Assignment 1: 'Palindrome' (20 points)

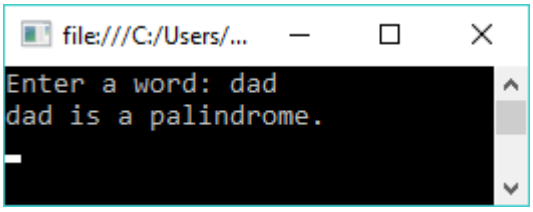
Create a Console project with name '**Assignment1**', and give the solution the name 'Programming1-exam'.
(the other assignments will also be added as projects to this solution, see later)

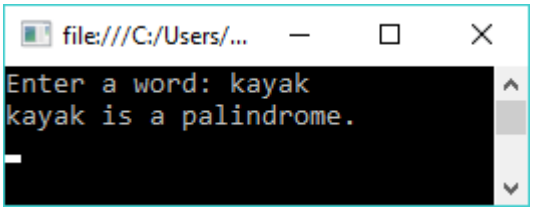
Write a C#-program that asks the user to enter a word. The program determines if the entered word is a palindrome or not. A palindrome is a word that reads the same backwards as forward (some examples: "kayak" and "dad").

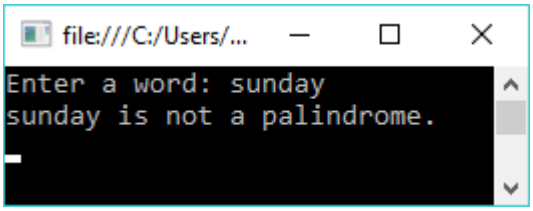
Procedure: create a 2nd word (string) that starts with an empty string. Add the letters of the (read) word one by one to the front of this 2nd word. At the end you can compare the entered word against the 2nd word. Display if the entered word is a palindrome or not.

Only points will be given to a solution with a procedure described above!

Some output examples are shown below.





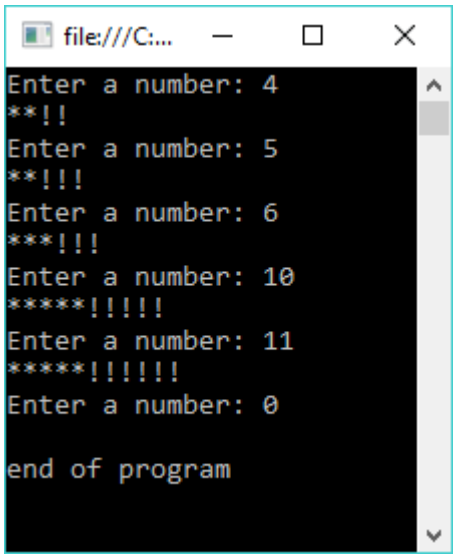


Assignment 2: 'Strings' (20 points)

Add to solution 'Programming1-exam' a Console project with name '**Assignment2**'.

Write a program that reads numbers until the user enters 0 or a negative number. For each positive number (> 0) print a string with the first half filled with character '*' and the second half filled with character '!'.

An output example is shown below.



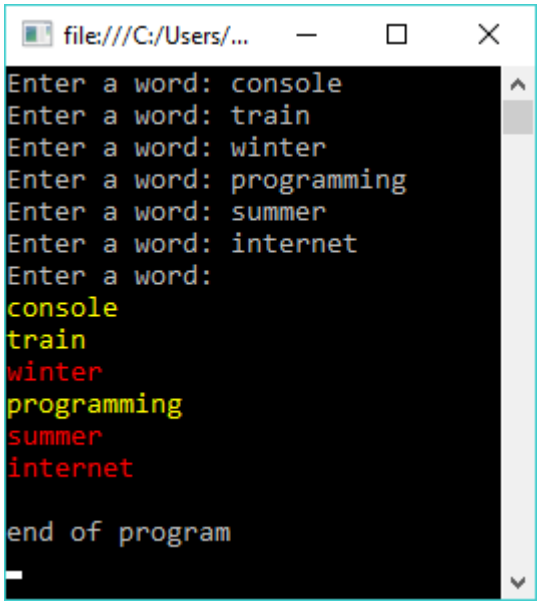
Assignment 3: 'Odd/even words' (20 points)

Add to solution 'Programming1-exam' a Console project with name '**Assignment3**'.

Create an string-array with 20 positions. Ask the user to enter several words, and store these words in the array. Stop reading words when the array is completely filled, or when the user enters an empty word (Length = 0). Finally, display all words in the same sequence as they were entered, use yellow for words with odd length, and use red for words with even length.

To display a text in yellow, first set the foreground-color of the console (`Console.ForegroundColor = ConsoleColor.Yellow`), and then write the text (`Console.WriteLine`). To reset the foreground-color, use `Console.ResetColor()`.

An output example is shown below.



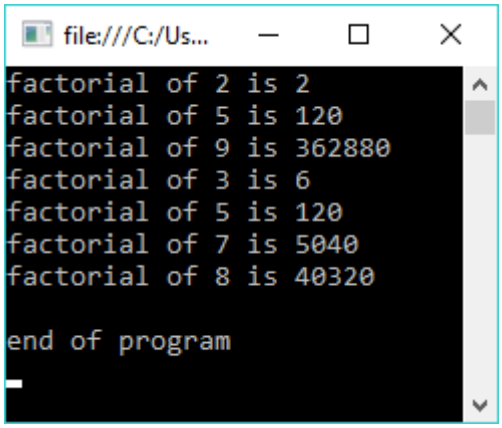
Assignment 4: 'Factorial' (20 points)

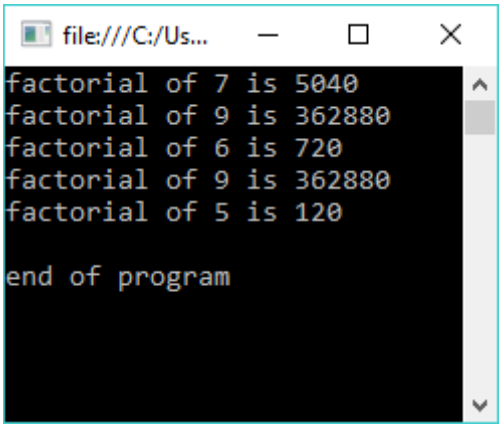
Add to solution 'Programming1-exam' a Console project with name '**Assignment4**'.

Write a method "Factorial" with one input-parameter "number" (integer). This method returns the factorial of the (parameter) number. The factorial of a number is the product of all integers less than or equal to this number. Some examples: the factorial of 3 = 6 (1 x 2 x 3), the factorial of 5 = 120 (1 x 2 x 3 x 4 x 5).

Make a loop in the Main-method to generate random numbers (0..10), and call for each random number (> 0) the Factorial-method, and display the calculated factorial. When the random number is 0, the program stops.

Some output examples are shown below.





Assignment 5: 'Running speed' (20 points)

Add to solution 'Programming1-exam' a Windows Forms project with name '**Assignment5**'.

Create a Windows Forms application that calculates the running speed in km/hour. The program reads the distance (according to the selected radiobutton) and the duration (in hours, minutes and seconds). The speed is calculated by dividing the distance with the duration (in hours!). To calculate the duration in hours, first calculate the total seconds, and then convert this into hours.

The Windows Forms application should look more or less the same as the examples below.