Project4
E-market

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Background

Nowadays, people care more about the health much more than in the past, more people start to cook for themselves instead of eating outside, but at the same time, they live busier as well. To look after both sides, convenience has become the highest priority. In order to build up a more convenient city, Taipei Rapid Transit Corporation takes the lead in cooperating with several markets. Ingredients including raw and prepared food are supplied. Customers can browse and shop at machines in MRT stations and pick up commodities on their way home without spending more transportation time and money. However, is it really the most convenient way? What if they can also shop outside MRT stations? To benefit both managers and customers, we expand this service into a website and call it E-market. Regardless of when and where, you can buy whatever you want on E-market just through several clicks.

As-Is and To-Be Model

To implement a better business process, we conduct simulations by income software. Both of the models involve actions from customers head to purchase merchandises to customers make a payment and go back home.

1. As-Is Model

   As-Is Model is the traditional way that people buy food. Take office worker as example, they will go to supermarkets and choose commodities right after getting of work. There are two conditions, (1) customers who get their needs and (2) customers who don't get their needs and go home with disappointment.
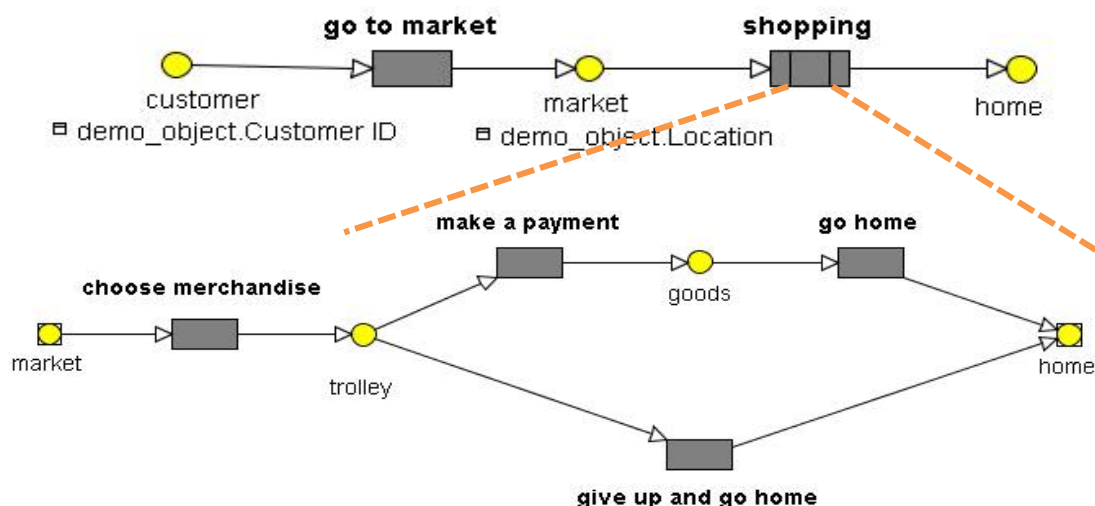

Figure1.As-Is Behavior Model
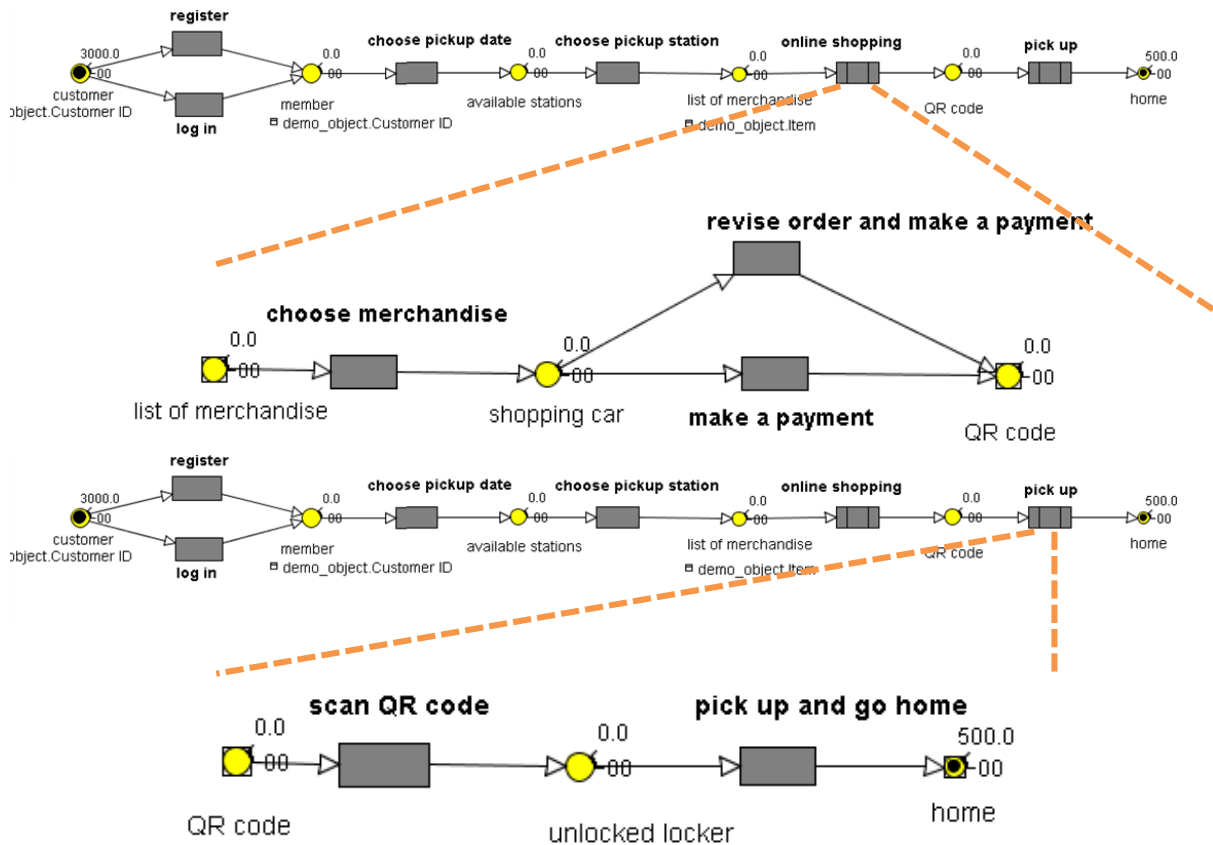
2. To-Be Model

Figure2.To-Be Behavior Model

To-Be Model is shopping on E-market. Before customers start to choose, they have to get memberships which record their basic information. After logging in, they should choose picking-up date and station first, then they can begin shopping. Before orders are checked, there are three chances for them to change their lists. Once orders are made, customers are not allowed to revise anymore. They will get QR code and order number right after the payment is confirmed, and they can scan at stations and take their commodities from assigned locker afterwards without spending additional time.

3. Simulation Results and Comparisons

Parameters setting of As-Is Model and To-Be Model

Table1.Parameters setting of As-Is Model

AS-IS MODEL	Average Cost	Average Time
go to market	$20	15 min
choose merchandises	--	20 min
make a payment	$180	10 min
go home	$20	15 min
give up and go home	$20	20 min

Table2.Parameters setting of To-Be Model

TO-BE MODEL	Average Cost	Average Time
register	--	5 min
log in	--	30 s
choose pick-up date	--	15 s
choose pick-up station	--	15 s
choose merchandise	--	10 min
make a payment	$250	1 min
revise order and make a payment	--	3 min
scan QR code	--	3 s
pick up and go home	$20	20 min
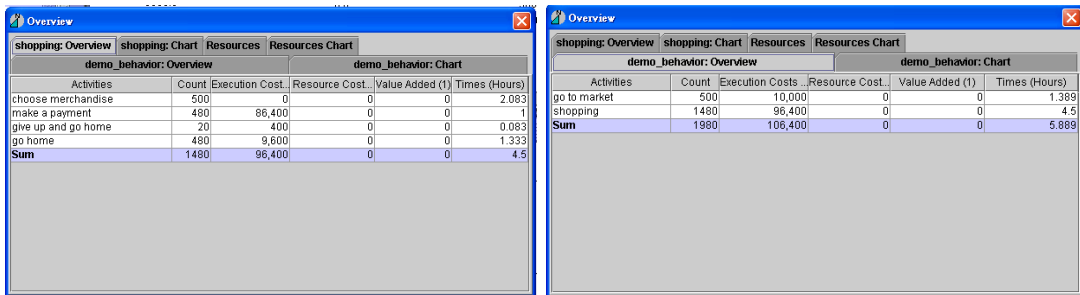
Figure3.Simulation Result of As-Is Model

Figure4.Simulation Result of To-Be Model

Table3.Feature comparison between supermarket and E-market

'	As-Is Model : Supermarket	To-Be Model : E-market
Market Location	not always on the way home	on the way home
Opening hours	9:00 - 22:00	24 hours
Ingredient Utility	sometimes leftovers	proper amount for family member
Extra Transportation Cost (average of per person per day)	40	20
Ingredients Price	$ 180	$ 250
Total Cost(per person per day)	$ 220	$ 270
Total Time(per day)	80 min	40 min 3s

Although buying same commodities in supermarkets is cheaper, customers can save almost half of the time if they shop in E-market. Also, when using E-market, customers can do shopping when they have spare minutes. They don't have to go to supermarkets especially and spend extra transportation time. Since convenience has become customers' first priority, E-market can really help them save amount of time.

Promotion Function

Those who are members will have chances to get reward points. One point can redeem for one dollar. Customers can redeem reward points for cash back when they shop on E-market next time. And these reward points can be cumulated.

1. Regular promotions
(1) Reward points for shopping

   After making a payment, customers will get reward points. One hundred dollar can redeem for one point.
(2) Reward points for registration

   For those who use E-market website for the first time, they will get 50 reward points as registration gifts.
(3) Reward points for birthday boy/girl

   For birthday boys/girls, they will get 50 reward points in their birthday as birthday presents.
2. Irregular promotions
(1) In some particular festivals, such as Thanksgiving, Christmas, Father's Day, Mother's Day, Moon Festival, customers can buy 5 instant foods and get one free.

Figure5.Promotion Activities

Web Design and Databases
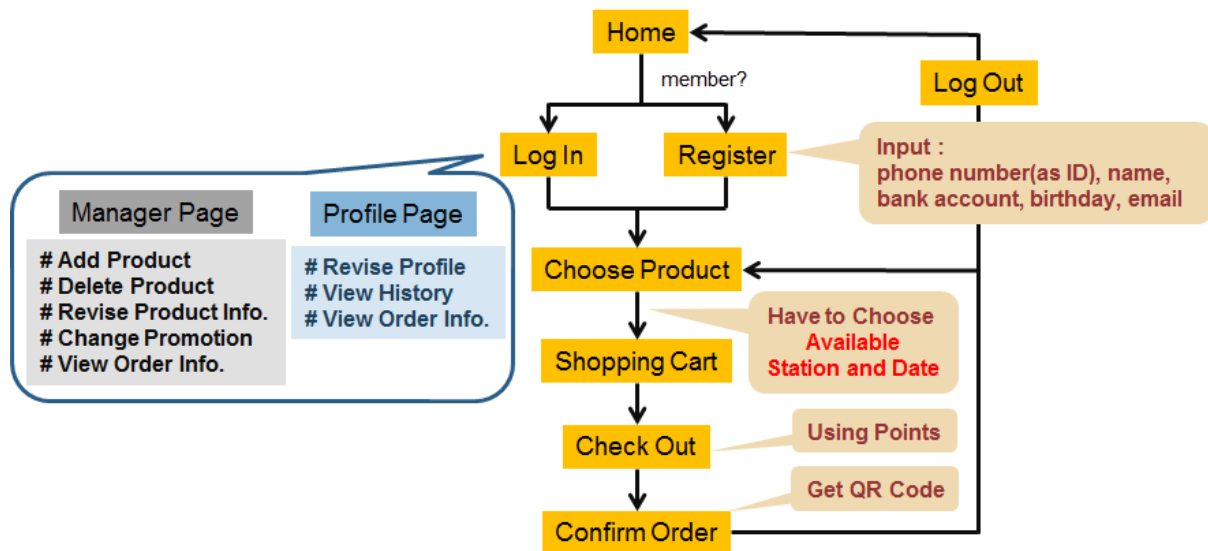
Figure6.SOP of Website

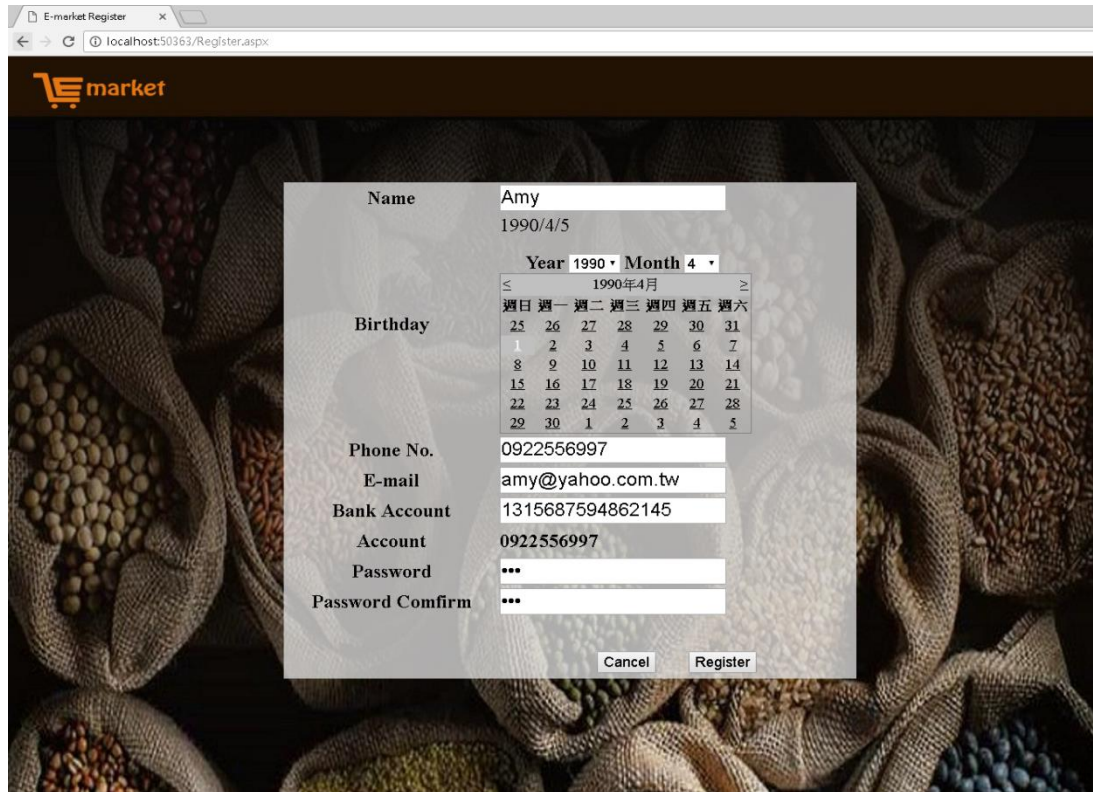There are 7 pages of the E-market website which are as follows:

(1) Home Page

Users can choose date, available stations and browse through product catalog. Customers have to register or log in before making a purchase.

(2) Register Page

This page is for users to register. After they type in personal information, including name, phone number, birthday, bank account and e-mail, that information will be saved to the database, and the registration is completed.
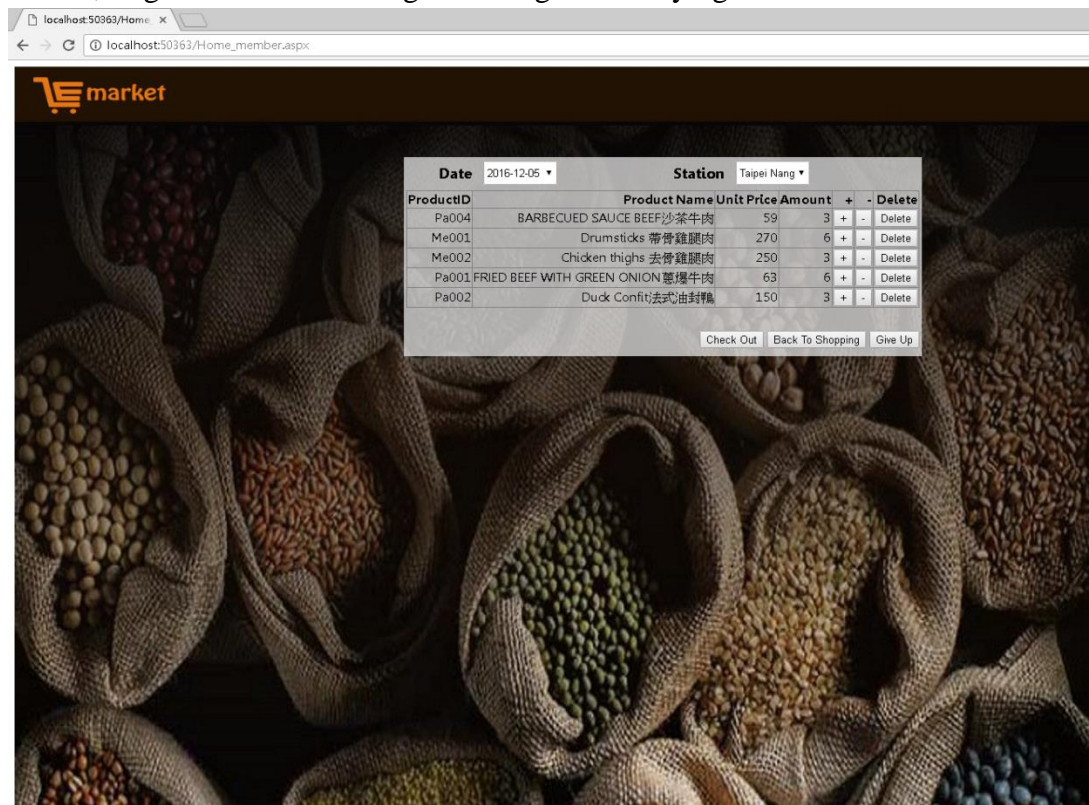

(3) Personal Profile Page

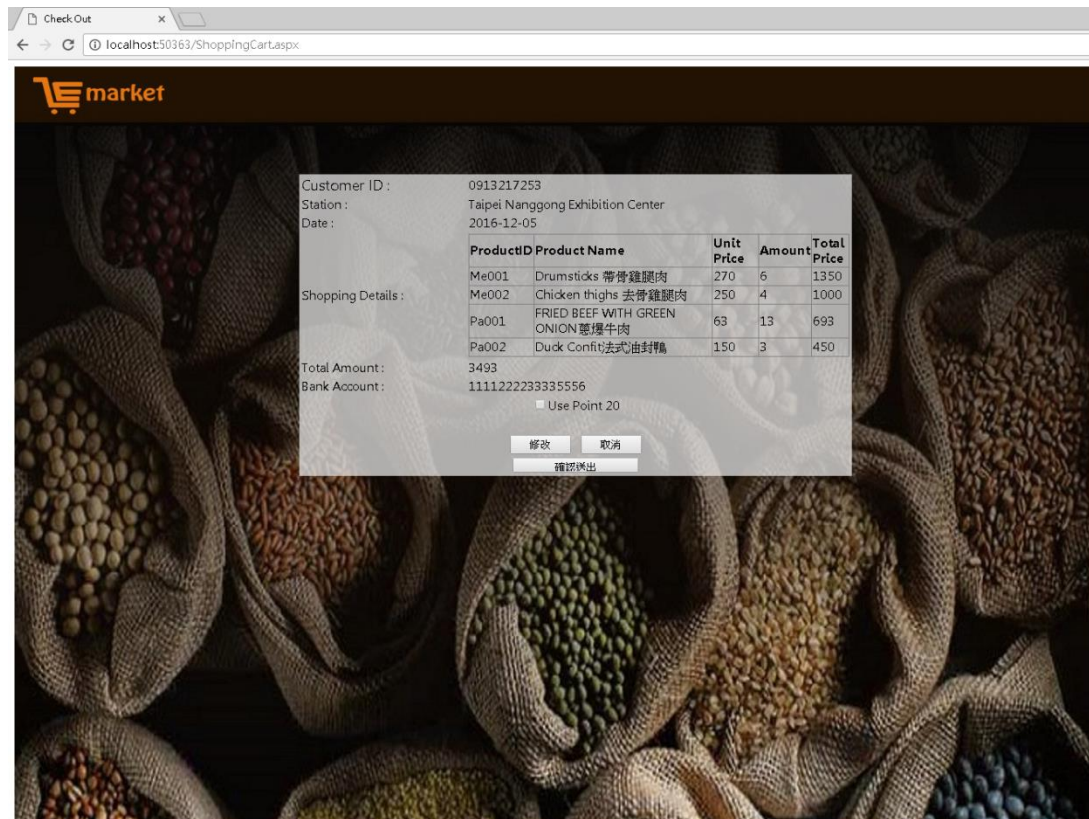Customers can revise their personal information here.
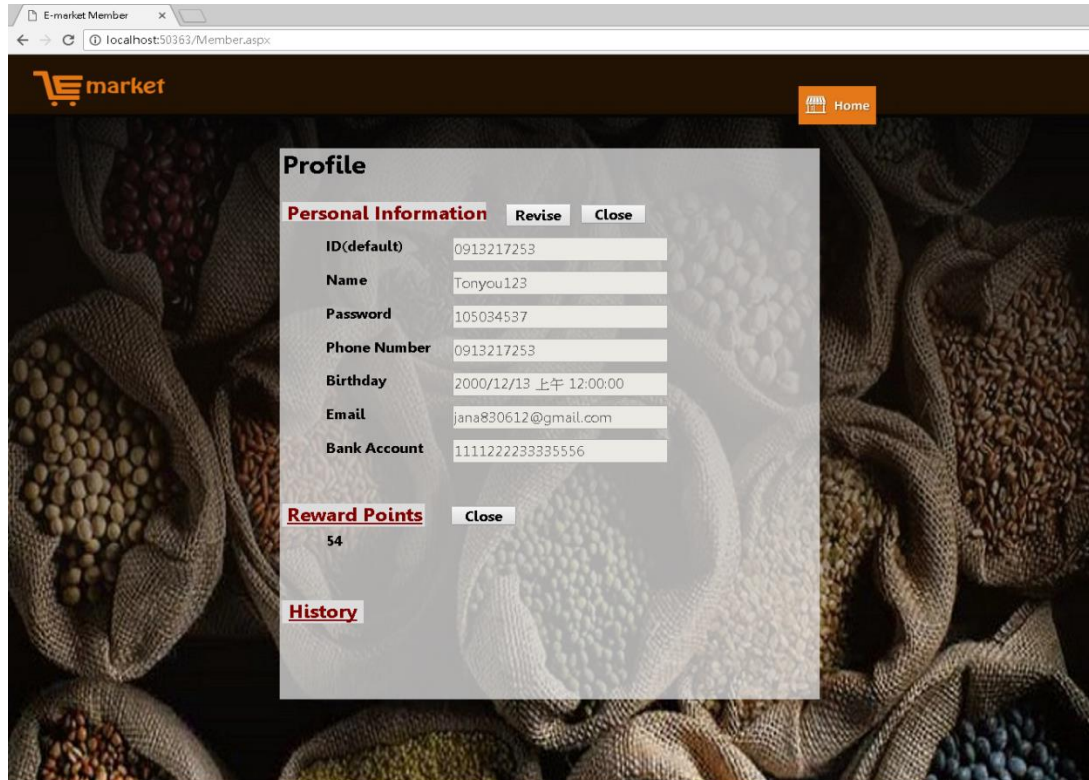
(4) Shopping Cart Page

This page will show what customers buy and they can still modify the amount, date and station, or go back to Home Page to change their buying.
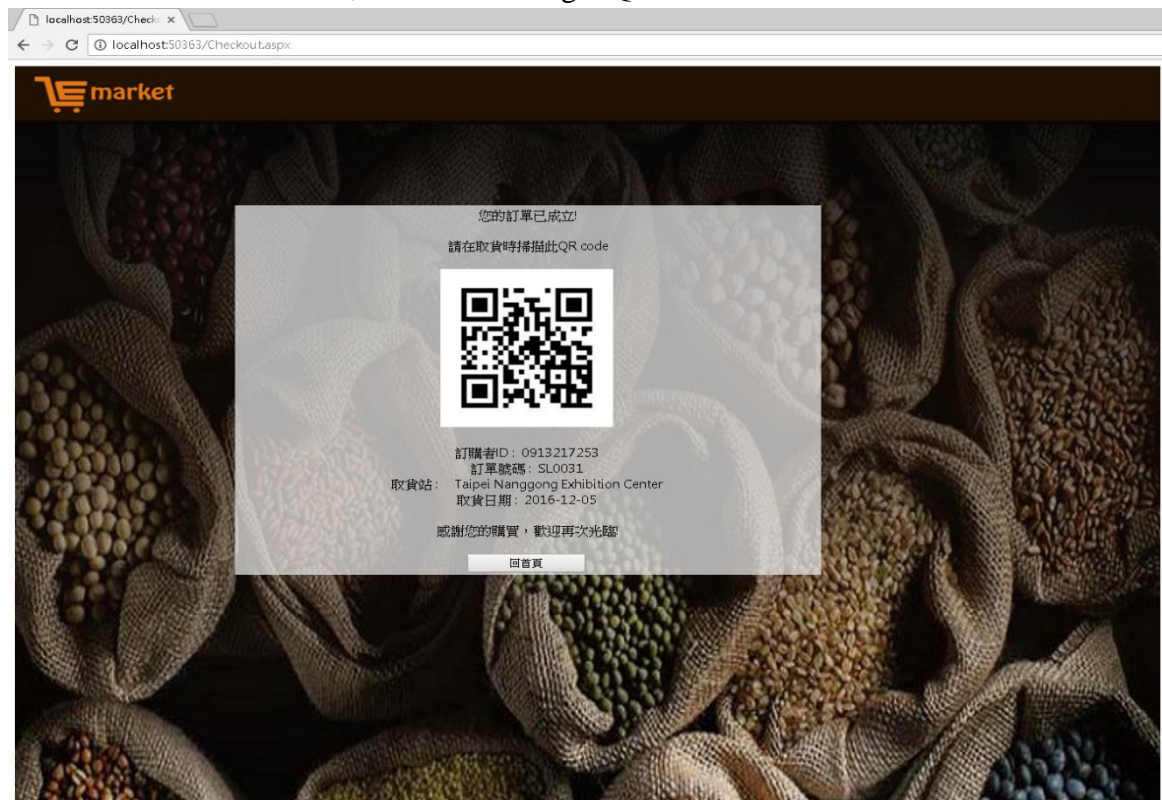

(5) Check Out Page

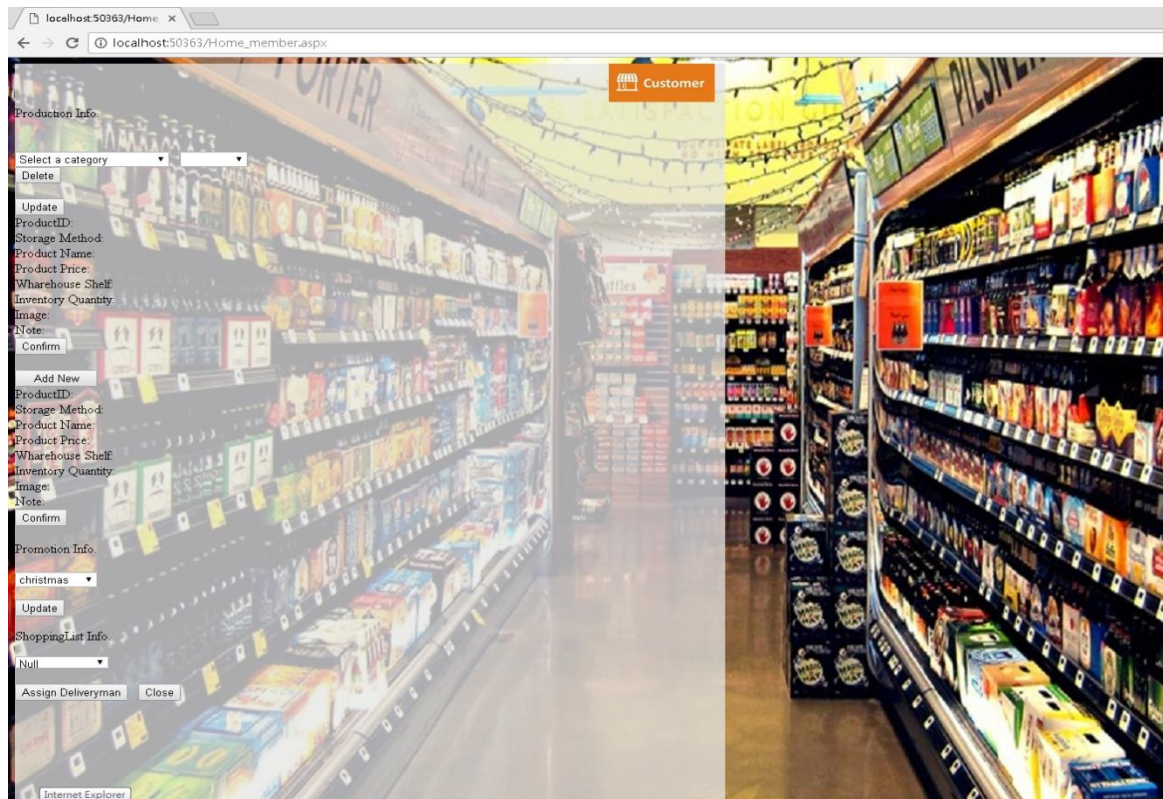Customers will be asked to confirm their orders in Check Out Page.

(6) Order-confirming Page

Once orders are confirmed, customers will get QR code.

(7) Website Manager Page

The website manager can check orders of that week, add or remove products, and change the promotion activity.

Conclusion

The popularization of the Internet caused a big revolution on how people lived. More and more people rely on technology products for interactions. Gradually, through contact with websites, physical stores have been replaced with online stores. People can make a living without egress and communication, in other words, they can get all the daily commodities on Internet.

We can say that e-market is just a beginning, in the near future; similar ideas will be put in use widely. Sooner or later, this kind of lifestyle will bring about a revolution.

Further Prospect

(1) Raise product diversity

(2) Multiple promotion activities

We plan to hold annual sales and offer other special discount, such as 10% of for > 1,000, irregular raffles, and so on.

(3) Combine E-market with Virtual Reality

Through combining E-market with VR, customers can enjoy not only convenience but the fun of shopping on E-market. They can grab fictitious products and put them into virtual shopping carts, just like going to supermarkets in person.