IT2120 - Probability and Statistics

IT24103582

Tharindu K T D S

Lab 05

Exercise

1)

```
setwd("E:\\Tharindu\\SLIIT\\Y2 S1\\PaS - IT2120\\Lab\\Lab 05")
Delivery_Times = read.table("Exercise - Lab 05.txt",header=TRUE,sep=",")
Delivery_Times
fix(Delivery_Times)
attach(Delivery_Times)
```

Data Editor

File Edit Help

	Delivery_Time_.minutes.	var2	var3	var4	var5
1	34				
2	54				
3	47				
4	29				
5	39				
6	61				
7	20				
8	40				
9	57				
10	36				
11	38				
12	44				
13	59				
14	38				

R Script

Console Terminal Background Jobs

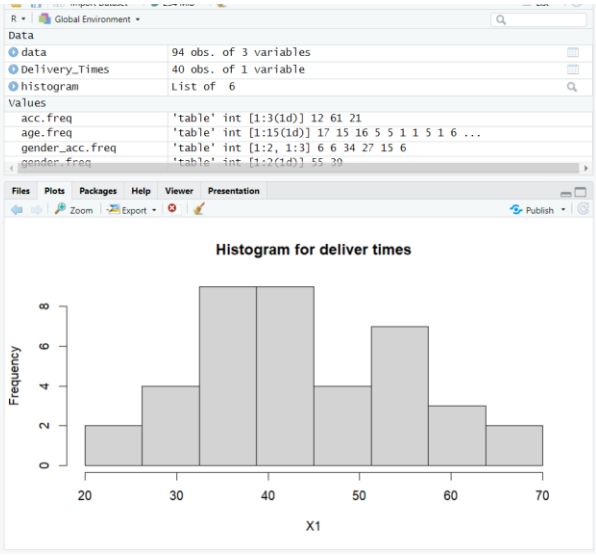
R 4.5.1 · E:/Tharindu/SLIIT/Y2 S1/PaS - IT2120/Lab/Lab 05/

```
> setwd("E:\\Tharindu\\SLIIT\\Y2 S1\\PaS - IT2120\\Lab\\Lab 05")
> Delivery_Times = read.table("Exercise - Lab 05.txt",header=TRUE,sep=",")
> Delivery_Times
   Delivery_Time_.minutes.
1                       34
2                       54
3                       47
4                       29
5                       39
6                       61
7                       20
```

2)

```
names(Delivery_Times) <- c("X1")
attach(Delivery_Times)
hist(X1,main="Histogram for deliver times")
summary(X1)
histogram <- hist(X1,main="Histogram for deliver times",breaks=seq(20,70,length=9))
histogram
```

```
The following object is masked from Delivery_Times (pos = 7):

    X1

> hist(X1,main="Histogram for deliver times")
> summary(X1)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  20.00   36.00   42.50   43.75   54.00   67.00
> histogram <- hist(X1,main="Histogram for deliver times",breaks=seq(20,70,length=9))
> histogram
$breaks
[1] 20.00 26.25 32.50 38.75 45.00 51.25 57.50 63.75 70.00

$counts
[1] 2 4 9 9 4 7 3 2

$density
[1] 0.008 0.016 0.036 0.036 0.016 0.028 0.012 0.008

$mids
[1] 23.125 29.375 35.625 41.875 48.125 54.375 60.625
[8] 66.875

$xname
[1] "X1"

$equidist
[1] TRUE

attr(,"class")
[1] "histogram"
```



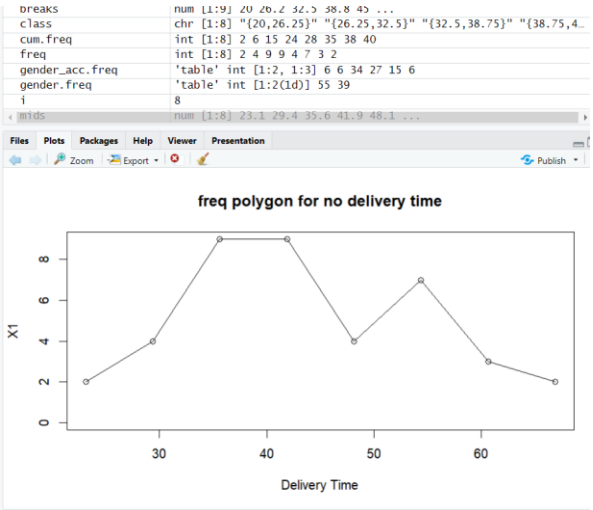
3)

Bi-Model Shaped

4)

```
breaks <- histogram$breaks
freq   <- histogram$counts
mids   <- histogram$mids

class<-c()

for(i in 1: length(breaks)-1){
  class[i] <- paste0("{", breaks[i],",",breaks[i+1],"}")
}
class
cbind(classes = class,frequency = freq)
lines(mids,freq)

plot (mids,freq,type="o",
      main="freq polygon for no delivery time",
      ylab="X1", xlab="Delivery Time",
      ylim=c(0,max(freq)))

cum.freq <- cumsum(freq)
cum.freq
```

```
7,] "{57.5,63.75}" "3"
8,] "{63.75,70}"   "2"
lines(mids,freq)

plot (mids,freq,type="o",
      main="freq polygon for no delivery time",
      ylab="X1", xlab="Delivery Time",
      ylim=c(0,max(freq)))

cum.freq <- cumsum(freq)
cum.freq
1]  2  6 15 24 28 35 38 40
```



```r
new <- c()

for(i in 1 : length(breaks)) {
  if(i==1){
    new[i] = 0
  }
  else{
    new[i] = cum.freq[i-1]
  }
}

new
plot(breaks,new,type="o",
     main="freq polygon for Delivery Time",
     ylabs="Cummulative Frequency", xlabs="Delivery Time",
     ylim=c(0,max(cum.freq)))
```

```
> new <- c()
>
> for(i in 1 : length(breaks)) {
+   if(i==1){
+     new[i] = 0
+   }
+   else{
+     new[i] = cum.freq[i-1]
+   }
+ }
>
> new
[1]  0  2  6 15 24 28 35 38 40
> plot(breaks,new,type="o",
+      main="freq polygon for Delivery Time",
+      ylabs="Cummulative Frequency", xlabs="Delivery Time",
+      ylim=c(0,max(cum.freq)))
There were 12 warnings (use warnings() to see them)
```

age.freq	'table' int [1:15(1d)] 17 15 16 5 5 1 1 5 1 6 ...
breaks	num [1:9] 20 26.2 32.5 38.8 45 ...
class	chr [1:8] "{20,26.25}" "{26.25,32.5}" "{32.5,38.75}" "{38.75,45}"...
cum.freq	int [1:8] 2 6 15 24 28 35 38 40
freq	int [1:8] 2 4 9 9 4 7 3 2
gender_acc.freq	'table' int [1:2, 1:3] 6 6 34 27 15 6
gender.freq	'table' int [1:2(1d)] 55 39
i	9L
mids	num [1:8] 23.1 29.4 35.6 41.9 48.1 ...
new	num [1:9] 0 2 6 15 24 28 35 38 40