# Exercise 2 - Introduction to Python and IDEs

## Objective

In this guided task, you’ll use Jupyter to: - Create a Python application - Perform arithmetic operations - Input values using keyboard and display information - Use casting to convert strings to integers and floats

### Part 1 - Create a New Notebook

Create a new notebook.

Experiment with the keyboard shortcuts in Command mode, e.g. - adding cells above and below - deleting cells - changing from markdown to code and verifying, i.e entering some text or code and running to check

### Part 2 - Display Hello World!

Type the following text in the code page that is open:

print(‘Hello World!’)

### Part 3.1 - Display a message using variables

Create two variables to hold someone’s name and age. Type:

username=‘Bob’ age=32 print(username,‘is’,age,‘years old’)

Modify your code to use the ‘+’ character to add strings:

username=‘Bob’ age=32 print(username+‘is’+age+‘years old’)

What is wrong? Look at the error. Can you correct it?

Does the output look right or are the strings stuck together? That’s what + and strings does! Modify the print statement by inserting 3 spaces in the strings as follows: print(username,’ is ‘+age+’ years old’)

### Part 3.2 - Get user input

Write the following code to get the username and age by using the keyboard.

username=input(‘Please enter your name’) age = input(‘Please enter your age’) print(username,‘is’,age,‘years old’)

### Part 4 - Arithmetic operations

A box contains 50 crayons which have to be distributed to 6 children. Each child has to get the same number of whole crayons (no breaking). Calculate the number of crayons each child will get.

### Part 5 - Casting variables

Capture user input to get the length of the first side of a rectangle.

Use a suitable variable name such as length.

You must cast (convert) the text you input to an integer type (int).

Input the length of the second side of the rectangle.

Use a suitable variable name such as width.

Again, cast the input text to an integer type (int).

Calculate and display the perimeter of the rectangle.

### Extension Activities

Given two numeric lists or tuples x\_vals and y\_vals of equal length, compute their inner product using zip().

In one line, count the number of even numbers in 0,…,99.

* Hint: x % 2 returns 0 if x is even, 1 otherwise.

Given pairs = ((2, 5), (4, 2), (9, 8), (12, 10)), count the number of pairs (a, b) such that both a and b are even.

Write a piece of code which calculates change to be given from an input amount in £. To start you off, we’ve given you a list of denominations of UK currency.