List

- **List items are enclosed in square brackets**
- **List items are ordered, use index to access elements**
- **List are mutable → can add, delete, update**
- **List elements are not unique**
- **You can use strings methods in list**
- **When use slicing the output is presented in list**

```
myList = ["osama", "mohamed", True, 1, 5]

# print the value of index 1
print(myList[1])    # mohamed

# print the value of last index
print(myList[-1])   # 5

# edit the list element
myList[1] = "Mohamed"
print(myList[1])        # Mohamed
```

List Methods

- **append()**
  - **used to insert new element to the end of list**
  - **append can be integer, string, Boolean, float, …**
  - **if you want to add list to list, the new list will be added <u>as list</u>**

```
names = ["Osama", "Mohamed", "Ali"]
names.append("Mona")
print(names)        # ['Osama', 'Mohamed', 'Ali', 'Mona']
```

- **extend()**
  - **used to insert element to the list**
  - **you can determine the position of inserted element**
  - **if you want to add list to list, the new list will be added <u>as elements</u>**

```
names = ["Osama", "Mohamed", "Ali"]
names.insert(0, "Alaa")     # ['Alaa', 'Osama', 'Mohamed', 'Ali']
print(names)
```

- **remove()**
  - **used to remove element from the list by it's name**
  - **make error if the name if not exist**

```
names = ["Osama", "Mohamed", "Ali"]
names.remove("Ali")     # ['Osama', 'Mohamed']
print(names)
```

- **sort()**
  - **used to integer elements on the list**
  - **sort the string elements on the list**
  - **can't sort string and integer together**
  - **you can reverse the sorting**

```
names = ["Osama", "Mohamed", "Ali"]
names.sort(reverse = True)
print(names)        # ['Osama', 'Mohamed', 'Ali']

names.sort()
print(names)        # ['Ali', 'Mohamed', 'Osama']
```