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# Programming

## Lab Sessions

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# List Methods

| Method | Description |
|---|---|
| append() | Adds an element at the end of the list |
| clear() | Removes all the elements from the list |
| copy() | Returns a copy of the list |
| count() | Returns the number of elements with the specified value |
| extend() | Add the elements of a list (or any iterable), to the end of the current list |
| index() | Returns the index of the first element with the specified value |
| insert() | Adds an element at the specified position |
| pop() | Removes the element at the specified position |
| remove() | Removes the first item with the specified value |
| reverse() | Reverses the order of the list |
| sort() | Sorts the list |

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# Exercise 1

- Variable *kingdoms* refers to the list of animal kingdom *['Bacteria', 'Protozoa', 'Chromista', 'Plantae', 'Fungi', 'Animalia'].* Using kingdoms and slicing or indexing with both positive and negative indexes, write expressions that produce the following:

a. The first item of kingdoms

b. The last item of kingdoms

c. The list *['Bacteria', 'Protozoa', 'Chromista']*

d. The list *['Chromista', 'Plantae', 'Fungi']*

e. The list *['Fungi', 'Animalia']*

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- Using positive indexes

```
kingdoms[0]
kingdoms[5]
kingdoms[:3]
kingdoms[2:5]
kingdoms[4:]
```

- Using negative indexes

```
kingdoms[-6]
kingdoms[-1]
kingdoms[-6:-3]
kingdoms[-4:-1]
kingdoms[-2:]
kingdoms[-1:-2]
```

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# Exercise 11

- Variable ids refers to the list [4353, 2314, 2956, 3382, 9362, 3900]. Using list methods, do the following:

a. Remove 3382 from the list.

b. Get the index of 9362.

c. Insert 4499 in the list after 9362.

d. Extend the list by adding [5566, 1830] to it.

e. Reverse the list.

f. Sort the list.

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```
#a.
ids.remove(3382)

#b.
ids.index(9362)

#c.
ids.insert(ids.index(9362) + 1, 4499)

#d.
ids.append(5566)
ids.append(1830)

#e.
ids.reverse()

#f.
ids.sort()
```

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# Exercise III

- Assign a list that contains the price of six pizza flavors — cheese (4), magherita (12), Vesuvius (20), Kebab (38), Peperoni (56), and UFO (88)—to a variable called pizza_prices.

a. Which index contains UFO's price? Write the answer in two ways, one using a positive index and one using a negative index.

b. Write code that tells you how many items there are in pizza_prices.

c. Write code that returns the highest price in pizza_prices.

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```
#a.
pizza_prices[5], pizza_prices[-1]

#b.
len(pizza_prices)

#c.
max(pizza_prices)
```

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# Exercise IV

- Create a list of temperatures in degrees Celsius with the values 25.2,16.8, 31.4, 23.9, 28, 22.5, and 19.6, and assign it to a variable called *temps*.

a. Using one of the list methods, sort temps in ascending order.

b. Using slicing, create two new lists, cool_temps and warm_temps, which contain the temperatures below and above 20 degrees Celsius, respectively.

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```
temps = [25.2, 16.8, 31.4, 23.9, 28, 22.5, 19.6]

#a.
temps.sort()

#b.
cool_temps = temps[0:2]
warm_temps = temps[2:]
```

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# Exercise V

Write a function same_first_last(L)  that returns True if and only if first item of the list is the same as the last. Otherwise it returns false.

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```
def same_first_last(L):
 return L[0] == L[-1]
```

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# Exercise VI

Write a function is_longer(L1, L2) that returns True if and only if the length of L1 is longer than the length of L2.

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```
def is_longer(L1, L2):
 return len(L1) > len(L2)
```

# Fin