

Assignment - 2

1) What are the data types in Python? Explain.

A) There are 5 types of data types.

1. Numeric
2. Sequence Type
3. Boolean
4. Set
5. Dictionary

1. Numeric: Numeric datatype represents the data which has numeric value. These values are defined as int, float, complex etc.

2. Sequence Type: Sequence is the ordered collection of similar (or) different data types. They are String, List, Tuple.

3. Boolean: Boolean data type has two boolean values. They are True or False.

4. set: set is an unordered collection of data type that is iterable, mutable and no duplicate element. When the element should add in set we use `set` built in function `add()` and `remove()`

5. Dictionary: Dictionary in Python is unordered collection of data value. used to store data values like a map. Each key - value pair in Dictionary is separated by colon, where as each key is separated by comma. Dictionary can be created by placing a sequence of element within curly {} separate by 'comma'.

*Removing element in Dictionary. by using `del` keyword.

2. Briefly explain history of Python.

(A) Python was created in 1980's and implementation began in 1989 December. Python was created by Guido van Rossum in the Netherlands as successor to ABC language. capable of exception handling and

interfacing with Amocha operating system. Python's design philosophy emphasizes code readability with its notable use of significant white space. van Rossum shouldered sole responsibility for the project as lead developer until 12 July 2018. Python 2.0 was released in '16 October 2000', Python 3.0 was released in '3 Decem 2008'. Python 2.7 end-of-life date was initially set at 2005 postponed to 2020

3. Explain all the operators in python?

① They are 7 types of operators.

1. Arithmetic operator
2. Relational operator
3. Assignment operator
4. Logical operator
5. Membership operator
6. Identity operator
7. Bitwise operator.

1. Arithmetic operator: $+$, $-$, $*$, $/$, $**$, $//$, $\%$
2. Relational operator: $<$, $>$, $<=$, $>=$, $==$, $!=$
3. Assignment operator: $=$, $+=$, $-=$, $/=$, $*=$, $\%=$, $**=$, $//=$
4. Logical operator: and , or , not
5. Membership operator: in , $not in$
6. Identity operator: is , $is not$
7. Bitwise operator: $&$, $|$, $(^)$, (\sim) , (\ll) , (\gg)

4. Explain the features of Python.

- A) * simple
- * easy to learn

* Easy to learn & code: Python is high level ~~level~~ programming language. Python is very easy to learn as compared to other languages.

* free & open source: Python language is freely available at official website. open source means source code is available to public.

* object-oriented language :- one of key features of python is object-oriented programming. python supports concept of class, object encapsulation.

* GUI programming support :- Graphical users interface can be made using Tk, Tkinter, Tk in python. Tkinter is most popular in creating graphical app with python.

* high level language :- python is High-Level language. when we write program in python, we don't need to remember the system architecture.

* Extensible feature :- python is extensible language we can write our python code into C (or) C++ language -

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* Integrated language:- Python is also an Integrated because we can easily integrate Python with other languages.

* Interpreted language:- Python is interpreted because Python code is executed line by line to time. There is no need to compile Python makes easy to debug.

5 justify why Python is interactive interpreted language?

① Python is interpreted language because Python code is executed line by line. There is no need to compile Python code this make it easier to debug our code.

* Python is interactive :- when a python statement entered and is followed by Return ^{key} and followed by return result will be printed on screen immediately, in the next line. This is particularly advantageous in debugging process.