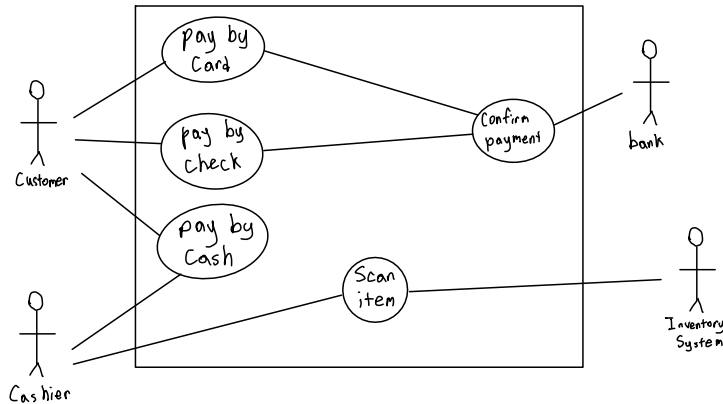


# Supermarket Checkout/Inventory System Use Case Diagram



**Use case name:** Pay by Card

**Summary:** Customer choose to pay by card for the items that they have had rung up, it then must get approved by the bank.

**Actor:** Customer

**Precondition:** Customer must have items in their shopping cart that they are buying.

**Main sequence:**

1. Customer shops and get items that they want to buy.
2. Customer gives their cart to the Cashier.
3. Cashier tells customer their total and hits the total button.
4. Customer hits the pay by card button.
5. Customer inserts their credit card to pay.
6. The bank approves the credit card payment.

**Alternate sequence:**

**Step 1:** Customer does not get any items and leaves.

**Step 4:** Customer pays by a different method.

**Step 6:** Bank does not approve the customers credit card payment.

**Postcondition:** System prints out a receipt and displays to the cashier that they have paid for their items.

**Use case name:** Pay by Check

**Summary:** Customer choose to pay by check for the items that they have chosen to buy from the store.

**Actor:** Customer

**Precondition:** Customer must have items in their shopping cart that they are buying.

**Main sequence:**

1. Customer shops and get items that they want to buy.
2. Customer gives their cart to the Cashier.
3. Cashier tells customer their total and hits the total button.
4. Customer hits the pay by check button.
5. Customer writes their check for the total amount.
6. Customer inserts their check into the check reader.
7. The bank approves the check payment.

**Alternate sequence:**

**Step 1:** Customer does not get any items and leaves.

**Step 4:** Customer pays by a different method.

**Step 6:** Bank does not approve the customers check payment.

**Postcondition:** System prints out a receipt and displays to the cashier that they have paid for their items.

**Use case name:** Pay by Cash

**Summary:** Customer choose to pay by cash for the items that they have chosen to buy from the store.

**Actor:** Customer, Cashier

**Precondition:** Customer must have items in their shopping cart that they are buying, and enough cash to pay.

**Main sequence:**

1. Customer shops and gets items that they want to buy.
2. Customer gives their cart to the Cashier.
3. Cashier tells customer their total and hits the total button.
4. Customer hands their cash to the cashier.
5. Cashier counts the money and hands back the change to the customer.

**Alternate sequence:**

**Step 1:** Customer does not get any items and leaves.

**Step 4:** Customer pays by a different method.

**Step 5:** Cashier counts the money and their is no change to hand back.

**Postcondition:** System prints out a receipt.

**Use case name:** Confirm Payment

**Summary:** Customer either has paid by check or card and it must be confirmed by the bank that they have enough money to pay.

**Actor:** Bank

**Precondition:** Customer must have an account with the bank and must have enough money to pay for their items.

**Main sequence:**

1. Check account number.
2. Using the account number check if account has enough money to pay transaction.
3. Approve payment and send back payment information.

**Alternate sequence:**

**Step 3:** Do not approve payment and give a reason.

**Postcondition:** Bank sends the payment to the store.

**Use case name:** Scan Item

**Summary:** Cashier scans an items barcode or enters Item\_ID to find out its price in the system.

**Actor:** Inventory System, Cashier

**Precondition:** Cashier must have an item to scan.

**Main sequence:**

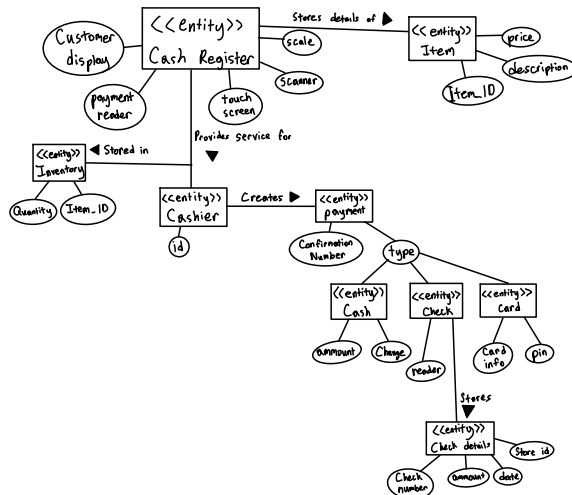
1. Cashier scans the barcode of the item.
2. The scale weights the item and sends it to the system.
3. With the item\_ID, quantity and weight the inventory system returns a price.
4. The price is added to the total in the cart.

**Alternate sequence:**

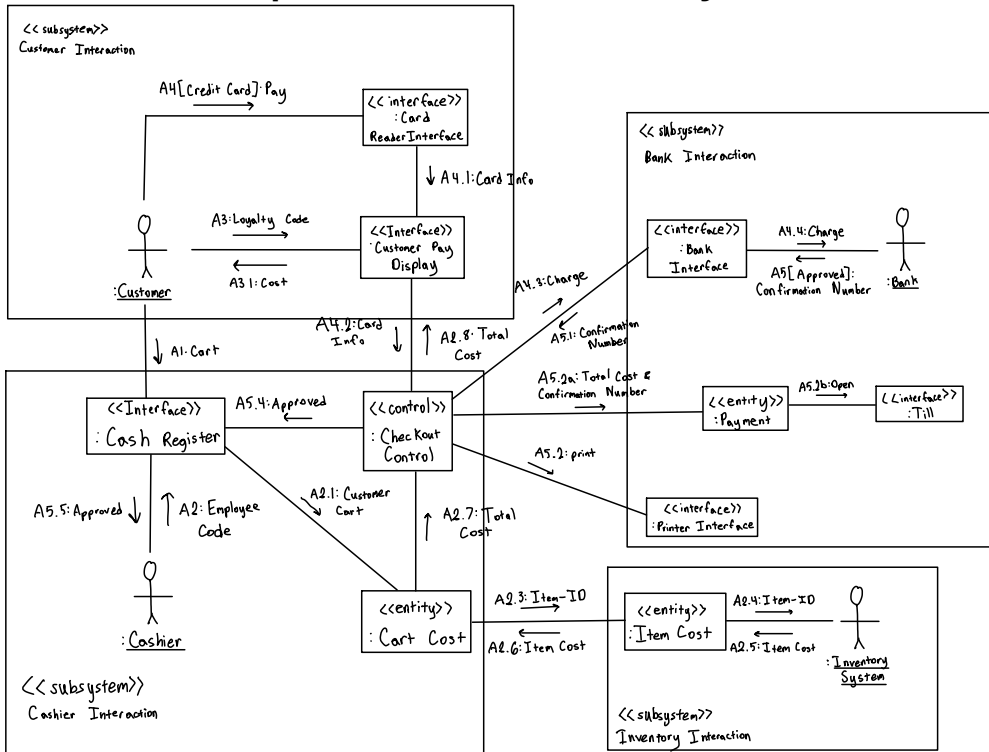
**Step 1:** Cashier inputs item\_ID of the item.

**Postcondition:** Hit total for the last item that is entered.

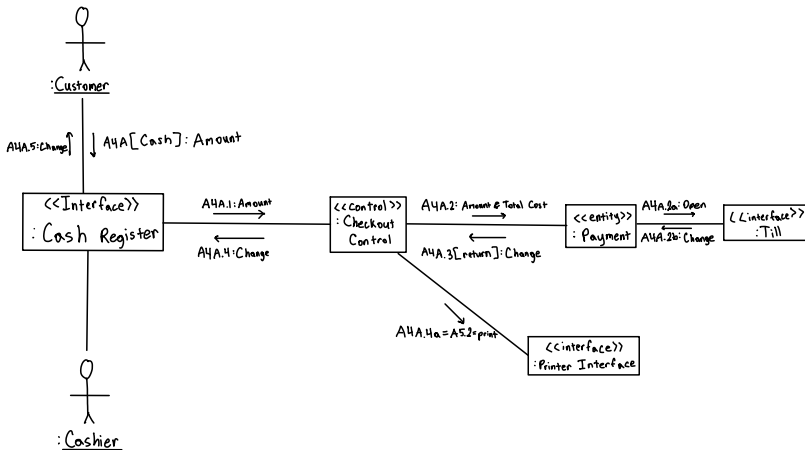
## Static model for Supermarket Checkout System



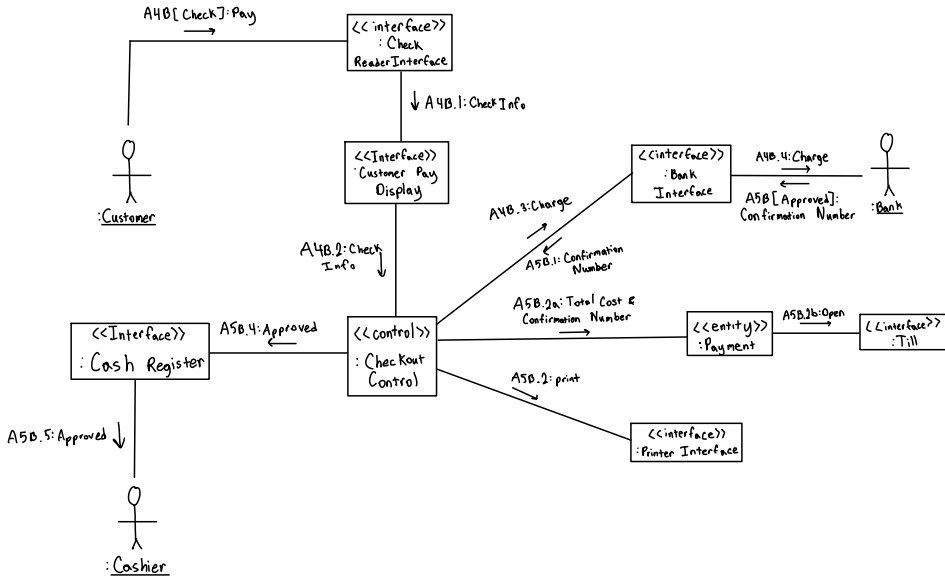
# Communication Diagram for Checkout at Supermarket - Valid Card Payment



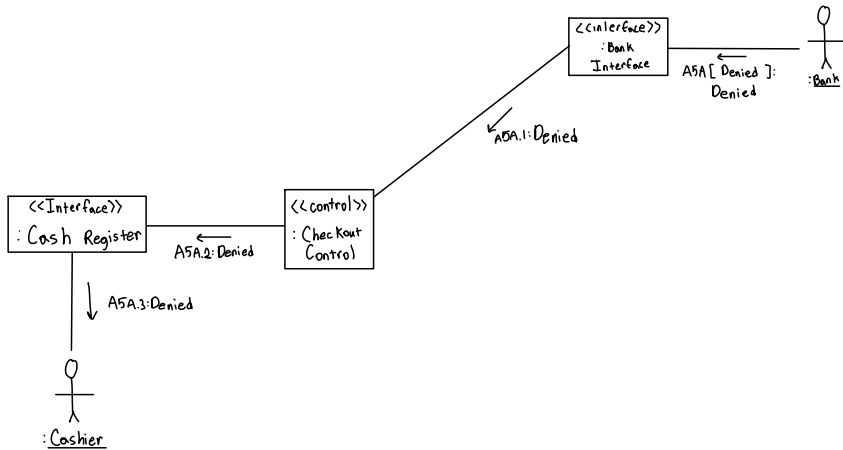
# Communication Diagram for Checkout at Supermarket - Cash Payment



# Communication Diagram for Checkout at Supermarket - Check Payment



# Communication Diagram for Checkout at Supermarket - Invalid Card Payment



# Class Operation Diagram

<<entity>> Cash Register
- tillCash: Integer = 0
+ payCash ( <b>in</b> cash, <b>out</b> change)

<<entity>> Item
- price: Integer = 0 - description: String = "" - item_ID: Integer = 0
+ getPrice ( <b>out</b> price) + getDescription ( <b>out</b> description)

<<entity>> Cashier
- id: Integer = 0
+ getID ( <b>out</b> id)

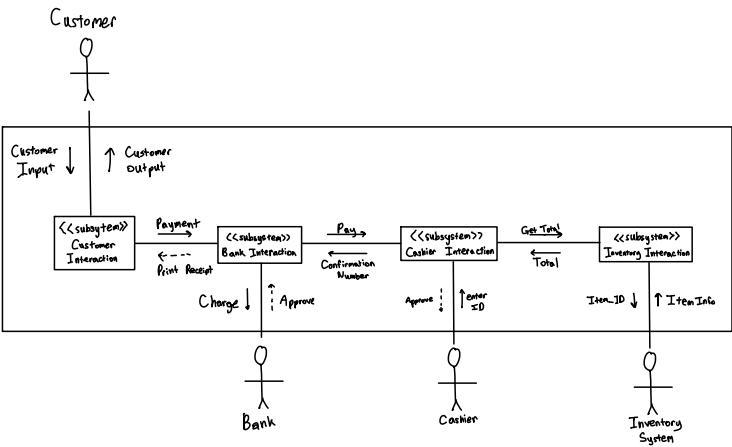
<<entity>> Payment
- type: String = "" - confirmationNumber: String = "" - amount: Integer = 0
+ pay ( <b>in</b> type, <b>in</b> amount, <b>out</b> confirmationNumber)

<<entity>> Cash
- amount: Integer = 0 - change: Integer = 0
+pay ( <b>in</b> amount, <b>out</b> change)

<<entity>> Check
- amount: Integer = 0 - date: Integer = 0 - name: String = "" - checkNumber: Integer = 0 - storeID: Integer = 0
+pay ( <b>in</b> amount, <b>in</b> date, <b>in</b> name, <b>in</b> checkNumber, <b>in</b> storeID)

<<entity>> Card
- amount: Integer = 0 - cardNumber: Integer = 0 - pinNumber: Integer = 0
+pay ( <b>in</b> amount, <b>in</b> cardNumber, <b>in</b> pinNumber)

# Software Architecture for Supermarket Checkout System



## Database Table for Supermarket Checkout System

