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/* InClass Assignmnet3
 * Group Members:'
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*/
package inClassAssignment3;
import java.util.Scanner;

public class inClass_Assignment3 {

	public static void main(String[] args)
	{
		Scanner keyboard = new Scanner(System.in);
		double[] arrTemp= new double[10];//  creating an array to store 10 user
inputs
		System.out.println("Enter Temperature for 10 days.");

		int i=0;
		double avg=0;
		double total=0;
		double max=1;
		double min=0;// creating bunch of variables to store desired results

		while(i!=10)// loop that iterates for 10 times
			// used while loop instead of for loop to make sure all 10 inuts
are stored in the case user enteres invalid data
		{
			System.out.print("Day "+(i+1)+":");
			arrTemp[i] = keyboard.nextDouble();
			if(arrTemp[i]<-50||arrTemp[i]>50)// check the user input is
within a given range(input validation)
			{
				System.out.println("Invalid input");
				continue;// goes back to the top of loop if invalid data is
detected
			}
			total+=arrTemp[i];
			if (arrTemp[i]>=max)//checking maximum temperature
				max=arrTemp[i];
			if (arrTemp[i]<=min)//checking minimum temperature
				min=arrTemp[i];
			i++;
		}

		avg=total/10;

		System.out.println("\nDays below average= ");

		for(int a=0;a<10;a++)
		{
			if(arrTemp[a]<avg)
				System.out.println("Day"+(a+1)+": "+arrTemp[a] );//
printing temperature below avg by comparing it with a reference point
		}

		System.out.println("\nDays above average= ");

		for(int b=0;b<10;b++)
		{
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                if(arrTemp[b]>=avg)
                      System.out.println("Day"+(b+1)+": "+arrTemp[b] );//// 
printing temperature above avg by comparing it with a reference point

            }

            double temporary=0;

            for (int j=0;j<10;j++) //sorting the values in ascending order through 
bubble sort algorithm to calculate median
            {
                  for(int k=0;k<j;k++)
                  {
                        if (arrTemp[j]<arrTemp[k])
                        {
                              temporary=arrTemp[j];// swapping values if the temp 
at lower index is higher than later one
                              arrTemp[j]=arrTemp[k];
                              arrTemp[k]=temporary;
                        }
                  }
            }

            System.out.println("\nAverage= "+avg);
            System.out.println("Median= "+(arrTemp[4]+arrTemp[5])/2);// calculates 
the median which is the average of the values stored at index n/2 and (n/2) -1
            System.out.println("Maximum Temp= "+max+"\nMinimum Temp= "+min);


      }

}
```