Assignment-2

1. What are the data types in python? Explain

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1. Numbers: Number datatypes store numeric values. Number objects are created when you assign a value to them

2. Strings: Strings in phython are identified as a contiguos set of characters represented in the quotation marks. It allows either pair of single or double quotes.

3. Lists: Lists are the most versatile of Python's compound data types. A list contains items separated by commas and enclosed within square brackets ([]).

4. Tuples: It is another sequence data type that is similar to the list. A tuple consists of a number of values separated by commas. Unlike lists, however, tuples are enclosed within parameters.

5. Dictionary: Python's dictionaries are kind of hash-table type. They work like associative arrays or hashes found in Perl and consist of key-value pairs. A dictionary key can be almost any Python type, but are usually numbers or strings. Dictionaries are enclosed within curly braces.

2. Briefly explain history of Python.

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In late 1980's history was about to be written. It was that time when working on Python started. Soon after that, Guido Van Rossum began doing its application based work in December of 1989 at CWI

The programming language Python is said to have

succeeded in ABC Programming Language, which had the interfacing with Amoeba OS & had the feature of exception handling. He had already helped to create ABC earlier in his career and he had been some issues with ABC but liked most of the features.

The inspiration for the name came from BBC's TV show - 'Monty Python's Flying Circus', as he was big fan of the TV show & also he wanted to a short, unique & slightly mysterious name for his invention and hence he named it Python! He was the "Benevolent dictator for life" until he stepped down from the position as the leader on 12th July 2018. For quite some time he used to work for Google, but currently he is working at Dropbox.

The language was released in 1991, it had a lot fewer codes to express compared to Java, C++ etc. Its main objective is to provide code readability and advanced developer productivity. When it was released it had more than enough capability to provide class, with inheritance, & core datatypes exception handling & functions.

3. Explain Operators in Python

→ Operators are special symbols that represent computations like addition & multiplication. The values the operator is applied to are called operands.

→ The operators +, -, *, /, ** perform addition, subtraction, multiplication, division, & exponentiation as in follows

- 20+32
- hour-1
- hour*60+minute

- minute/60
- 5**2
- (5+9)*(15-7)

4. Explain the features of Python.

→ Python features are as follows.

1) Easy to learn & use

Python is easy to learn & use, it is developer friendly and high level programming language.

* Expressive language:

Python language is more expressive means that it is more understandable and readable.

* Interpreted language:

Interpreter executes the code line by line at a time. This makes debugging easy & thus suitable for beginners.

* Cross-platform language:

Python can run equally on different platforms such as windows, linux, unix & etc.

* Free & open source:

Python is freely available at official web address. The source-code is also available.

* object-oriented language:

Python supports object oriented language and concepts of classes & objects come into existence

* Extensible:

It implies that other languages such as C/C++ can be used to compile the code & thus it can be used further in our python code.

* Large Standard Library:
Python has a large and broad library & provides rich set of module and functions for rapid application development

* GUI programming Support:
Graphical user interfaces can be developed using Python

* Integrated:
It can be easily integrated with languages like, C, C++, JAVA

5. Justify why Python is interactive interpreted language

Unlike C/C++ etc, Python is an interpreted language, It means that each time a program is run the interpreter checks through the code for errors & then interprets the instructions into machine-redable bytcode.

Python is interactive, when a statement is entered, & is followed by the Return key, if appropriate the result will be printed on the screen, immediately, in the next line. This is particularly advantageous in debugging process.