

Sri Lanka Institute of Information Technology



Lab Submission  
<Lab Sheet 5>

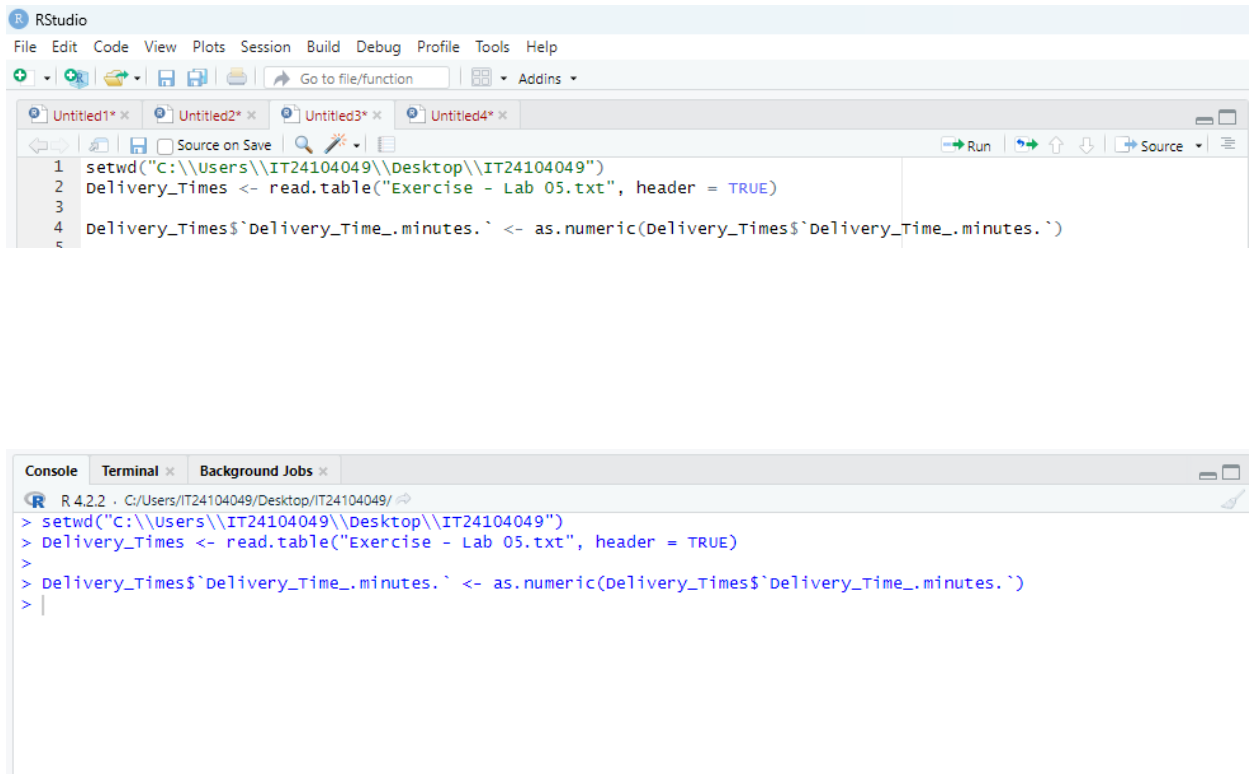
<IT24104049>

<Hewa V S S>

**Probability and Statistics - 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".



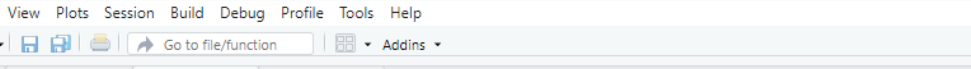
The image shows two screenshots from the RStudio interface. The top screenshot displays the source editor with the following R code:

```
1 setwd("C:\\Users\\IT24104049\\Desktop\\IT24104049")
2 Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
3
4 Delivery_Times$`Delivery_Time_.minutes.` <- as.numeric(Delivery_Times$`Delivery_Time_.minutes.`)
```

The bottom screenshot shows the R console with the same code executed:

```
R 4.2.2 - C:/Users/IT24104049/Desktop/IT24104049/
> setwd("C:\\Users\\IT24104049\\Desktop\\IT24104049")
> Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
>
> Delivery_Times$`Delivery_Time_.minutes.` <- as.numeric(Delivery_Times$`Delivery_Time_.minutes.`)
>
```

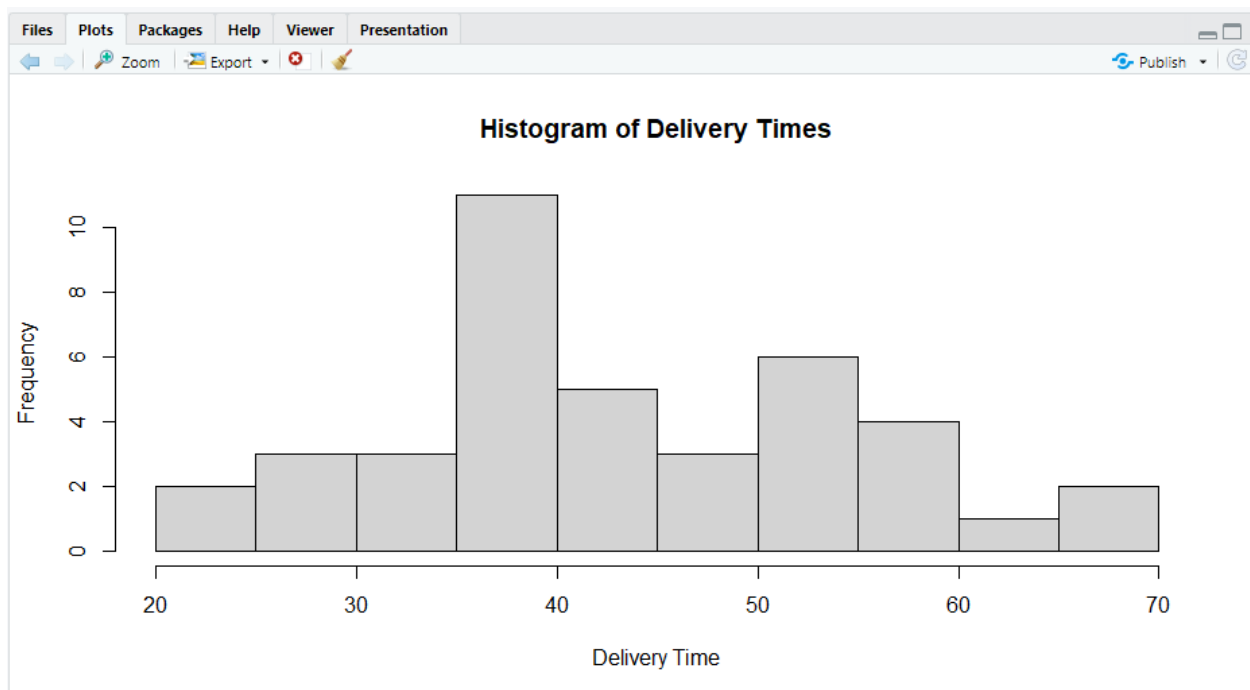
2. Draw a histogram for deliver times using nine class intervals where the lower limit is 20 and upper limit is 70. Use right open intervals.



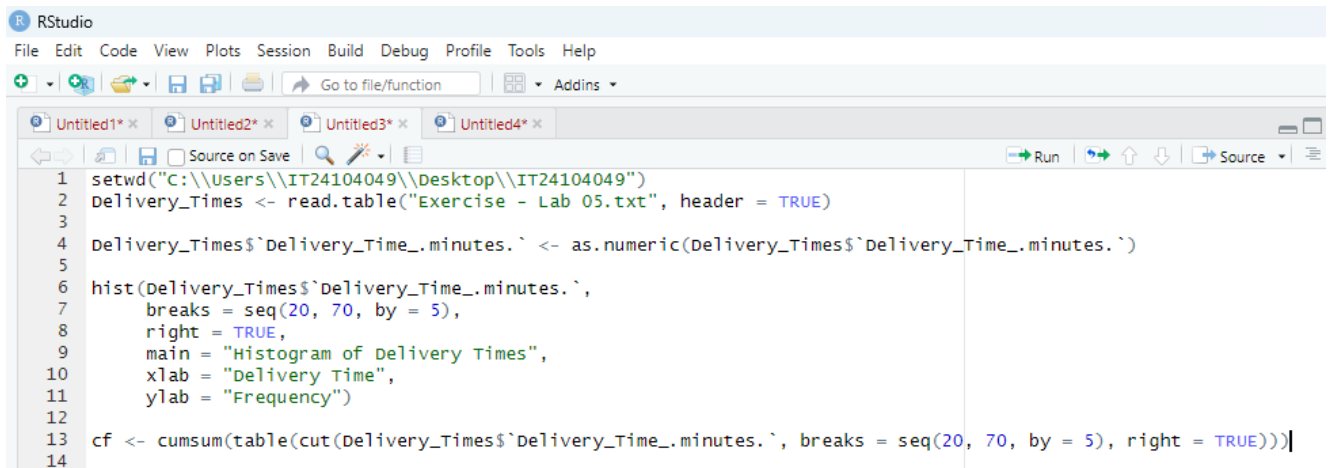
The screenshot shows the RStudio interface with the following elements:

- Menu Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Toolbar:** Includes icons for saving, opening, and navigating files, along with a "Go to file/function" search bar and an "Addins" dropdown.
- Tab Bar:** Shows four open tabs: "Untitled1\*", "Untitled2\*", "Untitled3\*", and "Untitled4\*".
- Code Editor:** Contains the following R code:
 

```
1 setwd("C:\\Users\\IT24104049\\Desktop\\IT24104049")
2 Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
3
4 Delivery_Times$Delivery_Time_.minutes.` <- as.numeric(Delivery_Times$Delivery_Time_.minutes.`)
5
6 hist(Delivery_Times$Delivery_Time_.minutes.`,
7       breaks = seq(20, 70, by = 5),
8       right = TRUE,
9       main = "Histogram of Delivery Times",
10      xlab = "Delivery Time",
11      ylab = "Frequency")
```
- Right Panel:** Shows icons for "Run", "Source", and other panel functions.



### 3. Comment on the shape of the distribution.



```
1 setwd("C:\\Users\\IT24104049\\Desktop\\IT24104049")
2 Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
3
4 Delivery_Times$`Delivery_Time_.minutes.` <- as.numeric(Delivery_Times$`Delivery_Time_.minutes.`)
5
6 hist(Delivery_Times$`Delivery_Time_.minutes.` ,
7       breaks = seq(20, 70, by = 5),
8       right = TRUE,
9       main = "Histogram of Delivery Times",
10      xlab = "Delivery Time",
11      ylab = "Frequency")
12
13 cf <- cumsum(table(cut(Delivery_Times$`Delivery_Time_.minutes.` , breaks = seq(20, 70, by = 5), right = TRUE)))
14
```

### 4. Draw a cumulative frequency polygon (ogive) for the data in a separate plot.

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
+ - Source on Save | Go to file/function | Addins
Untitled1* x Untitled2* x Untitled3* x Untitled4* x
1 setwd("C:\\Users\\IT24104049\\Desktop\\IT24104049")
2 Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
3
4 Delivery_Times$`Delivery_Time_.minutes.` <- as.numeric(Delivery_Times$`Delivery_Time_.minutes.`)
5
6 hist(Delivery_Times$`Delivery_Time_.minutes.` ,
7      breaks = seq(20, 70, by = 5),
8      right = TRUE,
9      main = "Histogram of Delivery Times",
10     xlab = "Delivery Time",
11     ylab = "Frequency")
12
13 cf <- cumsum(table(cut(Delivery_Times$`Delivery_Time_.minutes.` , breaks = seq(20, 70, by = 5), right = TRUE)))
14
15 plot(seq(22.5, 67.5, by = 5), cf, type = "o",
16      xlab = "Delivery Time", ylab = "cumulative Frequency",
17      main = "Cumulative Frequency Polygon (Ogive)")
18 |
```

