

**Name:** Nivedita Londhe

**PRN:** 22420003

**Batch:** EN-4

**Practical No. 6**

## Title: Execution of Python file in Linux

### **PART A:**

#### Single file Execution

➤ **Step 1: Created a new Python (.py) file**

I used the nano text editor to create a file named add.py

**Command:** `nano add.py`

➤ **Step 2: Wrote the Python code**

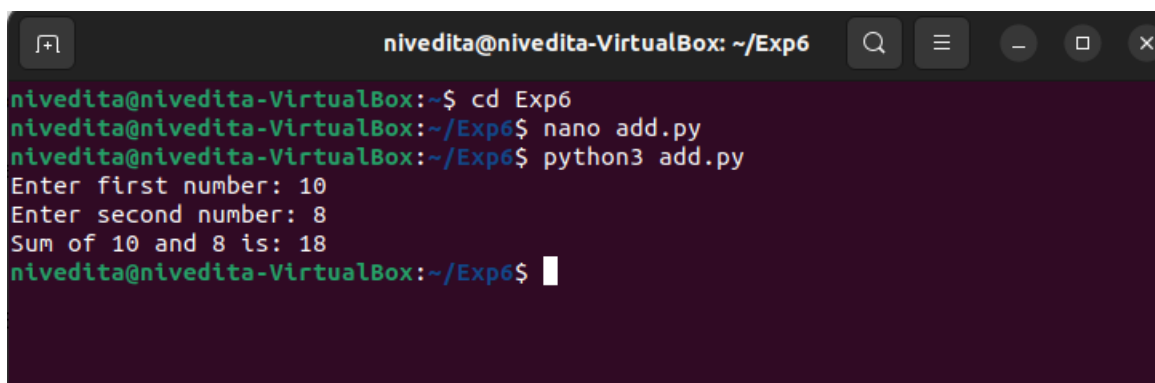
I entered the following code into the file and saved that.

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
sum = a + b
print(f"Sum of {a} and {b} is: {sum}")
```

➤ **Step 3: Run the Python file**

Execute the program using Python 3

**Command:** `python3 add.py`

A screenshot of a terminal window titled 'nivedita@nivedita-VirtualBox: ~/Exp6'. The terminal shows the following commands and output: 

```
nivedita@nivedita-VirtualBox:~$ cd Exp6
nivedita@nivedita-VirtualBox:~/Exp6$ nano add.py
nivedita@nivedita-VirtualBox:~/Exp6$ python3 add.py
Enter first number: 10
Enter second number: 8
Sum of 10 and 8 is: 18
nivedita@nivedita-VirtualBox:~/Exp6$
```

**PART B:**

## Multiple file Execution

➤ **Step 1: Create Source Files**

1. Create separate .py files for operation: loop.py, conditional.py,

**Command:** `nano file.py`

**sub.py**

```
x = int(input("Enter first number: "))
y = int(input("Enter second number: "))
difference = x - y
print(f"Difference between {x} and {y} is: {difference}")
```

**conditional.py**

```
num = int(input("Enter a number: "))
if num % 2 == 0:
    print(f"{num} is even")
else:
    print(f"{num} is odd")
```

**loop.py**

```
n = int(input("Enter a number to print the range: "))
for i in range(n):
    print(f"Number: {i}")
```

➤ **Step 2: Using Shell Script to Run Multiple Files**

1. Create a Shell Script (runPython.sh):

**`python3 add.py && python3 sub.py && python3 conditional.py && python loop.py`**

2. **commands:**

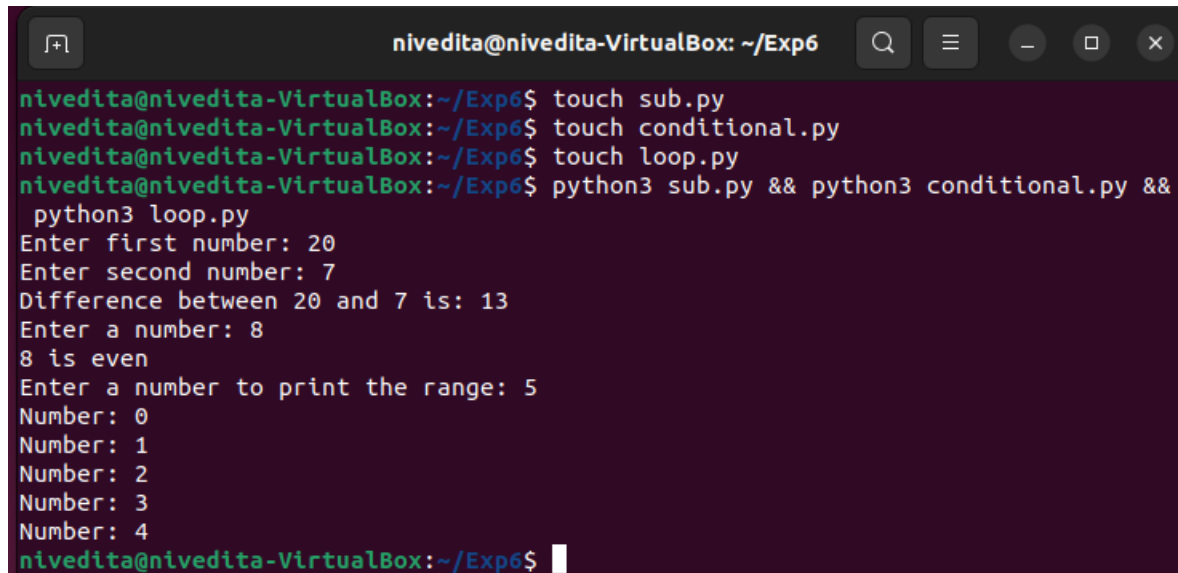
Make the shell script executable by running: **`chmod +x run_files.sh`**

Run the shell script: **`./run_files.sh`**

```
nivedita@nivedita-VirtualBox: ~/Exp6
nivedita@nivedita-VirtualBox:~/Exp6$ chmod +x runPython.sh
nivedita@nivedita-VirtualBox:~/Exp6$ ./runPython.sh
Enter first number: 10
Enter second number: 8
Difference between 10 and 8 is: 2
Enter a number: 5
5 is odd
Enter a number to print the range: 3
Number: 0
Number: 1
Number: 2
```

### ➤ Step 3: Using && Operation to Execute Multiple Files

Run all Python files sequentially in one line



```
nivedita@nivedita-VirtualBox: ~/Exp6
nivedita@nivedita-VirtualBox:~/Exp6$ touch sub.py
nivedita@nivedita-VirtualBox:~/Exp6$ touch conditional.py
nivedita@nivedita-VirtualBox:~/Exp6$ touch loop.py
nivedita@nivedita-VirtualBox:~/Exp6$ python3 sub.py && python3 conditional.py &&
python3 loop.py
Enter first number: 20
Enter second number: 7
Difference between 20 and 7 is: 13
Enter a number: 8
8 is even
Enter a number to print the range: 5
Number: 0
Number: 1
Number: 2
Number: 3
Number: 4
nivedita@nivedita-VirtualBox:~/Exp6$
```

## Conclusion:

Executing Python files in Linux can be done easily using the `python3` command. For a single file, it runs directly with user input and displays results. Multiple files can be executed using a shell script or the `&&` operator, running them sequentially. Adding user input makes the scripts interactive, allowing dynamic calculations and outputs. This method simplifies batch execution of Python programs in a Linux environment.

## Questions:

### 1. Write meaning and use of GCC in Linux.

➔ In Linux, an interpreter (like Python) executes code line by line, translating each instruction into machine code on the fly. This allows for immediate execution, making it useful for scripting, testing, and dynamic languages. However, interpreted programs tend to run slower since each line is processed during runtime.

A compiler (like GCC for C/C++) translates the entire source code into machine language in one step before execution, generating an executable file. This approach leads to faster execution at runtime but requires the additional compilation step beforehand. Both interpreters and compilers are widely used in Linux, depending on the programming language.