

ID1217 CONCURRENT PROGRAMMING

ASSIGNMENT -4

Monitors

SUBMITTED BY-
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PROBLEM 1- REPAIR STATION

In this problem a set of vehicles of different types are made to get repaired at a station. The station is accessed via the monitor object. First, all the variables are initialized with their initial values. In this example, there are three types of vehicles who can get repaired. The total number of vehicles who can access the station is restricted to ten. The program terminates when all the vehicles cross their total number of trips allowed.

First, we create a new Thread for each vehicle. Each vehicle will then sleep for random amount of time before approaching the station. They then call the method in the monitor. The method first checks whether the vehicle count is not maximum and whether the number of vehicles of same type has reached the limit or not. If it is not so, the vehicle can get repaired. Afterwards, the vehicle sleeps for some time when it is getting repaired. Then, finally it calls the StopRepair() method of the monitor which reduces the vehicle count and finally signals notifyall to allow other vehicles waiting to enter the station.

OUTPUT-

Vehicle nr 1 of type 2 approaching repair station.
Vehicle nr 1 of type 2 is getting repaired.
Vehicle nr 7 of type 2 approaching repair station.
Vehicle nr 7 of type 2 is getting repaired.
Vehicle nr 3 of type 0 approaching repair station.
Vehicle nr 3 of type 0 is getting repaired.
Vehicle nr 1 of type 2 finished repairing.
Vehicle nr 3 of type 0 finished repairing.
Vehicle nr 2 of type 2 approaching repair station.
Vehicle nr 2 of type 2 is getting repaired.
Vehicle nr 0 of type 0 approaching repair station.
Vehicle nr 0 of type 0 is getting repaired.
Vehicle nr 4 of type 1 approaching repair station.
Vehicle nr 4 of type 1 is getting repaired.
Vehicle nr 7 of type 2 finished repairing.
Vehicle nr 9 of type 1 approaching repair station.
Vehicle nr 9 of type 1 is getting repaired.
Vehicle nr 6 of type 0 approaching repair station.
Vehicle nr 9 of type 1 finished repairing.
Vehicle nr 6 of type 0 is getting repaired.
Vehicle nr 3 of type 0 approaching repair station.
Vehicle nr 3 of type 0 is getting repaired.
Vehicle nr 6 of type 0 finished repairing.
Vehicle nr 1 of type 2 approaching repair station.
Vehicle nr 9 of type 1 approaching repair station.
Vehicle nr 1 of type 2 is getting repaired.
Vehicle nr 0 of type 0 finished repairing.
Vehicle nr 9 of type 1 is getting repaired.

Vehicle nr 2 of type 2 finished repairing.
Vehicle nr 8 of type 0 approaching repair station.
Vehicle nr 8 of type 0 is getting repaired.
Vehicle nr 4 of type 1 finished repairing.
Vehicle nr 1 of type 2 finished repairing.
Vehicle nr 3 of type 0 finished repairing.
Vehicle nr 5 of type 2 approaching repair station.
Vehicle nr 5 of type 2 is getting repaired.
Vehicle nr 4 of type 1 approaching repair station.
Vehicle nr 4 of type 1 is getting repaired.
Vehicle nr 8 of type 0 finished repairing.
Vehicle nr 7 of type 2 approaching repair station.
Vehicle nr 7 of type 2 is getting repaired.
Vehicle nr 5 of type 2 finished repairing.
Vehicle nr 8 of type 0 approaching repair station.
Vehicle nr 8 of type 0 is getting repaired.
Vehicle nr 6 of type 0 approaching repair station.
Vehicle nr 9 of type 1 finished repairing.
Vehicle nr 6 of type 0 is getting repaired.
Vehicle nr 3 of type 0 approaching repair station.
Vehicle nr 9 of type 1 approaching repair station.
Vehicle nr 0 of type 0 approaching repair station.
Vehicle nr 4 of type 1 finished repairing.
Vehicle nr 9 of type 1 is getting repaired.
Vehicle nr 4 of type 1 approaching repair station.
Vehicle nr 8 of type 0 finished repairing.
Vehicle nr 3 of type 0 is getting repaired.
Vehicle nr 5 of type 2 approaching repair station.
Vehicle nr 7 of type 2 finished repairing.
Vehicle nr 4 of type 1 is getting repaired.
Vehicle nr 6 of type 0 finished repairing.
Vehicle nr 5 of type 2 is getting repaired.
Vehicle nr 2 of type 2 approaching repair station.
Vehicle nr 8 of type 0 approaching repair station.
Vehicle nr 9 of type 1 finished repairing.
Vehicle nr 0 of type 0 is getting repaired.
Vehicle nr 1 of type 2 approaching repair station.
Vehicle nr 8 of type 0 is getting repaired.
Vehicle nr 3 of type 0 finished repairing.
Vehicle nr 4 of type 1 finished repairing.
Vehicle nr 1 of type 2 is getting repaired.
Vehicle nr 7 of type 2 approaching repair station.
Vehicle nr 5 of type 2 finished repairing.
Vehicle nr 2 of type 2 is getting repaired.
Vehicle nr 1 of type 2 finished repairing.
Vehicle nr 7 of type 2 is getting repaired.
Vehicle nr 9 of type 1 approaching repair station.