Assignment-2

1. what are the data types of python? Explain?

⇒ The standard types of python:

- * Numeric
- * Sequence type
- * Boolean
- * Set
- * dictionary.

→ Numeric:- In python numeric data type represent the data which has numeric value. Numeric value can be integer, floating number (or) even complex numbers.

These are divided into

- * Integers
- * Float
- * Complex numbers.

*Integer:- It is represented by int class. It Contains Positive (or) negative whole numbers.

*Float :- It is represented by float class. It is a real number with floating point. representation. It is specified by decimal Point.

* Complex numbers:- Complex number is represented by Complex class. It is specified as real part + (Imaginary Part) j

→ sequence type :- Sequence is the ordered collection of similor : (or) different data types.n. sequences allows to Store multiple values in an organized and efficient fashion

There are several sequence types in Python:-

→ String

→ List

→ Tuple.

→ String :- strings are arrays of bytes representing unicode characters. It is represented by s/r class

→ List :- list are Just like, the arrays declared in other languages. It is represented by list class.

→ Tuple :- Tuples are created by placing sequence of values. seporated by 'comma' with (or) without the of Parathesis for grouping of data sequence. It is a bit tricky. There must be 'comma' to make it tuple.

⇒ Boolean :- Data type with one of the two built in values, True (or) False. In Python true and False should be capital 'T' and 'F' otherwise it shows error. It is terminated as bool.

⇒ **Set** :- Set is an unordered Collection of datatype that is iterable, mutable and has no duplicate elements. The major advantage of using a set is as opposed to a list, is that: has daily optimized method for checking whet Specific element is Contained in the set.

⇒ **Dictionary** :- Dictionary can be Created by plac a sequence of element within only curly {} braces, separated by 'comma'. Dictionary holds a Pair of values, one being the Key and the oth corresponding pair element.

2.> Briefly Explain history of python?

Python was conceived in the late 1980 by GUIDO VAN ROSUM of Centrum wiskunde Intermission (CWI) in the neither lands as to the ABC language capable of exception handling and interfacing with the Amoeba operating system.

→ Python 2.0, released in 2000, Introduced features like list comprehensions and a garbage collection system with reference counting

→ Python Interpreters are available for

many operating systems. n global community of programers develops and mountain cpython. as open source. reference implementation.

→ Python is a multi-paradigm programming language, object oriented programming and structed programming.

3) Explain all the operators in python?

⇒ Arithemetic operator:- It is used to perform mathematical operations like addition, ~~sub~~subtraction, multiplication and division.

operator	meaning	example
+	adds 2 operands	x+y
–	subtracts 2 operands	x-y
*	multiplies 2 operands	x*y
/	divides first operand by second operand (float)	x/y
//	floor division	x//y
**	left operand raised to the power of right operand	x**y

⇒ Comparision operators:- Comparision operators are used to compare values. It returns either 'true' (or) 'False' according to the condition.

operator	meaning	Example
>	Greater than	x>y
<	Less than	x<y
==	equal to	x==y
!=	Not equal to	x!=y
>=	Greater than or equal to	x>=y
<=	Less than or equal to	x<=y

⇒ Logical operators:- Logical operators are the and, or, not operators.

operator	meaning	example
and	True if both the operands are true	x and y
or	True if either of the operands is true.	x or y
not	True if operand is false (Complements the operand)	not x

⇒ Bitwise operators:- Bitwise operators act an operands as if they were strings of binary binary digits they operate bit by bit.

operator	meaning	example
&	Bitwise AND	x&y
|	Bitwise OR	x|y
~	Bitwise NOT	~x

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^	Bitwise XOR	x^y
>>	Bitwise right shift	x >>
<<	Bitwise left shift	x <<

Assignment operators:- Assignment operators are used in python to assign values to variable.

operator	meaning	example
+=	Add AND	x += y

-=	Subtract AND	x -= y
		x = x - y

*=	multiply AND	x * = y x = x * y
/=	division AND	x /= y x = x/y
%=	Modulus AND	x%=y x = x %y
//=	floor AND	x //= y x = x //y
**=	Exponent AND	x **= y x = x **y
|=	Bitwise OR	x |= y x = x|y
^=	Bitwise XOR	x ^= y x = x ^y

=> Special operators:- Is and is not are the identity operators in python. They are used to check if two values are located on the Same Part of the memory.

operator	meaning	Example
is	True if the operands are identical	x is true
is not	True if the operands are not identical	x is not true

=> Membership operators: in and not in are the membership operators in python.

operator	meaning	example
in	True if value is found in the sequence	5 in x
not in	True if value is not found in sequence	5 not in x

4> Explain the features of python?

* Easy to code
* Free and open source
* object oriented language
* Extensible
* Large standard library
* GUI programming support
* Integrated and Interpreted language
* Portable language
* High level language
* Dynamically typed language

5> Justify why python is interative interpreted language?

* Python program runs directly from the source code.

* Python converts source code written by the programmer into intermediate language which is again translated into the native language. machine language that is executed. so Python is interpreted language.

* Python processed at runtime by the interpreter. Program need to be compiled before it's executed.