Exercise 1: Create and Print Sets

1. Create a set `fruits` with the following items: `"apple"`, `"banana"`, `"cherry"`.
2. Print the set and observe the order of elements.

Exercise 2: Check Set Properties

1. Create a set `myset` with these values: `"apple"`, `"banana"`, `"cherry"`, `"apple"`, `True`, `1`, `0`.
2. Print the set and explain why some elements appear only once.
3. Check if `"banana"` exists in the set using the `in` keyword.

Exercise 3: Add and Remove Items

1. Create a set `colors` with these items: `"red"`, `"green"`, `"blue"`.
2. Add `"yellow"` to the set.
3. Remove `"green"` using the `remove()` method.
4. Try to remove an item not in the set (e.g., `"pink"`) and observe what happens.

Exercise 4: Perform Set Operations

1. Create two sets:
   - `set1 = {"a", "b", "c"}`
   - `set2 = {1, 2, "a"}`
2. Find:
   - The union of `set1` and `set2`.
   - The intersection of `set1` and `set2`.
   - The difference of `set1` from `set2`.

Exercise 5: Convert to Set

1. Create a list: `mylist = [1, 2, 2, 3, 3, 3, 4]`.
2. Convert the list into a set to remove duplicates.
3. Print the original list and the new set.

Exercise 6: Iterate Through a Set

1. Create a set `animals` with these items: `"dog"`, `"cat"`, `"rabbit"`, `"bird"`.
2. Use a for loop to print each item in the set.

Exercise 7: Join Multiple Sets

1. Create three sets:
    - `set1 = {"apple", "banana"}`
    - `set2 = {"cherry", "date"}`
    - `set3 = {"banana", "cherry", "fig"}`
2. Find:
    - The union of all three sets.
    - The symmetric difference between `set1` and `set3`.

Exercise 8: Clearing and Deleting Sets

1. Create a set `myset = {"a", "b", "c"}`.
2. Clear all items in the set using the `clear()` method and print the set.
3. Delete the set completely using the `del` keyword. Try printing it afterward and note what happens.

Exercise 9: Check Subsets and Supersets

1. Create two sets:
    - `set1 = {"apple", "banana"}`
    - `set2 = {"apple", "banana", "cherry"}`
2. Check if:
    - `set1` is a subset of `set2`.
    - `set2` is a superset of `set1`.

Exercise 10: Combine Set and Tuple

1. Create a set `myset = {"a", "b", "c"}`.
2. Create a tuple `mytuple = (1, 2, 3)`.
3. Use the `union()` method to combine the set and the tuple.
4. Print the result.

Challenge: Analyze Data with Sets

You are given two sets:

- `group_A = {"John", "Elena", "Steve", "Martha"}`
- `group_B = {"Elena", "Steve", "Sophia", "Derek"}`

1. Find members who are in both groups.
2. Find members who are only in `group_A`.
3. Find members who are in either group but not both.