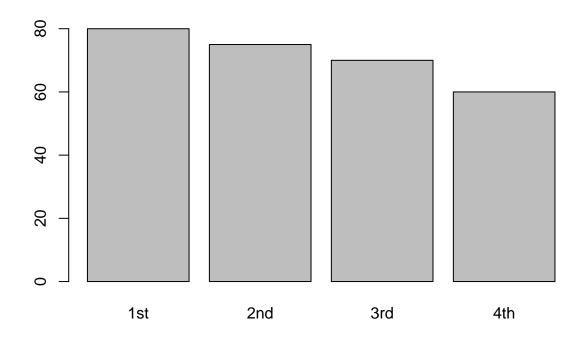
### WORKSHEET -5

#### Mark Wryzel Macarobo BSIT-2A

#### 12/6/2022

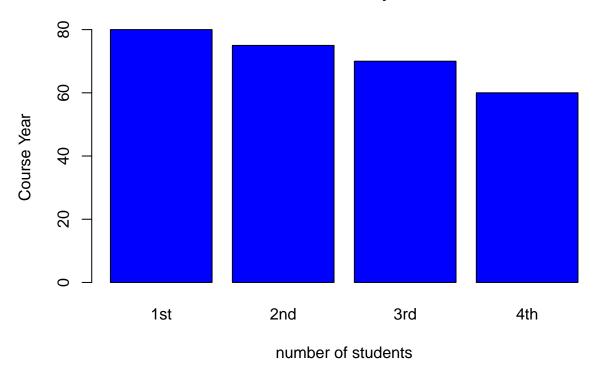
```
1.
stud <- data.frame("Course Year" = c ("1st", "2nd", "3rd", "4th"), " 2019-2020" = c(80, 75, 70, 60))
stud
##
     Course.Year X.2019.2020
## 1
             1st
## 2
             2nd
                          75
## 3
             3rd
                          70
## 4
             4th
                          60
  a.
a <- c("1st" = 80, "2nd" = 75, "3rd" = 70, "4th" = 60)
barplot(a)
```



b.

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

## **Enrollment of BS Computer Science**



```
graph
```

```
## [1,]
## [1,] 0.7
## [2,] 1.9
## [3,] 3.1
## [4,] 4.3

2.

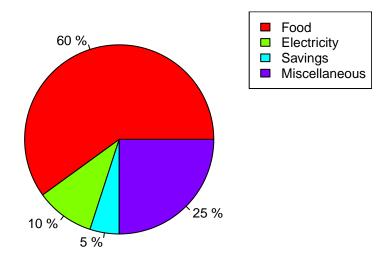
a.

sv <- c("Food", "Electricity", "Savings", "Miscellaneous_expenses")
mon <- c(60, 10, 5, 25)

spend <- data.frame(sv, mon)
spend</pre>
```

```
##
                         sv mon
## 1
                       Food 60
## 2
                Electricity
## 3
                    Savings
                              5
## 4 Miscellaneous_expenses
tab <- table(spend)</pre>
##
                           mon
## sv
                            5 10 25 60
                            0 1 0 0
##
     Electricity
##
                            0 0 0 1
     Food
##
     Miscellaneous_expenses 0 0 1 0
##
     Savings
                            1 0 0 0
mon = c(60, 10, 5, 25)
data <- round(mon/sum(mon)*100,1)</pre>
data <- paste(data, "%", sep = " ")</pre>
piechart <- pie( mon, labels = data, cex = 0.8, col = rainbow(4), main = "De Jesus family Monthly Expen
legend("topright", c("Food", "Electricity", "Savings", "Miscellaneous"),
      cex = 0.8, fill =rainbow(4))
```

### **De Jesus family Monthly Expenses**



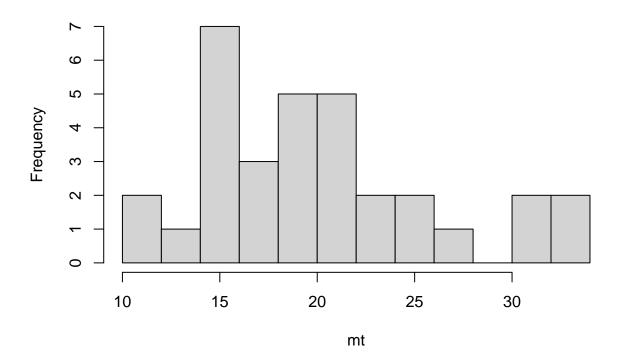
3.

```
data(mtcars)
mt <- (mtcars$mpg)
mt</pre>
```

```
## [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(mt, breaks=12)

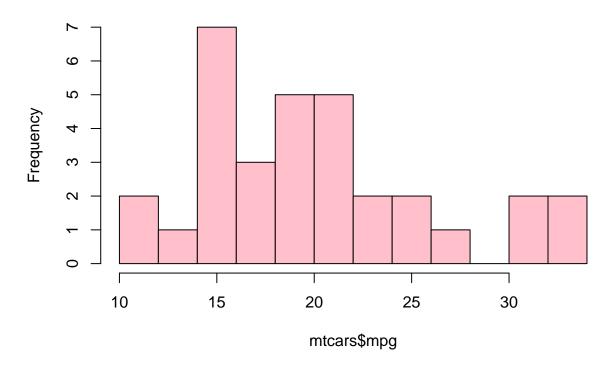
### Histogram of mt



b.

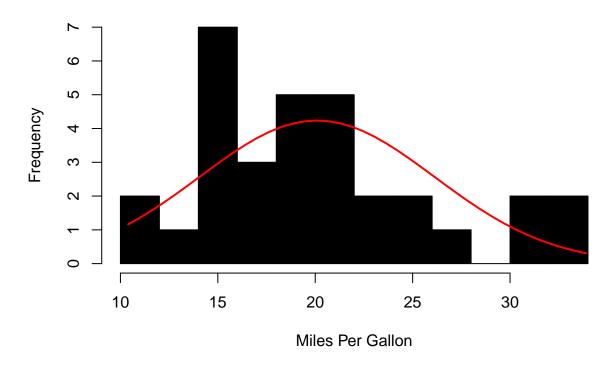
hist(mtcars\$mpg, breaks=12, col="pink")

## Histogram of mtcars\$mpg



c.

# **Histogram with Normal Curve**



4.

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

##		Sanal Langth	Senal Width	Petal.Length	Potal Width	Species
	4		-	•		-
##	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

##		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 ver	sicolor
##	52	6.4	3.2	4.5	1.5 ver	sicolor
##	53	6.9	3.1	4.9	1.5 ver	sicolor
##	54	5.5	2.3	4.0	1.3 ver	sicolor
##	55	6.5	2.8	4.6	1.5 ver	sicolor
##	56	5.7	2.8	4.5	1.3 ver	sicolor
##	57	6.3	3.3	4.7	1.6 ver	sicolor
##	58	4.9	2.4	3.3	1.0 ver	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	
##	67	5.6	3.0	4.5	1.5 ver	
##	68	5.8	2.7	4.1	1.0 ver	
##	69	6.2	2.2	4.5	1.5 ver	
	70	5.6	2.5	3.9	1.1 ver	
	71	5.9	3.2	4.8	1.8 ver	
	72	6.1	2.8	4.0	1.3 ver	
##		6.3	2.5	4.9	1.5 ver	

## 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	•
## 119	6.0	2.2	5.0	2.3 virginica 1.5 virginica
## 120 ## 121	6.9	3.2	5.7	2.3 virginica
## 121 ## 122	5.6	2.8	4.9	2.0 virginica
## 122 ## 123	7.7	2.8	4.9 6.7	2.0 virginica
## 123 ## 124	6.3	2.7	4.9	_
## 124 ## 125	6.7	3.3	4.9 5.7	1.8 virginica
				2.1 virginica
	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
##	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		3.6		0.2	
		4.9		1.4		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 ve	rsicolor
##	52	6.4	3.2	4.5	1.5 ve	rsicolor
##	53	6.9	3.1	4.9	1.5 ve	rsicolor
##	54	5.5	2.3	4.0	1.3 ve	rsicolor
##	55	6.5	2.8	4.6	1.5 ve	rsicolor
##	56	5.7	2.8	4.5	1.3 ve	rsicolor
##	57	6.3	3.3	4.7	1.6 ve	rsicolor
##	58	4.9	2.4	3.3	1.0 ve	rsicolor
##	59	6.6	2.9	4.6	1.3 ve	rsicolor
##	60	5.2	2.7	3.9	1.4 ve	rsicolor
##	61	5.0	2.0	3.5	1.0 ve	rsicolor
##	62	5.9	3.0	4.2	1.5 ve	rsicolor
##	63	6.0	2.2	4.0	1.0 ve	rsicolor
##	64	6.1	2.9	4.7	1.4 ve	rsicolor
##	65	5.6	2.9	3.6	1.3 ve	rsicolor
##	66	6.7	3.1	4.4	1.4 ve	rsicolor
##		5.6	3.0	4.5		rsicolor
	68	5.8	2.7	4.1		rsicolor
	69	6.2	2.2	4.5		rsicolor
	70	5.6	2.5	3.9		rsicolor
##	71	5.9	3.2	4.8		rsicolor
##	72	6.1	2.8	4.0		rsicolor
	73	6.3	2.5	4.9		rsicolor
##	74	6.1	2.8	4.7		rsicolor
##	75	6.4	2.9	4.3		rsicolor
##	76	6.6	3.0	4.4		rsicolor
##	77	6.8	2.8	4.4		rsicolor
	78	6.7	3.0			rsicolor
				5.0		
	79	6.0	2.9	4.5		rsicolor
##	ou	5.7	2.6	3.5	ı.∪ ve	rsicolor

## 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
## 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
## 120	6.2	2.8	4.8	1.8 virginica
## 127 ## 128	6.1	3.0	4.9	1.8 virginica
## 128 ## 129	6.4	2.8	5.6	2.1 virginica
## 129 ## 130	7.2	3.0	5.8	1.6 virginica
## 130 ## 131	7.4	2.8	6.1	1.9 virginica
## 131 ## 132	7.4	3.8	6.4	•
## 133	6.4	2.8	5.6	<ul><li>2.0 virginica</li><li>2.2 virginica</li></ul>
## 134	6.3	2.8	5.0	_
π# 10 <del>'</del> 1	0.3	۷.0	J.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	${\tt Sepal.Width}$	${\tt Petal.Length}$	${\tt Petal.Width}$	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

0/	,	4 0	4 4	0.0	
## 34		4.2	1.4	0.2	setosa
## 35		3.1	1.5	0.2	setosa
## 36		3.2	1.2	0.2	setosa
## 37		3.5	1.3	0.2	setosa
## 38		3.6	1.4	0.1	setosa
## 39		3.0	1.3	0.2	setosa
## 40		3.4	1.5	0.2	setosa
## 41		3.5	1.3	0.3	setosa
## 42		2.3	1.3	0.3	setosa
## 43		3.2	1.3	0.2	setosa
## 44	5.0	3.5	1.6	0.6	setosa
## 45		3.8	1.9	0.4	setosa
## 46	6 4.8	3.0	1.4	0.3	setosa
## 47	7 5.1	3.8	1.6	0.2	setosa
## 48	3 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	1 7.0	3.2	4.7	1.4	versicolor
## 52	2 6.4	3.2	4.5	1.5	versicolor
## 53	6.9	3.1	4.9	1.5	versicolor
## 54	5.5	2.3	4.0	1.3	versicolor
## 55	5 6.5	2.8	4.6	1.5	versicolor
## 56	5.7	2.8	4.5	1.3	versicolor
## 57	7 6.3	3.3	4.7	1.6	versicolor
## 58	3 4.9	2.4	3.3	1.0	versicolor
## 59	9 6.6	2.9	4.6	1.3	versicolor
## 60	5.2	2.7	3.9	1.4	versicolor
## 61	1 5.0	2.0	3.5	1.0	versicolor
## 62	2 5.9	3.0	4.2	1.5	versicolor
## 63	6.0	2.2	4.0	1.0	versicolor
## 64	4 6.1	2.9	4.7	1.4	versicolor
## 65	5 5.6	2.9	3.6	1.3	versicolor
## 66	6.7	3.1	4.4	1.4	versicolor
## 67		3.0	4.5	1.5	versicolor
## 68		2.7	4.1	1.0	versicolor
## 69		2.2	4.5		versicolor
## 70	5.6	2.5	3.9	1.1	versicolor
## 71		3.2	4.8	1.8	versicolor
## 72		2.8	4.0		versicolor
## 73		2.5	4.9		versicolor
## 74		2.8	4.7	1.2	versicolor
## 75		2.9	4.3		versicolor
## 76		3.0	4.4	1.4	versicolor
## 77		2.8	4.8		versicolor
## 78		3.0	5.0		versicolor
## 79		2.9	4.5		versicolor
## 80		2.6	3.5		versicolor
## 81		2.4	3.8		versicolor
## 82		2.4	3.7		versicolor
## 83		2.7	3.9		versicolor
## 84		2.7	5.1		versicolor
## 85		3.0	4.5		versicolor
## 86		3.4	4.5		versicolor
## 87		3.1	4.7		versicolor
ππ 01	0.7	5.1	4.1	1.5	AGIBICOIOI

## 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	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
				S

##	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		${\tt Petal.Length}$	${\tt Petal.Width}$	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

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## 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 versicolor
## 52	6.4	3.2	4.5	1.5 versicolor
## 53	6.9	3.1	4.9	1.5 versicolor
## 54	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	1.6 versicolor
## 58	4.9	2.4	3.3	1.0 versicolor
## 59	6.6	2.9	4.6	1.3 versicolor
## 60	5.2	2.7	3.9	1.4 versicolor
## 61	5.0	2.0	3.5	1.0 versicolor
## 62	5.9	3.0	4.2	1.5 versicolor
## 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
				1.0 versicolor
## 82	5.5	2.4	3.7	
## 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	Г. С	0.7	4 0	1 2
	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	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
110	0.0	0.0	0.2	2.0 VIIgIIICa

```
## 149 6.2 3.4 5.4 2.3 virginica ## 150 5.9 3.0 5.1 1.8 virginica
```

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
##		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
##		4.4	3.2	1.3	0.2	setosa
##		5.0	3.5	1.6	0.6	setosa
	45	5.1	3.8	1.9	0.4	setosa
##		4.8	3.0	1.4	0.3	setosa
##	4/	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
```

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

##		Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
##		7.0	3.2	4.7	1.4	versicolor
##	52	6.4	3.2	4.5	1.5	versicolor
##		6.9	3.1	4.9		versicolor
##		5.5	2.3	4.0		versicolor
##		6.5	2.8	4.6		versicolor
##		5.7	2.8	4.5		versicolor
##		6.3	3.3	4.7		versicolor
##		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		versicolor
##		5.9	3.0	4.2		versicolor
##		6.0	2.2	4.0		versicolor
##		6.1	2.9	4.7		versicolor
##		5.6	2.9	3.6		versicolor
## ##		6.7	3.1	4.4		versicolor
##		5.6 5.8	3.0 2.7	4.5 4.1		versicolor versicolor
##		6.2	2.7	4.5		versicolor
	70	5.6	2.2	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
##	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
##		6.0	2.7	5.1		versicolor
##		5.4	3.0	4.5	1.5	versicolor
##		6.0	3.4	4.5		versicolor
##	87	6.7	3.1	4.7	1.5	versicolor
##		6.3	2.3	4.4		versicolor
##		5.6	3.0	4.1		versicolor
##		5.5	2.5	4.0		versicolor
##		5.5	2.6	4.4		versicolor
##		6.1	3.0	4.6		versicolor
##		5.8	2.6	4.0		versicolor
##		5.0	2.3	3.3		versicolor
##		5.6	2.7	4.2		versicolor
##	96	5.7	3.0	4.2	1.2	versicolor

```
5.7
## 97
                               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
                               2.8
                                                          1.3 versicolor
## 100
                 5.7
                                             4.1
virginica <- subset(virginicaDF, Species == 'virginica' )</pre>
virginica
```

Sepal.Length Sepal.Width Petal.Length Petal.Width Species ## 101 6.3 3.3 6.0 2.5 virginica ## 102 2.7 5.8 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 2.5 5.8 1.8 virginica 6.7 ## 110 7.2 3.6 2.5 virginica 6.1 ## 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 2.8 5.8 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 7.7 2.6 ## 119 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 7.2 ## 126 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 6.0 ## 139 3.0 4.8 1.8 virginica ## 140 6.9 3.1 5.4 2.1 virginica 3.1 ## 141 6.7 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 3.3 ## 145 6.7 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
                                    5.1
             5.9
                         3.0
                                               1.8 virginica
 b.
setosa1 <- colMeans(setosa[sapply(setosaDF,is.numeric)])</pre>
setosa1
## Sepal.Length Sepal.Width Petal.Length Petal.Width
        5.006
##
                   3.428
                              1.462
virginica1 <- colMeans(virginica[sapply(virginicaDF,is.numeric)])</pre>
virginica1
## Sepal.Length Sepal.Width Petal.Length Petal.Width
                                5.552
        6.588
                   2.974
                                            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
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
## versicolor1
                  5.936
                                          4.260
                                                    1.326
                             2.770
## virginica1
                  6.588
                             2.974
                                         5.552
                                                    2.026
 d.
barplot(height = as.matrix(dfiris), main = "Iris Data",
       ylab = "Mean Scores",
       beside =T, col = rainbow(3) )
```

