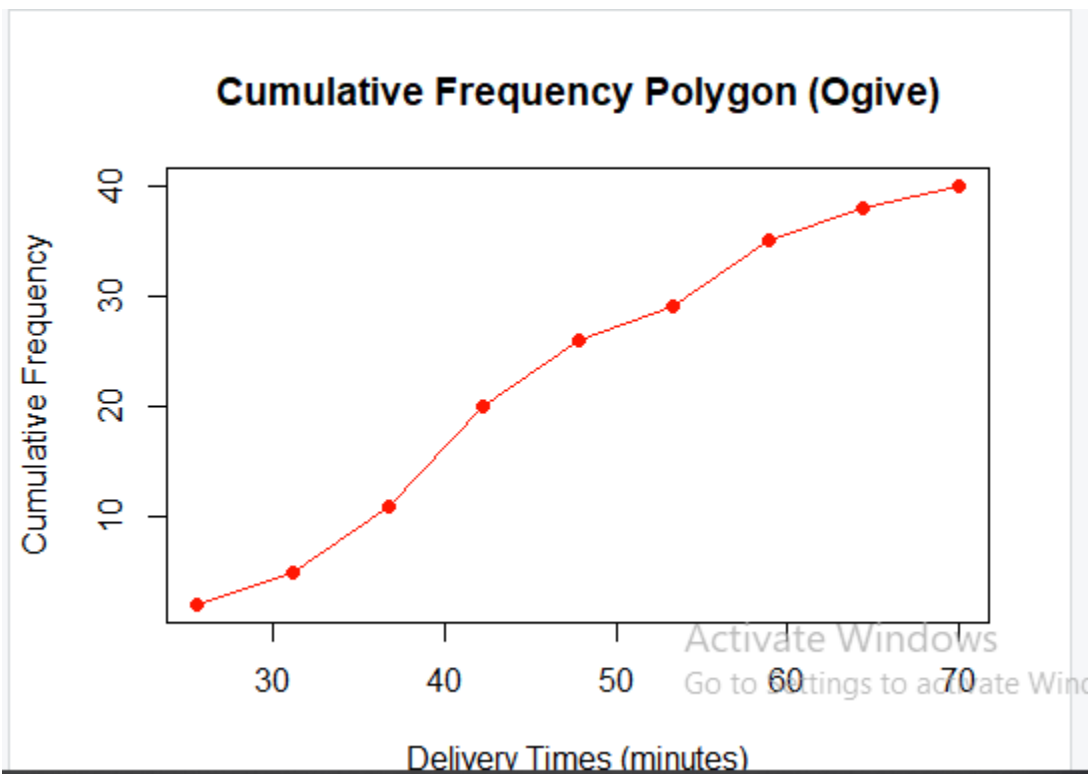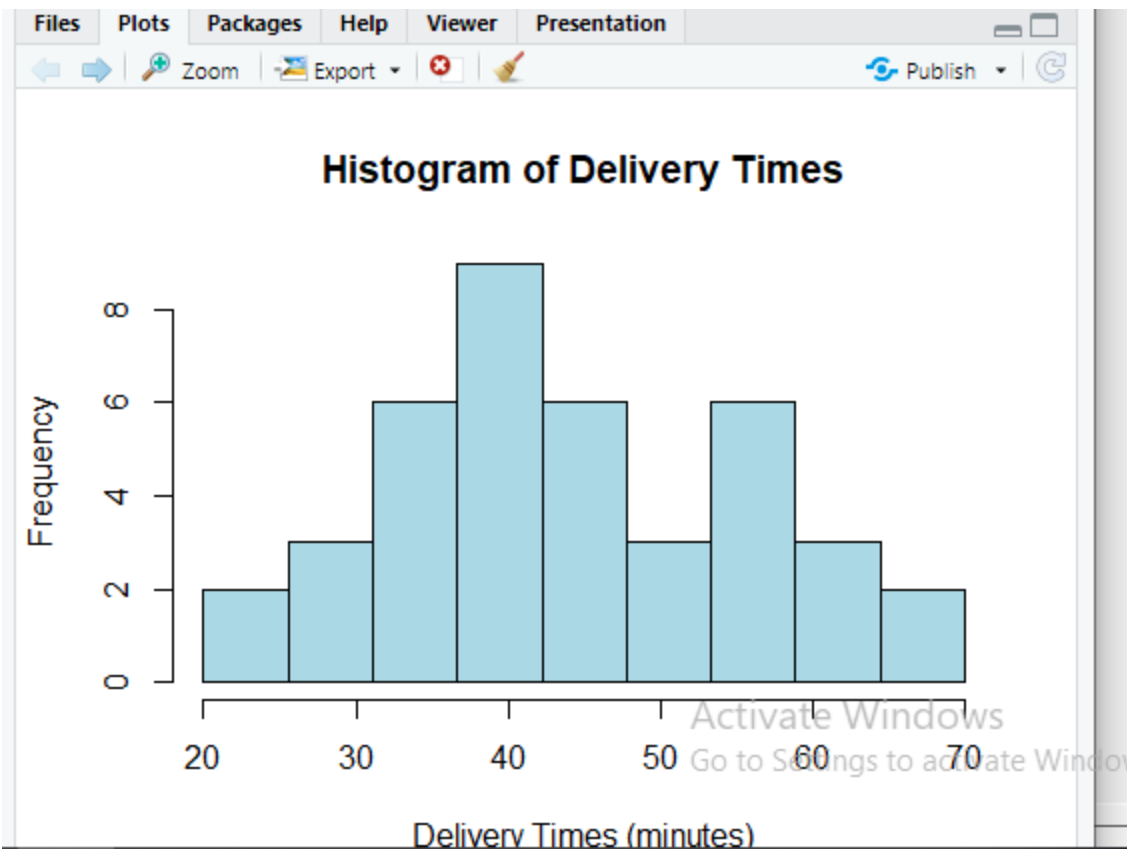IT24102477

Probability and Statistics - IT2120

Lab sheet 05


```
Console   Terminal ×   Background Jobs ×
R 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)
```

```
> 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)
+ )
```

Histogram of Delivery Times

Delivery Times (minutes)

Cumulative Frequency Polygon (Ogive)

Delivery Times (minutes)

```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)
```