# Basic Programming Concepts

**1- Run Jupyter lab in the environment we created - verify that the folder in use is the correct one**

**2-Launch a Notebook Python 3**

**3- Code to print: “Hello”**

**4- Compute 2+2**

**5- Declare two variables called a and b, and assign the values 2 and 3 respectively, then add those values**

**6- Swap the values between variables - classic method**

**7- I Swap the values between variables - python method**

**8- Assigning values by reference**

**9- Declare an array with values 1,2,3,4,5 and print the third element**

**10- Declare a list with values 1,2,3,4,”apple”,”lemon” and print the fifth element**

**11. Add the element “orange” at the end of the list and print the entire list**

**12. Add the value of a variable and print the list**

**13. Add the variable, not the value, to the list and print the entire list**

**14. Change the value of the variable and print the list**

**15. Reexamine the assignment of values in variables, assignment by reference. This is a pythonic concept not available natively in other languages.**

**16\*. Hard exercise: create a matrix with the values for: Depth, Gamma Ray, Resistivity, Density, Porosity.**

**17. Code to print the values in the list**

**18. Code to unpack the variables**

**19. Code to iterate and print the elements of a list including the index**

How can we do this without using enumerate?

**20. Code to print depth from 1000 to 1010 in increments of 1 meter**

**21. Code to print depth from 1000 to 1010 in increments of half a meter**

**22. Code to detect high values of ROP in a list. When high ROP is detected, an alert is printed indicating the value of ROP and the index. Generate random values of ROP.**

**23. Order elements in a sequence**

**24. Cut the elements in a sequence**

**25. Declare a dictionary with drilling parameters**

**26. Complete step 16 explaining all the steps**