

SUSTech Blackboard

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1819 樊顺(Fan Shun)

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Blackboard平台帮助

家

--Assignments 执行测验: Report4

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执行测验: Report4

测试信息

描述 Objective: Master the synchronization & mutual exclusion algorithm, understand the producer-consumer models, and understand the reader-writer problem. Understand the multi-threaded concurrent execution mechanism. Understand the synchronization and mutexes between threads.

Task:

Task 1.finish this test

Task 2.Understand the source codes

Task 3.Edit and modify the source codes

说明

多次尝试

强制完成

不允许。此测试只能进行一次。

本测试可保存并可稍后继续。

问题完成状态:

问题 1

3分 已保存

Describe Function(功能) of pthread_create:

对于工具栏, 请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

3 (12pt)

Create thread.

路径: p

字数:2

问题 2

3分 已保存

Describe Function(功能) of pthread_join:

对于工具栏, 请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

3 (12pt)

Waiting for the end of a thread, the operation of synchronization between threads.

路径: p

字数:13

问题 3

3分 已保存

https://bb.sustech.edu.cn/webapps/assessment/take/launch.jsp?course_assessment_id=_8600_1&course_id=_2234_1&content_id=_155022_1&... 1/5

Describe Function(功能) of pthread_mutex_lock:

对于工具栏，请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

▼

3 (12pt)

▼

The thread calls this function to lock the mutex.

路径: p

字数:9

问题 4

3 分

已保存

Describe Function(功能) of pthread_cond_wait:

对于工具栏，请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

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3 (12pt)

▼

Condition variables are a mechanism for synchronization using global variables shared between threads.
It mainly includes two actions:
A thread waits for "the condition of the condition variable is satisfied" and hangs;
Another thread makes the "conditions true" (gives a signal that the conditions are true).

路径: p

字数:44

问题 5

3 分

已保存

Describe Function(功能) of pthread_cond_signal:

对于工具栏，请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

▼

3 (12pt)

▼

Send a signal to another thread that is in a blocked waiting state to make it out of the blocked state and continue execution.

路径: p

字数:24

问题 6

3 分

已保存

Describe Function(功能) of pthread_mutex_unlock:

对于工具栏，请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

▼

3 (12pt)

▼

Function to unlock the mutex pointed to by mutex.

路径: p

字数:9

问题 7

3 分

已保存

Describe Function(功能) of sem_open:

对于工具栏，请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

▼

3 (12pt)

▼

Create and initialize a famous semaphore.

路径: p

字数:6

问题 8

3 分

已保存

Describe Function(功能) of sem_wait :

对于工具栏，请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

▼

3 (12pt)

▼

Waiting for shared resources, if successful, return 0, otherwise -1.

The sem_wait function can be used to specify the value of the semaphore. If the value is greater than 0, it will be decremented and returned immediately.

We can use the shared resources that we have applied for. If the value is equal to 0, the calling thread will be put to sleep until the value becomes greater than 0. At this time, it will be decremented by one, and the function will then return.

路径: p

字数:84

问题 9

3 分

已保存

Describe Function(功能) of sem_post :

对于工具栏，请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

▼

3 (12pt)

▼

Hang out shared resources.

When a thread finishes using a certain semaphore, it should call this function to tell the system that more resources have been used up.

The function of this function is exactly the opposite of the function of the sem_wait function. He adds one to the value of the specified semaphore and then wakes up any thread that is waiting for the semaphore to become positive.

路径: p

字数:68

问题 10

3 分

已保存

Describe Function(功能) of sem_close :

对于工具栏，请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

▼

3 (12pt)

▼

Turn off the famous semaphore.

But it only turns off the semaphore, but it is not deleted from the system.

路径: p

字数:20

问题 11

2 分

已保存

Producer-Consumer Problem (understand producer_consumer.c) : Are the data that consumers read from the buffer are produced by the same producer?

对于工具栏，请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac)。

Arial

▼

3 (12pt)

▼

Not necessarily, there can be more than one producer.

路径: p 字数:9

问题 12

4分 已保存

Producer-Consumer Problem (understand producer_consumer.c) : What is the order of the consumer's read operations and the producer's write operations, and their relationship
对于工具栏, 请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac).

Arial

3 (12pt)

The write operation must be performed before the read operation.

路径: p 字数:10

问题 13

4分 已保存

Producer-Consumer Problem (understand producer_consumer.c) : Briefly describe the result of the program
对于工具栏, 请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac).

Arial

3 (12pt)

Create two processes, the producer and the consumer, and three mutexes to ensure read and write safety. The producer generates a random letter every time and puts it into the queue, and the consumer takes out a letter from the queue every time and displays it.

路径: p 字数:46

问题 14

4分 已保存

Producer-Consumer Problem (understand producer_consumer.c) : What queue is used in this program, and its characteristics?
对于工具栏, 请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac).

Arial

3 (12pt)

Circular queue.
FIFO is realized, and all the space is recycled, without moving elements, only the pointer is moved each time.

路径: p 字数:21

问题 15

6分 已保存

Producer-Consumer Problem (understand producer_consumer.c) : Briefly describe the mutual exclusion mechanism of this program
对于工具栏, 请按 ALT+F10 (PC) 或 ALT+FN+F10 (Mac).

Arial

3 (12pt)

Arial

3 (12pt)

Three mutexes ensure the safety of reading and writing.

One guarantees that the other process is not operating when writing and reading;

One guarantees that the queue is not read when it is empty;

One guarantees not to write when the queue is full.

路径: p

字数:44

单击“保存并提交”以保存并提交。单击“保存所有答案”以保存所有答案。

保存所有答案

保存并提交