using System;

using static System.Console;

/\*

This console program allows a user to enter up to 10 numbers.

User can enter 0 to stop early. It displays the average of

the entered numbers and the difference of each number from that average.

It uses Math.Abs to ensure difference is calculated correctly for

negative numbers.

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// Written by: Samuel Graham, Tampa, FL

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namespace COP2360\_A6

{

class A6

{

static void Main(string[] args)

{

const int SENTINEL = 0;

double[] numArray = new double[10]; //stores user input

int counter = 0;

double userInput = 0;

double totalInput = 0;

// This loop puts user input in array and adds to total

while (counter < 10)

{

Write("Please enter a number(enter 0 to quit): ");

userInput = Convert.ToDouble(ReadLine());

if (userInput == SENTINEL)

break;

else

{

totalInput += userInput;

numArray[counter] = userInput;

++counter;

}

}

double averageOfNums = totalInput / counter;

WriteLine("\nThe average of the numbers you entered is: {0}\n", averageOfNums);

// This loop takes each number the user entered and calculates

// the difference from averageOfNums

for (int i = 0; i < counter; ++i)

{

double numDiff = 0;

if (averageOfNums >= 0)

{

if (numArray[i] < 0)

{

numDiff = Math.Abs(numArray[i]) + averageOfNums;

}

else

{

numDiff = Math.Abs(numArray[i] - averageOfNums);

}

}

else

{

if (numArray[i] > 0)

{

numDiff = Math.Abs(averageOfNums) + numArray[i];

}

else

{

numDiff = Math.Abs(numArray[i]) - Math.Abs(averageOfNums);

}

}

WriteLine("The difference from {0} to {1} is {2}.", numArray[i],

averageOfNums, numDiff);

}

}

}

}

