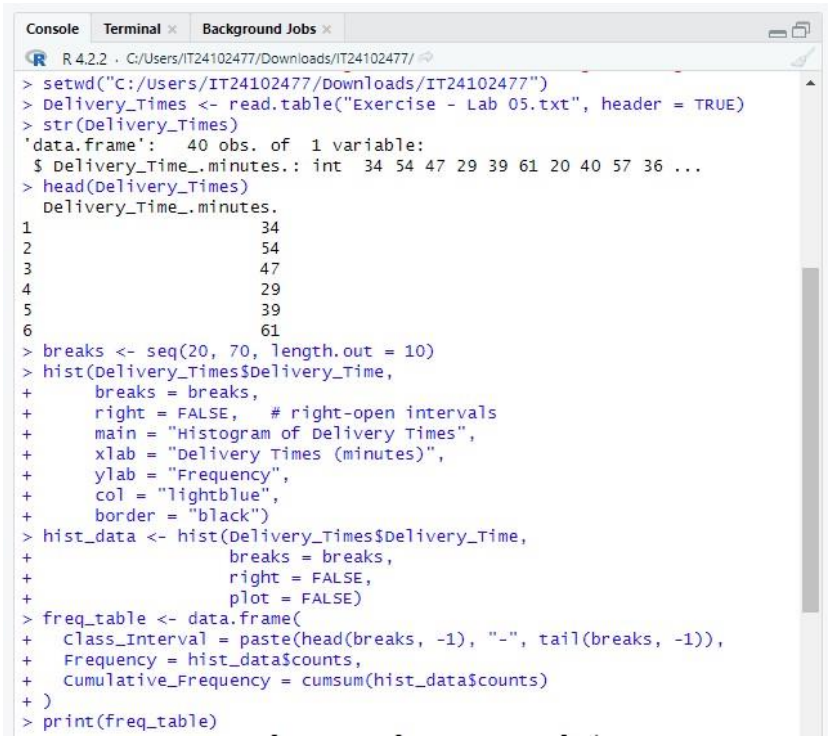
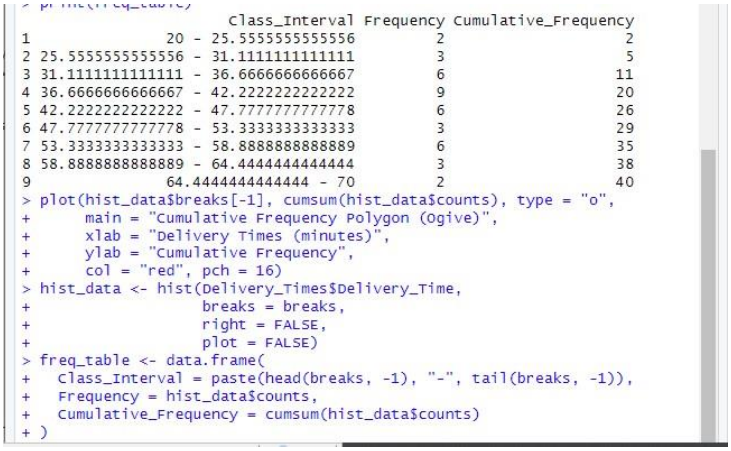
IT24102477

Probability and Statistics - IT2120

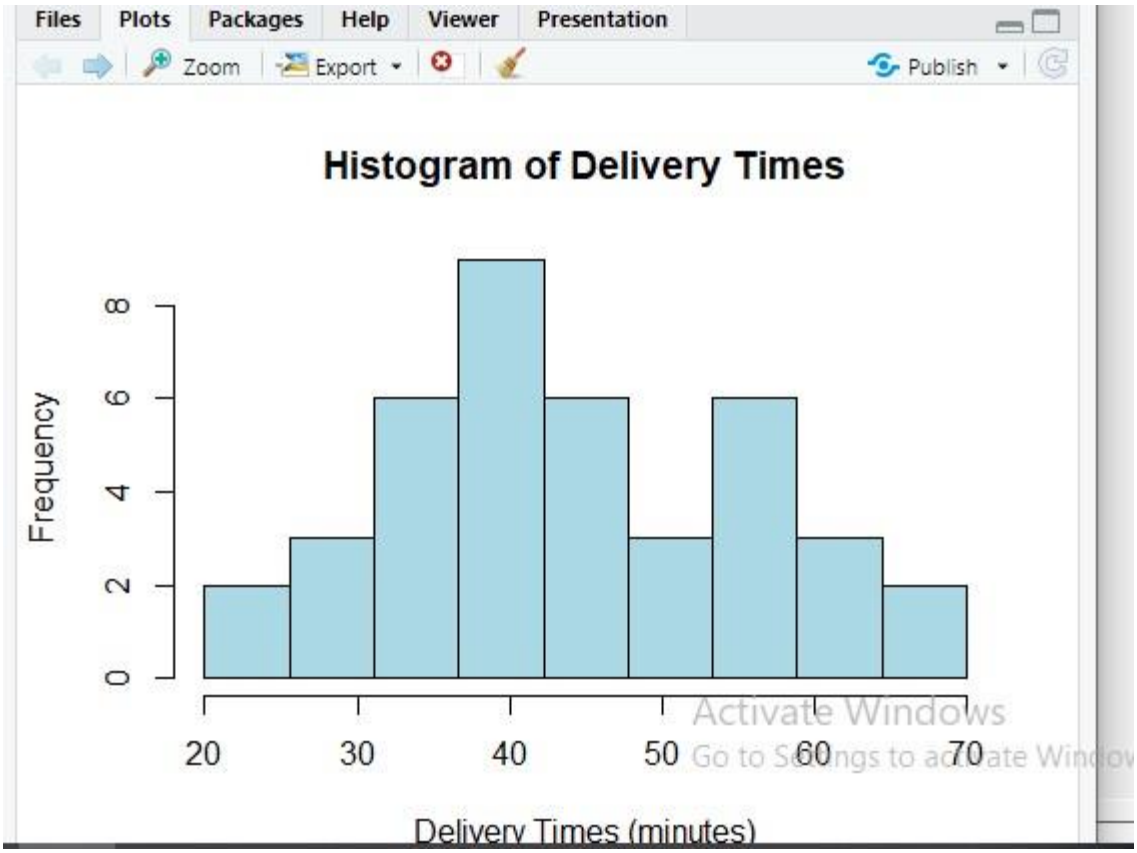
Lab sheet 05

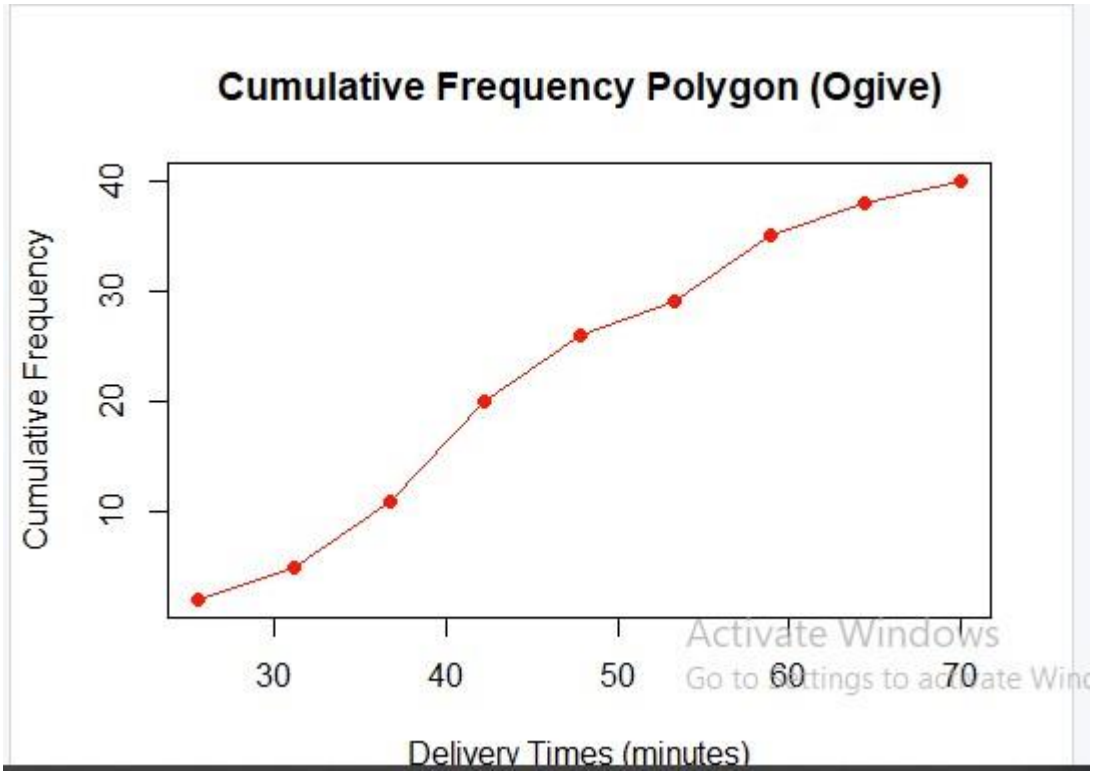


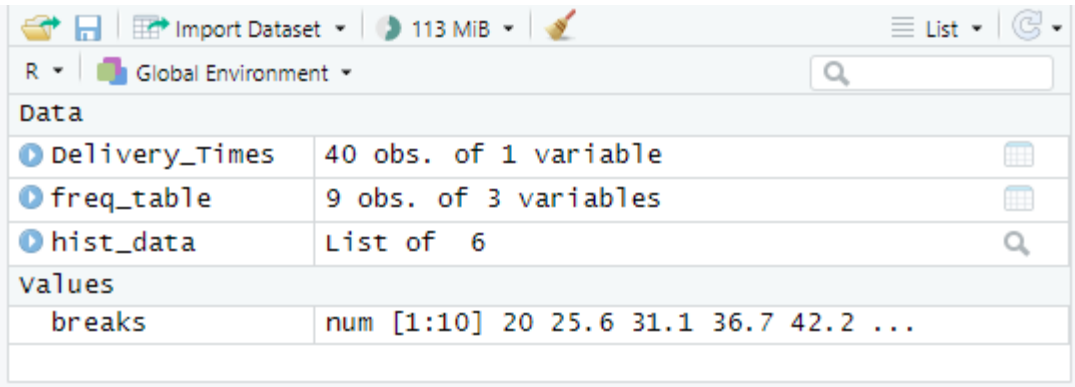
```
Console  Terminal  Background Jobs
R 4.2.2 · C:/Users/IT24102477/Downloads/IT24102477/
> setwd("C:/Users/IT24102477/Downloads/IT24102477")
> Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
> str(Delivery_Times)
'data.frame':   40 obs. of  1 variable:
 $ Delivery_Time_.minutes.: int  34 54 47 29 39 61 20 40 57 36 ...
> head(Delivery_Times)
  Delivery_Time_.minutes.
1                      34
2                      54
3                      47
4                      29
5                      39
6                      61
> breaks <- seq(20, 70, length.out = 10)
> hist(Delivery_Times$Delivery_Time,
+      breaks = breaks,
+      right = FALSE,   # right-open intervals
+      main = "Histogram of Delivery Times",
+      xlab = "Delivery Times (minutes)",
+      ylab = "Frequency",
+      col = "lightblue",
+      border = "black")
> hist_data <- hist(Delivery_Times$Delivery_Time,
+                   breaks = breaks,
+                   right = FALSE,
+                   plot = FALSE)
> freq_table <- data.frame(
+   Class_Interval = paste(head(breaks, -1), "-", tail(breaks, -1)),
+   Frequency = hist_data$counts,
+   Cumulative_Frequency = cumsum(hist_data$counts)
+ )
> print(freq_table)
```



```
                   Class_Interval Frequency Cumulative_Frequency
1              20 - 25.5555555555556         2                   2
2 25.5555555555556 - 31.1111111111111         3                   5
3 31.1111111111111 - 36.6666666666667         6                  11
4 36.6666666666667 - 42.2222222222222         9                  20
5 42.2222222222222 - 47.7777777777778         6                  26
6 47.7777777777778 - 53.3333333333333         3                  29
7 53.3333333333333 - 58.8888888888889         6                  35
8 58.8888888888889 - 64.4444444444444         3                  38
9              64.4444444444444 - 70         2                  40
> plot(hist_data$breaks[-1], cumsum(hist_data$counts), type = "o",
+      main = "Cumulative Frequency Polygon (Ogive)",
+      xlab = "Delivery Times (minutes)",
+      ylab = "Cumulative Frequency",
+      col = "red", pch = 16)
> hist_data <- hist(Delivery_Times$Delivery_Time,
+                   breaks = breaks,
+                   right = FALSE,
+                   plot = FALSE)
> freq_table <- data.frame(
+   Class_Interval = paste(head(breaks, -1), "-", tail(breaks, -1)),
+   Frequency = hist_data$counts,
+   Cumulative_Frequency = cumsum(hist_data$counts)
+ )
```


Files
Plots
Packages
Help
Viewer
Presentation
Zoom
Export
Publish
Histogram of Delivery Times
Frequency
0
2
4
6
8
20
30
40
50
60
70
Delivery Times (minutes)
Activate Windows
Go to Settings to activate Windows


Cumulative Frequency Polygon (Ogive)
Cumulative Frequency
10
20
30
40
30
40
50
60
70
Delivery Times (minutes)
Activate Windows
Go to Settings to activate Windows




```r
setwd("C:/Users/IT24102477/Downloads/IT24102477")

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

str(Delivery_Times)
head(Delivery_Times)

breaks <- seq(20, 70, length.out = 10)

hist(Delivery_Times$Delivery_Time,
     breaks = breaks,
     right = FALSE,   # right-open intervals
     main = "Histogram of Delivery Times",
     xlab = "Delivery Times (minutes)",
     ylab = "Frequency",
     col = "lightblue",
     border = "black")

hist_data <- hist(Delivery_Times$Delivery_Time,
                  breaks = breaks,
                  right = FALSE,
                  plot = FALSE)

freq_table <- data.frame(
  Class_Interval = paste(head(breaks, -1), "-", tail(breaks, -1)),
  Frequency = hist_data$counts,
  Cumulative_Frequency = cumsum(hist_data$counts)
)

print(freq_table)

plot(hist_data$breaks[-1], cumsum(hist_data$counts), type = "o",
     main = "Cumulative Frequency Polygon (Ogive)",
     xlab = "Delivery Times (minutes)",
     ylab = "Cumulative Frequency",
     col = "red", pch = 16)
```