The Bakery Algorithm without Choosing

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First the algorithm without choosing. Three processes $P_0, \ldots P_2$. Process i is:

```
1. do {
2. regi = max(number[0],number[1],number[2]) +1
3. number[i] = regi
4. while(number[0] != 0 and (number[0],0) < (number[i],i));
5. while(number[1] != 0 and (number[1],1) < (number[i],i));
6. while(number[2] != 0 and (number[2],2) < (number[i],i));
7. Critical Section
8. number[i] = 0
9. }
```

The basic idea to find a bad trace is for a process to pick a number but not put it into the array `number` until a process with a higher ticket is in its Critical Section, allowing two processes to enter the Critical section.

The interleaving is as follows

1. P_0 2 `reg0 = 1`
2. P_1 2 `reg1 = 1`
3. P_0 3 `number[0] = 1`
4. P_0 4,5,6,7 P_0 in its CS
5. P_2 2 `reg2 = 2`
6. P_2 3 `number[2] = 2`
7. P_0 8 `number[0] = 0` P_0 left its CS
8. P_2 4,5,6,7 P_2 in its CS
9. P_1 3 `number[1] = 1`
10. P_1 4,5,6,7 Now P_2 is in its CS as well.