

Zeru-Zhou-project13

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1 Project 13 – Zeru Zhou

TA Help: NA

Collaboration: NA

- Get help from Dr. Ward's video

1.1 Question 1

```
[1]: library(data.table)
library(lubridate)
liquor <- fread('/depot/datamine/data/iowa_liquor_sales/clean_sample.csv')
liquor$date <- mdy(liquor$Date)
liquor$year <- year(liquor$date)
liquor$month <- month(liquor$date)
```

Attaching package: 'lubridate'

The following objects are masked from 'package:data.table':

hour, isoweek, mday, minute, month, quarter, second, wday, week,
yday, year

The following objects are masked from 'package:base':

date, intersect, setdiff, union

```
[2]: head(liquor[,c("State Bottle Cost", "State Bottle Retail")])
typeof(liquor$`State Bottle Cost`)
typeof(liquor$`State Bottle Retail`)
```

	State Bottle Cost <chr>	State Bottle Retail <chr>
A data.table: 6 x 2	\$18.09	\$27.14
	\$18.09	\$27.14
	\$6.40	\$9.60
	\$35.55	\$53.34
	\$6.40	\$9.60
	\$35.55	\$53.34

'character'

'character'

```
[3]: liquor$cost <- as.numeric(gsub('\\$', '', liquor$'State Bottle Cost'))
```

```
[4]: liquor$retail <- as.numeric(gsub('\\$', '', liquor$'State Bottle Retail'))
```

```
[5]: liquor$profit <- liquor$retail - liquor$cost
```

```
[6]: which.max(liquor$profit)
```

1471217

```
[7]: liquor$profit[1471217]
```

3000

```
[10]: liquor[which(liquor$profit == 3000), ]
```

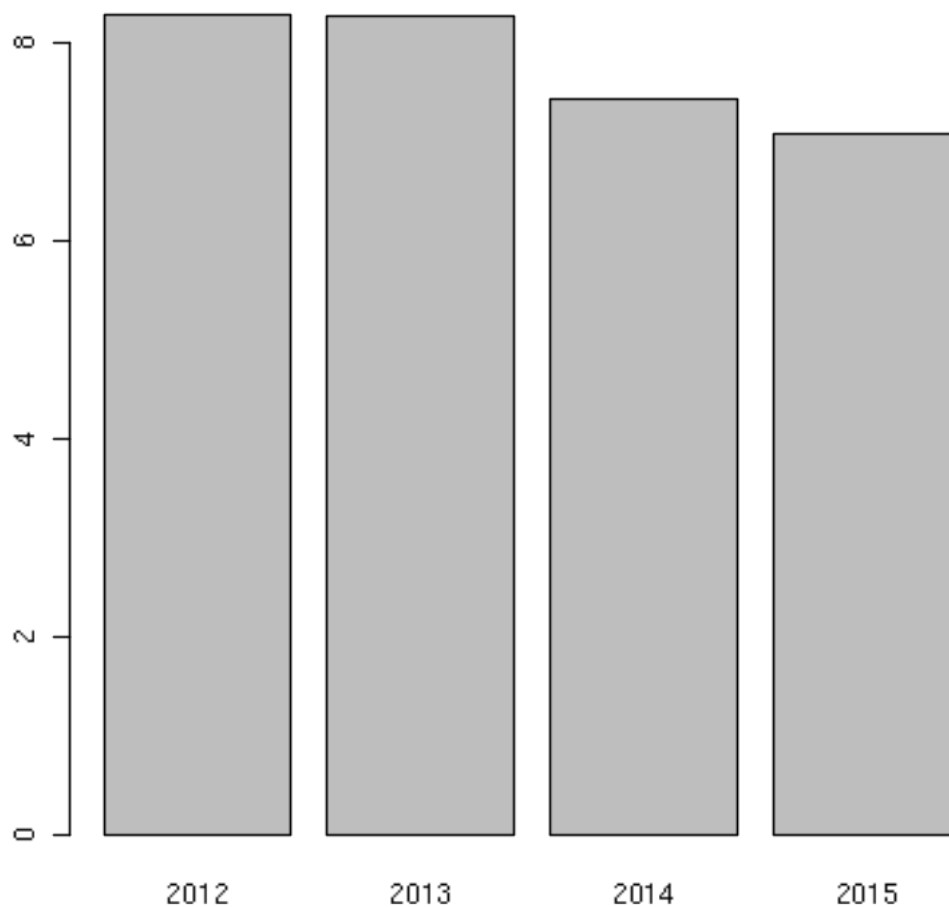
	Invoice/Item Number <chr>	Date <chr>	Store Number <int>	Store Name <chr>
A data.table: 4 x 30	S28648700001	10/29/2015	2663	Hy-Vee / Urbandale
	S28648800001	10/29/2015	2561	Hy-Vee Food Store / Fleur / DSM
	S28645600001	10/26/2015	2590	Hy-Vee Food Store #5 / Cedar Rapids
	S28646300002	10/27/2015	2666	Hy-Vee #2 / Ankeny

The maximum profit is 3000 dollars. The date of these maximum profit are 10/29, 10/26, and 10/27, in 2015. The vendor names are Hy-Vee / Urbandale, Hy-Vee Food Store / Fleur / DSM, Hy-Vee Food Store #5 / Cedar Rapids, and Hy-Vee #2 / Ankeny. The number of bottle sold are 1.

1.2 Question 2

```
[19]: createDashboard <- function(Number, DF) {
  myDF <- subset(DF, DF$'Vendor Number'== Number)
  barplot(tapply(myDF$profit, myDF$year, mean))
}
```

```
[20]: createDashboard(255, liquor)
```

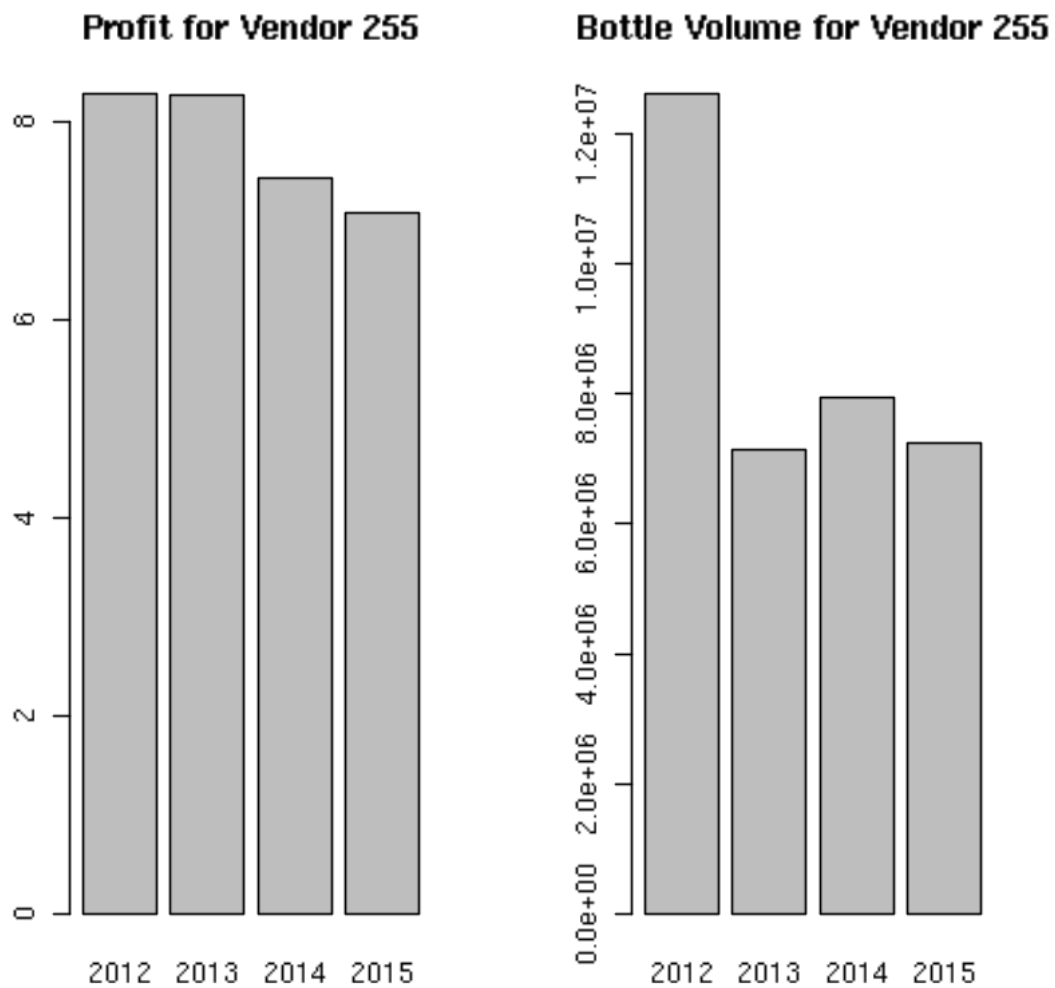


Here above the function is created.

1.3 Question 3

```
[23]: createDashboard <- function(Number, DF = liquor) {
  myDF <- subset(DF, DF$'Vendor Number'== Number)
  par(mfrow = c(1,2))
  barplot(tapply(myDF$profit, myDF$year, mean), main= paste("Profit for_
  ↪Vendor", Number))
  barplot(tapply(myDF$'Bottle Volume (ml)', myDF$year, sum), main=_
  ↪paste("Bottle Volume for Vendor", Number))
}
```

```
[24]: createDashboard(255)
```



Here above are the results of the modified function.

1.4 Question 4

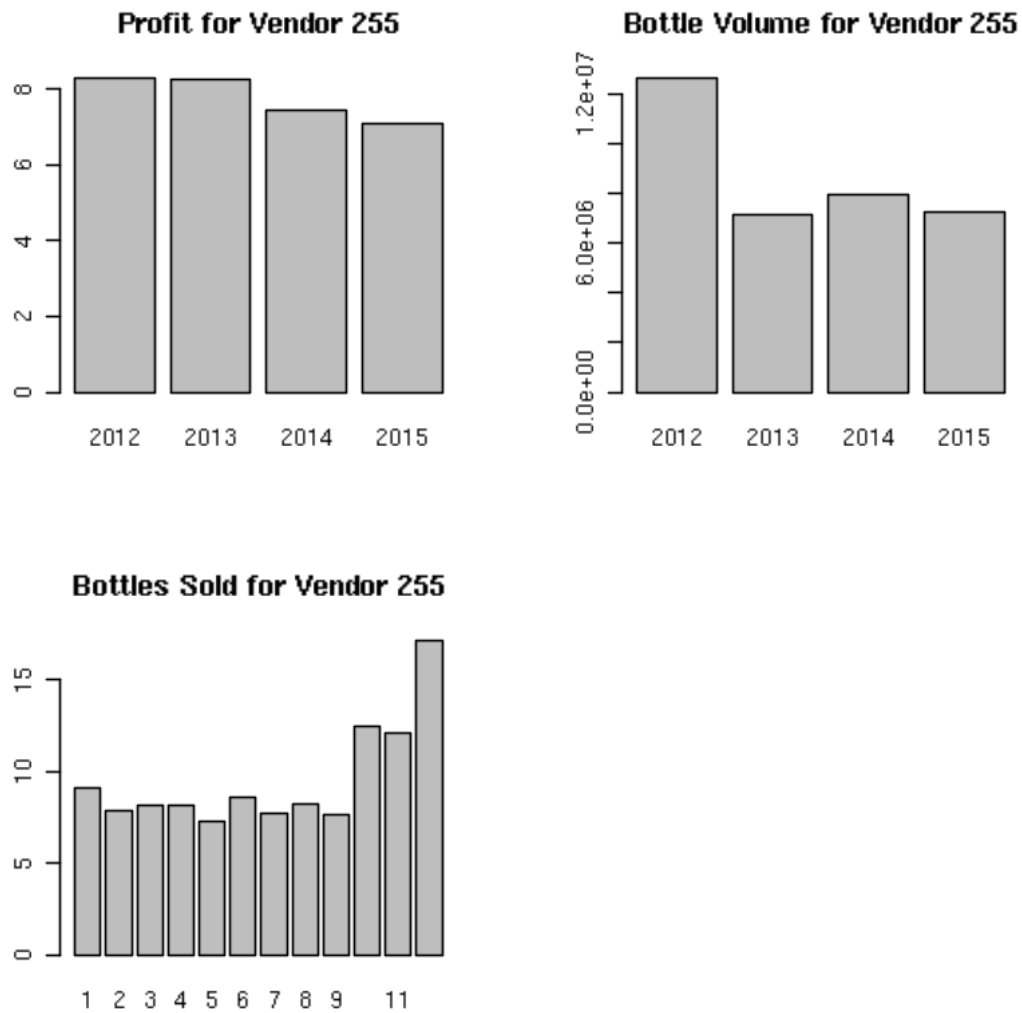
```
[41]: createDashboard <- function(Number, DF = liquor) {  
  myDF <- subset(DF, DF$'Vendor Number'== Number)  
  par(mfrow = c(2,2))  
  barplot(tapply(myDF$profit, myDF$year, mean), main= paste("Profit for_"  
↪Vendor", Number))  
  barplot(tapply(myDF$'Bottle Volume (ml)', myDF$year, sum), main=_  
↪paste("Bottle Volume for Vendor", Number))  
}
```

```

    barplot(tapply(myDF$'Bottles Sold', myDF$month, mean), main=paste("Bottles Sold for Vendor", Number))
  }

```

```
[42]: createDashboard(255)
```

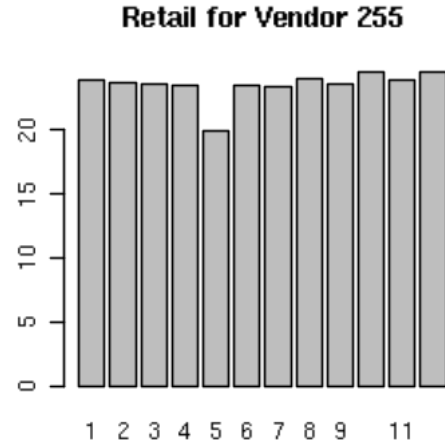
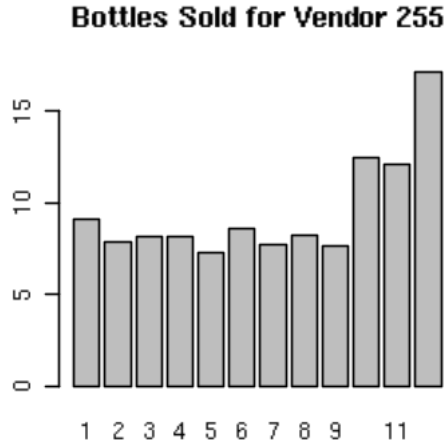
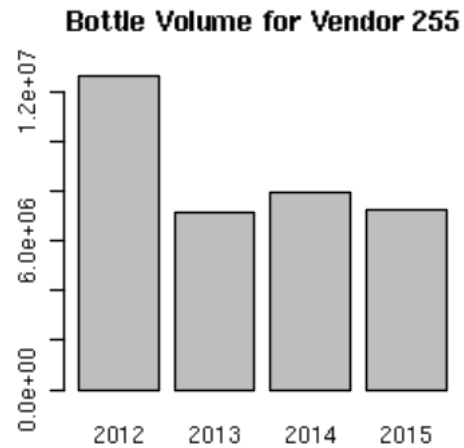
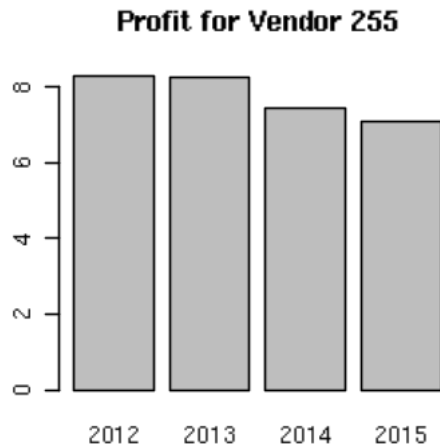


Here, the third plot is created.

1.5 Question 5

```
[43]: createDashboard <- function(Number, DF = liquor) {  
  myDF <- subset(DF, DF$'Vendor Number'== Number)  
  par(mfrow = c(2,2))  
  barplot(tapply(myDF$profit, myDF$year, mean), main= paste("Profit for_  
↪Vendor", Number))  
  barplot(tapply(myDF$'Bottle Volume (ml)', myDF$year, sum), main=_  
↪paste("Bottle Volume for Vendor", Number))  
  barplot(tapply(myDF$'Bottles Sold', myDF$month, mean), main=_  
↪paste("Bottles Sold for Vendor", Number))  
  barplot(tapply(myDF$retail, myDF$month, mean), main= paste("Retail for_  
↪Vendor", Number))  
}
```

```
[44]: createDashboard(255)
```



My plot is the average retail amount per month. From the plot we can check which months the sale condition are good and which are not.

1.6 Pledge

By submitting this work I hereby pledge that this is my own, personal work. I've acknowledged in the designated place at the top of this file all sources that I used to complete said work, including but not limited to: online resources, books, and electronic communications. I've noted all collaboration with fellow students and/or TA's. I did not copy or plagiarize another's work.

As a Boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together – We are Purdue.