Assignment using Methods

Assignment 6 – Due in Week 13

Once you are done with your programs, upload them to eCentennial under Assessments / Assignment / Assignment 6

For this exercise, you need to complete all the questions in a single project. You will invoke the methods from your main.

1. Write a method with the following specifications:
    name: **DisplayMenu**
    arguments: none
    return value: none
    tasks: display the following menu choice on the screen

    ```
    Calculation Menu
    3) Calculate Sum
    4) Calculate Sum of Squares
    5) Calculate Sum of Cubes
    0) To Exit

    Enter the number that corresponds to your choice:
    ```

    You may beautify the output to your own likings. You don't have to implement the functionalities of the various menu choices at this stage
    Call this method from your main.

2. Modify your main so that the above method is call repeatedly. The program will terminate when the user enters 0. Any other choice should produce an error message. Because you will not be doing any arithmetic you may accept the user response either as an **int**, or a **char** or a **string**.

    > You don't need to define a new method. Use the existing Main method.

    > Using a **do-while** loop to do the repetitions and a **switch** to check for user's choice is the recommended way to accomplish this

3. Write a method with the following specifications:
    name   : **CalculateSum**
    arguments   : a single int representing the number of inputs that will constitute the sum
    return value : int representing the sum of all the user inputs
    displays   : only the prompt for the user inputs, but does not display the sum
    tasks   : prompt and accepts inputs (as many as specified by the argument), and sum them, Finally the method will return the sum of all the inputs (the sum)

In your main you will call this method when the user enters 3 in response to the menu choices. You will invoke this method with argument 5 and then display the resulting value from the method.

4. Write a method with the following specifications:
   name   : `CalculateSumOfSquares`
   arguments   : int representing the number of input that will constitute the sum
   return value   : int representing the sum of the squares of its input
   displays   : the user prompts but **NOT** the sum of the squares
   tasks: prompt the user for inputs and accumulates the sum of the squares of the input. This is repeated as specified by the argument. Returns the final sum

   In your main when the user enters 4 in response to the menu choices, you will prompt the user for the number of inputs that she will be working with. You will invoke this method with this value and display the resulting value.

5. Write a method with the following specifications:
   name   : `CalculateSumOfCubes`
   arguments   : none
   return value   : int representing the sum of the cubes of its input
   displays   : the user prompts but **NOT** the sum of the cubes
   tasks:
   - prompt the user for the number of inputs that she will be working with
   - read in the user input
   - Prompts the user for their input
   - Accumulates the sum of the cubes input
   - Repeat the above two steps are many times as required
   - Returns the final sum

   In your main when the user enters 5 in response to the menu choices, you will invoke this method and display the resulting value.

6. Write a method with the following specifications:
   name   : `CalculateAverage`
   arguments   : none
   return value   : double representing the mathematical average of its inputs
   displays   : the user prompts but **NOT** the average
   tasks   : prompt and accept for the number of inputs that she will be working with. Prompts the user for the required number of inputs. Calculate and return the average of the inputs.

   Modify your **DisplayMenu** method by adding another choice below **CalculateSumOfCubes**. In your main when the user enters the appropriate choice in response to the menu choices, you will invoke this method and display the resulting value.