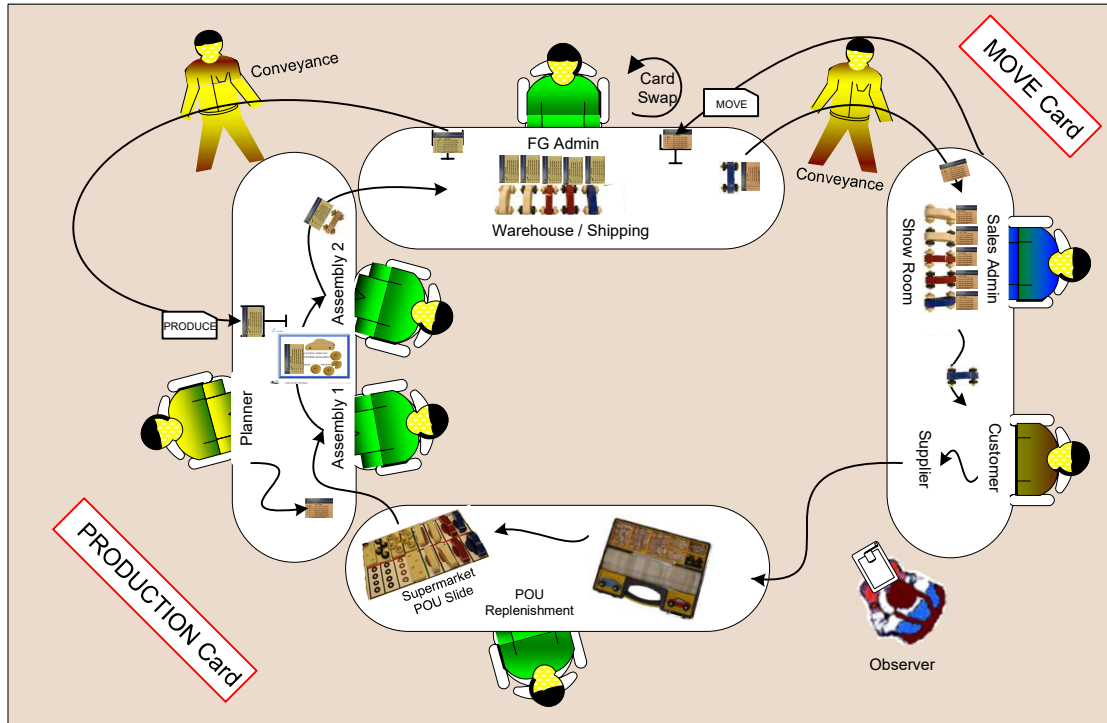


To start, pre-load the warehouse with one of each type Car. The showroom has six blank job cards and issues a job card for each type needed. The Warehouse processes the requests for cars until the showroom orders are complete, and continues to issue the requests to mfg to process cars until the warehouse is full. The customer can order the cars as they appear in the showroom, but only one every two minutes, and only what is available until the showroom has been stocked and if fully open for business. Note: the fg admin uses a blank job card to record that all six cars have been issued to the showroom at least once and thus the store is fully open for business.

The sim continues normally as Customers pull a car from the showroom one car every two minutes, the sales admin sends the job card to the warehouse to replenish. The warehouse replenishes from its own stock if available or else must wait for mfg to complete the order.

Each time the customer pulls a car, it causes the system to act. No pull – no work. The system has two minutes to complete the order.

Once the showroom has been stocked, subsequent stock-outs are not acceptable, and If the showroom does not have the car, the sales admin notes the order and time. Delivery is on time if the customer receives an order inside of two minutes. The admin records any late delivery as part of the metrics. If a car appears within the two minutes the sales admin delivers it and it is not considered late. Causes for the system taking more than two minutes should be recorded as observations for improvement.



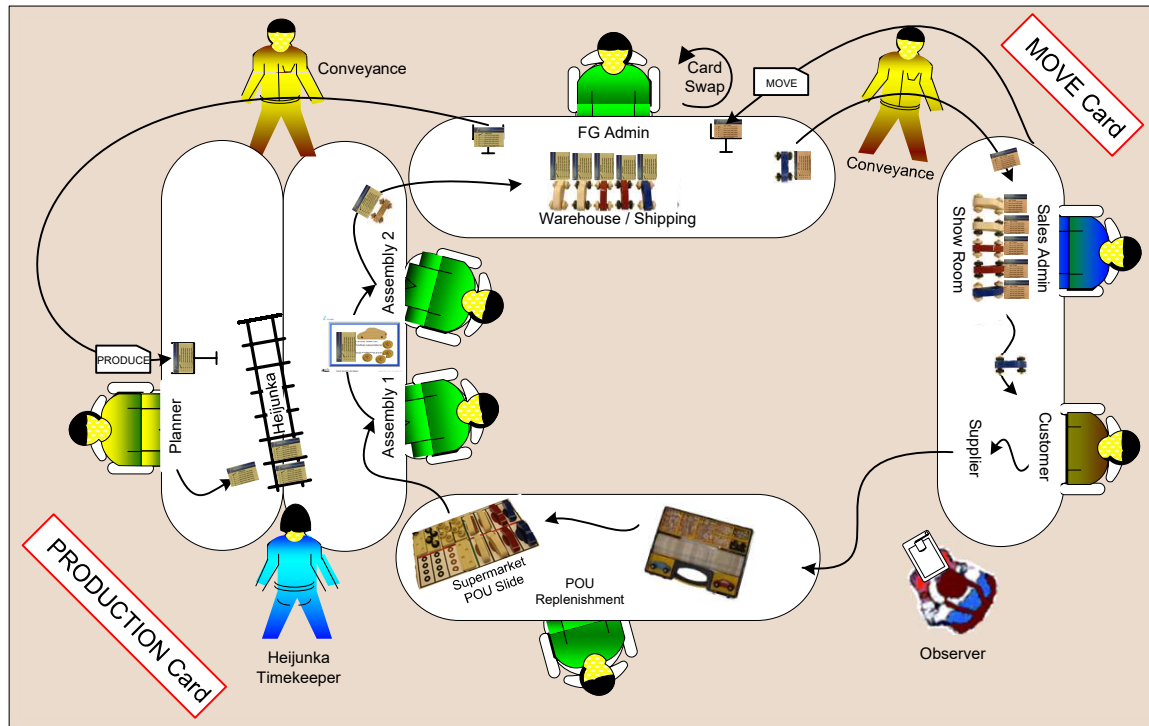
Note: if continuing from exercise #1, the warehouse and show room should be full. Make only the physical changes necessary to implement exercise #2 concerning the stockroom, the planner and two kanban cards. (swap the Job kanban cards on the warehouse cars with Heijunka cards). The stock keeper should also preload the POU supermarket.

To start, pre-load the warehouse with one of each type Car. The showroom has six blank job cards and issues a job card for each type needed. The Warehouse processes the requests for cars by swapping the MOVE order with a PRODUCTION car until all of the the showroom MOVE orders are complete, and continues to issue the PRODUCTION requests to mfg to process cars until the warehouse is replenished. The customer can order the cars as they appear in the showroom, but only one every two minutes, and only what is available until the showroom has been stocked and if fully open for business.

The sim continues normally as Customers pull a car from the showroom one car every two minutes, the sales admin sends the job card to the warehouse to replenish. The warehouse replenishes from its own stock if available by swapping the PRODUCTION card with the MOVE card and sending the car to the showroom, or else it must wait for mfg to complete the order in progress. NOTE: the use of a MOVE card and a PRODUCTION Card makes the task of identifying an open pull from the showroom to the warehouse visually obvious.

Each time the customer pulls a car, it causes the system to act. No pull – no work. The system has two minutes to complete the order.

Stock-outs are not acceptable, and If the showroom does not have the car, the sales admin notes the order and time. Delivery is on time if the customer receives an order inside of two minutes. The admin records any late delivery as part of the metrics. If a car appears within the two minutes the sales admin delivers it and it is not considered late. Causes for the system taking more than two minutes should be recorded as observations for improvement.



Note: if continuing from exercise #2, the warehouse and show room should be full. Make only the physical changes necessary to implement exercise #3 concerning the planner and Heijunka Box. The Heijunka Timekeeper regulates the heijunka period for each column of the box. In operation each period represents a finite time element to perform the tasks associated with the column, and exceeding the time causes schedule slides and lost productivity. In this simulation you can either use a fixed period in real time using a stopwatch, or ignore this element of Heijunka initially, and add it after the process becomes more understood.

To start, pre-load the warehouse with one of each type Car. The showroom has six blank job cards and issues a job card for each type needed. The Warehouse processes the requests for cars by swapping the MOVE order with a PRODUCTION card until all of the the showroom MOVE orders are complete, and continues to issue the PRODUCTION requests to mfg to process cars until the warehouse is replenished. The customer can order the cars as they appear in the showroom, but only one every two minutes, and only what is available until the showroom has been stocked and if fully open for business.

The sim continues normally as Customers pull a car from the showroom one car every two minutes, the sales admin sends the job card to the warehouse to replenish. The warehouse replenishes from its own stock if available by swapping the PRODUCTION card with the MOVE card and sending the car to the showroom, or else it must wait for mfg to complete the order in progress. NOTE: the use of a MOVE card and a PRODUCTION Card makes the task of identifying an open pull from the showroom to the warehouse visually obvious.

Each time the customer pulls a car, it causes the system to act. No pull – no work. The system has two minutes to complete the order.

Stock-outs are not acceptable, and If the showroom does not have the car, the sales admin notes the order and time. Delivery is on time if the customer receives an order inside of two minutes. The admin records any late delivery as part of the metrics. If a car appears within the two minutes the sales admin delivers it and it is not considered late. Causes for the system taking more than two minutes should be recorded as observations for improvement.

The role of the planner now takes on a higher level of effort. Each car type has a different labor element to it and requires different amounts of capacity as represented by the heijunka box rows and columns. The planner receives the PRODUCTION Card and adds it to the mix already received, and using the calculation method, places the PRODUCTION Card into the appropriate slot. The assembly line pulls the cards in top-down left to right column order sequence and builds by pullingmg material from the POU slide board.

Metrics for cycle time should indicate a shorter time to replenish (less than two minutes) and customer on-time should improve if the Heijunka is working correctly.

