

Number of approaches to develop the programs in python

In []: Number of Approaches to Develop Programs **in** Python

What **is** a Program?

>A program **is** a collection of optimized instructions designed to perform a specific task.
 >Optimized instructions aim to minimize time complexity **and** space complexity.
 >When we write a program, it should require less time **and** space, making it optimized.
 >In Python, every program must be saved **with** a filename that has a **.py** extension (e.g., **program.py**).
 >The primary purpose of writing a program **is** "to solve real-time problems **or** tasks."

 Real-Time Tasks/Problems **in** two ways:

1. By using interactive approaches
 2. By using batch mode approaches
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By using interactive approach:

In []: >In interactive approach, python programmer can issue one statement at a time **and** get the output immediately.
 >The purpose of the interactive approach **is** that test one instruction at a time and get the output.
 >The interactive approach **not** that much useful because it **not** allowing the python programmer to reuse the code **in** other parts of project.

Example Softwares:

1. Python command Prompt
2. Python IDLE Shell

By using batch mode approaches:

In []: --> In batch mode approaches, Python programmer can develop batch **or** group of optimized instructions. The program must be saved on file name **and with** extension of **.py** (fileName.py) so that we can reuse the code **in** the project.

Example Softwares:

1. Python IDLE Shell
- (Third party IDEs)
- > Pycharm
 - > Jupiter Notebook
 - > Spider
 - > VS-Code
 - > Google Colab....etc

In [2]: *# Program for adding two numbers:*

```
a=10
b=20
c=a+b
print("-"*50)
print("val of a=",a)
print("val of b=",b)
print("sum=",c)
print("-"*70)
```

```
-----
val of a= 10
val of a= 20
sum= 30
-----
```

```
In [4]: # Program for adding two numbers:
a=float(input("enter the first value:"))
b=float(input("enter the second value:"))
c=a+b
print("sum({},{})={}".format(a,b,c))
```

```
sum(200.0,300.0)=500.0
```

```
In [ ]: =====
          IDE - Integrated Development Environment
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=> An IDE is a type of third-party software.

=> IDEs provided by third-party developers offer additional services to programmers
such as:
    - Syntax highlighting
    - Function assistance
    - Auto-completion
    - Debugging tools
    - Etc.

Example:
    PyCharm - IDE developed by JetBrains
```