National Textile University

Department of Computer Science

Subject:

Operating System

Submitted to:

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Submitted by:

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Reg number:

1144

Lab no. :
6th

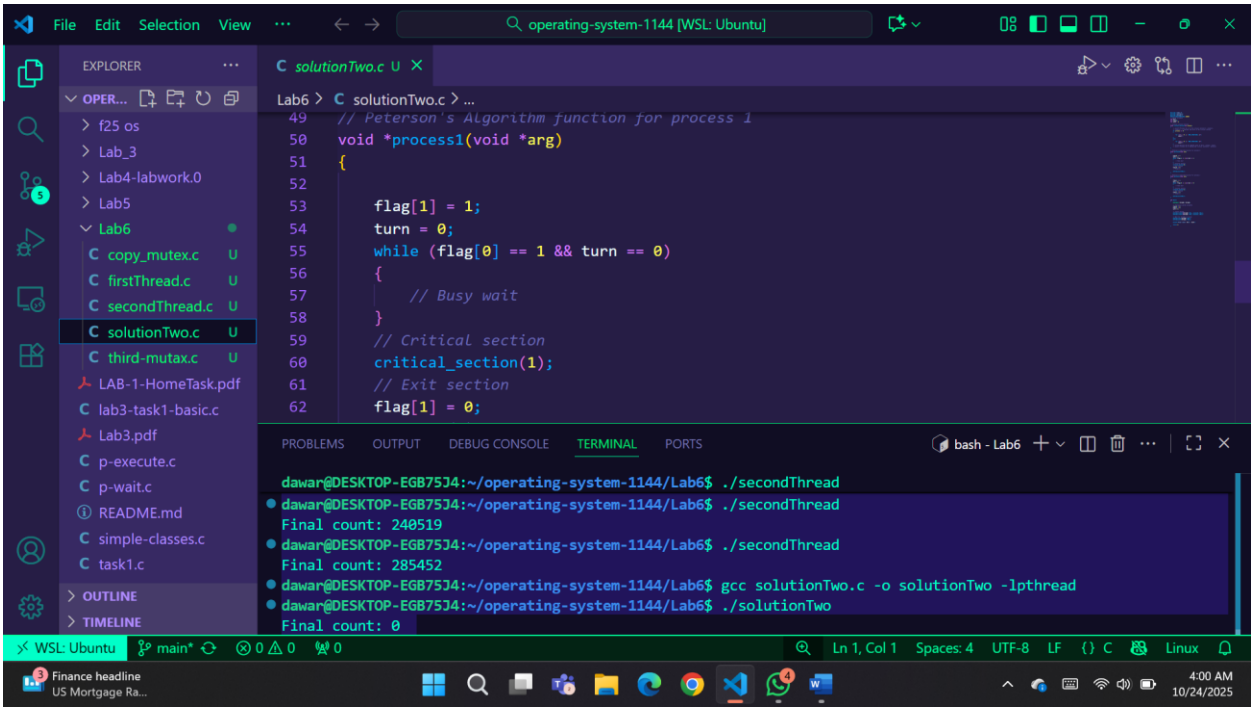
Semester:

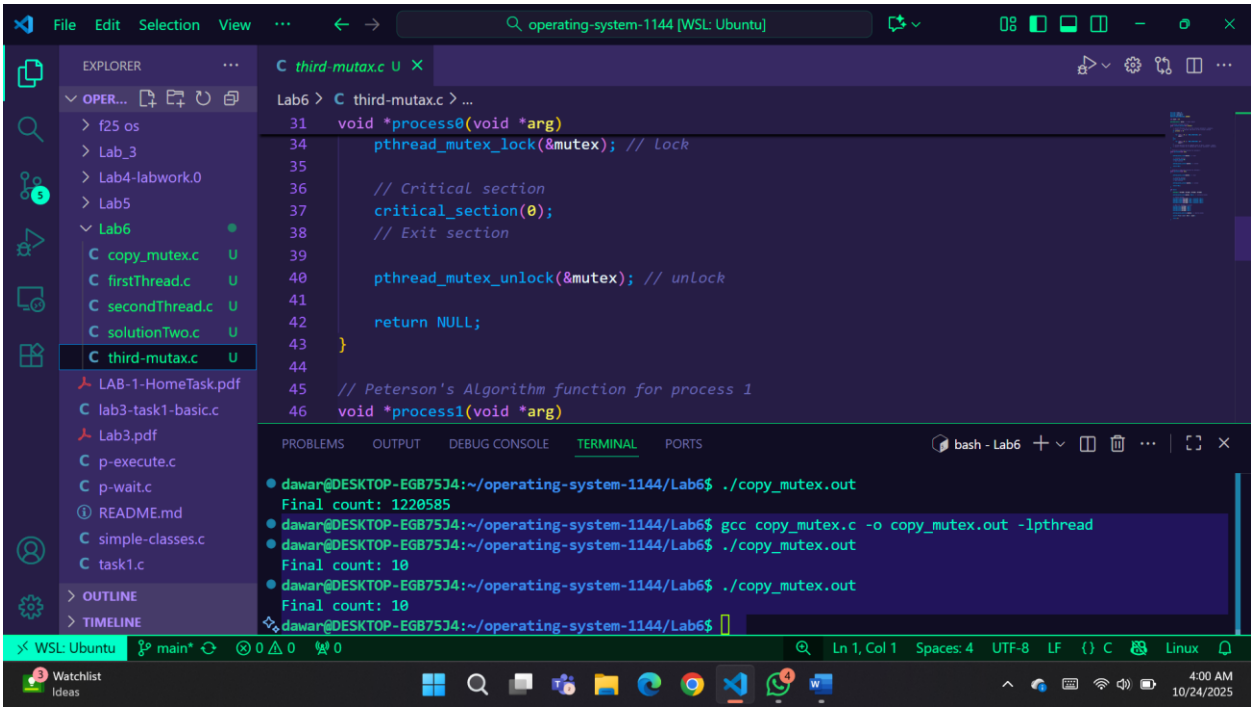
5th

Lab 5

In this lab we have seen the synchronization using Peterson's algorithm and Mutex approach

Peterson's Algorithm	Mutex Approach
• In this method we see that we must implement the whole code through manual coding and there is no built-in module for this purpose. • It is just valid for two functions only.	• Mutex is a built-in library of the c which has the feature to synchronize the processes. We have class pthread_mutex_t class to use methods like lock and unlock. • It is just valid for multiple functions.


File Edit Selection View
operating-system-1144 [WSL: Ubuntu]
EXPLORER
solutionTwo.c U
Lab6 > solutionTwo.c > ...
// Peterson's Algorithm function for process 1
void *process1(void *arg)
{
flag[1] = 1;
turn = 0;
while (flag[0] == 1 && turn == 0)
{
// Busy wait
}
// Critical section
critical_section(1);
// Exit section
flag[1] = 0;
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
bash - Lab6
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$ ./secondThread
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$ ./secondThread
Final count: 240519
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$ ./secondThread
Final count: 285452
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$ gcc solutionTwo.c -o solutionTwo -lpthread
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$ ./solutionTwo
Final count: 0
WSL: Ubuntu main* Ln 1, Col 1 Spaces: 4 UTF-8 LF C Linux
Finance headline
US Mortgage Ra...
4:00 AM
10/24/2025


File Edit Selection View
operating-system-1144 [WSL: Ubuntu]
EXPLORER
third-mutax.c U
Lab6 > third-mutax.c > ...
void *process0(void *arg)
pthread_mutex_lock(&mutex); // lock
// Critical section
critical_section(0);
// Exit section
pthread_mutex_unlock(&mutex); // unlock
return NULL;
}
// Peterson's Algorithm function for process 1
void *process1(void *arg)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
bash - Lab6
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$ ./copy_mutex.out
Final count: 1220585
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$ gcc copy_mutex.c -o copy_mutex.out -lpthread
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$ ./copy_mutex.out
Final count: 10
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$ ./copy_mutex.out
Final count: 10
dawar@DESKTOP-EGB75J4:~/operating-system-1144/Lab6$
WSL: Ubuntu main* Ln 1, Col 1 Spaces: 4 UTF-8 LF C Linux
Watchlist
Ideas
4:00 AM
10/24/2025