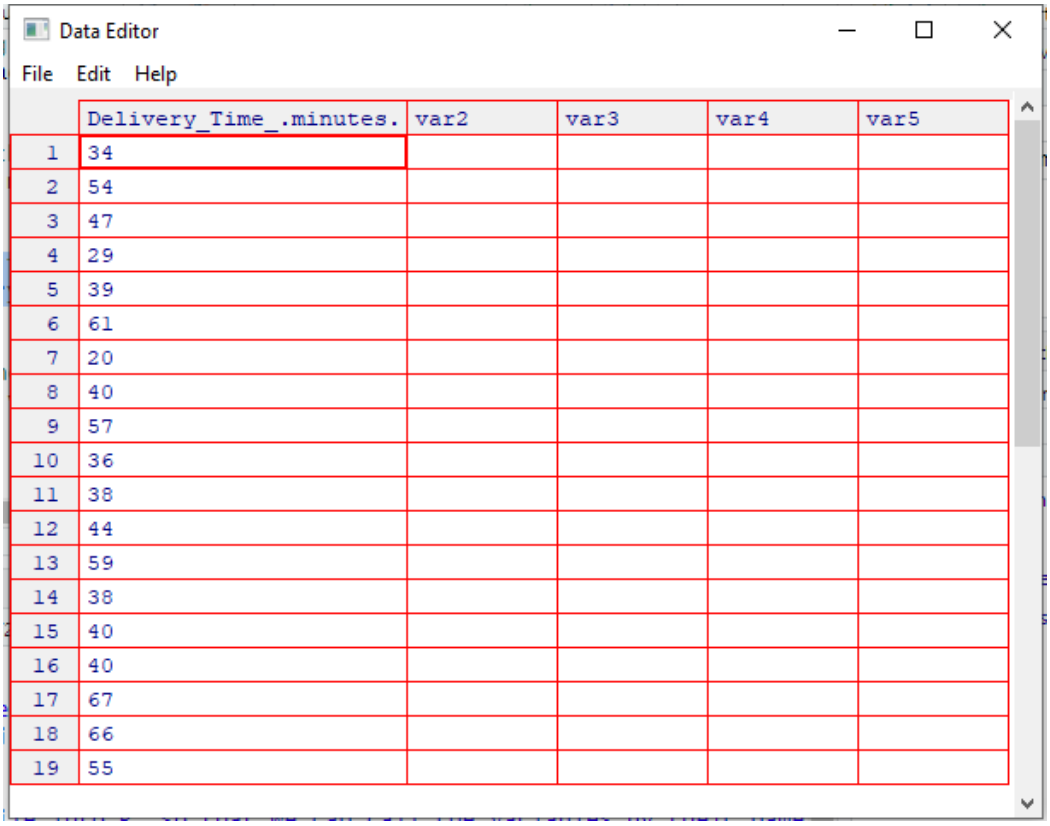
Lab Sheet 05

1. Import the dataset (’Exercise – Lab 05.txt’) into R and store it in a data frame called ”Delivery Times”.

```
> # Setting the directory
> setwd("C:\\Users\\IT24102374\\Desktop\\IT24102374")
>
>
> # Importing the data set
> data <- read.table("Exercise - Lab 05.txt", header = TRUE, sep = ",")
>
>
> # Storing the data in a data frame called "Delivery_Times"
> Delivery_Times <- data
>
>
> # View the file in a separate window
> fix(Delivery_Times)
>
```

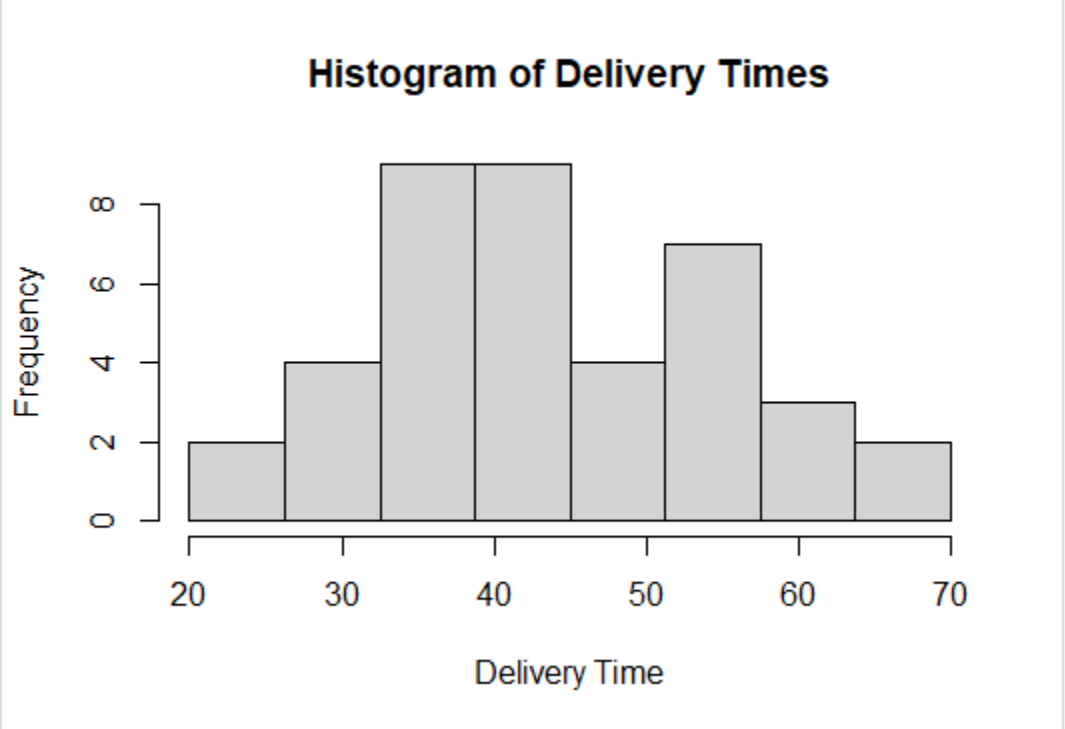


	Delivery_Time_.minutes.	var2	var3	var4	var5
1	34				
2	54				
3	47				
4	29				
5	39				
6	61				
7	20				
8	40				
9	57				
10	36				
11	38				
12	44				
13	59				
14	38				
15	40				
16	40				
17	67				
18	66				
19	55				

```
>
> # Attach the file into R, so that we can call the variables by their names
> attach(Delivery_Times)
>
```

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.

```
> # Histogram for deliver times using nine class intervals where the lower
limit is 20 and upper limit is 70, using right open intervals
> hist_data <- hist(Delivery_Times$DeliveryTime, main = "Histogram of Deliv
ery Times", breaks = seq(20, 70, length = 9), xlab = "Delivery Time", ylab
= "Frequency", right = TRUE)
>
```



3. Comment on the shape of the distribution.

   The histogram shows that delivery times are mostly concentrated around 30-40 minutes, with higher frequencies in this range. The distribution has a slight peak at 40 minutes, and the frequency decreases as delivery times move away from this point, both to the lower and higher ends. Overall, the distribution looks roughly symmetric with a slight peak in the middle.

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

```
> # Assign class frequencies of the histogram into a variable named "freq"
> freq <- hist_data$counts
>
>
> # Obtain the cumulative frequencies
> cum.freq <- cumsum(freq)
>
>
> # Obtain the midpoints from the histogram
> mids <- hist_data$mids
>
>
```

```
> # Plot the cumulative frequency polygon (Ogive)
> plot(mids, cum.freq, type = "o", main = "Cumulative Frequency Polygon (Og
ive)", xlab = "Delivery Time", ylab = "Cumulative Frequency", pch = 16)
>
```