



Xi'an Jiaotong-Liverpool University

西交利物浦大學

Department of Electrical and Electronic Engineering

EEE102 C++ Programming and Software Engineering

Group Project D Restaurant Management System¹
SDP Report

Group ID: G19

Group Leader²: Zheng Sun

ID Number: 1507820

We certify that we have read and understood the University's *Policy for dealing with Plagiarism, Collusion and the Fabrication of Data* with reference to this policy, we certify that:

- Our work does not contain any instances of plagiarism and/or collusion.
- Our work does not contain any fabricated data.

By handing in our assignment for marking, WE formally declare that all the above information is true to the best of our knowledge and belief.

Signature: Zheng Sun, Zheng Huang, Liming Zong,
Zecheng Li, Shengyi Yang, Yuze Hu

¹Last updated on May, 29th, 2017

²Group Leader should submit the related material of the group project

Contribution form

- On the second page of your report
- Signed by all the group members
- Breakdown of the roles and responsibilities of each group member during the duration of the project.
- The item of "How did the student appreciate the work within the group" could be your reflection or comments about your work during the group (no more than 70 words).

Students are requested to rate sincerely their contributions (1=low,5=High) as well as the percentage of their work load (%) during the project development process. Note that summation of all the students' work load for each specific item, e.g., coding, should be 100%.							
		Spec	Design	Coding	Testing	Doc.	How did the student appreciate the work within the group?
Zheng Sun 1507820	Rate	4	5	5	4	5	Honoured to work with you guys. Excellent team members.
	WorkLoad	20%	25%	41%	25%	25%	
Zheng Huang 1508070	Rate	4	5	4	5	5	Gain a lot from this project and have nice corporations with team mates.
	WorkLoad	20%	25%	18%	45%	25%	
Liming Zong 1508092	Rate	3	5	3	3	4	I have enjoyed collaborating with my group members and be happy to design this program.
	WorkLoad	10%	16%	13%	10%	16%	
Zechen Li 1507645	Rate	3	5	3	3	4	The process of design is wonderful, I really enjoy it.
	WorkLoad	10%	16%	9%	10%	12%	
Shengyi Yang 1508085	Rate	3	4	3	3	4	In this project, all of the team members work hard and have a cordial working relationship. Additionally, I also learn some useful skills of programming from my excellent teammates. After all, I am very grateful to do this project with these wonderful team members. I reckon this project is vitally beneficial for my future studying.
	WorkLoad	10%	12%	9%	5%	12%	
Yunze Hu 1508069	Rate	5	3	3	3	4	From the project, I have a good experience about c++ and I understand the meaning of cooperation. I feel lucky to have such a good team and feel proud to complete the project perfectly.
	WorkLoad	30%	10%	6%	5%	10%	

1. Problem Statement Specification

1.1. Overall Specification

Our team is employed by a restaurant to create a database management system (DBMS) to improve the management of a restaurant. This report is written to show the design analysis and test of implementation (coding) of the DBMS, as well as instruct user to manage the DBMS.

1.2. Customer Specification

The restaurant has an inventory storing **raw materials** and a menu listing all the **dishes**. At the same time, the restaurant implement a membership system which keeps the detailed information of the **customers** and a **consumption record list which keeps every piece of dish consumption along with customer info, dish info and date**. Additionally, the system should be able to calculate the fee that the customer should pay according to his/her ordered dishes. The gross profit should also be calculated based on the total avenue from the dishes minus the total expenditure of raw materials.

1.3. System specification

The DBMS should provide following functions as shown below:

- a) All the detail information of **raw material in inventory, dishes on menu** and **customer in file** should be able to be added, browsed, modified and deleted.
- b) Three **different user interfaces (UI)** should be presented with different authority, namely, manager, chef, customer. The manager user of the system can edit all the information of **customer file, dish list and raw material inventory**. The chef users can browse and edit the raw material info in inventory and the dish in menu list but they cannot search or edit the customer information. The customer users can only browse the menu, place the dish orders and see his/ her bill.
- c) **When the customers add the dishes to the menu, the order of a same dish which is already order currently should be verified to place**. When a new dish is added to the menu, the name of the dish cannot be the same as the old one.

2. Analysis

a) Inputs:

i. General

1. String types for login: account ID, PIN etc. → getline(cin, ID/PIN/etc);
2. Integer/string/char types for selecting options: temp → int intParser(), string strParser(), char intParser()

ii. Manger

1. String types for searching all the data: accountID/dishID/rawMaterialID → getline(cin, ID);
2. String types for revising all the data: temp → string strParser(), int intParser()

iii. Chef

1. String/integer types for revising the dishes and materials: temp → string strParser(), int intParser()
2. String types for searching the data of dishes and materials: dishID/rawMaterialID → getline(cin, ID)

iv. Customer

1. string types for inputting the ID of a dish : temp → string strParser()

b) Output:

1. Interactive instructions prompt user to input ID, name etc.
2. Interfaces which vary from the identity of user
3. Necessary information display, e.g. when the user plans to order, the menu list should be automatically shown.

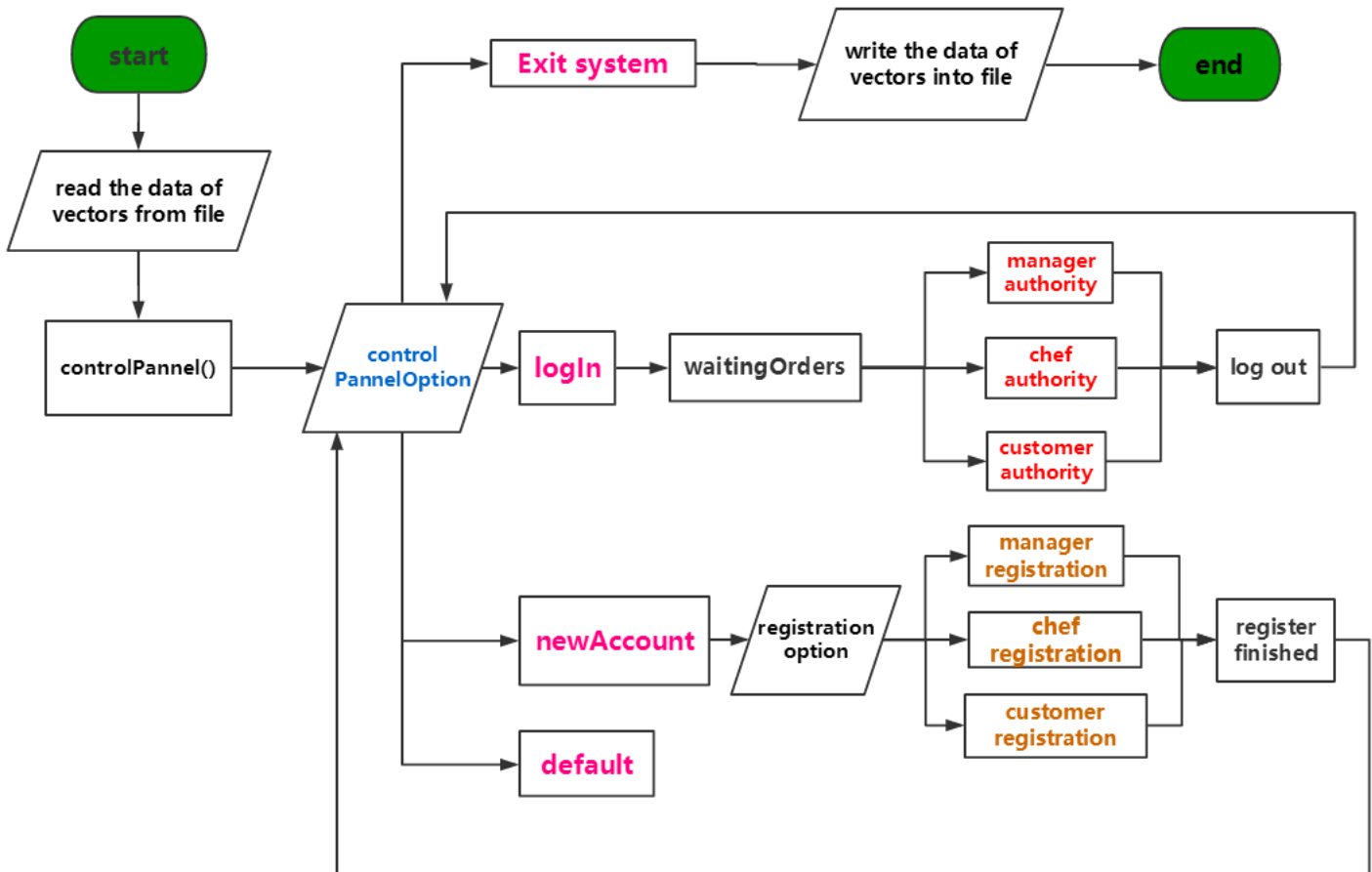
C) Extra and bonus characteristics

1. To store data, the vector has an overwhelming advantages over the structure arrays, because it has a dynamic growth length.
2. Managers have an ability of viewing all historical consumption records of a customer.
3. Managers are able to add dishes for every historical consumption.
4. The information is quite real-life, e.g. it concludes the date of an order, the order of a historical consumption etc.

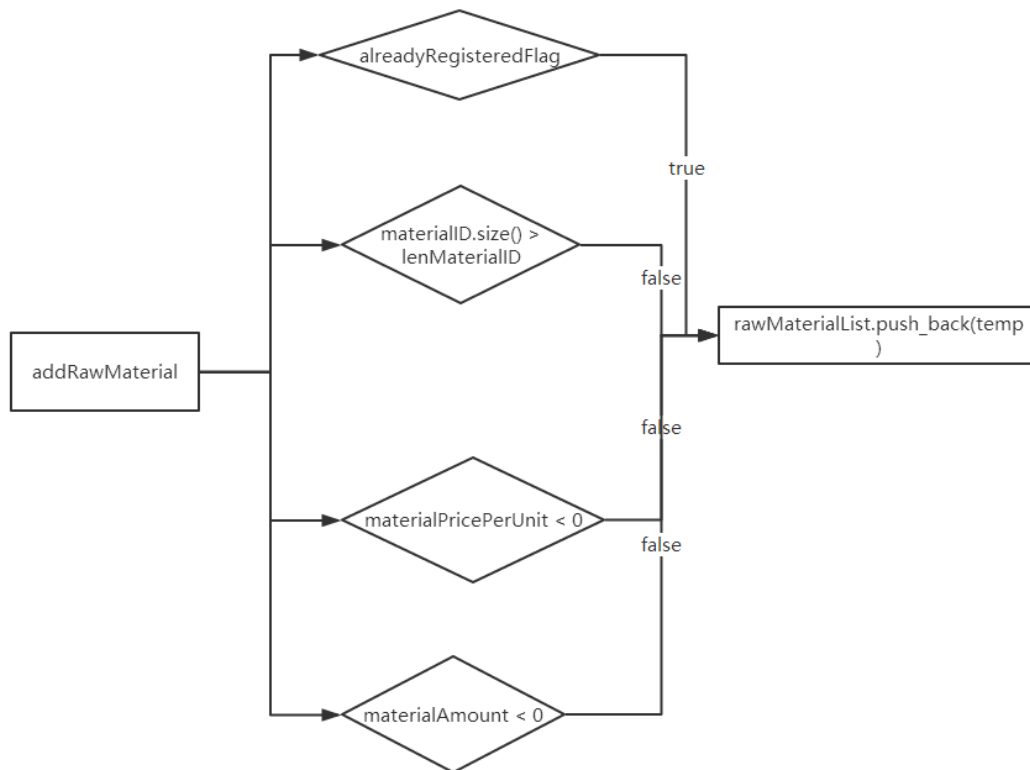
3. Design

3.1. Interface and main() function design

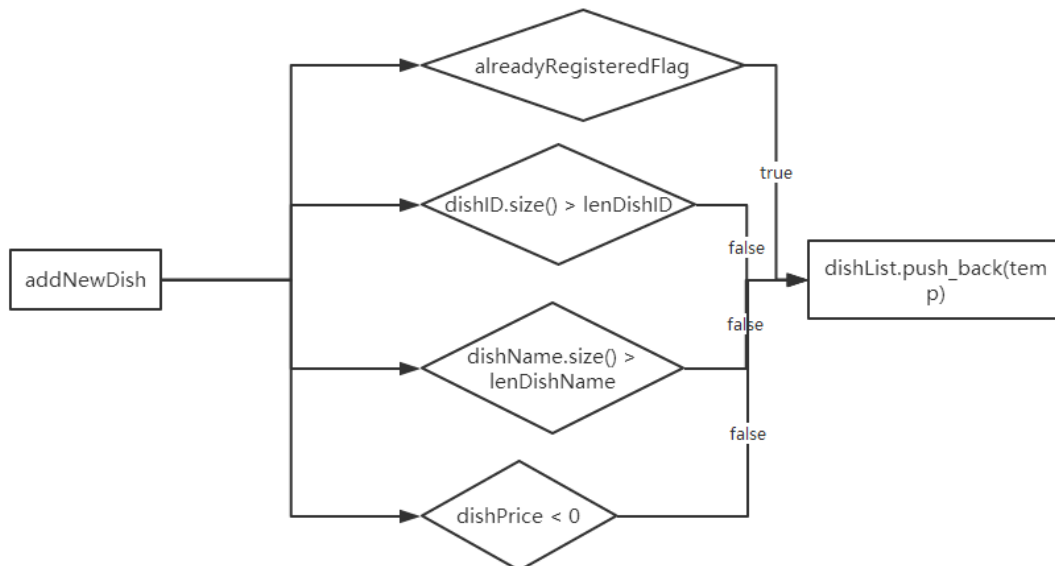
3.1.1 main():



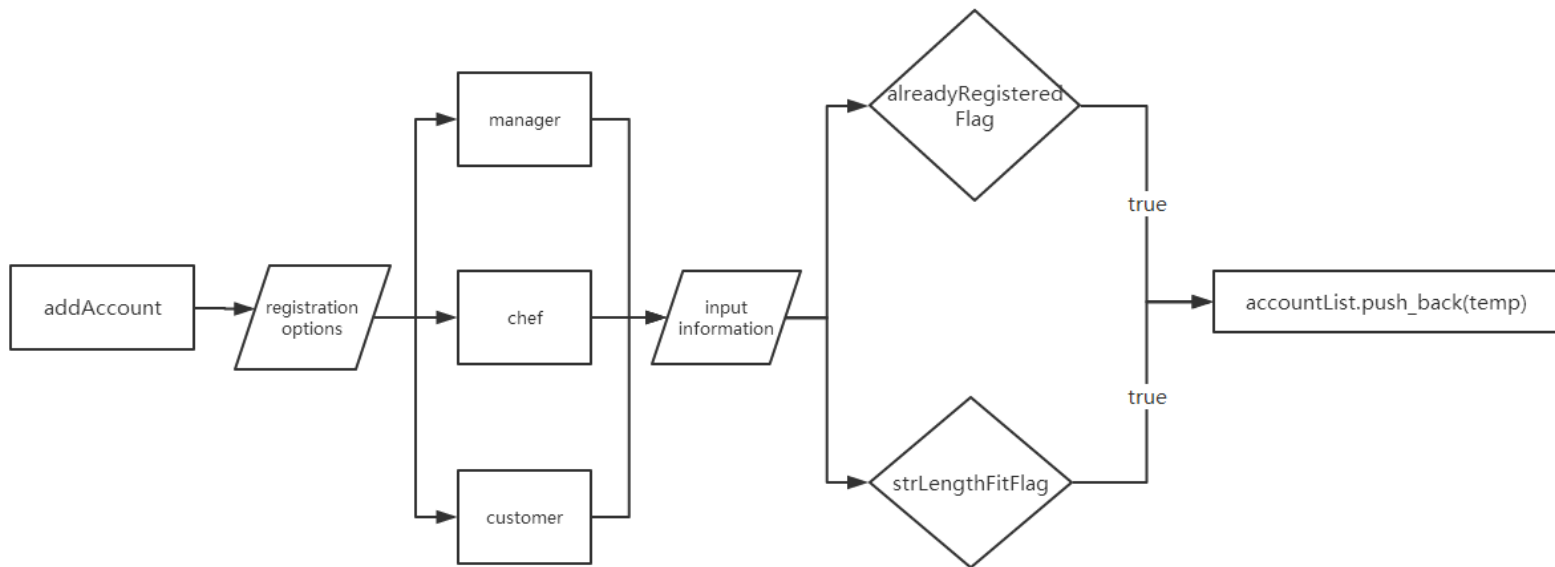
3.1.2. Add Raw Material:



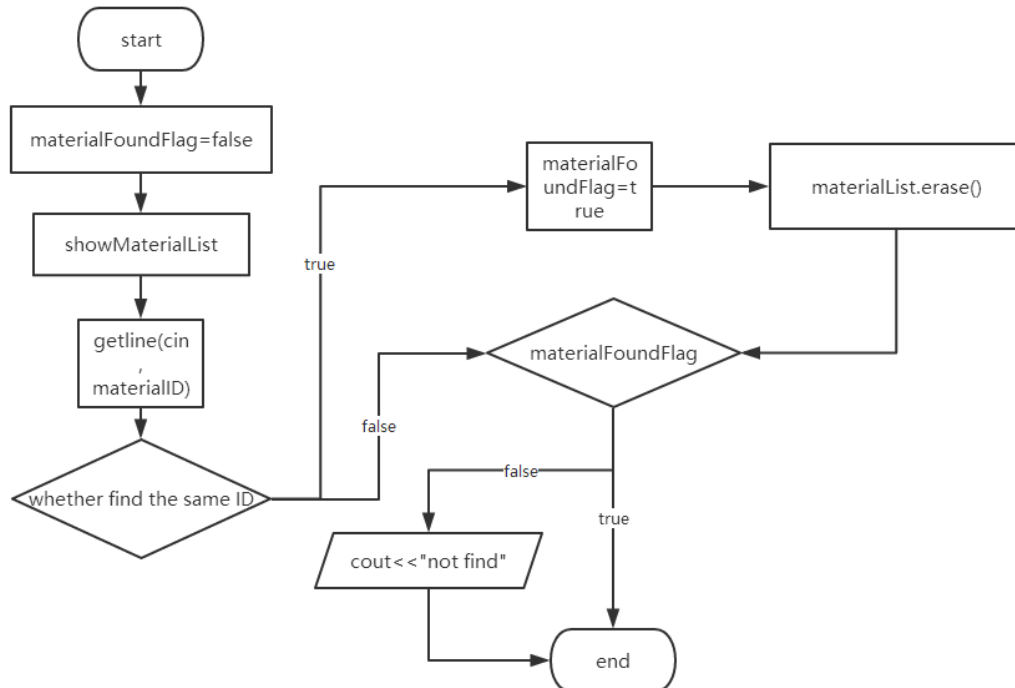
3.1.3. Add dish:



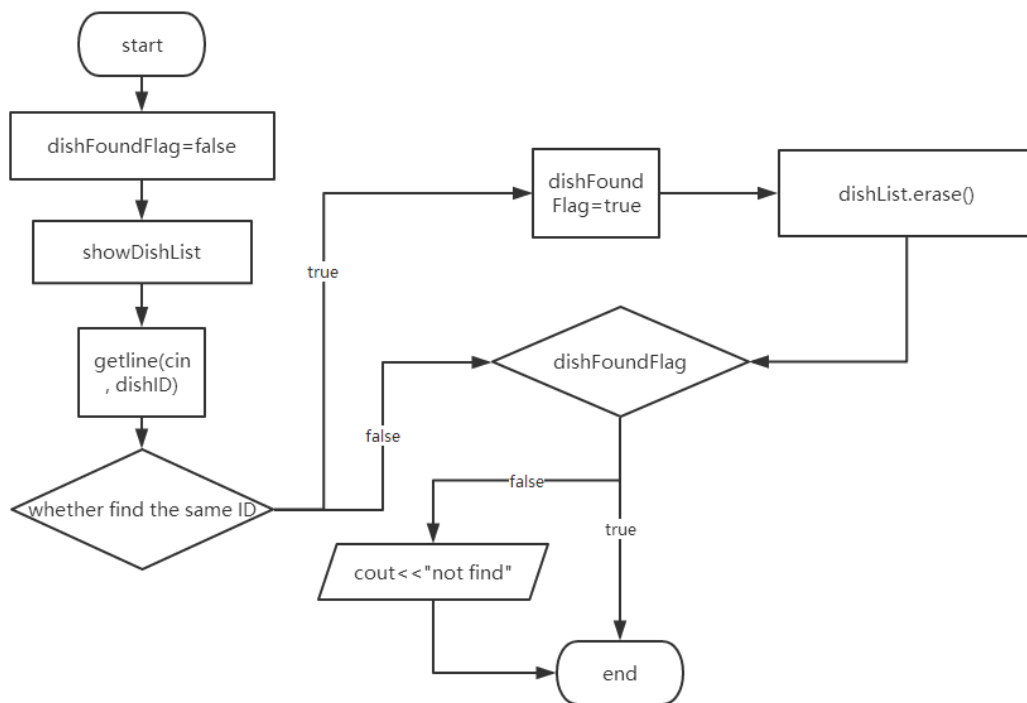
3.1.4. Add account:



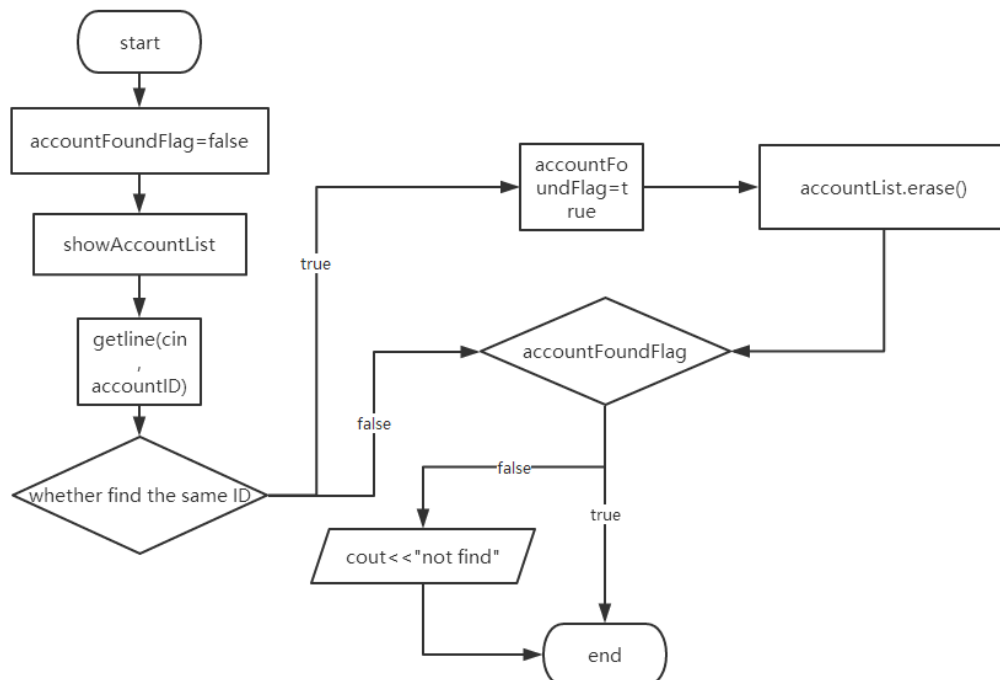
3.1.5. Delete material:



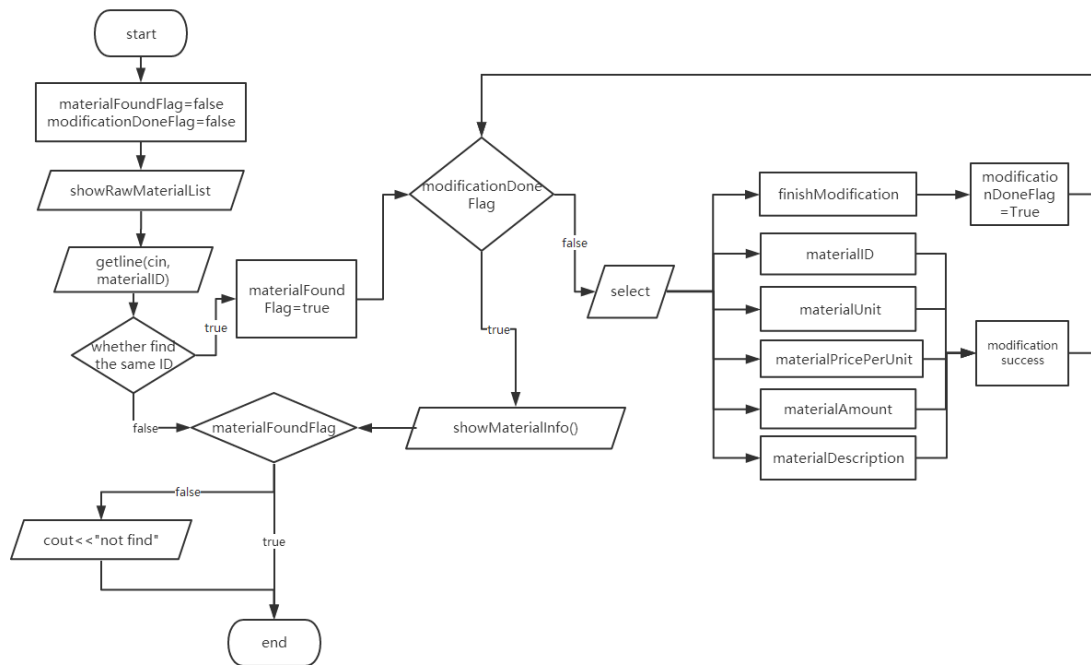
3.1.6. Delete dish:



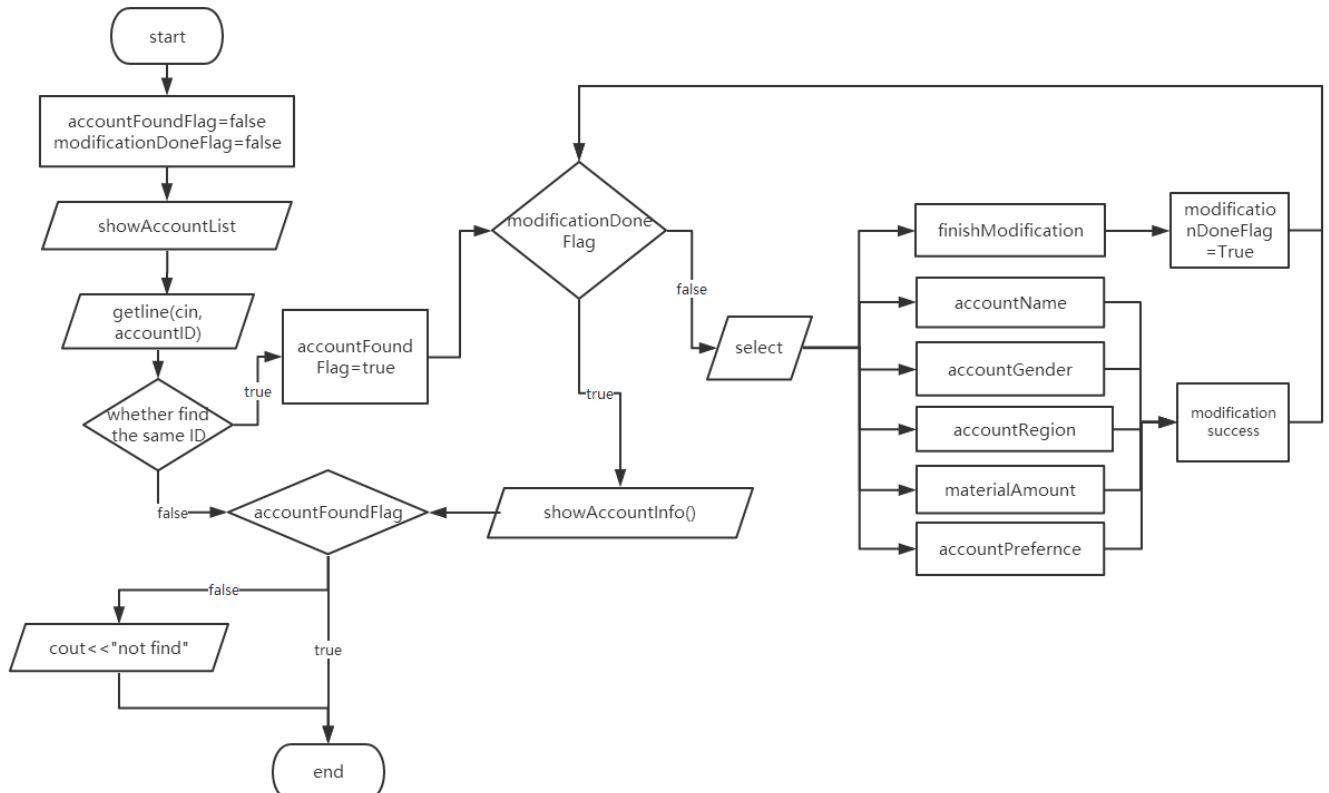
3.1.7. Delete account:



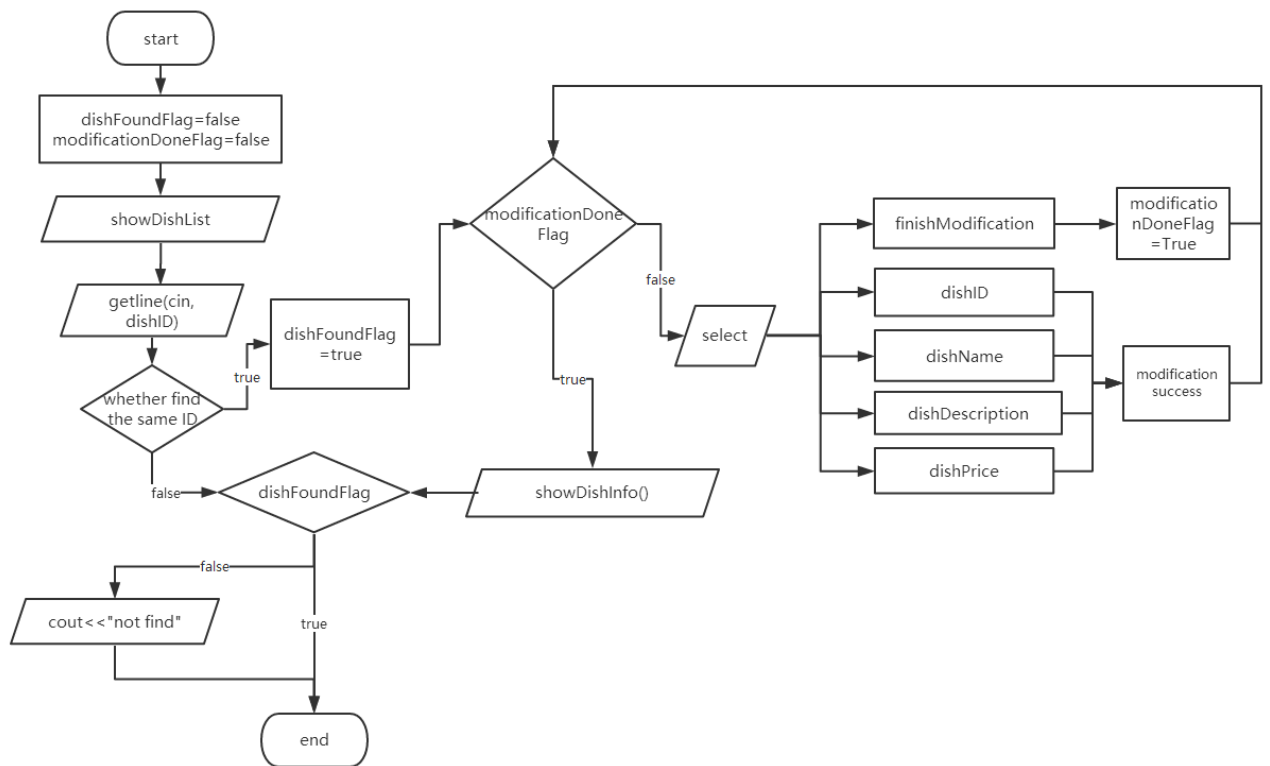
3.1.8. Modify material:



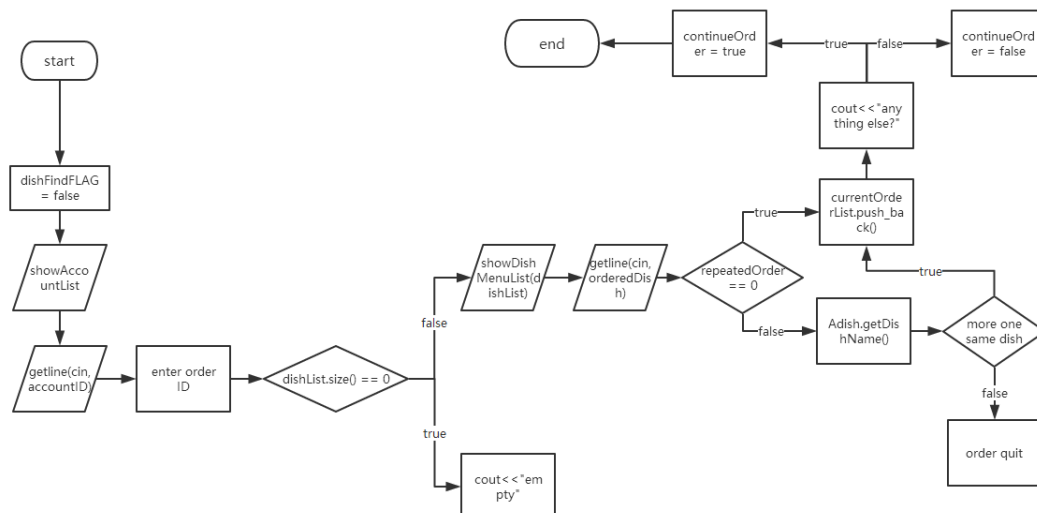
3.1.9. Modify account:



3.1.10. Modify dish:



3.1.11. Place Order



b) Class Design: 1.CRC cards and 2.hierarchical UML class graph

1. CRC cards of classes

Class: Account	
Responsibility: Storing the information of all users. Record the ID, user's name, password(PIN), gender, religion and preference taste. Collaborate with Consumption Record Tuple to create a record of an order by providing account info.	Collaborators: ConsumptionRecordTuple

Class: Dish	
Responsibility: Holding the information of dishes. Serve as a basic element to be read from and write into. Provide functions to set and change the dish data. Collaborate with Consumption Record Tuple to create a record of an order by providing dish info.	Collaborators: ConsumptionRecordTuple

Class: RawMaterial	
Responsibility: Basic element in this program, holding the amount, type and price information of raw materials. The restaurant should be functioning with raw materials and be edited except for customer account. Collaborate with main interface to calculate the total expenditure and gross profit.	Collaborators: Main() <<interface>>

Class: ConsumptionRecordTuple	
Responsibility: Hold information for every customers' every dish order which contains the account info, dish info and time of order. Collaborate with main interface to calculate the total expenditure and gross profit, with Account and Dish to create order record.	Collaborators: Main() <<interface>> Account Dish

2.Hierarchical UML class graph

```

<<INTERFACE>> main
controlPannel(vector<Account>& accountList, vector<Dish>& dishList, vector<RawMaterial>& rawMaterialList, vector<ConsumptionRecordTuple>&
consumptionRecordTupleList): void
isLoggedIn(const Account& x, const string& id, const string& pin): bool
waitingOrders(Account& x, vector<Account>& accountList, vector<Dish>& dishList, vector<RawMaterial>& rawMaterialList,
vector<ConsumptionRecordTuple>& consumptionRecordTupleList): void
orderADish(Account& x, vector<Dish>& dishList, vector<ConsumptionRecordTuple>& consumptionRecordTupleList, vector<ConsumptionRecordTuple>&
currentOrderList, ConsumptionRecordTuple& currentOrder): void
addDishForCustomer(Account& manager, vector<Account>& accountList, vector<Dish>& dishList, vector<ConsumptionRecordTuple>&
consumptionRecordTupleList, vector<ConsumptionRecordTuple>& currentOrderList, ConsumptionRecordTuple& currentOrder): void
showBillForCustomer(vector<ConsumptionRecordTuple>& consumptionRecordTupleList): void

readAccountList(const char* filename): vector<Account>
writeAccountList(const char* filename, vector<Account> x): void
readDishList(const char* filename): vector<Dish>
writeDishList(const char* filename, vector<Dish> x): void
readRawMaterialList(const char* filename): vector<RawMaterial>
writeRawMaterialList(const char* filename, vector<RawMaterial> x): void
readConsumptionList(const char* filename): vector<ConsumptionRecordTuple>
writeConsumptionList(const char* filename, vector<ConsumptionRecordTuple> x): void

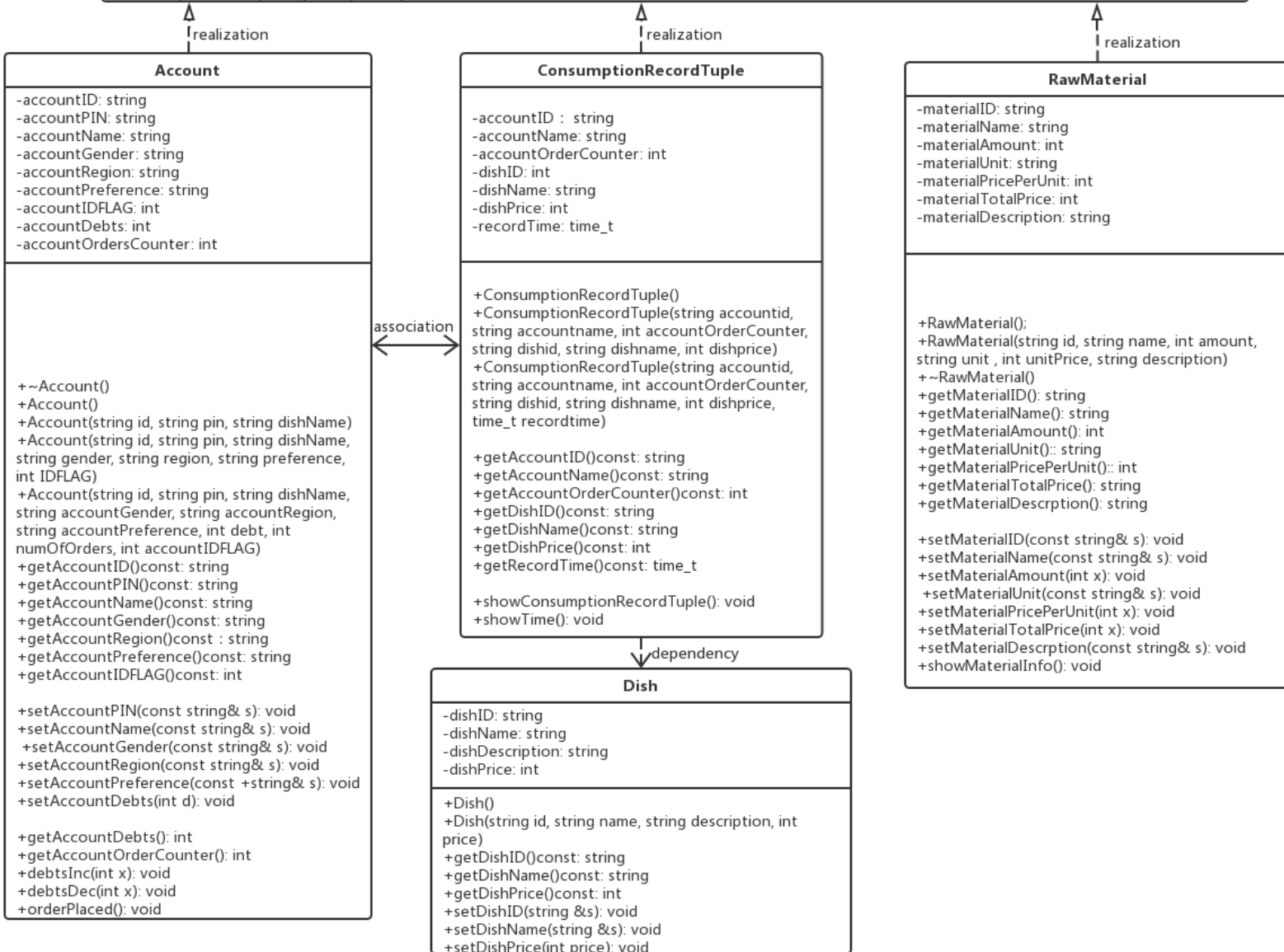
registerNewAccount(vector<Account>& accountList): void
showAccountList(vector<Account>& accountList): void
eraseAccount(vector<Account>& accountList): void
modifyAccount(vector<Account>& accountList): void

addNewDish(vector<Dish>& dishList): void
showDishMenuList(vector<Dish>& dishList): void
eraseDish(vector<Dish>& dishList): void
modifyDish(vector<Dish>& dishList): void

addRawMaterial(vector<RawMaterial>& rawMaterialList): void
showRawMaterialList(vector<RawMaterial>& rawMaterialList): void
eraseRawMaterial(vector<RawMaterial>& rawMaterialList): void
modifyRawMaterial(vector<RawMaterial>& rawMaterialList): void

intParser(): int
charParser(): char
strParser(int lenLimit, string name): string

```



4. Implementation:

G19_Project_D_Resturant_Management_System\Account.h

G19_Project_D_Resturant_Management_System\Account.cpp

G19_Project_D_Resturant_Management_System\account.dat

G19_Project_D_Resturant_Management_System\ConsumptionRecordTuple.h

G19_Project_D_Resturant_Management_System\ConsumptionRecordTuple.cpp

G19_Project_D_Resturant_Management_System\consumptionRecord.dat

G19_Project_D_Resturant_Management_System\Dish.h

G19_Project_D_Resturant_Management_System\Dish.cpp

G19_Project_D_Resturant_Management_System\dish.dat

G19_Project_D_Resturant_Management_System\RawMaterial.h

G19_Project_D_Resturant_Management_System\RawMaterial.cpp

G19_Project_D_Resturant_Management_System\rawMaterial.dat

5. Testing & Bugs Report

5.1. Account registration & Log in and log out & Viewing authority

Register a manager account and view his authority, finally log out:

```
C:\WINDOWS\system32\cmd.exe
0 = exit, 1 = LogIn, 2=CreateNewAccount
2
Which account type you want to register: 1=Manager, 2=Chef, 3=Customer: 1
Now registering as manager:
Enter account ID: 111
Enter the ACCOUNT name : Manager1
Enter the account's PIN: 111
Enter the account's Gender: man
Enter the account's Region: no
Enter the account's Preference: no
请按任意键继续. . .
```

```
C:\WINDOWS\system32\cmd.exe
0 = exit, 1 = LogIn, 2=CreateNewAccount
1
Please Enter your account ID:
111
Please Enter your account PIN
111
Looking for Account...
Log in successfully.
请按任意键继续. . .
```

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Manager Manager1. Waiting orders! Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
```

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Manager Manager1. Waiting orders! Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
0
请按任意键继续. . .
```

```
C:\WINDOWS\system32\cmd.exe
0 = exit, 1 = LogIn, 2=CreateNewAccount
```

Authority of chefs:

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Chef 222: Chef1
Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showMenu # 3=addNewDish # 5=modifyDish # 7=deleteDish #
# 2=showRawMaterial # 4=addNewRawMaterial # 6=modifyMaterial # 8=deleteRawMaterial #
#####
```

Authority of customers:

```
ca. C:\WINDOWS\system32\cmd.exe
Welcome back, Dear Customer1
Please give command:
##ConrolPannel##
# 0=LogOut      #
# 1=showMenu    #
# 2=placeOrder  #
# 3=showBill    #
#####
-
```

5.2. Test for authority of the manager

Interface:

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Manager Manager1. Waiting orders! Please give command:
#####ConrolPannel#####
# 0=LogOut      #
# 1=showCustomer  # 4=addNewAccount    # 7=modifyAccount    # 10=deleteAccount    # 13=showBillForCustomer#
# 2=showMenu     # 5=addNewDish      # 8=modifyDish      # 11=deleteDish      # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial  # 12=deleteRawMaterial # 15=showReport      #
#####
```


2.1 show customer

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Manager Manager1. Waiting orders! Please give command:
#####ConrolPannel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
1
#####MANGER#####
# AccountID M1 # AccountPIN M1 #
# ManagerName BOSS # Gender Male #
# Region Male # Prefernce Comencing Bombardment #
-----
# AccountID 11 # AccountPIN 11 #
# ManagerName 11 # Gender 11 #
# Region 11 # Prefernce 11 #
-----
# AccountID 111 # AccountPIN 111 #
# ManagerName Manager1 # Gender man #
# Region no # Prefernce no #
-----
#####CHEF#####
# AccountID C2 # AccountPIN C2 #
# ChefName Giovvani # Gender Male #
# Region Male # Prefernce Stir and Big knives #
-----
# AccountID 222 # AccountPIN 222 #
# ChefName Chef1 # Gender man #
# Region no # Prefernce man #
-----
#####CUSTOMER#####
# AccountID C3 # AccountPIN C3 #
# CustomerName Devourer # Gender #
# Region # Prefernce Eating Alive #
# NumberOfOrders 2 # Debts 100 #
-----
# AccountID C5 # AccountPIN CC #
# CustomerName 7 # Gender no #
# Region no # Prefernce S #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID C7 # AccountPIN SS #
# CustomerName SASA # Gender S #
# Region S # Prefernce S #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID 666 # AccountPIN L #
# CustomerName KKK # Gender DD #
# Region E # Prefernce W #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID 333 # AccountPIN 333 #
# CustomerName Customer1 # Gender woman #
# Region no # Prefernce woman #
# NumberOfOrders 0 # Debts 0 #
-----
#####END#OF#LIST#####
请按任意键继续. . .
```

2.2 show menu

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
2
#####
# Dish XXX # Name Bullets # price 999 # Description Come and Get Some #
-----
# Dish 11 # Name 11 # price 1 # Description 11 #
-----
#####
请按任意键继续. . .
```

2.3 show raw material

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
3
#####
# MaterialID X8086 # MaterialName X8086 # Amount 10 kg #
# TotalCost 600 # Description working class #
#####
请按任意键继续. . .
```

2.4 add new account

Registering a new customer account for testing.

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
4
Which account type you want to register: 1=Manager, 2=Chef, 3=Customer: 3
Now registering as customer:
Enter account ID: 444
Enter the ACCOUNT name : Customer2
Enter the account's PIN: 444
Enter the account's Gender: man
Enter the account's Region: abc
Enter the account's Preference: qaq
请按任意键继续. . .
```

```
C:\WINDOWS\system32\cmd.exe
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
1
#####MANGER#####
# AccountID M1 # AccountPIN M1 #
# ManagerName BOSS # Gender Male #
# Region Male # Preference Comencing Bombardment #
-----
# AccountID 11 # AccountPIN 11 #
# ManagerName 11 # Gender 11 #
# Region 11 # Preference 11 #
-----
# AccountID 111 # AccountPIN 111 #
# ManagerName Manager1 # Gender man #
# Region no # Preference no #
-----
#####CHEF#####
# AccountID C2 # AccountPIN C2 #
# ChefName Giovanni # Gender Male #
# Region Male # Preference Stir and Big knives #
-----
# AccountID 222 # AccountPIN 222 #
# ChefName Chef1 # Gender man #
# Region no # Preference man #
-----
#####CUSTOMER#####
# AccountID C3 # AccountPIN C3 #
# CustomerName Devourer # Gender #
# Region # Preference Eating Alive #
# NumberOfOrders 2 # Debts 100 #
-----
# AccountID C5 # AccountPIN CC #
# CustomerName 7 # Gender no #
# Region no # Preference S #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID C7 # AccountPIN SS #
# CustomerName SASA # Gender S #
# Region S # Preference S #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID 666 # AccountPIN L #
# CustomerName KKK # Gender DD #
# Region E # Preference W #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID 333 # AccountPIN 333 #
# CustomerName Customer1 # Gender woman #
# Region no # Preference woman #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID 444 # AccountPIN 444 #
# CustomerName Customer2 # Gender man #
# Region abc # Preference qaq #
# NumberOfOrders 0 # Debts 0 #
-----
#####END#OF#LIST#####
请按任意键继续.
```

2.5 add new dish

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
5
Enter dish ID: ads
Enter the Dish name: adidas
Enter the DishDescription:good
Please Enter dish price: 500
请按任意键继续. . .
```

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
2
#####
# Dish XXX # Name Bullets # price 999 # Description Come and Get Some #
-----
# Dish 11 # Name 11 # price 1 # Description 11 #
-----
# Dish ads # Name adidas # price 500 # Description good #
-----
#####
请按任意键继续. . .
```

2.6 add new raw material

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
6
Enter raw material ID: qqq
Enter the MaterialName:tomato
Enter the MaterialDescription:great
Enter the MaterialUnit:kg
Please Enter Raw Material price per unit: 10
Please Enter material amount: 100
请按任意键继续. . .
```

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
3
#####
# MaterialID X8086 # MaterialName X8086 # Amount 10 kg #
# TotalCost 600 # Description working class #
-----
# MaterialID qqq # MaterialName tomato # Amount 100 kg #
# TotalCost 1000 # Description great #
-----
#####
请按任意键继续. . .
```

2.7 modify account

```
-----
# AccountID      444 # AccountPIN      444 #
# CustomerName   Customer2 # Gender    man #
# Region         abc # Preference     qaq #
# NumberOfOrders 0 # Debts            0 #
-----
#####END#OF#LIST#####
Please Enter the Account ID you want to modify:
444
Account found...
Please give command to modify:
0 = Finish Modification, 1 = AccountPIN, 2=AccountName, 3=AccountGender, 4=AccountRegion, 5=accountPreference
2
Enter the AccountName:Customer2-1
Account attribute modified successfully!
Please give command to modify:
0 = Finish Modification, 1 = AccountPIN, 2=AccountName, 3=AccountGender, 4=AccountRegion, 5=accountPreference
0
Account attribute modified successfully!
Account modified successfully:
# AccountID      444 # AccountPIN      444 #
# CustomerName   Customer2-1 # Gender    man #
# Region         abc # Preference     qaq #
# NumberOfOrders 0 # Debts            0 #
请按任意键继续. . .
```

Run show customer function, the name has been changed.

```
#####
#####CUSTOMER#####
# AccountID      C3 # AccountPIN      C3 #
# CustomerName   Devourer # Gender      #
# Region         # Preference          Eating Alive #
# NumberOfOrders 2 # Debts            100 #
-----
# AccountID      C5 # AccountPIN      CC #
# CustomerName   7 # Gender            no #
# Region         no # Preference        S #
# NumberOfOrders 0 # Debts            0 #
-----
# AccountID      C7 # AccountPIN      SS #
# CustomerName   SASA # Gender          S #
# Region         S # Preference        S #
# NumberOfOrders 0 # Debts            0 #
-----
# AccountID      666 # AccountPIN      L #
# CustomerName   KKK # Gender          DD #
# Region         E # Preference        W #
# NumberOfOrders 0 # Debts            0 #
-----
# AccountID      333 # AccountPIN      333 #
# CustomerName   Customer1 # Gender    woman #
# Region         no # Preference      woman #
# NumberOfOrders 0 # Debts            0 #
-----
# AccountID      444 # AccountPIN      444 #
# CustomerName   Customer2-1 # Gender    man #
# Region         abc # Preference     qaq #
# NumberOfOrders 0 # Debts            0 #
-----
#####END#OF#LIST#####
请按任意键继续. . .
```

2.8 modify dish

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Manager Manager! Waiting orders! Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
8
#####
# Dish XXX # Name Bullets # price 999 # Description Come and Get Some #
-----
# Dish 11 # Name 11 # price 1 # Description 11 #
-----
# Dish ads # Name adidas # price 500 # Description good #
-----
Please Enter the dish ID you want to modify:
ads
Dish found..
Please give command to modify:
0 = Finish Modification, 1 = DishID, 2=DishName, 3=DishDescription 4=DishPrice
2
Enter the DishName:Nike
Dish attribute modified successfully!
Please give command to modify:
0 = Finish Modification, 1 = DishID, 2=DishName, 3=DishDescription 4=DishPrice
0
Dish attribute modified successfully!
Dish modified successfully:
# Dish ads # Name Nike # price 500 # Description good #
请按任意键继续. . .
```

Run show menu function, the name has been changed.

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
2
#####
# Dish XXX # Name Bullets # price 999 # Description Come and Get Some #
-----
# Dish 11 # Name 11 # price 1 # Description 11 #
-----
# Dish ads # Name Nike # price 500 # Description good #
-----
请按任意键继续. . .
```

2.9 modify raw material

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
9
#####
# MaterialID X8086 # MaterialName X8086 # Amount 10 kg #
# TotalCost 600 # Description working class #
-----
# MaterialID qqg # MaterialName tomato # Amount 100 kg #
# TotalCost 1000 # Description great #
-----
Please Enter the dish ID you want to modify:
qqg
Material found...
Please give command to modify:
0 = Finish Modification, 1 = MaterialID, 2=MaterialName, 3=MaterialUnit, 4=MaterialPricePerUnit, 5=MaterialAmount, 6=MaterialD
escription
3
Enter the MaterialUnit:g
Material attribute modified successfully!
Please give command to modify:
0 = Finish Modification, 1 = MaterialID, 2=MaterialName, 3=MaterialUnit, 4=MaterialPricePerUnit, 5=MaterialAmount, 6=MaterialD
escription
0
Material attribute modified successfully!
Material modified successfully:
# MaterialID qqg # MaterialName tomato # Amount 100 g #
# TotalCost 1000 # Description great #
请按任意键继续. . .
```

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Manager Manager1. Waiting orders! Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
8
#####
# Dish XXX # Name Bullets # price 999 # Description Come and Get Some #
-----
# Dish 11 # Name 11 # price 1 # Description 11 #
-----
# Dish ads # Name adidas # price 500 # Description good #
-----
Please Enter the dish ID you want to modify:
ads
Dish found..
Please give command to modify:
0 = Finish Modification, 1 = DishID, 2=DishName, 3=DishDescription 4=DishPrice
2
Enter the DishName:Nike
Dish attribute modified successfully!
Please give command to modify:
0 = Finish Modification, 1 = DishID, 2=DishName, 3=DishDescription 4=DishPrice
0
Dish attribute modified successfully!
Dish modified successfully:
# Dish ads # Name Nike # price 500 # Description good #
请按任意键继续. . .
```

Run show raw material function, the unit has been changed.

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
3
#####
# MaterialID X8086 # MaterialName X8086 # Amount 10 kg #
# TotalCost 600 # Description working class #
-----
# MaterialID qqg # MaterialName tomato # Amount 100 g #
# TotalCost 1000 # Description great #
-----
请按任意键继续. . .
```

2.10 delete account

```
-----
# AccountID      444 # AccountPIN      444 #
# CustomerName   Customer2-1 # Gender   man #
# Region         abc # Preference     qaq #
# NumberOfOrders 0 # Debts             0 #
-----
#####END#OF#LIST#####
Please Enter the dish ID you want to delete:
444
Account found:
Are you sure to delete the account? (Y/N)
y
Account deleted successfully!
请按任意键继续. . .
```

```
#####CUSTOMER#####
# AccountID      C3 # AccountPIN      C3 #
# CustomerName   Devourer # Gender     #
# Region         # Preference     Eating Alive #
# NumberOfOrders 2 # Debts             100 #
-----
# AccountID      C5 # AccountPIN      CC #
# CustomerName   7 # Gender           no #
# Region         no # Preference     S #
# NumberOfOrders 0 # Debts             0 #
-----
# AccountID      C7 # AccountPIN      SS #
# CustomerName   SASA # Gender         S #
# Region         S # Preference     S #
# NumberOfOrders 0 # Debts             0 #
-----
# AccountID      666 # AccountPIN      L #
# CustomerName   KKK # Gender         DD #
# Region         E # Preference     W #
# NumberOfOrders 0 # Debts             0 #
-----
# AccountID      333 # AccountPIN      333 #
# CustomerName   Customer1 # Gender    woman #
# Region         no # Preference     woman #
# NumberOfOrders 0 # Debts             0 #
-----
#####END#OF#LIST#####
请按任意键继续. . .
```

2.11 delete dish

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
11
#####
# Dish      XXX # Name      Bullets # price      999 # Description      Come and Get Some #
# Dish      11 # Name      11 # price      1 # Description      11 #
# Dish      ads # Name      Nike # price      500 # Description      good #
#####
Please Enter the Account ID you want to delete:
ads
Dish found:
Are you sure to delete the Dish from menu? (Y/N)
y
Dish deleted from menu successfully!
请按任意键继续. . .
```



```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel1#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
2
#####
# Dish XXX # Name Bullets # price 999 # Description Come and Get Some #
-----
# Dish 11 # Name 11 # price 1 # Description 11 #
-----
请按任意键继续. . .
```

2.12 delete raw material

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel1#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
12
#####
# MaterialID X8086 # MaterialName X8086 # Amount 10 kg #
# TotalCost 600 # Description working class #
-----
# MaterialID qqg # MaterialName tomato # Amount 100 g #
# TotalCost 1000 # Description great #
-----
Please Enter the raw material ID you want to delete:
qqg
Raw material found:
Are you sure to delete the Material from inventory? (Y/N)
y
Material deleted from intventory successfully!
请按任意键继续. . .
```

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolPannel1#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
3
#####
# MaterialID X8086 # MaterialName X8086 # Amount 10 kg #
# TotalCost 600 # Description working class #
-----
请按任意键继续. . .
```

2.13 show bill for a customer

```
C:\WINDOWS\system32\cmd.exe
Currently Account C3 Customer Devourer have 2 times of Consupion Record.
=====
# Account ID      # Account Name #CRID  #DishID  #DishName      #Price  #RecordTime
=====
# C3              # Devourer    # 1     # XXX    # Bullets      # 999    # Mon May 29 00:59:47 2017
=====
# C3              # Devourer    # 1     # XXX    # Bullets      # 999    # Mon May 29 00:59:53 2017
=====
# C3              # Devourer    # 1     # XXX    # Bullets      # 999    # Mon May 29 00:59:58 2017
=====
# C3              # Devourer    # 1     # 11     # 11            # 1       # Mon May 29 12:07:16 2017
=====
# C3              # Devourer    # 1     # 11     # 11            # 1       # Mon May 29 12:07:16 2017
=====
# C3              # Devourer    # 1     # 11     # 11            # 1       # Mon May 29 12:22:27 2017
=====
Totally 6 Dishes for ConsupionRecord #1, Bill: 3000
=====
# C3              # Devourer    # 2     # XXX    # Bullets      # 999    # Mon May 29 01:02:20 2017
=====
# C3              # Devourer    # 2     # XXX    # Bullets      # 999    # Mon May 29 01:02:33 2017
=====
# C3              # Devourer    # 2     # XXX    # Bullets      # 999    # Mon May 29 11:43:33 2017
=====
# C3              # Devourer    # 2     # 11     # 11            # 1       # Mon May 29 12:07:51 2017
=====
Totally 4 Dishes for ConsupionRecord #2, Bill: 2998
=====
#####
Totally 10 Dishes in Customer C3 Devourer History Record, Total Bill: 5998
请按任意键继续. . .
```

2.14 add dish for a customer

```
C:\WINDOWS\system32\cmd.exe
Currently Account C3 Customer Devourer have 2 times of Consupion Record.
=====
# Account ID      # Account Name #CRID  #DishID  #DishName      #Price  #RecordTime
=====
# C3              # Devourer    # 1     # XXX    # Bullets      # 999    # Mon May 29 00:59:47 2017
=====
# C3              # Devourer    # 1     # XXX    # Bullets      # 999    # Mon May 29 00:59:53 2017
=====
# C3              # Devourer    # 1     # XXX    # Bullets      # 999    # Mon May 29 00:59:58 2017
=====
# C3              # Devourer    # 1     # 11     # 11            # 1       # Mon May 29 12:07:16 2017
=====
# C3              # Devourer    # 1     # 11     # 11            # 1       # Mon May 29 12:07:16 2017
=====
# C3              # Devourer    # 1     # 11     # 11            # 1       # Mon May 29 12:22:27 2017
=====
Totally 6 Dishes for ConsupionRecord #1, Bill: 3000
=====
# C3              # Devourer    # 2     # XXX    # Bullets      # 999    # Mon May 29 01:02:20 2017
=====
# C3              # Devourer    # 2     # XXX    # Bullets      # 999    # Mon May 29 01:02:33 2017
=====
# C3              # Devourer    # 2     # XXX    # Bullets      # 999    # Mon May 29 11:43:33 2017
=====
# C3              # Devourer    # 2     # 11     # 11            # 1       # Mon May 29 12:07:51 2017
=====
# C3              # Devourer    # 2     # 11     # 11            # 1       # Mon May 29 17:32:07 2017
=====
Totally 5 Dishes for ConsupionRecord #2, Bill: 2999
=====
#####
Totally 11 Dishes in Customer C3 Devourer History Record, Total Bill: 5999
To which Consumption Record you want to Add? Please Enter CRID (Consumption Record ID):
2
请按任意键继续. . .
```

```
C:\WINDOWS\system32\cmd.exe
#####
# Dish      XXX # Name      Bullets # price  999 # Description      Come and Get Some #
#####
# Dish      11 # Name      11 # price      1 # Description      11 #
#####
Please Enter the dish ID you want to add to the consumer: XXX
Order Placed Successfully. Any Dish else? (Y/N): n
```

Show bills of customer C3.

```
#####
# C3        # Devourer  # 2  # XXX      # Bullets      # 999  # Mon May 29 01:02:20 2017
#####
# C3        # Devourer  # 2  # XXX      # Bullets      # 999  # Mon May 29 01:02:33 2017
#####
# C3        # Devourer  # 2  # XXX      # Bullets      # 999  # Mon May 29 11:43:33 2017
#####
# C3        # Devourer  # 2  # 11       # 11           # 1     # Mon May 29 12:07:51 2017
#####
# C3        # Devourer  # 2  # 11       # 11           # 1     # Mon May 29 17:32:07 2017
#####
# C3        # Devourer  # 2  # 11       # 11           # 1     # Mon May 29 17:32:07 2017
#####
# C3        # Devourer  # 2  # XXX      # Bullets      # 999  # Mon May 29 17:34:16 2017
#####
Totally 7 Dishes for ConsupntionRecord #2, Bill: 3999
#####
Totally 13 Dishes in Customer C3 Devourer History Record, Total Bill: 6999
请按任意键继续. . .
```

2.15 show report

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ControlPannel#####
# 0=Logout      #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu    # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
15
Total Expenditure: 600
Total Income: 8815
The gross profit is 8215
请按任意键继续. . .
```

5.3. Test for authority of the chef

Interface:

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Chef 222: Chef1
Please give command:
#####ControlPannel#####
# 0=Logout      #
# 1=showMenu    # 3=addNewDish # 5=modifyDish # 7=deleteDish #
# 2=showRawMaterial # 4=addNewRawMaterial # 6=modifyMaterial # 8=deleteRawMaterial #
#####
```

The functions from 1 to 8 are all same as those of a manager.

5.4. Test for authority of the customer

Interface:

```
C:\WINDOWS\system32\cmd.exe

Welcome back, Dear Customer2
Please give command:
##ConrolPannel##
# 0=LogOut      #
# 1=showMenu    #
# 2=placeOrder  #
# 3=showBill    #
#####
_
```

The function 1, which is showMenu, is same as that of a manager.

4.1 place order

```
C:\WINDOWS\system32\cmd.exe

Welcome back, Dear Customer2
Please give command:
##ConrolPannel##
# 0=LogOut      #
# 1=showMenu    #
# 2=placeOrder  #
# 3=showBill    #
#####
2
#####
# Dish          XXX # Name          Bullets # price    999 # Description    Come and Get Some #
-----
# Dish          11 # Name          11 # price    1 # Description    11 #
-----
#####
Please Enter the dish ID you want to order: XXX
Order Placed.Any Dish else?(Y/N): n_
```

4.2 show bill

Continue for 4.1.

```
C:\WINDOWS\system32\cmd.exe
Please give command:
##ControlPanel##
# 0=LogOut #
# 1=showMenu #
# 2=placeOrder #
# 3=showBill #
#####
3
# 444 # Customer2 # 1 # XXX # Bullets # 999 # Mon May 29 18:06:07 2017
The total bill is: 999
请按任意键继续. . .
```

If give another shoot.

```
C:\WINDOWS\system32\cmd.exe
Please give command:
##ControlPanel##
# 0=LogOut #
# 1=showMenu #
# 2=placeOrder #
# 3=showBill #
#####
3
# 444 # Customer2 # 1 # XXX # Bullets # 999 # Mon May 29 18:06:07 2017
# 444 # Customer2 # 2 # 11 # 11 # 1 # Mon May 29 18:10:50 2017
The total bill is: 1000
请按任意键继续. . .
```

5.5. Test for File data

```
C:\WINDOWS\system32\cmd.exe
Please give command:
##ControlPanel##
# 0=LogOut #
# 1=showMenu #
# 2=placeOrder #
# 3=showBill #
#####
0
0 = exit, 1 = LogIn, 2=CreateNewAccount
0
Exit Successfully.
请按任意键继续. . .
```

Exit then restart the program, check all data if it is reserved.

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Manager Manager1. Waiting orders! Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
13
#####MANGER#####
# AccountID M1 # AccountPIN M1 #
# ManagerName BOSS # Gender Male #
# Region Male # Preference Comencing Bombardment #
-----
# AccountID 11 # AccountPIN 11 #
# ManagerName 11 # Gender 11 #
# Region 11 # Preference 11 #
-----
# AccountID 111 # AccountPIN 111 #
# ManagerName Manager1 # Gender man #
# Region no # Preference no #
-----
#####CHEF#####
# AccountID C2 # AccountPIN C2 #
# ChefName Giovani # Gender Male #
# Region Male # Preference Stir and Big knives #
-----
# AccountID 222 # AccountPIN 222 #
# ChefName Chef1 # Gender man #
# Region no # Preference man #
-----
#####CUSTOMER#####
# AccountID C3 # AccountPIN C3 #
# CustomerName Devourer # Gender #
# Region # Preference Eating Alive #
# NumberOfOrders 2 # Debts 100 #
-----
# AccountID C5 # AccountPIN CC #
# CustomerName 7 # Gender no #
# Region no # Preference S #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID C7 # AccountPIN SS #
# CustomerName SASA # Gender S #
# Region S # Preference S #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID 666 # AccountPIN L #
# CustomerName KKK # Gender DD #
# Region E # Preference W #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID 3333 # AccountPIN 3333 #
# CustomerName Customer1 # Gender woman #
# Region no # Preference woman #
# NumberOfOrders 0 # Debts 0 #
-----
# AccountID 444 # AccountPIN 444 #
# CustomerName Customer2 # Gender man #
# Region no # Preference no #
# NumberOfOrders 2 # Debts 0 #
-----
```

Check the bills.

```
C:\WINDOWS\system32\cmd.exe
Currently Account 444 Customer Customer2 have 2 times of Consuption Record.
-----
# Account ID      # Account Name #CRID  #DishID      #DishName      #Price #RecordTime
-----
# 444             # Customer2    # 1     # XXX        # Bullets       # 999   # Mon May 29 18:06:07 2017
-----
Totally 1 Dishes for ConsuptionRecord #1, Bill: 999
-----
# 444             # Customer2    # 2     # 11         # 11            # 1     # Mon May 29 18:10:50 2017
-----
Totally 1 Dishes for ConsuptionRecord #2, Bill: 1
-----
#####
Totally 2 Dishes in Customer 444 Customer2 History Record, Total Bill: 1000
请按任意键继续. . .
```

5.6. Test for erroneous input

(1) Inputs that exceed the range

```
C:\WINDOWS\system32\cmd.exe
0 = exit, 1 = LogIn, 2=CreateNewAccount
3
0 = exit, 1 = LogIn, 2=CreateNewAccount
-1
0 = exit, 1 = LogIn, 2=CreateNewAccount
555
0 = exit, 1 = LogIn, 2=CreateNewAccount
1
Please Enter your account ID:
```

```
C:\WINDOWS\system32\cmd.exe
Welcome back, Manager Manager1. Waiting orders! Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
16
请按任意键继续. . .
```

(2) Inputs that are invalid

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ControlPanel#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
dsadad
Please enter an integer: _
```

```
#####END#OF#LIST#####
Please Enter the dish ID you want to delete:
adjhkasdhkja
Sorry, cannot find appointed account.
请按任意键继续. . .
```

(3) Inputs that exceed the length of strings

```
C:\WINDOWS\system32\cmd.exe
Please give command:
#####ConrolParne1#####
# 0=LogOut #
# 1=showCustomer # 4=addNewAccount # 7=modifyAccount # 10=deleteAccount # 13=showBillForCustomer#
# 2=showMenu # 5=addNewDish # 8=modifyDish # 11=deleteDish # 14=addDishForCustomer #
# 3=showRawMaterial # 6=addNewRawMaterial # 9=modifyMaterial # 12=deleteRawMaterial # 15=showReport #
#####
5
Enter dish ID: asjdhsdkjadhkahdkjashdkjahdkaahsdadhjasdhkjas
Sorry, dish ID length cannot exceed 12 charactersEnter dish ID: aasdad
Enter the Dish name: asdjkhaskdhskjad
Enter the DishDescription:akdjhsakjdhkasjhdjkashdkjasdhkjas
Sorry, DishDescription length cannot exceed 29 charactersEnter the DishDescription:
_
```

5.7. Test for several special cases

(1) After deleting the account of customer 333. The program will prevent you from registering the same ID account.

```
C:\WINDOWS\system32\cmd.exe
0 = exit, 1 = LogIn, 2=CreateNewAccount
2
Which account type you want to register: 1=Manager, 2=Chef, 3=Customer: 3
Now registering as customer:
Enter account ID: 333
Sorry, this ID has been registered or existed in history Consumption Record.Enter account ID: 3333
Enter the ACCOUNT name : Customer1'
Enter the account's PIN: 3333
Enter the account's Gender: woman
Enter the account's Region: no
Enter the account's Preference: woman
请按任意键继续. . .
```

5.8. Bugs report

[illegible]

This bug occurred due to the storage of an integer variable is limited. Its maximum should be 2147483647 in the 32 bit operating system, providing that exceeding this value, it will cause unpredictable consequences.

6. User Manual

This is the user manual which give a brief description for each function for the restaurant system users.

In the initial interface, there are three choices for the users.

1. Exit:

Allow the users to quit the operation system.

2. Log in:

Provide the function of logging in the specific account.

The log process need the accountID and the corresponding PIN.

3. CreatNewAccount:

There are three kinds of account the users can provide : manager, chef and customer. Each account contains the basic messages which the users need to input: accountID, name, PIN, gender, region, preference.

3.1 manager:

The user can materialize the specific functions by entering the specific number.

a. Entering "0": logout

If the user input "0", the system would quit the current account and return the initial interface.

b. Entering "1": showCustomer

If the user inputs "1", the system will display the basic information of all the system users.

c. Entering "2": showMenu,

If the user inputs "2", the system will display the information of the menu, however, if no dishes have been added, the users will be told the menu is empty.

d. Entering "3": showRawMaterial

If the user inputs "3", the system will display the information of the menu, however, if no raw materials have been added, the users will be told the inventory is empty.

e. Entering "4": addNewAccount

If the user inputs "4", a new account will be added. After choosing the account type, the corresponding basic messages need to be completed.

f. Entering "5": addNewDish

If the user inputs "5", a new dish will be added to the menu. Additionally, the corresponding basic information includes dish ID, dish name, dish description and prize need to be completed.

g. Entering "6": addNewRawMaterial

If the user inputs "6", a new raw material will be added to the inventory. Additionally, the corresponding basic information need to be completed. The information includes material

ID, material name, material description, material unit, the prize per unit and the material amount.

h. Entering "7": modifyAccount

If the user inputs "7", the system will display the information of the current account and ask the user to input the specific ID of the corresponding account. If the account was found, the user can modify the information by inputting the specific number. After the modifying is over, the new account information will be displayed again.

i. Entering "8": modifyDish

If the user inputs "8", the system will display the information of the current menu and ask the user to input the specific ID of the corresponding dish. If the dish was found, the user can modify the information by input the specific number. The new information will be shown again after the modifying.

j. Entering "9": modifyMaterial

If the user inputs "9", the system will display the information of the current inventory and ask the user to input the specific ID of the corresponding material. If the material was found, the user can modify the information by input the specific number. The new information of the materials will be shown again after the modifying.

k. Entering "10": deleteAccount

If the user inputs "10", the system will display the information of the current account and ask the user to input the ID of the account which the user want to delete. Then, the system will ask the user Y/N for this decision, if the customer input Y and the account will be deleted successfully.

l. Entering "11": deleteDish

If the user inputs "11", the system will display the information of the current account and ask the user to input the ID of the account which the user want to delete. Then, the system will ask the user Y/N for this decision, if the customer input Y and the account will be deleted successfully.

m. Entering "12": deleteRawmaterial

If the user inputs "12", the system will display the information of the current inventory and ask the user to input the ID of the material which the user want to delete. Then, the system will ask the user Y/N for this decision, if the customer input Y and the material will be deleted successfully from the inventory.

n. Entering "13": showBillForCustomer

If the user inputs "13", the whole information for all users will be displayed. Then, the system will ask the users to choose the account ID which need to be shown the bill. However, if the account of manager or chef is chosen, the system will not give the bill for they don't have the record of debts. After choosing the account ID of the customer, the bill contains the information of ordered dishes as well as the expenses will be displayed.

o. Entering "14": addDishForCustomer

If the user inputs "14", the whole information for all users will be displayed. Then, the system will ask the users to choose the account ID which need to be shown the bill. However, if the account of manager or chef is chosen, the system will not give the response that they can't order dishes. After choosing the account ID of the customer, the user can also choose the assumption record from the system.

p. Entering "15": showReport

If the user inputs "15", the report contains the expenditure and income as well as the gross profit will be displayed.

3.2 Chef:

a. Entering "0": logout

If the user input "0", the system would quit the current account and return the initial interface.

b. Entering "1": showMenu

If the user inputs "1", the system will display the information of the menu, however, if no dishes have been added, the users will be told the menu is empty.

c. Entering "2": showRawMaterial

If the user inputs "2", the system will display the information of the menu, however, if no raw materials have been added, the users will be told the inventory is empty.

d. Entering "3": addNewDish

If the user inputs "3", a new dish will be added to the menu. Additionally, the corresponding basic information includes dish ID, dish name and prize need to be completed.

e. Entering "4": addNewRawMaterial

If the user inputs "6", a new raw material will be added to the inventory. Additionally, the corresponding basic information need to be completed. The information includes material ID, material name, material description, material unit, the prize per unit and the material amount.

f. Entering "5": modifyDish

If the user inputs "5", the system will display the information of the current menu and ask the user to input the specific ID of the corresponding dish. If the dish was found, the user can modify the information by input the specific number. The new information will be shown again after the modifying.

g. Entering "6": modifyMaterial

If the user inputs "6", a new raw material will be added to the inventory. Additionally, the corresponding basic information need to be completed. The information includes material ID, material name, material description, material unit, the prize per unit and the material amount.

h. Entering "7": deleteDish

If the user inputs "11", the system will display the information of the current account and ask the user to input the ID of the account which the user want to delete. Then, the system will ask the user Y/N for this decision, if the customer input Y and the account will be deleted successfully.

i. Entering "8": deleteRawMaterial

If the user inputs "12", the system will display the information of the current inventory and ask the user to input the ID of the material which the user want to delete. Then, the system will ask the user Y/N for this decision, if the customer input Y and the material will be deleted successfully from the inventory.

3.3 Customer:

a. Entering "0": logout

If the user input "0", the system would quit the current account and return the initial interface.

b. Entering "1": showMenu

If the user inputs "1", the system will display the information of the menu, however, if no dishes have been added, the users will be told the menu is empty.

c. Entering "2": placeOrder

If the user inputs "2", the menu will be displayed. Then, the user can input the specific ID to order the corresponding dish. After that, the system will ask the user Y/N for this decision, if the customer input Y and the dish will be ordered successfully.

d. Entering "3": showBill

If the user inputs "3", the bill contains the information of ordered dishes as well as the expenses will be displayed.