

# CDF

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### get data and calculate key summary statistics
#Read data
#Mention the path of the data file
#header value will be true if there any header otherwise false

data <- read.table("C:/Users/Robin/Desktop/LoRaWAN/lpdata.csv", header = TRUE, sep = ",")
head(data)

##      No.of.observation Through Throughput RSSI SNR Header.Size Latency Jitter
## 1                      1       26         208   NA   NA           NA    11.3    NA
## 2                      2       26         208 -201  -8           NA    11.0    NA
## 3                      3       26         208 -121  -5           NA    10.0    NA
## 4                      4       23         184   NA   NA           NA    13.0    NA
## 5                      5       23         184   NA   NA           NA    14.0    NA
## 6                      6       21         168 -201  -5           NA    11.0    NA

#Select specific data from the dataset
data_1= data$RSSI

#Count the number of row conatining data
n = sum(!is.na(data_1))

#summary (optional)
summary(fivenum(data_1))

##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -208.0 -205.0 -201.0 -165.2 -109.0 -103.0

# ordering the data
data.ordered = sort(data_1)
head(data.ordered)

## [1] -208 -207 -206 -206 -205 -205

#create the image in png form

png('C:/Users/Robin/Desktop/LoRaWAN/Latency1.png',width = 300, height = 300, units = "px", bg = "white")

# plot the possible values of probability (0 to 1) against the ordered data
# notice the option type = '' for plotting the functions

plot(data.ordered, (1:n)/n, type = 'o', ylim = c(0, 1), xlab = 'RSSI(dBm, 50)', ylab = 'CDF', main = 'En

#add quartile (if necessary)
#ggplot(data.ordered) + stat_ecdf(geom = "step", pad = FALSE)
# mark the 3rd quartile
#abline(v = 62.5, h = 0.75)

# add a legend (if necessary)
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#legend(65, 0.7, '3rd Quartile = 63.5', box.lwd = 0)

# add the label on the y-axis (optional)
#mtext(text = expression(hat(F)[n](x)), side = 2, line = 2.5)

dev.off()

## pdf
## 2
```