



**Department of Computer Science and Engineering
PES University, Bangalore, India**

Lecture Notes

Python for Computational Problem Solving

UE23CS151A

Lecture #11

First Program in Python, Program Structures and Running a Program

By,

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Many Thanks to

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Few points to think!

- What must be installed to run the code written in python language?

Hybrid Python interpreter/Compiler

- Which version of python must be used?

The stable version – Python 3.X and above.

Refer to python.org – An official site for python

Links for installation of python on different OS:

- Windows : [How to install Python 3.11.0 on Windows 10 - Bing video](#)
- MAC: [How to Install Python on Mac OS and How to Run Python code - YouTube](#)
- Ubuntu: [Install Python on Ubuntu/Linux | install python through terminal | easy steps - YouTube](#)

Note: Few of the Operating systems have Python installed by default. You can upgrade it to a specific version.

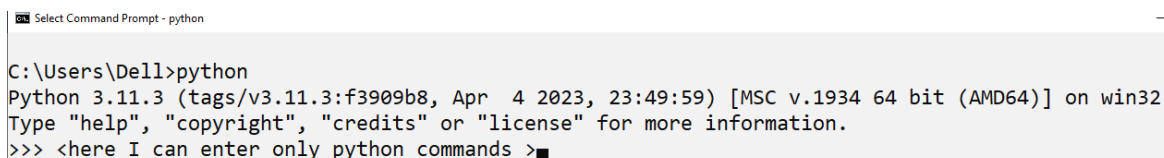
Running the python Code

There are different ways of making the computer follow the commands of Python.

- Interactive mode
- Batch Mode / File Mode / Script Mode
- IDE Mode – IDLE Installation and Usage is a part of Lab.

Interactive mode: The computer will keep displaying the results immediately.

- Open the Terminal (Ctrl+Alt+T) or Command Prompt. Type **python3 or py or py -3 or python**
- You should be getting the below default python prompt (>>>).



```
Select Command Prompt - python
C:\Users\Dell>python
Python 3.11.3 (tags/v3.11.3:f3909b8, Apr 4 2023, 23:49:59) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> <here I can enter only python commands >■
```

- Here only python commands are valid.

```
Command Prompt - python

C:\Users\Dell>python
Python 3.11.3 (tags/v3.11.3:f3909b8, Apr  4 2023, 23:49:59) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> 78
78
>>> print("Hello world")
Hello world
>>>
```

- How to come out of python prompt? Type exit() or quit() and then press enter key.

You will be out of python prompt and OS Prompt is back to you now.

```
Command Prompt

C:\Users\Dell>python
Python 3.11.3 (tags/v3.11.3:f3909b8, Apr  4 2023, 23:49:59) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> exit()

C:\Users\Dell>
```

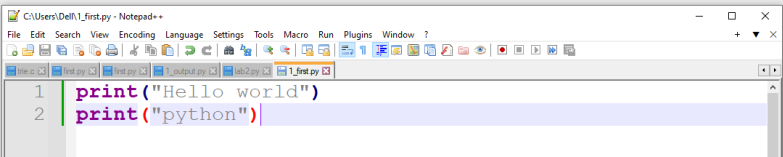
Batch mode: We should explicitly indicate that we want to display something using a special command. You can view the created file anytime later.

- Create a file containing the commands/statements in python.

```
Command Prompt

C:\Users\Dell>start notepad++ 1_first.py

C:\Users\Dell>
```



- Save the above file. Close the editor.
- Run them together using the python interpreter on the created python file(.py extension conventionally) - **python filename.py**
- You can see the output if there are no errors.

```
Command Prompt

C:\Users\Dell>start notepad++ 1_first.py

C:\Users\Dell>python 1_first.py
Hello world
python

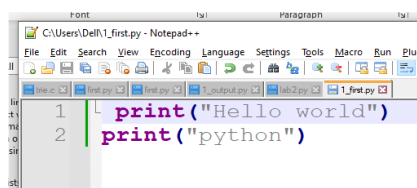
C:\Users\Dell>
```

Program Structure:

- In the beginning of the program, all statements should start from the first column (**column 0**)
- Executes as it exists – top to bottom
- Case sensitive constructs are used in the language
- A statement must be in one line. If it must span multiple lines,
Escape the new line using \
- Use a construct which has begin and end markers
- To have more than one statement on a single line, separate using ;
- Format of code is rigid – Not a free format

Examples:

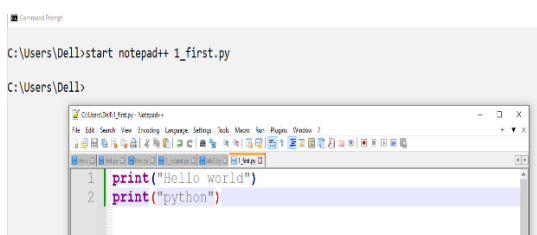
1. The below code results in Indentation Error



```
1 print("Hello world")
2 print("python")
```

```
C:\Users\Dell>python 1_first.py
File "C:\Users\Dell\1_first.py", line 1
print("Hello world")
IndentationError: unexpected indent
C:\Users\Dell>
```

2. Output of below code is first **Hello world** and in the next line it is **python**



```
C:\Users\Dell>start notepad++ 1_first.py
C:\Users\Dell>
```

```
C:\Users\Dell>start notepad++ 1_first.py
C:\Users\Dell>python 1_first.py
Hello world
python
C:\Users\Dell>
```

More examples will be dealt once we start with output function in detail.

Refer to Lecture #12.

First Program in Python:

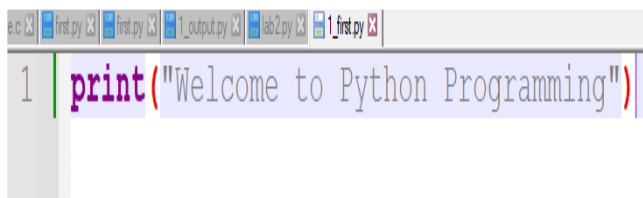
Open the command prompt / terminal.

Open the Editor. Save the code with .py extension. Run it

Interpreter Mode Execution:

```
C:\Users\Dell>python
Python 3.11.3 (tags/v3.11.3:f3909b8, Apr  4 2023, 23:49:59) [MSC v.1934 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print("Welcome to Python Programming")
Welcome to Python Programming
>>> █
```

Batch Mode Execution: python 1_first.py



Command Prompt

```
C:\Users\Dell>python 1_first.py
Welcome to Python Programming

C:\Users\Dell>█
```

- END -