

Assignment No. 2

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Programme:

```
class MySet:

    def __init__(self):
        self._data = []

    def add(self, element):
        if element not in self._data:
            self._data.append(element)

    def remove(self, element):
        if element in self._data:
            self._data.remove(element)

    def contains(self, element):
        return element in self._data

    def size(self):
        return len(self._data)

    def iterator(self):
        return iter(self._data)

    def intersection(self, other_set):
        result = MySet()
        for item in self._data:
            if other_set.contains(item):
```

```
        result.add(item)
    return result
```

```
def union(self, other_set):
    result = MySet()
    for item in self._data:
        result.add(item)
    for item in other_set.iterator():
        result.add(item)
    return result
```

```
def difference(self, other_set):
    result = MySet()
    for item in self._data:
        if not other_set.contains(item):
            result.add(item)
    return result
```

```
def is_subset(self, other_set):
    for item in self._data:
        if not other_set.contains(item):
            return False
    return True
```

```
def __str__(self):
    return "{" + ", ".join(str(x) for x in self._data) + "}"
```

Example usage:

```
if __name__ == "__main__":
    set1 = MySet()
    set2 = MySet()

    for i in [1, 2, 3, 4]:
```

```

        set1.add(i)

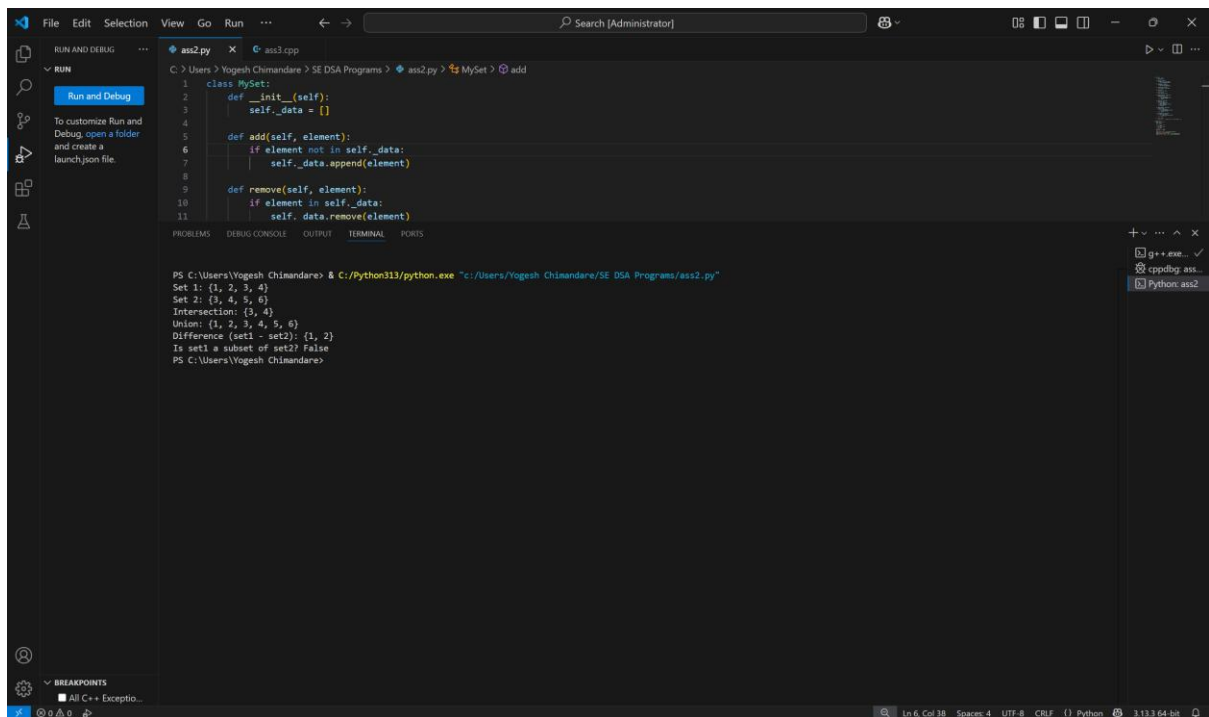
for i in [3, 4, 5, 6]:
    set2.add(i)

print("Set 1:", set1)
print("Set 2:", set2)

print("Intersection:", set1.intersection(set2))
print("Union:", set1.union(set2))
print("Difference (set1 - set2):", set1.difference(set2))
print("Is set1 a subset of set2?", set1.is_subset(set2))

```

Output:



The screenshot shows a Visual Studio Code editor window with a Python file named `ass2.py` open. The code defines a `MySet` class with methods for adding, removing, and checking set properties. The terminal output shows the execution of the script, which creates two sets, `set1` and `set2`, and prints their various set operations.

```

class MySet:
    def __init__(self):
        self._data = []

    def add(self, element):
        if element not in self._data:
            self._data.append(element)

    def remove(self, element):
        if element in self._data:
            self._data.remove(element)

PS C:\Users\Yogesh Chimandare> & C:/Python311/python.exe "c:/Users/Yogesh Chimandare/SE DSA Programs/ass2.py"
Set 1: {1, 2, 3, 4}
Set 2: {3, 4, 5, 6}
Intersection: {3, 4}
Union: {1, 2, 3, 4, 5, 6}
Difference (set1 - set2): {1, 2}
Is set1 a subset of set2? False
PS C:\Users\Yogesh Chimandare>

```