In-class Exercise

(Section 3.3C)

1. Write a program that converts Fahrenheit to Celsius temperatures in increments of 5 degrees. The initial value of Fahrenheit temperature (integer) and the total conversions (integer) to be made are to be requested as user input during execution. The Celsius temperature should be a value of type *int.*  Use a ***for*** loop. 

Sample Run:

Enter a starting temperature in Fahrenheit> 20

Enter the number of conversions> 8

Fahrenheit Celsius

20 -6

25 -3

30 -1

35 1

40 4

45 7

50 10

55 12

Below is the start of the program.

*import java.util.Scanner;*

*public class FahrenheitToCelsius {*

*public static void main(String[] args) {*

*int i, fahrenheitTemp, celsiusTemp, numberOfConversions;*

*Scanner keyboard = new Scanner(System.in);*

*System.out.print("Enter a starting temperature in Fahrenheit> ");*

*fahrenheitTemp = keyboard.nextInt();*

*System.out.print("Enter the number of conversions> ");*

*numberOfConversions = keyboard.nextInt();*

1. Write a program to read in a list of nonnegative integers and output: the largest

integer, the smallest integer, and the average of all the integers. The end of the

input is indicated by the user entering a negative sentinel value. Note that the

sentinel value is not used in finding the largest, smallest, or average. It is only

an end marker. The average should be a value of type *int*. Use a ***while*** loop.

Sample Output:

Enter a nonnegative integer (or negative integer to quit)> **87**

Enter a nonnegative integer (or negative integer to quit)> **143**

Enter a nonnegative integer (or negative integer to quit)> **23010**

Enter a nonnegative integer (or negative integer to quit)> **17**

Enter a nonnegative integer (or negative integer to quit)> **-1**

The largest integer is 23010

The smallest integer is 17

The average is 5814

Below is the start of the program.

*import java.util.Scanner;*

*public class SmallLargeAverage {*

*public static void main(String[] args) {*

*int number, largestNumber, smallestNumber;*

*int average = 0;*

*int countOfNumbers = 0;*

*int sumOfNumbers = 0;*

*Scanner keyboard = new Scanner(System.in);*

*System.out.print("Enter a nonnegative integer(or negative integer to quit: ");*

*number = keyboard.nextInt();*

Fahrenheit to Celsius Conversion

import java.util.Scanner;

public class FahrenheitToCelsius {

public static void main(String[] args) {

int i, fahrenheitTemp, celsiusTemp, numberOfConversions;

Scanner keyboard = new Scanner(System.in);

System.out.print("Enter a starting temperature in Fahrenheit> ");

fahrenheitTemp = keyboard.nextInt();

System.out.print("Enter the number of conversions> ");

numberOfConversions = keyboard.nextInt();

System.out.println();

System.out.println("Fahrenheit Celsius");

for ( i = 1; i <= numberOfConversions; i++) {

celsiusTemp = (int) ( (5.0/9.0) \* (fahrenheitTemp - 32) );

System.out.printf("%6d %10d\n", fahrenheitTemp, celsiusTemp);

fahrenheitTemp += 5;

}

}

}

Finding largest, smallest, and average of non-negative numbers

import java.util.Scanner;

public class SmallLargeAverage {

public static void main(String[] args) {

int number, largestNumber, smallestNumber;

int average = 0;

int countOfNumbers = 0;

int sumOfNumbers = 0;

Scanner keyboard = new Scanner(System.in);

System.out.print("Enter a nonnegative integer(or negative integer to quit: ");

number = keyboard.nextInt();

largestNumber = number;

smallestNumber = number;

while (number >= 0) {

sumOfNumbers += number;

countOfNumbers++;

if (number > largestNumber)

largestNumber = number;

else if (number < smallestNumber)

smallestNumber = number;

System.out.print("Enter a nonnegative integer(or negative integer to quit: ");

number = keyboard.nextInt();

}

if (countOfNumbers > 0) {

average = sumOfNumbers / countOfNumbers;

System.out.println("\nThe largest integer is " + largestNumber);

System.out.println("\nThe smallest integer is " + smallestNumber);

System.out.println("The average is " + average);

}

else

System.out.println("You did not enter any positive integers");

}

}