Assignment using Methods

### For this exercise, you need to complete all the questions in a single project. You will invoke the methods from your main. Questions 1-6 is due at the end of your next class.

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.

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

1. 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**.

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

1. 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.
2. 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.
3. 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.

1. 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.
2. Write a method with the following specifications:  
   **name** : **DisplayEquation**  
   **arguments** : none  
   **return value** : nothing  
   **displays** : the following table:

x 5 3x -2x^2 y  
 0.0 5.0 0.0 0.0 5.0  
 0.3 5.0 0.8 -0.1 5.6  
 0.5 5.0 1.5 -0.5 6.0  
 0.8 5.0 2.3 -1.1 6.1  
 1.0 5.0 3.0 -2.0 6.0  
 1.3 5.0 3.8 -3.1 5.6  
 1.5 5.0 4.5 -4.5 5.0  
 1.8 5.0 5.3 -6.1 4.1  
 2.0 5.0 6.0 -8.0 3.0  
  
This table is calculated using the quadratic equation y = 5 + 3x -2x2  
The value of x starts at 0 and moves in increments of 0.25 to 2.0. (The first column is misleading because the last digit is rounded up i.e. **0.25** is displayed as **0.3** and. **0.75** is displayed as **0.8**)  
  
Modify your **DisplayMenu** method by adding another choice below the last item. In your main when the user enters the appropriate choice in response to the menu choices, you will invoke this method and to display the above values