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Practical-1

Aim: 1. Introduction to Python language and Installation of Python.
2. Write a Python program to implement arithmetic, logical operators

Introduction:

Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms. The Python interpreter and the extensive standard library are freely available in source or binary form for all major platforms from the Python Web site, http://www.python.org/, and can be freely distributed. The same site also contains distributions of and pointers to many free third party Python modules, programs and tools, and additional documentation.

Features of Python:

- Python is a high level language. It is a free and open source language.
- It is an interpreted language, as Python programs are executed by an interpreter.
- Python programs are easy to understand as they have a clearly defined syntax and relatively simple structure.
- Python is case-sensitive. For example, NUMBER and number are not same in Python.
- Python is portable and platform independent, means it can run on various operating systems and hardware platforms.
- Python has a rich library of predefined functions.
- Python is also helpful in web development. Many popular web services and applications are built using Python.
- Python uses indentation for blocks and nested blocks.

Installation :

Step 1: Navigate to http://www.python.org/download/

Step 2: Choose your operating system.

Step 3: Accordingly download python package i.e. if you are on macOS or Linux operating system download Python.pkg or if you are using windows then download Python.exe.

Step 4: Install downloaded package/Application and read documentation then proceed further to install.

Step 5: After successful installation of python package, go to cmd/terminal and type “python” and press enter key then it will show which python version you have installed and start Command Line Interface (CLI) for python as shown in screenshot.

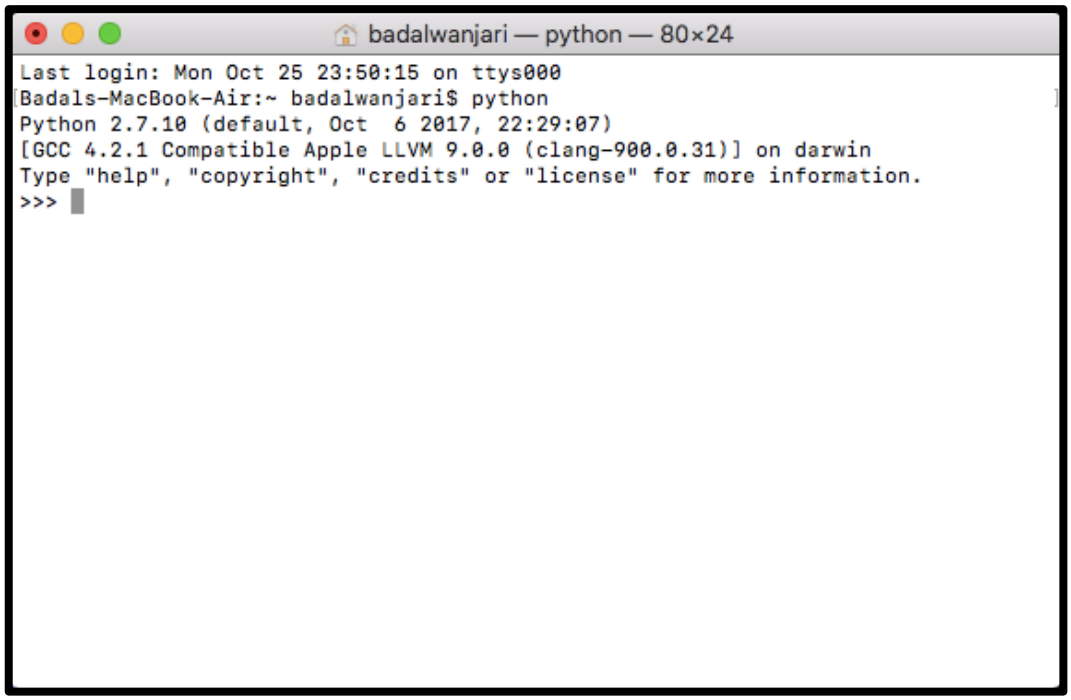

Fig. Screenshot:- terminal on MacOS

Implementation of Arithmetic and Logical operators :

Algorithm:

- Step 1: Start.
- Step 2: Declare *a* and take value of *a* from user.
- Step 3: Declare *b* and take value of *b* from user.
- Step 4: Calculate and print values of “a+b” , “a-b”, “a*b”, “a/b”, “a//b” and a**b” .
- Step 5: Stop.

Program :

```
a=int(input("Enter first positive integer: "))
b=int(input("Enter second positive integer: "))
print("Arithmetic Operator")
print("Sum is", a+b)
print("Subtraction is", a-b)
print("Multiplication is", a*b)
print("Division is", a/b)
print("Floor Division is", a//b)
print("Power is", a**b)
print("\n\nLogical operators")

x=True
y=False
print(x, "is", y,"--->", x is y)
print(x, "is not", y,"--->", x is not y)
print(x, "and", y,"--->", x and y)
print(x, "or", y,"--->", x or y)
print("not", x , "--->", not x)
```

Output :

```
Enter first positive integer: 16
Enter second positive integer: 4
Arithmetic Operator
Sum is 20
Subtraction is 12
Multiplication is 64
Division is 4.0
Floor Division is 4
Power is 65536


Logical operators
True is False ---> False
True is not False ---> True
True and False ---> False
True or False ---> True
not True ---> False
```

Screenshot:

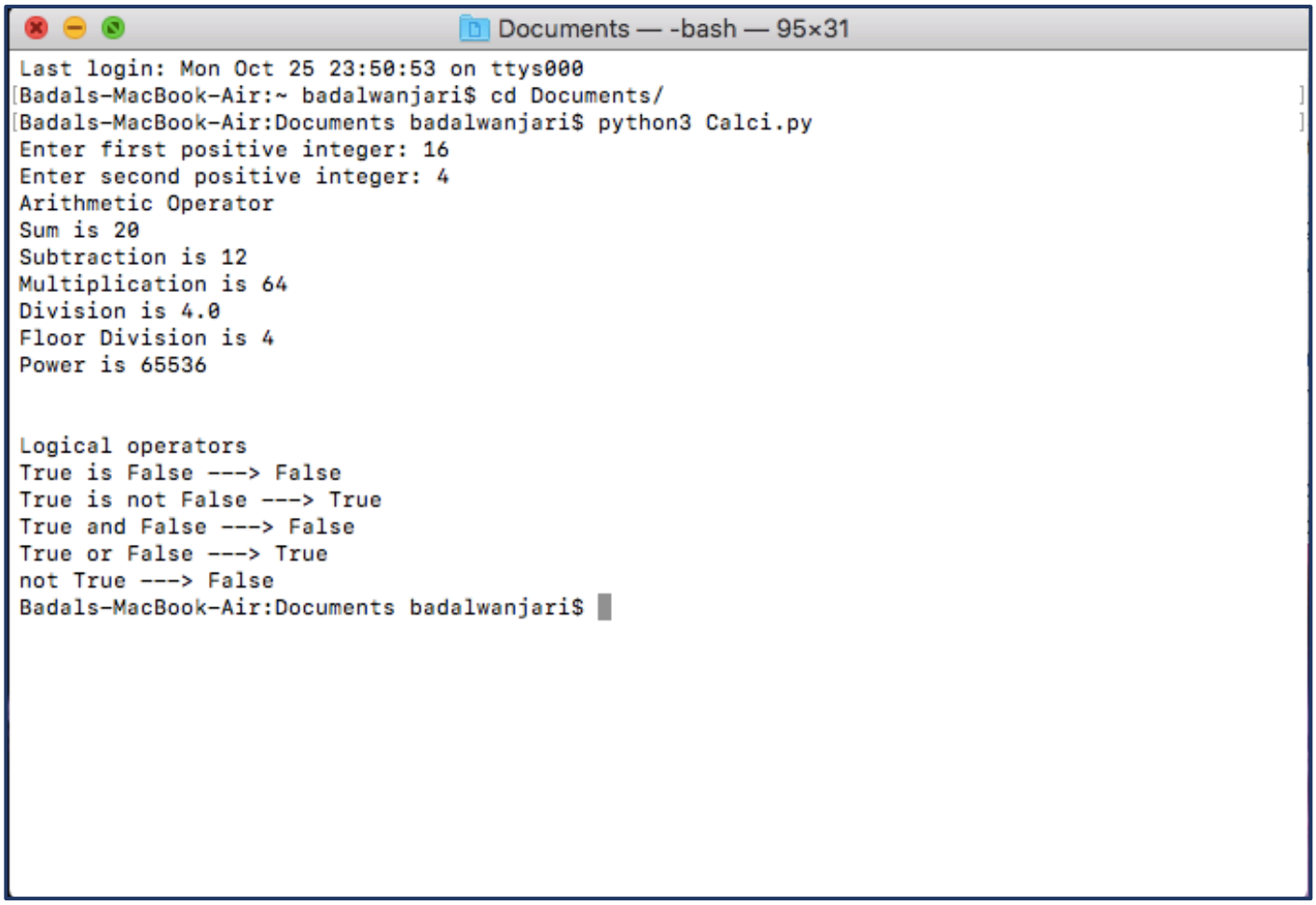

Fig. Terminal : program Running

Results: I have studied the practical-1 where I learn about python as programming language, Installation of python on PC, Implementation of various arithmetic and logical operators in python program. Also I have learnt about how to run program in terminal/cmd.