# Assignment

PW SKILLS

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

**Ans**. The characteristics of Tuples

- They are indexed.
- Tuples are ordered.
- These are immutable.
- They can contain duplicate items.

**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**. There are only two tuple methods **count()** and **index()**. The reason why tuple has only two methods is because, tuples are immutable. i.e. the value items cannot be changed once it is assigned. Example of two methods are as follows,

- **count()**

  It Return number of occurrences of value.

  ```
  t=(1,2,3,4,5,6,7.88,1+2j)
  t.count(4)
  ```

  Output: 1

- **Index()**

  This function Returns first index of value.

  ```
  t=(1,2,3,4,5,6,7.88,1+2j)
  t.index(4)
  ```

  Output: 3

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

**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]**

**Answer**. Sets do not allow the duplicate items. In order to remove the duplicates, we would follow the below line of code.

```
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]
t= [set(List)]
```

**Output: [{1, 2, 3, 4}]**

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

**Answer.**

- **Union()**

  The function Union is used to Return the union of sets as a new set.
  Example:

```
s1={1,2,3,4.5,"ashish", True}
s2={1,1,1,2,2,2,3,3,3,4,4,5,5,6,6,3,2,1}

s2.union(s1)
```

**Output:** {1, 2, 3, 4, 4.5, 5, 6, 'ashish'}

- **Update()**

  The function Update is used to Update a set with the union of itself and others.

  s1= {1, 2, 3, 4.5, 'ashish'}

  s3={1, 2, 3, 9, 'Ashish', 'ashish'}

  s3.update(s1)

  s3

  **Output: {1, 2, 3, 4.5, 9, 'Ashish', 'ashish'}**

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

Answer: Dictionaries are used to store data values in key:value pairs.

Example:

```
d={"Name":"Ashish","E-mail address":"ashishec1017@gmail.com","Phone number":"7712345132"}
```

**Output: {'Name': 'Ashish',**
**'E-mail address': 'ashishec1017@gmail.com',**
**'Phone number': '7712345132'}**

A dictionary is a collection which is ordered, that means that the items have a defined order, and that order will not change.

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

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

**Example:**

```
d13={"Ashish": {"Email address":"ashishec1017@gmail.com", "Phone number":123456},"Xyz":{"Email address":"xyz@gmail.com", "Phone number":7891011}}

d13
```

**Output:**

**{'Ashish': {'Email address': 'ashishec1017@gmail.com', 'Phone number': 123456},**
**'Xyz': {'Email address': 'xyz@gmail.com', 'Phone number': 7891011}}**

**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'}**

Answer:

```
dict1 = {'language' : 'Python', 'course': 'Data Science Masters',}
dict1.setdefault("topics",['Python', 'Machine Learning','Deep Learning'])
dict1["topics"]
```

Output:

```
['Python', 'Machine Learning', 'Deep Learning']
```

**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']}**

Answer:

```
dict1 = {'Sport': 'Cricket' , 'Teams': ['India', 'Australia', 'England', 'South Africa', 'Sri Lanka', 'New Zealand']}
```

Output:

```
dict1.keys()
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'])])
```