Assignment Based Quiz

Duration: 24 Hours

There is a high voltage match between Manchester City and Tottenham Hotspurs on December 2. Fans of both teams are very excited about the match and they are keen to watch the match live in the stadium. Tickets for the match have almost been sold out. There are only 10 tickets left. Fans have to maintain a queue according to the first come first serve manner while purchasing tickets. In order to maintain the rule a serial number has been assigned to each who is in the queue. Serials have been assigned in 1, 2 , 3, ……………, n according to the first come first serve order. The current scenario is, there are 10 tickets available and 12 persons in the queue. And there are 2 booths for purchasing tickets. Tickets gets sold in the following order, first two persons (1 and 2 in this case) gets called to two booths together but after the purchase gets completed of person 1 then person 2 starts the procedure of his purchase then after the completion of his purchase both of them left booths then next two persons from the queue gets called to booths for purchasing (3 and 4 in this case). If tickets get finished, booths get closed. Then nobody from the queue can purchase tickets anymore. That is how the entire ticket selling procedure works. According to the current scenario, there are 10 tickets left and 12 persons in the queue for purchasing tickets. Design a proper solution to the scenario that how the entire procedure of selling tickets can be synchronized based on the procedure described above. You have to design a solution and explain it briefly in order to provide the solution. Consider the number of remaining tickets as the shared variable and order of persons in the queue 1,2,3,..........,12. Consider 12 persons as 12 threads here.

**The outcome of the solution should look like the following:**

Person 1 is purchasing

Tickets left: 10

Person: 1, Purchase Done

Person 2 is purchasing

Tickets left: 9

Person: 2, Purchase Done

Person 3 is purchasing

Tickets left: 8

Person: 3, Purchase Done

Person 4 is purchasing

Tickets left: 7

Person: 4, Purchase Done

Person 5 is purchasing

Tickets left: 6

Person: 5, Purchase Done

Person 6 is purchasing

Tickets left: 5

Person: 6, Purchase Done

Person 7 is purchasing

Tickets left: 4

Person: 7, Purchase Done

Person 8 is purchasing

Tickets left: 3

Person: 8, Purchase Done

Person 9 is purchasing

Tickets left: 2

Person: 9, Purchase Done

Person 10 is purchasing

Tickets left: 1

Person: 10, Purchase Done

Person 11 can not purchase

Tickets left: 0

Person: 11, Purchase failed

Person 12 can not purchase

Tickets left: 0

Person: 12, Purchase failed

**Ps: Those who will construct proper solutions in code using c language will get bonus marks.**

**Plagiarism, of any sort, will be strictly dealt with. Copied answers from ChatGPT, Paraphrase from Quilbot or other usage of AI will result in a 0 for the quiz. No exceptions.**

**Form Submission Link:** [**https://docs.google.com/forms/d/e/1FAIpQLSe6GtMWCXZD-bfT5BHQzuRfZ05z0Hu3U5VMuCvFjf51G1IQSQ/viewform?usp=sf\_link**](https://docs.google.com/forms/d/e/1FAIpQLSe6GtMWCXZD-bfT5BHQzuRfZ05z0Hu3U5VMuCvFjf51G1IQSQ/viewform?usp=sf_link)

**This Form will be closed at 29/11/23 5:00PM**