

#### **4.1.1. Set Operations**

##### **ALGORITHM**

## **Algorithm: Set Operations (Union, Intersection, Difference)**

**Step 1:** Start the program.

**Step 2:** Read elements of **Set A** from the user.

**Step 3:** Convert the input values into integers and store them as a set.

**Step 4:** Read elements of **Set B** from the user.

**Step 5:** Convert the input values into integers and store them as a set.

**Step 6:** Find the **Union** of Set A and Set B  
(Union means all elements from both sets without repetition).

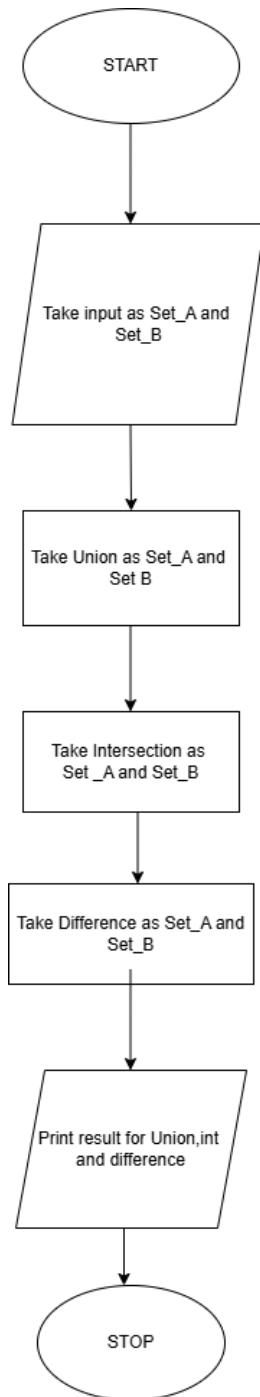
**Step 7:** Find the **Intersection** of Set A and Set B  
(Intersection means common elements in both sets).

**Step 8:** Find the **Difference** of Set A and Set B  
(Difference means elements present in Set A but not in Set B).

**Step 9:** Display the Union, Intersection, and Difference.

**Step 10:** Stop the program.

## Flowchart



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4.1.1. Set Operations

Write a Python program to perform union, intersection and difference operations on *Set A* and *Set B*.

**Input Format:**

- First Line prompts "Set A: " followed by space-separated list of integers for *Set A*.
- The second input prompts "Set B: " followed by space-separated list of integers for *Set B*.

**Output Format:**

- The first line prints "Union: " followed by the union of *Set A* and *Set B*.
- The second line prints "Intersection: " followed by the intersection of *Set A* and *Set B*.
- The third line prints "Difference: " followed by the difference of *Set A* and *Set B*.

**Note:**

- If there is no intersection between the two sets, the program prints an empty set, which appears as "set()" in the output.
- Please refer to the visible test cases for better understanding.

Sample Test Cases

```
1 Set_A = set(map(int, input("Set A: ").split()))
2 Set_B = set(map(int, input("Set B: ").split()))
3 Union_set = Set_A | Set_B
4 Intersection_set = Set_A & Set_B
5 Difference_set = Set_A - Set_B
6
7
8 print("Union:",Union_set)
9 print("Intersection:",Intersection_set)
10 print("Difference:",Difference_set)
```

Average time: 0.005 s Maximum time: 0.009 s 4.75 ms 2 out of 2 shown test case(s) passed 2 out of 2 hidden test case(s) passed

Test case 1 (4 ms)

Expected output	Actual output
Set A: 0 2 4 5 8	Set A: 0 2 4 5 8
Set B: 1 2 3 4 5	Set B: 1 2 3 4 5
Union: {0, 1, 2, 3, 4, 5, 8}	Union: {0, 1, 2, 3, 4, 5, 8}
Intersection: {4, 5}	Intersection: {4, 5}
Difference: {0, 8}	Difference: {0, 8}

Terminal Test cases < Prev Reset Submit Next >

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