IT24102056

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PS LAB 05

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

```
> delivery_times <- read.table("Exercise - Lab 05.txt",header = TRUE, sep = ",")
> names(delivery_times) <- c("x1")
> attach(delivery_times)
The following object is masked from delivery_times (pos = 3):

    x1

The following object is masked from delivery_times (pos = 4):

    x1
```
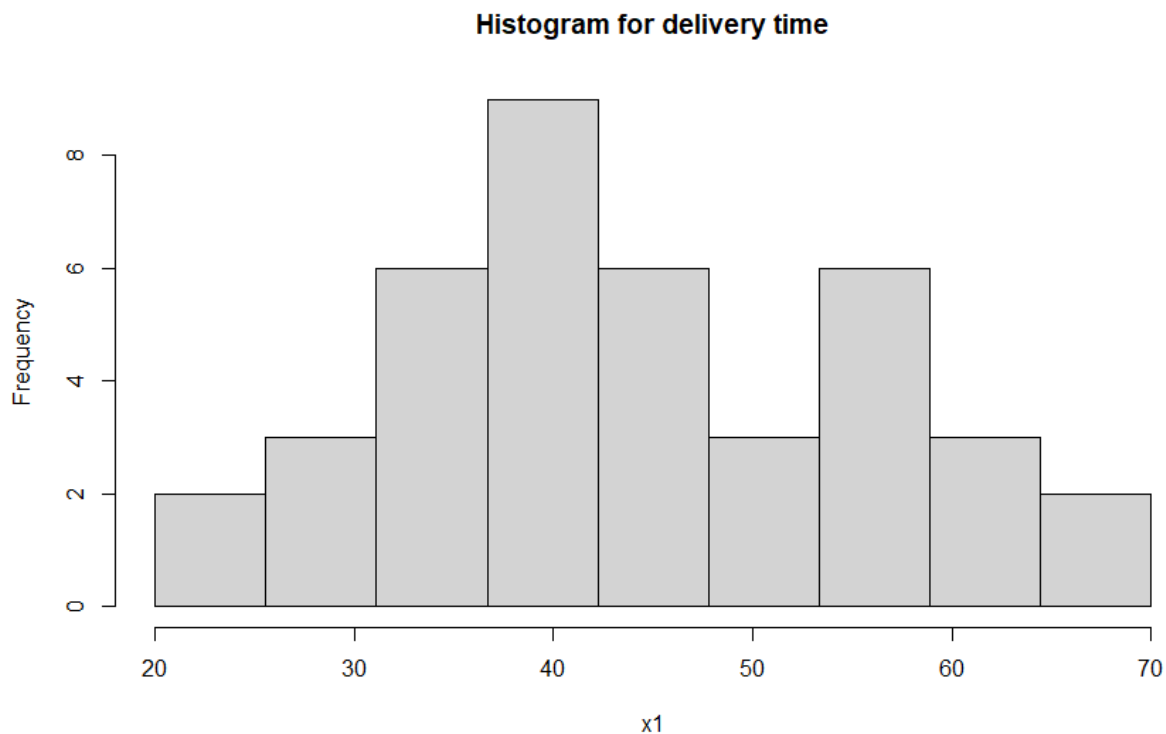
2. Draw a histogram for deliver times using nine class intervals where the lower limit is 20 and upper limit is 70. Use right open intervals.

```
> histogram <- hist(x1,main = "Histogram for delivery time",
+              breaks = seq(20,70, length = 10), right = FALSE)
```

Histogram for delivery time

3. Comment on the shape of the distribution.

- The data is spread roughly between 20 and 70 minutes. The delivery times are mostly concentrated around 35-45 minutes. The shape is slightly right skewed. That indicates most deliveries take around 40 minutes

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

```
> breaks <- round(histogram$breaks)
> freq <- histogram$counts
> mid <- histogram$mids
> classes <- c()
> for (i in 1: length(breaks)-1){
+    classes[i] <- paste0("[", breaks[i], ",", breaks[i+1],")")
+ }
> cbind(Classes = classes, Frequency = freq)
```

```
> cbind(Classes = classes, Frequency = freq)
        Classes   Frequency
  [1,]  "[20,26)"  "2"
  [2,]  "[26,31)"  "3"
  [3,]  "[31,37)"  "6"
  [4,]  "[37,42)"  "9"
  [5,]  "[42,48)"  "6"
  [6,]  "[48,53)"  "3"
  [7,]  "[53,59)"  "6"
  [8,]  "[59,64)"  "3"
  [9,]  "[64,70)"  "2"
```

```
> for (i in 1: length(breaks)){
+   if(i==1){
+     new[i] = 0
+   }else{
+     new[i] = cum.freq[i-1]
+   }
+ }
> plot(breaks,new,type = "o",main = "Cumulative frequency poligon(ogive) ",xlab ="Delivery time",ylab = "Cumulative frequen
cy",ylim = c(0,max(cum.freq))   )
> |
```

Cumulative frequency poligon(ogive)