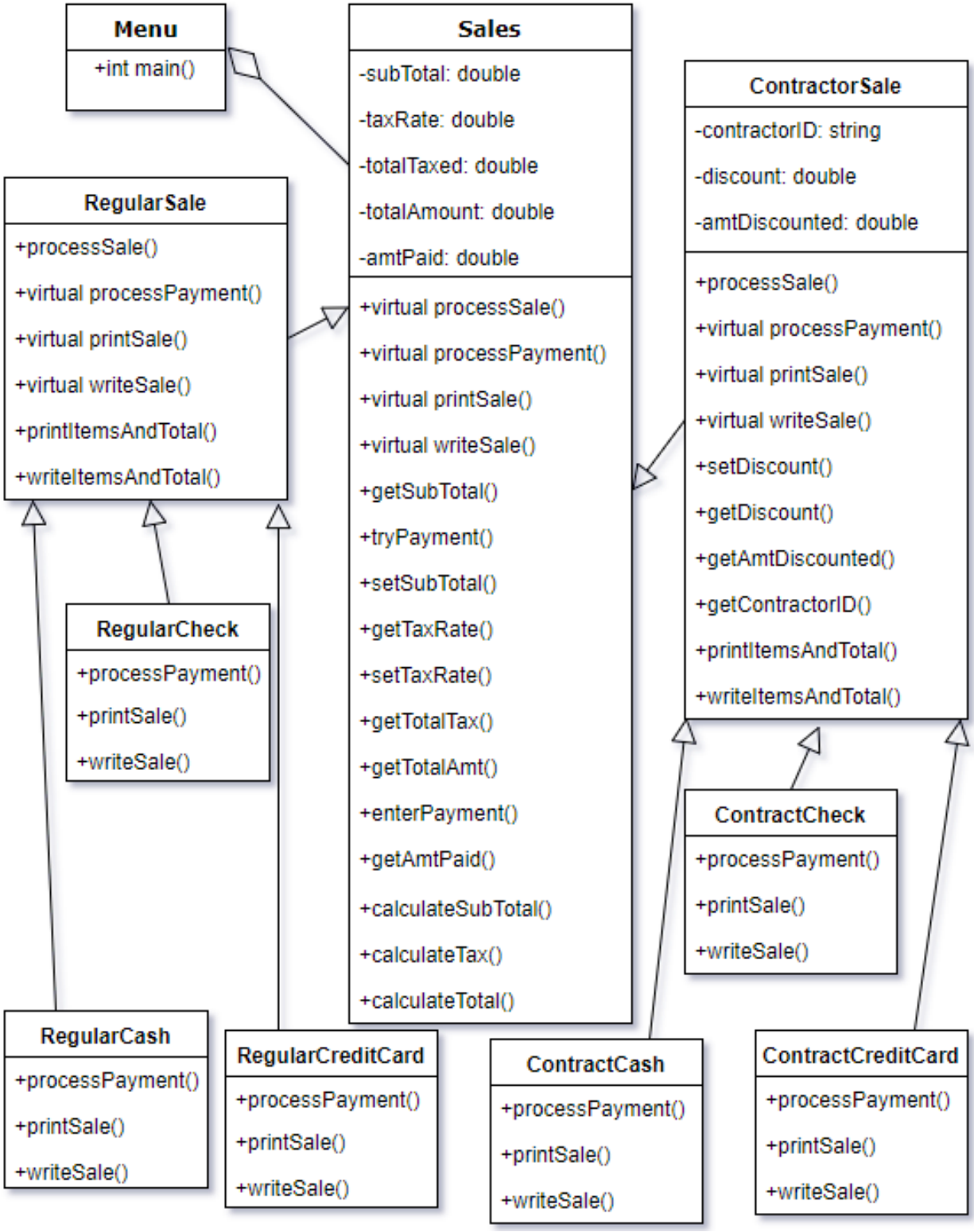
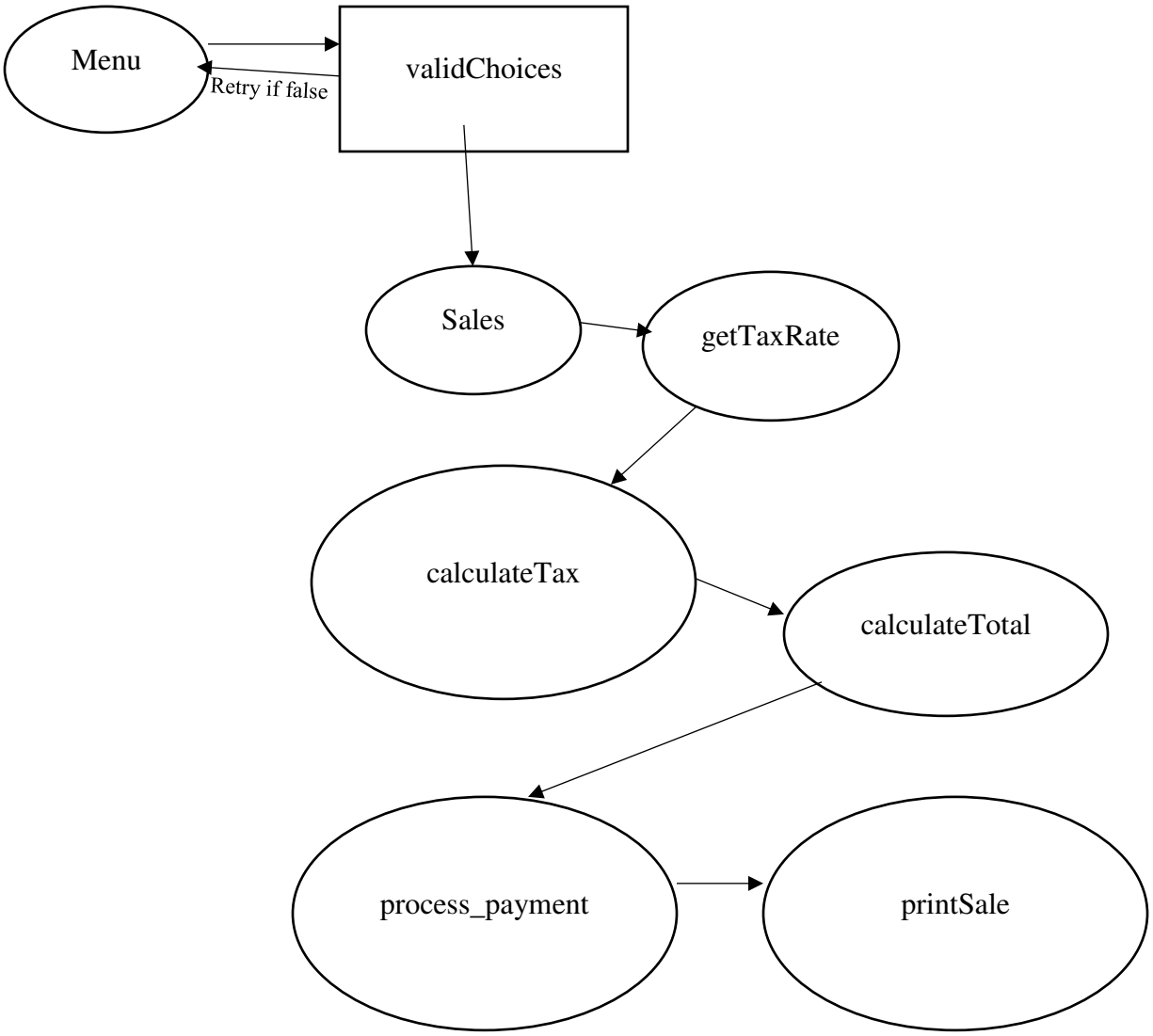
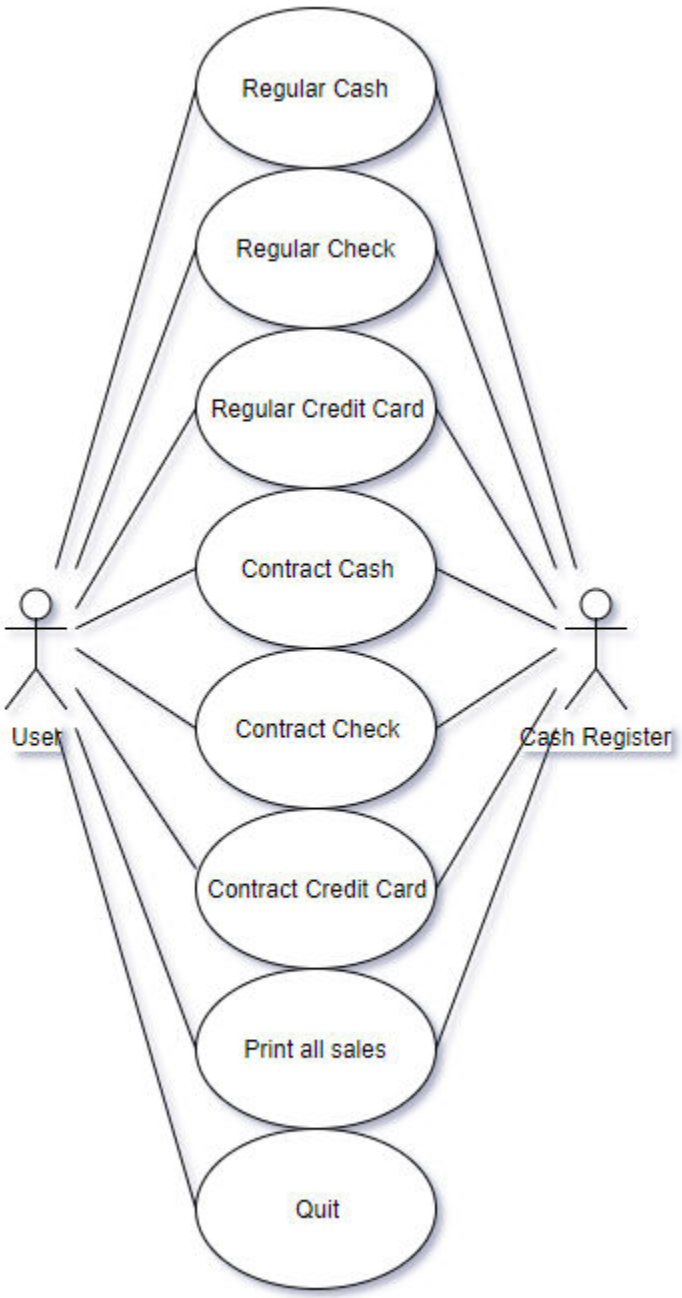
Class Diagram



DFD Diagram


Menu
validChoices
Retry if false
Sales
getTaxRate
calculateTax
calculateTotal
process_payment
printSale

Use Cases



1. Name: Regular Cash
   Description: Pay by regular cash
   Assumption: The input is valid
   Actors: User, Cash register
   Pre-conditions: The choice must be valid
   Post-conditions: The price must be calculated price after taxed properly
   Steps: User inputs 1, the program record the item and calculate the price

Variations: Invalid inputs
Non-functional requirement:
Issues:

2. Name: Regular Check
   Description: Pay by regular check
   Assumption: The input is valid
   Actors: User, Cash register
   Pre-conditions: The choice must be valid
   Post-conditions: The price must be calculated price after taxed properly
   Steps: User inputs 2, the program record the item and calculate the price
   Variations: Invalid inputs
   Non-functional requirement:
   Issues:
3. Name: Regular Credit Card
   Description: Pay by regular credit card
   Assumption: The input is valid
   Actors: User, Cash register
   Pre-conditions: The choice must be valid
   Post-conditions: The price must be calculated price after taxed properly
   Steps: User inputs 3, the program record the item and calculate the price
   Variations: Invalid inputs
   Non-functional requirement:
   Issues:
4. Name: Contract Cash
   Description: Pay by contract cash
   Assumption: The input is valid
   Actors: User, Cash register
   Pre-conditions: The choice must be valid
   Post-conditions: The price must be calculated price after taxed properly
   Steps: User inputs 4, the program record the item and calculate the price
   Variations: Invalid inputs
   Non-functional requirement:
   Issues:
5. Name: Contract Check
   Description: Pay by contract check
   Assumption: The input is valid
   Actors: User, Cash register
   Pre-conditions: The choice must be valid
   Post-conditions: The price must be calculated price after taxed properly
   Steps: User inputs 5, the program record the item and calculate the price
   Variations: Invalid inputs
   Non-functional requirement:
   Issues:
6. Name: Contract Credit Card
   Description: Pay by contract credit card
   Assumption: The input is valid

Actors: User, Cash register
Pre-conditions: The choice must be valid
Post-conditions: The price must be calculated price after taxed properly
Steps: User inputs 6, the program record the item and calculate the price
Variations: Invalid inputs
Non-functional requirement:
Issues:

7. Name: Print all sales
   Description: Print all sales as receipt
   Assumption: The input is valid
   Actors: User, Cash register
   Pre-conditions: The valid inputs have been recorded in the item list
   Post-conditions: The receipt will be printed by the program
   Steps: User inputs 7, the program prints the receipt with all sales listed
   Variations: Invalid inputs
   Non-functional requirement:
   Issues:
8. Name: Quit
   Description: Quit the program
   Assumption: The input is valid
   Actors: User
   Pre-conditions: The choice must be valid
   Post-conditions: The program stops
   Steps: User inputs 8, the program quits properly
   Variations: Invalid inputs
   Non-functional requirement:
   Issues:

Test Cases

1. User inputs ‘a’ on menu. Expected: The program asks for retrying.
2. User inputs ‘1’ on menu. Expected: The program asks for item inputs.
3. User inputs ‘*’ after typing item name. Expected: ‘Sorry, please finish your data input.’
4. User inputs:
   1
   Calculator
   35.70
   Battery
   5.20
   *

   Expected:
   Sub-Total: $40.90
   Regular Sale
   Tax: $ 3.27
   Total amount: $ 44.17
   Amount received: $ 50.00
   Change: $ 5.83
5. User inputs:
   6
   Printer
   148.30
   Ink Cartridge
   43.70
   *

   Expected:
   Sub-Total: $ 192.00
   Contractor Sale
   Contractor ID:

   User inputs:
   24680

   Expected:
   Discount: $ 29.85
   Sub-Total: $ 162.15
   Tax: $ 12.97
   Total amount: $ 175.12
   Enter name on the credit card:
6. User inputs:
   5
   Scanner
   105.70
   Printer paper
   21.40
   *

   Expected:

Sub-Total: $ 127.10
Contractor Sale
Contractor ID:
User Inputs:
13579
Expected:
Discount: $ 19.07
Sub-Total: $ 108.04
Tax: $ 8.64
Total amount: $ 116.68
Enter name on the check:

7. User inputs: 7 Expected: The receipt is printed properly.
8. User inputs: 8 Expected: The program stops.