PYTHON IN 10 VIDEOS

Assignment - 3
(Part B)

1. Which is true?

a. Tuples support item assignment after creation
b. Tuples can be used as keys in dictionaries
c. Tuples can be sorted using sort() method
d. Tuples are resizable

Ans: b

2. What is the output?

```
my_tuple = (1, 2, 3)
print(len(my_tuple))
```

a. 0
b. 1
c. 2
d. 3

Ans: d

3. What is a tuple?

a. Mutable data structure
b. Sequence of immutable python objects
c. Key-value pair
d. Collection on unordered elements

Ans: b

4. How to create empty tuple?

a. Empty_tuple = ()
b. Empty_tuple = []
c. Empty_tuple = {}
d. Empty_tuple =(None)

Ans: a

6. What does union operation on sets returns?

a. New set with common elements from both sets
b. New set with unique elements form both sets
c. New set containing elements only from first set.
d. New set containing elements only from second set.

Ans: b

5. Output: set1. intersection(set2)

set1 = {1, 2, 3}
set2 = {3, 4, 5}

a. {1,2,3,4,5}
b. {1,2,3}
c. {3}
d. {}

Ans: c

7. Which is true?

a. Sets contain duplicates
b. Sets are ordered collection
c. Sets contain mutable elements
d. Sets are iterable but not indexable

Ans: d

8. What does pop() in sets do?

a. Pops specific element
b. Pops last element
c. Removes random element
d. Clears set

Ans: c

9. Method to add element to set?

a. insert()
b. add()
c. append()
d. update()

Ans: b

10. Can dictionaries have duplicate values?

a. Yes
b. No
c. Maybe

Ans: a

11. Method to get all keys in dictionary?

a. keys()
b. get_keys()
c. list()
d. items()

Ans: a

12. What does items() method return?

a. List of all keys
b. List of all values
c. List of tuples containing key-value pairs
d. List of dictionaries

Ans: c

13. Which is not a valid key type for a dictionary?

a. String
b. Integer
c. List
d. Tuple

Ans:c

14. How to remove specific key-val pair from dictionary?

a. remove()
b. delete()
c. popitem()
d. discard()

Ans: c

15. How to access value of ‘age’ in dictionary?

{'name': 'John', 'age': 30}

a. Dist[‘age’]
b. dict.get(‘age’)
c. dict.value(‘age’)
d. Both a and b

Ans:d

16. How to create empty dictionary?

a. Empty_dict = ()
b. Empty_dict = []
c. Empty_dict ={}
d. Empty_dict = None

Ans: c

17. What does clear() method do on dictionaries?

a. Removes all items from dictionaries
b. Returns a copy of dictionary
c. Clears keys but keeps values
d. Clears values keeps keys

Ans:a

18.Create a tuple with duplicate elements. Convert it to a set to remove duplicates and print the resulting set.

```
tpl = (1, 2, 2, 3, 4, 4, 4, 5)
unique_set = set(tpl)
print(unique_set)
```

19. Create a tuple with duplicate elements and count the occurrences of an element. Find the index of the first occurrence of an element in the tuple.

```
tpl = (1, 2, 2, 3, 4, 4, 4, 5)
print(f"Occurrences of 4: {tpl.count(4)}")
print(f"Index of first occurrence of 2: {tpl.index(2)}")
```

20. Write functions that take a tuple and return the minimum, maximum, and sum of the elements. Print the results for a sample tuple.

```python
def min_in_tuple(tpl):
    return min(tpl)

def max_in_tuple(tpl):
    return max(tpl)

def sum_of_tuple(tpl):
    return sum(tpl)

sample_tpl = (1, 2, 3, 4, 5)
print(f"Minimum: {min_in_tuple(sample_tpl)}")
print(f"Maximum: {max_in_tuple(sample_tpl)}")
print(f"Sum: {sum_of_tuple(sample_tpl)}")
```

21. Create a frozenset with the first 5 positive integers. Print the frozenset.

```
fs = frozenset(range(1, 6))
print(fs)
```

22. Create a set containing tuples, where each tuple contains two elements. Print the set.

```
s = { (1, 2), (3, 4), (5, 6) }
print(s)
```

23. Create a set with duplicate elements and remove the duplicates using set methods. Print the modified set.

```
s = {1, 2, 2, 3, 4, 4, 5}
unique_s = set(s)
print(unique_s)
```

24. Create two dictionaries: one with keys as the first 5 positive integers and values as their squares, and another with keys as the next 5 positive integers and values as their squares. Merge these dictionaries into a single dictionary and print it.

```
d1 = {i: i**2 for i in range(1, 6)}
d2 = {i: i**2 for i in range(6, 11)}
d1.update(d2)
print(d1)
```

25.Write a function that takes a string and returns a dictionary with the count of each character in the string. Print the dictionary.

```
def count_chars(s):
    count_dict = {}
    for char in s:
        count_dict[char] = count_dict.get(char, 0) + 1
    return count_dict

string = "hello world"
print(count_chars(string))
```

26.Create a dictionary representing a book with keys 'title', 'author', 'year', and 'genre'. Convert the dictionary to a JSON string and print it.

```
import json

book = {
    'title': 'To Kill a Mockingbird',
    'author': 'Harper Lee',
    'year': 1960,
    'genre': 'Fiction'
}
book_json = json.dumps(book)
print(book_json)
```

27.Create a dictionary with the first 10 positive integers as keys and their squares as values. Create a new dictionary containing only the key-value pairs where the key is even. Print the new dictionary.

```
d = {i: i**2 for i in range(1, 11)}
even_dict = {k: v for k, v in d.items() if k % 2 == 0}
print(even_dict)
```