## What is Python?

Python is a programming language. It allows you to control the computer. The benefits of Pythons are that it is simple and easy, portable, extensible.

## What are the main differences of Python from other programming languages.

Programs can be developed very quickly with this language. In addition, the simple and clean syntax of the Python programming language has made it a preferred language by many programmers. It's easy to write programs and read a program written by others. It has a wide range of countless libraries. It has build-in data structure and also it is free and open source programming language. So, it has been widely used - especially in Data Science - and has received lots of demands in recent years.

## What is PEP 8?

**PEP** stands for Python Enhancement Proposal.

PEP 8 is a coding convention, a set of recommendation, about how to write your Python code**more readable.**

In other words, PEP 8 is a document that gives coding conventions for the Python code comprising the standard library in the main Python distribution.

## What are the comments and how do you write it in Python?

Comments are used to explain code when the basic code itself isn't clear. Python ignores comments, and so will not execute code in there, or raise syntax errors for plain English sentences. Comments in Python start with a**#**character. '#' character converts all subsequent characters to the comment form that Python does nothing.

# this is a single line comment

print("Hello World!") # this is an inline comment

## What is docstring in Python?

**Docstrings** are - unlike regular comments - stored as an attribute of the function or the module they document, meaning that you can access them programmatically. Docstring runs as an explanatory text of codes and it should be written between triple quotes.

## Which of the following is an invalid statement?

a) x,y,z = 1, 22, 333  
b) x\_y\_z = 1,234,567  
c) xyz = 1,234,567  
**d) x y z = 111 222 333**

Spaces are not allowed in variable names.

## What are the 'type conversion' and basic methods of that in Python?

Type conversion refers to the conversion of one data type into another.

**int()** – converts some data types into integer type.

**float()** – converts some data types into float type.

**str() –** converts any data type into string type.

## What are the numerical data types in Python and their properties?

* **Integers** : they are whole numbers (positive, negative or zero), including no decimal point.
* **Floats** : they stand for real numbers with a decimal point.
* **Complexes** : they are written in the form, **x + yj** , where x is the real part and y is the imaginary part.

## What are the basic data types except the numerical and collection types?

**String** and **Boolean** types.

## Describe the Boolean types in detail.

**Boolean** types are called bool and their values are the two constant objects **False** and **True**. They are used to represent truth values (other values can also be considered false or true).

In numeric contexts (for example, when used as the argument to an arithmetic operator), they behave like the integers 0 and 1, respectively.

**Bools**are important data types that are widely used in Python as they can find use in every aspect of our daily lives. For example, imagine, whether the TV is turned on or off in your home or if the weather is rainy can be explained easily with bools.

## What is the 'variable' and how do you assign a value to it?

**Variable** is a location designated where a value can be stored and accessed later. Imagine a box where you store something. That's a variable.

Python variables do not need an explicit declaration to reserve memory space. The declaration happens automatically when you assign a value to a variable.

To create a variable in Python, all you need to do is specify the variable name and then assign a value to it.

## What is a boolean in Python?

Boolean is one of the built-in data types in Python, it mainly contains two values, and they are **True** and **False**.

**Python has three built-in Boolean operators. What are they?**

**They are :** and, or, not

**What is the order of priority of the logical operators?**

1. not
2. and
3. or

**What is the output of this Boolean logic : True and False or not True or False**

The answer is : **False**

You should follow the order of priority. Firstly, 'not True' is evaluated. Then 'and' is

evaluated from left to right. Lastly, 'or' is evaluated as well.

## What are the values evaluated to False when applied to a Boolean operator?

* None and False.
* Zero of any numeric type: 0, 0.0, 0j
* Empty sequences and collections: '', [], {}.
* Any remaining value is evaluated as True.

## What is the output of print(str[4:]) if str = 'Python Language' ?

on Language

## What is the output of print('%.5s' % x) if x = "HelloWorld!" ?

Hello

## There are several ways in Python that we use when processing and using string data structures. What are the most important of these:

* Arithmetic syntax (**+** ,  \*, and  =),
* **%** operator formatting,
* **string.format()** method,
* **f-string** formatting.

## If you want to use multiple 'f-string formatting' lines without parentheses, what will be the other option that you can use?

You can use backslashes 👉**\** between f-lines.

## What does the title() method do in Python?

Python provides the title() method to convert the first letter in each word to capital format while the rest turns to lowercase.

Example:

str = 'pYtHoN lAngUaGe'

print(str.title())

The output:

Python Language

## print("Actions speaks louder than words".upper().swapcase().capitalize()), will this code work? If yes, what will be the output? Describe how?

Yes it works. The syntax is : 'string.method()'. Changing the string using these methods returns string type again. The output is :

**Actions speaks louder than words**

Follow the additional examples below :

string.upper() # returns string type

string.upper().lower() # also returns string type

string.upper().lower().title() # returns string type again

## What are the 'string.startswith()' and 'string.endswith()' method used for? Describe how?

To search patterns in a string there are two useful methods called startswith() and endswith() that search for the particular pattern in the immediate beginning or end of a string and return True if the expression is found.