Assignment02: SETS, LISTS ,TUPLES AND DICTONARIES:

1. Sets:

- Unordered collection of unique elements
- Defined using the set() function or {} syntax
- Elements must be immutable (e.g., strings, integers, tuples)
- Supports mathematical operations like union, intersection, and difference

Example:

```
my_set = {1, 2, 3, 4, 4, 5}  # duplicates are ignored
print(my_set)  # {1, 2, 3, 4, 5}
```

2.Tuples:

- Ordered, immutable collection of elements
- Defined using the () syntax or the tuple() function
- Elements can be of any data type, including strings, integers, and other tuples
- Supports indexing, slicing, and concatenation

Example:

```
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple[0])  # 1
```

3. Lists:

- Ordered, mutable collection of elements
- Defined using the [] syntax or the list() function
- Elements can be of any data type, including strings, integers, and other lists
- Supports indexing, slicing, concatenation, and modification

Example:

```
my_list = [1, 2, 3, 4, 5]
my_list[0] = 10
print(my_list)  # [10, 2, 3, 4, 5]
```

4. Dictionaries

- Unordered collection of key-value pairs
- Defined using the {} syntax or the dict() function
- Keys must be unique and immutable (e.g., strings, integers, tuples)
- Values can be of any data type, including strings, integers, and other dictionaries
- Supports key-based lookup, insertion, and deletion

Example:

```
my_dict = {'name': 'John', 'age': 30}
print(my_dict['name'])  # John
```