Day-01

Program-9

marks <- c(55, 60, 71, 63, 55, 65, 50, 55, 58, 59, 61, 63, 65, 67, 71, 72, 75)

num\_bins <- 3

bins\_eq\_frequency <- cut(marks, breaks = num\_bins, labels = FALSE)

hist(marks, breaks = num\_bins, col = "lightblue", xlab = "Marks", main = "Equal-Frequency (Equi-Depth) Partitioning")

marks <- c(55, 60, 71, 63, 55, 65, 50, 55, 58, 59, 61, 63, 65, 67, 71, 72, 75)

bin\_mean <- tapply(data, cut(data, num\_bins), mean)

smoothed\_data\_by\_mean <- unname(bin\_mean[as.character(cut(data, num\_bins))])

bin\_median <- tapply(data, cut(data, num\_bins), median)

smoothed\_data\_by\_median <- unname(bin\_median[as.character(cut(data, num\_bins))])

bin\_boundaries <- tapply(data, cut(data, num\_bins), function(x) c(min(x), max(x)))

smoothed\_data\_by\_boundaries <- unlist(bin\_boundaries[as.character(cut(data, num\_bins))])

print("Original data:")

print(data)

print("Smoothed data by bin mean:")

print(smoothed\_data\_by\_mean)

print("Smoothed data by bin median:")

print(smoothed\_data\_by\_median)

print("Smoothed data by bin boundaries:")

print(smoothed\_data\_by\_boundaries)

Output:



