Experiment No. 2(B)

Student Enrolment Manager: Create a Python code to demonstrate the use of sets and perform set operations (union, intersection, difference) to manage student enrolments in multiple courses / appearing for multiple entrance exams like CET, JEE, NEET etc.

Program:-

```
# Sample data: List of students enrolled in various entrance exams
students_CET = set(["Vishal", "Rohan", "Jay", "David", "Eva", "Pooja","Dev"])
students_JEE = set(["Vishal", "Jay", "Kiran", "Pooja", "Hena", "Ivy"])
students_NEET = set(["David", "Eva", "Jay", "Kiran", "Neha", "Vishal"])

# 1. Union: Students who are enrolled in at least one exam (CET, JEE, or NEET)
def union_student():
    union_students = students_CET.union(students_JEE, students_NEET)
    print("Students enrolled in at least one exam (Union):")
    print(union_students)

# 2. Intersection: Students who are enrolled in all three exams (CET, JEE, NEET)
def intersection_student():
    intersection_students = students_CET.intersection(students_JEE, students_NEET)
    print("\nStudents enrolled in all three exams (Intersection):")
    print(intersection_students)

# 3. Difference: Students who are enrolled only in CET but not in JEE or NEET
def difference_student():
    only_CET_students = students_CET.difference(students_JEE, students_NEET)
    print("\nStudents enrolled only in CET (Difference):")
    print(only_CET_students)

while True:
    n=int(input('1.Union \n2.Intersection\n3.difference\n4.Exit : '))
    if n==1:
        union_student()
    elif n==2:
        intersection_student()
    elif n==3:
        difference_student()
    else:
        break
    '''
s={4,5,6,7}
print(type(s))
s=set((4,5,6,7))
print(type(s))
'''
```

```python
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students_JEE = set(["Vishal", "Jay", "Kiran", "Pooja", "Hena", "Ivy"])
students_NEET = set(["David", "Eva", "Jay", "Kiran", "Neha", "Vishal"])

# 1. Union: Students who are enrolled in at least one exam (CET, JEE, or NEET)
def union_student():
    union_students = students_CET.union(students_JEE, students_NEET)
    print("Students enrolled in at least one exam (Union):")
    print(union_students)

# 2. Intersection: Students who are enrolled in all three exams (CET, JEE, NEET)
def intersection_student():
    intersection_students = students_CET.intersection(students_JEE, students_NEET)
    print("\nStudents enrolled in all three exams (Intersection):")
    print(intersection_students)

# 3. Difference: Students who are enrolled only in CET but not in JEE or NEET
def difference_student():
    only_CET_students = students_CET.difference(students_JEE, students_NEET)
    print("\nStudents enrolled only in CET (Difference):")
    print(only_CET_students)

# Main program loop with user input
while True:
    # Display options to the user
    print('\n1. Union \n2. Intersection\n3. Difference\n4. Exit')

    # Get user input
    try:
        n = int(input('Enter your choice (1-4): '))

        # Perform the respective operation based on user choice
        if n == 1:
            union_student()
        elif n == 2:
            intersection_student()
        elif n == 3:
            difference_student()
        elif n == 4:
            print("Exiting the program.")
            break  # Exit the loop and end the program
        else:
            print("Invalid choice. Please enter a number between 1 and 4.")

    except ValueError:
        print("Invalid input. Please enter a valid number.")
```