

Exercises: PHP Syntax, Basic Web

Problems for exercises and homework for the [“Software Technologies” course @ SoftUni](#).

You can submit your solutions here <https://judge.softuni.bg/Contests/236/PHP-First-Steps-Exercises>.

Part I: Simple operations with PHP

Taking into account the nature of PHP we will receive input **not** from the console, as in C# or Java, but from **forms**, which will be **rendered** in the **browser**.

Every task in judge will have a **skeleton**, which will be an **HTML** skeleton of the form.

In each example, you will see new column named **“Parameter name”**. Every parameter, which should be passed to your program, should be received from **input tag** with exactly the same **name parameter**. All of the skeletons will be with the correct **name parameters**. If you write your own HTML make sure you use the **same names**.

1. Multiply a Number by 2

You are given a number **num**. Write a PHP script that **multiplies** the **number by 2** and prints the result. The input comes as a parameter named **num**.

Examples

Parameter name	Input	Output
num	2	4

Input	Output
3	6

You will be given a HTML form that submits the input data:

```
<form>
  N: <input type="text" name="num" />
  <input type="submit" />
</form>
```

The name of the input parameter will be exactly as shown above – **num**.

Print the output in the HTML document, just after the HTML form.

2. Multiply Two Numbers

You are given a number **num1** and a number **num2**. Write a PHP script that multiplies **num1 * num2** and prints the result. The input comes as parameters named **num1** and **num2**. Print the output in the HTML page.

Examples

Parameters names	Input	Output
num1	2	6
num2	3	

Input	Output
13	169
13	

3. Multiply / Divide Numbers

You are given a number **num1** and a number **num2**. Write a PHP script that:

- Multiplies **num1** * **num2** if **num2** is greater than or equal to **num1**.
- Divides **num1** / **num2** if **num1** is greater than **num2**.

The input comes as parameters named **num1** and **num2**. Print the output in the HTML page.

Examples

Parameters names	Input	Output
num1	2	6
num2	3	

Input	Output
13	169
13	

Input	Output
3	1.5
2	

4. Product of 3 Numbers

You are given a number **num1**, **num2** and **num3**. Write a PHP script that finds if **num1** * **num2** * **num3** (the product) is **negative** or **positive**. Try to do this **WITHOUT** multiplying the 3 numbers.

The input comes as parameters named **num1**, **num2** and **num3**.

Examples

Parameters name	Input	Output
num1	2	Negative
num2	3	
num3	-1	

Input	Output
5	Positive
4	
3	

Input	Output
-3	Positive
-4	
5	

5. Numbers from 1 to N

You are given a number **num**. Write a PHP script that loops through all of the numbers from **1** to **num** and prints them. The input comes as a parameter named **num**. The parameter **num** will hold a positive integer.

Examples

Parameter name	Input	Output
num	5	1 2 3 4 5

Input	Output
2	1 2

6. Numbers from N to 1

You are given a number **num**. Write a PHP script that loops through all of the numbers from **num** to **1** and prints them. The input comes as a parameter named **num**. The parameter **num** will hold a positive integer.

Examples

Parameter name	Input	Output
num	5	5 4 3 2 1

Input	Output
2	2 1

7. Even Numbers from 1 to N

You are given a number **num**. Write a PHP script that loops through all of the numbers from **1** to **num** and prints only the even ones. The input comes as a parameter named **num**. The parameter **num** will hold a positive integer.

Examples

Parameter name	Input	Output
num	5	2 4

Input	Output
2	2

8. Odd Numbers from N to 1

You are given a number **num**. Write a PHP script that loops through all of the numbers from **num** to **1** and prints only the odd ones. The input comes as a parameter named **num**. The parameter **num** will hold a positive integer.

Examples

Parameter name	Input	Output
num	5	5 3 1

Input	Output
2	1

9. N Factorial

You are given a number **num**. Write a PHP script that prints **factorial** of **num**. Factorial is calculated by multiplying all numbers to the given number. Factorial (N) = $1 * 2 * 3 * \dots * \text{num}$. The input comes as a parameter named **num**. The parameter **num** will hold a positive integer.

Examples

Parameter name	Input	Output
num	5	120

Input	Output
3	6

10. Not Divisor Numbers

You are given a number **num**. Write a PHP script that prints all the numbers from **num** to **1**, which are not divisors of **num**. The input comes as a parameter named **num**. The parameter **num** will hold a positive integer.

Examples

Parameter name	Input	Output
num	10	9 8 7 6 4 3

Input	Output
12	11 10 9 8 7 5

11. Fibonacci Sequence

You are given a number **num**. Write a PHP script that prints **num** numbers from The Fibonacci sequence, each on a new line, starting from 1. In the Fibonacci sequence, every number is formed from the sum of the previous 2. The input comes as a parameter named **num**. The parameter **num** will hold a positive integer.

Examples

Parameter name	Input	Output
num	5	1 1 2 3 5

Input	Output
10	1 1 2 3 5 8 13 21 34 55

12. Tribonacci Sequence

In the “**Tribonacci**” sequence, every number is formed by the **sum of the previous 3**.

You are given a number **num**. Write a PHP script that prints **num** numbers from the Tribonacci sequence, each on a new line, starting from 1. The input comes as a parameter named **num**. The value **num** will always be positive integer.

Examples

Parameter name	Input	Output
num	4	1 1 2 4

Input	Output
8	1 1 2 4 7 13 24 44

13. Prime Numbers from N to 1

You are given a number **num**. Write a PHP script that prints only the **prime** numbers from **num** to **1**. A prime number is a number that can be divided only by 1 and itself. **1 is not a prime number**. The input comes as a parameter named **num**. The parameter **num** will hold a positive integer.

Examples

Parameter name	Input	Output
Num	10	7 5 3 2

Input	Output
20	19 17 13 11 7 5 3 2


Part 2: Manipulating HTML with PHP

14. HTML Buttons

You are given a number **num**. Write a PHP script that **generates HTML <button> elements**. The buttons must hold a number from **1** to **num** as their caption. The input comes as a parameter named **num**, holding a positive integer.

There is no indentation on the elements.

Examples

Parameter name	Input	Output	Picture
num	3	<button>1</button> <button>2</button> <button>3</button>	
num	5	<button>1</button> <button>2</button> <button>3</button> <button>4</button> <button>5</button>	
num	1	<button>1</button>	

15. Sub-Lists

You are given a number **num1** and a number **num2**. Write a PHP script that generates a list with **num1** elements, and each of those elements has a sub-list with **num2** elements. Each of the Lists has a caption "**List #**" where # is the current number from **1** to **num1**. And each of the elements of those lists has a caption "**Element #.#**" where the first # is the current list number and the second # is the current element from **1** to **num2**. The input comes as two parameters named **num1** and **num2**, holding positive integers.

Examples

Parameters names	Input	Output	Picture
num1	1	<pre> List 1 Element 1.1 Element 1.2 </pre>	
num2	2		

There is **indentation** on the elements. Each nested element is **tabbed once right** from its parent.

16. Draw an “S” with Buttons

Write a PHP script that draws 5 x 9 **<button>** elements with **0** and **1** in them. The **1s** should form a figure “**S**”. Make the **1s**’ background color – **blue**. There is no indentation on the elements.

Example

1	1	1	1	1				
1	0	0	0	0				
1	0	0	0	0				
1	0	0	0	0				
1	1	1	1	1				
0	0	0	0	0	1			
0	0	0	0	0	1			
0	0	0	0	0	1			
1	1	1	1	1				

17. RGB Table

Write a PHP script that draws a table with 3 columns, with captions – **Red**, **Green** and **Blue**, and 5 rows, each having as **background 1** of 5 shades of those colors. Increase the color index by **51** for each row. For example, for the Red Column it will be:

- RGB(51, 0, 0)
- RGB(102, 0, 0)
- RGB(153, 0, 0)
- ...

The caption columns should **NOT** be colored. Each cell of the table has **width** and **height** equal to **50px** and has **1px solid black border**.

Picture:

Red	Green	Blue

18. 50 Shades of Grey

Write a PHP script that generates 5 rows of 10 **<div> elements**, each having as background a different shade of grey – resulting in 50 shades of grey. Every row starts with a color index – a **multiple of 51**.

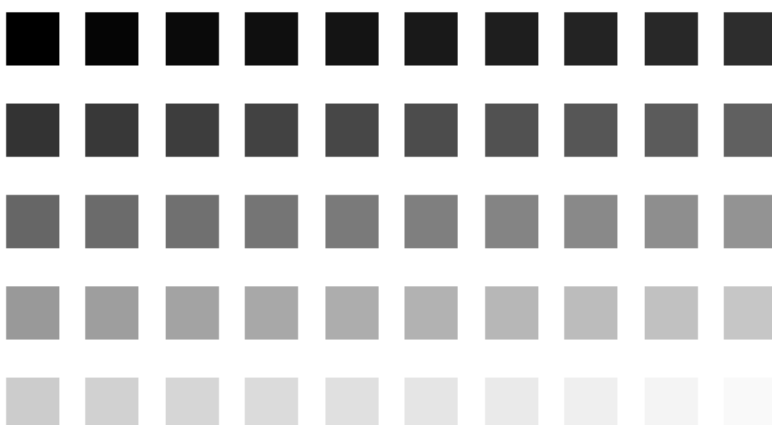
- First row – 0,
- Second row – 51,
- Third row – 102 ...

Then you need to print **10 divs**, each increasing that index with **5**.

- First row – 0, 5, 10...
- Second row – 51, 56, 61...

The color index needs to be applied to **all parameters** of the **RGB function**. Example: `rgb(51, 51, 51);`

Picture:



There is no indentation on the elements.