Lab: Methods

Test your tasks in the Judge system: https://judge.softuni.org/Contests/4417

1. Sign of Integer Number

Write a program that:

- Reads an **integer number N** from the console
- Create a method that prints the **sign** of an entered number **N**:
- Print**:**
  - If the number is positive **(N > 0)**: "**`The number {number} is positive.`**"
  - If the number is negative **(N < 0)**: "**`The number {number} is negative.`**"
  - If the number is zero (**N = 0**): "**`The number {number} is zero.`**"

Example

Input	Output
2	`The number 2 is positive.`

Input	Output
-5	`The number -5 is negative.`

Input	Output
0	`The number 0 is zero.`

2. Grades

Write a program that:

- Reads a **grade** (floating-point number) from the console
- Create a **method** that receives a **grade** between **2.00** and **6.00**
- Prints the corresponding **grade in words**
  - "**`Fail`**" - If the grade is in range **2.00 – 2.99** (inclusively)
  - "**`Average`**" - If the grade is in range **3.00 – 3.49** (inclusively)
  - "**`Good`**" - If the grade is in range **3.50 – 4.49** (inclusively)
  - "**`Very good`**" - If the grade is in range **4.50 – 5.49** (inclusively)
  - "**`Excellent`**" - If the grade is in range **5.50 – 6.00** (inclusively)

Example

Input	Output

Input	Output

Input	Output

3.33	Average

4.50	Very good

2.99	Fail

Input	Output
5.70	Excellent

Input	Output
3.70	Good

Input	Output
2.00	Fail

3. Printing Triangle

Write a program that:

- Reads an **integer number N** from the console
- Create a method for printing triangle depending on value of the number N

Example

Input	Output
3	1 1 2 1 2 3 1 2 1

Input	Output
4	1 1 2 1 2 3 1 2 3 4 1 2 3 1 2 1

Input	Output
2	1 1 2 1

4. Calculate Rectangle Area

Write a program that:

- Reads **two integer** numbers from the console**: width** and **length**
- Create a method which returns **rectangle area** with given **width** and **length**

Hint: Rectangle area can be calculated when you multiply width and length of the rectangle.

Example

Input	Output
3 4	12

Input	Output
6 8	48

Input	Output
5 10	50

Input	Output
8 7	56

Input	Output
3 7	21

Input	Output
2 8	16

5. Repeat String

Write a program that:

- Reads a **text (string)** and **repeat count (integer number)** from the console
- Write a method that receives a string and a repeat count
- The method should return a new string, containing the initial one, repeated **count** times without space

Example

Input	Output
abc 3	abcabcabc

Input	Output
String 2	StringString

Input	Output
Re 3	ReReRe

6. Math Power

Write a program that:

- Reads **two integer numbers** from the console: **base numbe**r and **power**
- Create a method, which receives two numbers as parameters:
  - The first number – the **base**
  - The second number – the **power**
- The method should return the **base** raised to the given **power**

Example

Input	Output
3 4	81

Input	Output
2 8	256

Input	Output
4 2	16

7. Greater of Two Values

Write a program that:

- Reads a **type (string)** and **two values** of this type from the console
- Entered type can be one of the following values: "**`int`**", "**`char`**" or "**`string`**"
- Create methods **which can compare `int`, `char` or `string`**
- Return the **biggest of the two values**

Example

Input	Output
int 2 16	16

Input	Output
char a z	z

Input	Output
string aaa bbb	bbb

8. Multiply Evens by Odds

Write a program that **multiplies the sum** of **all even digits** of a number **by the sum of all odd digits** of the same number:

- Read **an integer number** from the console
- Create a method called **`GetMultipleOfEvenAndOdds()`**
- Create a method **`GetSumOfEvenDigits()`**
- Create **`GetSumOfOddDigits()`**
- You may need to use **`Math.Abs()`** for negative numbers

Example

Input	Output	Comment
-12345	54	Evens: 2 4 Odds: 1 3 5 Even sum: 6 Odd sum: 9 6 * 9 = 54

Input	Output	Comment
3453466	220	Evens: 4 4 6 6 Odds: 3 5 3 Even sum: 20 Odd sum: 11 20 * 11 = 220

9. Orders

Write a program that:

- Reads a **string** on the first line from the console, representing a **product** - **`"coffee"`**, **`"water"`**, **`"coke"`** or **`"snacks"`**
- Reads an **integer** on the second line from the console, representing the **quantity** of the product
- Create a method that calculates and prints the total price of an order
- The method should receive two parameters: **product** and **quantity**
- The prices for a single item of each product are:
  - ✓ **coffee – 1.50**
  - ✓ **water – 1.00**
  - ✓ **coke – 1.40**
  - ✓ **snacks – 2.00**
- Print the result, **formatted to the second digit**

Example

Input	Output
water 5	5.00

Input	Output
coffee 2	3.00

Input	Output
snacks 6	12.00