CS6403 Software Engineering

Tutorial – 3 SET 1

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1. The following narrative describes the procedure carried out by the clerical staff in the stock room of an electrical parts distributor.
When an order is received from the sales department, each item on the order is checked to see if it can be met from current inventory. If sufficient inventory is held, the clerk adjusts the stock records and passes the item for picking and dispatch. Each time the stock records are changed, the new inventory level is compared to the safe reorder level which is marked in the stock item card. If the new inventory level is below the safe reorder level, the clerk writes a purchase order form, notes the quantity ordered on the stock item card and passes the purchase order form to the store manager who is the deciding authority, for approval and dispatch to the supplier.

If there is some inventory, but not enough to fill the order, the clerk dispatches the item available, adjusts the stock records and creates a purchase order for the required amount. The purchase order is filed in item code order. If the item has been ordered previously, the clerk sends a notice to the store manager to enquire about the ordered items. If the item is not on order, a purchase order is prepared. If the item is completely out of stock a purchase order is created and filed in item code order and the clerk sends a notice to the store manager, whether or not the item is already on order.

a) Draw a DFD to show the data flow of this process.

(OR)

b) Model the behaviour of the system using a state diagram.

2. Computer technology is being applied to super market check-out operations. In these systems, some type of optical character recognition scanner reads the universal-product-code on items sold in the stores. A computer in the store contains a file with the universal-product-code numbers and the current price. As the items are scanned, their price is read from the file and the entire cost of the grocery order is computed.

All during the day, the computer in the store maintains a record of all the items sold. In the evening, the data is used to update the master records. These inventory data can then be used to restock the supermarket, so that it is not necessary for store personnel to place formal orders with the warehouse.

Such systems are designed to speed up the check-out process and to ensure more rapid response for the resupply of grocery products.

Represent the interactions in the above system using a sequence diagram.

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