

Lab 1: Arithmetic in Python

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$$I_o \left(\sqrt{\frac{4K(1+K)}{p_{sf}}} p_g \right)$$

$$21 = (A + \eta)^2 + \kappa^2 \text{ and}$$

GitHub Classroom



Lab 1 - Arithmetic in python

Preliminaries

Write your first executable program !

1. Create a python file

Use your favorite editor (VSCode, Notepad++, etc.) and create a python file “Hello.py”. And save it at the location you like.



2. Write your code

In the first line, type the following:

```
print("Hello world.")
```

Save and exit



3. Run your code

Execute by typing this command in the terminal:

```
python hello.py
```



Preliminaries

You can also replace this line with a more complex code!

```
num = 10 # You can change this later
other_num = num * 4
print(other_num)
print(num)
print(str(num))
# Not a very useful code, though
```

What are the '#' symbols?

- Comments!
- Use as often as you can: in-code documentation is a very good habit

What does the 'str(...)' code do?

- That's a conversion-to-string code
- It's used to convert the given data into a string
- What happens if we don't use str(...) ?

Quadratic equation

- Do you remember the solution to a quadratic equation?

$$ax^2 + bx + c = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

- The solution of x is expressed as a combination of values: a, b, c
- That means we can write a program that can automatically calculate this, given those three values!

Task 1

- Complete the first part of quad.py
 - Need to fill in the ellipsis (...) to implement the quadratic formula
 - Remember there are two roots!
- Conditions
 - You must **only** use arithmetic operators
 - Do **not** use anything we haven't learned in class yet. That qualifies as a 0.
 - Do **not** change anything besides the two lines you're supposed to add

Task 2

- Let's do division (for kids)
- When you divide two numbers, you get a quotient and a remainder
 - $3 / 2$ is 1 with remainder 1
 - $10 / 3$ is 3 with remainder 1
 - $1 / 4$ is ...?
- In this task, you are to declare two variables x and y
 - Initialize them to whatever **positive** values you like
 - You should compute a quotient and a remainder
 - E.g., for $x = 10$ and $y = 3$, the output should look like this:

3
1
- Same conditions as task 1
- Fill in quad.py's second part
 - Submit quad.py to Github Classroom when you're done (due the end of tonight)
 - You may leave if you're done