3.Data Preprocessing :Reduction and Transformation

Use the two methods below to normalize the following group of data: 200, 300, 400, 600,

1000 (a) min-max normalization by setting min = 0 and max = 1 (b) z-score normalization

PROGRAM:

ages <- c(13, 15, 16, 16, 19, 20, 20, 21, 22, 22, 25, 25, 25, 25, 30, 33, 33, 35, 35, 35, 35, 36, 40, 45, 46, 52, 70)

mean\_age <- mean(ages)

median\_age <- median(ages)

mode\_age <- as.numeric(names(sort(table(ages), decreasing = TRUE)[1]))

modality <- ifelse(length(unique(table(ages))) == 1, "No mode", paste("Mode(s):", mode\_age))

midrange\_age <- (min(ages) + max(ages)) / 2

Q1 <- quantile(ages, 0.25)

Q3 <- quantile(ages, 0.75)

cat("Mean:", mean\_age, "\n")

cat("Median:", median\_age, "\n")

cat("", modality, "\n")

cat("Midrange:", midrange\_age, "\n")

cat("First Quartile (Q1):", Q1, "\n")

cat("Third Quartile (Q3):", Q3, "\n")

data <- c(200, 300, 400, 600, 1000)

min\_val <- min(data)

max\_val <- max(data)

min\_max\_normalized <- (data - min\_val) / (max\_val - min\_val)

mean\_data <- mean(data)

sd\_data <- sd(data)

z\_score\_normalized <- (data - mean\_data) / sd\_data

cat("Min-Max Normalized Data:", min\_max\_normalized, "\n")

cat("Z-Score Normalized Data:", z\_score\_normalized, "\n")

OUTPUT:

