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