IT2120 - Probability and Statistics

Lab Sheet 05

It24101982

Lab Exercise 5

1. Import the dataset ('Exercise – Lab 05.txt') into R and store it in a data frame called "Delivery Times".

```
getwd()
setwd("C:\\Users\\it24101982\\Desktop\\IT24101982")
getwd()
##exercise

# Import the dataset
Delivery_Times <- read.table("Exercise - Lab 05.txt", header = TRUE)
```

2. Draw a histogram for deliver times using nine class intervals where the lower limit is 20 and upper limit is 70. Use right open intervals.

```
# Draw histogram with 9 class intervals (20 to 70, right open)
hist(Delivery_Times$Time, breaks = seq(20, 70, length.out = 10), right = FALSE,
     main = "Histogram of Delivery Times", xlab = "Delivery Time", ylab = "Frequency")
```

3. Comment on the shape of the distribution.

```
# Comment on the shape (to be added as a screenshot in word doc)
# The distribution appears to be [shape description, e.g., skewed right, to be observed from histogram]
|
```

4. Draw a cumulative frequency polygon (ogive) for the data in a separate plot.

```
|
# Draw cumulative frequency polygon (ogive)
times <- Delivery_Times$Time
breaks <- seq(20, 70, length.out = 10)
h <- hist(times, breaks = breaks, plot = FALSE)
plot(h$mids, cumsum(h$counts), type = "l", main = "Cumulative Frequency Polygon",
     xlab = "Delivery Time", ylab = "Cumulative Frequency", ylim = c(0, length(times)))
```