Faculty of Computing

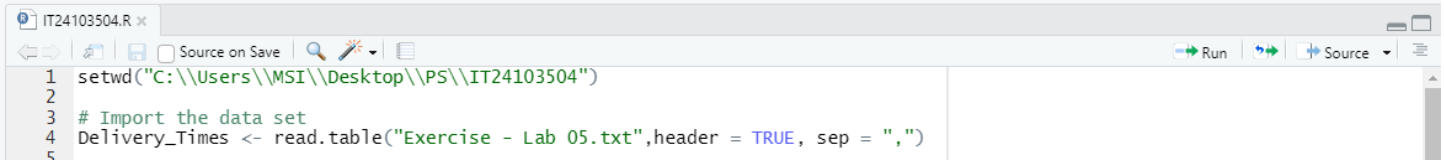
Year 2 Semester 1 (2025)

IT2120 - Probability and Statistics Lab Sheet 05

IT24103504 – YUNIDU E D P

Exercise

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



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.**

3. **. Comment on the shape of the distribution**

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

```r
# View in separate window
fix(Delivery_Times)

# attach the file into R
attach(Delivery_Times)

# create histogram
hist(Delivery_Times$Delivery_Time_.minutes.,
     main = "Histogram of Delivery Times",
     breaks <- seq(20, 70, length = 10), right = FALSE,
     col = 'orange',
     xlab = "Delivery Times",
     border = 'black')

# make frequently table
freq_table <- table(cut(Delivery_Times$Delivery_Time_.minutes.,
                        breaks <- seq(20,70, length = 10), right = FALSE))

# cumulative frequency
cum_freq <- cumsum(freq_table)

# frequency polygon
plot(breaks[-1],
     main="Frequency Polygon of Delivery Times",
     cum_freq,
     type="o",
     col="purple",
     xlab="Delivery Time",
     ylab="Cumulative Frequency")
```

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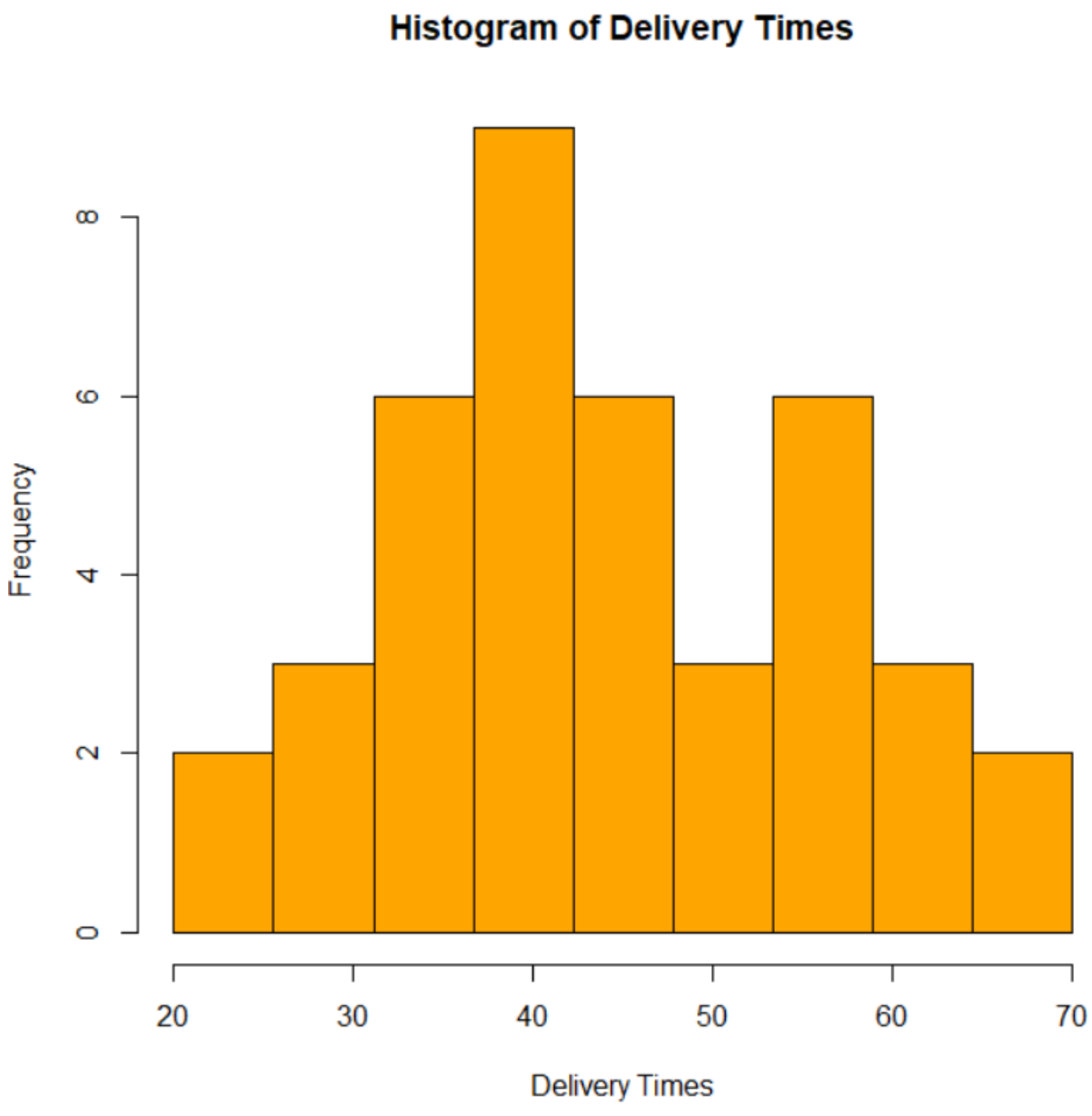
Data	
Delivery_Times	40 obs. of 1 variable
$ Delivery_Time_.minutes.:	num 34 54 47 29 39 61 20 40 57 36 ...
Values	
breaks	num [1:10] 20 25.6 31.1 36.7 42.2 ...
cum_freq	Named int [1:9] 2 5 11 20 26 29 35 38 40
freq_table	'table' int [1:9(1d)] 2 3 6 9 6 3 6 3 2

R Graphics: Device 2 (ACTIVE)

File History Resize



```
37:1  (Top Level)                                                    R Script
Console  Terminal  Jobs
R 4.5.1 · C:/Users/MSI/Desktop/PS/IT24103504/
> # create histogram
> hist(Delivery_Times$Delivery_Time_.minutes.,
+      main = "Histogram of Delivery Times",
+      breaks <- seq(20, 70, length = 10), right = FALSE,
+      col = 'orange',
+      xlab = "Delivery Times",
+      border = 'black')
>
> # make frequently table
> freq_table <- table(cut(Delivery_Times$Delivery_Time_.minutes.,
+                         breaks <- seq(20,70, length = 10), right = FALSE))
>
> # cumulative frequency
> cum_freq <- cumsum(freq_table)
>
> # frequency polygon
> plot(breaks[-1],
+      main="Frequency Polygon of Delivery Times",
+      cum_freq,
+      type="o",
+      col="purple",
+      xlab="Delivery Time",
+      ylab="Cumulative Frequency")
>
```

R Graphics: Device 2 (ACTIVE)

File History Resize