Module 1 : Assignment 2

1. What are the data types in python ? Explain.
   : Python has ~~five~~ six standard Data Types.

   → Number        → sets
   → String
   → List
   → Dictionary
   → Tuple

Number : It includes integers, floating point numbers and complex numbers. They are defined as int, float and complex classes in python. We can use the type() function to know which class a variable or a value belongs to. Similarly the isInstance() function is used to check if an object belongs to a particular class.

List : It is an ordered sequence of items. It is one of the most used datatypes in python and is very flexible. All the items in a list do not need to be of the same data type.
Declaring a list is pretty straight forward. Items separated by commas are enclosed within the brackets .[ ].

Tuple : It is an ordered sequence of items same as a list. The only difference is that tuples are immutable. Tuples once created cannot be multiplied modified.

Tuples are used to write-protect data and are usually faster than lists as they cannot change dynamically

Strings : String is a sequence of Unicode characters. We can use string in single or double, quotes. Multi line strings can be used by using triple quotes.

Set : Set is a collection of unique items. A set is defined by values separated by comma inside braces {}. Items in a set are not ordered.

Dictionary: It is an unordered collection of key value- pairs. It is generally used when we have huge amount of data. Dictionaries are optimized for retrieving data. In python dictionaries are defined with braces {}

2) Briefly explain history of python.

Python is a general purpose interpreted interactive, object-oriented, and high level programming language.

It was created by Guido Van Rossum during 1985 - 1990.

Python was named after a TV show called Monty Pythons' flying Circus and not after python the snake.

Since it is high level language it should be converted to machine level language so it executes line by line code to convert to Machine level language.

3) Explain the operators in python.

→ Arithmetic operators
→ Assignment operator
→ Comparision operator
→ logical operator
→ Bitwise operator.

Arithmetic operators are used with numeric values to perform common mathematical operations.

$+, -, *, /, ., **, //$.

+ Addition

- Subtraction

* Multiplication

/ Division

% Modulous

** Exponentiation

// floor division.

Assignment operators : Its used to Assign the values to variables.

+=    -=    *=    /=    %=    //=    **=

Comparision operators : These are used to compare two values .

== Equal

!= Not equal

> Greater than

< Less than

>= Greater than or equal to.

<= Less than or equal to.

logical operators : are used to combine conditional statements.

and , or , not

Bitwise operators : They are used to compare binary numbers .

     &      AND

     |      OR

     ^      XOR

     ~      NOT

4) Explain the features of python.

Python is a high level language.

Easy to Code.

Object Oriented language.

Extensible features

Easy to learn : It is easy than any other programming language. There is no use of semi colon or curly brackets.

Expressive language : It can perform complex tasks using a few lines of codes

Interpretted language : It is interpretted language it means the python program is executed one line at a time.

Dynamic Memory Allocation : We dont need to specify the data type in python

of a variable. When we specify some some value to the variable it automatically allocates the value.

5) Justify why python is interactive interpretted language.

Python program runs directly from the source code. Each time python programs are executed code is required.

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

So python is interpretted language.

It is proceeded at runtime by the interpretter.

Hence, python is interactive and interpretted language as it translates the given code line by line in a machine readable language.