Project4\_1:

import java.util.\*;

public class Project4\_4 {

public static void main(String[] args){

int[] testVals = {89, 95, 72, 83, 99, 54, 86, 75, 92, 73, 79, 75, 82, 83, 73};

double avg = calcAverage(testVals);

System.out.printf("The average of testVals is %.2f %n" , avg);

double variance = variance(avg, testVals);

System.out.printf("The variance of testVals is %.2f" , variance);

}

static double calcAverage(int[] testVals){

double sum=0;

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

sum += testVals[i];

}

return sum/testVals.length;

}

static double variance(double avg, int[] testVals){

double variance = 0;

double squares = 0.0;

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

squares += Math.pow(testVals[i]-avg, 2);

}

return squares/testVals.length;

}

}

/\*\*\*\*\*\*\*\*\*output\*\*\*\*\*\*\*\*\*\*

The average of testVals is 80.67

The variance of testVals is 116.76

\*/

Project4\_2:

import java.util.\*;

import java.lang.\*;

public class Project4\_2 {

public static void main(String[] args){

String[] Fortune = {"Study more", "Go to movie", "Relax", "Sleep"};

int i = 0;

do{

//System.out.print(Math.random());

i = (int)(Math.random() \* 4); // 0-3

System.out.println(Fortune[i]);

}while(i!= 3);

}

}

/\*\*\*\*\*\*\*\*\*output\*\*\*\*\*\*\*\*\*\*

Relax

Relax

Relax

Study more

Sleep

\*/

Project4\_3:

import java.util.\*;

public class Project4\_3 {

public static void main(String[] args){

Scanner read = new Scanner(System.in);

int[] a = new int[7];

System.out.print("Enter 7 int number: ");

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

a[i] = read.nextInt();

}

System.out.print("Original data: ");

Display(a);

java.util.Arrays.sort(a);

System.out.print("Sorted data: ");

Display(a);

System.out.print("Enter an int number: ");

int bs = read.nextInt();

int index\_bs = java.util.Arrays.binarySearch(a, bs);

System.out.println(bs + " is at location " + index\_bs + " of the sorted array");

}

static void Display(int[] a){

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

System.out.printf("%4d",a[i]);

}

System.out.println();

}

}

/\*\*\*\*\*\*\*\*\*output\*\*\*\*\*\*\*\*\*\*

Enter 7 int number: 10 15 40 70 30 9 11

Original data: 10 15 40 70 30 9 11

Sorted data: 9 10 11 15 30 40 70

Enter an int number: 11

11 is at location 2 of the sorted array

\*/

Project4\_4:

import java.util.\*;

public class Project4\_4 {

public static void main(String[] args){

int[] testVals = {89, 95, 72, 83, 99, 54, 86, 75, 92, 73, 79, 75, 82, 83, 73};

double avg = calcAverage(testVals);

System.out.printf("The average of testVals is %.2f %n" , avg);

double variance = variance(avg, testVals);

System.out.printf("The variance of testVals is %.2f" , variance);

}

static double calcAverage(int[] testVals){

double sum=0;

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

sum += testVals[i];

}

return sum/testVals.length;

}

static double variance(double avg, int[] testVals){

double variance = 0;

double squares = 0.0;

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

squares += Math.pow(testVals[i]-avg, 2);

}

return squares/testVals.length;

}

}

/\*\*\*\*\*\*\*\*\*output\*\*\*\*\*\*\*\*\*\*

The average of testVals is 80.67

The variance of testVals is 116.76

\*/