

Assignment 4

OPERATING SYSTEMS

Farwa Rizvi | CS-01-A | 4-01-23

Question 1

You have to create four threads other than main thread.

1. Input thread
2. Reverse thread
3. Capital thread
4. Shift thread

Input thread will take string input from user, reverse thread will reverse the string and output it, capital thread will capitalize the characters of string and output it and shift thread will shift each characters of the string two time (e.g. a will become c) and output it. All the threads wait for input thread when input thread finishes his task all the waiting thread start their work simultaneously. You also have to handle the exceptions of input thread. Also take care the state of each thread. Do not waste your memory resources

GITHUB LINK

https://github.com/farwaa-sr/200901098_Assign_o4/upload

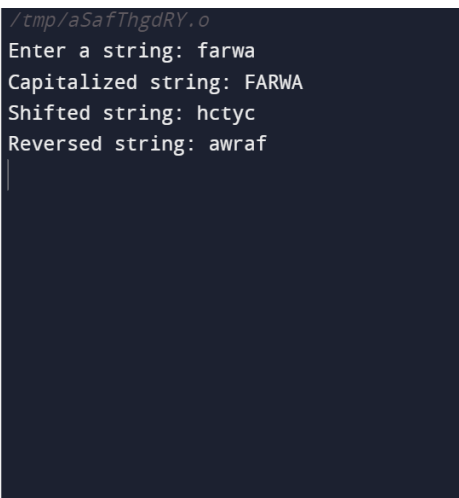
OUTPUT

```
include <iostream>
include <string>
include <thread>
include <atomic>
using namespace std;
atomic<bool> input_done(false);
string input_str;

void input_thread_func()

    cout << "Enter a string: ";
    cin >> input_str;
    input_done = true;

void reverse_thread_func()
```



EXPLANATION

Atomic header file is used for performing operations on data shared among the created threads. Four functions are made for the required output. Threads are created and joined in driver function.