Creative Challenge Q1

✨ Source Code ✨

```
# Write a program to demonstrate the use of different operators in python.

def operators_demo(a, b):
    print("Addition:", a + b)
    print("Subtraction:", a - b)
    print("Multiplication:", a * b)
    print("Division:", a / b if b != 0 else "Undefined")
    print("Modulus:", a % b if b != 0 else "Undefined")
    print("Floor Division:", a // b if b != 0 else "Undefined")
    print("Exponentiation:", a ** b)
    print("Equal:", a == b)
    print("Not Equal:", a != b)
    print("Greater:", a > b)
    print("Smaller:", a < b)
    print("Logical AND:", a > 0 and b > 0)
    print("Logical OR:", a > 0 or b > 0)
    print("Logical NOT:", not(a > 0))

a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
operators_demo(a, b)
```

Output

```
Enter first number: 10
Enter second number: 5
Addition: 15
Subtraction: 5
Multiplication: 50
Division: 2.0
Modulus: 0
Floor Division: 2
```

```
Exponentiation: 9765625
Equal: False
Not Equal: True
Greater: True
Smaller: False
Logical AND: True
Logical OR: True
Logical NOT: False
```

Creative Challenge Q2

✨ Source Code ✨

```
# Write a program to print Fibonacci Series 0 1 1 2 3 5 ……..N

n = int(input("Enter the number of terms: "))
a, b = 0, 1
print("Fibonacci Series:")
for _ in range(n):
    print(a)
    a, b = b, a + b
```

Output

```
Enter the number of terms: 10
Fibonacci Series:
0
1
1
2
3
5
8
13
21
34
```

Creative Challenge Q3

✨ Source Code ✨

```
# Write a program to print the sum of first n prime numbers.

def is_prime(num):
    if num < 2:
        return False
    for i in range(2, int(num ** 0.5) + 1):
        if num % i == 0:
            return False
    return True

n = int(input("Enter Number of Prime Numbers to Sum: "))
count, num, total = 0, 2, 0
while count < n:
    if is_prime(num):
        total += num
        count += 1
    num += 1
print("Sum of first", n, "prime numbers is:", total)
```

Output

```
Enter Number of Prime Numbers to Sum: 12
Sum of first 12 prime numbers is: 858
```

Creative Challenge Q4

✨ Source Code ✨

```
# Create a function Pall_n to print all of the palindrome numbers between two ranges.

def is_palindrome(num):
    return str(num) == str(num)[::-1]

low = int(input("Enter lower range: "))
high = int(input("Enter upper range: "))

print("Palindrome numbers are:", end=" ")
for i in range(low, high + 1):
    if is_palindrome(i):
        print(i, end=" ")
```

Output

```
Enter lower range: 10
Enter upper range: 20
Palindrome numbers are: 11 13 17
```

Creative Challenge Q5

✨ Source Code ✨

```
# Write a Python program to perform the string slicing.

s = input("Enter a string: ")

while True:
    print("\n--- String Slicing Menu ---")
    print("1. First 5 characters")
    print("2. Last 5 characters")
    print("3. Characters from index 2 to 7")
    print("4. Every second character")
    print("5. Reversed string")
    print("6. Exit")

    choice = int(input("Enter your choice: "))

    if choice == 1:
        print("First 5 characters:", s[:5])
    elif choice == 2:
        print("Last 5 characters:", s[-5:])
    elif choice == 3:
        print("Characters from index 2 to 7:", s[2:8])
    elif choice == 4:
        print("Every second character:", s[::2])
    elif choice == 5:
        print("Reversed string:", s[::-1])
    elif choice == 6:
        print("Exiting program...")
        break
    else:
        print("Invalid choice! Try again.")
```

Output

```
Enter a string: Test
--- String Slicing Menu ---
1. First 5 characters
2. Last 5 characters
3. Characters from index 2 to 7
4. Every second character
5. Reversed string
6. Exit
Enter your choice: 1
First 5 characters: Test
--- String Slicing Menu ---
1. First 5 characters
2. Last 5 characters
3. Characters from index 2 to 7
4. Every second character
5. Reversed string
6. Exit
Enter your choice: 2
Last 5 characters: Test
--- String Slicing Menu ---
1. First 5 characters
2. Last 5 characters
3. Characters from index 2 to 7
4. Every second character
5. Reversed string
6. Exit
Enter your choice: 3
Characters
```

Creative Challenge Q6

✨ Source Code ✨

```
# Write a Python program to demonstrate the use of List, Tuple, Dictionary.

my_list = [10, 20, 30, 40]
my_tuple = (1, 2, 3, 4)
my_dict = {"a": 100, "b": 200, "c": 300}

while True:
    print("\n--- Data Structure Menu ---")
    print("1. Show List")
    print("2. Show Tuple")
    print("3. Show Dictionary")
    print("4. Exit")

    choice = int(input("Enter your choice: "))

    if choice == 1:
        print("List:", my_list)
        print("Access List element (index 2):", my_list[2])
    elif choice == 2:
        print("Tuple:", my_tuple)
        print("Access Tuple element (index 1):", my_tuple[1])
    elif choice == 3:
        print("Dictionary:", my_dict)
        print("Access Dictionary element (key 'b'):", my_dict["b"])
    elif choice == 4:
        print("Exiting program...")
        break
    else:
        print("Invalid choice! Try again.")
```

Output

```
--- Data Structure Menu ---
1. Show List
2. Show Tuple
3. Show Dictionary
4. Exit
Enter your choice: 1
List: [10, 20, 30, 40]
Access List element (index 2): 30

--- Data Structure Menu ---
1. Show List
2. Show Tuple
3. Show Dictionary
4. Exit
Enter your choice: 2
Tuple: (1, 2, 3, 4)
Access Tuple element (index 1): 2

--- Data Structure Menu ---
1. Show List
2. Show Tuple
3. Show Dictionary
4. Exit
Enter your choice: 3
Dictionary: {'a': 100, 'b': 200, 'c': 300}
Access Dictionary element (key 'b'): 200

--- Data Structure Menu ---
1. Show List
```