# Sri Lanka Institute of Information Technology


**<IT24103527>**

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## <Lab Sheet No.5>


**IT2120 | Probability & Statistics**

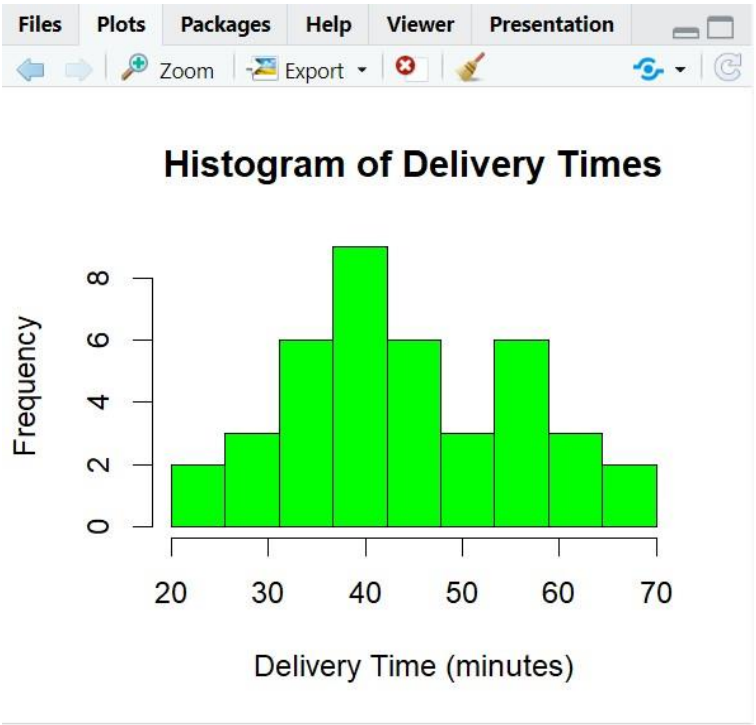
LAB 5 ANSWERS

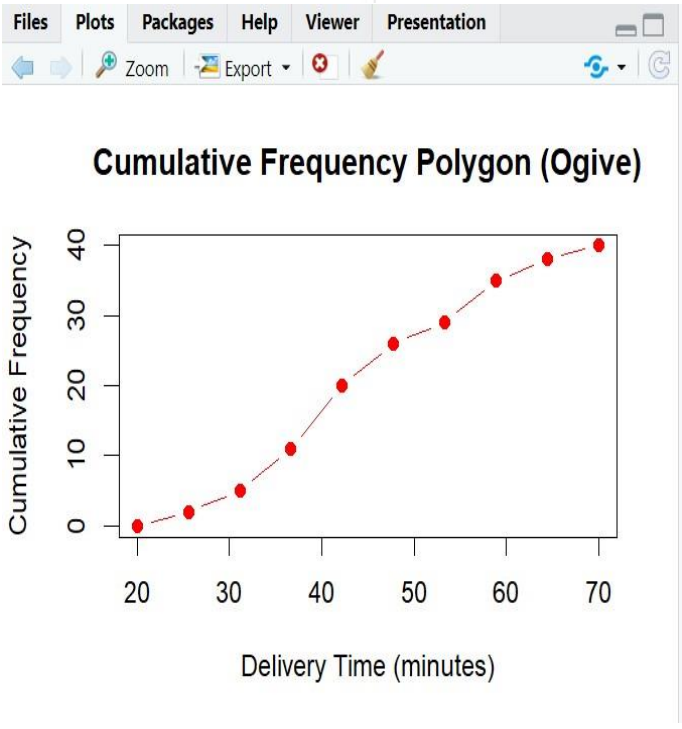
BSc (Hons.) in Information Technology

Year 2 Semester 1

```r
#1.
setwd("C:\\Users\\IT24103527\\Desktop\\IT24103527")
Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
fix(Delivery_Times)
#2.)
hist(Delivery_Times$Delivery_Time,
     breaks = seq(20, 70, length.out = 10),
     right = TRUE,
     main = "Histogram of Delivery Times",
     xlab = "Delivery Time (minutes)",
     ylab = "Frequency",
     col = "green",
     border = "black"
)

# 3.)
# After drawing the histogram, the distribution appears to be roughly symmetric,
# with a slight skew to the right.
```

```r
#4.)
# First, calculate the cumulative frequencies.
# We get the histogram data without plotting it.
hist_data <- hist(Delivery_Times$Delivery_Time, breaks = seq(20, 70, length.out = 10), plot = FALSE)
cumulative_freq <- cumsum(hist_data$counts)

# Get the upper limits and corresponding cumulative frequencies for the ogive.
upper_limits <- hist_data$breaks[2:length(hist_data$breaks)]
ogive_data <- cbind(upper_limits, cumulative_freq)


# Drawing a cumulative frequency polygon (ogive) for the data in a separate plot.
plot(x = c(hist_data$breaks[1], upper_limits),
     y = c(0, cumulative_freq),
     type = "b", # 'b' for both points and lines
     main = "Cumulative Frequency Polygon (Ogive)",
     xlab = "Delivery Time (minutes)",
     ylab = "Cumulative Frequency",
     col = "red",
     pch = 19
)
```



*CONSOLE*

```
> #1.
> setwd("C:\\Users\\User\\Desktop\\IT24103527-PS_LAB5_ANS")
> Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
> fix(Delivery_Times)
> #2.)
> hist(Delivery_Times$Delivery_Time,
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+      right = TRUE,
+      main = "Histogram of Delivery Times",
+      xlab = "Delivery Time (minutes)",
+      ylab = "Frequency",
+      col = "green",
+      border = "black"
+ )
> # 3.)
> # After drawing the histogram, the distribution appears to be roughly symmetric,
> # with a slight skew to the right.
> #4.)
> # First, calculate the cumulative frequencies.
> # We get the histogram data without plotting it.
> hist_data <- hist(Delivery_Times$Delivery_Time, breaks = seq(20, 70, length.out = 10), plot = FALSE)
> cumulative_freq <- cumsum(hist_data$counts)
>
> # Get the upper limits and corresponding cumulative frequencies for the ogive.
> upper_limits <- hist_data$breaks[2:length(hist_data$breaks)]
> ogive_data <- cbind(upper_limits, cumulative_freq)
>
>
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> plot(x = c(hist_data$breaks[1], upper_limits),
+      y = c(0, cumulative_freq),
+      type = "b", # 'b' for both points and lines
+      main = "Cumulative Frequency Polygon (Ogive)",
+      xlab = "Delivery Time (minutes)",
+      ylab = "Cumulative Frequency",
+      col = "red",
+      pch = 19
+ )
```

*Global Environment*