

- Simple python program using jupyter

[1]: print ("Hello Kitan") This is code
Hello Kitan

- Using another method [Markdown]
This is my first ~~metho~~ program

We can print the words in paragraph structure we use the [Raw]

Hello, Good evening

my name is Kitan

- without [Raw] the sentence will display in single row.

* Comments :

This are the part of code but won't execute at runtime.

There are two types:

- Single line Comment [# Kitan note].
- Multi line Comment ["Kitan" or ""note""].

★ Keywords :

This are reserved words used for particular task and we cannot use these words as identifiers (variable name or function name).

Ex: def, if, else, for, True, False ... etc

★ Input / Output Functions :

print ("How are you?") # old function
how are you ?

- We take input from the users
- # My name is Kitan, I am from Karnataka
n = input ("Enter your name")
p = input ("Enter your place")
- # general printing statement
print ("My name is", n, ", I am from", p)

Enter your name Kitan

Enter your place Karnataka

old My name is Kitan, I am from Karnataka

We can use alternative methods

- # format method

```
print("My name is %s, I am %s" % format(n, p))
```

o/p My name is Kitan, I am from Karnataka

- # f string method [It is used commonly in python]

```
print(f" My name is %s, I am %s" % (n, p))
```

o/p My name is Kitan, I am from Karnataka

Simple number display

```
num = 15
```

```
print(num) # 15
```

* Variable:

It is a place to store the values with specific variable name.

- Valid Variable declaration:

```
A = 15                      num1 = 1
```

```
b = 19                      num2 = 15
```

```
num = 123                  sub-marks = 24
```

```
Stu-name = "Kitan"
```

- Invalid variable declaration:
- `1Num = 78` • `@name$ = "Kiran"`
- `stu id = 1234`

H/W

01) What is python and why is it called an interpreted language?

⇒ Python is a high level, general purpose programming language known for its clear syntax and readability.

It is called an Interpreted language because its code is executed line-by-line by an interpreter at runtime. But when the first line is ~~error~~ then stop execution and throw the error in the which line.

02) What are the key features of python that make it popular for beginners and professionals?

- Easy to learn & Read
- Versatile and General-Purpose
- Extensive Libraries

- Large and active community
- cross platform
- Dynamically Typed

The python is very popular to beginners and professionals because the its syntax is clean and easy to understand in english language. It can use in the anything like web development, data science, AI, automation and more. Python has huge collection of pre-written code (libraries and frameworks). Python can run any platform like windows, macos, linux and other OS. You don't need to declare variable types, making code shorter and faster to write.

Q3] What is difference between python 2 and python 3?

⇒ Python 3 is the latest and present and future of the language, Python 2 is created by the BeOpen python labs team in 2000.

Python 2

- ASCII used for string type.
- Print is a special statement rather than a function.
- Integer division by default truncation - giving the fractional part $7/2 = 3$.

Python 3

- Unicode used for string type.
- print() is a built-in function in Python 3.6.
- It is true division, returning a float $7/2 = 3.5$.

Ques)

What are python's applications in real-world projects?

- Web development: Using frameworks like Django and Flask.
- Data Science and Analytics: Using libraries like Pandas, Numpy and matplotlib.
- ML and AI: Using powerful frameworks like TensorFlow, sklearn.
- Automation and scripting: Writing scripts to automate repetitive tasks.
- SW Development: As a supporting language for build control, testing, and

management.

- Scientific and Numeric Computing : In fields like biology, astronomy, and physics.

Q5) What is PEP 8 & why is it important in python programming?

⇒ PEP 8 is the official style guide for python code. PEP stands for "Python Enhancement Proposal".

It is important because :

- Readability : It promotes a consistent coding style, making code easier to read and understand for everyone.
- Maintainability : Consistent code is easier to maintain and modify.
- Community Standard : Following PEP 8 is a sign of a professional programmer and helps you integrate seamlessly into the python community.

It covers conventions for indentation, line length, variable and comments.

Q6) Who developed python and in which year was it released?

⇒ Python was developed by Guido van Rossum. Its first release was in 1991.

Q7) What do you mean by "dynamically typed" in Python?

⇒ It means that the type of variable (e.g., integer, string, list) is checked at runtime, not in advance. You don't need to declare the variable type; the interpreter infers it based on the value you assign.

This is flexible but requires the programmer to be careful, as type-related errors will only appear when the code is executed.

Q8) What is the difference between a compiler and an interpreter, and which does python use?

• Compiler: Translates the entire source code into machine code all at once.

once before execution.

- Interpreter: Translates and executes the source code line-by-line at runtime.

Which does python use: This is a common point of confusion. Python uses both, but it is primarily considered an interpreted language.

1. The python code is first compiled into an intermediate bytecode (.pyc file).
2. This bytecode is then executed by the python virtual machine (PVM), which is an interpreter.