ML LAB 2:

CODE:

# Load necessary libraries

library(caret)

library(rpart)

library(rpart.plot) # for visualization

# Read data from the provided dataset

file\_path <- "C:/Users/MSI/OneDrive/Desktop/ML/oulad-assessments.csv"

# Update with the actual file path

data <- read.csv(file\_path)

data <- na.omit(data)

# First, split the data into a training set and a testing set

set.seed(123) # for reproducibility

training\_indices <- createDataPartition(data$score, p = 0.8, list = FALSE) # Assuming 'score' is the target variable

training\_set <- data[training\_indices, ]

testing\_set <- data[-training\_indices, ]

# Train the model

model <- rpart(score ~ ., data = training\_set)

# Make predictions

predictions <- predict(model, testing\_set)

# Convert predictions to factor

predictions <- as.factor(ifelse(predictions > 0.5, 1, 0)) # Assuming 'score' is a binary variable

# Convert testing\_set$score to factor if it's not already

testing\_set$score <- as.factor(testing\_set$score)

# Ensure the levels of 'predictions' and 'testing\_set$score' are in the same order

levels(predictions) <- levels(testing\_set$score)

# Evaluate the model

confusionMatrix(predictions, testing\_set$score)

# Visualize the decision tree

rpart.plot(model)

OUTPUT:

A diagram of a computer code

Description automatically generated with medium confidence