

#1) Write a Python program to Illustrate Set Methods.(Any ten methods)

```
# Create sets
set1 = {1, 2, 3, 4, 5}
set2 = {4, 5, 6, 7, 8}
print("Set1:", set1)
print("Set2:", set2)

# 1. add()
set1.add(10)
print("1. After add(10) to Set1:", set1)

# 2. update()
set1.update([11, 12])
print("2. After update([11, 12]) to Set1:", set1)

# 3. remove()
set1.remove(2)
print("3. After remove(2) from Set1:", set1)

# 4. discard()
set1.discard(100) # Won't raise error if not found
print("4. After discard(100) from Set1:", set1)

# 5. pop()
popped = set1.pop()
print("5. After pop() from Set1:", set1, "| Popped value:", popped)

# 6. union()
union_set = set1.union(set2)
print("6. Union of Set1 and Set2:", union_set)

# 7. intersection()
intersect = set1.intersection(set2)
print("7. Intersection of Set1 and Set2:", intersect)

# 8. difference()
diff = set1.difference(set2)
print("8. Difference of Set1 - Set2:", diff)

# 9. symmetric_difference()
sym_diff = set1.symmetric_difference(set2)
print("9. Symmetric Difference between Set1 and Set2:", sym_diff)

# 10. clear()
temp_set = set2.copy()
temp_set.clear()
print("10. After clear() on a copy of Set2:", temp_set)
```

↗ Set1: {1, 2, 3, 4, 5}  
 Set2: {4, 5, 6, 7, 8}  
 1. After add(10) to Set1: {1, 2, 3, 4, 5, 10}  
 2. After update([11, 12]) to Set1: {1, 2, 3, 4, 5, 10, 11, 12}  
 3. After remove(2) from Set1: {1, 3, 4, 5, 10, 11, 12}  
 4. After discard(100) from Set1: {1, 3, 4, 5, 10, 11, 12}  
 5. After pop() from Set1: {3, 4, 5, 10, 11, 12} | Popped value: 1  
 6. Union of Set1 and Set2: {3, 4, 5, 6, 7, 8, 10, 11, 12}  
 7. Intersection of Set1 and Set2: {4, 5}  
 8. Difference of Set1 - Set2: {11, 10, 3, 12}  
 9. Symmetric Difference between Set1 and Set2: {3, 6, 7, 8, 10, 11, 12}  
 10. After clear() on a copy of Set2: set()

