# Worksheet 3 – Polya

The maths needed in this worksheet is add ( 1+2 ), subtract ( 4-2 ), multiply ( 3\*4 ) and divide ( 10/2 )

Reference code:

|  |  |
| --- | --- |
|  |  |

The print command is a strange beast. It will take multiple parameters, each separated with a comma:

A screenshot of a computer

Description automatically generated with low confidence

Print has placed a single space between each of the parameters, and a new-line at the end.

Print will convert a number to a string before it prints it out:

A picture containing graphical user interface

Description automatically generated

As you can see with the numbers 1, 2 and 3.

But what happens if we don’t want the spaces in between the items, we want to take total control of the output?

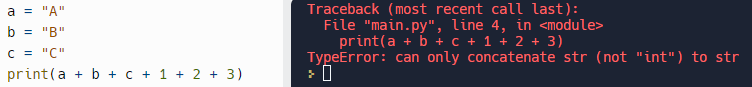
Attempt 1:

Graphical user interface

Description automatically generated with low confidence

Python has used string concatenation to append the three strings together into “ABC” which is then sent to the print command.

Attempt 2:



This fails because when Python attempts to determine what the + should do (is it string concatenation or is it a mathematical addition?) it can’t figure it out.

To fix this we need to cast the integers into strings using the str() command:

Graphical user interface, text, application

Description automatically generated

This has sent a single string to the print command.

If we compare that to the previous code that sent 6 parameters to the print command:

A picture containing graphical user interface

Description automatically generated

You can see how the output is different.

And finally I’m sending 3 different parameters to the print command (note where the commas are):

A picture containing text

Description automatically generated

## Questions

Explain the difference between:

* 3
* 3.0
* “3”

## Coding Task 1

* ***Research*** the Python power operator \*\*
* A computer program that asks a user to input two whole numbers
* It should display the square of each number
* Each number should be stored in sensibly named variables
* The program should contain comments throughout
* Use a multi-line comment at the start of the code to inform the reader of what the program is designed to achieve.

Follow Poylas 4 steps to solve the task. Document your progress:

## Coding Task 2

Create a program that allows the user to convert from mpg (m/g) to kilometres per litre (km/L)  
(miles \* 1.609 ) / 3.785  
30 mpg is equal to 12.753 km/L  
<https://www.youtube.com/watch?v=tCkNhshfXrU>

Follow Poylas 4 steps to solve the task. Document your progress: