RWorksheet #5

Vincent Pastor

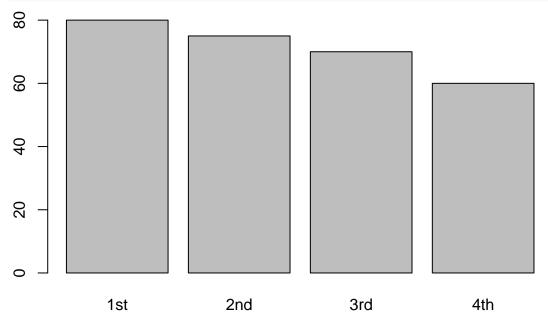
2022-11-22

RWorksheet #5

1. The table shows the enrollment of BS in Computer Science, SY 2010-2011.

a. Plot the data using a bar graph. Write the codes and copy the result.

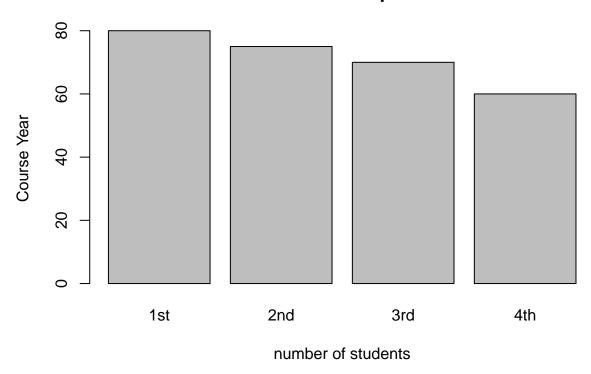
```
a <- c("1st" = 80, "2nd" = 75, "3rd" = 70, "4th" = 60)
barplot(a)
```



b. Using the same table, label the barchart with Title = "Enrollment of BS Computer Science" horizontal axis = "Curriculum Year" and vertical axis = "number of students"

```
a <- c("1st" = 80 , "2nd" = 75, "3rd" = 70, "4th" = 60)
barplot(a, main = "Enrollment of BS Computer Science", xlab = "number of students", ylab = "Course Year
```

Enrollment of BS Computer Science

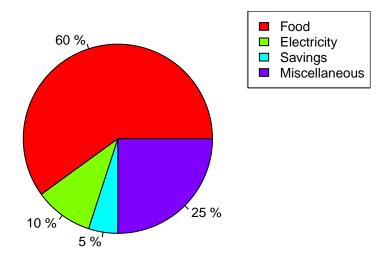


- 2. The monthly income of De Jesus family was spent on the following: 60% on Food, 10% on electricity, 5% for savings, and 25% for other miscellaneous expenses.
 - a. Create a table for the above scenario. Write the codes and its result.

```
sv <- c("Food", "Electricity", "Savings", "Miscellaneous_expenses")</pre>
mon <- c(60, 10, 5, 25)
spend <- data.frame(sv, mon)</pre>
spend
##
                            sv mon
## 1
                         Food
                                60
## 2
                 Electricity
                                10
## 3
                      Savings
                                 5
## 4 Miscellaneous_expenses
                                25
tab <- table(spend)</pre>
tab
##
                              mon
## sv
                               5 10 25 60
##
     Electricity
                                     0
##
                               0
                                  0
                                     0
##
     Miscellaneous_expenses 0
                                  0
                                     1
                                  0
##
     Savings
```

```
mon = c(60, 10, 5, 25)
```

De Jesus family Monthly Expenses

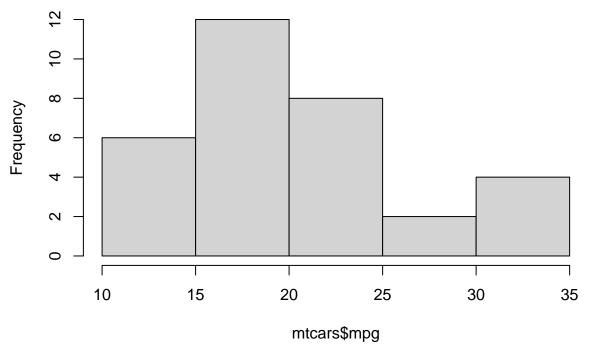


3. Open the mtcars dataset. a. Create a simple histogram specifically for mpg (miles per gallon) variable. Use \$ to select the mpg only. Write the codes and its result.

```
data(mtcars)
mt <- (mtcars$mpg)
mt

## [1] 21.0 21.0 22.8 21.4 18.7 18.1 14.3 24.4 22.8 19.2 17.8 16.4 17.3 15.2 10.4
## [16] 10.4 14.7 32.4 30.4 33.9 21.5 15.5 15.2 13.3 19.2 27.3 26.0 30.4 15.8 19.7
## [31] 15.0 21.4
hist(mtcars$mpg)</pre>
```

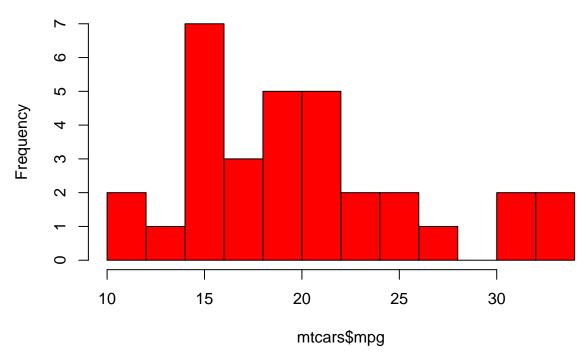
Histogram of mtcars\$mpg



b. Colored histogram with different number of bins. hist(mtcars\$mpg, breaks=12, col="red") Note: breaks= controls the number of bins.

hist(mtcars\$mpg, breaks=12, col="red")

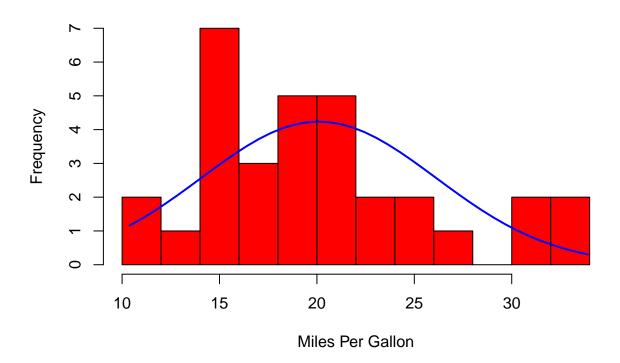
Histogram of mtcars\$mpg



c. Add a Normal Curve $x \leftarrow mtcarsmpgh \leftarrow -hist(x, breaks = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = "MilesPerGallon", main = 10, col = "red", xlab = 10, col = "red", xlab = 10, col = 10,$

"HistogramwithNormalCurve")xfit < -seq(min(x), max(x), length = 40)yfit < -dnorm(xfit, mean = mean(x), sd = sd(x))yfit < -yfit * diff(hmids[1:2])*length(x) lines(xfit, yfit, col="blue", lwd=2) Copy the result.

Histogram with Normal Curve



4. Open the iris dataset. Create a subset for each species. a. Write the codes and its result.

```
data(iris)
allspcs <- data.frame(iris)
allspcs</pre>
```

##		Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
##	1	5.1	3.5	1.4	0.2	setosa
##	2	4.9	3.0	1.4	0.2	setosa
##	3	4.7	3.2	1.3	0.2	setosa
##	4	4.6	3.1	1.5	0.2	setosa
##	5	5.0	3.6	1.4	0.2	setosa
##	6	5.4	3.9	1.7	0.4	setosa
##	7	4.6	3.4	1.4	0.3	setosa
##	8	5.0	3.4	1.5	0.2	setosa

##		4.4	2.9	1.4	0.2	setosa
##	10	4.9	3.1	1.5	0.1	setosa
##	11	5.4	3.7	1.5	0.2	setosa
##	12	4.8	3.4	1.6	0.2	setosa
##	13	4.8	3.0	1.4	0.1	setosa
##	14	4.3	3.0	1.1	0.1	setosa
##	15	5.8	4.0	1.2	0.2	setosa
##	16	5.7	4.4	1.5	0.4	setosa
##	17	5.4	3.9	1.3	0.4	setosa
##	18	5.1	3.5	1.4	0.3	setosa
##	19	5.7	3.8	1.7	0.3	setosa
##	20	5.1	3.8	1.5	0.3	setosa
##	21	5.4	3.4	1.7	0.2	setosa
##	22	5.1	3.7	1.5	0.4	setosa
##	23	4.6	3.6	1.0	0.2	setosa
##	24	5.1	3.3	1.7	0.5	setosa
##	25	4.8	3.4	1.9	0.2	setosa
##	26	5.0	3.0	1.6	0.2	setosa
##	27	5.0	3.4	1.6	0.4	setosa
##	28	5.2	3.5	1.5	0.2	setosa
##	29	5.2	3.4	1.4	0.2	setosa
##	30	4.7	3.2	1.6	0.2	setosa
##	31	4.8	3.1	1.6	0.2	setosa
##	32	5.4	3.4	1.5	0.4	setosa
##	33	5.2	4.1	1.5	0.1	setosa
##	34	5.5	4.2	1.4	0.2	setosa
##	35	4.9	3.1	1.5	0.2	setosa
##	36	5.0	3.2	1.2	0.2	setosa
##	37	5.5	3.5	1.3	0.2	setosa
##	38	4.9	3.6	1.4	0.1	setosa
##	39	4.4	3.0	1.3	0.2	setosa
##	40	5.1	3.4	1.5	0.2	setosa
##	41	5.0	3.5	1.3	0.3	setosa
##	42	4.5	2.3	1.3	0.3	setosa
##	43	4.4	3.2	1.3	0.2	setosa
##	44	5.0	3.5	1.6	0.6	setosa
##	45	5.1	3.8	1.9	0.4	setosa
##	46	4.8	3.0	1.4	0.3	setosa
##	47	5.1	3.8	1.6	0.2	setosa
##		4.6	3.2	1.4	0.2	setosa
##	49	5.3	3.7	1.5	0.2	setosa
##	50	5.0	3.3	1.4	0.2	setosa
##	51	7.0	3.2	4.7	1.4 vers	sicolor
##	52	6.4	3.2	4.5	1.5 vers	sicolor
##	53	6.9	3.1	4.9	1.5 vers	sicolor
##	54	5.5	2.3	4.0	1.3 vers	sicolor
##	55	6.5	2.8	4.6	1.5 vers	sicolor
##	56	5.7	2.8	4.5	1.3 vers	
##	57	6.3	3.3	4.7	1.6 vers	
##	58	4.9	2.4	3.3	1.0 vers	
	59	6.6	2.9	4.6	1.3 vers	
	60	5.2	2.7	3.9	1.4 vers	
	61	5.0	2.0	3.5	1.0 vers	
##		5.9	3.0	4.2	1.5 vers	
		-	-			

## 63	6.0	2.2	4.0	1.0 versicolor
## 64	6.1	2.9	4.7	1.4 versicolor
## 65	5.6	2.9	3.6	1.3 versicolor
## 66	6.7	3.1	4.4	1.4 versicolor
## 67	5.6	3.0	4.5	1.5 versicolor
## 68	5.8	2.7	4.1	1.0 versicolor
## 69	6.2	2.2	4.5	1.5 versicolor
## 70	5.6	2.5	3.9	1.1 versicolor
## 71	5.9	3.2	4.8	1.8 versicolor
## 72	6.1	2.8	4.0	1.3 versicolor
## 73	6.3	2.5	4.9	1.5 versicolor
## 74	6.1	2.8	4.7	1.2 versicolor
## 75	6.4	2.9	4.3	1.3 versicolor
## 76	6.6	3.0	4.4	1.4 versicolor
## 77	6.8	2.8	4.8	1.4 versicolor
## 78	6.7	3.0	5.0	1.7 versicolor
## 79	6.0	2.9	4.5	1.5 versicolor
## 80	5.7	2.6	3.5	1.0 versicolor
## 81	5.5	2.4	3.8	1.1 versicolor
## 82	5.5	2.4	3.7	1.0 versicolor
## 83	5.8	2.7	3.9	1.2 versicolor
## 84	6.0	2.7	5.1	1.6 versicolor
## 85	5.4	3.0	4.5	1.5 versicolor
## 86	6.0	3.4	4.5	1.6 versicolor
## 87	6.7	3.1	4.7	1.5 versicolor
## 88	6.3	2.3	4.4	1.3 versicolor
## 89	5.6	3.0	4.1	1.3 versicolor
## 90	5.5	2.5	4.0	1.3 versicolor
## 91	5.5	2.6	4.4	1.2 versicolor
## 92	6.1	3.0	4.6	1.4 versicolor
## 93	5.8	2.6	4.0	1.2 versicolor
## 94	5.0	2.3	3.3	1.0 versicolor
## 95	5.6	2.7	4.2	1.3 versicolor
## 96	5.7	3.0	4.2	1.2 versicolor
## 97	5.7	2.9	4.2	1.3 versicolor
## 98	6.2	2.9	4.3	1.3 versicolor
## 99	5.1	2.5	3.0	1.1 versicolor
## 100	5.7	2.8	4.1	1.3 versicolor
## 101	6.3	3.3	6.0	2.5 virginica
## 102	5.8	2.7	5.1	1.9 virginica
## 103	7.1	3.0	5.9	2.1 virginica
## 104	6.3	2.9	5.6	1.8 virginica
## 105	6.5	3.0	5.8	2.2 virginica
## 106	7.6	3.0	6.6	2.1 virginica
## 107	4.9	2.5	4.5	1.7 virginica
## 108	7.3	2.9	6.3	1.8 virginica
## 109	6.7	2.5	5.8	1.8 virginica
## 110	7.2	3.6	6.1	2.5 virginica
## 111	6.5	3.2	5.1	2.0 virginica
## 112	6.4	2.7	5.3	1.9 virginica
## 113	6.8	3.0	5.5	2.1 virginica
## 114	5.7	2.5	5.0	2.0 virginica
## 115	5.8	2.8	5.1	2.4 virginica
## 116	6.4	3.2	5.3	2.3 virginica
				5

##	117	6.5	3.0	5.5	1.8	virginica
##	118	7.7	3.8	6.7	2.2	virginica
##	119	7.7	2.6	6.9	2.3	virginica
##	120	6.0	2.2	5.0	1.5	virginica
##	121	6.9	3.2	5.7	2.3	virginica
##	122	5.6	2.8	4.9	2.0	virginica
##	123	7.7	2.8	6.7	2.0	virginica
##	124	6.3	2.7	4.9	1.8	virginica
##	125	6.7	3.3	5.7	2.1	virginica
##	126	7.2	3.2	6.0	1.8	virginica
##	127	6.2	2.8	4.8	1.8	virginica
##	128	6.1	3.0	4.9	1.8	virginica
##	129	6.4	2.8	5.6	2.1	virginica
##	130	7.2	3.0	5.8	1.6	virginica
##	131	7.4	2.8	6.1	1.9	virginica
##	132	7.9	3.8	6.4	2.0	virginica
##	133	6.4	2.8	5.6	2.2	virginica
##	134	6.3	2.8	5.1	1.5	virginica
##	135	6.1	2.6	5.6	1.4	virginica
##	136	7.7	3.0	6.1	2.3	virginica
##	137	6.3	3.4	5.6	2.4	virginica
##	138	6.4	3.1	5.5	1.8	virginica
##	139	6.0	3.0	4.8	1.8	virginica
##	140	6.9	3.1	5.4	2.1	virginica
##	141	6.7	3.1	5.6	2.4	virginica
##	142	6.9	3.1	5.1	2.3	virginica
##	143	5.8	2.7	5.1	1.9	virginica
##	144	6.8	3.2	5.9	2.3	virginica
##	145	6.7	3.3	5.7	2.5	virginica
##	146	6.7	3.0	5.2	2.3	virginica
##	147	6.3	2.5	5.0	1.9	virginica
##	148	6.5	3.0	5.2	2.0	virginica
##	149	6.2	3.4	5.4	2.3	virginica
##	150	5.9	3.0	5.1	1.8	virginica

setosaDF <- data.frame(iris)
setosaDF</pre>

##		Sepal Length	Sepal.Width	Petal.Length	Petal.Width	Species
##	1	5.1	3.5	1.4	0.2	setosa
##	2	4.9	3.0	1.4	0.2	setosa
##	3	4.7	3.2	1.3	0.2	setosa
##	4	4.6	3.1	1.5	0.2	setosa
##	5	5.0	3.6	1.4	0.2	setosa
##	6	5.4	3.9	1.7	0.4	setosa
##	7	4.6	3.4	1.4	0.3	setosa
##	8	5.0	3.4	1.5	0.2	setosa
##	9	4.4	2.9	1.4	0.2	setosa
##	10	4.9	3.1	1.5	0.1	setosa
##	11	5.4	3.7	1.5	0.2	setosa
##	12	4.8	3.4	1.6	0.2	setosa
##	13	4.8	3.0	1.4	0.1	setosa
##	14	4.3	3.0	1.1	0.1	setosa
##	15	5.8	4.0	1.2	0.2	setosa
##	16	5.7	4.4	1.5	0.4	setosa

шш	4.7	Г 4	2.0	4 0	0 4	
	17	5.4	3.9	1.3	0.4	setosa
##	18	5.1	3.5	1.4	0.3	setosa
##	19	5.7	3.8	1.7	0.3	setosa
##	20	5.1	3.8	1.5	0.3	setosa
##	21	5.4	3.4	1.7	0.2	setosa
##	22	5.1	3.7	1.5	0.4	setosa
##	23	4.6	3.6	1.0	0.2	setosa
##	24	5.1	3.3	1.7	0.5	setosa
##	25	4.8	3.4	1.9	0.2	setosa
##	26	5.0	3.0	1.6	0.2	setosa
##	27	5.0	3.4	1.6	0.4	setosa
##	28	5.2	3.5	1.5	0.2	setosa
##	29	5.2	3.4	1.4	0.2	setosa
##	30	4.7	3.2	1.6	0.2	setosa
##	31	4.8	3.1	1.6	0.2	setosa
##	32	5.4	3.4	1.5	0.4	setosa
##	33	5.2	4.1	1.5	0.1	setosa
##	34	5.5	4.2	1.4	0.2	setosa
##	35	4.9	3.1	1.5	0.2	setosa
##	36	5.0	3.2	1.2	0.2	setosa
##	37	5.5	3.5	1.3	0.2	setosa
##	38	4.9	3.6	1.4	0.1	setosa
##	39	4.4	3.0	1.3	0.2	setosa
##	40	5.1	3.4	1.5	0.2	setosa
##	41	5.0	3.5	1.3	0.3	setosa
##	42	4.5	2.3	1.3	0.3	setosa
##	43	4.4	3.2	1.3	0.2	setosa
##	44	5.0	3.5	1.6	0.6	setosa
##	45	5.1	3.8	1.9	0.4	setosa
##	46	4.8	3.0	1.4	0.3	setosa
##	47	5.1	3.8	1.6	0.2	setosa
##	48	4.6	3.2	1.4	0.2	setosa
##	49	5.3	3.7	1.5	0.2	setosa
##	50	5.0	3.3	1.4	0.2	setosa
##	51	7.0	3.2	4.7	1.4 vers	
##	52	6.4	3.2	4.5	1.5 vers	
##		6.9	3.1	4.9	1.5 vers	
##		5.5	2.3	4.0	1.3 vers	
##		6.5	2.8	4.6	1.5 vers	
	56	5.7	2.8	4.5	1.3 vers	
	57	6.3	3.3	4.7	1.6 vers	
	58	4.9	2.4		1.0 vers	
				3.3 4.6		
	59 60	6.6 5.2	2.9 2.7		1.3 vers	
##				3.9	1.4 vers	
##	61	5.0	2.0	3.5		
##	62	5.9	3.0	4.2	1.5 vers	
##	63	6.0	2.2	4.0	1.0 vers	
##	64	6.1	2.9	4.7	1.4 vers	
##	65	5.6	2.9	3.6	1.3 vers	
##	66	6.7	3.1	4.4	1.4 vers	
	67	5.6	3.0	4.5	1.5 vers	
	68	5.8	2.7	4.1	1.0 vers	
	69	6.2	2.2	4.5	1.5 vers	
##	70	5.6	2.5	3.9	1.1 vers	sicolor

## 71	5.9	3.2	4.8	1.8 versicolor
## 72	6.1	2.8	4.0	1.3 versicolor
## 73	6.3	2.5	4.9	1.5 versicolor
## 74	6.1	2.8	4.7	1.2 versicolor
## 75	6.4	2.9	4.3	1.3 versicolor
## 76	6.6	3.0	4.4	1.4 versicolor
## 77	6.8	2.8	4.8	1.4 versicolor
## 78	6.7	3.0	5.0	1.7 versicolor
## 79	6.0	2.9	4.5	1.5 versicolor
## 80	5.7	2.6	3.5	1.0 versicolor
## 81	5.5	2.4	3.8	1.1 versicolor
## 82	5.5	2.4	3.7	1.0 versicolor
## 83	5.8	2.7	3.9	1.2 versicolor
## 84	6.0	2.7	5.1	1.6 versicolor
## 85	5.4	3.0	4.5	1.5 versicolor
## 86	6.0	3.4	4.5	1.6 versicolor
## 87	6.7	3.1	4.7	1.5 versicolor
## 88	6.3	2.3	4.4	1.3 versicolor
## 89	5.6	3.0	4.1	1.3 versicolor
## 90	5.5	2.5	4.0	1.3 versicolor
## 91	5.5	2.6	4.4	1.2 versicolor
## 92	6.1	3.0	4.6	1.4 versicolor
## 93	5.8	2.6	4.0	1.2 versicolor
## 94	5.0	2.3	3.3	1.0 versicolor
## 95	5.6	2.7	4.2	1.3 versicolor
## 96	5.7	3.0	4.2	1.2 versicolor
## 97	5.7	2.9	4.2	1.3 versicolor
## 98	6.2	2.9	4.3	1.3 versicolor
## 99	5.1	2.5	3.0	1.1 versicolor
## 100	5.7	2.8	4.1	1.3 versicolor
## 101	6.3	3.3	6.0	2.5 virginica
## 102	5.8	2.7	5.1	1.9 virginica
## 103	7.1	3.0	5.9	2.1 virginica
## 104	6.3	2.9	5.6	1.8 virginica
## 105	6.5	3.0	5.8	2.2 virginica
## 106	7.6	3.0	6.6	2.1 virginica
## 107	4.9	2.5	4.5	1.7 virginica
## 108	7.3	2.9	6.3	1.8 virginica
## 109	6.7	2.5	5.8	1.8 virginica
## 110	7.2	3.6	6.1	2.5 virginica
## 111	6.5	3.2	5.1	2.0 virginica
## 112	6.4	2.7	5.3	1.9 virginica
## 113	6.8	3.0	5.5	2.1 virginica
## 114	5.7	2.5	5.0	2.0 virginica
## 115	5.8	2.8	5.1	2.4 virginica
## 116	6.4	3.2	5.3	2.3 virginica
## 117	6.5	3.0	5.5	1.8 virginica
## 118	7.7	3.8	6.7	2.2 virginica
## 119	7.7	2.6	6.9	2.3 virginica
## 120	6.0	2.2	5.0	1.5 virginica
## 121	6.9	3.2	5.7	2.3 virginica
## 121 ## 122	5.6	2.8	4.9	2.0 virginica
## 123	7.7	2.8	6.7	2.0 virginica
## 124	6.3	2.7	4.9	1.8 virginica
TT 147	0.0	4.1	Ŧ. J	1.0 ATTRITTE

##	125	6.7	3.3	5.7	2.1	virginica
##	126	7.2	3.2	6.0	1.8	virginica
##	127	6.2	2.8	4.8	1.8	virginica
##	128	6.1	3.0	4.9	1.8	virginica
##	129	6.4	2.8	5.6	2.1	virginica
##	130	7.2	3.0	5.8	1.6	virginica
##	131	7.4	2.8	6.1	1.9	virginica
	132	7.9	3.8	6.4	2.0	virginica
##	133	6.4	2.8	5.6	2.2	virginica
##	134	6.3	2.8	5.1	1.5	virginica
##	135	6.1	2.6	5.6	1.4	virginica
##	136	7.7	3.0	6.1	2.3	virginica
##	137	6.3	3.4	5.6	2.4	virginica
##	138	6.4	3.1	5.5	1.8	virginica
##	139	6.0	3.0	4.8	1.8	virginica
##	140	6.9	3.1	5.4	2.1	virginica
##	141	6.7	3.1	5.6	2.4	virginica
##	142	6.9	3.1	5.1	2.3	virginica
##	143	5.8	2.7	5.1	1.9	virginica
##	144	6.8	3.2	5.9	2.3	virginica
##	145	6.7	3.3	5.7	2.5	virginica
##	146	6.7	3.0	5.2	2.3	virginica
##	147	6.3	2.5	5.0	1.9	virginica
##	148	6.5	3.0	5.2	2.0	virginica
##	149	6.2	3.4	5.4	2.3	virginica
##	150	5.9	3.0	5.1	1.8	virginica

virginicaDF <- data.frame(iris)
virginicaDF</pre>

##		Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
##	1	5.1	3.5	1.4	0.2	setosa
##	2	4.9	3.0	1.4	0.2	setosa
##	3	4.7	3.2	1.3	0.2	setosa
##	4	4.6	3.1	1.5	0.2	setosa
##	5	5.0	3.6	1.4	0.2	setosa
##	6	5.4	3.9	1.7	0.4	setosa
##	7	4.6	3.4	1.4	0.3	setosa
##	8	5.0	3.4	1.5	0.2	setosa
##	9	4.4	2.9	1.4	0.2	setosa
##	10	4.9	3.1	1.5	0.1	setosa
##	11	5.4	3.7	1.5	0.2	setosa
##	12	4.8	3.4	1.6	0.2	setosa
##	13	4.8	3.0	1.4	0.1	setosa
##	14	4.3	3.0	1.1	0.1	setosa
##	15	5.8	4.0	1.2	0.2	setosa
##	16	5.7	4.4	1.5	0.4	setosa
##	17	5.4	3.9	1.3	0.4	setosa
##	18	5.1	3.5	1.4	0.3	setosa
##	19	5.7	3.8	1.7	0.3	setosa
##	20	5.1	3.8	1.5	0.3	setosa
##	21	5.4	3.4	1.7	0.2	setosa
##	22	5.1	3.7	1.5	0.4	setosa
##	23	4.6	3.6	1.0	0.2	setosa
##	24	5.1	3.3	1.7	0.5	setosa

		4.8	3.4	1.9	0.2	setosa
## 2		5.0	3.0	1.6	0.2	setosa
## 2	27	5.0	3.4	1.6	0.4	setosa
		5.2	3.5	1.5	0.2	setosa
## 2	29	5.2	3.4	1.4	0.2	setosa
## 3	30	4.7	3.2	1.6	0.2	setosa
## 3	31	4.8	3.1	1.6	0.2	setosa
## 3	32	5.4	3.4	1.5	0.4	setosa
## 3	33	5.2	4.1	1.5	0.1	setosa
## 3	34	5.5	4.2	1.4	0.2	setosa
## 3	35	4.9	3.1	1.5	0.2	setosa
## 3	36	5.0	3.2	1.2	0.2	setosa
## 3	37	5.5	3.5	1.3	0.2	setosa
## 3	38	4.9	3.6	1.4	0.1	setosa
## 3	39	4.4	3.0	1.3	0.2	setosa
## 4	40	5.1	3.4	1.5	0.2	setosa
## 4	41	5.0	3.5	1.3	0.3	setosa
## 4	42	4.5	2.3	1.3	0.3	setosa
## 4	43	4.4	3.2	1.3	0.2	setosa
## 4	14	5.0	3.5	1.6	0.6	setosa
## 4	45	5.1	3.8	1.9	0.4	setosa
## 4	46	4.8	3.0	1.4	0.3	setosa
## 4		5.1	3.8	1.6	0.2	setosa
		4.6	3.2	1.4	0.2	setosa
		5.3	3.7	1.5	0.2	setosa
		5.0	3.3	1.4	0.2	setosa
		7.0	3.2	4.7		rsicolor
## 5		6.4	3.2	4.5		rsicolor
		6.9	3.1	4.9		rsicolor
		5.5	2.3	4.0		rsicolor
		6.5	2.8	4.6		rsicolor
		5.7	2.8	4.5		rsicolor
		6.3	3.3	4.7		rsicolor
		4.9	2.4	3.3		csicolor
		6.6	2.9	4.6		csicolor
		5.2	2.7	3.9		rsicolor
## 6		5.0	2.0	3.5		rsicolor
## 6		5.9	3.0	4.2		rsicolor
## 6		6.0	2.2	4.0		rsicolor
## 6		6.1	2.9	4.7		csicolor
## 6		5.6	2.9	3.6		rsicolor
		6.7	3.1	4.4		rsicolor
		5.6	3.0	4.5		csicolor
		5.8	2.7	4.1		csicolor
		6.2	2.2	4.5		csicolor
		5.6	2.5	3.9		csicolor
		5.9	3.2	4.8		csicolor
		6.1	2.8	4.0		csicolor
		6.3	2.5	4.9		csicolor
		6.1	2.8	4.7		csicolor
		6.4	2.9	4.3		csicolor
		6.6	3.0	4.4		csicolor
		6.8	2.8	4.8		csicolor
## 7		6.7	3.0	5.0		csicolor
## /	10	0.1	5.0	5.0	1.1 ve	PICOTOL

===				
## 79	6.0	2.9	4.5	1.5 versicolor
## 80	5.7	2.6	3.5	1.0 versicolor
## 81	5.5	2.4	3.8	1.1 versicolor
## 82	5.5	2.4	3.7	1.0 versicolor
## 83	5.8	2.7	3.9	1.2 versicolor
## 84	6.0	2.7	5.1	1.6 versicolor
## 85	5.4	3.0	4.5	1.5 versicolor
## 86	6.0	3.4	4.5	1.6 versicolor
## 87	6.7	3.1	4.7	1.5 versicolor
## 88	6.3	2.3	4.4	1.3 versicolor
## 89	5.6	3.0	4.1	1.3 versicolor
## 90	5.5	2.5	4.0	1.3 versicolor
## 91	5.5	2.6	4.4	1.2 versicolor
## 92	6.1	3.0	4.6	1.4 versicolor
## 93	5.8	2.6	4.0	1.2 versicolor
## 94	5.0	2.3	3.3	1.0 versicolor
## 9 1 ## 95	5.6	2.7	4.2	1.3 versicolor
## 95 ## 96	5.7	3.0	4.2	1.2 versicolor
		2.9		1.2 versicolor
## 97	5.7		4.2	
## 98	6.2	2.9	4.3	1.3 versicolor
## 99	5.1	2.5	3.0	1.1 versicolor
## 100	5.7	2.8	4.1	1.3 versicolor
## 101	6.3	3.3	6.0	2.5 virginica
## 102	5.8	2.7	5.1	1.9 virginica
## 103	7.1	3.0	5.9	2.1 virginica
## 104	6.3	2.9	5.6	1.8 virginica
## 105	6.5	3.0	5.8	2.2 virginica
## 106	7.6	3.0	6.6	2.1 virginica
## 107	4.9	2.5	4.5	1.7 virginica
## 108	7.3	2.9	6.3	1.8 virginica
## 109	6.7	2.5	5.8	1.8 virginica
## 110	7.2	3.6	6.1	2.5 virginica
## 111	6.5	3.2	5.1	2.0 virginica
## 112	6.4	2.7	5.3	1.9 virginica
## 113	6.8	3.0	5.5	2.1 virginica
## 114	5.7	2.5	5.0	2.0 virginica
## 115	5.8	2.8	5.1	2.4 virginica
## 116	6.4	3.2	5.3	2.3 virginica
## 117	6.5	3.0	5.5	1.8 virginica
## 118	7.7	3.8	6.7	2.2 virginica
## 119	7.7	2.6	6.9	2.3 virginica
## 120	6.0	2.2	5.0	1.5 virginica
## 121	6.9	3.2	5.7	2.3 virginica
## 122	5.6	2.8	4.9	2.0 virginica
## 123	7.7	2.8	6.7	2.0 virginica
## 124	6.3	2.7	4.9	1.8 virginica
## 125	6.7	3.3	5.7	2.1 virginica
## 126	7.2	3.2	6.0	1.8 virginica
## 127	6.2	2.8	4.8	1.8 virginica
## 128	6.1	3.0	4.9	1.8 virginica
## 129	6.4	2.8	5.6	2.1 virginica
## 130	7.2	3.0	5.8	1.6 virginica
## 131	7.4	2.8	6.1	1.9 virginica
## 132	7.9	3.8	6.4	2.0 virginica
				3

##	133	6.4	2.8	5.6	2.2	virginica
##	134	6.3	2.8	5.1	1.5	virginica
##	135	6.1	2.6	5.6	1.4	virginica
##	136	7.7	3.0	6.1	2.3	virginica
##	137	6.3	3.4	5.6	2.4	virginica
##	138	6.4	3.1	5.5	1.8	virginica
##	139	6.0	3.0	4.8	1.8	virginica
##	140	6.9	3.1	5.4	2.1	virginica
##	141	6.7	3.1	5.6	2.4	virginica
##	142	6.9	3.1	5.1	2.3	virginica
##	143	5.8	2.7	5.1	1.9	virginica
##	144	6.8	3.2	5.9	2.3	virginica
##	145	6.7	3.3	5.7	2.5	virginica
##	146	6.7	3.0	5.2	2.3	virginica
##	147	6.3	2.5	5.0	1.9	virginica
##	148	6.5	3.0	5.2	2.0	virginica
##	149	6.2	3.4	5.4	2.3	virginica
##	150	5.9	3.0	5.1	1.8	virginica

versicolorDF <- data.frame(iris)
versicolorDF</pre>

##		Sepal.Length	${\tt Sepal.Width}$	Petal.Length	${\tt Petal.Width}$	Species
##	1	5.1	3.5	1.4	0.2	setosa
##	2	4.9	3.0	1.4	0.2	setosa
##	3	4.7	3.2	1.3	0.2	setosa
##	4	4.6	3.1	1.5	0.2	setosa
##	5	5.0	3.6	1.4	0.2	setosa
##	6	5.4	3.9	1.7	0.4	setosa
##	7	4.6	3.4	1.4	0.3	setosa
##	8	5.0	3.4	1.5	0.2	setosa
##	9	4.4	2.9	1.4	0.2	setosa
##	10	4.9	3.1	1.5	0.1	setosa
##	11	5.4	3.7	1.5	0.2	setosa
##	12	4.8	3.4	1.6	0.2	setosa
##	13	4.8	3.0	1.4	0.1	setosa
##	14	4.3	3.0	1.1	0.1	setosa
##	15	5.8	4.0	1.2	0.2	setosa
##	16	5.7	4.4	1.5	0.4	setosa
##	17	5.4	3.9	1.3	0.4	setosa
##	18	5.1	3.5	1.4	0.3	setosa
##	19	5.7	3.8	1.7	0.3	setosa
##	20	5.1	3.8	1.5	0.3	setosa
##	21	5.4	3.4	1.7	0.2	setosa
##	22	5.1	3.7	1.5	0.4	setosa
##	23	4.6	3.6	1.0	0.2	setosa
##	24	5.1	3.3	1.7	0.5	setosa
	25	4.8	3.4	1.9	0.2	setosa
##	26	5.0	3.0	1.6	0.2	setosa
##	27	5.0	3.4	1.6	0.4	setosa
##	28	5.2	3.5	1.5	0.2	setosa
##	29	5.2	3.4	1.4	0.2	setosa
##	30	4.7	3.2	1.6	0.2	setosa
##	31	4.8	3.1	1.6	0.2	setosa
##	32	5.4	3.4	1.5	0.4	setosa

## 33	5.2	4.1	1.5	0.1	setosa
## 34	5.5	4.2	1.4	0.2	setosa
## 35	4.9	3.1	1.5	0.2	setosa
## 36	5.0	3.2	1.2	0.2	setosa
## 37	5.5	3.5	1.3	0.2	setosa
## 38	4.9	3.6	1.4	0.1	setosa
## 39	4.4	3.0	1.3	0.2	setosa
## 40	5.1	3.4	1.5	0.2	setosa
## 41	5.0	3.5	1.3	0.3	setosa
## 42	4.5	2.3	1.3	0.3	setosa
## 43	4.4	3.2	1.3	0.2	setosa
## 44	5.0	3.5	1.6	0.6	setosa
## 45	5.1	3.8	1.9	0.4	setosa
## 46	4.8	3.0	1.4	0.3	setosa
## 47	5.1	3.8	1.6	0.2	setosa
## 48	4.6	3.2	1.4	0.2	setosa
## 49	5.3	3.7	1.5	0.2	setosa
				0.2	
## 50	5.0	3.3	1.4 4.7		setosa
## 51	7.0	3.2			sicolor
## 52	6.4	3.2	4.5		sicolor
## 53	6.9	3.1	4.9		sicolor
## 54	5.5	2.3	4.0		sicolor
## 55	6.5	2.8	4.6		sicolor
## 56	5.7	2.8	4.5		sicolor
## 57	6.3	3.3	4.7		sicolor
## 58	4.9	2.4	3.3		sicolor
## 59	6.6	2.9	4.6	1.3 ver	sicolor
## 60	5.2	2.7	3.9	1.4 ver	sicolor
## 61	5.0	2.0	3.5	1.0 ver	sicolor
## 62	5.9	3.0	4.2	1.5 ver	sicolor
## 63	6.0	2.2	4.0	1.0 ver	sicolor
## 64	6.1	2.9	4.7	1.4 ver	sicolor
## 65	5.6	2.9	3.6	1.3 ver	sicolor
## 66	6.7	3.1	4.4	1.4 ver	sicolor
## 67	5.6	3.0	4.5	1.5 ver	sicolor
## 68	5.8	2.7	4.1	1.0 ver	sicolor
## 69	6.2	2.2	4.5	1.5 ver	sicolor
## 70	5.6	2.5	3.9	1.1 ver	sicolor
## 71	5.9	3.2	4.8	1.8 ver	sicolor
## 72	6.1	2.8	4.0	1.3 ver	sicolor
## 73	6.3	2.5	4.9	1.5 ver	sicolor
## 74	6.1	2.8	4.7	1.2 ver	sicolor
## 75	6.4	2.9	4.3		sicolor
## 76	6.6	3.0	4.4		sicolor
## 77	6.8	2.8	4.8		sicolor
## 78	6.7	3.0	5.0		sicolor
## 79	6.0	2.9	4.5		sicolor
## 79	5.7	2.6	3.5		sicolor
## 81	5.5	2.4	3.8		sicolor
## 82	5.5	2.4	3.7		sicolor
## 83		2.4			sicolor
## 84	5.8 6.0	2.7	3.9 5.1		sicolor
	6.0				
## 85 ## 86	5.4	3.0	4.5		sicolor
## 86	6.0	3.4	4.5	1.6 ver	sicolor

		0 4		
## 87	6.7	3.1	4.7	1.5 versicolor
## 88	6.3	2.3	4.4	1.3 versicolor
## 89	5.6	3.0	4.1	1.3 versicolor
## 90	5.5	2.5	4.0	1.3 versicolor
## 91	5.5	2.6	4.4	1.2 versicolor
## 92	6.1	3.0	4.6	1.4 versicolor
## 93	5.8	2.6	4.0	1.2 versicolor
## 94	5.0	2.3	3.3	1.0 versicolor
## 95	5.6	2.7	4.2	1.3 versicolor
## 96	5.7	3.0	4.2	1.2 versicolor
## 97	5.7	2.9	4.2	1.3 versicolor
## 98	6.2	2.9	4.3	1.3 versicolor
## 99	5.1	2.5	3.0	1.1 versicolor
## 100	5.7	2.8	4.1	1.3 versicolor
## 101	6.3	3.3	6.0	2.5 virginica
## 102	5.8	2.7	5.1	1.9 virginica
## 103	7.1	3.0	5.9	2.1 virginica
## 104	6.3	2.9	5.6	1.8 virginica
## 105	6.5	3.0	5.8	2.2 virginica
## 106	7.6	3.0	6.6	2.1 virginica
## 107	4.9	2.5	4.5	1.7 virginica
## 108	7.3	2.9	6.3	1.8 virginica
## 109	6.7	2.5	5.8	1.8 virginica
## 110	7.2	3.6	6.1	2.5 virginica
## 111	6.5	3.2	5.1	2.0 virginica
## 112	6.4	2.7	5.3	1.9 virginica
## 113	6.8	3.0	5.5	2.1 virginica
## 114	5.7	2.5	5.0	2.0 virginica
## 115	5.8	2.8	5.1	2.4 virginica
## 116	6.4	3.2	5.3	2.3 virginica
## 117	6.5	3.0	5.5	1.8 virginica
## 118	7.7	3.8	6.7	2.2 virginica
## 119	7.7	2.6	6.9	2.3 virginica
## 120	6.0	2.2	5.0	1.5 virginica
## 121	6.9	3.2	5.7	2.3 virginica
## 122	5.6	2.8	4.9	2.0 virginica
## 123	7.7	2.8	6.7	2.0 virginica
## 124	6.3	2.7	4.9	1.8 virginica
## 125	6.7	3.3	5.7	2.1 virginica
## 126	7.2	3.2	6.0	1.8 virginica
## 127	6.2	2.8	4.8	1.8 virginica
## 128	6.1	3.0	4.9	1.8 virginica
## 129	6.4	2.8	5.6	2.1 virginica
## 130	7.2	3.0	5.8	1.6 virginica
## 131	7.4	2.8	6.1	1.9 virginica
## 132 ## 133	7.9	3.8	6.4	2.0 virginica
## 133 ## 134	6.4	2.8	5.6 5.1	2.2 virginica
## 134 ## 135	6.3	2.8	5.1	1.5 virginica
	6.1	2.6	5.6	1.4 virginica
## 136 ## 137	7.7	3.0	6.1	2.3 virginica
## 137 ## 138	6.3	3.4	5.6	2.4 virginica
## 138 ## 139	6.4	3.1	5.5 4.8	1.8 virginica
## 139 ## 140	6.0	3.0	4.8	1.8 virginica
## 140	6.9	3.1	5.4	2.1 virginica

```
## 141
               6.7
                          3.1
                                       5.6
                                                  2.4 virginica
## 142
               6.9
                          3.1
                                       5.1
                                                  2.3 virginica
## 143
               5.8
                          2.7
                                       5.1
                                                  1.9 virginica
## 144
               6.8
                          3.2
                                       5.9
                                                   2.3 virginica
## 145
               6.7
                          3.3
                                       5.7
                                                   2.5 virginica
## 146
                                                   2.3 virginica
               6.7
                          3.0
                                       5.2
## 147
                                                   1.9 virginica
               6.3
                          2.5
                                       5.0
## 148
               6.5
                          3.0
                                       5.2
                                                   2.0 virginica
## 149
               6.2
                           3.4
                                       5.4
                                                   2.3 virginica
## 150
                                                   1.8 virginica
               5.9
                          3.0
                                       5.1
```

setosa <- subset(setosaDF, Species == 'setosa')
setosa</pre>

##		Sepal Length	Sepal Width	Petal.Length	Petal Width	Species
	1	5.1	3.5	1.4	0.2	setosa
##	2	4.9	3.0	1.4	0.2	setosa
##	3	4.7	3.2	1.3	0.2	setosa
##	4	4.6	3.1	1.5	0.2	setosa
##	5	5.0	3.6	1.4	0.2	setosa
##	6	5.4	3.9	1.7	0.4	setosa
##	7	4.6	3.4	1.4	0.3	setosa
##	8	5.0	3.4	1.5	0.2	setosa
##	9	4.4	2.9	1.4	0.2	setosa
##	10	4.9	3.1	1.5	0.1	setosa
##	11	5.4	3.7	1.5	0.2	setosa
##	12	4.8	3.4	1.6	0.2	setosa
##	13	4.8	3.0	1.4	0.1	setosa
##	14	4.3	3.0	1.1	0.1	setosa
##	15	5.8	4.0	1.2	0.2	setosa
##	16	5.7	4.4	1.5	0.4	setosa
##	17	5.4	3.9	1.3	0.4	setosa
##	18	5.1	3.5	1.4	0.3	setosa
##	19	5.7	3.8	1.7	0.3	setosa
##	20	5.1	3.8	1.5	0.3	setosa
##	21	5.4	3.4	1.7	0.2	setosa
##	22	5.1	3.7	1.5	0.4	setosa
##	23	4.6	3.6	1.0	0.2	setosa
##	24	5.1	3.3	1.7	0.5	setosa
##	25	4.8	3.4	1.9	0.2	setosa
##	26	5.0	3.0	1.6	0.2	setosa
##	27	5.0	3.4	1.6	0.4	setosa
##	28	5.2	3.5	1.5	0.2	setosa
##	29	5.2	3.4	1.4	0.2	setosa
##	30	4.7	3.2	1.6	0.2	setosa
##	31	4.8	3.1	1.6	0.2	setosa
##	32	5.4	3.4	1.5	0.4	setosa
##	33	5.2	4.1	1.5	0.1	setosa
##	34	5.5	4.2	1.4	0.2	setosa
##	35	4.9	3.1	1.5	0.2	setosa
##	36	5.0	3.2	1.2	0.2	setosa
##	37	5.5	3.5	1.3	0.2	setosa
##	38	4.9	3.6	1.4	0.1	setosa
##	39	4.4	3.0	1.3	0.2	setosa
##	40	5.1	3.4	1.5	0.2	setosa

```
## 41
            5.0
                    3.5
                                 1.3
                                       0.3 setosa
## 42
            4.5
                       2.3
                                  1.3
                                            0.3 setosa
## 43
            4.4
                       3.2
                                  1.3
                                            0.2 setosa
## 44
                                            0.6 setosa
            5.0
                       3.5
                                  1.6
## 45
            5.1
                       3.8
                                  1.9
                                            0.4 setosa
## 46
            4.8
                       3.0
                                  1.4
                                            0.3 setosa
## 47
            5.1
                       3.8
                                  1.6
                                            0.2 setosa
                                            0.2 setosa
## 48
            4.6
                       3.2
                                  1.4
                                            0.2 setosa
## 49
             5.3
                       3.7
                                  1.5
## 50
            5.0
                       3.3
                                  1.4
                                            0.2 setosa
```

versicolor <- subset(versicolorDF, Species == 'versicolor')
versicolor</pre>

##		Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
##	51	7.0	3.2	4.7	1.4	versicolor
##	52	6.4	3.2	4.5		versicolor
##	53	6.9	3.1	4.9	1.5	versicolor
##		5.5	2.3	4.0	1.3	versicolor
	55	6.5	2.8	4.6	1.5	versicolor
	56	5.7	2.8	4.5	1.3	versicolor
	57	6.3	3.3	4.7		versicolor
	58	4.9	2.4	3.3		versicolor
##		6.6	2.9	4.6		versicolor
##		5.2	2.7	3.9		versicolor
##		5.0	2.0	3.5	1.0	versicolor
##		5.9	3.0	4.2	1.5	versicolor
##	63	6.0	2.2	4.0		versicolor
	64	6.1	2.9	4.7		versicolor
	65	5.6	2.9	3.6		versicolor
##	66	6.7	3.1	4.4		versicolor
	67	5.6	3.0	4.5		versicolor
##	68	5.8	2.7	4.1		versicolor
##		6.2	2.2	4.5		versicolor
	70	5.6	2.5	3.9		versicolor
	71	5.9	3.2	4.8		versicolor
	72	6.1	2.8	4.0		versicolor
	73	6.3	2.5	4.9		versicolor
	74	6.1	2.8	4.7		versicolor
	75	6.4	2.9	4.3		versicolor
	76	6.6	3.0	4.4		versicolor
	77	6.8	2.8	4.8		versicolor
	78	6.7	3.0	5.0		versicolor
##		6.0	2.9	4.5		versicolor
##		5.7	2.6	3.5		versicolor
##		5.5	2.4	3.8		versicolor
##	83	5.5	2.4 2.7	3.7		versicolor
## ##		5.8 6.0	2.7	3.9 5.1		versicolor versicolor
##						
##		5.4 6.0	3.0 3.4	4.5 4.5		versicolor versicolor
##		6.7	3.4	4.5		versicolor
##	88	6.3	2.3	4.7		versicolor
##	89		3.0	4.4		versicolor
		5.6				
##	90	5.5	2.5	4.0	1.3	versicolor

```
## 91
               5.5
                           2.6
                                        4.4
                                                    1.2 versicolor
## 92
               6.1
                           3.0
                                        4.6
                                                    1.4 versicolor
## 93
               5.8
                           2.6
                                        4.0
                                                    1.2 versicolor
## 94
               5.0
                           2.3
                                        3.3
                                                    1.0 versicolor
## 95
                                        4.2
               5.6
                           2.7
                                                    1.3 versicolor
## 96
               5.7
                           3.0
                                        4.2
                                                    1.2 versicolor
## 97
               5.7
                           2.9
                                        4.2
                                                    1.3 versicolor
## 98
                           2.9
                                        4.3
                                                    1.3 versicolor
               6.2
## 99
               5.1
                           2.5
                                        3.0
                                                    1.1 versicolor
## 100
               5.7
                           2.8
                                        4.1
                                                    1.3 versicolor
```

virginica <- subset(virginicaDF, Species == 'virginica')
virginica</pre>

##		Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
##	101	6.3	3.3	6.0	2.5	virginica
##	102	5.8	2.7	5.1	1.9	virginica
##	103	7.1	3.0	5.9	2.1	virginica
##	104	6.3	2.9	5.6	1.8	virginica
##	105	6.5	3.0	5.8	2.2	virginica
##	106	7.6	3.0	6.6	2.1	virginica
##	107	4.9	2.5	4.5	1.7	virginica
##	108	7.3	2.9	6.3	1.8	virginica
##	109	6.7	2.5	5.8	1.8	virginica
##	110	7.2	3.6	6.1		virginica
##	111	6.5	3.2	5.1		virginica
##	112	6.4	2.7	5.3	1.9	virginica
##	113	6.8	3.0	5.5		virginica
##	114	5.7	2.5	5.0	2.0	virginica
##	115	5.8	2.8	5.1		virginica
	116	6.4	3.2	5.3		virginica
	117	6.5	3.0	5.5	1.8	virginica
	118	7.7	3.8	6.7		virginica
##	119	7.7	2.6	6.9		virginica
	120	6.0	2.2	5.0		virginica
	121	6.9	3.2	5.7		virginica
	122	5.6	2.8	4.9		virginica
	123	7.7	2.8	6.7		virginica
##	124	6.3	2.7	4.9		virginica
##	125	6.7	3.3	5.7		virginica
	126	7.2	3.2	6.0		virginica
##	127	6.2	2.8	4.8		virginica
	128	6.1	3.0	4.9		virginica
	129	6.4	2.8	5.6		virginica
	130 131	7.2	3.0	5.8		virginica
	131	7.4	2.8	6.1		virginica
	133	7.9 6.4	3.8 2.8	6.4 5.6		virginica
	134	6.3	2.8	5.0		virginica
##	135	6.1	2.6	5.6		virginica
##	136	7.7	3.0	6.1		virginica
	137	6.3				virginica
	138	6.4	3.4	5.6 5.5		virginica virginica
##	139	6.0	3.0	4.8		virginica
	140	6.9	3.0	5.4		virginica
##	140	0.9	3.1	5.4	2.1	ATTRITTER

```
## 141
                 6.7
                             3.1
                                           5.6
                                                        2.4 virginica
## 142
                 6.9
                                           5.1
                                                        2.3 virginica
                             3.1
## 143
                 5.8
                             2.7
                                           5.1
                                                        1.9 virginica
                                                        2.3 virginica
## 144
                 6.8
                             3.2
                                           5.9
## 145
                 6.7
                             3.3
                                           5.7
                                                        2.5 virginica
## 146
                                                        2.3 virginica
                 6.7
                             3.0
                                           5.2
## 147
                 6.3
                             2.5
                                                        1.9 virginica
                                           5.0
                                                        2.0 virginica
## 148
                 6.5
                             3.0
                                           5.2
## 149
                 6.2
                              3.4
                                           5.4
                                                        2.3 virginica
## 150
                 5.9
                             3.0
                                           5.1
                                                        1.8 virginica
```

b. Get the mean for every characteristics of each species using colMeans(). Write the codes and its result. Example: setosa <- colMeans(setosa[sapply(setosaDF,is.numeric)])

```
setosa1 <- colMeans(setosa[sapply(setosaDF,is.numeric)])</pre>
setosa1
## Sepal.Length Sepal.Width Petal.Length Petal.Width
          5.006
                         3.428
                                       1.462
                                                     0.246
virginica1 <- colMeans(virginica[sapply(virginicaDF,is.numeric)])</pre>
virginica1
## Sepal.Length Sepal.Width Petal.Length Petal.Width
           6.588
                         2.974
                                       5.552
                                                     2.026
versicolor1 <- colMeans(versicolor[sapply(versicolorDF,is.numeric)])</pre>
versicolor1
## Sepal.Length Sepal.Width Petal.Length Petal.Width
##
           5.936
                         2.770
                                       4.260
                                                     1.326
  c. Combine all species by using rbind() The table should be look like this:
comb <- rbind( setosa1, versicolor1, virginica1)</pre>
dfiris <- data.frame(comb)</pre>
dfiris
##
                Sepal.Length Sepal.Width Petal.Length Petal.Width
## setosa1
                        5.006
                                     3.428
                                                   1.462
                                                                0.246
                                                                1.326
## versicolor1
                        5.936
                                     2.770
                                                   4.260
## virginica1
                        6.588
                                     2.974
                                                   5.552
                                                                2.026
  d. From the data in 4-c: Create the barplot(). Write the codes and its result. The barplot should be like
```

this.

Iris Data

