

## **Task(8.4)**

### ***Modify a Variable Captured by Lambda Expression***

**Objective:** Understand variable capturing in lambda expressions and how to modify captured variables.

**Instructions:**

**1.Create a Lambda Expression:**

- Define a variable num in the main function and initialize it with a value.
- Create a lambda expression that captures this variable by value.

**2.Attempt to Modify the Captured Variable:**

- Inside the lambda expression, add a line that attempts to change the value of the captured variable.

**3.Observe the Compilation Error:**

- Compile and run your code. You should see a compilation error indicating that you are trying to assign a value to a read-only variable.

**4.Fix the Compilation Error:**

- Modify the lambda expression to capture the variable by reference instead of by value.
- Ensure that the lambda can now modify the captured variable.

**5.Verify the Changes:**

- Print the value of the variable inside and outside the lambda to confirm that the modification is successful.

**Explanation:**

- **Behavior:** When a variable is captured by value, it is essentially a copy of the original variable. Inside the lambda, this copy is treated as a constant in terms of modification. You are only modifying the copy, not the original variable.
- **Error Cause:** If you try to modify this copy, the lambda's internal representation treats the copy as const to prevent modification. This is why you get a compilation error: assignment of read-only variable.

# Thank You