from sklearn.model\_selection import train\_test\_split

from sklearn.linear\_model import LinearRegression

from sklearn.metrics import mean\_squared\_error

# Split the data into training and testing sets

X = df[['Pace', 'Shooting', 'Passing', 'Dribbling', 'Defending', 'Physical']]

y\_ability = df['Ability']

y\_potential = df['Potential']

X\_train, X\_test, y\_ability\_train, y\_ability\_test = train\_test\_split(X, y\_ability, test\_size=0.2, random\_state=42)

X\_train, X\_test, y\_potential\_train, y\_potential\_test = train\_test\_split(X, y\_potential, test\_size=0.2, random\_state=42)

# Train the linear regression model

model\_ability = LinearRegression()

model\_ability.fit(X\_train, y\_ability\_train)

model\_potential = LinearRegression()

model\_potential.fit(X\_train, y\_potential\_train)

# Evaluate the model

y\_ability\_pred = model\_ability.predict(X\_test)

y\_potential\_pred = model\_potential.predict(X\_test)

mse\_ability = mean\_squared\_error(y\_ability\_test, y\_ability\_pred)

mse\_potential = mean\_squared\_error(y\_potential\_test, y\_potential\_pred)

print(f"Mean Squared Error (Ability): {mse\_ability}")

print(f"Mean Squared Error (Potential): {mse\_potential}")

# Input player attributes (scout's evaluation)

new\_player = pd.DataFrame({

'Pace': [82],

'Shooting': [72],

'Passing': [78],

'Dribbling': [85],

'Defending': [68],

'Physical': [80],

})

# Predict Ability and Potential for the new player

ability\_prediction = model\_ability.predict(new\_player)

potential\_prediction = model\_potential.predict(new\_player)

print(f"Predicted Ability: {ability\_prediction[0]:.2f} out of 5")

print(f"Predicted Potential: {potential\_prediction[0]:.2f} out of 5")

X = df[['Age', 'Pace', 'Shooting', 'Passing', 'Dribbling', 'Defending', 'Physical']]

y\_ability = df['Ability']

y\_potential = df['Potential']

# ... Splitting data, training models, and evaluating remain the same ...

import pandas as pd

data = {

'Age': [21, 25, 18, 28, 20, 22, 24, 30, 29, 32, 23, 27, 31, 26, 33, 34, 19, 35, 29, 36],

'Pace': [80, 75, 90, 70, 85, 78, 82, 65, 68, 70, 88, 72, 70, 74, 69, 67, 92, 62, 66, 61],

'Shooting': [85, 70, 75, 60, 80, 72, 76, 62, 65, 58, 88, 78, 70, 76, 72, 70, 65, 70, 64, 59],

'Passing': [75, 80, 85, 70, 78, 80, 72, 68, 70, 60, 70, 75, 80, 72, 68, 65, 75, 68, 71, 66],

'Dribbling': [88, 78, 92, 70, 84, 82, 85, 72, 75, 68, 90, 75, 72, 86, 80, 78, 92, 68, 73, 67],

'Defending': [60, 75, 70, 80, 65, 68, 70, 75, 78, 80, 55, 70, 75, 68, 70, 78, 45, 72, 77, 73],

'Physical': [75, 85, 88, 82, 90, 86, 84, 78, 80, 75, 70, 82, 85, 80, 76, 74, 88, 81, 79, 77],

'Ability': [4.2, 3.8, 4.5, 3.5, 4.0, 4.0, 4.1, 3.3, 3.2, 3.0, 4.4, 3.6, 3.1, 3.8, 3.5, 3.2, 4.6, 2.9, 2.7, 2.5],

'Potential': [4.8, 4.5, 4.9, 3.3, 4.7, 4.6, 4.5, 3.0, 3.1, 2.8, 4.9, 4.0, 3.2, 4.3, 3.7, 3.5, 4.0, 2.4, 2.2, 2.0],

}

df = pd.DataFrame(data)