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Question

Answer the following Step by Step

10.0/10.0 points (graded)

Consider the below algorithm:

```
for (i=1;i < n;i++){
```

```
for (j=1;j < m;j++){
```

```
Alloc[i][j]=( 2i *( j+1 ) % 7)
```

```
}}
```

For n=13 and m=6 answer the following questions

What value Alloc[2][4] will store?



What value Alloc[4][2] will store?

What value Alloc[4][5] will store?



What value Alloc[7][2] will store?



What value Alloc[11][5] will store?



This part of the problem involves in deriving the Allocation matrix for a set of threads for implementing Banker's algorithm. Consider the system has five threads (T0~T4) and five resources (A~E) **[Remember all threads are in CAPITAL letter]**. Currents allocation matrix follows the following rule: T0 has allocated resources equal to the value of row A[2] of Alloc[i][j] array, T1 has equal to row A[4], T2 has equal to row A[7], T3 has equal to row A[9] and T4 has equal to row A[11]. [Hints. if a row has a value 12345 then allocated resources are A:1,B:2,and so on.]

What is the allocated resource for thread T0 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread is allocated 1 instance of resource A, 2 instance of resource B and so on.]



What is the allocated resource for thread T1 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread is allocated 1 instance of resource A, 2 instance of resource B and so on.]



What is the allocated resource for thread T2 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread is allocated 1 instance of resource A, 2 instance of resource B and so on.]



What is the allocated resource for thread T3 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread is allocated 1 instance of resource A, 2 instance of resource B and so on.]



What is the allocated resource for thread T4 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread is allocated 1 instance of resource A, 2 instance of resource B and so on.]



The Maximum Requirement matrix is given below:

T0: 2 6 4 7 4

T1: 3 3 6 6 7

T2: 2 2 2 1 1

T3: 2 5 3 7 4

T4: 3 4 5 7 7

The Available matrix is given below:

2 0 2 2 1

What is the need sequence for thread T0 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread needs 1 instance of resource A, 2 instance of resource B and so on.]



What is the need sequence for thread T1 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread needs 1 instance of resource A, 2 instance of resource B and so on.]



What is the need sequence for thread T2 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread needs 1 instance of resource A, 2 instance of resource B and so on.]



What is the need sequence for thread T3 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread needs 1 instance of resource A, 2

instance of resource B and so on.]



What is the need sequence for thread T4 ? [Hints. input **only the values** one after another starting with resource A, then resource B without any space or anything in between. for example - if you insert 12345, that will mean the thread needs 1 instance of resource A, 2 instance of resource B and so on.]



What is the safe sequence? [Note, try to execute the threads sequentially that is T0, then T1 and so on. If T2 gets first chance in safe sequence, then again start with T0, then T1 and so on.] [Hints. input safe sequence without any space or anything in between such as - T4T2T0T1T3]



While identifying the above safe sequence, what are the resources available after completing thread T2? [Hints. input **only the values** of resource available sequentially starting with resource A, then B and so on, without any space or anything in between. For example - if you enter 12345 that will mean after the thread 1 instance of resource A is available, 2 instance of resource B is available and so on.]



While identifying the above safe sequence, what are the resources available after completing thread T4? [Hints. input **only the values** of resource available sequentially starting with resource A, then B and so on, without any space or anything in between. For example - if you enter 12345 that will mean after the thread 1 instance of resource A is available, 2 instance of resource B is available and so on.]



You have used 2 of 3 attempts

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