

4.1.1] Set Operations

ALGORITHM

Step 1: Start

Step 2: Input Set A

Step 3: Convert the input values into Set A

Step 4: Input Set B

Step 5: Convert the input values into Set B

Step 6: Find the Union of Set A and Set B

$$\text{Union} = A \mid B$$

Step 7: Find the Intersection of Set A and Set B

$$\text{Intersection} = A \& B$$

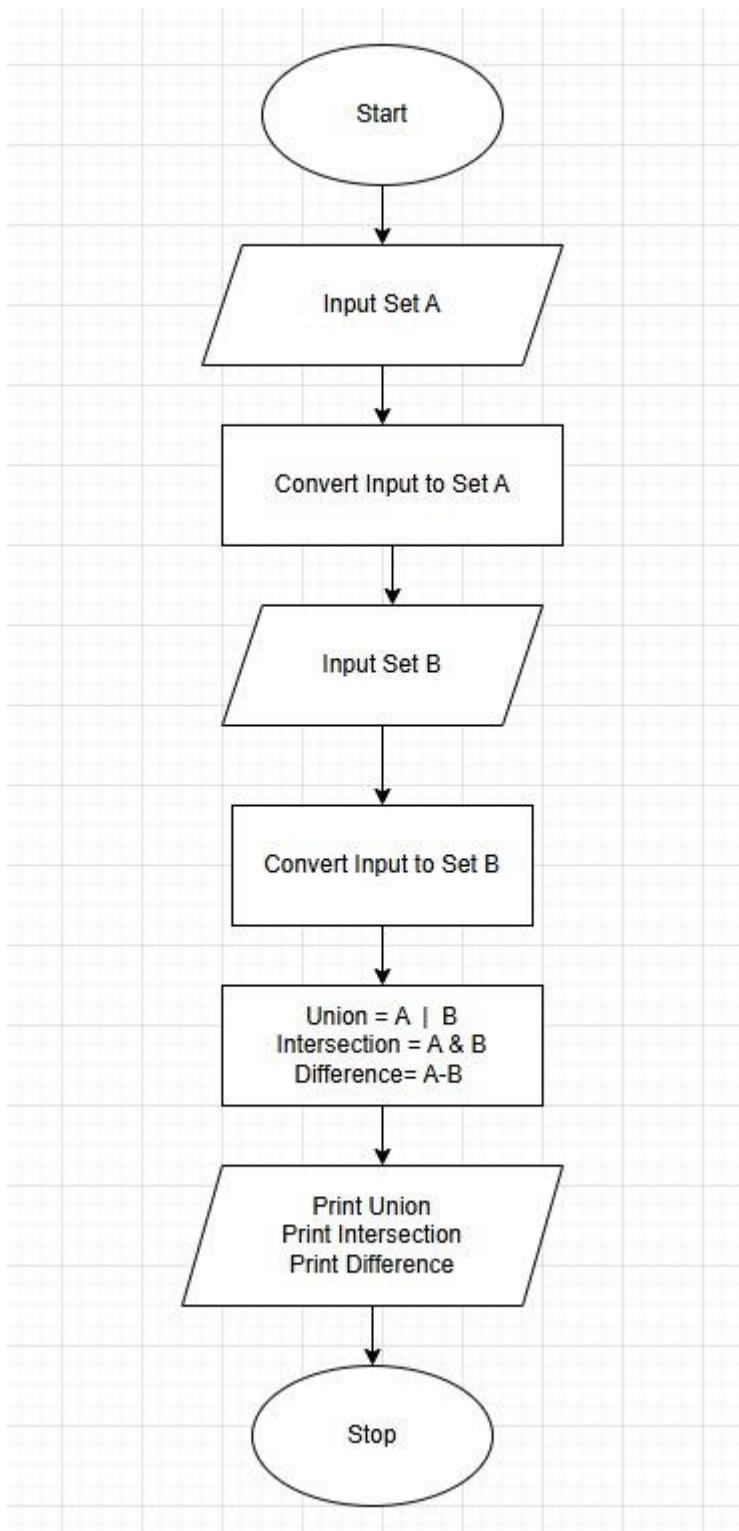
Step 8: Find the Difference of Set A and Set B

$$\text{Difference} = A - B$$

Step 9: Print Union, Intersection, and Difference

Step 10: Stop

FLOWCHART



PYTHON CODE

```
set_a = set(map(int, input("Set A: ").split()))
set_b = set(map(int, input("Set B: ").split()))
```

```

print("Union:", set_a | set_b)
print("Intersection:", set_a & set_b)
print("Difference:", set_a - set_b)

```

EXECUTION

The screenshot shows the CodeTantra IDE interface. On the left, there's a sidebar with sections for '4.1.1. Set Operations' and 'Sample Test Cases'. The main area has tabs for 'Editor', 'Test cases', and 'Terminal'. In the Editor tab, a file named 'setoperat...' contains the provided Python code. Below the code, performance metrics are shown: Average time 0.020 s, Maximum time 0.048 s, and two test cases passed. The Test cases tab shows a single test case with expected and actual outputs. The Terminal tab is empty.

```

1 set_a = set(map(int, input("Set A: ").split()))
2 set_b = set(map(int, input("Set B: ").split()))
3
4
5 print("Union:", set_a | set_b)
6 print("Intersection:", set_a & set_b)
7 print("Difference:", set_a - set_b)
8

```

Average time	Maximum time	Test cases
0.020 s	0.048 s	2 out of 2 shown test case(s) passed 2 out of 2 hidden test case(s) passed
20.00 ms	48.00 ms	

Test case 1 (18 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: {2, 4, 5}	Intersection: {2, 4, 5}
Difference: {0, 8}	Difference: {0, 8}