**PROGRAMMING:**

It is a way to communication with computer system.

**Python:**

It is simple and readable. It features is straight forward and intuitive. It is multiprogramming language.

**Modules**:

In python, a module is a single file containing python definition and statements. A module can define functions, classes, and variables, and can also include runnable code.

The import statement is used to include a module in a script.

**For example:**

import math

x = math.sqrt(16)

print(x)

This will output 4.0, which is the square root of 16.

It's also possible to import specific definitions from a module.

from math import sqrt

x = sqrt(16)

print(x)

It is also possible to give a module an alias name with the as keyword.

import numpy as np

This will import the numpy module and give it the alias name np.

There are **two type** of modules in python.

* Build in modules
* External modules

**Comments in Python:**

In Python, comments are used to explain and document code. Comments are ignored by the interpreter

and are not executed as part of the program. They are used to add additional information to the code.

**There are two ways to write comments in Python:**

**Single-line comments** start with a # symbol and continue to the end of the line. They are used for short,

one-line explanations:

# This is a single-line comment

x = 5 # This is also a single-line comment

**Multi-line comments**, also known as documentation strings, start and end with triple quotes (either

single or double) """.

"""

This is a

multi-line

comment

"""

**Pip in python:**

Pip (package installer for python) is a package management system for Python that makes it easy to

install and manage third-party libraries and modules. With pip, you can install, update, and remove

packages with a simple command-line interface.

pip install requests

You can also specify a version number to install a specific version of a package:

pip install requests==2.24.0

**To update a package**

pip install --upgrade requests

**To remove a package**

pip uninstall requests

Pip also allows you to create a requirement file to save the **dependencies** of your project. You can create

it by running pip freeze > requirements.txt and then you can use this file to install all the packages in an

environment by running pip install -r requirements.txt.

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**variables in python:**

In Python, a variable is a named storage location that can hold a value. The value stored in a variable can be of various types, such as a number, a string, or a list. You can use the assignment operator (=) to assign a value to a variable.

x = 5

print(x)

It's important to keep in mind that the value stored in a variable can be changed later in the program, and you can use the same variable to store different values at different points in your code.

In Python, there are several built-in data types:

* int
* float
* str
* bool
* list
* tuple
* set
* dict

**Some common data types in Python include:**

**Integers:**

(int) are whole numbers, such as 42.

**Floating-point numbers:**

(float) have decimal points, such as 3.14.

**Strings:**

(str) are sequences of characters, such as "hello".

**Booleans:**

(bool) have a value of either True or False.

**Lists:**

(list) are ordered collections of items, such as

[1, 2, 3].

Python list are container to store a set of value of any data type.

Exe:

Y= [ “apple”, 7, false]

**List index:**

A list can be indexed just like a string

Exe:

L= [1,2,3]

Print (L [0])

Output: 1

**Dictionaries:**

(dict) are unordered collections of key-value pairs, such as

K= {‘one’: “apple”}

**Finding a length:**

K= {‘one’: “apple”}

Print ( len (k))

**Tuples**:

(tuple) are ordered, immutable collection of items, such as (1, 2, 3)

Tuple is an immutable data type in python.

A=() empty tuple

A=(1,) only one element

A=(1,2,3) more than one element

**Operator in python:**

Arithmetic operator +, -, \*, /, etc.

Assignment operator =, +=, -= etc.

Comparison operators ==, >, >=, <, != etc.

Logical operators and, or, not

Functions:

A function in python is a block of code that performs a specific task and can be re-used throughout your program to define a function in python, you use the def keyword followed by the function name and a pair of parentheses(). The inputs to the function, called parameters, are placed within the parentheses.

Def greet\_ user ():

Name= input (“what is your name?”)

Print (“good days, ” + name)

Greet\_ user ()