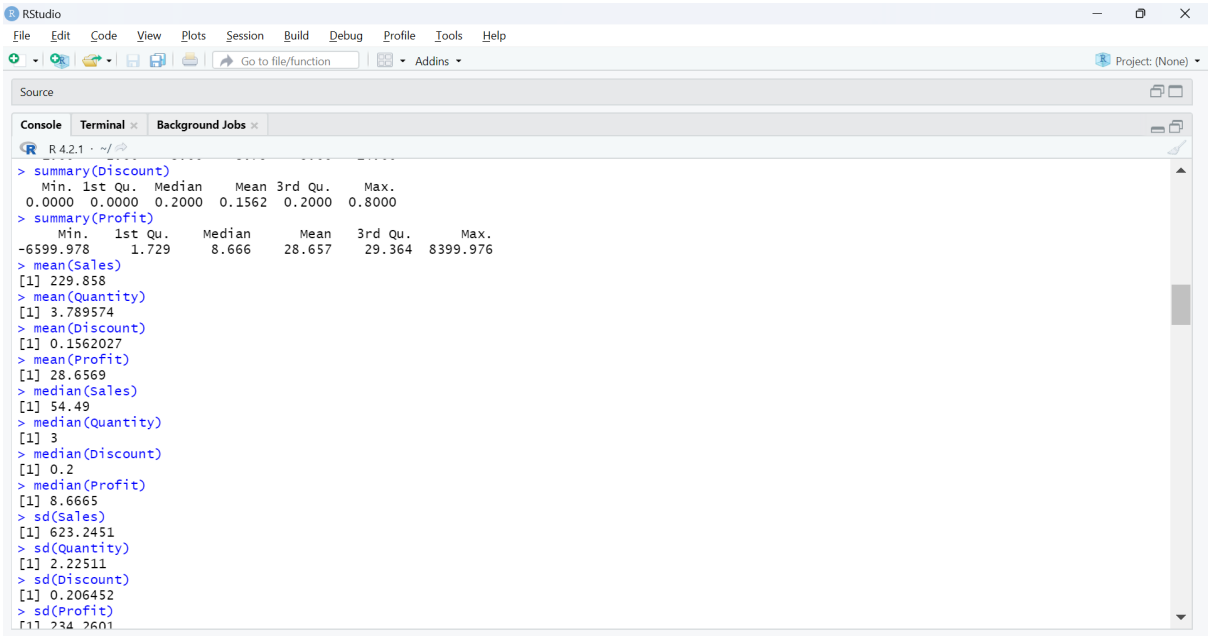
RStudio
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R 4.2.1 · ~/
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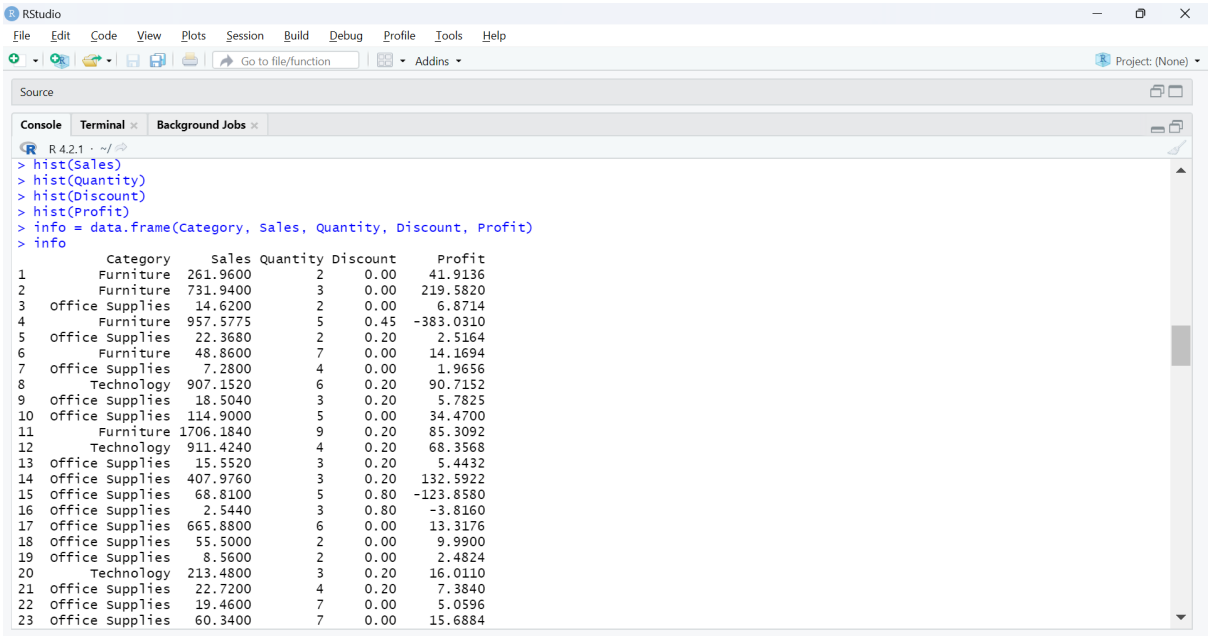
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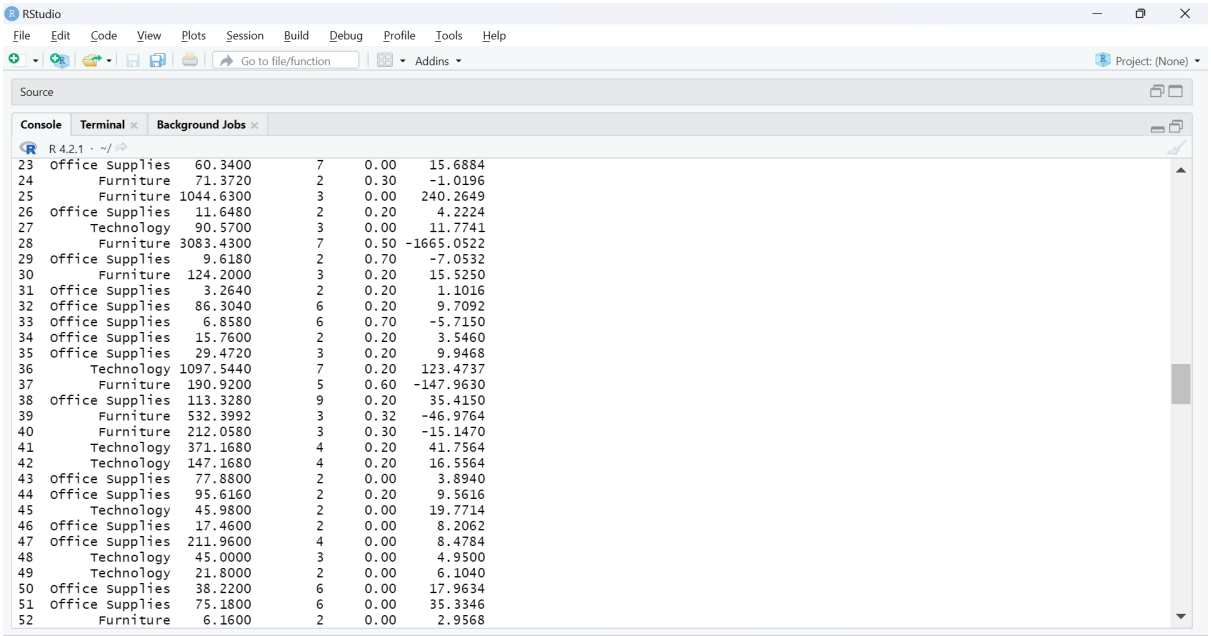
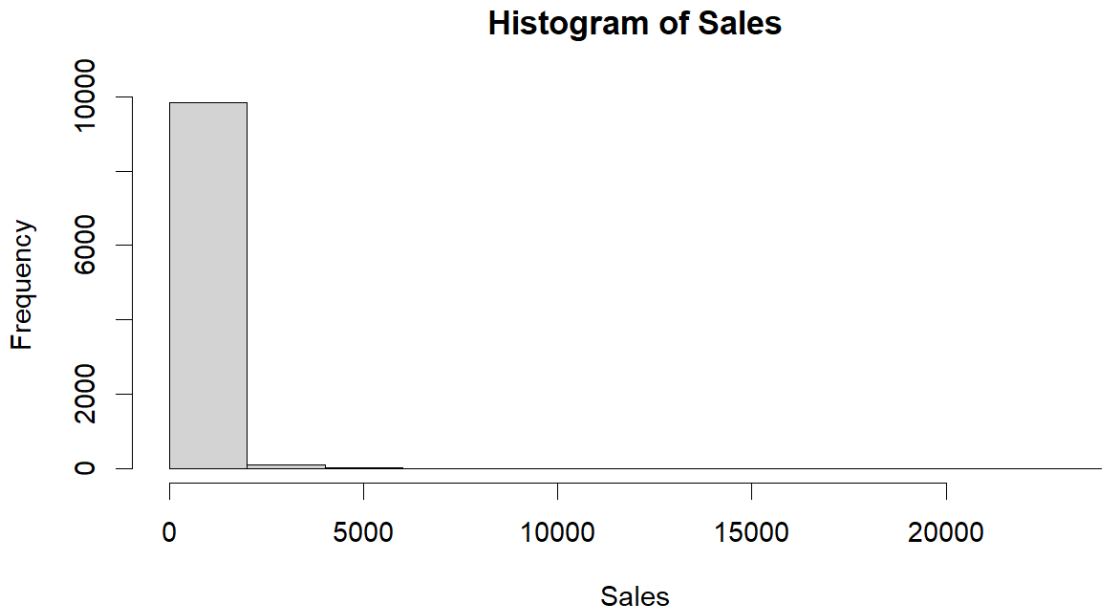
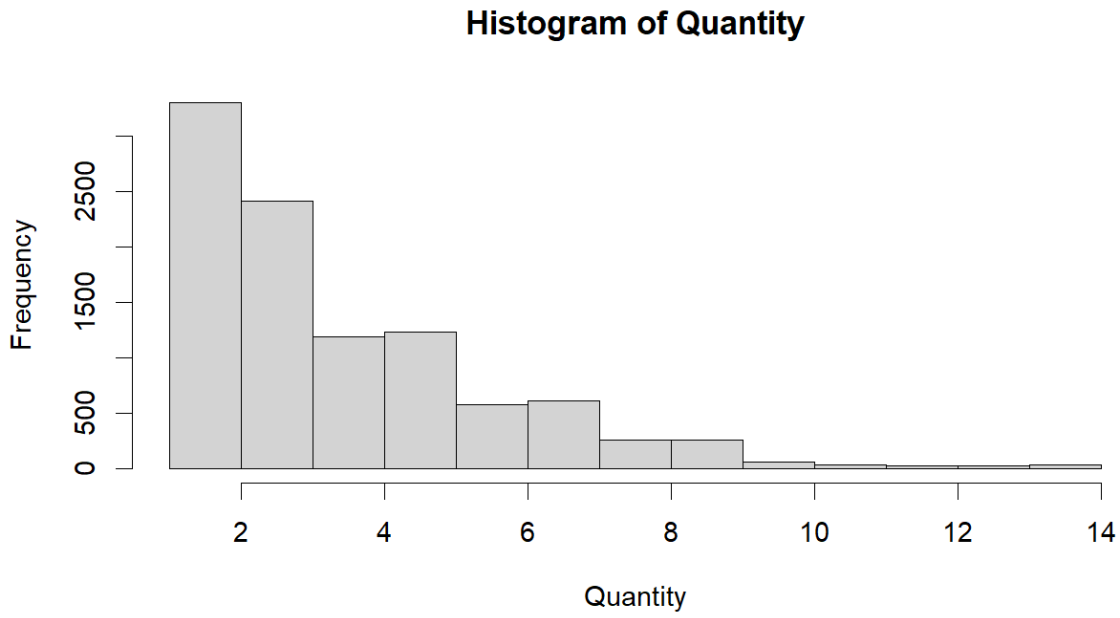
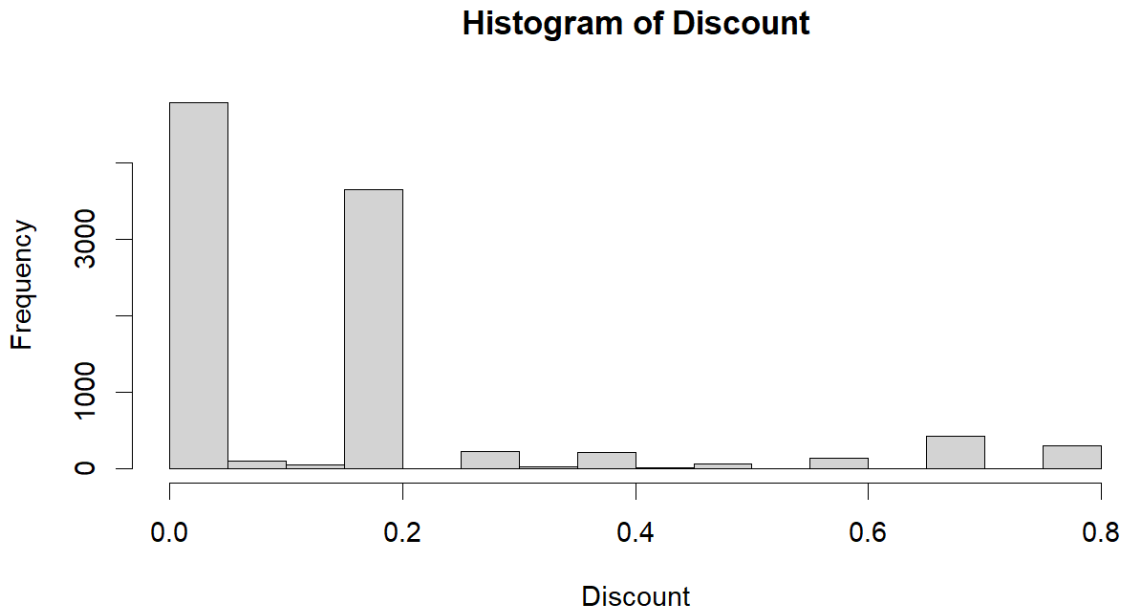
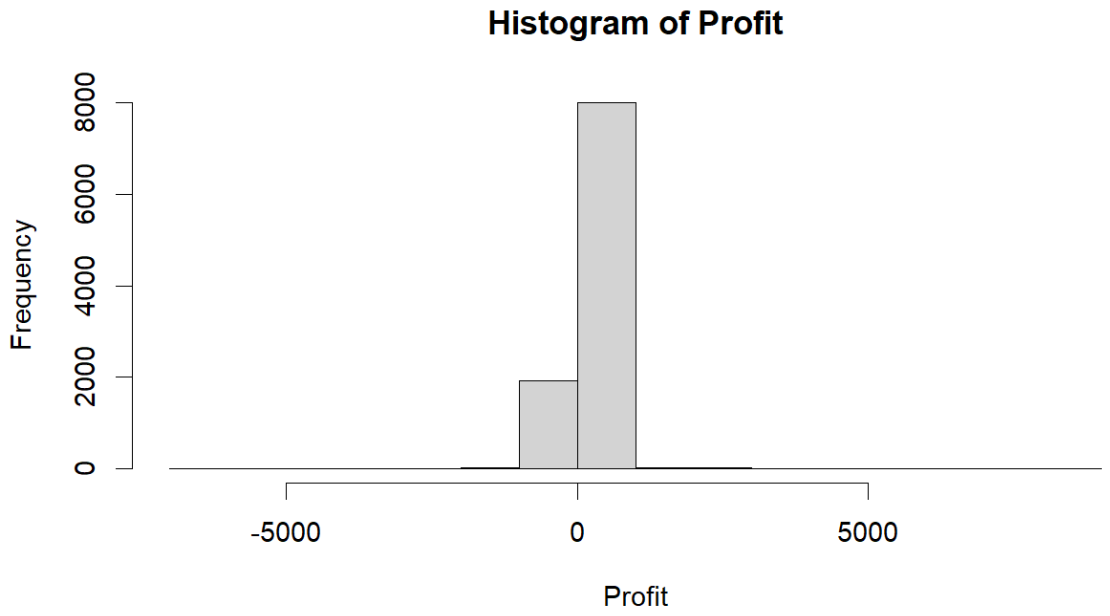
3 Office Supplies 14.6200 2 0.00 6.8714
4 Furniture 957.5775 5 0.45 -383.0310
5 Office Supplies 22.3680 2 0.20 2.5164
6 Furniture 48.8600 7 0.00 14.1694
7 Office Supplies 7.2800 4 0.00 1.9656
8 Technology 907.1520 6 0.20 90.7152
9 Office Supplies 18.5040 3 0.20 5.7825
10 Office Supplies 114.9000 5 0.00 34.4700
11 Furniture 1706.1840 9 0.20 85.3092
12 Technology 911.4240 4 0.20 68.3568
13 Office Supplies 15.5520 3 0.20 5.4432
14 Office Supplies 407.9760 3 0.20 132.5922
15 Office Supplies 68.8100 5 0.80 -123.8580
16 Office Supplies 2.5440 3 0.80 -3.8160
17 Office Supplies 665.8800 6 0.00 13.3176
18 Office Supplies 55.5000 2 0.00 9.9900
19 Office Supplies 8.5600 2 0.00 2.4824
20 Technology 213.4800 3 0.20 16.0110
21 Office Supplies 22.7200 4 0.20 7.3840
22 Office Supplies 19.4600 7 0.00 5.0596
23 Office Supplies 60.3400 7 0.00 15.6884


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Project: (None)
Source
Console Terminal Background Jobs
R 4.2.1 · ~/
23 Office Supplies 60.3400 7 0.00 15.6884
24 Furniture 71.3720 2 0.30 -1.0196
25 Furniture 1044.6300 3 0.00 240.2649
26 Office Supplies 11.6480 2 0.20 4.2224
27 Technology 90.5700 3 0.00 11.7741
28 Furniture 3083.4300 7 0.50 -1665.0522
29 Office Supplies 9.6180 2 0.70 -7.0532
30 Furniture 124.2000 3 0.20 15.5250
31 Office Supplies 3.2640 2 0.20 1.1016
32 Office Supplies 86.3040 6 0.20 9.7092
33 Office Supplies 6.8580 6 0.70 -5.7150
34 Office Supplies 15.7600 2 0.20 3.5460
35 Office Supplies 29.4720 3 0.20 9.9468
36 Technology 1097.5440 7 0.20 123.4737
37 Furniture 190.9200 5 0.60 -147.9630
38 Office Supplies 113.3280 9 0.20 35.4150
39 Furniture 532.3992 3 0.32 -46.9764
40 Furniture 212.0580 3 0.30 -15.1470
41 Technology 371.1680 4 0.20 41.7564
42 Technology 147.1680 4 0.20 16.5564
43 Office Supplies 77.8800 2 0.00 3.8940
44 Office Supplies 95.6160 2 0.20 9.5616
45 Technology 45.9800 2 0.00 19.7714
46 Office Supplies 17.4600 2 0.00 8.2062
47 Office Supplies 211.9600 4 0.00 8.4784
48 Technology 45.0000 3 0.00 4.9500
49 Technology 21.8000 2 0.00 6.1040
50 Office Supplies 38.2200 6 0.00 17.9634
51 Office Supplies 75.1800 6 0.00 35.3346
52 Furniture 6.1600 2 0.00 2.9568


Histogram of Sales
Frequency
0
2000
6000
10000
0
5000
10000
15000
20000
Sales


Histogram of Quantity
Frequency
0
500
1500
2500
2
4
6
8
10
12
14
Quantity


Histogram of Discount
Frequency
0
1000
3000
0.0
0.2
0.4
0.6
0.8
Discount


Histogram of Profit
Frequency
0
2000
4000
6000
8000
-5000
0
5000
Profit