Assignment No. 2

Name: Yogesh Giridhar Chimandare

Roll No: COA218

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: