Practical No. 10 : Write python program to perform following operations on the Set: Create set, Access Set, Update Set, Delete Set

- **Practical related questions**

1. **Describe the various set operations.**

➔

1) **Add** (`add()`):
The add operation adds a single element to the set.

Syntax:
`set1.add(element)`

Example:
```
set1 = {1, 2, 3}
set1.add(4)
print(set1)
```

Output:
`{1, 2, 3, 4}`

2) **Remove**(`remove()`):
The remove operation removes an element from the set, and if the element is not found, it raises a KeyError.

Syntax:
`set1.remove(element)`

Example:
```
set1 = {1, 2, 3}
set1.remove(2)   # Removes 2
```

```
print(set1)
```

Output:
{1, 3}

3) **Clear (`clear()`):**
The clear operation removes all elements from the set.

Syntax:
```
set1.clear()
```

Example:
```
set1 = {1, 2, 3}
set1.clear()
print(set1)
```

Output:
set()

2. Describe the various methods of set.

➔

1) **add()**
Adds a single element to the set.

Syntax:
```
set.add(element)
```

Example:
```
s = {1, 2, 3}
s.add(4)
print(s)
```

Output:
{1, 2, 3, 4}

2) **update()**
Adds multiple elements from another set, list, tuple, etc.

Syntax:

```
set.update(iterable)
```

Example:

```
s = {1, 2}
s.update([3, 4])
print(s)
```

Output:

{1, 2, 3, 4}

3) **remove()**

Removes a specific element from the set. Raises an error if the element is not present.

Syntax:

```
set.remove(element)
```

Example:

```
s = {1, 2, 3}
s.remove(2)
print(s)
```

Output:

{1, 3}

4) **pop()**

Removes and returns a random element from the set.

Syntax:

```
set.pop()
```

Example:

```
s = {1, 2, 3}
s.pop()
print(s)
```

Output:
{2, 3}

5) **clear()**
Removes all elements from the set.

Syntax:
```
set.clear()
```

Example:
```
s = {1, 2, 3}
s.clear()
print(s)
```

Output:
set()

3. Write a Python program to create a set, add member(s) in a set and remove one item from set.

➔
```
my_set = {1, 2, 3}
print("Original Set:", my_set)
my_set.add(4)
my_set.add(5)
print("Set after adding elements:", my_set)
my_set.remove(2)
print("Set after removing an element:", my_set)
```

Output:
```
Original Set: {1, 2, 3}
Set after adding elements: {1, 2, 3, 4, 5}
Set after removing an element: {1, 3, 4, 5}
```

4. Write a Python program to find maximum and the minimum value in a set.

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```
my_set = {5, 10, 3, 8, 2}

maximum = max(my_set)
minimum = min(my_set)

print("Set elements:", my_set)
print("Maximum value:", maximum)
print("Minimum value:", minimum)
```

Output:

```
Set elements: {2, 3, 5, 8, 10}
Maximum value: 10
Minimum value: 2
```

5. Write a Python program to find the length of a set.

➔

```
my_set = {10, 20, 30, 40, 50}

length = len(my_set)

print("Set elements:", my_set)
print("Length of the set:", length)
```

Output:

```
Set elements: {50, 20, 40, 10, 30}
Length of the set: 5
```