Software Engineering

IT – 314 | Lab 06

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Use Case: Process Sale

Actors: Cashier, Customer

Preconditions

- The cashier should be logged into the Point-of-Sale system.
- The catalogue system and the inventory system should be activated and functional.

Postconditions

- The transition is successfully completed, inventory is adjusted, and the details are stored in the POS system.
- The customer is given a printed receipt of the transaction.

Normal Flow

1. Cashier starts a new transaction in the POS system.
2. The barcodes of all the items are scanned.
3. The catalogue system sends the item name and the prices of the item to the POS system.
4. The inventory system checks and updates the quantity of item in real-time.
5. Once all the items are added, the cashier proceeds for the final checkout.
6. The customer selects a method of payment.
7. The POS system handles the payment and the transaction is completed.
8. The details of the transaction are stored in the POS system.
9. The customer is given a generated receipt of the transaction.

Alternate Flow

- **Step 2 –** If the item scan fails, the item detail is manually entered by the cashier.
- **Step 4 –** If the item is out of stock, the cashier is notified, and the item is removed.
- **Step 6 –** If a discount is availed by a particular coupon code, the prices are revised accordingly.
- **Step 7 –** If the transaction is unsuccessful, the cashier is notified, and the customer must retry for checkout.

Use Case: Handle Return

Actor: Cashier, Customer

Preconditions

- The cashier should be logged into the Point-of-Sale system.
- The request is within the time of the return policy period.
- The catalogue system and the inventory system should be activated and functional.

Postconditions

- The item is returned, inventory is adjusted, and the return is stored in the POS system.
- The customer is given a refund for the transaction.

Normal Flow

1. Customer provides the item that is to be returned along with the receipt.
2. Cashier initiates the return process in the POS system.
3. The barcode of the all the items to be returned are scanned.
4. The catalogue system sends the item name and the prices of the item to the POS system.
5. The system retrieves the original transaction details of the said items.
6. The receipt is cross-referenced with the retrieved information by the cashier.
7. The inventory system checks and updates the quantity of item in real-time of the items that are returned.
8. The customer is given the refund for the returned items.
9. The details of the return are stored in the POS system.

Alternate Flow

- **Step 1 –** If the items returned are damaged or compromised, the return is declined by the cashier.
- **Step 3 –** If the item scan fails, the item detail is manually entered by the cashier.
- **Step 6 –** If both the receipts do not match, the return process is cancelled.
- **Step 7 –** If the inventory is not updated, the cashier would have to manually update the quantity in the inventory.
- **Step 8 –** If the return is unsuccessful, the cashier is notified, and the customer must retry for the return.

Entity, Boundary and Control Objects

Actors

- Cashier
- Customer

Entity Objects

- Cashier
- Coupons
- Items
- Payment Details
- Sales Transaction
- Return Transaction

Boundary Objects

- POS User interface
- Catalogue System interface
- Inventory System interface
- Barcode Scanner Device
- Receipt Printer

Control Objects

- Inventory Controller
- Payment Processing Controller
- Sales Controller
- Return Processing Controller