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## 1<sup>st</sup> practical work

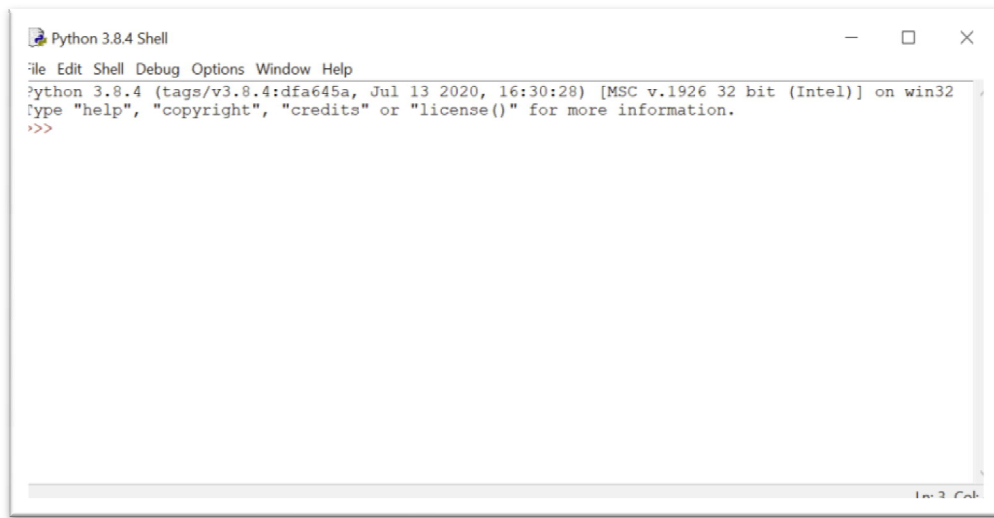
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All students are invited to do the following :

- Install the latest version of Python 3 on your computer: <https://www.python.org/downloads/windows/>  
Run the Installer



- Open **IDLE**, Python's built-in **I**ntegrated **D**evelopment and **L**earning **E**nvironment.
  - 1-Click the Start menu and locate the Python folder.
  - 2- Open the folder and select IDLE




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## Write a Python Program

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IDLE's interactive window contains a **Python shell**, which is a textual user interface used to interact with the Python language. You can type a bit of Python code into the interactive window and press Enter to immediately see the results.

The `>>>` symbol in the last line is called the **prompt**. This is where you'll write your code  
**Note** : for a program (a set of instructions) in python Idle : click: **file--New**. if you want to run your program click : **Run -- Run Module** from the menu in editor window.

### 1- Comments:

Comments are used to explain the code and are ignored by the Python interpreter. You can use the `#` symbol for single-line comments.

```
>>> # Nothing to do , it's just a comment
```

```
# .....
```

2- Shell as a calculator

a) Type and explain the result of these operations?

```
>>> 5 + 2 # .....
>>> 10 - 2 # .....
>>> 6 * 2 # .....
>>> 8 / 3 # .....
>>> 10 // 3 # .....
>>> 5 % 2 # .....
>>> 5 ** 2 # .....
>>> 9 ** 0.5 # .....
>>> 5 and 0 # .....
>>> 1 or 1 # .....
>>> (5 + 1 * 3) + 2 # .....
>>> 5 + 3 ** 2 * 2 # .....
>>> 5 + 3 + * 2 * 2 # .....
>>> 5 + 3 ** 2 / 0 # .....
```

b) Command Print .

To print strings to console or echo some data to console output, use Python inbuilt print() function. Type and explain the result ?

```
>>> print('hello world') # .....
>>> print ('5 + 3 ** 2 ', 5 + 3 ** 2) # .....
>>> print ('5 + 3 ** 2 ', 5 + 3 ** 2, sep = '=') # .....
>>> print('hello world', end='.') # .....
>>> print('hello', end='\n'); print('world', end='.') # .....
what is the role of semi colon(;)?
```

3- built-in Functions:

some built-in functions in python. Type the following and explain each result ?

```
>>> abs(-1.5) # .....
>>> bin(24) # .....
>>> chr(65); ord('m') # .....
>>> chr(ord('m')+1) # .....
>>> chr(ord('B')-1) # .....
>>> str(65) # .....
>>> min([-1.5,2,3.1,10,12]) # .....
>>> max([-1.5,2,3.1,10,12]) # .....
>>> sum([-1.5,2,3.1,10,12]) # .....
>>> format(0.000152,'E') # .....
>>> format(0.152,'%') # .....
>>> int(3.41) # .....
```

3- Using the editor : Type, save and run this program. What does this program do?

```
import time
seconds = 10
while seconds > 0:
    print(f"Time remaining: {seconds} seconds")
    time.sleep(1) # Delay for 1 second
    seconds -= 1

print("Time's up!")
```