Exercises about variables

- Solve them in Visual Studio or use https://dotnetfiddle.net/.

Exercise 02.01: Taxes and discount

- There is a fixed percentage of reduction given to clients of 7%.
- There is also a fixed percentage of 21% taxes.
- Ask thru the console a name.
    - E.g., Vincent
- Ask thru the console an amount (no decimals).
    - E.g., 1000
- First, subtract the discount of it (7%) (decimals possible).
- Then, add the taxes to it (21%) (decimals possible).
- Show this message on the console.
    - Hello Vincent, your amount was 1000.
- On the next line.
    - You need to pay xxx. (The result of your calculation)
- Show the result (no formatting at all).
- After you have a good result.
    - Show the result rounded to 2 decimals.

	Tip 1:
	YourVariable.ToString("F2")
	F2 means floating with 2 decimals.
	Tip 2:
	"You need to pay {0:F2}", yourResultOfTheCalculation
	F2 means floating with 2 decimals.

Notes

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Exercise 02.02: Christmas tree (Jingle bells)

- Ask thru the console a number (no decimals).
  - That number must be between 0 and 21 (borders not included).
  - E.g., 11.
- As long as the number is not correct, ask it again.
  - When the number is lower than 1.
  - When the number is higher than 20.
  - When the number is not a number. E.g. "abc".
- Then you loop from 0 till the given number (A counter in a loop).
  - Show on the console this:
    - A "*" – A number of spaces – A "*".
    - The number of spaces is the value of the counter in the loop.
- At the end, when another key is entered on the keyboard, the application stops.

An example

Given number

- 10 → Loop from 0 till 10.

Result

```
**
*  *
*   *
*    *
*     *
*      *
*       *
*        *
*         *
*          *
*           *
```

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Exercise 02.03: More jingle with the bells

- The same exercise as 02.02.
- You also ask for 2 characters:
    - First character to start and stop with.
    - Second character to put in between.
- The first character cannot be a space.
    - If it is, it must be re-asked after showing a nice error message.
- The second character cannot be a space.
    - If it is, it must be re-asked after showing a nice error message.
- The second character must be different than the first character.
    - If it is the same, it must be re-asked after showing a nice error message.

Given number

- 10 → Loop from 0 till 10.

Given first character

- +

Given second character

- O

Result

```
++
+O+
+OO+
+OOO+
+OOOO+
+OOOOO+
+OOOOOO+
+OOOOOOO+
+OOOOOOOO+
+OOOOOOOOO+
+OOOOOOOOOO+
```

Notes

Exercise 02.04: Fibonacci Sequence (a famous one)

- Ask thru the console a number (no decimals).
    - That number can be very big.
- As long as the number is not correct, ask it again.
    - When the number is not a number.
    - Show a nice error message.
- We show numbers on the console (Fibonacci Sequence).
    - We start with 0.
    - We continue with 1.
    - All the next numbers are the sum of the last 2 put on the screen.
        - 1 → 2 → 3 → 5 → 8 → 13 → … → 196418 → …
- You stop the loop, when the last shown number in the Fibonacci Sequence is larger than the asked number.

Given number

- 250.

Result

```
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
```

Exercise 02.05: This counts as a discount

- Ask for an age.
  - o As long as the number is not correct, ask it again.
    - When the number is not a number.
    - Show a nice error message.
- Ask for a rating.
  - o The letters "A", "B" and "C" are correct.
    - As long as the rating is not correct, ask it again.
    - When the letter is not "A", "B" or "C".
    - Show a nice error message.
  - o Tip: Console.ReadKey() returns a character.
- In the movie theater you have a discount when these conditions apply.
  - o You are younger than 13 with rating "A".
  - o You are older than 64 with rating "A".
- Show on the screen if you have a discount or not.

Exercise 02.06: And or Or, And and Or, Côde d'or

- You are a person that likes to eat chocolate. But not all flavours.
- Ask for the flavour of chocolate.
  - Correct options are:
    - Dark.
    - Brown.
    - White.
      - All of them independent of the case.
      - Dark is correct, DARK also, even DaRk is correct.
      - Use the ToLower() method on a text variable to do this.
- Ask for the extra in the chocolate.
  - Correct options are:
    - No extra.
    - Nuts.
    - Praliné.
      - All of them independent of the case.
      - Nuts is correct, NUTS also, even nUtS is correct.
- These are the situations, you like the chocolate.
  - All flavors, with no extra in it.
  - Dark, with nuts.
- All other situations, you don't like it.

Your task

- Show on the screen, after the input of the options.
  - The text "I like it", if you like it.
  - If not, the text "No thanks".