

Homework Assignment2 -Feb13

Elham

2023-02-13

- (a) Create (and print out) a table that contains all students in department D [point:0.50]
- (b) Create (and print out) a vector called department.D that contains the admitted and rejected students. [point:0.50]

Hint: You may need to use rowSums() on your answer from part (a).

- (c) Create a bar plot displaying the admitted and rejected students in Department D. Make sure to include a main title and label your x-axis. Also, make sure that each bar is a different color. [point:0.50]
- (d) Create (and print out) a vector called admitted.females which contains the admitted females in Department D.[point:0.50]
- (e) Create (and print out) a vector called pct.admitted.females which contains the percentage of admitted females in department D. [point:1:00]

The students can present two methods: “admitted vs rejected” and “admitted females vs rejected females” for question 1(e). Either one is correct.

- (f) Create a pie chart that displays the pct.admitted.femalesdata. Be sure to include a main title for your pie chart.

- (g) What does the pie chart imply about the number of admitted females in department D? (f and g) [point:1.00]

If the students could generate the percentage of admitted females appropriately the solution for 1(g) is also covered

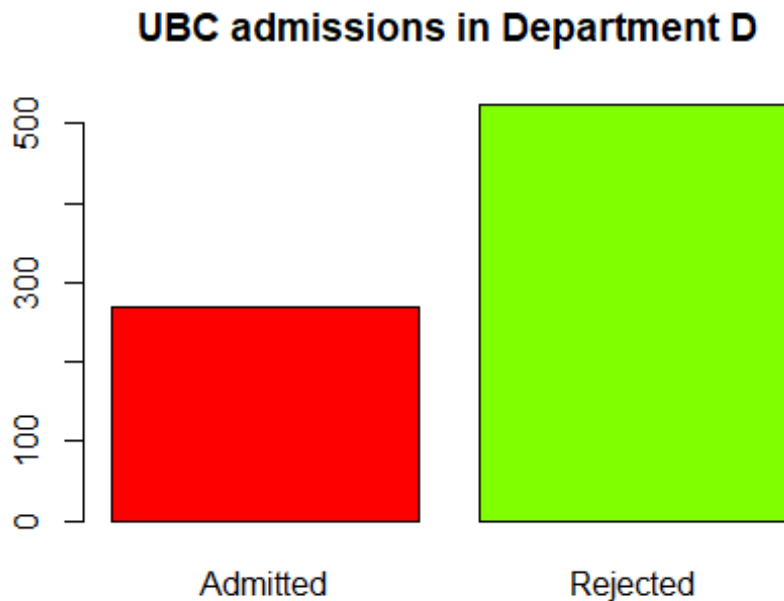
```
UCBAdmissions.table<- UCBAdmissions[, , 4]
UCBAdmissions.table

##           Gender
## Admit      Male Female
## Admitted   138    131
## Rejected   279    244

department.D<- rowSums(UCBAdmissions.table)
department.D

## Admitted Rejected
##      269      523
```

```
barplot(department.D, main="UCB admissions in Department D",
        col= rainbow(length(UCBAdmissions.table)), beside = TRUE)
```



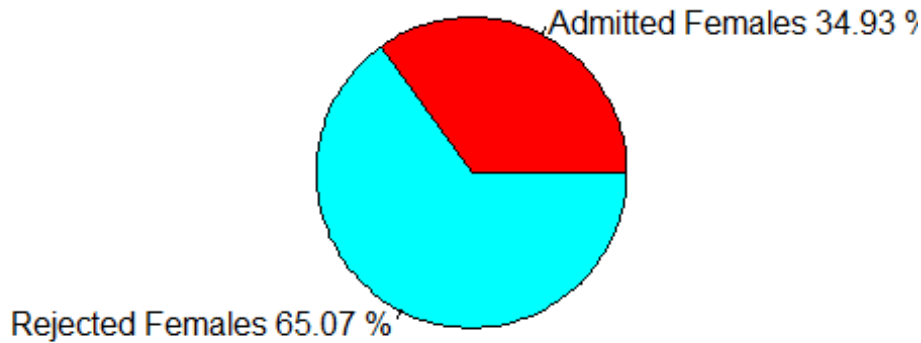
```
UCBAdmissions.table2<- UCBAdmissions[1, 2, ]

admitted.females= UCBAdmissions.table[ , "Female"] # method 2:
UCBAdmissions.table["Admitted" ,]
admitted.females

## Admitted Rejected
##      131      244

pct.admitted.females=round((admitted.females/sum(admitted.females)*100), 2)
pct=paste(c("Admitted Females", "Rejected Females"), pct.admitted.females,
"%")
# method 2: pct=paste(c("Admitted Males", "Admitted Females"),
pct.admitted.females, "%")
pie(admitted.females, labels=pct, col= rainbow(2), main=" Percentage of
Admitted Females")
```

Percentage of Admitted Females



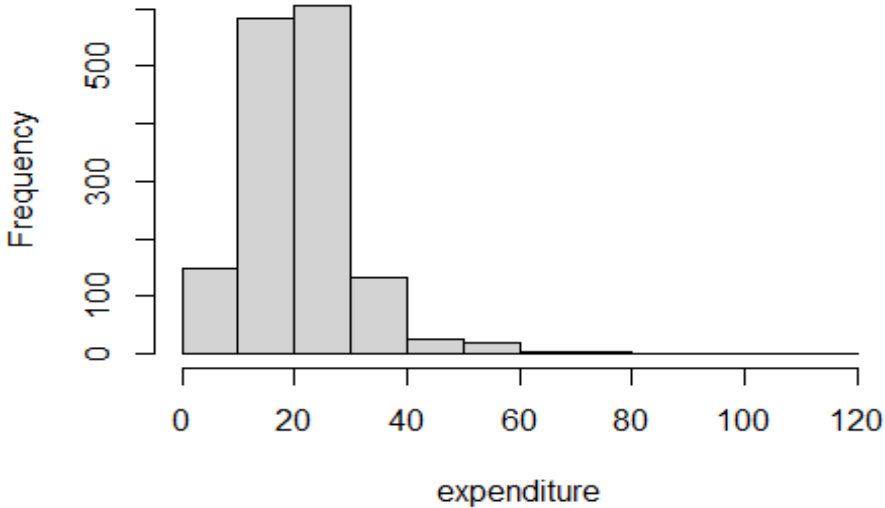
If the students could generate the percentage of admitted females appropriately the 1(g) is also covered

- (a) Create (but do not print) a vector called expenditure containing the last column of the dataset named Value. [point:0.50]
- (b) Create a histogram displaying the distribution of this variable. Be sure to have both a main title and a title on your x-axis. [point:1.00]
- (c) Describe the shape of the distribution (symmetric, left-skewed, right-skewed).
- (d) Compute the appropriate center value and the corresponding measures of variability. [point:0.50]
- (e) Remove decimals from the vector named expenditure by using round() and create a stem plot. [point:1.00]

```
df= read.csv(choose.files(), header=TRUE)
expenditure= c(df$Value)
```

```
hist(expenditure, main="Government expenditure per student")
```

Government expenditure per student



#right-skewed

```
median(expenditure)
```

```
## [1] 20.30278
```

```
stem.exp= round(expenditure, 0)
```

```
stem(stem.exp)
```

##

```
## The decimal point is 1 digit(s) to the right of the |
```

##

##	θ	
----	----------	--

0000000000001333444444445555555555555555666666666666666677777777+50

```
##      1 |
```

[illegible]

```
##      2 |
```

[illegible]

```
##      3 |
```

[illegible]

```
##      4 | 000111122223333444445667778
```

```
##      5 | 011122233344445688
```

```
##      6 | 1558
```

```
##      7 | 0123
```

8 | 9

9 |

```
##      10 |
```

```
##      11 | 6
```