**5.DIABETES**

# Create a sample diabetes dataset (Age & BloodPressure)

diabetes\_data <- data.frame(

Age = c(22, 35, 45, 50, 60, 25, 39, 48, 55, 30, 40, 42, 58, 62, 70, 75),

BloodPressure = c(75, 82, 90, 88, 95, 78, 85, 89, 92, 80, 87, 86, 94, 97, 100, 105)

)

# Display dataset

print("Sample Diabetes Dataset:")

print(diabetes\_data)

# 📊 Scatter Plot: Blood Pressure vs Age

plot(diabetes\_data$Age, diabetes\_data$BloodPressure,

main = "Blood Pressure vs Age",

xlab = "Age (years)",

ylab = "Blood Pressure (mmHg)",

col = "blue",

pch = 16)

# Grouping Age into Age Ranges

age\_groups <- cut(diabetes\_data$Age, breaks = c(0, 20, 30, 40, 50, 60, 70, 100),

labels = c("0-20", "21-30", "31-40", "41-50", "51-60", "61-70", "71+"),

include.lowest = TRUE)

# Compute Average Blood Pressure per Age Group

bp\_by\_age <- aggregate(BloodPressure ~ age\_groups, data = diabetes\_data, FUN = mean)

# 📊 Bar Chart: Average Blood Pressure by Age Group

barplot(bp\_by\_age$BloodPressure,

names.arg = bp\_by\_age$age\_groups,

main = "Average Blood Pressure by Age Group",

xlab = "Age Group",

ylab = "Average Blood Pressure (mmHg)",

col = "red",

border = "black")