银行家算法

1. 安全

{p4,p5,p1,p2,p3}

2. 不能

T0时刻，Available(2,3,3)

Request2(0,3,4)>Available(2,3,3) 请求不合理

3. 能

Request4(2,0,1)的请求合理

尝试分配：

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Work | Need | Allocation | Work+Allocation | Finish |
| P4 | (0,3,2) | (0,2,0) | (4,0,5) | (4,3,7) | TRUE |
| P5 | (4,3,7) | (1,1,0) | (3,1,4) | (7,4,11) | TRUE |
| P1 | (7,4,11) | (3,4,7) | (2,1,2) | (9,5,13) | TRUE |
| P2 | (9,5,13) | (1,3,4) | (4,0,2) | (13,5,15) | TRUE |
| P3 | (13,5,15) | (0,0,6) | (4,0,5) | (17,5,20) | TRUE |

4. 不能

P1:Request(0,2,0)<P1:Need(3,4,7)

P1:Request(0,2,0)<P1:Available(0,3,2) =>请求合理

尝试分配：

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Work | Need | Allocation | Work+Allocation | Finish |
| P1 | (0,3,2) | (0,2,0) | (2,1,2) | (0,1,2) | TRUE |
| P4 | (0,1,2) | (2,2,1) | (2,0,4) |  | FALSE |
| P5 |  | (1,1,0) | (3,1,4) |  |  |
| P1 |  | (3,2,7) | (2,3,2) |  |  |
| P2 |  | (1,3,4) | (4,0,2) |  |  |
| P3 |  | (0,0,6) | (4,0,5) |  |  |

Available(0,1,2)<P4Need:(2,2,1)

Available(0,1,2)<P5Need:(1,1,0)

Available(0,1,2)<P1Need:(3,2,7)

Available(0,1,2)<P2Need:(1,3,4)

Available(0,1,2)<P3Need:(0,0,6)

这时处于不安全状态，所以不能分配，分配无效