Sales & Returns

Listen

Sales

NOTE: These specifications may be supplemented by your instructor with sequence and/or class diagrams for the use cases involving transactional processing. When provided, you must follow the guidance of those diagrams.

Business Process Overview

The Sales and Returns component assigned to you is for supporting in store events only. Employees must log onto the system. Sales and Returns must only allow authenticated users with roles Sales Manager, Store Staff or Salesperson to have access to the subsystem. A store staff or Sales Manager handle sales and/or returns. The Employee full name must appear on the screen

Sales - Story Overview

Imagine you are a store staff member, a salesperson, or a sales manager starting your shift. After logging in, the system recognizes your role as part of the Sales and Returns team. Your full name appears on the screen, confirming that you have the correct permissions to handle in-store sales and process customer returns. This dedicated part of the system makes each transaction smooth, efficient, and error-free while helping you maintain accurate inventory records and uphold store policies.

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In-Store Sales

Your primary task is to assist customers who bring products to the checkout counter. You'll build each sale by adding items to a virtual "shopping cart" within your till. You start an order by searching for the customer by their entire or partial phone number. Once you select a customer from the search results, you can add parts to the order.

To help locate items, you can use a category filter that displays both the category name and the number of items it contains. The parts list shows each product's description, price, and available quantity. To prevent confusion, the system doesn't allow duplicates in the cart. If you have already added a part to the order, you cannot select it for the second time. You can adjust quantities or remove items completely at any time. Your goal is to keep the cart accurate and ready for checkout.

Before finalizing a sale, you verify that all items and their quantities are correct. You may apply a coupon if the customer presents one. You must confirm the coupon is valid by entering it and clicking the verify button. You can confirm its validity and see the discount percentage applied to the order total. Discounts only apply to the subtotal, not to taxes, ensuring transparent and fair pricing. Once satisfied, you guide the customer through payment, then click the **Complete Sale** button. When completing a sale, the system records the transaction: it creates a sales record, deducts the sold quantities from the inventory (ensuring no negative stock occurs), and returns a sales ID as a reference. After checkout, no one can make any further changes to the sale. If, for any reason, the sale doesn't proceed—maybe the customer changes their mind—you can always hit the **Cancel** button, reset the form, clear the list of items, and start fresh.

Sale

Navigation

[Product Selector] [View Cart] [Checkout] [Cancel]

1) Customer Screen (Screen 1 of 4)

Phone Number (Partial):
[ ] [Search] [Clear]

Customer Name	Phone Number	Address
Sam Smith	780.444.4444	12345 – 67 St Edmonton, AB T5J1X1
John Jones	780.432.2222	23456 – 78 St Edmonton, AB T5J1X2
Vern Green	780.433.3333	11111 – 33 St Edmonton, AB T5J1X3
Dave Davids	780.433.4344	22222 – 22 St Edmonton, AB T5J1X4
Abe Appleby	780.432.4545	33333 – 33 St Edmonton, AB T5J1X5

Note: Selecting a new customer clears any entered parts or coupon data—always warn if unsaved

changes will be lost!

2) Product Selector Screen (Screen 2 of 4)

[Customer Search] [Product Selector] [View Cart] [Checkout]

Select Category: (Dropdown or List)

Category	Action
All (69)	[Select]
Hand Saw (4)	[Select]
Hand Tool (8)	[Select]
...	[Select]
Yard Equipment (3)	[Select]

Select Part & Quantity:

Part with QOH	Action
Dewalt Multi Speed Drill (65)	[Add]

Dewalt Multi Speed Sander (15)	[Add]
...	[Add]

[Clear]

- “Clear” resets Category, Part & Quantity inputs.
- “Add” appends the item to the Cart and recalculates all totals.

3) Cart Screen (Screen 3 of 4)

[Customer Search] [Product Selector] [Checkout]

Part	Price	QOH	Quantity	Ext Price	
Dewalt Multi Speed Drill	$45.65	65	[2 ▲▼]	$91.30	❌
Dewalt Multi Speed Sander	$49.65	15	[2 ▲▼]	$99.30	❌

- **QOH** shows current stock on hand.
- Quantity (never exceed QOH).
- ❌ deletes the line item and updates totals.

Subtotal: $190.60 **Tax (5%):** $9.53 **Total:** $200.13

4) Checkout Screen (Screen 4 of 4)

4) Checkout Screen (Screen 4 of 4)

[Product Selector] [View Cart] [View Cart] [Cancel]

Part	Qty	Price	Total
Dewalt Multi Speed Drill	2	$45.65	$91.30
Dewalt Multi Speed Sander	2	$49.65	$99.30

Coupon

[GSTFree] ✓ [Verify] [Clear Coupon]

Coupon must be verified before it applies; warn if completing sale with an unverified code.

Payment Type

- ( ) Cash
- ( ) Debit
- (●) Credit

Payment type **required** to Complete Sale.

Order Totals

Subtotal:	$190.60
Discount (5%):	−$9.53

Tax (5%):	$9.05
Total:	$190.12

[Place Order] [Cancel]

Sale ID: 12345 *(shown only after completion; “Place Order” and “Cancel” disabled once placed)*

*Review **Sales Breakdown***

Sales - Story Continue

Imagine you are a Sales Manager starting your shift and logging into the system. Your full name appears on the screen, confirming you're authenticated. You can navigate to the Sales or Returns screen, establishing your role within the Sales and Returns team. This application helps streamline in-store transactions, making each sale and return process smooth, efficient, and accurate.

Customer Interaction and Search

As customers approach the counter, your first task is quickly identifying them. You start by entering the customer's phone or partial number into a search box and clicking the "Search" button. If multiple customers result from your search, a grid of possible matches appears, allowing you to select the correct individual. Once you have identified the proper customer, you can choose parts to add to their order.

Selecting Products and Managing the Cart

Next, you guide the customer through their purchase. A drop-down list categorizes all available items, showing each category's name and the total number of items in the category. Selecting a category activates the parts drop-down, which displays the Part names and the quantities on hand filtered by the selected category. You must enter the desired quantity for the chosen part, with the system not allowing you to enter an amount less than one or exceeding what's available. Clicking the **Add Part** button places the item into the shopping cart. If you add an item already in the cart again, the system updates the quantity in the order and does not add a second item line.

Reviewing the Cart and Applying Discounts

In the cart area, all selected items appear in their grid, each with a delete button for easy removal. As you adjust quantities or remove items, the system automatically updates the subtotals, taxes, and final total. If the customer has a coupon, you enter it into the designated box and click "Validate." The system checks the coupon's validity based on its existence and date range and applies the appropriate discount percentage to the subtotal. The system calculates taxes based on **subtotal - discount percent**, ensuring transparency in pricing.

Finalizing the Sale

Once everything looks correct, you can finalize the sale. The Summary section displays the totals and allows you to select a payment type. Payment types—Money, Credit, or Debit—are selected from a radio button selection, ensuring the system knows which method the customer used. Clicking "Complete Sale" validates that the quantities sold do not exceed the stock on hand, saves the order to the database, updates the inventory, and disables the "Complete Sale" button to prevent duplicate submissions. A unique Sale ID is generated and displayed, providing a reference for the transaction.

Returns and Refunds

Customers may also return products with their original receipt. Your role is to verify that the returned items belong to that original sale and that the return quantity does not exceed what was originally purchased. If the sale had a discount, you apply that discount proportionally to the returned items' subtotal, making the refund fair. You must record a reason for each returned item. You cannot accept returns for non-refundable products. When you confirm a return, the system processes all items as one complete transaction, creates a refund record, and provides a reference number. The inventory is updated to reflect the returned items. Once the refund is processed, no one can edit it. Suppose you need to start over or clear the screen after reviewing the sale details. In that case, a **Clear** button resets everything, readying the system for the next customer.

Sales Return

Navigation

[Search Invoice] [Clear] [Cancel]

1) Invoice Lookup

Sales Invoice #: xxx
[Search] [Clear]

Note:

- You must search and find a valid sales invoice to process a return.
- Searching again clears all entered values—warn users if unsaved changes will be lost!

2) Sale Information

Field	Value
Sale Invoice #	2000
Customer	John Jones
Date	Sept 11, 2024
Discount %	10%
Payment Method	Cash

3) Sale Parts

Part Name	Orig Qty	Returned	Price	Refundable	Qty to Return	Reason

Helmet	5	3	$90.00	Y	[1 ▲▼]	Does not fit
Aviator goggle	1	0	$75.00	Y	[0 ▲▼]	
O-ring gasket	2	2	$20.00	Y	[0 ▲▼]	
Brake Oil, pint	3	0	$4.90	N	[0 ▲▼]	
Fuel Filter	1	0	$23.95	Y	[1 ▲▼]	Wrong Color
Air filter	1	0	$25.00	Y	[0 ▲▼]	

Subtotal: $293.95 **Discount:** $29.40 **Tax:** $13.23 **Total:** $277.78

Note:
- Returned quantity cannot exceed (Orig Qty – Returned).
- Tax is 5% of (Subtotal – Discount).

4) Actions

[Process Return] [Cancel]

Note: A valid sales invoice is required to do anything with a return. After processing, buttons disable and Sale ID (if shown) remains read-only.

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*Review **Returns Breakdown (Manager Only)***

Sales Return - Story Continue

Handling Returns and Refunds

Occasionally, customers return items. You enter the original Sale ID to retrieve the sale details and select the items to refund. The system ensures that the return quantity does not exceed the original purchase and applies any relevant discounts proportionally. Each returned item requires a reason, as store staff must maintain accurate records and prevent unauthorized refunds. Once confirmed, the system updates the inventory and generates a Refund ID, ensuring that all returns are documented and reflected in the system.

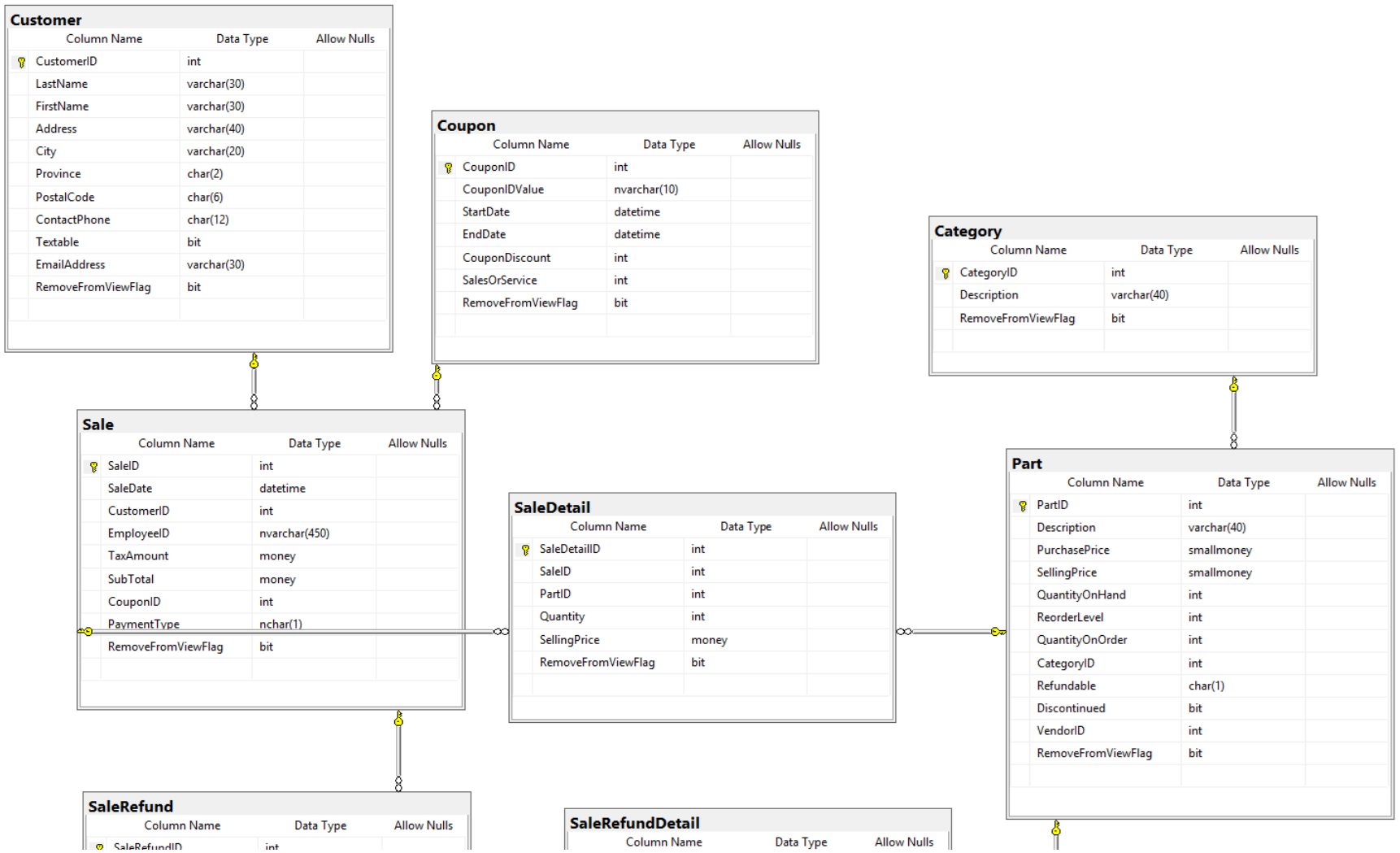
Navigating Between Screens

Throughout the process, each screen's "Cancel" buttons offer flexibility. Whether you need to return to the home page or reset the current customer and cart information, these buttons ensure you can handle any situation without disrupting the workflow.

What This Means Day-to-Day

This Sales functionality empowers you to manage transactions effortlessly. From searching for customers and selecting items to applying discounts and handling returns, the system supports you in maintaining accurate records and providing excellent customer service. The dynamic updates and validation rules help prevent errors, ensuring each sale is processed correctly and efficiently. Understanding how each component interacts allows you to navigate the application confidently, fostering a seamless sales

experience for you and your customers.



Customer

Column Name	Data Type	Allow Nulls
CustomerID	int	
LastName	varchar(30)	
FirstName	varchar(30)	
Address	varchar(40)	
City	varchar(20)	
Province	char(2)	
PostalCode	char(6)	
ContactPhone	char(12)	
Textable	bit	
EmailAddress	varchar(30)	
RemoveFromViewFlag	bit	

Coupon

Column Name	Data Type	Allow Nulls
CouponID	int	
CouponIDValue	nvarchar(10)	
StartDate	datetime	
EndDate	datetime	
CouponDiscount	int	
SalesOrService	int	
RemoveFromViewFlag	bit	

Category

Column Name	Data Type	Allow Nulls
CategoryID	int	
Description	varchar(40)	
RemoveFromViewFlag	bit	

Sale

Column Name	Data Type	Allow Nulls
SaleID	int	
SaleDate	datetime	
CustomerID	int	
EmployeeID	nvarchar(450)	
TaxAmount	money	
SubTotal	money	
CouponID	int	
PaymentType	nchar(1)	
RemoveFromViewFlag	bit	

SaleDetail

Column Name	Data Type	Allow Nulls
SaleDetailID	int	
SaleID	int	
PartID	int	
Quantity	int	
SellingPrice	money	
RemoveFromViewFlag	bit	

Part

Column Name	Data Type	Allow Nulls
PartID	int	
Description	varchar(40)	
PurchasePrice	smallmoney	
SellingPrice	smallmoney	
QuantityOnHand	int	
ReorderLevel	int	
QuantityOnOrder	int	
CategoryID	int	
Refundable	char(1)	
Discontinued	bit	
VendorID	int	
RemoveFromViewFlag	bit	

SaleRefund

Column Name	Data Type	Allow Nulls
SaleRefundID	int	

SaleRefundDetail

Column Name	Data Type	Allow Nulls

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