מבוא למדעי המחשב בשפת java

סטונדנט 1: דליה ויליאם.

סטודנט 2: גיא רחמים.

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//Home assignment 6.

**import** java.util.Scanner;

**public** **class** Functioning

{

**public** **static** Scanner *input* = **new** Scanner(System.***in***);

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

{

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

**boolean** quit=**false**;

**double** radius=0;

**int** num1=0, num2=0, num3=0,num4=0;

**while** (!quit)

{

**switch** (*getMenuChoice*())

{

**case** 1: // case for calling the "squares" function.

{

//ask users for input.

System.***out***.println("Please enter 3 numbers: ");

num1=input.nextInt();

num2=input.nextInt();

num3=input.nextInt();

//function call

System.***out***.println("The answer is: " + *squares*(num1,num2,num3) + "\n");

**break**;

}

**case** 2: //case for calling the "checkRectangle" function.

{

//asking the user for input.

System.***out***.println("Please enter numbers for 4 sides of a rectangle:");

num1=input.nextInt();

num2=input.nextInt();

num3=input.nextInt();

num4=input.nextInt();

//function call.

System.***out***.println("Can these be 4 adjacent sides of a rectangle?\n"

+ "The answer is " + *checkRectangle*(num1,num2,num3,num4) +"\n");

**break**;

}

**case** 3: //case for calling the "circleSum" function.

{

//asking the users for input.

System.***out***.println("Please enter a circle's radius:");

radius=input.nextDouble();

//function call

System.***out***.println(*circleSum*(radius) + "\n");

**break**;

}

**case** 4: // case for calling the "factAVG" function.

{

System.***out***.println("Please enter 3 numbers to be factored and averged:");

num1=input.nextInt();

num2=input.nextInt();

num3=input.nextInt();

//function call.

System.***out***.println("The averaged value is: " + *factAVG*(num1, num2, num3) +"\n");

**break**;

}

**case** 5: //case for leaving the program.

{

System.***out***.println("We are at an end. Thank you for participating!");

quit=**true**;

}

}//end switch

}//end while

input.close();

}//end main

//a function that takes 3 numbers and check if they are consecutive powers of 2.

**public** **static** **boolean** squares (**int** num1,**int** num2,**int** num3) // Ex.1

{

**return** (Math.*pow*(num1, 2)==num2?(Math.*pow*(num2, 2)==num3?**true**:**false**):**false**);

}

//a function that takes 4 numbers and checks if they can be 4 sides of a rectangle.

**public** **static** **boolean** checkRectangle(**int** side1, **int** side2, **int** side3, **int** side4) //Ex.2

{

//if all 4 numbers are positive

**if** ((side1>0 && side2>0 && side3>0 &&side4 > 0) && ((side1==side3) && (side2==side4)))

{

**return** **true**;

}

**return** **false**;

}

//function that takes a radius and computes the circle's circumference + area.

**public** **static** **double** circleSum (**double** radius) //Ex.3

{

//returns the circles circumference + area for the given radius.

System.***out***.print("the circle's circumference + area, given radius " + radius + " is: ");

**return** (2\*Math.***PI***\*radius + Math.***PI***\*radius\*radius);

}

**public** **static** **double** factAVG(**int** num1, **int** num2, **int** num3) //Ex.4

{

**int** i;

**double** factorialsum1=1,

factorialsum2=1,

factorialsum3=1,

numberOfDivisors=3;

**for** (i=1;i<=num1;i++)

factorialsum1\*=i;

**for** (i=1;i<=num2;i++)

factorialsum2\*=i;

**for** (i=1;i<=num3;i++)

factorialsum3\*=i;

**return** ((factorialsum1+factorialsum2+factorialsum3)/numberOfDivisors);

}

//function that prints the options and takes the choice from the user.

**public** **static** **int** getMenuChoice() //Ex.5

{

**int** menuChoice;

//prints choices.

System.***out***.println("Please choose one of the following:\n" +

"1.Check if each number of 3 given are squares in sequence.\n"

+ "2.Check if 4 given numbers can be 4 sides of a rectangle. \n"

+"3.Calculate the circumference plus the area of a circle given its radius. \n"

+"4.Calculate the average of 3 given numbers' factorial values.\n"

+"5.Exit the program.");

//take the users selected choice.

menuChoice=*input*.nextInt();

//if the users selection is valid (between 1 and 5, inclusive)

//return the choice.

//else, print "bad input" and then return the the choice.

**if** (menuChoice>=1 && menuChoice<=5)

**return** menuChoice;

**else**

System.***out***.println(menuChoice);

**return** menuChoice;

}

}//end class









