

## 2 feb assignment

February 9, 2023

[ ]: Q1. What are the characteristics of the tuples? Is tuple immutable?

Ans- The tuples are an ordered collection of elements of different data types.  
→ We represent them by writing the element inside the parenthesis separated by commas. We can also define tuples as lists that we cannot change. Therefore, we can call them immutable tuples.

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[ ]: Q2. What are the two tuple methods in python? Give an example of each method.  
→ Give a reason why tuples have only two in-built methods as compared to Lists.

Ans- python has two built-in methods that can use on tuples. 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.

##Examples

[5]: t1=( "abcd")

[6]: t1.count("abcd")

[6]: 1

[7]: t1=(1,2,3,4,5)

[9]: t1.index(3)

[9]: 2

[ ]: tuples are immutable. you cannot change items of a tuple once it is assigned.  
→ there are only two tuple methods count() and index() that a tuple object can call. the length of the tuple is fixed, whereas the length of a list is variable. the list can have different sizes, but

`tuple` cannot. tuples are allocated large block of memory with lower overhead than lists because they are immutable, whereas for lists, small memory blocks are allocated.

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[ ]: Q3. Which collection datatypes in python do not allow duplicate items? Write a code using a set to remove duplicates from the given list.

[10]: List = [1, 1, 1, 2, 1, 3, 1, 4, 2, 1, 2, 2, 2, 3, 2, 4, 3, 1, 3, 2, 3, 3, 3, 4, 4, 1, 4, 2, 4, 3, 4, 4]

[ ]: ANS- A set is unique in python. it does not allow duplicates.

[20]: s1={1, 1, 1, 2, 1, 3, 1, 4, 2, 1, 2, 2, 2, 3, 2, 4, 3, 1, 3, 2, 3, 3, 3, 4, 4, 1, 4, 2, 4, 3, 4, 4}

[21]: s1

[21]: {1, 2, 3, 4}

[ ]:

[ ]: Q4. Explain the difference between the union() and update() methods for a set. Give an example of each method.

[ ]: Ans - Both set.update() and set.union() perform the union operation. however, set.update() adds all missing elements to the set on which it is called whereas set.union() creates a new set. consequently, the return value of set.update() is none.

## 0.1 Examples

[40]: s1={ 1,2,3,4,5}  
s2={6,7,8,9,10}

[41]: s1.union(s2)

[41]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

[42]: s1={ 1,2,3,4,5}  
s2={6,7,8,9,10}

[45]: s2.update(s1)

```
[46]: s1
```

```
[46]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
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[ ]: Q5. What is a dictionary? Give an example. Also, state whether a dictionary is  
↳ordered or unordered.
```

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[ ]: Ans - A dictionary is a collection which is ordered* , changeable and do not  
↳allow duplicates.  
Dictionary in python is an unordered collection of data values, used to  
↳store data values like map, which  
unlike other data type that hold only single value as an element, dictionary  
↳holds key: value pair
```

## 0.2 Example

```
[47]: d1= {"name":"shu" , "email id ": "skkhan@gmail.com" , "number": 8759574}
```

```
[48]: d1
```

```
[48]: {'name': 'shu', 'email id ': 'skkhan@gmail.com', 'number': 8759574}
```

```
[49]: d2={"name":"shu" , "name":"shadab khan"}
```

```
[50]: d2
```

```
[50]: {'name': 'shadab khan'}
```

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[ ]:
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[ ]: Q6. Can we create a nested dictionary? If so, please give an example by  
↳creating a simple one-level nested dictionary.
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[ ]: Ans- In python, dictionary is a dictionary inside a dictionary. it is a  
↳collection of dictionaries in to one single  
dictionary.here, the nested_dict is a nested dictionary with the  
↳dictionary dictA and dictB . they are two  
dictionary each having own key and value.
```

## 0.3 Example

```
[53]: d2={"key" : {"name":"shadab" , "class":"Data science master"}}
```

```
[54]: d2
```

```
[54]: {'key': {'name': 'shadab', 'class': 'Data science master'}}
```

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[ ]: Q7. Using setdefault() method, create key named topics in the given dictionary
↳ and also add the value of the key as this
    list ['Python', 'Machine Learning', 'Deep Learning']

    dict1 = {'language' : 'Python', 'course': 'Data Science Masters'}
```

Ans - dict2= {"key": {"language": "python", "course": "data science masters", "learning": "machine learning", "deep learning"}}

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[ ]: Q8. What are the three view objects in dictionaries? Use the three in-built
↳ methods in python to display these three view
    objects for the given dictionary.
    dict1 = {'Sport': 'Cricket', 'Teams': ['India', 'Australia', 'England',
↳ 'South Africa', 'Sri Lanka', 'New Zealand']}
```

```
[ ]: Ans- The main view objects of dictionary in python are Keys , Values , Items.
```

## 0.4 Example

```
[55]: dict1= {"sport": "cricket", "teams":["india", "australia", "england",
↳ "south-africa", "sri-lanka", "new-zealand"]}
```

```
[56]: dict1.keys()
```

```
[56]: dict_keys(['sport', 'teams'])
```

```
[57]: dict1.values()
```

```
[57]: dict_values(['cricket', ['india', 'australia', 'england', 'south-africa', 'sri-lanka', 'new-zealand']])
```

```
[58]: dict1.items()
```

```
[58]: dict_items([('sport', 'cricket'), ('teams', ['india', 'australia', 'england', 'south-africa', 'sri-lanka', 'new-zealand'])])
```

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