



Faculty of Computing

Year 2 Semester 1 (2025)

IT2120 - Probability and Statistics

Lab Sheet 05

Question 01

The screenshot shows an R Studio session. The script editor contains the following R code:

```
1  
2  
3 #Question 01  
4 Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)  
5  
6 fix(Delivery_Times)  
7  
8 names(Delivery_Times)<-c("x1")  
9  
10 attach(Delivery_Times)  
11  
12  
13  
14  
15
```

The Data Editor window is open, displaying a table with 5 columns: Delivery_Time_.minutes., var2, var3, var4, and var5. The first column contains 17 rows of data.

	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				
15	40				
16	40				
17	67				

The Console window shows the following output:

```
> setw  
> #Que  
> Deli  
> fixC
```

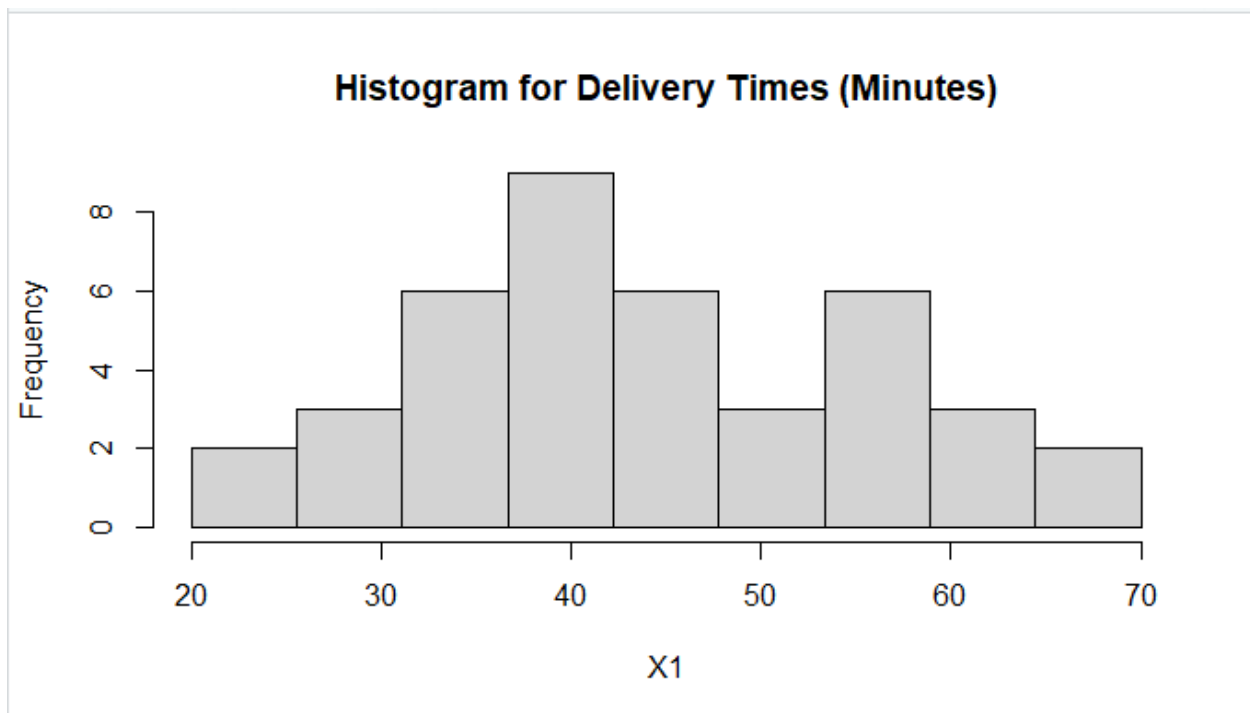
Question 02

```
IT24104092.R x
Source on Save
Run
Source

2
3 #Question 01
4 Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
5
6 fix(Delivery_Times)
7
8 names(Delivery_Times)<-c("X1")
9
10 attach(Delivery_Times)
11
12 #Question 02
13 histogram<-hist(X1,main="Histogram for Delivery Times (Minutes)",breaks =
14 |
15 |

14:1 (Top Level) R Script
```

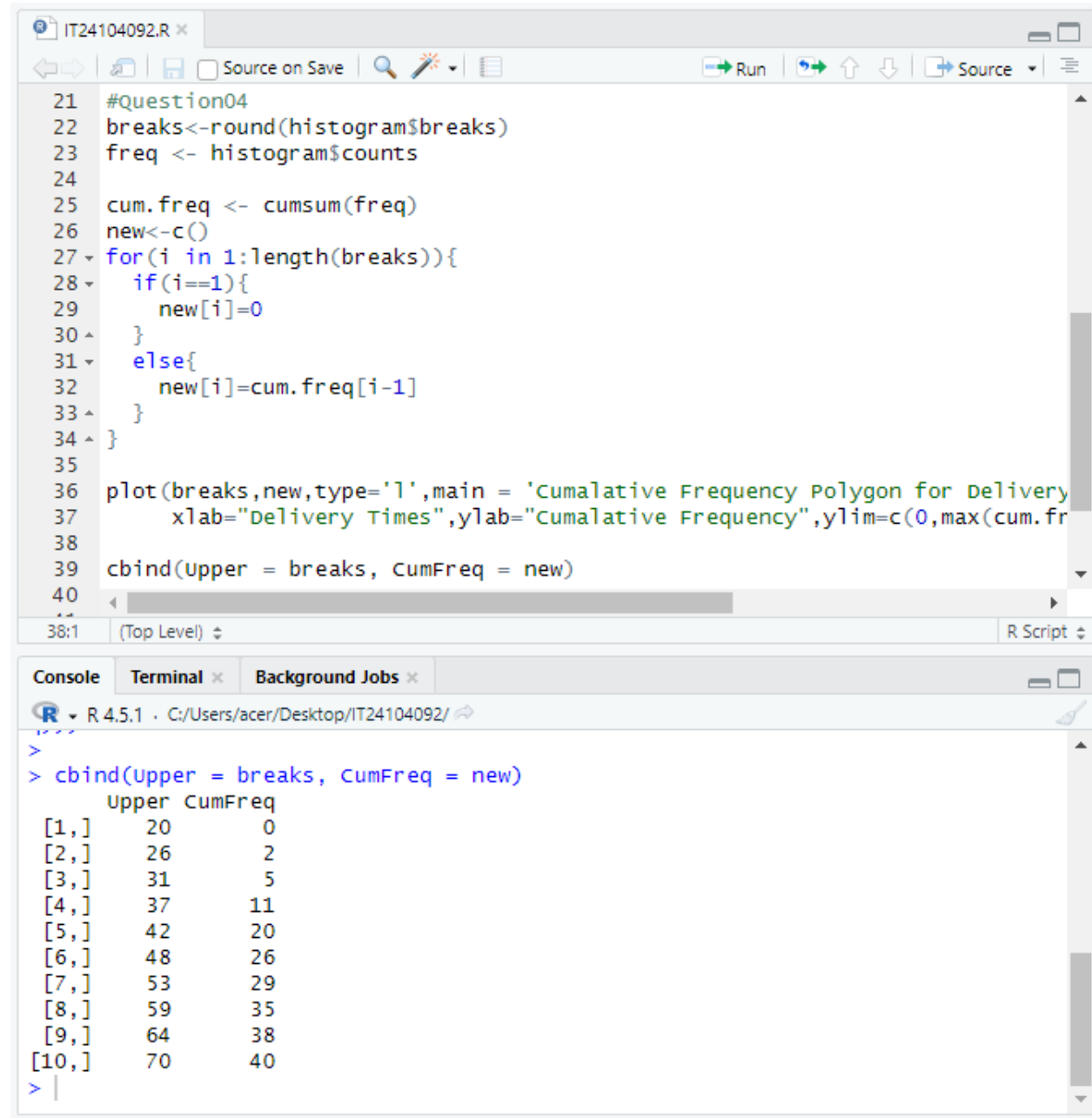
```
Console Terminal Background Jobs
R 4.5.1 C:/Users/acer/Desktop/IT24104092/
> #Question 02
> histogram<-hist(X1,main="Histogram for Delivery Times (Minutes)",breaks = seq(20,70,length = 10),right = FALSE)
> |
```



Question 03

```
# ---Question 03---  
# The histogram shows that delivery times are approximately symmetric.  
# Most delivery times fall between 35 and 45 minutes.  
# The shape is bell-shaped, resembling a normal distribution.  
# There are fewer observations at both the lower and upper ends.
```

Question 04



The screenshot displays the R Studio environment. The script editor at the top contains R code for creating a cumulative frequency polygon. The console at the bottom shows the execution of the code, resulting in a data frame with two columns: 'Upper' and 'CumFreq'.

```
IT24104092.R x  
Source on Save  
Run  
Source  
21 #Question04  
22 breaks<-round(histogram$breaks)  
23 freq <- histogram$counts  
24  
25 cum.freq <- cumsum(freq)  
26 new<-c()  
27 for(i in 1:length(breaks)){  
28   if(i==1){  
29     new[i]=0  
30   }  
31   else{  
32     new[i]=cum.freq[i-1]  
33   }  
34 }  
35  
36 plot(breaks,new,type='l',main = 'Cumulative Frequency Polygon for Delivery  
37       xlab="Delivery Times",ylab="Cumulative Frequency",ylim=c(0,max(cum.fr  
38  
39 cbind(upper = breaks, CumFreq = new)  
40  
38:1 (Top Level) R Script
```

Console

```
R 4.5.1 C:/Users/acer/Desktop/IT24104092/  
>  
> cbind(upper = breaks, CumFreq = new)  
      upper CumFreq  
[1,]    20      0  
[2,]    26      2  
[3,]    31      5  
[4,]    37     11  
[5,]    42     20  
[6,]    48     26  
[7,]    53     29  
[8,]    59     35  
[9,]    64     38  
[10,]   70     40  
>
```

Cumulative Frequency Polygon for Delivery Times

