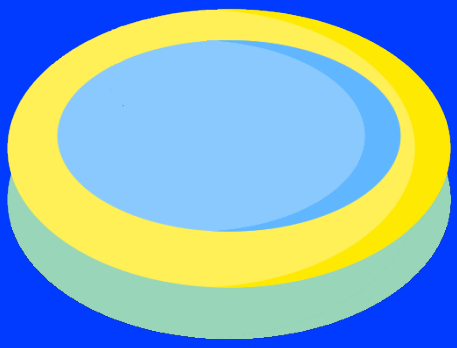
{EPITECH}

# WADING POOL_

## < 02 - BASIC OPERATIONS & VARIABLES />



# WADING POOL

**OH MY GIT!**
In addition to the tasks below, you must go as far as possible in this game.
Work on it as soon as you have a bit of time, or whenever you need a break in you day!


**For EACH future exercise, create a separate file properly named, such as *task4.2*.**

## Operations

### Task 1.1

Open the Python interpreter console and type :

- ✓ $1 + 1$
- ✓ $30 + 12$
- ✓ $777 + (-735)$
- ✓ $1 + 2 + 3 + 5 + 7 + 11 + 13$

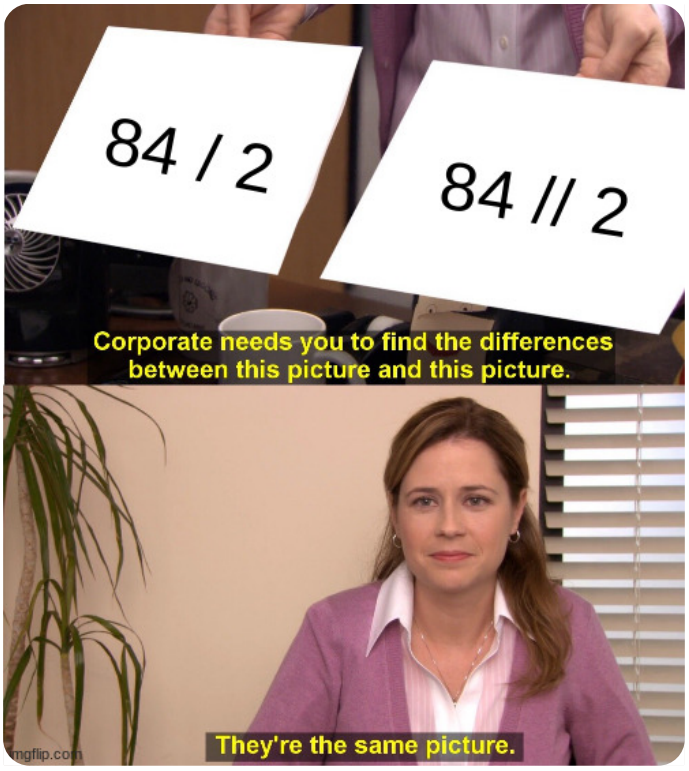
### Task 1.2

Guess, then test, the results of:

- ✓ $84 < 42$
- ✓ $0 == -(-(0))$
- ✓ 666 != 42
- ✓ 2 ** 21
- ✓ $pow(10, 3)$
- ✓ $9\%2$

## Task 1.3

What is the difference between $84/2$ and $84//2$?




## Task 1.4

What happens when typing $84/(8 + (-3) + (-7) + 2)$?

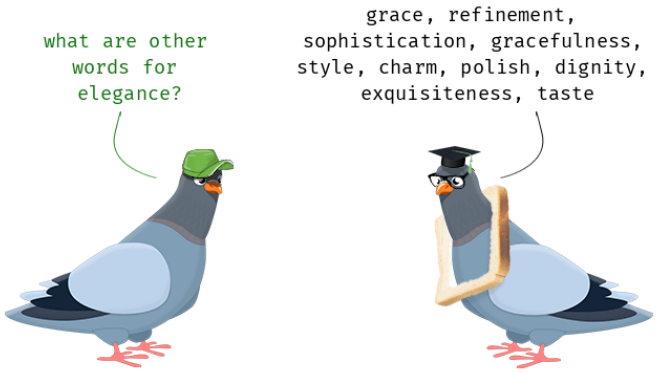
# Variables

## Task 2.1

In a file `task2.1`, compute the value of $1 + 11 + 111 + ... + 111111111$. Then, compute this result power 2, power 3, power 4 and power 5. Finally, do the same job with:

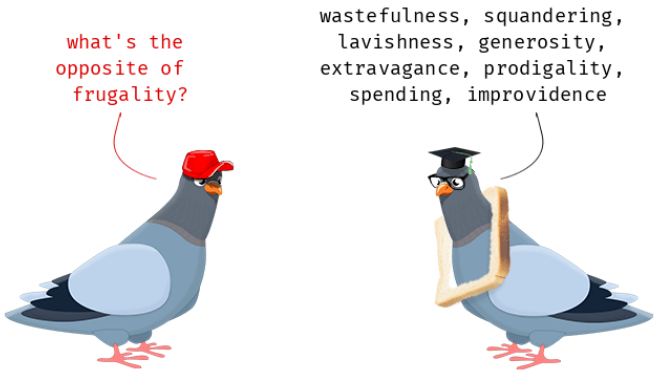
- ✓ $1 + 11 + 111 + ... + 111111111 + 1111111111$ ;
- ✓ $1 + 11 + 111 + ... + 111111111 + 1111111111 + 11111111111$.

Compare with others'code. Then, try to produce the most elegant code possible.




## Task 2.2

In a file `task2.2`, compute the value of $17^{1024}$. Your code should be as frugal as possible.




You can have a look at the powerful Python **one-liners**.

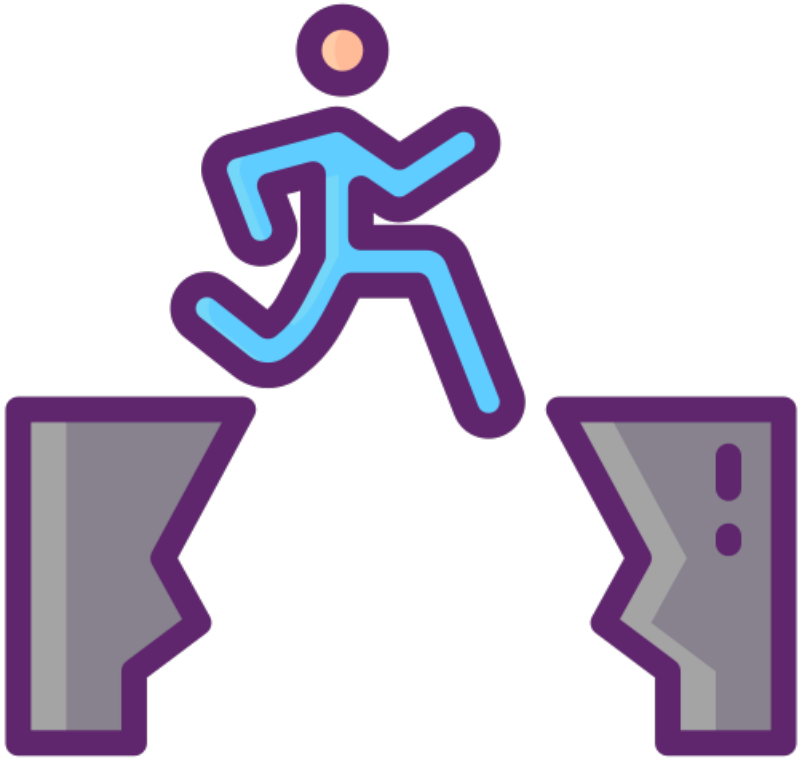
## CHALLENGE

The smallest positive number that is evenly divisible by:

- ✓ all the numbers from 1 to 4 is 12 ;
- ✓ all the numbers from 1 to 7 is 420.

Write some code to compute the smallest positive number that is evenly divisible by:

- ✓ all the numbers from 1 to 20?
- ✓ all the numbers from 1 to 200?
- ✓ all the numbers from 1 to 2000?



Try to push your code to its limits, by testing some bigger values.
Observe what is going on and read carefully the error message when you get one.

## Modulo

### Task 3.1

Write a snippet of code in order to check if a number is odd.

It would be nice if your program could print ”odd” or ”even”, depending of the result.


### Task 3.2

Write a snippet of code that calculates the sum of the digits of $123456789$.

Use the same code to calculates the sum of the digits of $112233445566778899$.

Use the same code to calculates the sum of the digits of $123456789 * 987654321$.

### Task 3.3

Getting inspiration from your previous code, write a snippet of code that extracts the **integer** part of the following **decimal** numbers:

- ✓ 12.24
- ✓ 424242.8412

### Task 3.4

Getting inspiration from your previous code, write a snippet of code that extracts the decimal part of the following numbers:

- ✓ 12.24
- ✓ 424242.8412

## You want some more?


### Task 4.1

Calculate the first 6 decimals of Pi using the formula:

$$\pi = 4 * (1/1 - 1/3 + 1/5 - 1/7...)$$

### Task 4.2

Calculate the first 6 decimals of Pi using this amazing formula:

$$\pi - 3 = \cfrac{1^2}{6+\cfrac{3^2}{6+\cfrac{5^2}{6+\cfrac{7^2}{6+...}}}}$$

v 2.2