一張含有 文字, 螢幕擷取畫面, 字型, 數字 的圖片

自動產生的描述一張含有 文字, 螢幕擷取畫面, 字型, 數字 的圖片

自動產生的描述Student ID : 111062307, Name : 陳大佑

Set some parameters on manually allocated memory.

一張含有 文字, 螢幕擷取畫面, 字型 的圖片

自動產生的描述

Use P1 for debugging.

EA = 0; marks the start of a **critical section**.

If the current thread is the Consumer (cur\_ID == 0):

Then choose the next thread according to the producer

Else if current thread is not consumer then switch to consumer

EA = 1; End of critical section

*Screenshots for compliation :*

一張含有 文字, 螢幕擷取畫面, 字型 的圖片

自動產生的描述

Screenshots and explanation:

Cur\_ID (34H) is 1, which means producer1 is running.

And now our mutex = 0, full = 1, empty = 1。

一張含有 文字, 螢幕擷取畫面, 軟體, 電腦圖示 的圖片

自動產生的描述

After 1400 iteration, cur\_ID(34H) is still 1

But now our mutex = 1, full = 3, empty = 0。 Which means semaphore changes

一張含有 文字, 螢幕擷取畫面, 軟體, 陳列 的圖片

自動產生的描述

Cur\_ID (34H) is 2, which means producer2 is running.

And now our mutex = 0, full = 0, empty = 2。

一張含有 文字, 螢幕擷取畫面, 軟體, 陳列 的圖片

自動產生的描述

After 1000 iteration, cur\_ID(34H) is still 2

But now our mutex = 1, full = 3, empty = 0。 Which means semaphore changes

一張含有 文字, 螢幕擷取畫面, 軟體, 電腦圖示 的圖片

自動產生的描述

Cur\_ID (34H) is 0, which means consumer is running.

And now our mutex = 0, full = 1, empty = 1。

一張含有 文字, 螢幕擷取畫面, 軟體, 陳列 的圖片

自動產生的描述

After 1900 iteration, cur\_ID(34H) is still 0

But now our mutex = 1, full = 0, empty = 3。 Which means semaphore changes

一張含有 文字, 螢幕擷取畫面, 軟體, 電腦圖示 的圖片

自動產生的描述

**Fair Version:**  
At the start, it is producer1's turn. Producer1 produces 3 alphabets, after which the consumer outputs these 3 alphabets. Then, the turn switches to producer2, which produces 3 numbers, and the consumer outputs these 3 numbers. The two producers alternate turns after producing 3 alphabets or numbers each.一張含有 文字, 電子產品, 螢幕擷取畫面, 軟體 的圖片

自動產生的描述

**Unfair Version:**At the start, it is producer1's turn. Producer1 produces 3 alphabets, and then the turn switches to producer2. However, since mutex = 1, full = 3, and empty = 0, the buffer is already full. As a result, when the turn switches to the consumer, it can only output 3 alphabets and cannot output 3 numbers.

一張含有 文字, 螢幕擷取畫面, 軟體, 電腦圖示 的圖片

自動產生的描述