Future Connect Media

Python Part C

Part of Future Connect Media's IT Course

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Topics to be covered:

- List
- Tuple

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Python List

- Python List: Storing multiple items in a single variable. It is denoted by ‘[]’.List items can be of any data type.

```
list=['bmw','mercedes','audi']
print(list)
```

```
['bmw', 'mercedes', 'audi']
```

- List length:

```
list=['bmw','mercedes','audi']
print(len(list))
```

```
3
```

- Change List item:

```
>>> list=['bmw','mercedes','audi']
>>> list[1]='jaguar'
>>> print(list)
['bmw', 'jaguar', 'audi']
```

- Append List:

```
>>> list=['bmw','mercedes','audi']
>>> list.append('mercedes')#
>>> print(list)
['bmw', 'mercedes', 'audi', 'mercedes']
```

- Insert into List:

```
>>> list=['bmw','mercedes','audi']
>>> list.insert(1,'jaguar')
>>> print(list)
['bmw', 'jaguar', 'mercedes', 'audi']
```

- Extend List:

```
>>> list=['bmw','mercedes','audi']
>>> list1=['black','white','silver']
>>> list.extend(list1)
>>> print(list)
['bmw', 'mercedes', 'audi', 'black', 'white', 'silver']
```

- Removing an item:

```
>>> list=['bmw','mercedes','audi']
>>> list.remove('mercedes')
>>> print(list)
['bmw', 'audi']
```

- Sort List:

```
>>> list=['bmw','mercedes','audi']
>>> list.sort()
>>> print(list)
['audi', 'bmw', 'mercedes']
```

- Sort List (descending):

```
>>> list=['bmw','mercedes','audi']
>>> list.sort(reverse=True)
>>> print(list)
['mercedes', 'bmw', 'audi']
```

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List Method

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 item with the specified value
reverse()	Reverses the order of the list
sort()	Sorts the list

Tuple

- Tuple: An ordered and immutable group of things or objects is referred to as a tuple. Sequences are what tuples and lists both are. Tuples and lists vary in that tuples cannot be altered, although lists can, and tuple use parentheses while lists use square brackets. The index of the first item in the tuple is denoted by [0], index of second item [1] and so on.

```
>>> tuple=('bmw','mercedes','audi','jaguar')
>>> print(tuple);
('bmw', 'mercedes', 'audi', 'jaguar')
```

```
>>> tuple=('bmw','mercedes','audi','jaguar')
>>> print(tuple[-3:-1]);
('mercedes', 'audi')
```

#last item has the index [-1].

- Updating items in a tuple:

```
t = ('bmw', 'mercedes', 'audi', 'jaguar')
l = list(t)
l[1] = 'bentley'
t = tuple(l)
print(t)
```

```
('bmw', 'bentley', 'audi', 'jaguar')
```

- Adding item to a tuple:

```
t = ('bmw', 'mercedes', 'audi', 'jaguar')
l = list(t)
l.append('bentley')
t = tuple(l)
print(t)
```

```
('bmw', 'mercedes', 'audi', 'jaguar', 'bentley')
```

- Adding tuple to a tuple:

```
t = ('bmw', 'mercedes', 'audi', 'jaguar')
t1 = ('bentley',)
t += t1
print(t)
```

```
('bmw', 'mercedes', 'audi', 'jaguar', 'bentley')
```

- Joining tuples:

```
t = ('bmw', 'mercedes', 'audi', 'jaguar')
t1 = ('1','2','3','4')
t2= t + t1
print(t2)
```

```
('bmw', 'mercedes', 'audi', 'jaguar', '1', '2', '3', '4')
```

Tuple Method

Method	Description
count()	Returns the number of times a specified value occurs in a tuple
index()	Searches the tuple for a specified value and returns the position of where it was found