Cash Register Semester Project
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Introduction

The purpose of this program is to output a receipt of a purchase at a market or a convenience store. The receipt should be formatted nicely and must contain: 1) The market's name, address, phone number, and fax. 2) The date and time of purchase. 3) The method of payment - card (include type, card number, entry method, approval) or cash (include amount). 4) List of items purchased with name, quantity, and amount. 5) The subtotal. 6) Tax percent and amount. 7) The balance due. 8) The amount of change. 9) The total number of items. 10) The barcode of the receipt. We must also implement at least the five classes named CashRegister, CreditCard, Inventory, Barcode, and Address.

Program Analysis and Algorithm Design

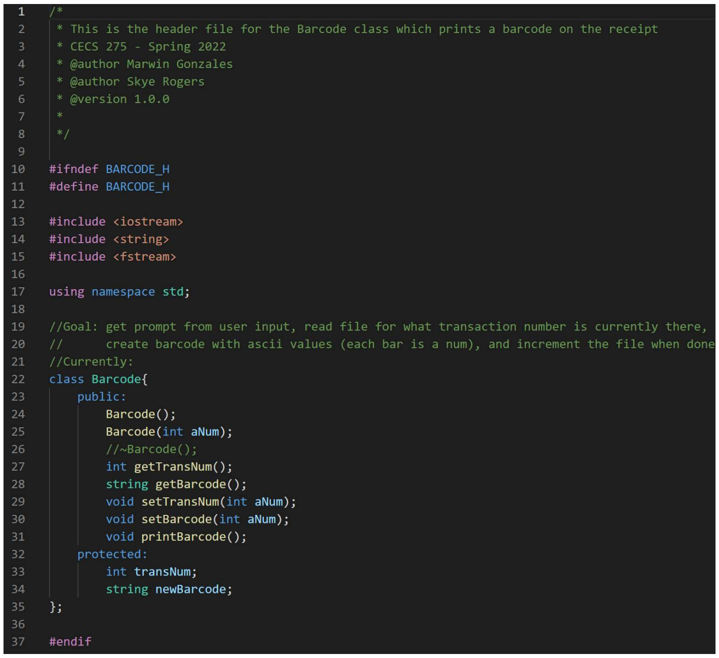
This program was first designed using a schematic (as seen on bottom page). The five classes CashRegister, Inventory, Cash, Debit, and Barcode are the centerpieces of the program. Besides the usual getters and setters for each private member of our classes, we also used quite a few methods and functions in our program.

One of the more important functions that we used was Scanner(), which returns an Inventory object and pushes it into a globally declared vector<Inventory> called Queued{}. This vector is the most important part of accurately keeping track of which objects have been scanned, as it dynamically changes whenever an object is scanned or removed using Queued.pop_back(). This creates a list of objects scanned that we can iterate through to find the total cost of the entire cart (we do this with a separate vector<double> priceVec in CashRegister, but it could also be used for this purpose) and also to be able to print out all chosen attributes of all the objects we want.

More important functions we used were InventoryInit(), which parses through our Inventory file and fills an array with objects with the attributes as defined in the Inventory file, and TransNumInit() which increments a file containing an int that represents how the transaction number(which in turn creates a unique barcode sequence every time the code is run).

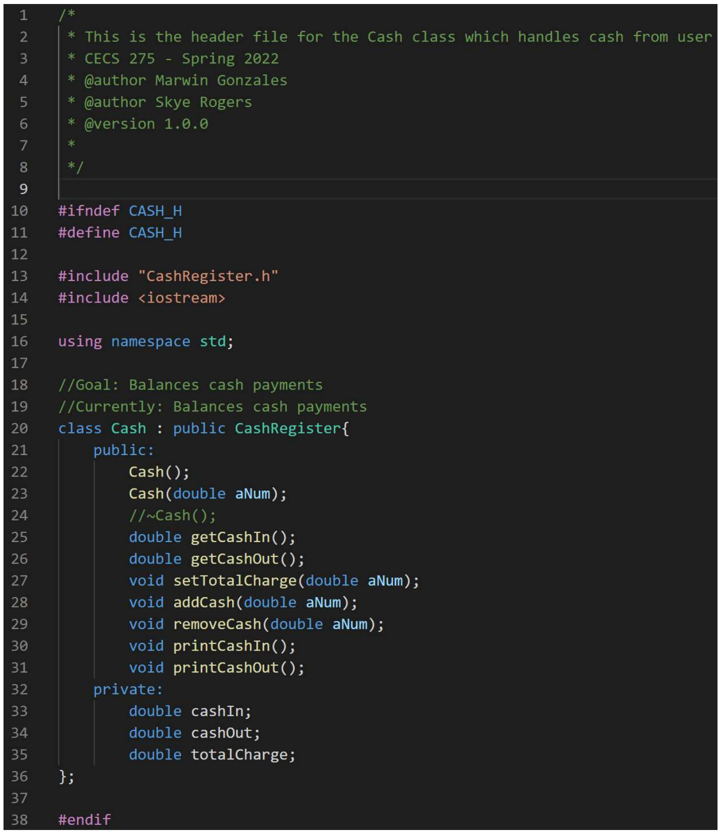
Program Code

Barcode header:



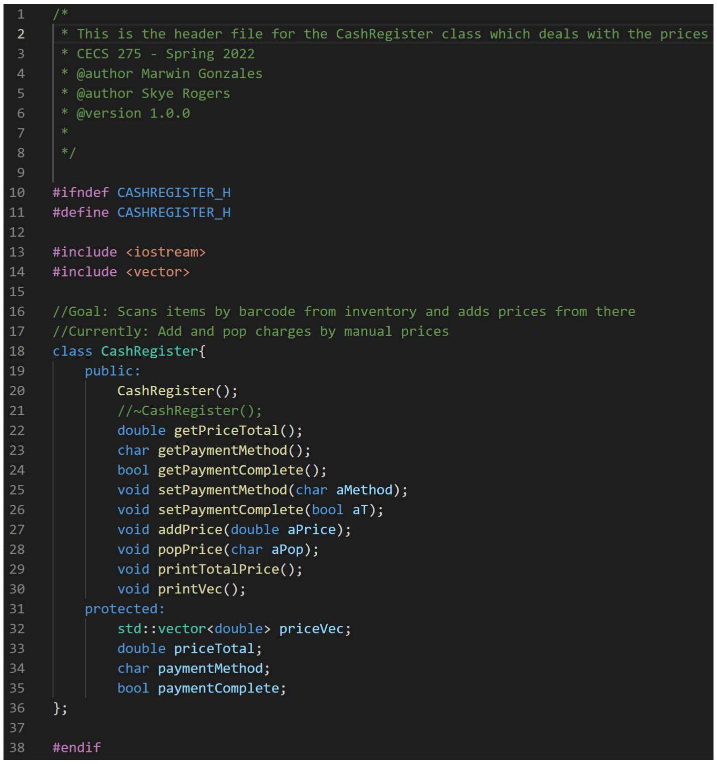
```cpp
/*
 * This is the header file for the Barcode class which prints a barcode on the receipt
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#ifndef BARCODE_H
#define BARCODE_H

#include <iostream>
#include <string>
#include <fstream>

using namespace std;

//Goal: get prompt from user input, read file for what transaction number is currently there,
//      create barcode with ascii values (each bar is a num), and increment the file when done
//Currently:
class Barcode{
    public:
        Barcode();
        Barcode(int aNum);
        //~Barcode();
        int getTransNum();
        string getBarcode();
        void setTransNum(int aNum);
        void setBarcode(int aNum);
        void printBarcode();
    protected:
        int transNum;
        string newBarcode;
};

#endif
```

Cash header:



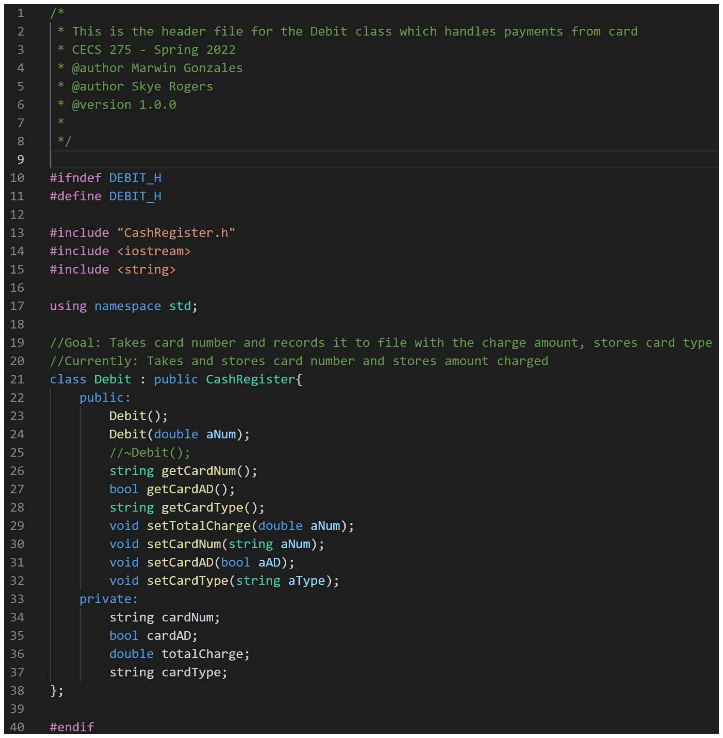
```cpp
/*
 * This is the header file for the Cash class which handles cash from user
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#ifndef CASH_H
#define CASH_H

#include "CashRegister.h"
#include <iostream>

using namespace std;

//Goal: Balances cash payments
//Currently: Balances cash payments
class Cash : public CashRegister{
    public:
        Cash();
        Cash(double aNum);
        //~Cash();
        double getCashIn();
        double getCashOut();
        void setTotalCharge(double aNum);
        void addCash(double aNum);
        void removeCash(double aNum);
        void printCashIn();
        void printCashOut();
    private:
        double cashIn;
        double cashOut;
        double totalCharge;
};

#endif
```

CashRegister header:



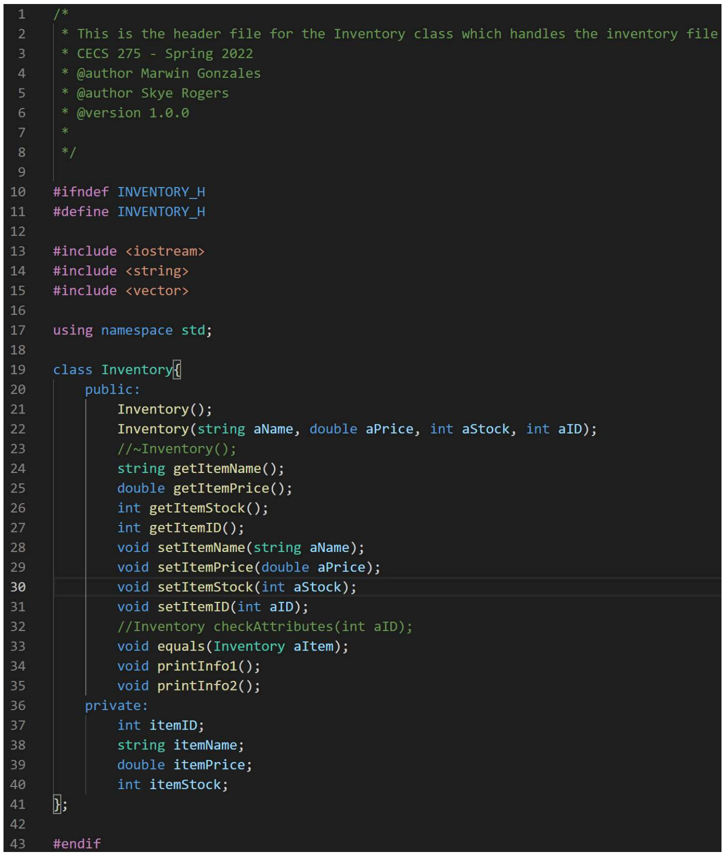
```cpp
/*
 * This is the header file for the CashRegister class which deals with the prices
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#ifndef CASHREGISTER_H
#define CASHREGISTER_H

#include <iostream>
#include <vector>

//Goal: Scans items by barcode from inventory and adds prices from there
//Currently: Add and pop charges by manual prices
class CashRegister{
    public:
        CashRegister();
        //~CashRegister();
        double getPriceTotal();
        char getPaymentMethod();
        bool getPaymentComplete();
        void setPaymentMethod(char aMethod);
        void setPaymentComplete(bool aT);
        void addPrice(double aPrice);
        void popPrice(char aPop);
        void printTotalPrice();
        void printVec();
    protected:
        std::vector<double> priceVec;
        double priceTotal;
        char paymentMethod;
        bool paymentComplete;
};

#endif
```

Debit header:



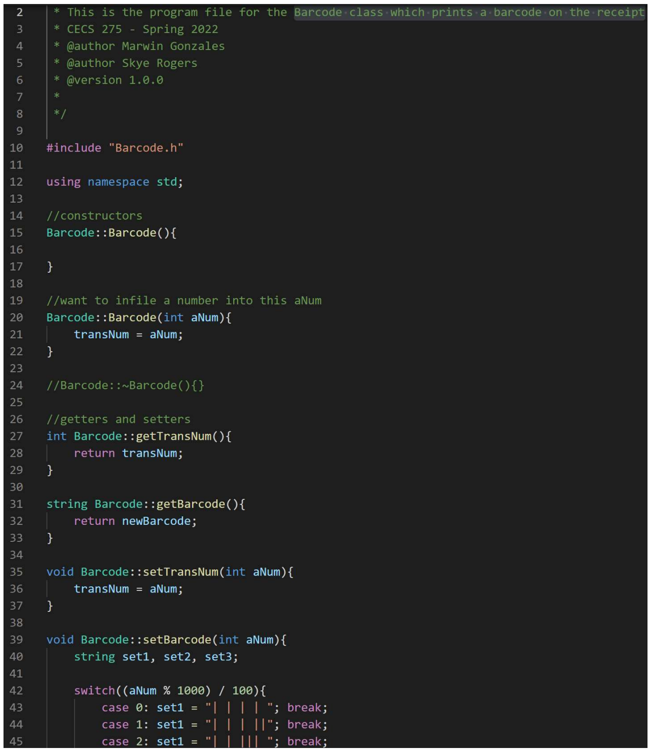
```cpp
/*
 * This is the header file for the Debit class which handles payments from card
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#ifndef DEBIT_H
#define DEBIT_H

#include "CashRegister.h"
#include <iostream>
#include <string>

using namespace std;

//Goal: Takes card number and records it to file with the charge amount, stores card type
//Currently: Takes and stores card number and stores amount charged
class Debit : public CashRegister{
    public:
        Debit();
        Debit(double aNum);
        //~Debit();
        string getCardNum();
        bool getCardAD();
        string getCardType();
        void setTotalCharge(double aNum);
        void setCardNum(string aNum);
        void setCardAD(bool aAD);
        void setCardType(string aType);
    private:
        string cardNum;
        bool cardAD;
        double totalCharge;
        string cardType;
};

#endif
```

Inventory header:

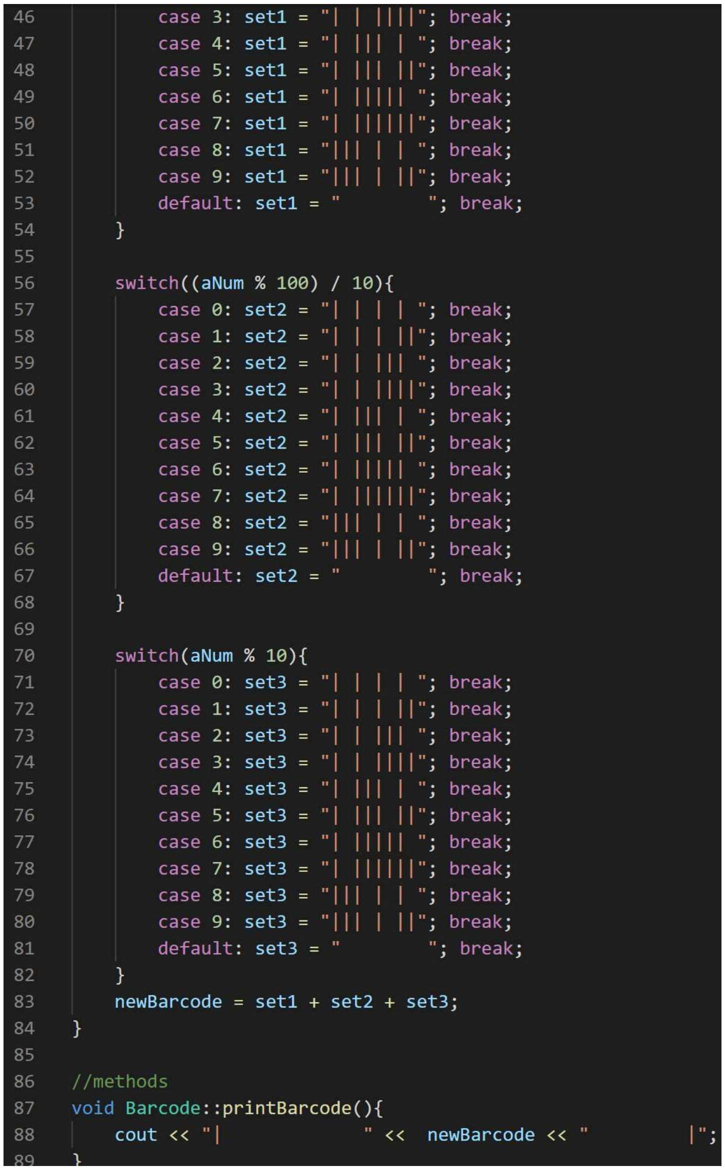


```cpp
/*
 * This is the header file for the Inventory class which handles the inventory file
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#ifndef INVENTORY_H
#define INVENTORY_H

#include <iostream>
#include <string>
#include <vector>

using namespace std;

class Inventory{
    public:
        Inventory();
        Inventory(string aName, double aPrice, int aStock, int aID);
        //~Inventory();
        string getItemName();
        double getItemPrice();
        int getItemStock();
        int getItemID();
        void setItemName(string aName);
        void setItemPrice(double aPrice);
        void setItemStock(int aStock);
        void setItemID(int aID);
        //Inventory checkAttributes(int aID);
        void equals(Inventory aItem);
        void printInfo1();
        void printInfo2();
    private:
        int itemID;
        string itemName;
        double itemPrice;
        int itemStock;
};

#endif
```

Barcode program:

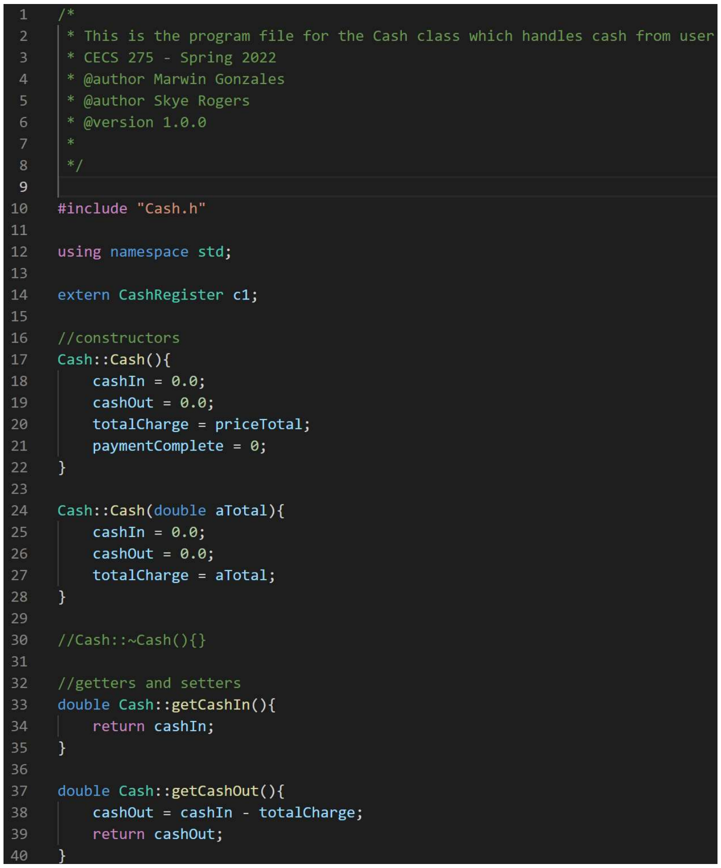


```cpp
 * This is the program file for the Barcode class which prints a barcode on the receipt
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#include "Barcode.h"

using namespace std;

//constructors
Barcode::Barcode(){

}

//want to infile a number into this aNum
Barcode::Barcode(int aNum){
    transNum = aNum;
}

//Barcode::~Barcode(){}

//getters and setters
int Barcode::getTransNum(){
    return transNum;
}

string Barcode::getBarcode(){
    return newBarcode;
}

void Barcode::setTransNum(int aNum){
    transNum = aNum;
}

void Barcode::setBarcode(int aNum){
    string set1, set2, set3;

    switch((aNum % 1000) / 100){
        case 0: set1 = "| | | | "; break;
        case 1: set1 = "| | | ||"; break;
        case 2: set1 = "| | ||| "; break;
```

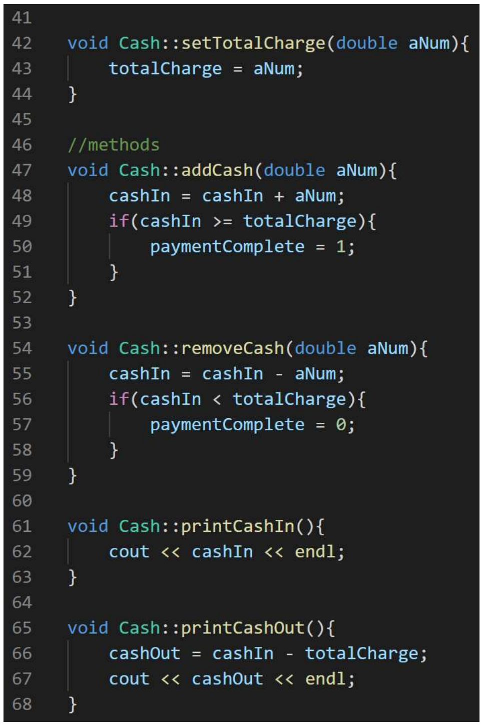


```cpp
        case 3: set1 = "| | ||||"; break;
        case 4: set1 = "| ||| | "; break;
        case 5: set1 = "| ||| ||"; break;
        case 6: set1 = "| ||||| "; break;
        case 7: set1 = "| ||||||"; break;
        case 8: set1 = "||| | | "; break;
        case 9: set1 = "||| | ||"; break;
        default: set1 = "        "; break;
    }

    switch((aNum % 100) / 10){
        case 0: set2 = "| | | | "; break;
        case 1: set2 = "| | | ||"; break;
        case 2: set2 = "| | ||| "; break;
        case 3: set2 = "| | ||||"; break;
        case 4: set2 = "| ||| | "; break;
        case 5: set2 = "| ||| ||"; break;
        case 6: set2 = "| ||||| "; break;
        case 7: set2 = "| ||||||"; break;
        case 8: set2 = "||| | | "; break;
        case 9: set2 = "||| | ||"; break;
        default: set2 = "        "; break;
    }

    switch(aNum % 10){
        case 0: set3 = "| | | | "; break;
        case 1: set3 = "| | | ||"; break;
        case 2: set3 = "| | ||| "; break;
        case 3: set3 = "| | ||||"; break;
        case 4: set3 = "| ||| | "; break;
        case 5: set3 = "| ||| ||"; break;
        case 6: set3 = "| ||||| "; break;
        case 7: set3 = "| ||||||"; break;
        case 8: set3 = "||| | | "; break;
        case 9: set3 = "||| | ||"; break;
        default: set3 = "        "; break;
    }
    newBarcode = set1 + set2 + set3;
}

//methods
void Barcode::printBarcode(){
    cout << "|             " <<  newBarcode << "         |";
}
```

Cash program:

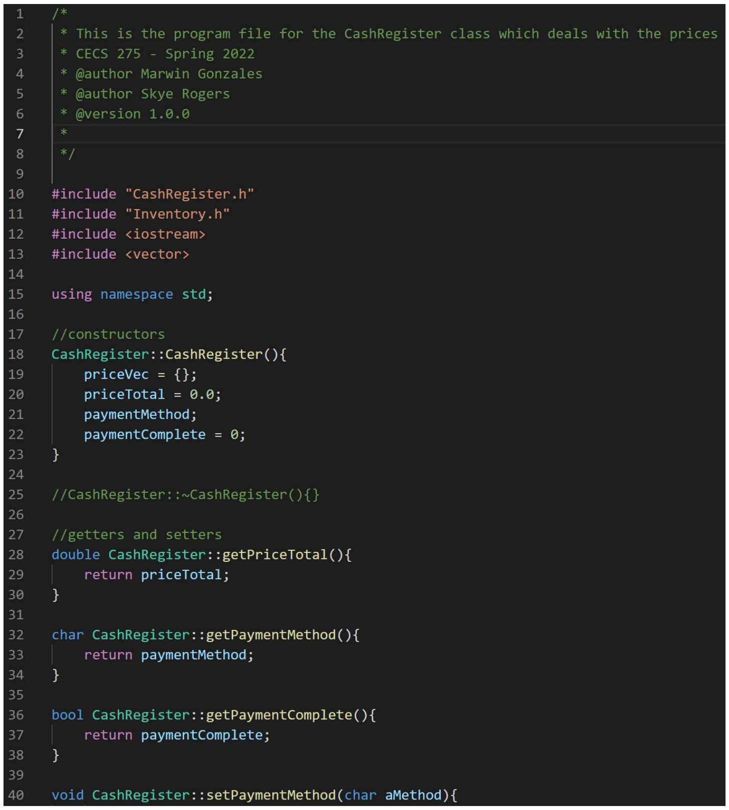


```
/*
 * This is the program file for the Cash class which handles cash from user
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#include "Cash.h"

using namespace std;

extern CashRegister c1;

//constructors
Cash::Cash(){
    cashIn = 0.0;
    cashOut = 0.0;
    totalCharge = priceTotal;
    paymentComplete = 0;
}

Cash::Cash(double aTotal){
    cashIn = 0.0;
    cashOut = 0.0;
    totalCharge = aTotal;
}

//Cash::~Cash(){}

//getters and setters
double Cash::getCashIn(){
    return cashIn;
}

double Cash::getCashOut(){
    cashOut = cashIn - totalCharge;
    return cashOut;
}
```

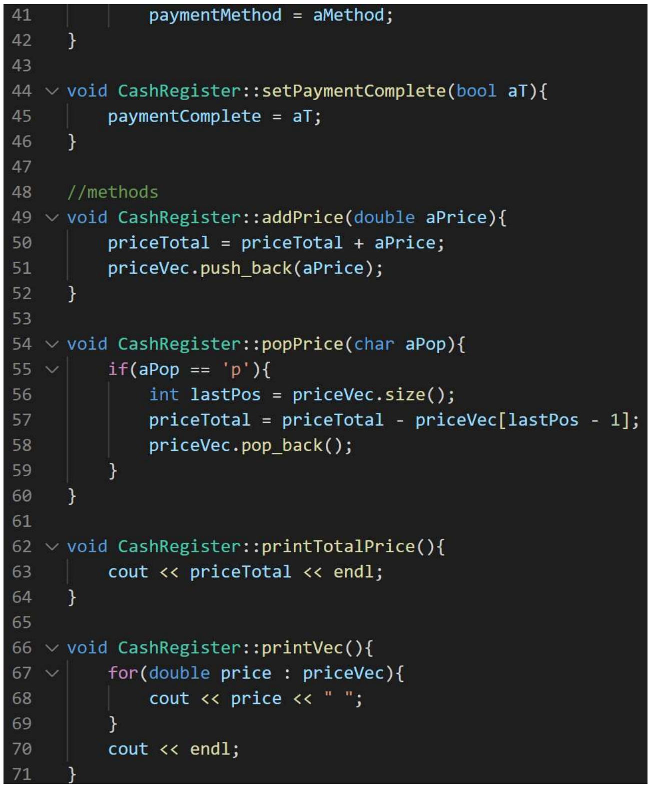


```

void Cash::setTotalCharge(double aNum){
    totalCharge = aNum;
}

//methods
void Cash::addCash(double aNum){
    cashIn = cashIn + aNum;
    if(cashIn >= totalCharge){
        paymentComplete = 1;
    }
}

void Cash::removeCash(double aNum){
    cashIn = cashIn - aNum;
    if(cashIn < totalCharge){
        paymentComplete = 0;
    }
}

void Cash::printCashIn(){
    cout << cashIn << endl;
}

void Cash::printCashOut(){
    cashOut = cashIn - totalCharge;
    cout << cashOut << endl;
}
```

CashRegister program:

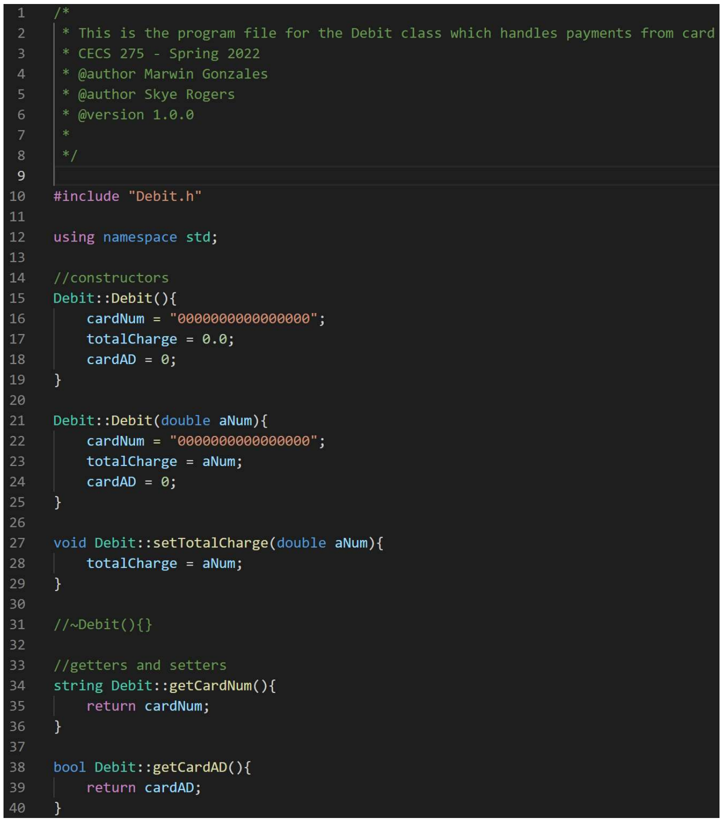


```cpp
/*
 * This is the program file for the CashRegister class which deals with the prices
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#include "CashRegister.h"
#include "Inventory.h"
#include <iostream>
#include <vector>

using namespace std;

//constructors
CashRegister::CashRegister(){
    priceVec = {};
    priceTotal = 0.0;
    paymentMethod;
    paymentComplete = 0;
}

//CashRegister::~CashRegister(){}

//getters and setters
double CashRegister::getPriceTotal(){
    return priceTotal;
}

char CashRegister::getPaymentMethod(){
    return paymentMethod;
}

bool CashRegister::getPaymentComplete(){
    return paymentComplete;
}

void CashRegister::setPaymentMethod(char aMethod){
```

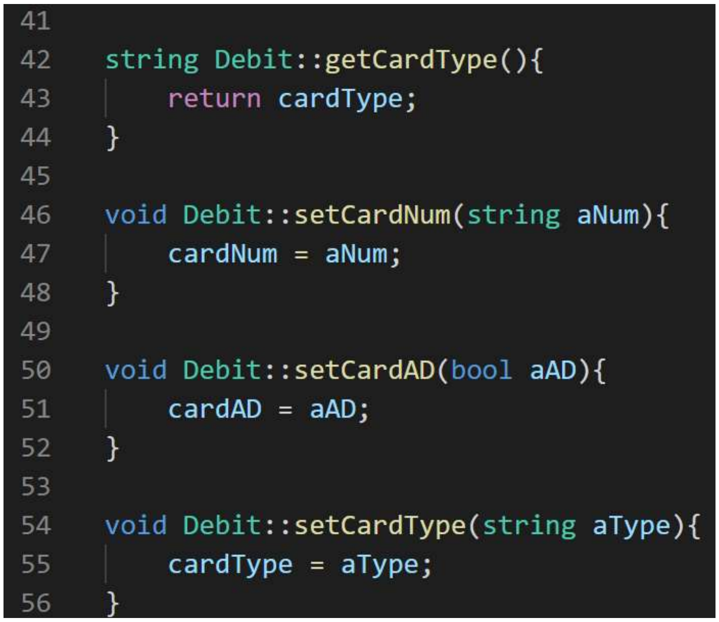


```cpp
        paymentMethod = aMethod;
}

void CashRegister::setPaymentComplete(bool aT){
    paymentComplete = aT;
}

//methods
void CashRegister::addPrice(double aPrice){
    priceTotal = priceTotal + aPrice;
    priceVec.push_back(aPrice);
}

void CashRegister::popPrice(char aPop){
    if(aPop == 'p'){
        int lastPos = priceVec.size();
        priceTotal = priceTotal - priceVec[lastPos - 1];
        priceVec.pop_back();
    }
}

void CashRegister::printTotalPrice(){
    cout << priceTotal << endl;
}

void CashRegister::printVec(){
    for(double price : priceVec){
        cout << price << " ";
    }
    cout << endl;
}
```

Debit program:

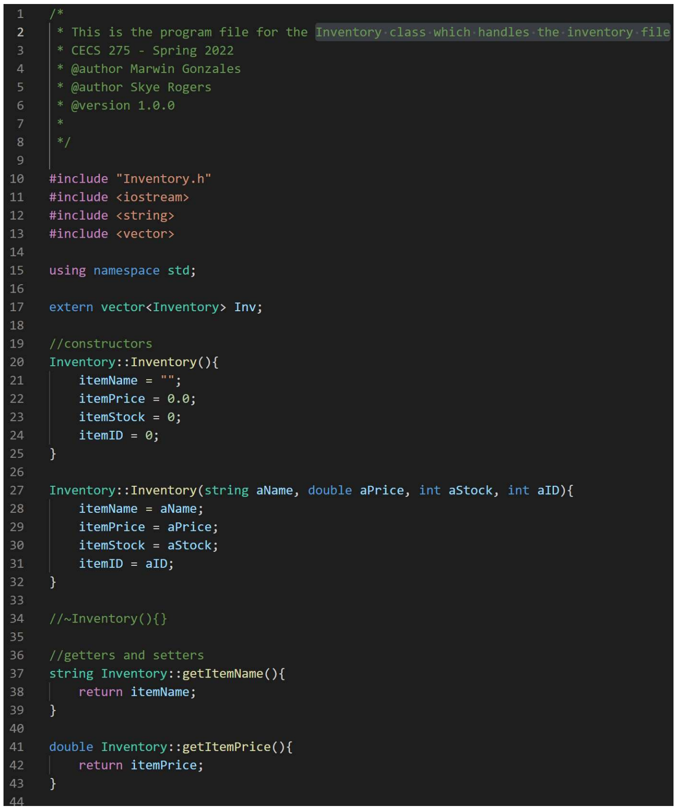


```
/*
 * This is the program file for the Debit class which handles payments from card
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#include "Debit.h"

using namespace std;

//constructors
Debit::Debit(){
    cardNum = "0000000000000000";
    totalCharge = 0.0;
    cardAD = 0;
}

Debit::Debit(double aNum){
    cardNum = "0000000000000000";
    totalCharge = aNum;
    cardAD = 0;
}

void Debit::setTotalCharge(double aNum){
    totalCharge = aNum;
}

//~Debit(){}

//getters and setters
string Debit::getCardNum(){
    return cardNum;
}

bool Debit::getCardAD(){
    return cardAD;
}
```

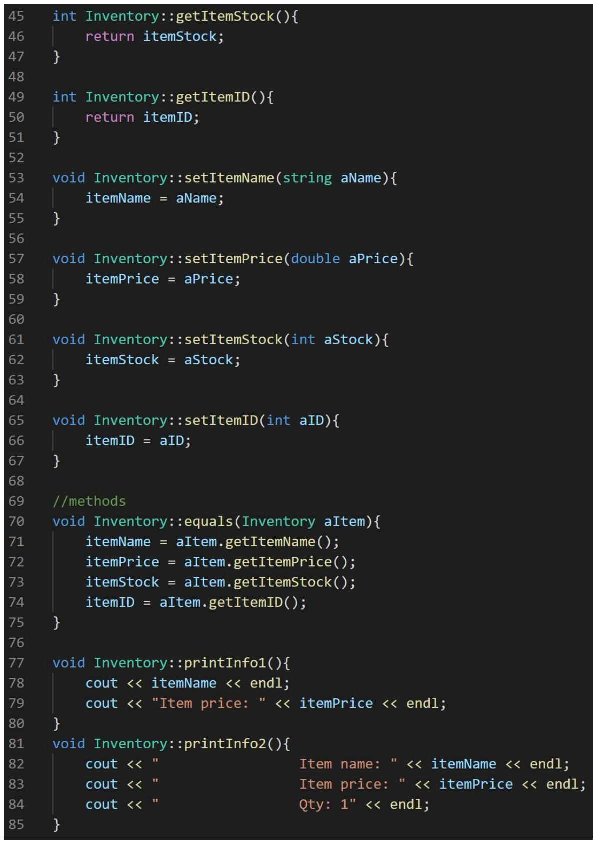


```

string Debit::getCardType(){
    return cardType;
}

void Debit::setCardNum(string aNum){
    cardNum = aNum;
}

void Debit::setCardAD(bool aAD){
    cardAD = aAD;
}

void Debit::setCardType(string aType){
    cardType = aType;
}
```

Inventory program:

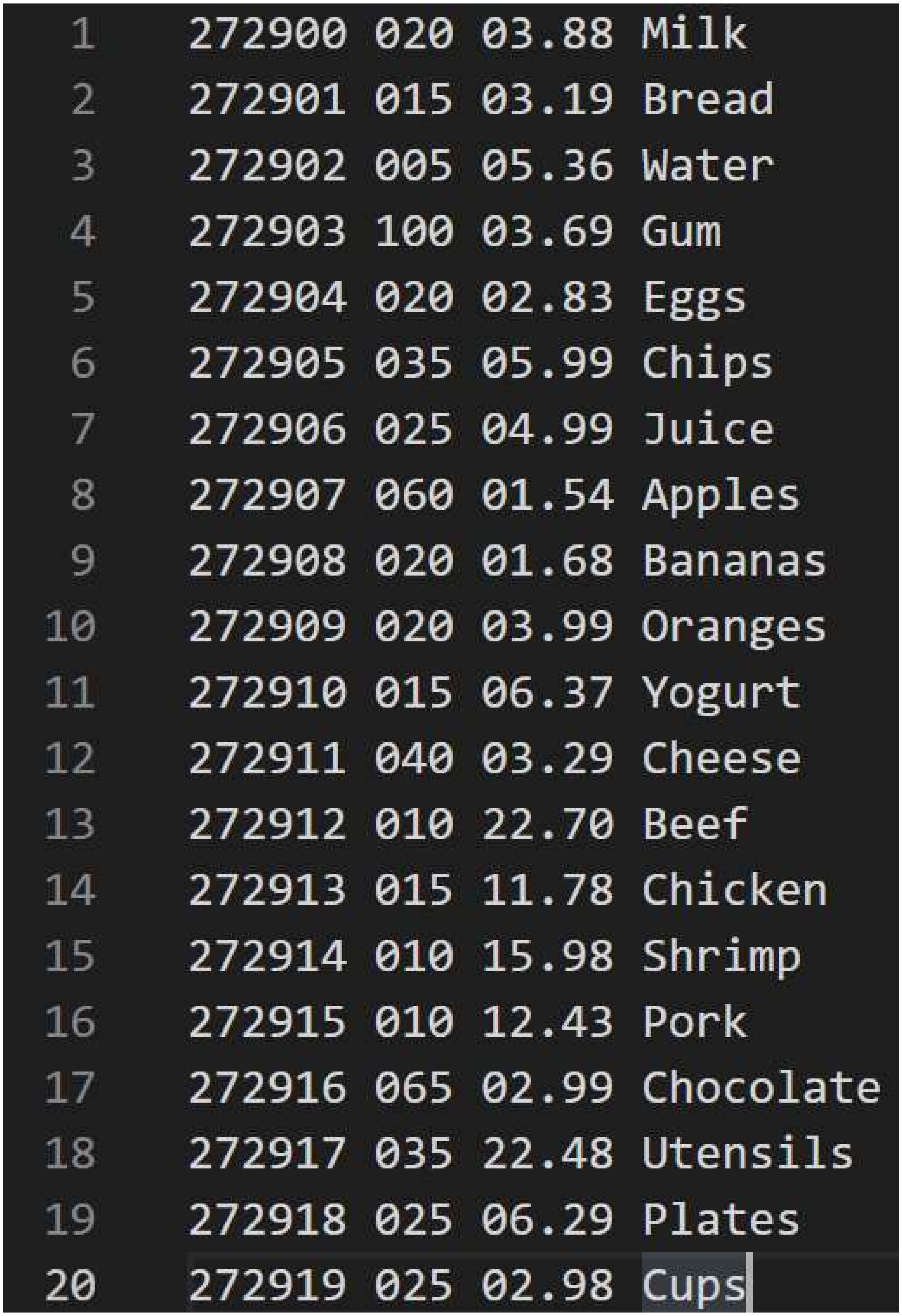


```cpp
/*
 * This is the program file for the Inventory class which handles the inventory file
 * CECS 275 - Spring 2022
 * @author Marwin Gonzales
 * @author Skye Rogers
 * @version 1.0.0
 *
 */

#include "Inventory.h"
#include <iostream>
#include <string>
#include <vector>

using namespace std;

extern vector<Inventory> Inv;

//constructors
Inventory::Inventory(){
    itemName = "";
    itemPrice = 0.0;
    itemStock = 0;
    itemID = 0;
}

Inventory::Inventory(string aName, double aPrice, int aStock, int aID){
    itemName = aName;
    itemPrice = aPrice;
    itemStock = aStock;
    itemID = aID;
}

//~Inventory(){}

//getters and setters
string Inventory::getItemName(){
    return itemName;
}

double Inventory::getItemPrice(){
    return itemPrice;
}

```



```cpp
int Inventory::getItemStock(){
    return itemStock;
}

int Inventory::getItemID(){
    return itemID;
}

void Inventory::setItemName(string aName){
    itemName = aName;
}

void Inventory::setItemPrice(double aPrice){
    itemPrice = aPrice;
}

void Inventory::setItemStock(int aStock){
    itemStock = aStock;
}

void Inventory::setItemID(int aID){
    itemID = aID;
}

//methods
void Inventory::equals(Inventory aItem){
    itemName = aItem.getItemName();
    itemPrice = aItem.getItemPrice();
    itemStock = aItem.getItemStock();
    itemID = aItem.getItemID();
}

void Inventory::printInfo1(){
    cout << itemName << endl;
    cout << "Item price: " << itemPrice << endl;
}
void Inventory::printInfo2(){
    cout << "                 Item name: " << itemName << endl;
    cout << "                 Item price: " << itemPrice << endl;
    cout << "                 Qty: 1" << endl;
}
```

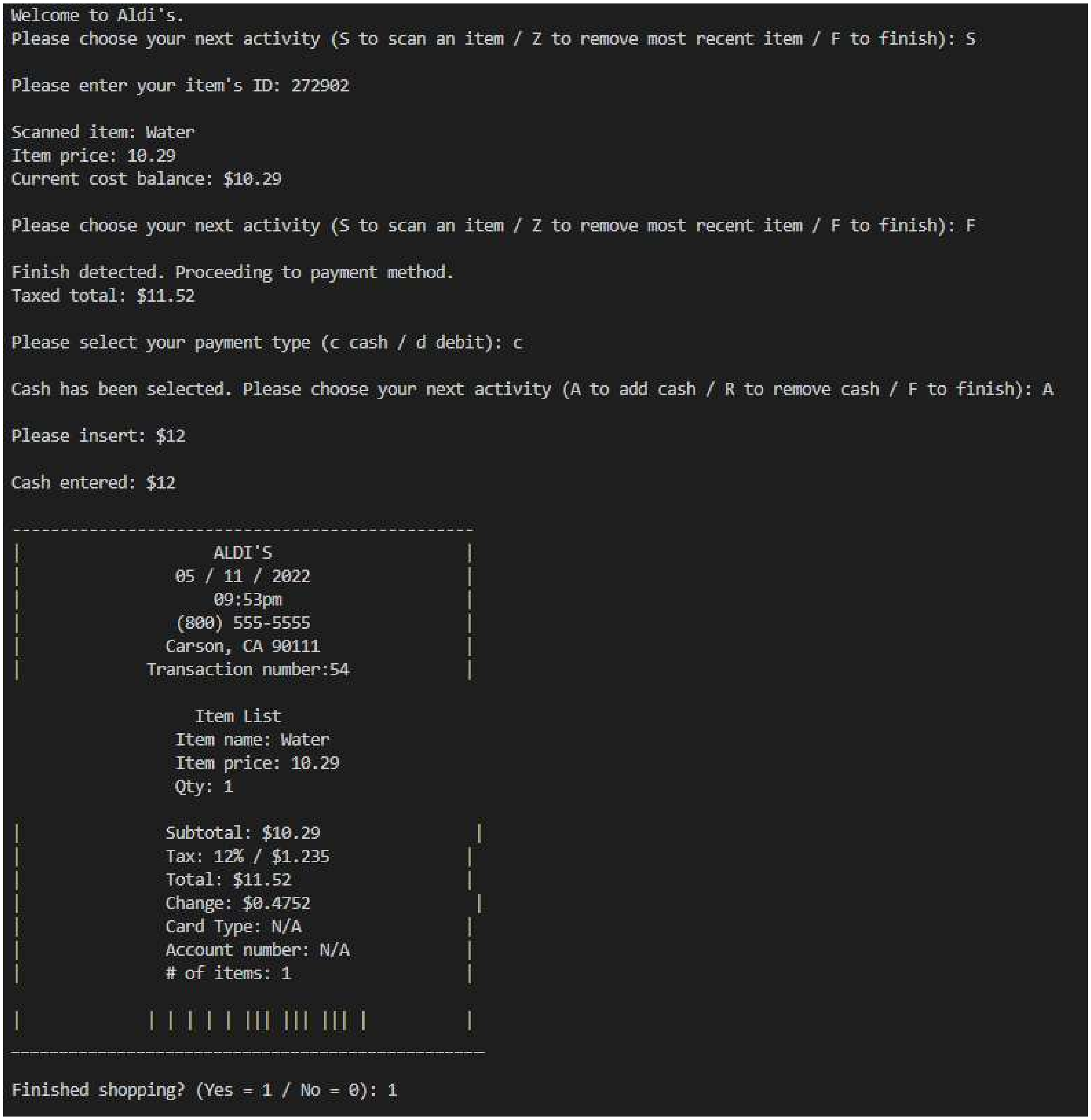
Inventory text file:



```
272900 020 03.88 Milk
272901 015 03.19 Bread
272902 005 05.36 Water
272903 100 03.69 Gum
272904 020 02.83 Eggs
272905 035 05.99 Chips
272906 025 04.99 Juice
272907 060 01.54 Apples
272908 020 01.68 Bananas
272909 020 03.99 Oranges
272910 015 06.37 Yogurt
272911 040 03.29 Cheese
272912 010 22.70 Beef
272913 015 11.78 Chicken
272914 010 15.98 Shrimp
272915 010 12.43 Pork
272916 065 02.99 Chocolate
272917 035 22.48 Utensils
272918 025 06.29 Plates
272919 025 02.98 Cups
```

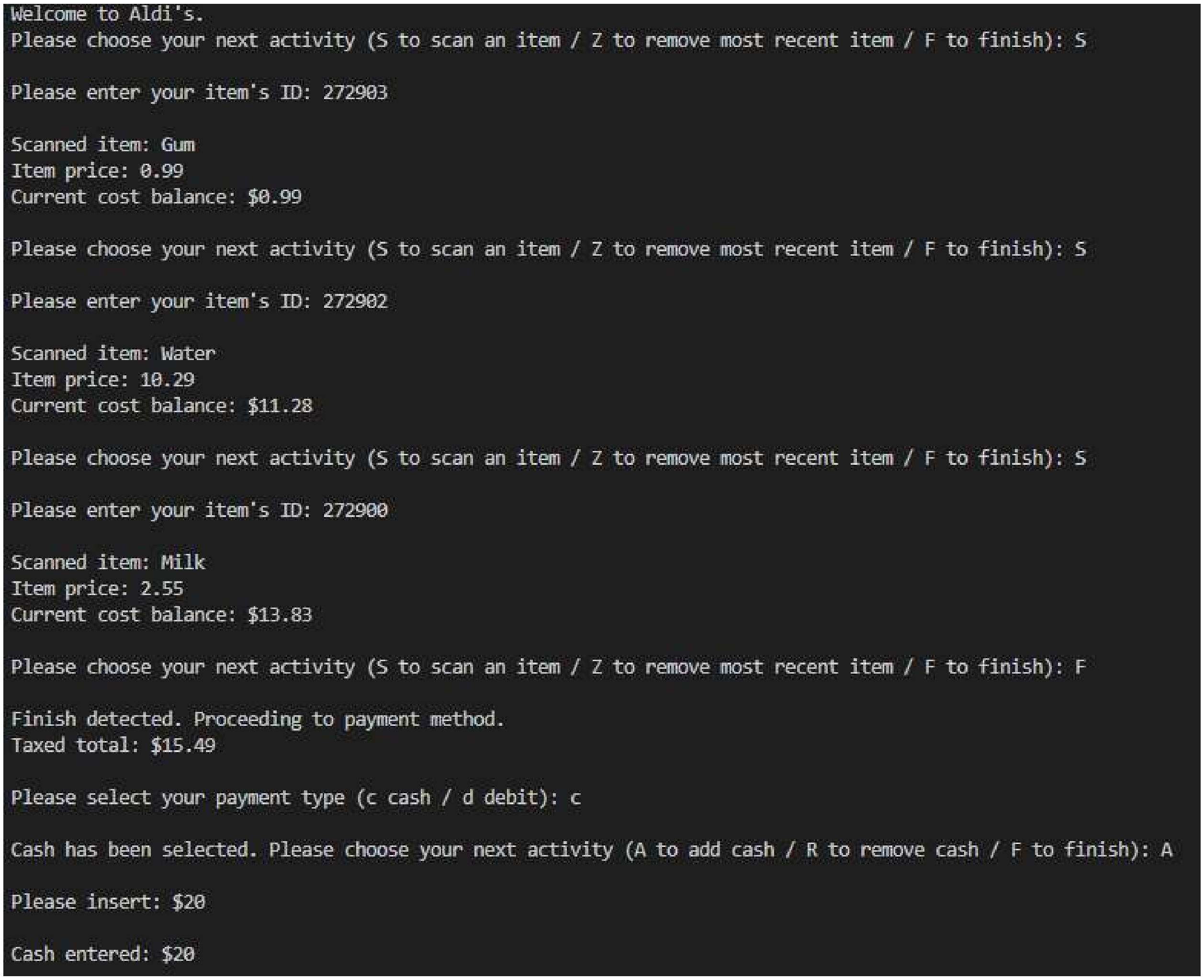
Sample Run

Sample 1:

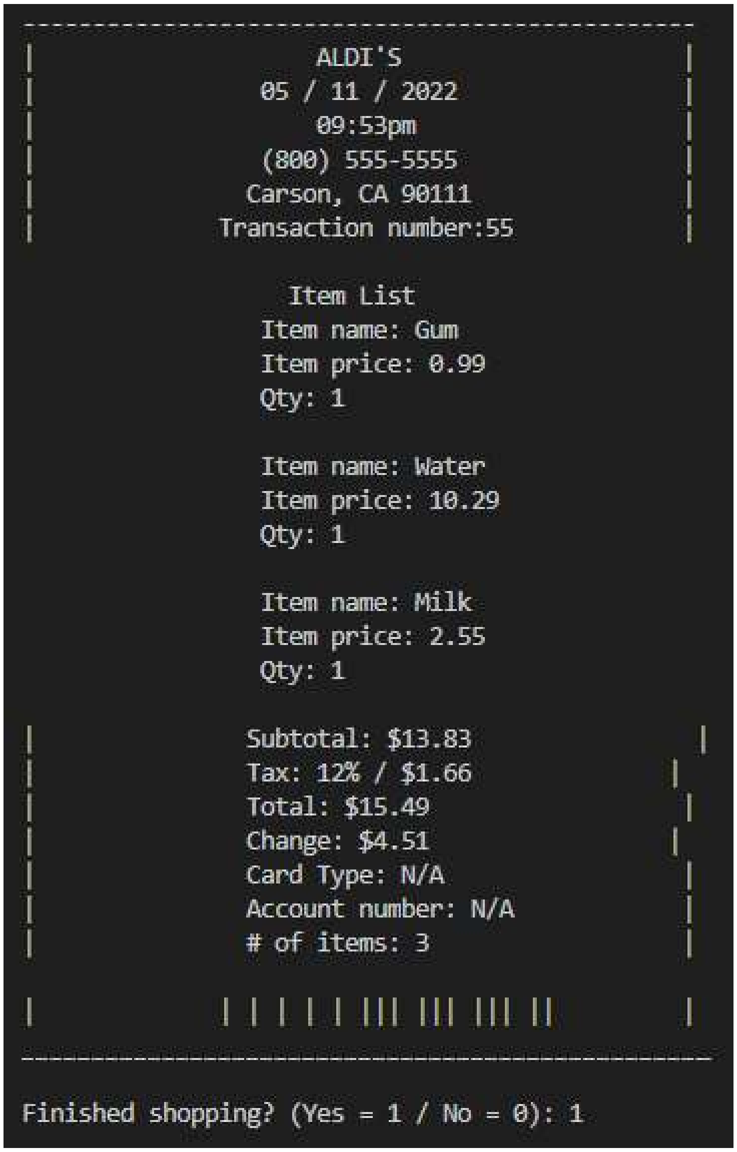


```
Welcome to Aldi's.
Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272902

Scanned item: Water
Item price: 10.29
Current cost balance: $10.29

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): F

Finish detected. Proceeding to payment method.
Taxed total: $11.52

Please select your payment type (c cash / d debit): c

Cash has been selected. Please choose your next activity (A to add cash / R to remove cash / F to finish): A

Please insert: $12

Cash entered: $12

------------------------------------------------
|                    ALDI'S                    |
|                05 / 11 / 2022                |
|                    09:53pm                   |
|                (800) 555-5555                |
|               Carson, CA 90111               |
|             Transaction number:54            |

                   Item List
                 Item name: Water
                 Item price: 10.29
                 Qty: 1

|               Subtotal: $10.29                |
|               Tax: 12% / $1.235              |
|               Total: $11.52                  |
|               Change: $0.4752                 |
|               Card Type: N/A                 |
|               Account number: N/A            |
|               # of items: 1                  |

|             | | | | | ||| ||| ||| |          |
-------------------------------------------------

Finished shopping? (Yes = 1 / No = 0): 1
```

Sample 2:

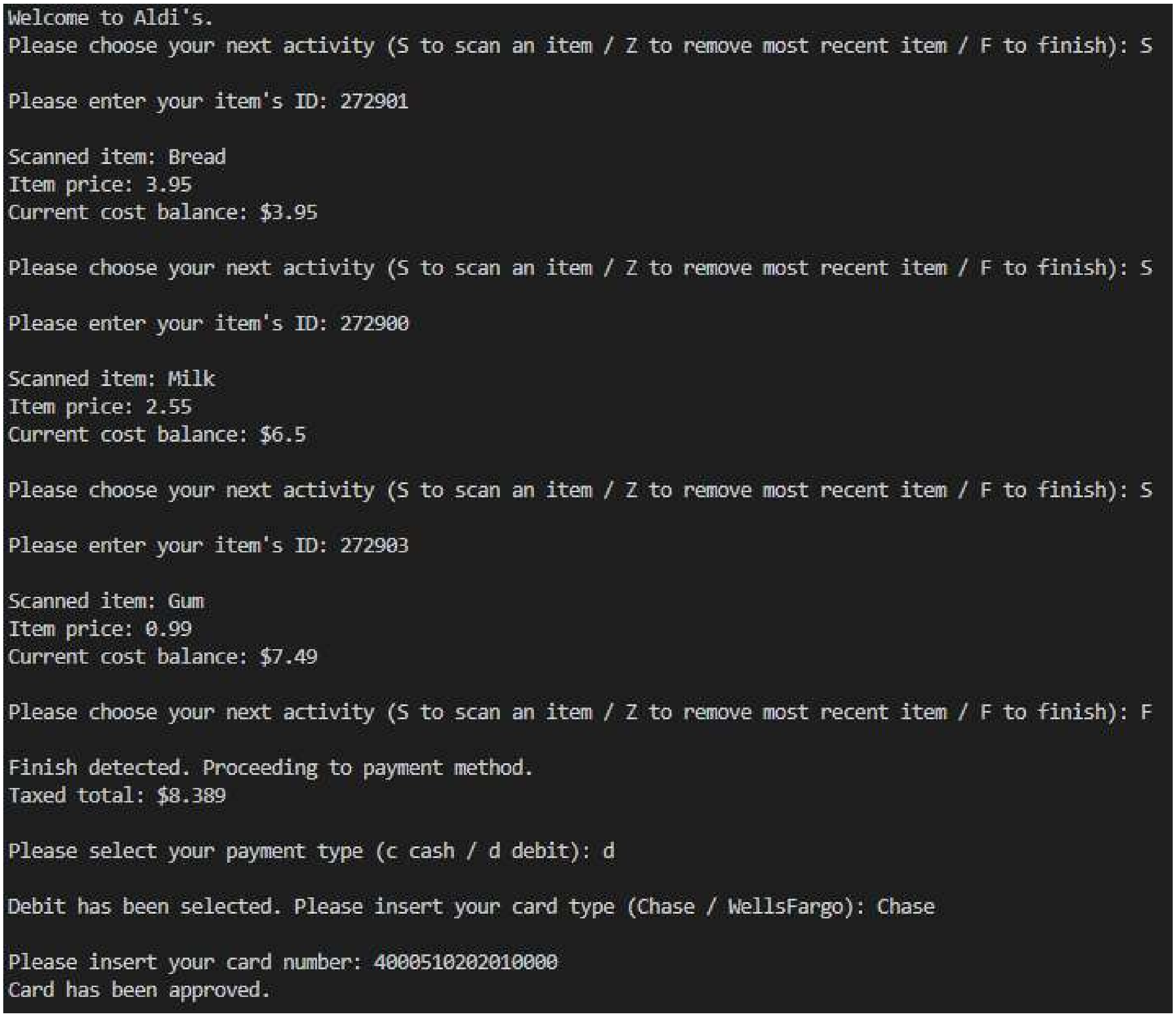


```
Welcome to Aldi's.
Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272903

Scanned item: Gum
Item price: 0.99
Current cost balance: $0.99

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272902

Scanned item: Water
Item price: 10.29
Current cost balance: $11.28

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272900

Scanned item: Milk
Item price: 2.55
Current cost balance: $13.83

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): F

Finish detected. Proceeding to payment method.
Taxed total: $15.49

Please select your payment type (c cash / d debit): c

Cash has been selected. Please choose your next activity (A to add cash / R to remove cash / F to finish): A

Please insert: $20

Cash entered: $20
```

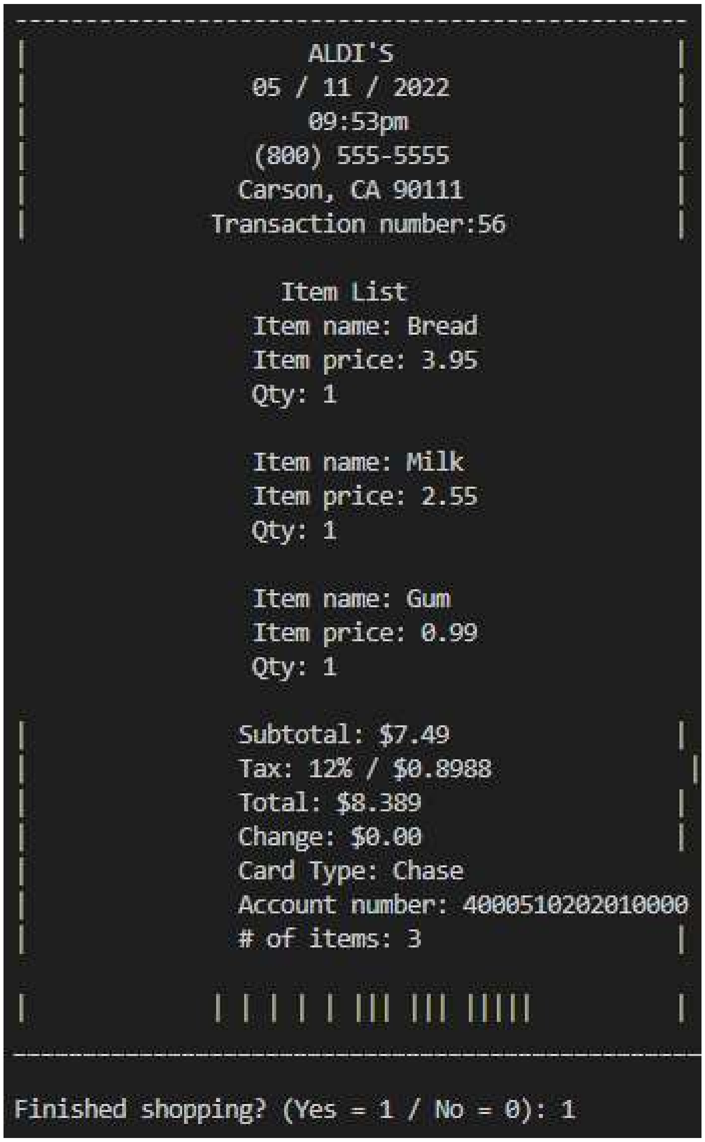


```
-------------------------------------------------
|                    ALDI'S                      |
|                05 / 11 / 2022                  |
|                    09:53pm                     |
|                (800) 555-5555                  |
|               Carson, CA 90111                 |
|             Transaction number:55              |

                   Item List
                 Item name: Gum
                 Item price: 0.99
                 Qty: 1

                 Item name: Water
                 Item price: 10.29
                 Qty: 1

                 Item name: Milk
                 Item price: 2.55
                 Qty: 1

|               Subtotal: $13.83                  |
|               Tax: 12% / $1.66                |
|               Total: $15.49                    |
|               Change: $4.51                   |
|               Card Type: N/A                   |
|               Account number: N/A              |
|               # of items: 3                    |

|             | | | | | ||| ||| ||| ||          |
--------------------------------------------------

Finished shopping? (Yes = 1 / No = 0): 1
```

Sample 3:

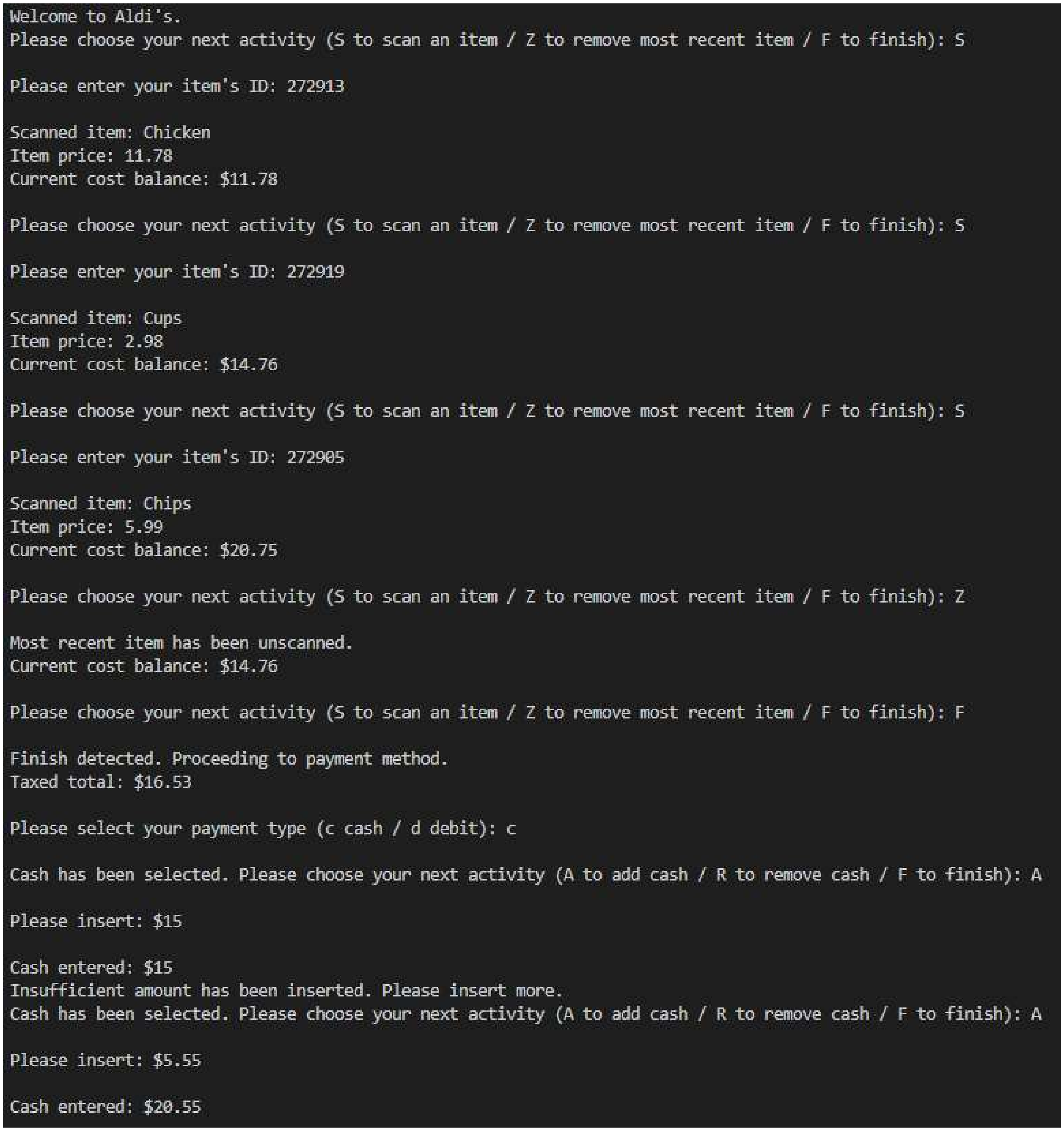


```
Welcome to Aldi's.
Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272901

Scanned item: Bread
Item price: 3.95
Current cost balance: $3.95

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272900

Scanned item: Milk
Item price: 2.55
Current cost balance: $6.5

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272903

Scanned item: Gum
Item price: 0.99
Current cost balance: $7.49

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): F

Finish detected. Proceeding to payment method.
Taxed total: $8.389

Please select your payment type (c cash / d debit): d

Debit has been selected. Please insert your card type (Chase / WellsFargo): Chase

Please insert your card number: 4000510202010000
Card has been approved.
```

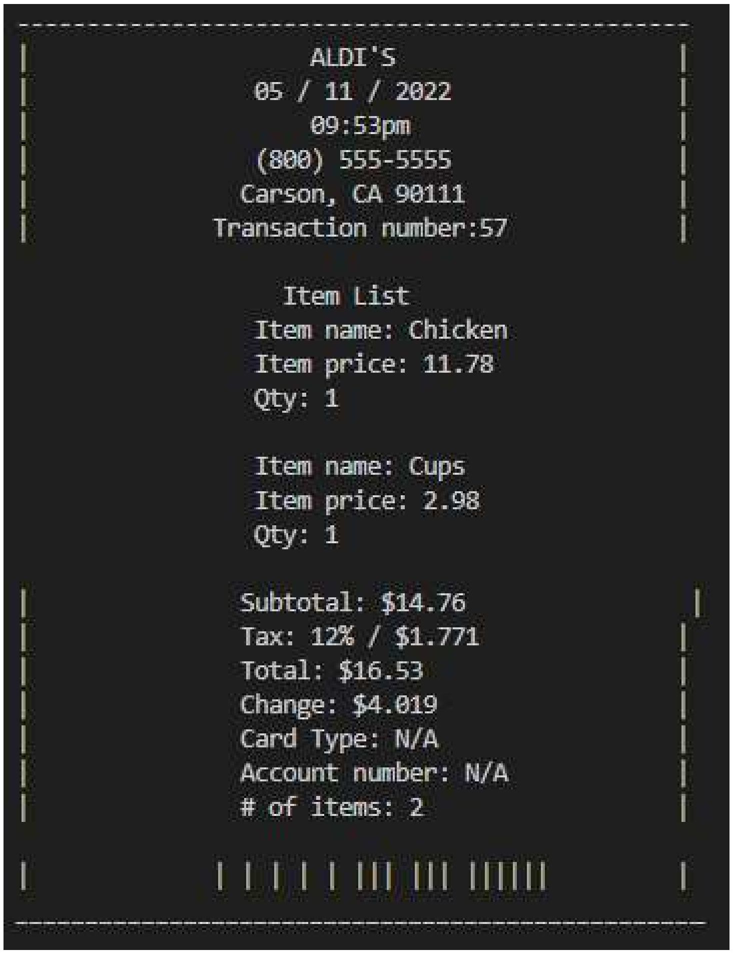


```
------------------------------------------------
|                    ALDI'S                    |
|                05 / 11 / 2022                |
|                    09:53pm                   |
|                (800) 555-5555                |
|               Carson, CA 90111               |
|             Transaction number:56            |

                   Item List
                 Item name: Bread
                 Item price: 3.95
                 Qty: 1

                 Item name: Milk
                 Item price: 2.55
                 Qty: 1

                 Item name: Gum
                 Item price: 0.99
                 Qty: 1

|               Subtotal: $7.49                |
|               Tax: 12% / $0.8988              |
|               Total: $8.389                  |
|               Change: $0.00                  |
|               Card Type: Chase
|               Account number: 4000510202010000
|               # of items: 3                  |

|             | | | | | ||| ||| |||||          |
-------------------------------------------------

Finished shopping? (Yes = 1 / No = 0): 1
```

Sample 4:

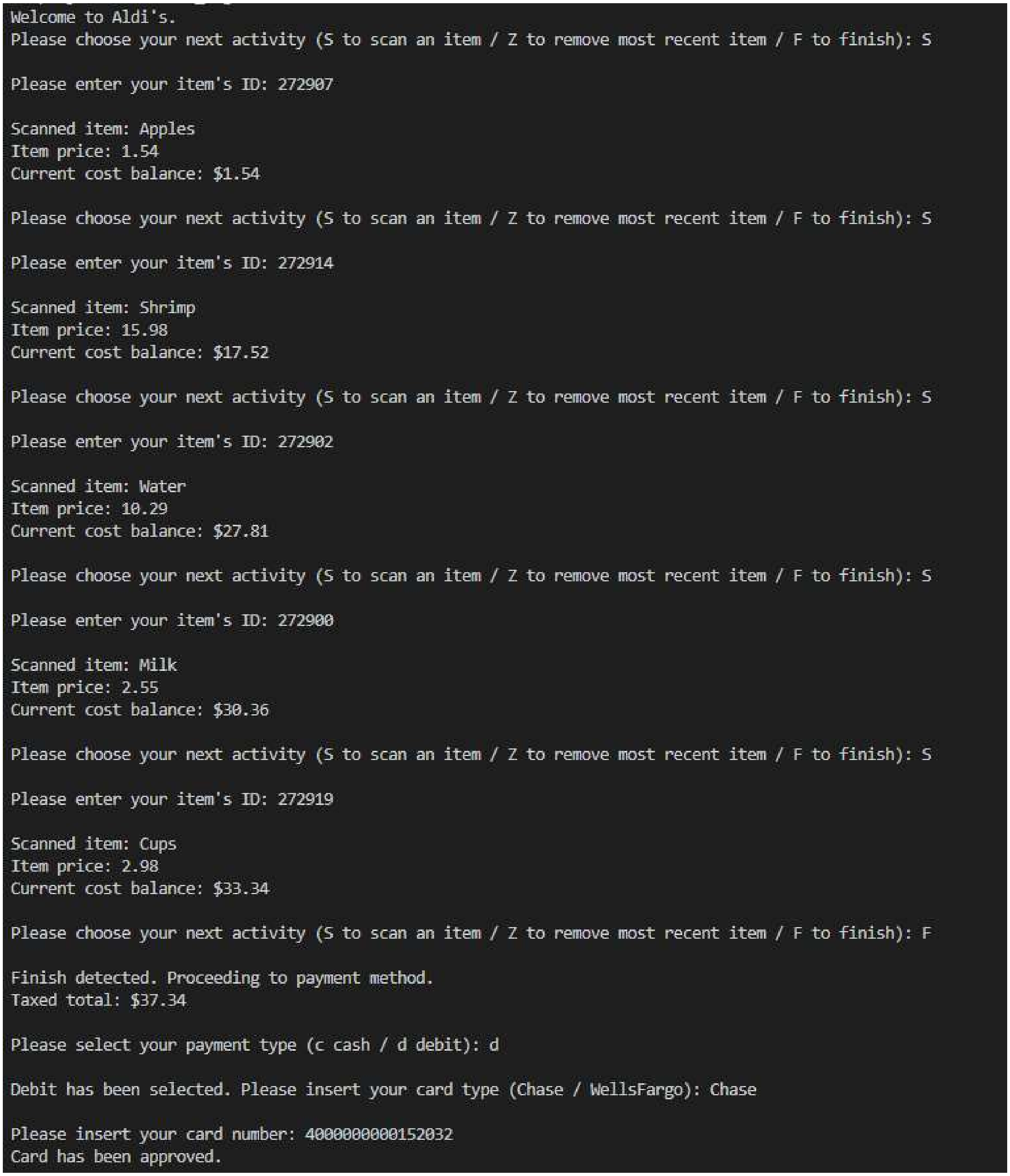


```
Welcome to Aldi's.
Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272913

Scanned item: Chicken
Item price: 11.78
Current cost balance: $11.78

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272919

Scanned item: Cups
Item price: 2.98
Current cost balance: $14.76

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272905

Scanned item: Chips
Item price: 5.99
Current cost balance: $20.75

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): Z

Most recent item has been unscanned.
Current cost balance: $14.76

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): F

Finish detected. Proceeding to payment method.
Taxed total: $16.53

Please select your payment type (c cash / d debit): c

Cash has been selected. Please choose your next activity (A to add cash / R to remove cash / F to finish): A

Please insert: $15

Cash entered: $15
Insufficient amount has been inserted. Please insert more.
Cash has been selected. Please choose your next activity (A to add cash / R to remove cash / F to finish): A

Please insert: $5.55

Cash entered: $20.55
```

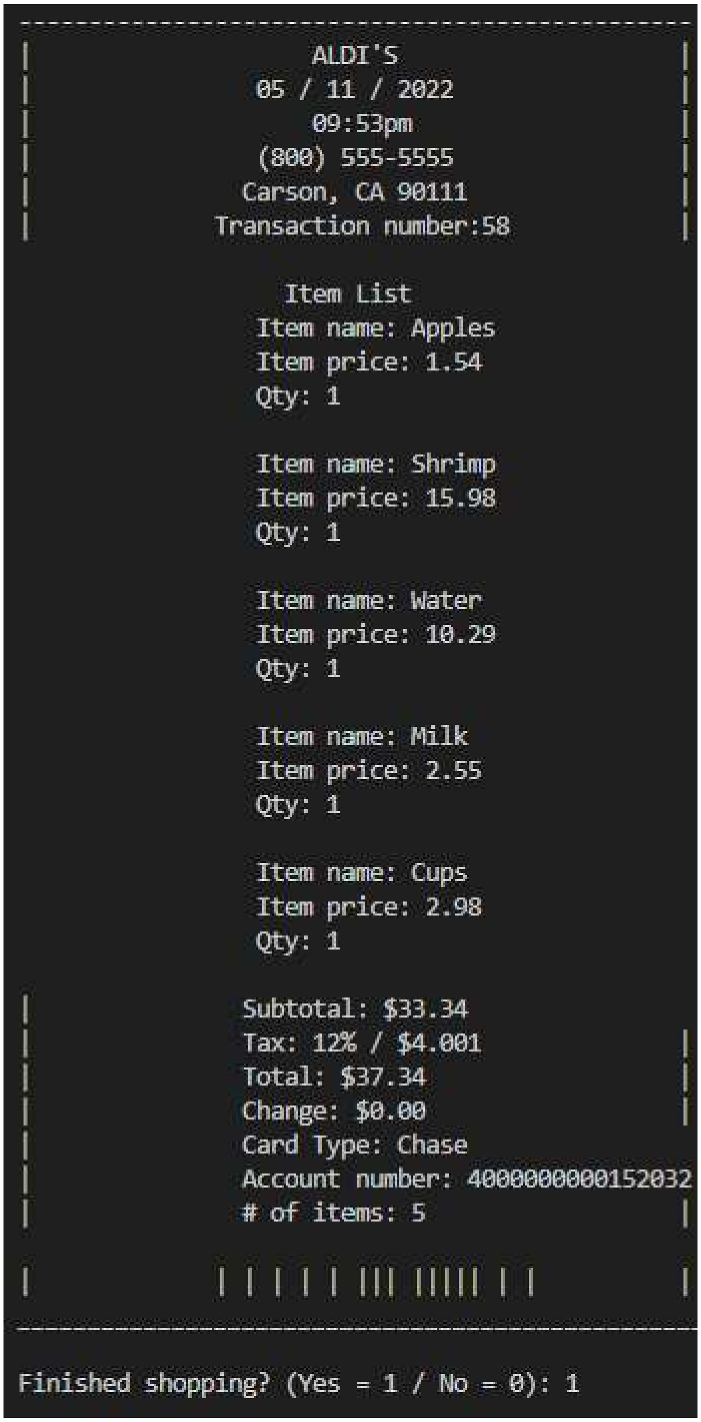


```
------------------------------------------------
|                   ALDI'S                      |
|               05 / 11 / 2022                  |
|                   09:53pm                     |
|                (800) 555-5555                 |
|               Carson, CA 90111                |
|             Transaction number:57             |

                   Item List
                 Item name: Chicken
                 Item price: 11.78
                 Qty: 1

                 Item name: Cups
                 Item price: 2.98
                 Qty: 1

|               Subtotal: $14.76                |
|               Tax: 12% / $1.771              |
|               Total: $16.53                  |
|               Change: $4.019                 |
|               Card Type: N/A                 |
|               Account number: N/A            |
|               # of items: 2                  |

|             | | | | | ||| ||| ||||||          |
-------------------------------------------------
```

Sample 5:

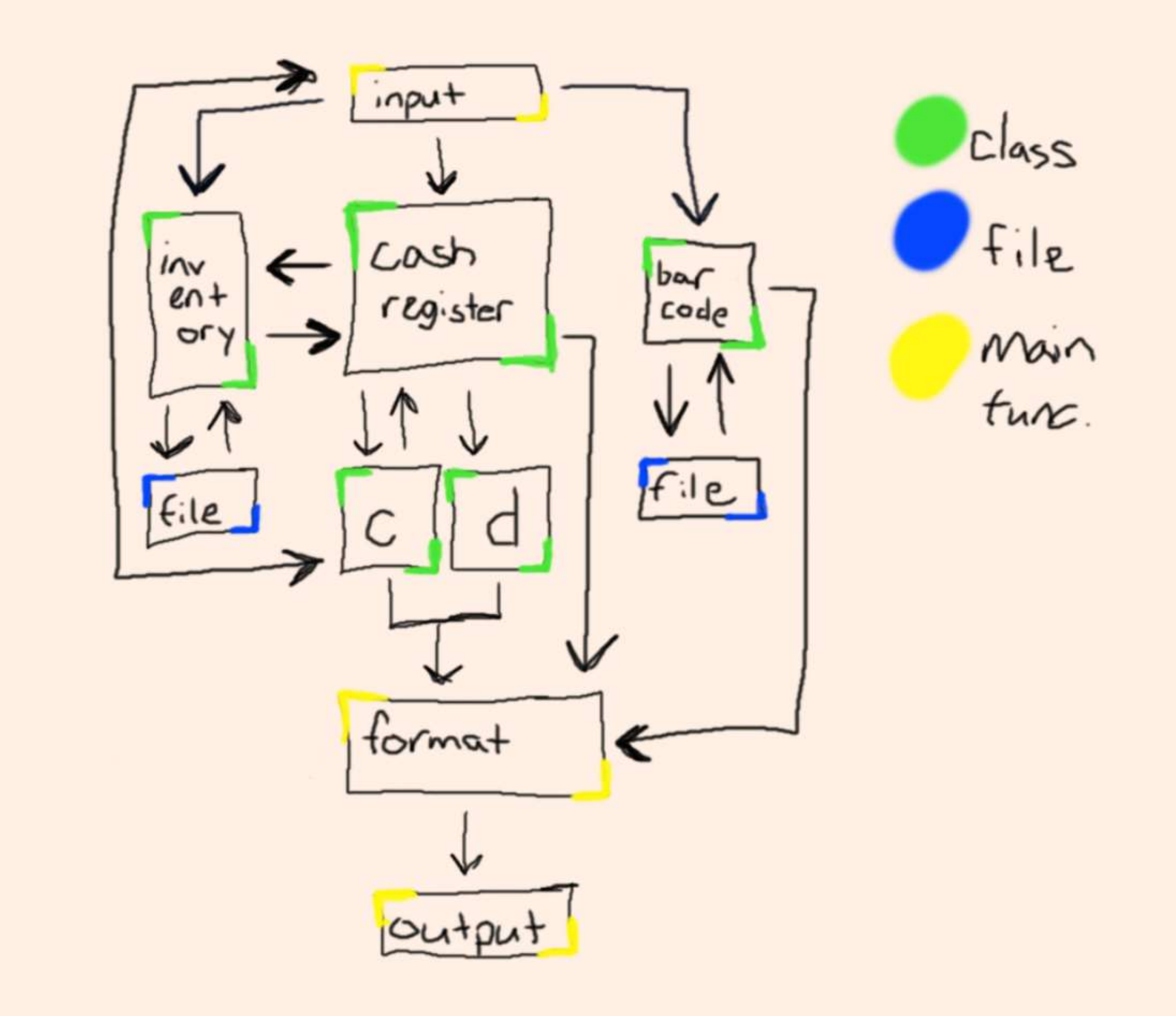


```
Welcome to Aldi's.
Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272907

Scanned item: Apples
Item price: 1.54
Current cost balance: $1.54

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272914

Scanned item: Shrimp
Item price: 15.98
Current cost balance: $17.52

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272902

Scanned item: Water
Item price: 10.29
Current cost balance: $27.81

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272900

Scanned item: Milk
Item price: 2.55
Current cost balance: $30.36

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): S

Please enter your item's ID: 272919

Scanned item: Cups
Item price: 2.98
Current cost balance: $33.34

Please choose your next activity (S to scan an item / Z to remove most recent item / F to finish): F

Finish detected. Proceeding to payment method.
Taxed total: $37.34

Please select your payment type (c cash / d debit): d

Debit has been selected. Please insert your card type (Chase / WellsFargo): Chase

Please insert your card number: 4000000000152032
Card has been approved.
```



```
------------------------------------------------
|                    ALDI'S                    |
|                05 / 11 / 2022                |
|                    09:53pm                   |
|                (800) 555-5555                |
|               Carson, CA 90111               |
|             Transaction number:58            |

                   Item List
                 Item name: Apples
                 Item price: 1.54
                 Qty: 1

                 Item name: Shrimp
                 Item price: 15.98
                 Qty: 1

                 Item name: Water
                 Item price: 10.29
                 Qty: 1

                 Item name: Milk
                 Item price: 2.55
                 Qty: 1

                 Item name: Cups
                 Item price: 2.98
                 Qty: 1

|               Subtotal: $33.34
|               Tax: 12% / $4.001              |
|               Total: $37.34                  |
|               Change: $0.00                  |
|               Card Type: Chase
|               Account number: 4000000000152032
|               # of items: 5                  |

|             | | | | | ||| ||||| | |          |
------------------------------------------------

Finished shopping? (Yes = 1 / No = 0): 1
```

UML Diagram:


input
inv
ent
ory
cash
register
bar
code
file
c
d
file
format
output
class
file
main
func.