# Assignment - 2 (Python)

1. What the data types in python? Explain.

Data types in python are: 1. Numeric
2. Boolean
3. Sequence type
4. Dictionary

Numeric: Any Numeric value can be repragented by this.

Integer: Any positive or Negative number without decimal Part

Ex:- 2, 3, 9, -1, -7

Float: Any real number with fractional component.

Ex:- 2.00, 3.14

complex numbers: A number with real and imageuary Part. in the form $x+yj$

Ex:- $2+3i$

Boolean: Data with two build values i.e either True or false

Sequence type: Sequence is of collection of same/different data types.

String:- Collection of one or more characters which are kept single/double/thiple Quotes.

List:- It is an ordered collection of one or more data items. Kept in square braces.

Tuple:- A Tuple object is an ordered collection of one/more data items, not necessary of same type. put in parauthesis.

Dictionary:- collection of Unordered data in a key: value pair form. enclosed in curly braces.

Ex:- {1: "Steve", 2: "Bill", 3: "Ram" 4: "Fasha"}

2. Briefly explain history of python?

Python was introduced by Guido van Rossum in 1991 and developed by python software foundation. It was widely used in general-purpose high level programming language. It was mainly developed for emphasis on code readability and its syntax allows programmers to express concept in fewer lines of code.

In the late 1980's history was about to written. It was that time when working on python started. Soon after that, Guido van Rossum began doing its application. based work in dec of 1989 by at centrumwiskunde and informatica (CWI) which is situated in Netherlands It was started first as a hobby project because he was looking for an interesting project to keep him occupied during christmas. The programming language, which had the interfacing with the Amoeba operating system and had the feature of exception handling. He had already helped to create ABC earlier in his career and he provide code readability and advanced developer productivity when it was released it had more than enough capability to provide classes with inheritance, several core data-types exception handling and functions.

3. Explain the operations in Python?

Operations are the special symbols that perform Arthematic and logic operations. The value that the operator operates on is called the operand

Arthematic operations:

They are used to perform mathematical operations like addition, substraction, multiplication, etc.

Identity operators:-

is  x is True

isnot  x is not True

Membership operators:-

in  5 in x

not in  5 not in x

4. Explain the features of python:-

1. Easy to learn and use
Python is easy to learn and use. It is developer-friendly and high level programming language.

2. Expressive language:
It means that it is more understandable and readable.

3. Interpreted language
Interpreter executes the code line by line at a time. This makes debugging easy and thus suitable for beginners

4. Cross-platform language
It can run easily on different platforms such as windows, linux, unix etc. So we can say python is a portable language

5. Free and open source:
It is freely available at official web address source-code is also available ibit is open source.

6. Object-Obj oriented language.
It supports object oriented language and cocepts of classes and objects come into existance.

7. Extensible:
It implies that other languages such as c/c++ can

| | | |
|---|---|---|
| + | Add two operands or unary plus | x+y+2 |
| - | Substraction | x-y-2 |
| * | Multiplication | x*y |
| / | division | x/y |
| % | modules | x%y |
| // | floor division | x//y |
| ** | Exponent | x**y |

* comparision operations:-

| | |
|---|---|
| > | greater than |
| < | lesser than |
| == | Equal to |
| != | Not equal to |
| >= | Greater than equal to |
| <= | Less than equal to |

Logical operations:

| | |
|---|---|
| and | x and y |
| or | x or y |
| not | not x |

Bitwise operators:

| | |
|---|---|
| & | Bitwise AND |
| \| | Bitwise OR |
| ~ | Bitwise Not |
| ^ | Bitwise XOR |
| >> | Bitwise right Shift |
| << | Bitwise left shift |

* Assignment operators.

| | |
|---|---|
| = | x=5 |
| += | x+=5 |
| -= | x-=5 |
| *= | x*=5 |
| /= | x/=5 |
| %= | x%=5 |
| //= | x//=5 |
| **= | x**=5 |
| &= | x&=5 |
| \|= | x\|=5 |
| ^= | x^=5 |
| >>= | x>>=5 |
| <<= | x<<=5 |

be used to compile the code an further in our program Python code.

8. Large standard library:
Python has large and broad library and provide rich set of module and functions for rapid application development.

9. GUI programming support
Graphical user interface can be developed using python.

10. Integrated
It can be easily integrated with languages like c, c++, Java etc.

5. Justify why python is interactive interpreted language?
Python is an interacted interactive language because ulike c/c++ etc, python is an interpreted object oriented programming language by interacted it is meant that each time a program is run time the interpreter checks through the code for errors and then interpretes the instruct into machine readable bytecode we can easily integrated.
python with other languages like c, c++, etc.. there is no need to complete compile python code this makes it easier to debug our code.
The source code of python is converted into an immediate form called byte code.