1.Keep fastest growing term:- time = a\*n

2.Drop constants:- o(n)

:- Measuring running time growth: time complexity

Measuring space growth: space complexity

Array:

Int[] stock prices = new int[5] :- this static array

Stock prices[0]=400;

Array List<Integer> stock prices = new Array list<Integer>(); :- this is dynamic

Stock prices. Add(298);

Linked list:

Liked list has two main benefits over an array,

1. You don’t need to pre-allocate space
2. Insertion is easier

What is Data Structure?

Data structure is a particular way of storing data and organizing data in a computer so that it can be used efficiently.

Classification of Dsa.

1.Linear data structure:-Array, dynamic array, LinkedList, stack, queue, dequeue, etc.

2.Non-Linear data structure:- Binary Trees, Binary Search Trees(BST),AVL Trees

**Algorithm:-** An Algorithm is the step by step procedure or set of rules of logic to solving a given problem

**Array:-**

**1.**It is used to Stroe multiple values in a single variable, and it’s store data same data type.

**2.**This module defines an object type which can efficiently represent an array of basic values:-character, integers, floating point numbers

**How to creating Array:-**

From array import \*

A1=array(type code,[element])

A1=array(‘I’,[23,56,11])

Type(A1)

**Array Methods:-**

Append(),Count(),extend(),from list(),index(), insert(),pop(),remove(),reverse(),to list()

**List:-**

list is a class

list is mutable

list elements ae indexed

list is lterable

list can grow(dynamic array)

list can contain different types of elements

**what Is the difference between Array and dynamic array in general science not in python.**

**Array:-**

1.collection of same type elements

2.fixed size

3.indexed

**Dynamic:-**

1.collection of same type elements

2.resizable

3. indexed

**Create list Object:-**

L1=[10,20,30]

L2 =[]

L3=[10,57,’abx’]

**Methods of list**

Append(),Count(),extend(),index(), insert(),pop(),remove(),sort()

**Class:-**

Class is like an object constructor, or a "blueprint" for creating objects.

Class test:

#attribute

**Attributes:-**

Attributes are members of variables and members of functions

Class test:

X=5

def f1():

# some code

Note:- here x and f1 are attributes.

**Objects:-**

Objects is an instance of a class

Objects can contain variable and data.

Objects are of two types

1.class object

2.Instance object

T1 = test()

T2= test()

Note:- T1 And T2 are Instance

Objects of test class