ASSIGNMENT 4

```python
class Set:
    def __init__(self):
        self.data = []

    def add(self, item):
        if item not in self.data:
            self.data.append(item)

    def remove(self, item):
        if item in self.data:
            self.data.remove(item)

    def contains(self, item):
        return item in self.data

    def union(self, other_set):
        result = self
        for item in other_set:
            if item not in result:
                result.add(item)
        return result

    def intersect(self, other_set):
        result = Set()
        for item in self:
            if item in other_set:
                result.add(item)

        return result
```

```python
    def difference(self, other_set):
        result = Set()
        for item in self:
            if item not in other_set:
                result.add(item)
        return result


    def subset(self, other_set):
        return all(item in self for item in other_set)


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


    def __iter__(self):
        return iter(self.data)


    def __contains__(self, item):
        return item in self.data


    def __str__(self):
        return str(self.data)



if __name__ == "__main__":
    set1 = Set()
    set1.add(1)
    set1.add(2)
    set1.add("Hello")

    print("Set 1: ", set1)
```
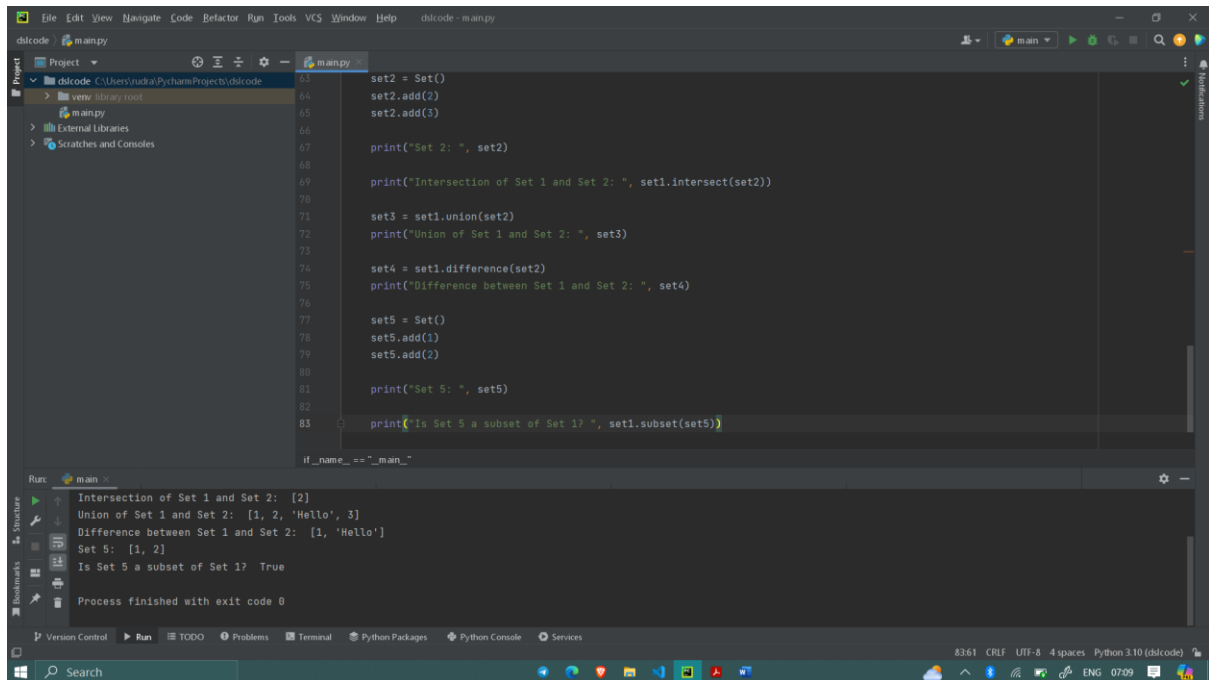
```
print("Is Hello in Set 1? ", set1.contains("Hello"))

set2 = Set()
set2.add(2)
set2.add(3)

print("Set 2: ", set2)

print("Intersection of Set 1 and Set 2: ", set1.intersect(set2))

set3 = set1.union(set2)
print("Union of Set 1 and Set 2: ", set3)

set4 = set1.difference(set2)
print("Difference between Set 1 and Set 2: ", set4)

set5 = Set()
set5.add(1)
set5.add(2)

print("Set 5: ", set5)

print("Is Set 5 a subset of Set 1? ", set1.subset(set5))
```