IT24101929 GUNAWARDHANA I.K.T.S Lab 5

Exercise

```
setwd("C:/Users/it24101929/Desktop/it24101929 lab 5")
getwd()
```

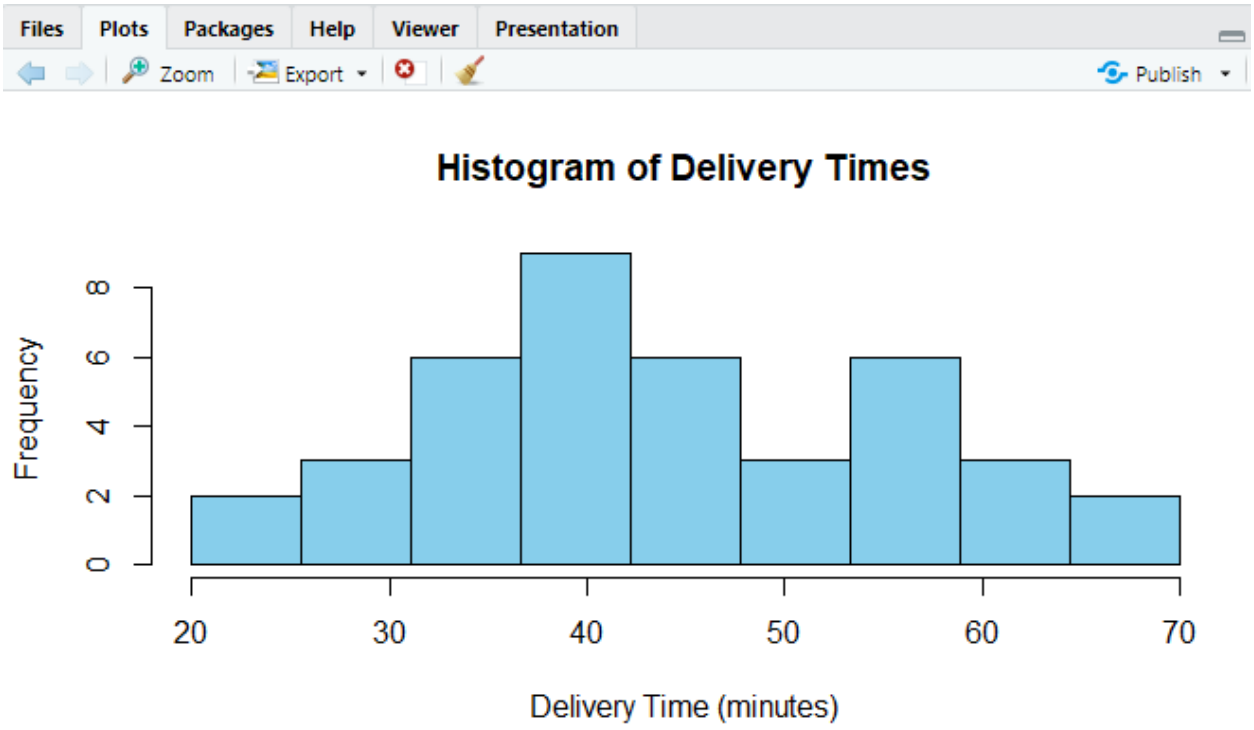
1.

```
> Delivery_Times <- read.table("Exercise - Lab 05.txt",
+                              header = TRUE,
+                              sep = "",
+                              stringsAsFactors = FALSE)
> head(Delivery_Times)
  Delivery_Time_.minutes.
1                      34
2                      54
3                      47
4                      29
5                      39
6                      61
```

2.

```
#2

hist(Delivery_Times$Delivery_Time_.minutes.,
     breaks = seq(20, 70, length.out = 10),   # 9 intervals
     right = FALSE,                           # right-open intervals [a, b)
     main = "Histogram of Delivery Times",
     xlab = "Delivery Time (minutes)",
     ylab = "Frequency",
     col = "skyblue",
     border = "black")
```




```
> hist(Delivery_Times$Delivery_Time_.minutes.,
+      breaks = seq(20, 70, length.out = 10),    # 9 intervals
+      right = FALSE,                            # right-open intervals [a, b)
+      main = "Histogram of Delivery Times",
+      xlab = "Delivery Time (minutes)",
+      ylab = "Frequency",
+      col = "skyblue",
+      border = "black")
>
```

3.

The distribution of delivery times is roughly symmetric, centered around 40 minutes. Frequencies rise towards the middle (30–45 minutes), then fall off towards the ends (20–25 minutes and 65–70 minutes). There is no extreme skewness and the highest frequency (the "peak") is around the 35–45 minute interval.

4.

```r
#4

times <- Delivery_Times$Delivery_Time_.minutes.


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


freq <- hist(times, breaks = breaks, right = FALSE, plot = FALSE)


cum_freq <- cumsum(freq$counts)


plot(breaks[-1], cum_freq, type = "o", col = "blue", lwd = 2, pch = 16,
     main = "Cumulative Frequency Polygon (Ogive)",
     xlab = "Delivery Time (minutes)",
     ylab = "Cumulative Frequency")

grid()
```

```
> times <- Delivery_Times$Delivery_Time_.minutes.
> breaks <- seq(20, 70, length.out = 10)
> freq <- hist(times, breaks = breaks, right = FALSE, plot = FALSE)
> cum_freq <- cumsum(freq$counts)
> plot(breaks[-1], cum_freq, type = "o", col = "blue", lwd = 2, pch = 16,
+      main = "Cumulative Frequency Polygon (Ogive)",
+      xlab = "Delivery Time (minutes)",
+      ylab = "Cumulative Frequency")
> grid()
```