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Group: 3

Programming Assignment Loops

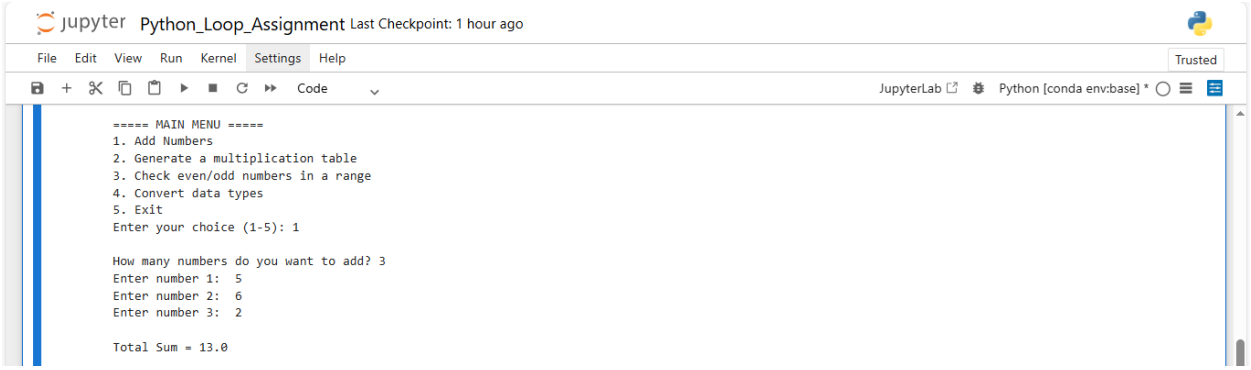
Python Code

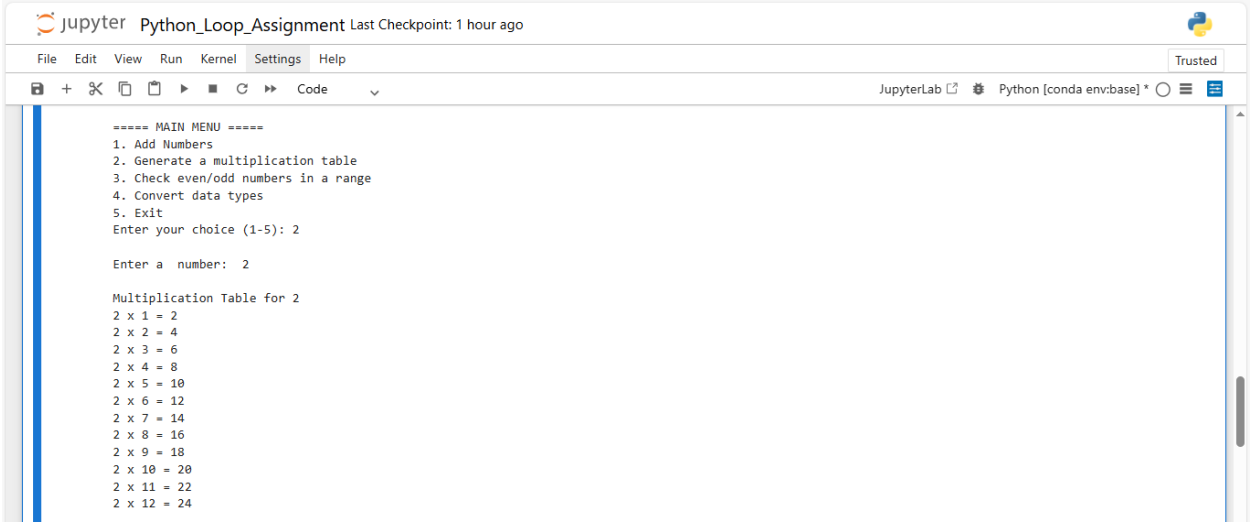
```
while True:
    print("\n===== MAIN MENU =====")
    print("1. Add Numbers")
    print("2. Generate a multiplication table")
    print("3. Check even/odd numbers in a range")
    print("4. Convert data types")
    print("5. Exit")

    choice = input("Enter your choice (1-5):")

    # --- 1. Add Numbers ---
    if choice == '1':
        count = int(input("\nHow many numbers do you want to
add?"))
        total = 0

        for i in range(count):
            num = float(input(f"Enter number {i+1}: "))
            total += num

        print(f"\nTotal Sum = {total}")
```

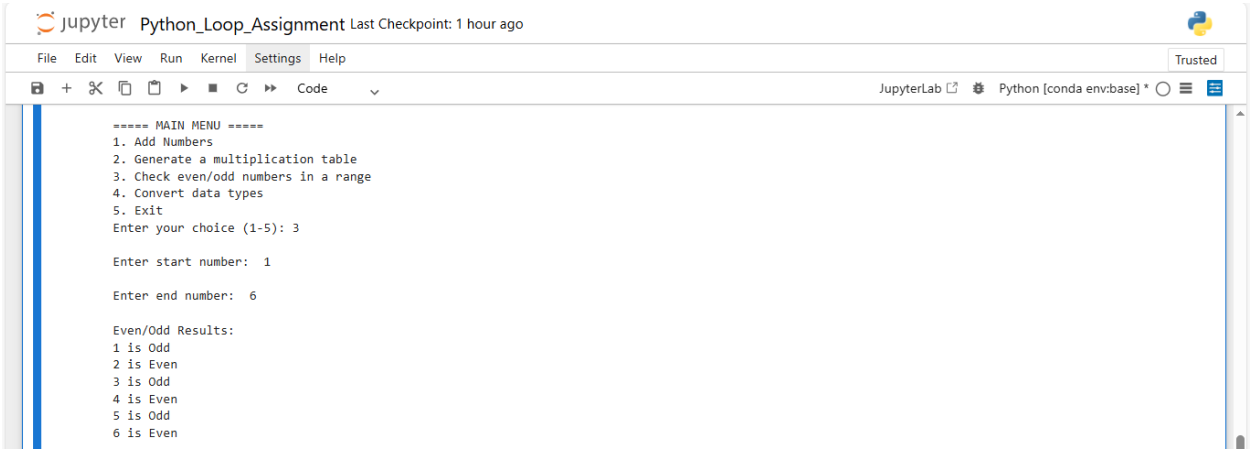
```
# --- 2. Multiplication Table ---
elif choice == '2':
    num = int(input("\nEnter a  number: "))
    print(f"\nMultiplication Table for {num}")
    for i in range(1, 13):
        print(f"{num} x {i} = {num * i}")

# --- 3. Even/Odd Checker ---
elif choice == "3":
    start = int(input("\nEnter start number: "))
    end = int(input("\nEnter end number: "))

    print("\nEven/Odd Results: ")
    for n in range(start, end + 1):
        if n % 2 == 0:
            print(f"{n} is Even")
        else:
            print(f"{n} is Odd")

# --- 4. Data Type Converter ---
elif choice == '4':
    user_input = input("\nEnter any value: ")

    print("\nData Type Conversion:")
    print(f"String: {str(user_input)}")
```

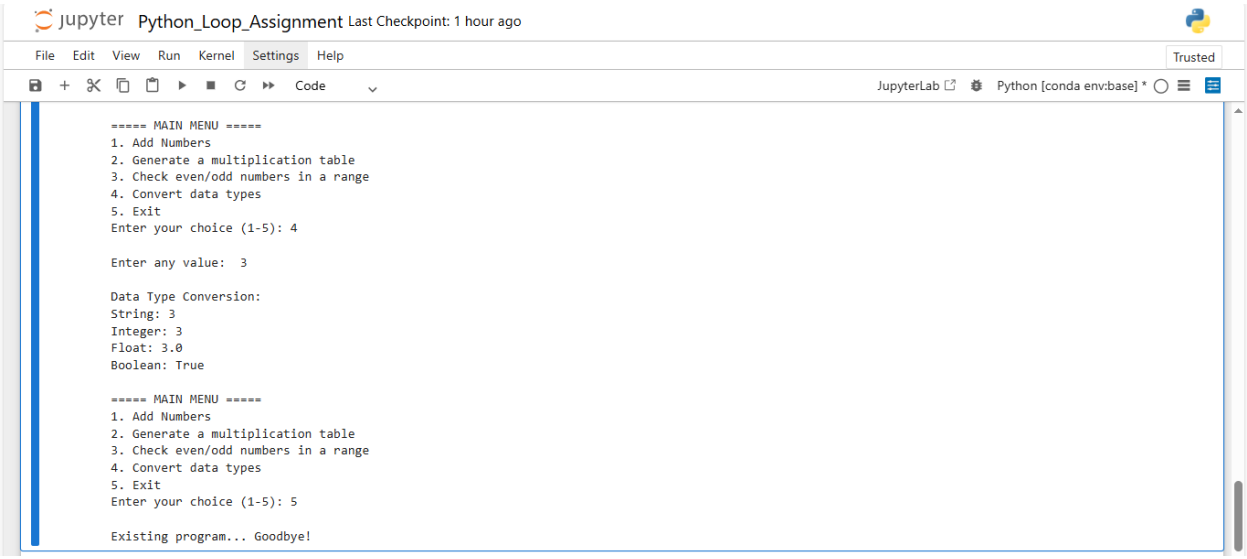
```
        # Convert to integer if possible.
        try:
            print(f"Integer: {int(user_input)}")
        except:
            print("Integer: Cannot Convert")

        # Convert to float if possible.
        try:
            print(f"Float: {float(user_input)}")
        except:
            print("Float: Cannot Convert")

        # Convert to boolean if possible.
        try:
            print(f"Boolean: {bool(user_input)}")
        except:
            print("Boolean: Cannot Convert")

    # --- 5. Exit Program ---
    elif choice == '5':
        print("\nExisting program... Goodbye!")
        break

    else:
        print("\nInvalid choice. Please enter a number between 1
and 5.")
```

Screenshot Showing The Program Running Atleast Two Menu Options









Short Explanation Describing Where I Used Type Casting

Type casting was used several times in the program to convert user input—which always arrives as a string into numeric types such as integers and floats. For example, when adding numbers or generating a multiplication table, the program converts inputs to integer or float type so mathematical operations can be performed. In the Data Type Converter section, the program attempts to cast the user's input into int, float, str, and bool formats to demonstrate how values change across data types. This helps show how type conversion is used