In [2]:
```
# Data Analysis with Python Week - 1 Task
# Data structures in python

# List
my_list = [10, 20, 30, 40, 50]
print("List:", my_list)
```

```
List: [10, 20, 30, 40, 50]
```

In [3]:
```
user_input = int(input("Enter a value to add in list: "))
my_list.append(user_input)
print("List after appending the user input value:", my_list)
```

```
Enter a value to add in list: 25
List after appending the user input value: [10, 20, 30, 40, 50, 25]
```

In [4]:
```
value_to_check = int(input("Enter a value to check if it is in the list: "))
if value_to_check in my_list:
    print(f"{value_to_check} is in the list.")
else:
    print(f"{value_to_check} is not in the list.")
```

```
Enter a value to check if it is in the list: 40
40 is in the list.
```

In [5]:
```
old_value = int(input("Enter the value to be updated: "))
new_value = int(input("Enter the new value: "))

if old_value in my_list:
    index = my_list.index(old_value)
    my_list[index] = new_value
    print(f"{old_value} has been updated to {new_value} in the list. Now the list is {my_list}")
else:
    print(f"{old_value} is not in the list.")
```

```
Enter the value to be updated: 30
Enter the new value: 35
30 has been updated to 35 in the list. Now the list is [10, 20, 35, 40, 50, 25]
```

In [6]:
```
value_to_remove = int(input("Enter a value to remove from the list: "))
if value_to_remove in my_list:
    my_list.remove(value_to_remove)
    print(f"{value_to_remove} has been removed from the list. Now the list is {my_list}")
else:
    print(f"{value_to_remove} is not in the list.")
```

```
Enter a value to remove from the list: 50
50 has been removed from the list. Now the list is [10, 20, 35, 40, 25]
```

In [8]:
```
# Set
my_set = {10, 20, 30, 40, 50}
print("Set:", my_set)
```

```
Set: {50, 20, 40, 10, 30}
```

In [9]:
```
my_set.add(60)
print("Set after adding:", my_set)
```

```
Set after adding: {50, 20, 40, 10, 60, 30}
```

In [10]:
```
my_set.remove(30)
print("Set after removing:", my_set)
```

```
Set after removing: {50, 20, 40, 10, 60}
```

In [11]:
```
another_set = {40, 50, 60, 70, 80}
```

In [12]:
```
union_set = my_set.union(another_set)
print("Union of my_set and another_set:", union_set)
```

```
Union of my_set and another_set: {70, 40, 10, 80, 50, 20, 60}
```

In [13]:
```
intersection_set = my_set.intersection(another_set)
print("Intersection of my_set and another_set:", intersection_set)
```

```
Intersection of my_set and another_set: {40, 50, 60}
```

In [14]:
```
difference_set = my_set.difference(another_set)
print("Difference between my_set and another_set:", difference_set)
```

```
Difference between my_set and another_set: {10, 20}
```

In [13]:
```
#Dictionary
my_dict = {
    "name": "Mahendra Singh Dhoni",
    "age": 42,
    "city": "Ranchi",
    "international cups":(2007,2011),
    "ipl cups":5
}
print("Dictionary:", my_dict,"\n")
```

```
Dictionary: {'name': 'Mahendra Singh Dhoni', 'age': 42, 'city': 'Ranchi', 'international cups': (2007, 2011), 'ipl cups': 5}
```

In [14]:
```
my_dict["nickname"] = "Thala"
print("Ms Dhoni:", my_dict)
```

```
Ms Dhoni: {'name': 'Mahendra Singh Dhoni', 'age': 42, 'city': 'Ranchi', 'international cups': (2007, 2011), 'ipl cups': 5, 'nickname': 'Thala'}
```

In [15]:
```
name = my_dict["name"]
print("Name:", name)
```

```
Name: Mahendra Singh Dhoni
```

In [16]:
```
my_dict["city"] = "Ranchi, India"
print("Dictionary after updating city:", my_dict)
```

```
Dictionary after updating city: {'name': 'Mahendra Singh Dhoni', 'age': 42, 'city': 'Ranchi, India', 'international cups': (2007, 2011), 'ipl cups': 5, 'nickname': 'Thala'}
```

In [1]:
```
#Tuple
my_tuple=(7,18,33,45,93)
print(my_tuple)
```

```
(7, 18, 33, 45, 93)
```

In [5]:
```
no_1 = my_tuple[1]
print("The value at index 1 is:", no_1)
```

```
The value at index 1 is: 18
```

In [11]:
```
new_value = int(input("enter a value to add"))
my_tuple = my_tuple + (new_value,)
print(my_tuple)
```

```
enter a value to add12
(7, 18, 33, 45, 93, 12)
```

In [12]:
```
my_list_tuple=list(my_tuple)
print(my_list_tuple)
```

```
[7, 18, 33, 45, 93, 12]
```

In [14]:
```
delete_value=int(input("enter a value to delete"))
if delete_value in my_list_tuple:
    my_list_tuple.remove(delete_value)
    print(f"Value {delete_value} deleted from the list")
    my_tuple = tuple(my_list_tuple)
    print("Tuple after deleting the value:", new_tuple)
else:
    print(f"Value {delete_value} not found in the tuple")
```

```
enter a value to delete99
Value 99 not found in the tuple
```

In [16]:
```
old_value = int(input("enter value to be updated"))
new_value = int(input("enter value to update"))
if old_value in my_list_tuple:
    index = my_list_tuple.index(old_value)
    my_list_tuple[index] = new_value
    my_tuple = tuple(my_list_tuple)
    print(f"List after updating {old_value} to {new_value}:", my_tuple)
else:
    print(f"{old_value} is not in the list.")
```

```
enter value to be updated33
enter value to update9
List after updating 33 to 9: (7, 18, 9, 45, 93, 12)
```