**Week\_03\_Assignment\_Celebal\_Training**

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**Q1. Difference between List, Tuple, Set, Dict:**

| **Parameters** | **List** | **Tuple** | **Set** | **Dictionary** |
| --- | --- | --- | --- | --- |
| Representation | We can represent the list by **[]** | We can represent the tuple by **()** | We can represent the set **{}** | We can represent the dict. {} |
| Duplicates Items | List allows the duplicate items. | Tuple allows the duplicate items. | Set cannot allow any duplicate items | The keys are not at all duplicated. |
| Function for creation | List use the list() | Tuple use the tuple() | Set use the set() | Dict use the dict() |
| Mutation | List is mutable. This means that the user can make any change in the list | Tuple is immutable.  Means that the user cant’s make any change to the tuple | Set is mutable. This means that the user can make any change in list | Dict is mutable but are not at all duplicated |
| Order | Order | Order | Unorder | Order |
| Empty Element | L = [] | T = () | A = set()  A = set(b) | D = {} |
| Example | L = [2,3,4] | T = (‘a’,4,5) | S = {1,2,3} | D = {‘name’:’Ram’  ‘div’:’A’} |

Q2. The buit-in function of List, Tuple, Set, Dict

* **List**

1. all() - This function returns true if all elements of a given iterable(List, Set, Tuple, Dict) are True else it returns false. It also returns true if the iterable object is empty.
2. any() - This function returns true if any of the elements of a given iterable are true else it returns false.
3. len() - This function returns the length of the string
4. map() - This function returns a map object(which is an iterator) of the results after the given function to each item of a given iterable.
5. max() - This function returns the largest item in an iterable or the largest of two or more arguments.
6. min() - This function returns the smallest of the value or smallest item in an iterable passed as its parameter.
7. append() - Adds an element at the end of the list
8. clear() - removes all the elements from the list
9. copy() - returns a copy of the list
10. count() - returns the numbers of elements with the specified value
11. extend() - Add the elements of a list (or any iterable), to the end of the current list
12. index() - Returns the index of the first element with the specified value
13. insert() - Adds an element at the specified position
14. pop() - Removes the element at the specified position
15. remove() - Removes the item with the specified value
16. reverse() - Reverses the order of the list
17. sort() - sorts the list

* **Tuple**

1. count() - Returns the number of times a specified value occurs in a tuple
2. index() - Searches the tuple for a specified value and returns the position of where it was found
3. all() - This function returns true if all elements of a given iterable(List, Set, Tuple, Dict) are True else it returns false. It also returns true if the iterable object is empty.
4. any() - This function returns true if any of the elements of a given iterable are true else it returns false.
5. len() - This function returns the length of the string
6. map() - This function returns a map object(which is an iterator) of the results after the given function to each item of a given iterable.
7. max() - This function returns the largest item in an iterable or the largest of two or more arguments.
8. min() - This function returns the smallest of the value or smallest item in an iterable passed as its parameter.

* **Set**

1. add() - Adds an element to the set
2. clear() - Removes all the elements from the set
3. copy() - Returns a copy of the set
4. pop() - Removes an element from the set
5. union() - Return a set containing the union of sets
6. update() - Update the set with the union of this set and others
7. remove() - Removes the specified element
8. pop() - Removes an element from the set
9. len() - This function returns the length of the string

* **Dict**

1. clear() - Removes all the elements from the dictionary
2. copy() - Returns a copy of the dictionary
3. get() - Returns the value of the specified key
4. items() - Returns a list containing a tuple for each key value pair
5. keys() - Returns a list containing the dictionary's keys
6. pop() - Removes the element with the specified key
7. popitem() - Removes the last inserted key-value pair
8. update() - Updates the dictionary with the specified key-value pairs
9. values() - Returns a list of all the values in the dictionary
10. len() - This function returns the length of the string