Sri Lanka Institute of Information Technology

Lab Submission Lab sheet No 02

IT24102801

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Probability and Statics

IT2120

B.Sc. (Hons) in Information Technology

1. Import the dataset ('Exercise – Lab 05.txt') into R and store it in a data frame called "Delivery_Times".

```
> setwd("C:\\Users\\it24102801\\Desktop\\IT24102801")
>
> Delivery_Times<-read.table("Exercise - Lab 05.txt",header=TRUE)
> print(Delivery_Times)
   Delivery_Time_.minutes.
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
18                      66
19                      55
20                      48
21                      52
22                      59
23                      35
24                      56
25                      32
26                      38
27                      54
28                      30
29                      43
30                      36
31                      42
32                      20
33                      27
34                      38
35                      54
36                      43
37                      45
38                      51
39                      36
40                      47
>
```

2. Draw a histogram for deliver times using nine class intervals where the lower limit is 20 and upper limit is 70. Use right open intervals.

```
hist(Delivery_Times$Delivery,
     breaks = seq(20, 70, by = 5),
     right = FALSE,
     main = "Histogram of Delivery Times",
     xlab = "Delivery Times Minutes",
     ylab = "Frequency",
     col = "lightblue",
     border = "black")


hist_data <- hist(Delivery_Times$Delivery,
                  breaks = seq(20, 70, by = 5),
                  right = FALSE,
                  plot = FALSE)

cumulative_freq <- cumsum(hist_data$counts)
```

```
> hist(Delivery_Times$Delivery,
+      breaks = seq(20, 70, by = 5),
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>
>
> hist_data <- hist(Delivery_Times$Delivery,
+                   breaks = seq(20, 70, by = 5),
+                   right = FALSE,
+                   plot = FALSE)
>
> cumulative_freq <- cumsum(hist_data$counts)
>
>
> plot(hist_data$mids, cumulative_freq,
+      type = "o",
+      main = "Cumulative Frequency Polygon (Ogive)",
+      xlab = "Delivery Times",
+      ylab = "Cumulative Frequency",
+      pch = 16,
+      col = "blue")
> setwd("C:\\Users\\It24102801\\Desktop\\IT24102801")
>
> Delivery_Times<-read.table("Exercise - Lab 05.txt",header=TRUE)
> print(Delivery_Times)
  Delivery_Time_.minutes.
1                      34
```
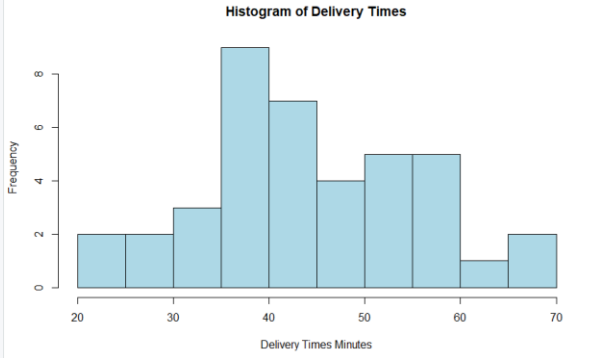

Data	
Delivery_Times	40 obs. of 1 variable
hist_data	List of 6
values	
cumulative_freq	int [1:10] 2 4 7 16 23 27 32 37 38 40



The distribution is roughly symmetric and bell-shaped, with most delivery times between 40–55 minutes and no extreme outliers.

```
Delivery_Times<-read.table("Exercise - Lab 05.txt",header=TRUE)
print(Delivery_Times)

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     main = "Histogram of Delivery Times",
     xlab = "Delivery Times Minutes",
     ylab = "Frequency",
     col = "lightblue",
     border = "black")


hist_data <- hist(Delivery_Times$Delivery,
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> cumulative_freq <- cumsum(hist_data$counts)
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>
> plot(hist_data$mids, cumulative_freq,
+      type = "o",
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+      ylab = "Cumulative Frequency",
+      pch = 16,
+      col = "blue")
>
```

Data	
Delivery_Times	40 obs. of 1 variable
hist_data	List of 6
values	
cumulative_freq	int [1:10] 2 4 7 16 23 27 32 37 38 40