Practical 12

**Source Code**

package com.practical12;

import java.io.File;

import java.io.FileNotFoundException;

import java.util.ArrayList;

import java.util.List;

import java.util.Scanner;

public class WeatherDataAnalyzer {

public static void main(String[] args) {

// Path to the weather data file

String filePath = "E:\\Eclipse Java Workspace\\Practical12\_DSBDA\\src\\com\\practical12\\sample\_weather.txt";

// Read weather data from file

double[][] weatherData = readWeatherData(filePath);

// Calculate averages

if (weatherData != null) {

double[] averages = calculateAverages(weatherData);

// Print the results

System.out.println("Average Temperature: " + averages[0] + " °C");

System.out.println("Average Dew Point: " + averages[1] + " °C");

System.out.println("Average Wind Speed: " + averages[2] + " m/s");

} else {

System.out.println("No data found in the file.");

}

}

// Function to read the weather data from the text file

private static double[][] readWeatherData(String filePath) {

try {

File file = new File(filePath);

Scanner scanner = new Scanner(file);

List<double[]> validData = new ArrayList<>();

while (scanner.hasNextLine()) {

String line = scanner.nextLine();

String[] fields = line.split("\\s+");

// Check if the line contains the expected number of fields

if (fields.length >= 3) {

try {

double[] dataEntry = {

Double.parseDouble(fields[3]), // Temperature

Double.parseDouble(fields[4]), // Dew Point

Double.parseDouble(fields[5]) // Wind Speed

};

validData.add(dataEntry);

} catch (NumberFormatException e) {

// Skip lines with invalid data

continue;

}

}

}

scanner.close();

// Convert list to array

double[][] weatherData = new double[validData.size()][3];

for (int i = 0; i < validData.size(); i++) {

weatherData[i] = validData.get(i);

}

return weatherData;

} catch (FileNotFoundException e) {

e.printStackTrace();

return null;

}

}

// Function to calculate the average of each weather parameter

private static double[] calculateAverages(double[][] weatherData) {

int numEntries = weatherData.length;

double[] averages = new double[3];

double totalTemperature = 0;

double totalDewPoint = 0;

double totalWindSpeed = 0;

for (double[] entry : weatherData) {

totalTemperature += entry[0];

totalDewPoint += entry[1];

totalWindSpeed += entry[2];

}

averages[0] = totalTemperature / numEntries;

averages[1] = totalDewPoint / numEntries;

averages[2] = totalWindSpeed / numEntries;

return averages;

}

}

**Output**

Average Temperature: 53.58260416666668 °C

Average Dew Point: 25.899999999999977 °C

Average Wind Speed: 24.0 m/s