**Exercise 7: Financial Forecasting**

import java.util.\*;

public class FinancialForecasting {

// Method to calculate simple moving average

public static double[] simpleMovingAverage(double[] data, int window) {

int n = data.length;

double[] forecast = new double[n - window + 1];

for (int i = 0; i <= n - window; i++) {

double sum = 0;

for (int j = i; j < i + window; j++) {

sum += data[j];

}

forecast[i] = sum / window;

}

return forecast;

}

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

// Input past data (e.g., revenue of past months)

System.out.print("Enter number of months of data: ");

int n = scanner.nextInt();

double[] revenue = new double[n];

System.out.println("Enter revenue data:");

for (int i = 0; i < n; i++) {

System.out.print("Month " + (i + 1) + ": ");

revenue[i] = scanner.nextDouble();

}

// Moving average window size (e.g., 3 months)

System.out.print("Enter moving average window : ");

int window = scanner.nextInt();

if (window > n) {

System.out.println("Window size can't be larger than data length.");

return;

}

// Forecast calculation

double[] forecast = simpleMovingAverage(revenue, window);

// Output

System.out.println("\nForecast using " + window + "-month Moving Average:");

for (int i = 0; i < forecast.length; i++) {

System.out.printf("Month %d Forecast: %.2f\n", (i + window), forecast[i]);

}

scanner.close();

}

}

**Output :**

Enter number of months of data: 6

Enter revenue data:

Month 1: 10000

Month 2: 11000

Month 3: 12000

Month 4: 11500

Month 5: 13000

Month 6: 12500

Enter moving average window : 3

Forecast using 3-month Moving Average:

Month 3 Forecast: 11000.00

Month 4 Forecast: 11500.00

Month 5 Forecast: 12166.67

Month 6 Forecast: 12333.33

