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## PRN:25070521135

**Algorithm: Set Operations in Python**

1. **Start.**
2. **Input Collection: * Prompt the user with "Set A: " and read a line of space-separated integers.**
    - **Prompt the user with "Set B: " and read a second line of space-separated integers.**
3. **Data Transformation:**
    - **Split the input strings into individual elements.**
    - **Convert each element from a string to an integer.**
    - **Convert the resulting lists into Set data structures (Set A and Set B) to ensure unique elements and enable set methods.**
4. **Perform Union:**
    - **Calculate the union of Set A and Set B (all unique elements from both sets).**
    - **Store this in union result.**
5. **Perform Intersection:**
    - **Calculate the intersection of Set A and Set B (elements common to both sets).**
    - **Store this in intersection result.**
6. **Perform Difference:**

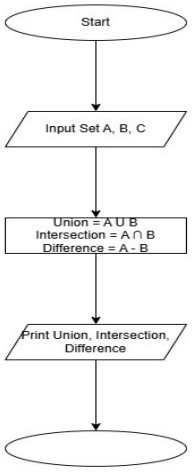
- **Calculate the set difference (Set A - Set B), which includes elements present in Set A but not in Set B.**
- **Store this in difference result.**

**7. Output Generation:**

- **Print "Union: " followed by the union result.**
- **Print "Intersection: " followed by the intersection result.**
- **Print "Difference: " followed by the difference result.**

**8. Stop.**

**Flowchart:**

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**4.1.1. Set Operations** 16:26

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.

Explorer setoperat... Submit Debugger

```
1  input_a = input("Set A: ")
2  set_a = set(map(int, input_a.split()))
3  input_b = input("Set B: ")
4  set_b = set(map(int, input_b.split()))
5  union_result = set_a.union(set_b)
6  intersection_result = set_a.intersection(set_b)
7  difference_result = set_a.difference(set_b)
8  print(f"Union: {union_result}")
9  print(f"Intersection: {intersection_result}")
10 print(f"Difference: {difference_result}")
```