**Python overview:**

**Python** is a widely used [high-level programming language](https://en.wikipedia.org/wiki/High-level_programming_language) for [general-purpose programming](https://en.wikipedia.org/wiki/General-purpose_programming_language), created by [Guido van Rossum](https://en.wikipedia.org/wiki/Guido_van_Rossum) and first released in 1991.

An [interpreted language](https://en.wikipedia.org/wiki/Interpreted_language), Python has a design philosophy which emphasizes code [readability](https://en.wikipedia.org/wiki/Readability)

(notably using [whitespace](https://en.wikipedia.org/wiki/Whitespace_character) indentation to delimit [code blocks](https://en.wikipedia.org/wiki/Code_block) rather than curly braces or keywords)

Python features a [dynamic type](https://en.wikipedia.org/wiki/Dynamic_type) system and automatic [memory management](https://en.wikipedia.org/wiki/Memory_management) and supports multiple [programming paradigms](https://en.wikipedia.org/wiki/Programming_paradigm), including [object-oriented](https://en.wikipedia.org/wiki/Object-oriented_programming), [imperative](https://en.wikipedia.org/wiki/Imperative_programming), [functional programming](https://en.wikipedia.org/wiki/Functional_programming), and [procedural](https://en.wikipedia.org/wiki/Procedural_programming) styles. It has a large and comprehensive [standard library](https://en.wikipedia.org/wiki/Standard_library).[[25]](https://en.wikipedia.org/wiki/Python_(programming_language)#cite_note-About-25)

* Object oriented
* Portable
* Power full
* Easy to use
* Mixed with features from java,c++,perl

**Python installation:**

* **Go to this site** [**https://www.python.org/**](https://www.python.org/) **and click on download there we can python 2.7.13 then download it.**
* **Set environment variables**
* **Install pip**

**Data types in Python:**

1. **Number**

a=10

1. **String**

We can represent string Using single or double or three quotes.

Example:

S=”hello” or s=’hello’ or s=”””hello”””

**String functions:**

Count

Endswith

Startswith

Split

Join

Splitlines

Index

find

**Slicing**: by using this we can get substring from the main string (important)

Syntax:

S=”I am teaching python”

S[ start :end : step]

Start: start index

End :ending index

Step: step number

**Question on string functions:**

1)Difference b/w index and find functions of string.?

2)what is slicing ?

3)**List**

It is a Sequential collection of ordered items

List is a mutable object (mutable means we can change the values)

By using square brackets we can represent the list (ex: l=[] it is one empty list)

Ex:

L=[1,2,3,”hello”]

List functions :

Append, extend,count,index,remove, pop,insert

Questions on list:

What is list?

What is difference b/w append and extend?

4)**Tuple**

It is a Sequential collection of ordered items

Tuple is immutable object

By using parenthesis we can represent a list (ex=(,) empty list)

Example :

T=(1,2,3,’hello’)

Tuple functions:

Index,count

Questions on tuple:

What is tuple?

Deference b/w list and tuple?

Compare to list and tuple which one is fast ?

**Note :list or tuple each item separated by comma (,)**

5) **Dictionary**

Unordered Collection of key value pairs

By using curly brackets we can represent the dictionary

In the dictionary key are immutable values are mutable

Following way to define a dictionary:

Syntax :

**D={ key:value,key:value,key:value,……….}**

**D={“chinna”:”m-tech”,”bhavana”:”b-tech”}**

**Or**

**L=[(“chinna”,”m-tech”),(“bhavana”,”b-tech”)]**

**D=dict(l)**

Dictionary functions:

Keys , values ,pop ,get ,items ,has\_key

6) **Set**

Unordered collection of unique items

By using curly brackets we can represent the set

Example:

S={1,2,3,4,”hello”}