JAVA - J2EE Batch 2

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Assignment-2

3 PROBLEM STATEMENT - DEVELOP A CALCULATOR USING SWITCH CASE

Get two numbers of type of integer or double from the user and perform the operation (Add,Multiply,Divide,Subtract) selected by the user using switchcase, if-else statement,break and looping switchcase using recursion

This exercise contains a class named Calculator with the following methods:

```
+calculate(int, int, int) : String

    - Should take three integers(firstValue,secondValue,operator) as input
and return a String of format "firstValue operation secondValue = result"
    - Switch case should be used to provide user operations as option to
select
    - The number of switch cases should be similar to number of operation
options provided in menu
    - Operator value that is not present as a case should be dealt by
default case
```

```
+getValues(Scanner) : String

        - Should get three integers from user as input from console using
scanner
       - After receiving the operands the operation menu should be shown
to the user to choose from
   - All the three values should be send to calculate method and return
value should be printed out to user
```

3.1 EXAMPLE

```
Expected Output:
Enter the first number:45
Enter the second number:22
Enter number beside the operation to perform:  1. Add  2. Subtract 3.
Multiply 4. Divide
1
45 + 22 = 67
Do you want to try again(y/n)
n
```

```
Expected Output:
Enter the first number:65
Enter the second number:34
Enter number beside the operation to perform:  1. Add  2. Subtract 3.
Multiply 4. Divide
2
65 - 34 = 31
Do you want to try again(y/n)
Y
Enter the first number:45
Enter the second number:22
Enter number beside the operation to perform:  1. Add  2. Subtract 3.
Multiply 4. Divide
1
45 + 22 = 67
Do you want to try again(y/n)
n
```

```
Expected Output:
Enter the first number:45
Enter the second number:22
Enter number beside the operation to perform:  1. Add  2. Subtract 3.
Multiply 4. Divide
7
Entered wrong option 7
```

```
Expected Output:
Enter the first number:90
Enter the second number:0
Enter number beside the operation to perform:  1. Add  2. Subtract 3.
Multiply 4. Divide
4
The divider (secondValue) cannot be zero
```

3.2 INSTRUCTIONS

- Avoid printing unnecessary values other than expected output as given in sample
- Take care of whitespace/trailing whitespace
- Do not change the provided class/method names unless instructed
- Follow best practices while coding

4 PROGRAM

```
Copy the program into Codelabs/Any of the IDE, complete the instructions as
per problem statement

import java.util.Scanner;
```

```
public class Calculator {
    private static Scanner scan;

    // define,declare scanner and call getValues with scanner as parameter
    public static void main(String[] args) {
        scan = new Scanner(System.in);
        new Calculator().getValues(scan);
    }

    //Get values and which operator from the menu
    public void getValues(Scanner scan) {

    }

    //perform operation based on the chosen switch case corresponding to
the menu and return string
    public String calculate(int firstValue, int secondValue, int operator)
{
        return null;
    }
}

import java.util.Scanner;

public class CalculatorSolution {
    private static Scanner scan;
    int firstValue;
    int secondValue;
    int operator;
    // define,declare scanner and call getValues with scanner as parameter
    public static void main(String[] args) {
     scan = new Scanner(System.in);
     new Calculator().getValues(scan);

    }
    //Get values and which operator from the menu
    public void getValues(Scanner scan) {
        char repeat;
        do {
         System.out.println("Enter the first number :");
         firstValue =scan.nextInt();
         System.out.println("Enter the second number :");
         secondValue =scan.nextInt();
         System.out.println("Enter the  number beside the operation to
perform : \n"
          +"1.Add \n"
          +"2.subtract \n"
          +"3.Multiply \n"
          +"4.Divide");
         operator  =scan.nextInt();
         String result=new
Calculator().calculate(firstValue,secondValue,operator);
         System.out.println(result);
         System.out.println("Do u want to try again(y/n)");
         repeat =scan.next().charAt(0);
         if (repeat == 'n')
                System.exit(0);
        }while(repeat == 'y');
    }
```

```
    //perform operation based on the chosen switch case corresponding to
the menu and return string
    public String calculate(int firstValue, int secondValue,int operator) {
        int result=0;
        String output="";
        switch(operator) {
        case 1 :
          result=firstValue+secondValue;
          output=firstValue+" "+"+"+" "+secondValue+" "+"="+" "+result;
          //System.out.println(output);
                break;
       case 2 :
                  result=firstValue-secondValue;
                  output=firstValue+" "+"-"+" "+secondValue+" "+"="+"
"+result;
                  //System.out.println(output);
                break;
       case 3 :
                  result=firstValue*secondValue;
                output=firstValue+" "+"*"+" "+secondValue+" "+"="+"
"+result;
                 //System.out.println(output);
                break;
       case 4 :
           if(secondValue!=0)
           {
                     result=firstValue/secondValue;
                   output=firstValue+" "+"/"+" "+secondValue+" "+"="+"
"+result;
           }
           else {
                    output="The divider (secondValue) cannot be zero";
                 }
           //System.out.println(output);
                  break;
        default:
                        output="Entered wrong option"+"
"+Integer.toString(operator);
          //return output;
         }
        return output;

    }

}
```

→

```java
import java.util.Scanner;

public class Calculator {
    private static Scanner scan;

    Run | Debug
    public static void main(String[] args) {
        scan = new Scanner(System.in);
        new Calculator().getValues(scan);
    }

    public void getValues(Scanner scan) {
        char repeat;
        do {
            System.out.println(x:"Enter the first number:");
            int firstValue = scan.nextInt();
            System.out.println(x:"Enter the second number:");
            int secondValue = scan.nextInt();
            System.out.println("Enter the number beside the operation to perform:\n" +
                    "1. Add\n" +
                    "2. Subtract\n" +
                    "3. Multiply\n" +
                    "4. Divide");
            int operator = scan.nextInt();
            String result = calculate(firstValue, secondValue, operator);
            System.out.println(result);
            System.out.println(x:"Do you want to try again(y/n)");
            repeat = scan.next().charAt(index:0);
        } while (repeat == 'y');
    }

    public String calculate(int firstValue, int secondValue, int operator) {
        int result = 0;
        String output = "";
        switch (operator) {
            case 1:
                result = firstValue + secondValue;
                output = firstValue + " + " + secondValue + " = " + result;
                break;
            case 2:
                result = firstValue - secondValue;
                output = firstValue + " - " + secondValue + " = " + result;
                break;
            case 3:
                result = firstValue * secondValue;
                output = firstValue + " * " + secondValue + " = " + result;
                break;
            case 4:
                if (secondValue != 0) {
                    result = firstValue / secondValue;
                    output = firstValue + " / " + secondValue + " = " + result;
                } else {
                    output = "The divider (secondValue) cannot be zero";
                }
                break;
            default:
                output = "Entered wrong option " + operator;
        }
        return output;
    }
}
```

```
Enter the first number:
45
Enter the second number:
22
Enter the number beside the operation to perform:
1. Add
2. Subtract
3. Multiply
4. Divide
1
45 + 22 = 67
Do you want to try again(y/n)
n
```

```
Enter the first number:
65
Enter the second number:
34
Enter the number beside the operation to perform:
1. Add
2. Subtract
3. Multiply
4. Divide
2
65 - 34 = 31
Do you want to try again(y/n)
y
Enter the first number:
45
Enter the second number:
22
Enter the number beside the operation to perform:
1. Add
2. Subtract
3. Multiply
4. Divide
1
45 + 22 = 67
Do you want to try again(y/n)
n
```

```
Enter the first number:
45
Enter the second number:
22
Enter the number beside the operation to perform:
1. Add
2. Subtract
3. Multiply
4. Divide
7
Entered wrong option 7
```

```
Enter the first number:
90
Enter the second number:
0
Enter the number beside the operation to perform:
1. Add
2. Subtract
3. Multiply
4. Divide
4
The divider (secondValue) cannot be zero
```