TASKS

(1) Write a program that takes as input a four-digit number in format abcd (e.g. 2011) and performs the following actions:

– Calculates the sum of the digits (in our example 2+0+1+1 = 4).

– Prints on the console the number in reversed order: dcba (in our example 1102).

– Puts the last digit in the first position: dabc (in our example 1201).

– Exchanges the second and the third digits: acbd (in our example 2101).

(2) Write a program that applies bonus points to given scores in the range [1…9] by the following rules:

– If the score is between 1 and 3, the program multiplies it by 10.

– If the score is between 4 and 6, the program multiplies it by 100.

– If the score is between 7 and 9, the program multiplies it by 1000.

– If the score is 0 or more than 9, the program prints an error message.

(3) Write a C# Sharp program to compute the sum of the two given integer values. If the two values are the same, then return triple their sum.

*Sample Input*:  
- 1, 2  
- 3, 2  
- 2, 2  
*Expected Output*:

* 3
* 5
* 12

(4) Write a C# Sharp program to check two given integers and return true if one of them is 30 or if their sum is 30.

Sample Input:  
- 30, 0  
- 25, 5  
- 20, 30  
- 20, 25  
Expected Output:

* True
* True
* True
* False

(5)  Solve the following string manipulation questions

(a) Write a C# Sharp program to create a new string where 'if' is added to the front of a given string. If the string already begins with 'if', return the string unchanged.

*Sample Input*:  
- "if else"  
- "else"  
*Expected Output*:

- if else

- if else

(b) Write a C# Sharp program to remove the character in a given position of a given string. The given position will be in the range 0.. string length -1 inclusive.

*Sample Input*:  
- "Python", 1  
- "Python", o  
- "Python", 4  
*Expected Output*:

* Pthon
* ython

- Pythn

(c) Write a C# Sharp program to exchange the first and last characters in a given string and return the new string.

*Sample Input*:  
- "abcd"  
- "a"  
- "xy"  
*Expected Output*:

* dbca
* a

- yx

(d) Write a C# Sharp program to create a new string which is 4 copies of the 2 front characters of a given string. If the given string length is less than 2 return the original string.

*Sample Input*:  
- "C Sharp"  
- "JS"  
- "a"  
*Expected Output*:

* C C C C
* JSJSJSJS
* a

(06) A given company has name, address, phone number, fax number, web site and manager. The manager has name, surname and phone number. Write a program that reads information about the company and its manager and then prints it on the console.

(07) A company dealing with marketing wants to keep a data record of its employees. Each record should have the following characteristic – first name, last name, age, gender (‘m’ or ‘f’) and unique employee number (27560000 to 27569999). Declare appropriate variables needed to maintain the information for an employee by using the appropriate data types and attribute names.

(8) Create a small database, which will be used to store data about books.

For a certain book, we want to keep the following information:

* Title
* Author

The program must be able to store 1000 books, and the user will be allowed to:

* Add data for one book
* Display all the entered books (just title and author, in the same line)
* Search for the book(s) with a certain title
* Delete a book at a known position (for example, book number 6)
* Exit the program

(9) Using Visual Studio, create a project and the corresponding classes (using several files) for this classes diagram.

Each class must include the attributes and methods shown in the diagram, as well as Get and Set methods for Vehicle and "Has" methods ("HasDualSlidingDoors") for MiniVan.

You must create also a test program, which will create an object belonging to each class and tell it to "Drive".

(10)

* Create a new project, and include in it the class Person that you just created.
* Create a class "Student" and another class "Teacher", both descendants of "Person".
* The class "Student" will have a public method "GoToClasses", which will write on screen "I’m going to class."
* The class "Teacher" will have a public method "Explain", which will show on screen "Explanation begins". Also, it will have a private attribute "subject", a string.
* The class Person must have a method "SetAge (int n)" which will indicate the value of their age (eg, 20 years old).
* The student will have a public method "ShowAge" which will write on the screen "My age is: 20 years old" (or the corresponding number).
* You must create another test class called "StudentAndTeacherTest" that will contain "Main" and:
  + Create a Person and make it say hello
  + Create a student, set his age to 21, tell him to Greet and display his age
  + Create a teacher, 30 years old, ask him to say hello and then explain.

(11) Qu1: Write a program to display user’s complete mailing address. Accept user’s name, city, street, pin and house no. and store it in a variable and display it.

Qu2: Write a program to display student information. Accept Student’s name, Roll no, Age, class, and university name and display it on console.

#Links

<http://www.pakproject.com/c-sharp/c-practice-problems/>

<https://www.w3resource.com/csharp-exercises/basic-algo/index.php>

<https://exercisescsharp.blogspot.com/2013/04/604-vehicles.html>

https://exercisescsharp.blogspot.com/2013/04/601-classes-student-teacher.html