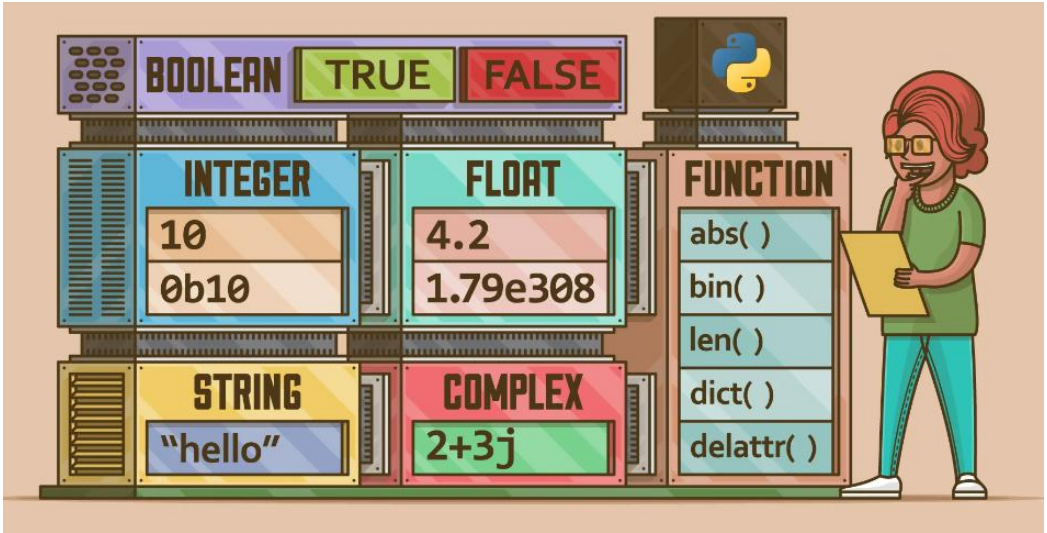
Day 14: Python Data Types and Data Structures

This is #90DaysofDevops challenge under the guidance of Shubham Londhe sir.

Day 14 TASK

check this for task:

https://github.com/LondheShubham153/90DaysOfDevOps/blob/master/2023/day14/tasks.md



Data Types

- Data types are the classification or categorization of data items. It represents the kind of value that tells what operations can be performed on a particular data.
- Since everything is an object in Python programming, data types are actually classes and variables are instance (object) of these classes.
- Python has the following data types built-in by default: Numeric(Integer, complex, float), Sequential(string,lists, tuples), Boolean, Set, Dictionaries, etc

Data Structures

Data Structures are a way of organizing data so that it can be accessed more efficiently depending upon the situation. Data Structures are fundamentals of any programming language around which a program is built. Python helps to learn the fundamental of these data structures in a simpler way as compared to other programming languages.

- Lists Python Lists are just like the arrays, declared in other languages which is an ordered collection of data. It is very flexible as the items in a list do not need to be of the same type
- Tuple Python Tuple is a collection of Python objects much like a list but Tuples are immutable in nature i.e. the elements in the tuple cannot be added or removed once created. Just like a List, a Tuple can also contain elements of various types.
- Dictionary Python dictionary is like hash tables in any other language with the time complexity of O(1). It is an unordered collection of data values, used to store data values like a map, which, unlike other Data Types that hold only a single value as an element, Dictionary holds the key:value pair. Key-value is provided in the dictionary to make it more optimized

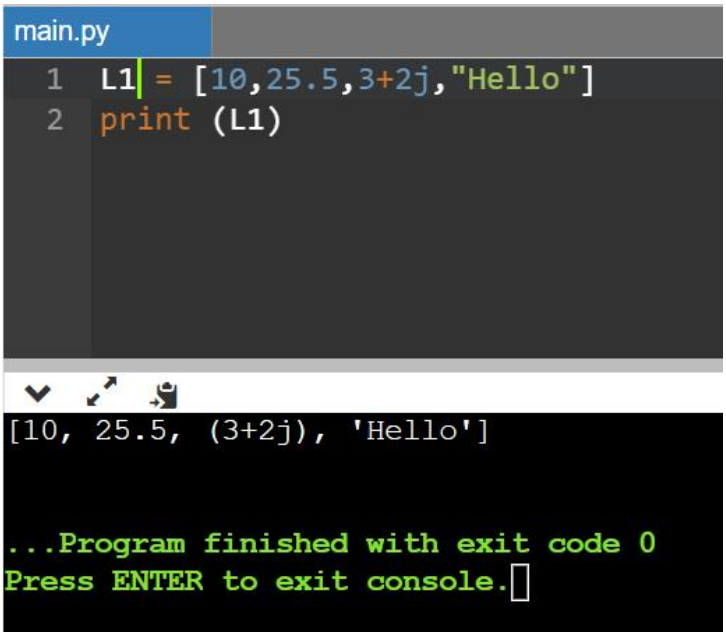
Tasks

1. Give the Difference between List, Tuple and set. Do Handson and put screenshots as per your understanding.

List:

A list is an ordered collection of elements that can be of different types. Lists are mutable, which means you can modify them by adding, removing, or changing elements.

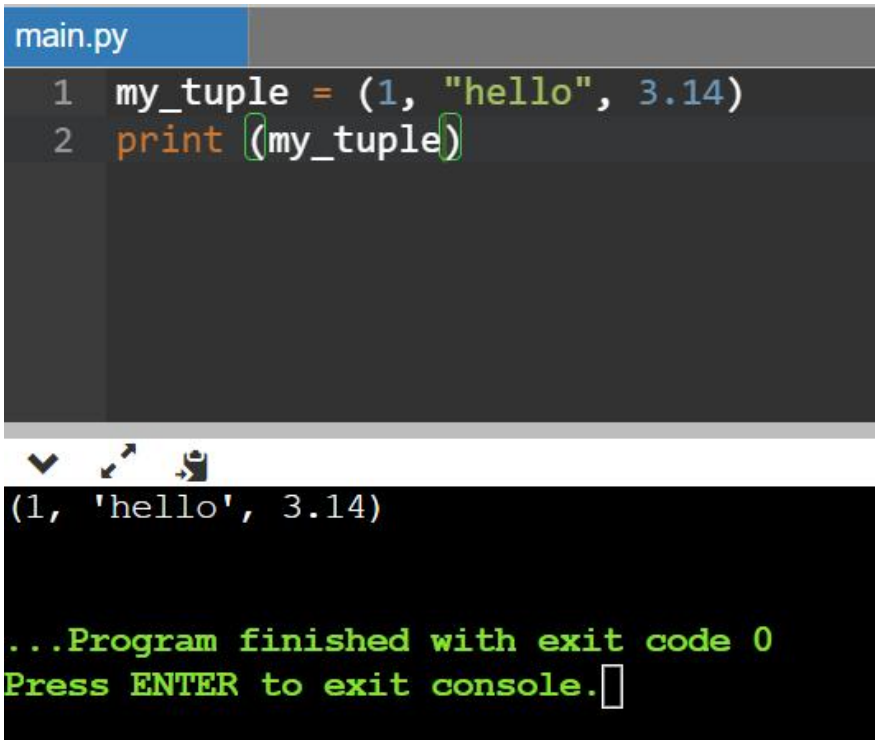
my_list = [1, “hello”, 3.14]



Tuple:

A tuple is also an ordered collection of elements, but unlike lists, tuples are immutable. This means that you cannot modify them once they are created.

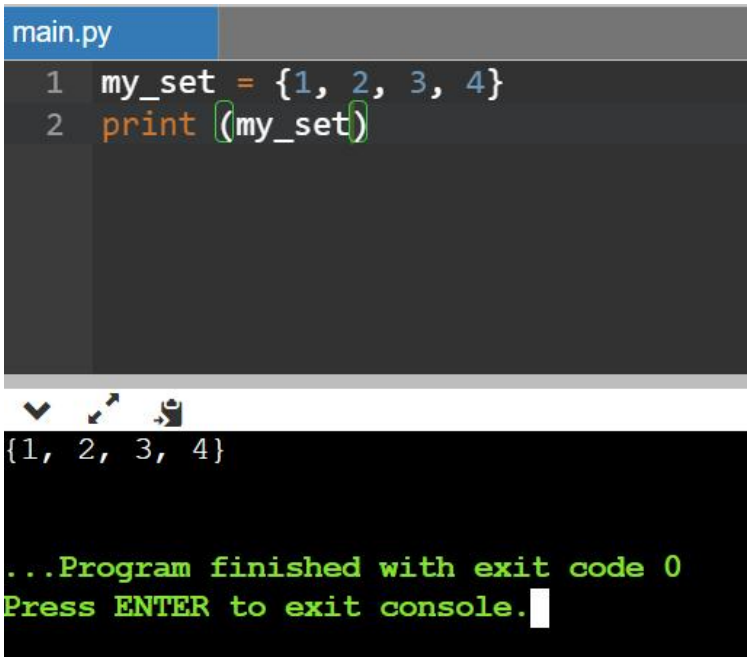
my_tuple = (1, “hello”, 3.14)



Set:

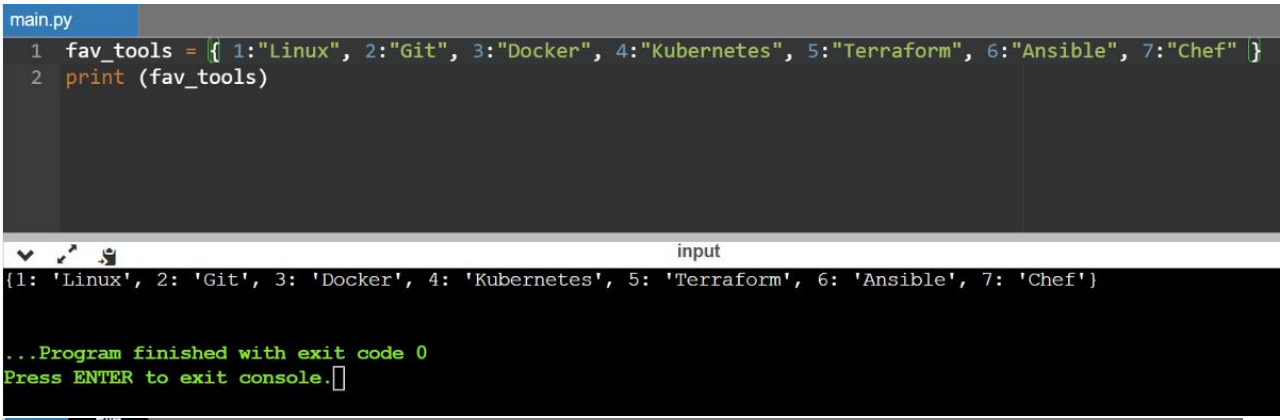
A set is an unordered collection of unique elements. Sets are mutable, which means you can add or remove elements from them, but you cannot change individual elements.

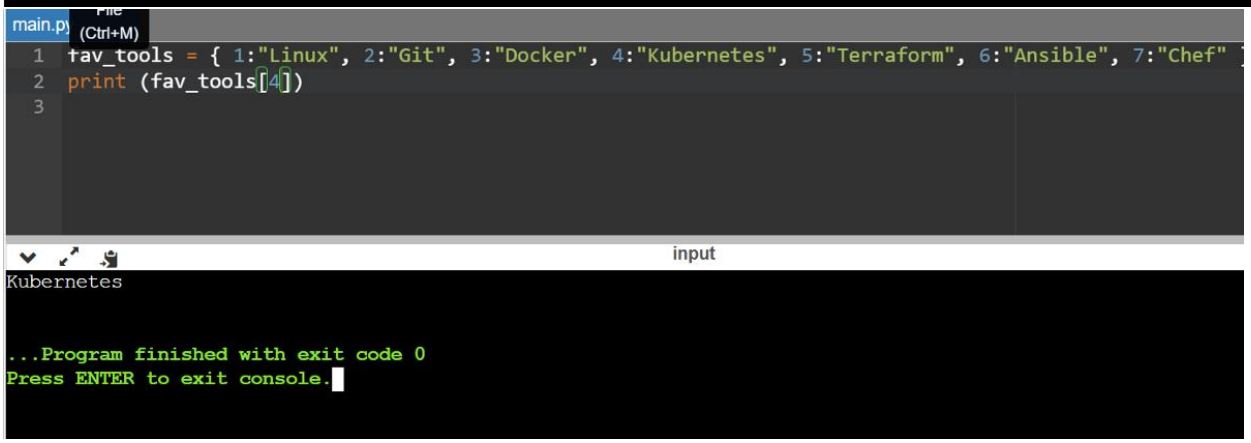
my_set = {1, 2, 3, 4}



1. Create below Dictionary and use Dictionary methods to print your favourite tool just by using the keys of the Dictionary.

```
fav_tools =
{
  1:"Linux",
  2:"Git",
  3:"Docker",
  4:"Kubernetes",
  5:"Terraform",
  6:"Ansible",
  7:"Chef"
}
```





Create a List of cloud service providers eg.

```
cloud_providers = ["AWS","GCP","Azure"]
```

main.py

```
1 cloud_providers = ["AWS","GCP","Azure"]
2 print(cloud_providers)
```

```
['AWS', 'GCP', 'Azure']


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```
1 cloud_providers = ["AWS","GCP","Azure"]
2 cloud_providers.append("Alibaba_cloud")
3 print(cloud_providers)
```

```
['AWS', 'GCP', 'Azure', 'Alibaba_cloud']


...Program finished with exit code 0
Press ENTER to exit console.
```

Write a program to add `Digital Ocean` to the list of cloud_providers and sort the list in alphabetical order.

main.py

```
1  cloud_providers = ["AWS","GCP","Azure"]
2  cloud_providers.append("Digital Ocean")
3  print(cloud_providers)
```

```
['AWS', 'GCP', 'Azure', 'Digital Ocean']


...Program finished with exit code 0
Press ENTER to exit console.
```

Sorted List

main.py

```
1  cloud_providers = ["AWS","GCP","Azure"]
2  cloud_providers.append("Digital Ocean")
3  cloud_providers1 = sorted(cloud_providers)
4  print(cloud_providers1)
```

```
['AWS', 'Azure', 'Digital Ocean', 'GCP']


...Program finished with exit code 0
Press ENTER to exit console.
```

Please, feel free to drop any questions in the comments below. I would be happy to answer them.

If this post was helpful, please do follow and click the clap

_Thank you for reading

_Rajani