Assignment 3

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

Ans - The main characteristics of tuple is the values of it cannot be changed once it is created. Tuple items are ordered, indexed and allow duplicate values.Yes it is immutable.

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 -
-> Count and Index are the two methods in Python for tuple.
- > Example of Count :

```
thistuple = (1, 3, 7, 8, 7, 5, 4, 6, 8, 5)
x = thistuple.count(5)
print(x)
```

-> Example of Index :

```
thistuple = (1, 3, 7, 8, 7, 5, 4, 6, 8, 5)
x = thistuple.index(8)
print(x)
```

-> Tuple are immutable, you cannot change their content that's why have only two built in methods

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

Ans - Set is the datatype which don't allow duplicate items.
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]

Code : setToList = set(List)

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

Update will Update the set with another set, or any other iterable where as Union will return only the matched values of two sets.

Union Example:

```
x = {"apple", "banana", "cherry"}
y = {"google", "microsoft", "apple"}
z = x.union(y)
print(z)
```

Update Example:

```
x = {"apple", "banana", "cherry"}
y = {"google", "microsoft", "apple"}
x.update(y)
print(x)
```

Q5. What is a dictionary? Give an example. Also, state whether a dictionary is ordered or unordered.

Ans - Dictionaries are used to store data values in key:value pairs. A dictionary is a ordered.

```
Example :
thisdict = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
print(thisdict)
```

Q6. Can we create a nested dictionary? If so, please give an example by creating a simple one-level nested dictionary.

A dictionary can contain dictionaries, this is called nested dictionaries.

```
Example:
myfamily = {
  "child1" : {
    "name" : "Emil",
    "year" : 2004
  },
  "child2" : {
    "name" : "Tobias",
    "year" : 2007
  },
  "child3" : {
    "name" : "Linus",
    "year" : 2011
  }
}
```

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'}

```
Code 1 :
dict1.setdefault("Python")
dict1.setdefault("Machine Learning")
dict1.setdefault('Deep Learning')
Code 2 :
for i in ['Python', "Machine Learning","Deep Learning"]:
    dict1.setdefault(i)
```

Note: Looks like question was not clear but still I have tried two sample code as per my understanding.

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 -
dict1.keys()
Output - dict_keys([‘Sport', 'Teams'])
dict1.values()
dict_values(['Cricket', ['India', 'Australia', 'England', 'South Africa', 'Sri Lanka', 'New Zealand’]])
dict1.items()
dict_items([('Sport', 'Cricket'), ('Teams', ['India', 'Australia', 'England', 'South Africa', 'Sri Lanka', 'New Zealand'])])