

# Probability and Statics

## IT1120 IT24102290 – Y2S1

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#### Part 1 :-

```
Console Terminal Background Jobs
R • R 4.5.1 • C:/Users/malsh/Desktop/IT24102290/
> setwd("C:\\Users\\malsh\\Desktop\\IT24102290")
> Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
> colnames(Delivery_Times) <- "Delivery_Time"
> head(Delivery_Times)
  Delivery_Time
1           34
2           54
3           47
4           29
5           39
6           61
> str(Delivery_Times)
'data.frame': 40 obs. of 1 variable:
 $ Delivery_Time: int 34 54 47 29 39 61 20 40 57 36 ...
> breaks <- seq(20, 70, length.out = 10)
> hist(Delivery_Times$Delivery_Time, right = FALSE, breaks = breaks, main = "Histogram of Delivery Times", xlab = "Delivery Time", ylab = "Frequency")
> hist_data <- hist(Delivery_Times$Delivery_Time, breaks = breaks, right = FALSE, plot = FALSE)
> frequencies <- hist_data$counts
> cum_freq <- cumsum(frequencies)
> print(frequencies)
[1] 2 3 6 9 6 3 6 3 2
> print(cum_freq)
[1] 2 5 11 20 26 29 35 38 40
> midpoints <- hist_data$mids
> plot(midpoints, cum_freq, type = "b",
+       main = "Cumulative Frequency Polygon for Delivery Time",
+       xlab = "Delivery Time (minutes)",
+       ylab = "Cumulative Frequency",
+       pch = 16)
> |
```

## Part 2 :-

```
setwd("C:\\Users\\malsh\\Desktop\\IT24102290")
Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)

colnames(Delivery_Times) <- "Delivery_Time"
head(Delivery_Times)
str(Delivery_Times)

breaks <- seq(20, 70, length.out = 10)
hist(Delivery_Times$Delivery_Time, right = FALSE, breaks = breaks, main = "Histogram of Delivery Times", xlab = "Delivery Time", ylab = "Frequency")

hist_data <- hist(Delivery_Times$Delivery_Time, breaks = breaks, right = FALSE, plot = FALSE)
frequencies <- hist_data$counts
cum_freq <- cumsum(frequencies)
print(frequencies)
print(cum_freq)

midpoints <- hist_data$mids
plot(midpoints, cum_freq, type = "b", |
      main = "Cumulative Frequency Polygon for Delivery Time",
      xlab = "Delivery Time (minutes)",
      ylab = "Cumulative Frequency",
      pch = 16)
```