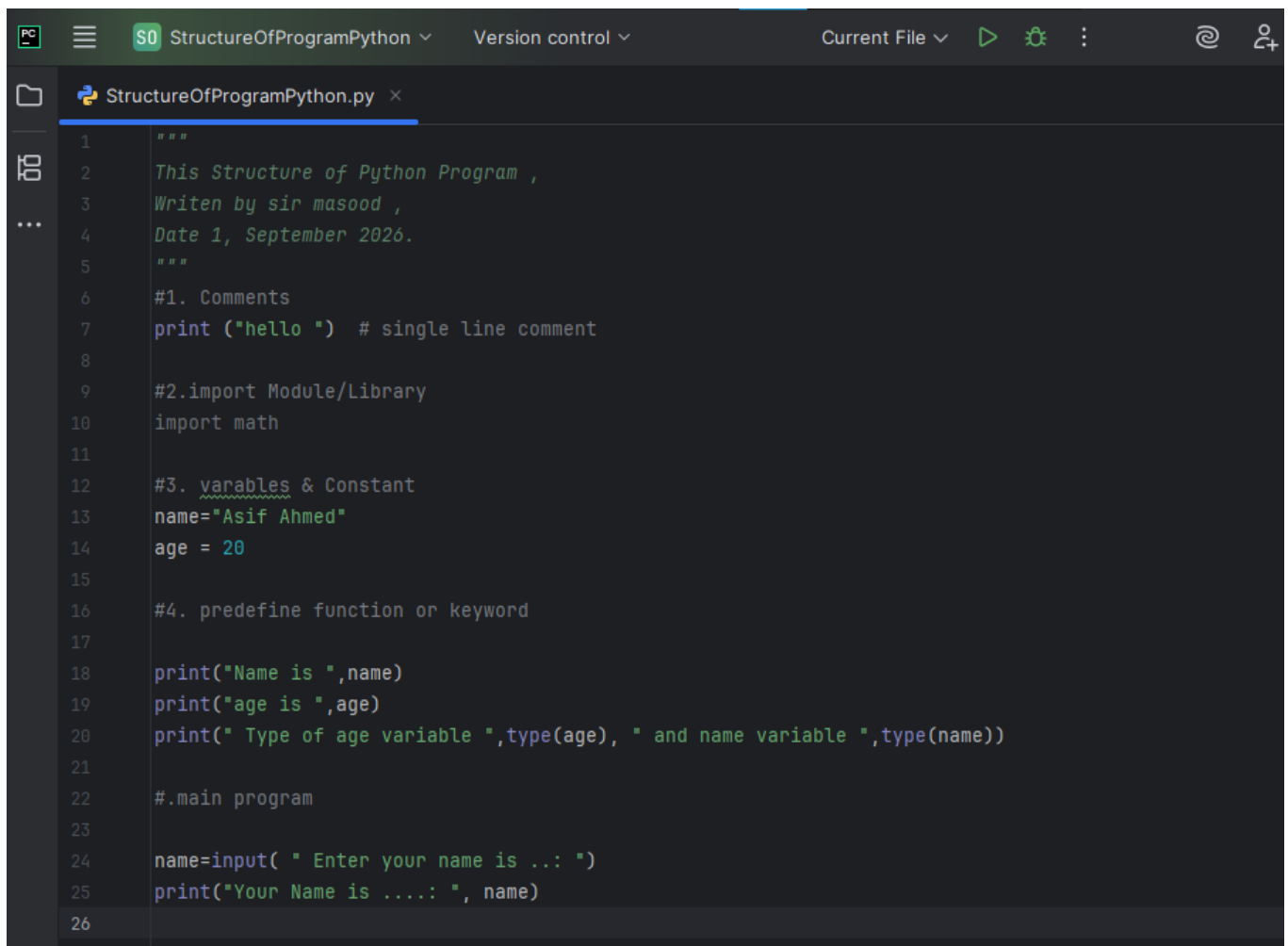


### Python - Program Structure

Python has a simple and readable structure. A typical Python program is organized like this:

A Python program has the following form:

1. Comments
2. Import library/Modules
3. Variables and Constant
4. Pre-define Functions/keywords
5. Statements and expression
6. Main program

A screenshot of a code editor window titled 'StructureOfProgramPython.py'. The editor shows a Python program with line numbers 1 through 26. The code includes a multi-line docstring at the top, followed by comments for each section: '#1. Comments', '#2.import Module/Library', '#3. variables & Constant', and '#4. predefine function or keyword'. The code includes a single-line comment, an import statement for 'math', variable assignments for 'name' and 'age', and several print statements. The main program section starts with a comment and includes an input statement and a print statement.

```
1  """
2  This Structure of Python Program ,
3  Writen by sir masood ,
4  Date 1, September 2026.
5  """
6  #1. Comments
7  print ("hello ") # single line comment
8
9  #2.import Module/Library
10 import math
11
12 #3. variables & Constant
13 name="Asif Ahmed"
14 age = 20
15
16 #4. predefine function or keyword
17
18 print("Name is ",name)
19 print("age is ",age)
20 print(" Type of age variable ",type(age), " and name variable ",type(name))
21
22 #.main program
23
24 name=input( " Enter your name is ...: ")
25 print("Your Name is ....: ", name)
26
```

#### ❖ Comments:

- Used to give additional useful information inside a Python Program.
- For Single line comments: #
- For Multi line or larger explanations, documentation strings (docstrings) can be used: `""" ..... """`

### ❖ Import Module/Library

Python provides many built-in modules and allows programmers to use external modules. Modules are imported using ***import ModuleName***:

```
import math
```

You can also import specific function of math library/Module

```
from math import sqrt  
print(sqrt(25))
```

### ❖ Variables and Constant

Variables are used to hold numbers, strings and complex data for manipulation. Variable is a name of memory addresses, where store data. Variable can be change during execution of program even Constant data cannot be change during the execution of program. String data assign should be in single or double quotation.

Python automatically determines the data type.

```
name = "Ali"  
age = 20
```

Constants are values that normally should not change. Python does not enforce constants, but uppercase names are commonly used by convention:

```
PI = 3.14159  
MAX_MARKS = 100
```

### ❖ Functions

Functions are main building blocks of any Python Program like `print()`, `input()` and `type()` etc. The term function refers to a subroutine or individual statements grouped into a logical unit that performs a specific task. You will work with built-in Python function.

### ❖ Statements & Expressions

- **Statement:** The individual lines of code that make up a Python language are called statement.
- **Expression:** Expressions, combine variables and constants to create new values.

Statements are expressions, assignments, function calls, or control flow statements, which make up the Python programs.

### ❖ Main program

For small programs, code can be written directly at the top level.

### Some basic syntax rule for Python program

- Python is a case sensitive language so all Python keywords or function must be written in lower case letter.
- Variables name declares start any letters or underscore ' \_ ' sign like (salary, name and \_age etc)

**Important:** Python uses **indentation (spaces)** to define blocks of code instead of { } braces, which is one of its most distinctive features. Python uses indentation (spaces at the beginning of a line) to show which code belongs to a block.

### What is Syntax?

The rules for using a programming language are called syntax. Syntax refers to the spelling and grammar of a programming language. Computers are inflexible machines that understand what you type only if you type it in the exact form that the computer expects. The expected form is called the syntax.

### Exercise

#### Theory Questions

1. Define Python is a "**Case Sensitive Language**"?
2. Identify the types of comments available in Python.
3. Why and How Python uses indentation?
4. Write names list of Python program structure.

#### Practical Questions

1. Write a simple Python program to print your BIODATA on the browser screen.
2. Elaborate the Error(s) of python language in the code below (if any).

```
% This is a comment for PYTHON program
```

```
print(" Display First Line ")
```

```
print( Second Line )
```

```
PRINT(" Third Line");
```

3. Write down the correct code of above program.
4. Mention the output of above code.

#### Objective and MCQ's

1. What do you use to separate multiple argument that are passed to a print function
  - a) A period ( . )
  - b) A comma ( , )
  - c) A forward slash ( / )
  - d) A backward slash ( \ )
2. You create line comments in Python code by adding \_\_\_\_ to a line you want to use a comment.
  - a) ||
  - b) \*\*
  - c) /\*
  - d) #
3. Block comments begin with """" and end with \_\_\_\_
  - a) \*/
  - b) /\*
  - c> """
  - d) //
4. Print has a return value is
  - a) 0 or 1
  - b) Greater 1
  - c) Less than 1
  - d) Not all above

5. The rules for using a programming language are called \_\_\_\_\_.
  - a) Protocols
  - b) Syntax
  - c) Variables
  - d) Comments
  
6. We can use print statement in the Python language. You chose corrects code are following.
  - a) `print "Pakistan "`
  - b) `print( Pakistan )`
  - c) `print("Pakistan ");`
  - d) `print("Pakistan ")`
  
7. All Python statements must be end with a \_\_\_\_\_ symbol.
  - a) Semicolon
  - b) Commas
  - c) Double quotations
  - d) No type any symbol
  
8. Combine variables and constants to create new values that are called \_\_\_\_\_.
  - a) Variables
  - b) Statement
  - c) Expression
  - d) Concatenation
  
9. Python keywords or function must be used in \_\_\_\_\_case
  - a) Upper case
  - b) Camel case
  - c) Sentence case
  - d) Lower case
  
- 10 Variable name must be start in python language
  - a) letters
  - b) digits
  - c) under score
  - d) both a and c