1. Data Structures: List

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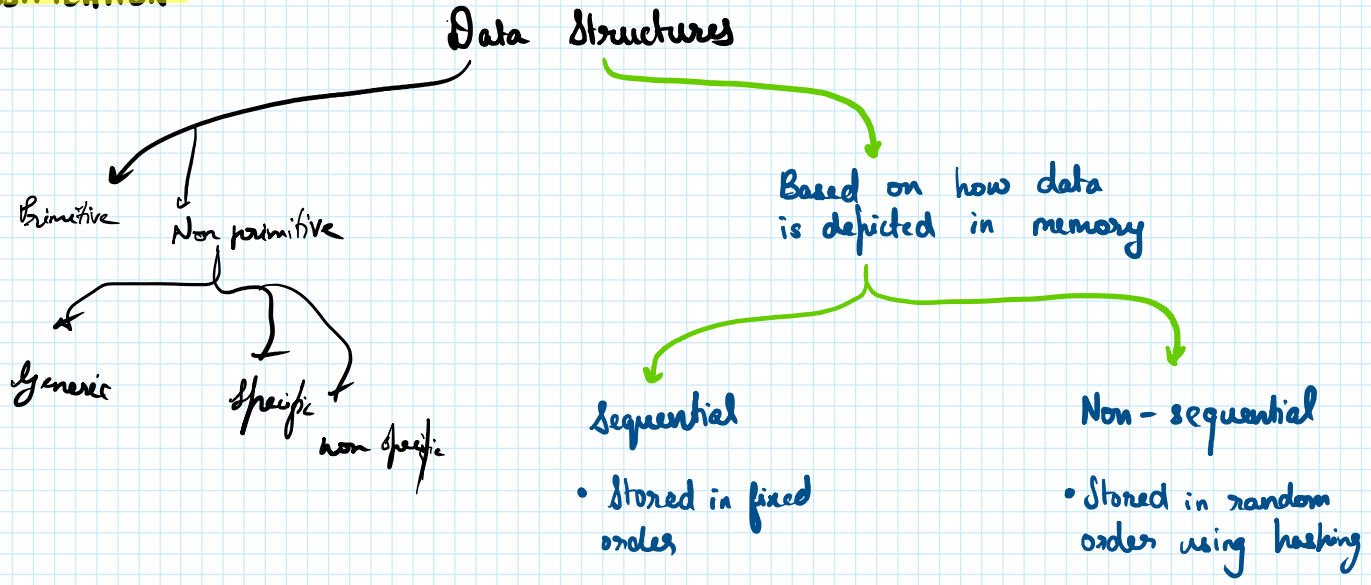
DATA STRUCTURES

Method of storing data efficiently ⟶ data structure

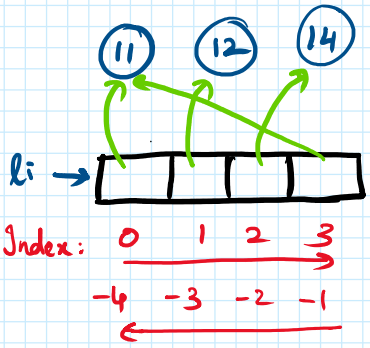
CLASSIFICATION



LIST

- Non-primitive datatype
- Sequential data structure
- Any no. of elements of any datatype
- Homogeneous / heterogeneous
  - Homogeneous → only one datatype
  - heterogeneous → more than one datatype
- Allows duplicate elements
- Indexable
- Mutable
- Iterable

li = [11, 12, 14, 11]



list slicing

- li [1::2] → [12, 11]
- li [::-1] → [11, 14, 12, 11]
- li [0:2] → [11, 12, 14]

> **NOTE:**
> If the list is empty, index does not exist. You cannot assign a value to an index that does not exist.

List functions

① append()

list_name.append([object/data to append])

Adds specified object to the end of the list

② extend()

list_name.extend([iterable])

Takes each element one at a time from given iterable and appends it to the list

③ list()

a = list([iterable])

If no argument is given ⟶ creates new empty list

If iterable argument is given ⟶ creates new list with each element of the iterable becoming an element of the list

Eg: a = list("test") ⟶ ['t', 'e', 's', 't']

list() is a constructor function.

NOTE: Constructor function

Special method in a class used to create and initialise an object of that class