ARRAY IN PYTHON

WHAT IS AN ARRAY IN PYTHON?

In Python, a list is commonly used as a dynamic array.

- An array is a collection of items stored in a single variable.
- Elements can be accessed using an index, starting from 0.

Syntax Example:

```
numbers = [10, 20, 30, 40]
print(numbers[0]) # Output: 10
```

WAYS TO ACCESS ELEMENTS

- You can access array elements by index.
- Negative indexing starts from the end.

Syntax Example:

```
numbers = [10, 20, 30, 40]
print(numbers[2])   # 30
print(numbers[-1])  # 40
```

LIST OPERATIONS

Lists support common array operations.

- Concatenation

Syntax Example:

```
a = [1, 2] + [3, 4]  # [1, 2, 3, 4]
```

- Repetition

Syntax Example:

```
b = [0] * 3  # [0, 0, 0]
```

LIST OPERATIONS

- Slicing

Syntax Example:

```
nums = [10, 20, 30, 40]
print(nums[1:3])  # [20, 30]
```

- Membership

Syntax Example:

```
 print(20 in nums)  # True
```

LOOPING THROUGH AN ARRAY

Use for loop to iterate directly or with index.

- Direct loop

Syntax Example:

```
for num in numbers:
    print(num)
```

- With index

Syntax Example:

```
 for i in range(len(numbers)):
    print(numbers[i])
```

ARRAY METHOD – APPEND() & EXTEND()

append(): Adds a single element

syntax:
nums.append(50)

extend(): Adds elements from another list

syntax:
nums.extend([60, 70])

ARRAY METHOD – INSERT() & REMOVE()

insert(): Insert at specific index

syntax:
nums.insert(1, 25)

remove(): Removes first matching value

syntax:
nums.remove(30)

ARRAY METHOD – POP() & INDEX()

pop(): Removes and returns element

syntax:
nums.pop() # Last item

index(): Finds index of value

syntax:
nums.index(20)

ARRAY METHOD – SORT() & REVERSE()

sort(): Sorts the list

syntax:
nums.sort()

reverse(): Reverses the list

syntax:
nums.reverse()