Vending Machine

Group 29

What we have done

Requirement

System Objective

- In this project, we are developing a software that simulates a normal and classical vending machine. The software will take care of the User Interface, ensure every merchandise can be sold correctly and the user can get correct change. Also, a manager will check all merchandise for its stock and the money box to ensure the machine's normal operation. A UPPAAL model will be provided to check whether the machine works correctly.
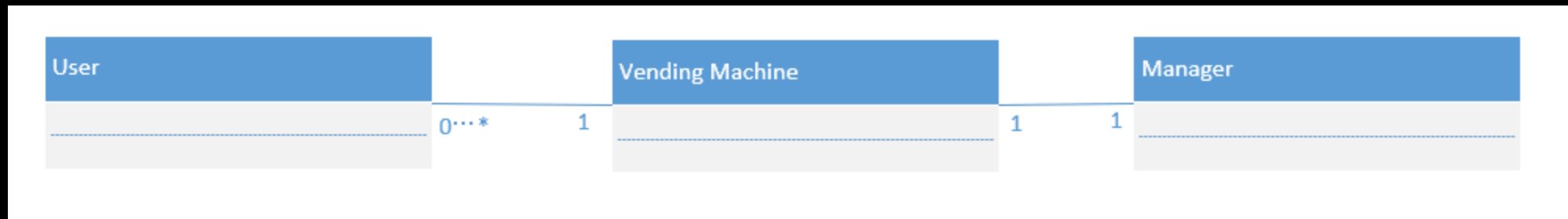
Domain Analysis
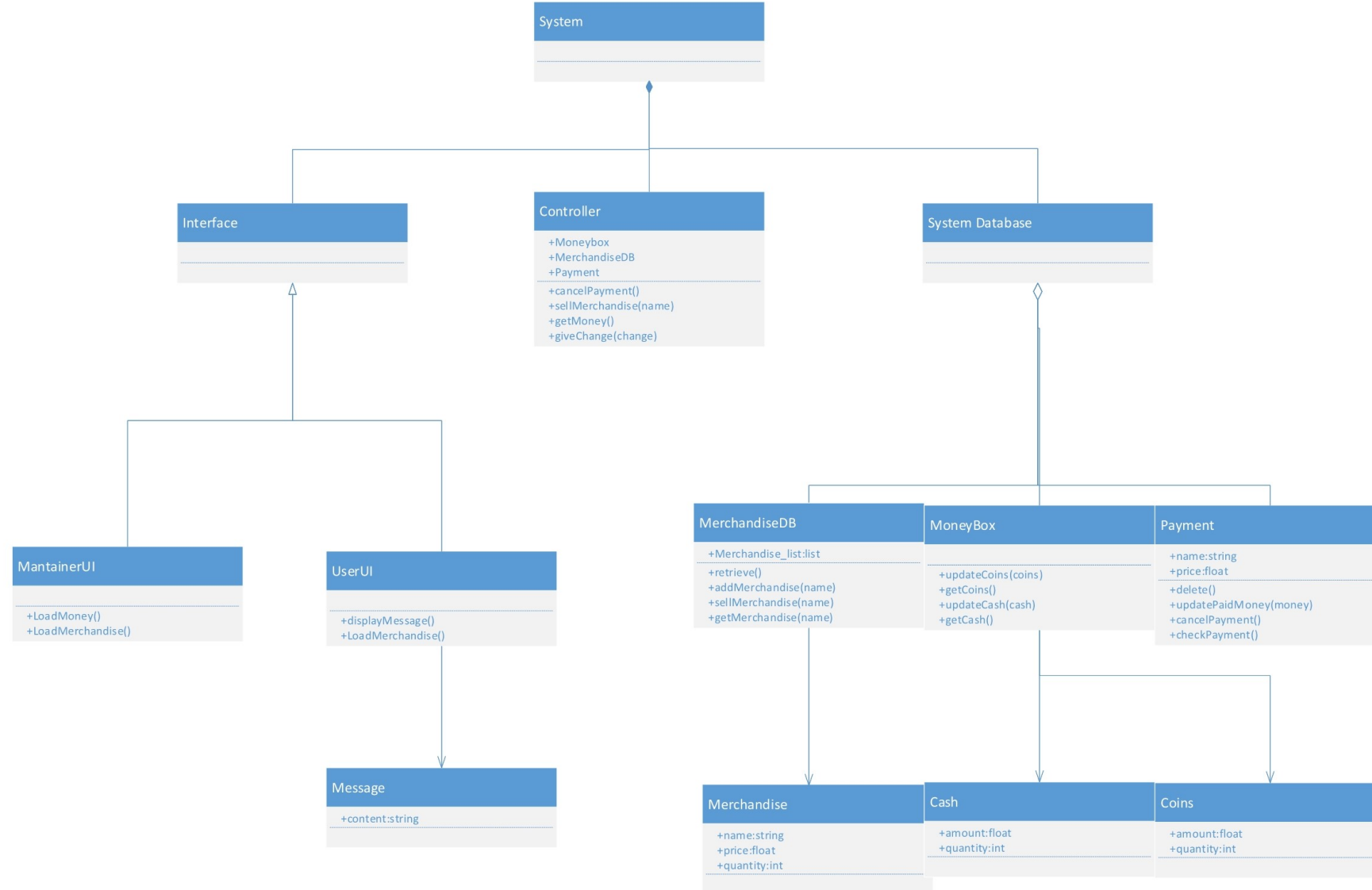
Domain Analysis

Vending Machine

- merchandise
- coin
- cash

- sellmerchandise()
- givechange()
- receivemoney()
- showmerchandise()
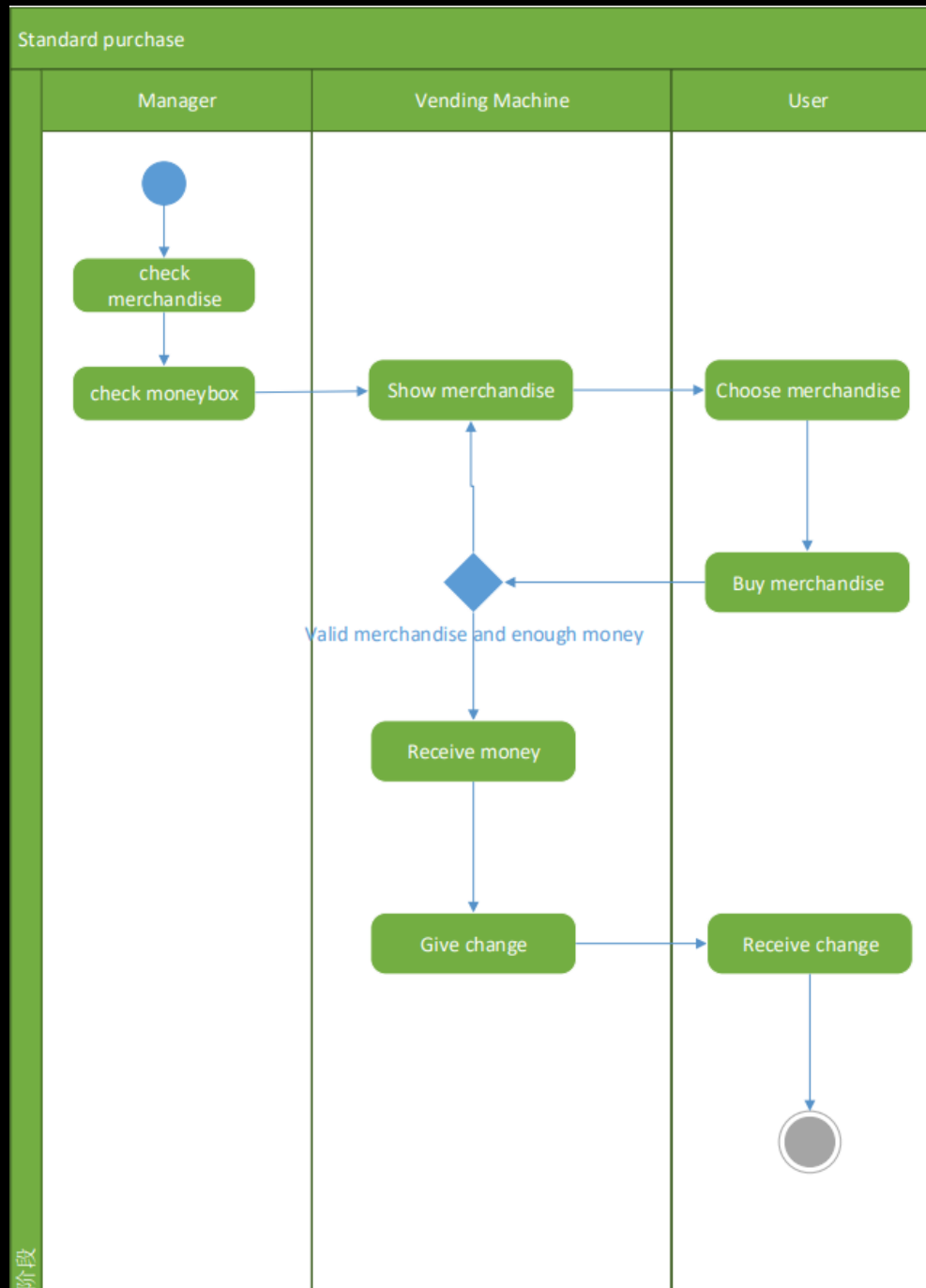
User

- coin
- cash

- buymerchandise()
- getchange()

Manager

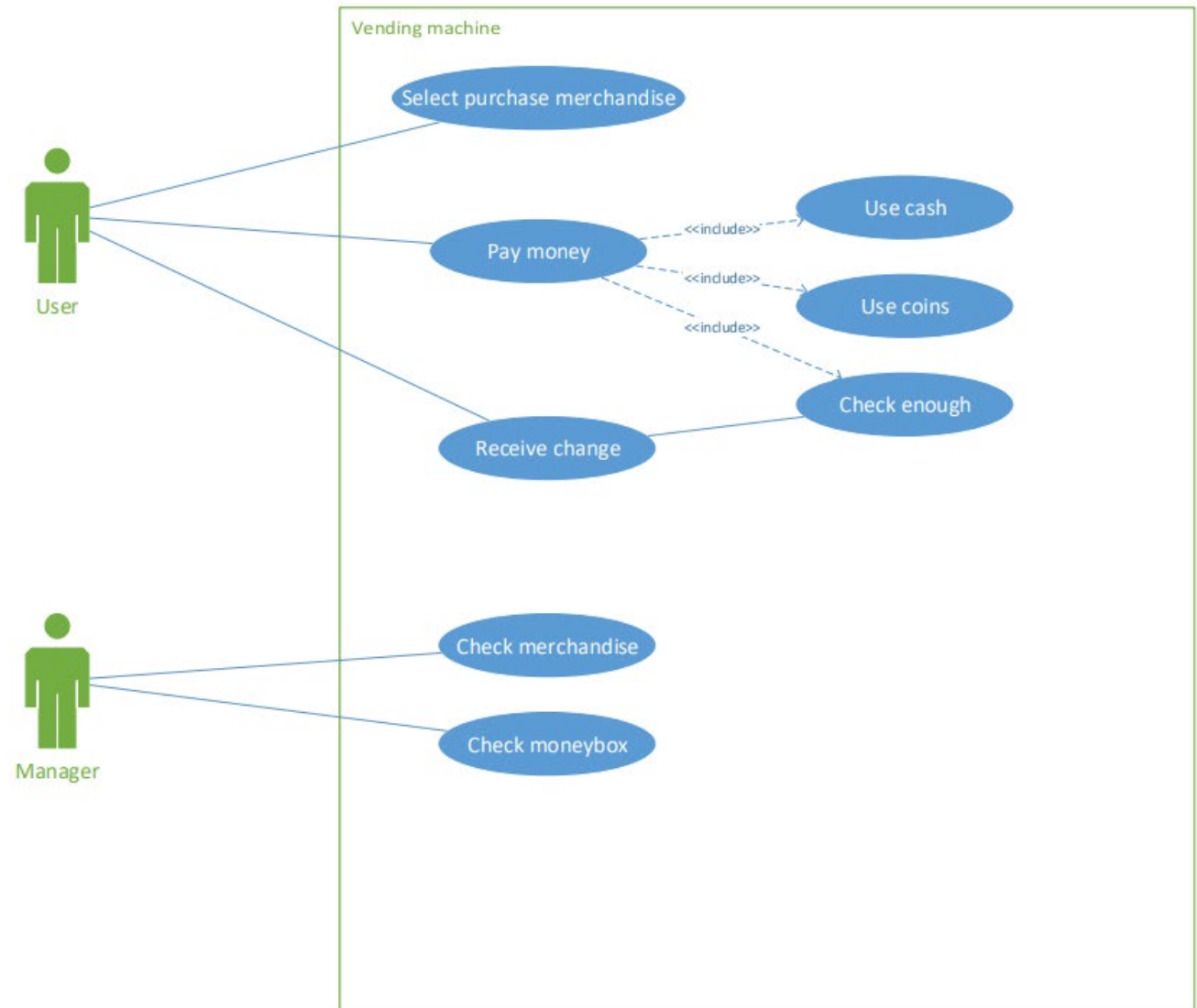- checkmerchandise()
- checkmoneybox()

Domain Analysis

Domain Analysis

Use Case
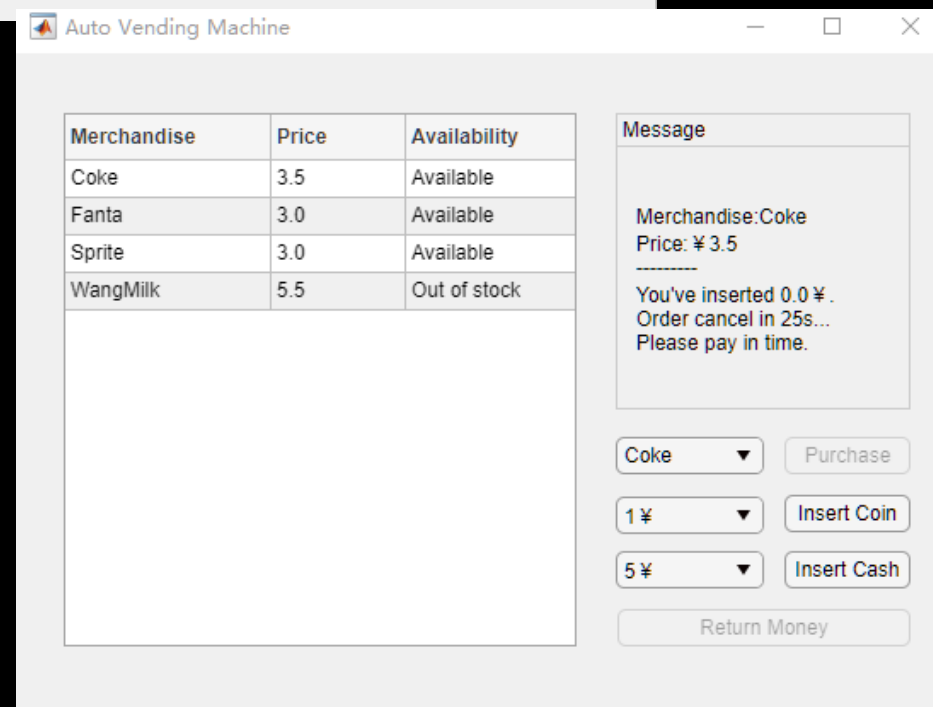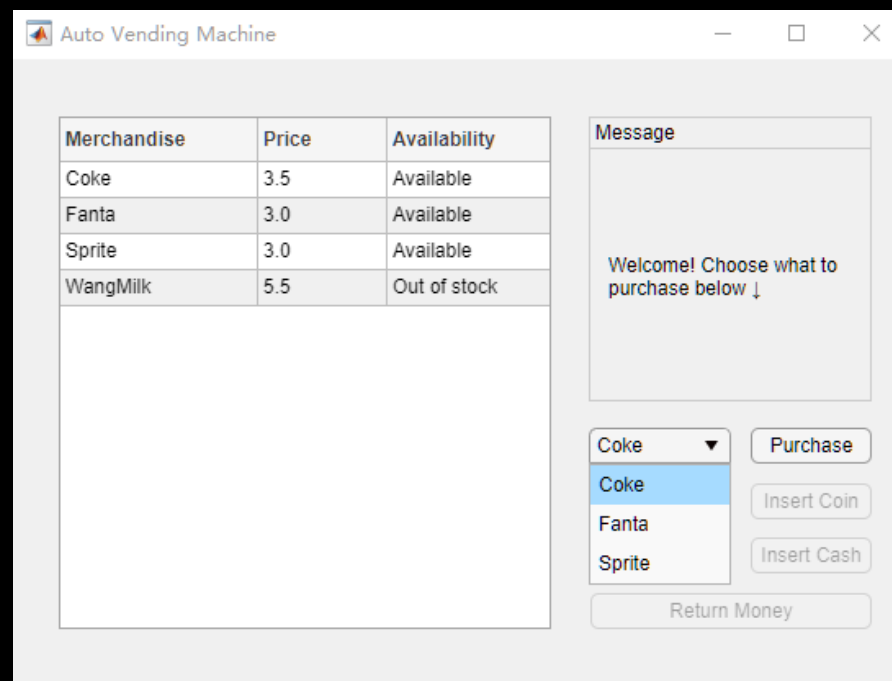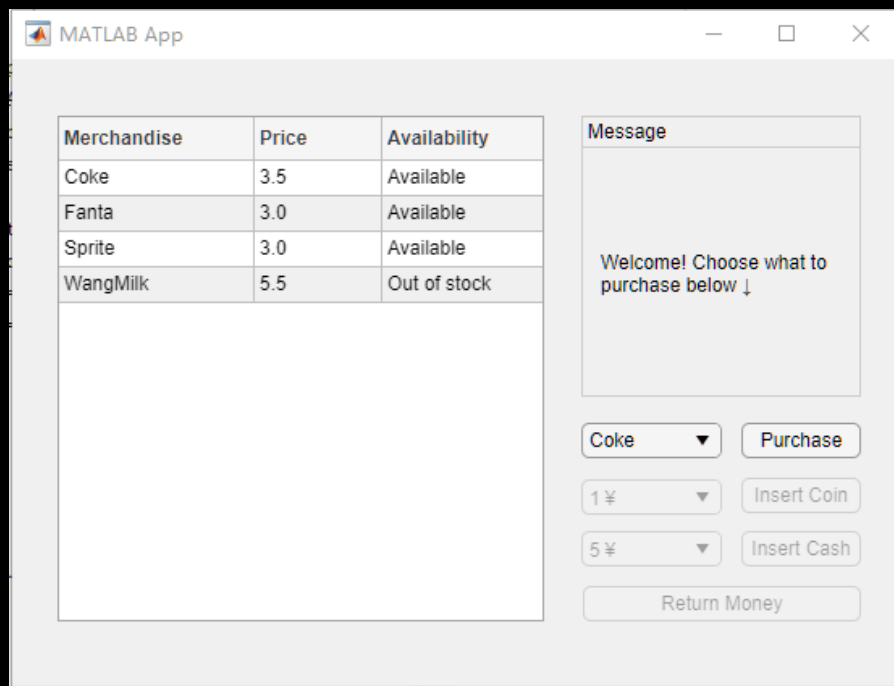
Software Requirements

- R1: User UI
- R2: Maintainer UI
- R3: Controller

Development

User UI

User UI

User UI

Left window:

Merchandise	Price	Availability
Coke	3.5	Available
Fanta	3.0	Available
Sprite	3.0	Available
WangMilk	5.5	Out of stock

Message

Payment Time-out
Please try again.

Coke ▾   Purchase

1¥ ▾   Insert Coin

5¥ ▾   Insert Cash

Return Money

Right window:

Merchandise	Price	Availability
Coke	3.5	Available
Fanta	3.0	Available
Sprite	3.0	Available
WangMilk	5.5	Out of stock

Message

Payment success!
Get your Coke and
0.5¥ change below ↓

Coke ▾   Purchase

1¥ ▾   Insert Coin

5¥ ▾   Insert Cash

Return Money

User UI

Maintainer UI

Mantainer Backend

Message

[06-09 21:40:46] (++)Out of WangMilk!
[06-09 21:40:46] Auto Vending Machine ver2.2 is running.

Merchandise Status	Money Box Status	Payment Record

Merchandise	Price	Quantity
Coke	3.5	10
Fanta	3.0	10
Sprite	3.0	10
WangMilk	5.5	0

Add Panel

Item Name

[ ] [+]

Mantainer Backend

Message

[06-09 21:40:46] (++)Out of WangMilk!
[06-09 21:40:46] Auto Vending Machine ver2.2 is running.

Merchandise Status	Money Box Status	Payment Record

Money	Quantity
0.5￥Coin	50
1￥Coin	50
1￥Cash	30
5￥Cash	30
10￥Cash	30
20￥Cash	0

Mantainer Backend

Message

[06-09 21:49:16] (++)Out of WangMilk!
[06-09 21:40:46] (++)Out of WangMilk!
[06-09 21:40:46] Auto Vending Machine ver2.2 is running.

Merchandise Status	Money Box Status	Payment Record

Date	Merchandise	Price	Status
2021-06-09 21:50:34	Coke	3.5	Time Out
2021-06-09 21:49:11	Coke	3.5	Success

Maintainer UI

Left Window

Mantainer Backend

Message

[06-09 21:55:22] (++)Out of qwe!(++)Out of WangMilk!
[06-09 21:55:22] qwe has been added successfully!
[06-09 21:49:16] (++)Out of WangMilk!
[06-09 21:40:46] (++)Out of WangMilk!
[06-09 21:40:46] Auto Vending Machine ver2.2 is running.

Merchandise Status | Money Box Status | Payment Record

Merchandise	Price	Quantity
Coke	3.5	9
Fanta	3.0	10
Sprite	3.0	10
WangMilk	5.5	0
qwe	5.0	0

Add Panel

Item Name

qwe [+]

Right Window

Mantainer Backend

Message

[06-09 21:59:21] (++)Out of WangMilk!
[06-09 21:59:02] (++)Out of WangMilk!
[06-09 21:55:22] (++)Out of qwe!(++)Out of WangMilk!
[06-09 21:55:22] qwe has been added successfully!
[06-09 21:49:16] (++)Out of WangMilk!
[06-09 21:40:46] (++)Out of WangMilk!
[06-09 21:40:46] Auto Vending Machine ver2.2 is running.

Merchandise Status | Money Box Status | Payment Record

Merchandise	Price	Quantity
Coke	3.5	9
Fanta	3.0	10
Sprite	3.0	10
WangMilk	5.5	5
qwe	4.0	10

Add Panel

Item Name

qwe [+]

Maintainer UI

OOP

Vending Display

What we're going to do next