

# 数据库课程项目实践报告

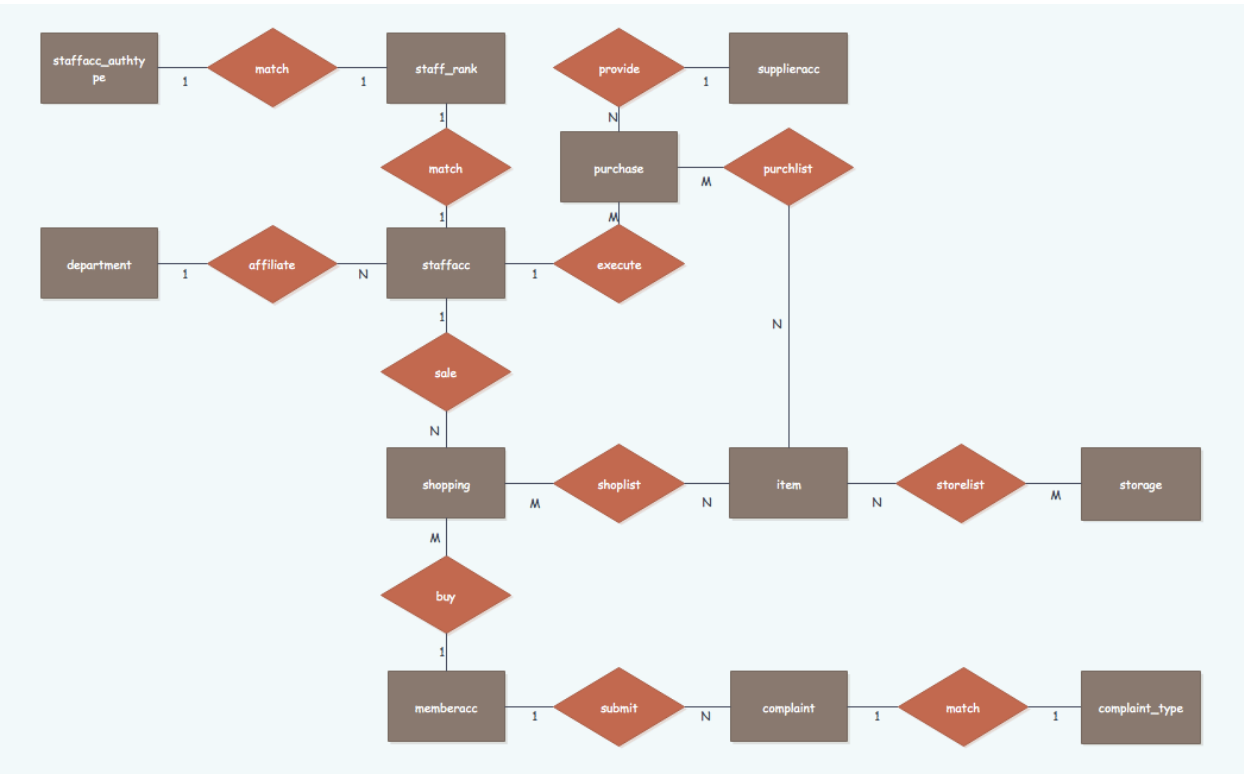
## 小组成员：

- 15307130096 张曾光
- 15307130224 余国榛
- 15307130021 王沛晟
- 15307130201 肖以恒

## 项目概述：

如今社会网购兴起，基于这一点，本小组设计了一个集超市员工管理，顾客消费及供货商订单管理为一体的超市管理系统。总体设计基于实体超市的运作流程，包括：采购，销售，售后，人事管理等等。希望通过应用本系统，可以达到提高超市总体运作效率的目标。

## ER图设计：



## 关系模式：

### 投诉(complaint)

(投诉编号(**comp\_id**), 会员编号(mem\_id), 投诉类号(comp\_type), 投诉内容(comp\_content), 投诉时间(comp\_time))

## 投诉类别(complaint\_type)

(投诉类号(comp\_type), 投诉类名(discomp\_typename))

## 部门(department)

(部门编号(dept\_id), 部门名(dept\_name))

## 商品(item)

(商品编号(item\_id), 商品名(item\_name), 商品规格(item\_spec), 商品描述(item\_cate), 品牌名(item\_brand), 销售价格(item\_price), 生产日期(item\_manudate), 保质截止日期(item\_expidate), 备注(item\_note))

## 会员账户(memberacc)

(会员编号(mem\_id), 用户名(mem\_name), 密码(mem\_psw), 手机(mem\_phone), 邮箱(mem\_mail), 注册时间(mem\_regtime), 会员积分(mem\_point), 备注(mem\_note))

## 采购(purchase)

(采购单号(purchase\_id), 供货商编号(supp\_id), 负责人编号(staff\_id), 采购时间(purchase\_time), 备注(purchase\_note))

## 采购清单(purchlist)

(商品编号(item\_id), 采购单号(purchase\_id), 商品采购价(purchase\_price), 商品数量(purchase\_quant))

## 购物清单(shoplist)

(商品编号(item\_id), 购物单号(shop\_id), 商品销售价(item\_price), 商品数量(item\_quant))

## 购物(shopping)

(购物单号(shop\_id), 会员编号(mem\_id), 负责人编号(staff\_id), 购物时间(shop\_time), 备注(shop\_note))

## 职工账户权限(staff\_rank)

(职工编号(staff\_id), 职工账户权限类号(staff\_type))

## 职工账户(staffacc)

(职工编号(staff\_id), 部门编号(dept\_id), 用户名(staff\_name), 密码(staff\_psw), 身份证号(staff\_idcard), 手机(staff\_phone), 住址(staff\_addr), 入职日期(staff\_regtime), 工资(staff\_salary), 备注(staff\_note))

## 权限类型(staffacc\_authtype)

(职工账户权限类号(staff\_type), 职工账户权限类名(staff\_typename))

## 仓库(storage)

(仓库编号(stor\_id), 仓库描述(stor\_desc), 负责人工号(staff\_id))

## 存储清单(storelist)

(商品编号(item\_id), 仓库编号(stor\_id), 存储数量(number))

## 供货商账户(supplieracc)

(供货商编号(supp\_id), 用户名(supp\_name), 密码(supp\_psw), 注册时间(supp\_regtime), 联系人(supp\_contact), 手机(supp\_phone), 邮箱(supp\_mail), 地址(supp\_addr), 备注(supp\_note))

# 开发流程

---

本次开发的流程大概分为以下几个步骤：

## 编程语言和开发模式：

- 1.使用python的flask框架，前端的工作辅以bootstrap
- 2.采用MVC模式，后端数据库对应Module，前端界面对应view，前后端交接对应Control，从而将任务分工

## 后端部分：

- 1.根据分析出的ER模型得到关系模式，从而得到数据库的表
- 2.根据数据库table编写样例数据，便于测试
- 3.根据前端第三部分的用户需求，编写相应的底层函数，操作数据库，和向前端返回数据

## 前端部分：

- 1.根据ER图与对超市实际状况的分析，确定我们需要的三个视图：分别是**顾客，供应商，管理员**
- 2.对三者进行权限分析，得出各自所需要实现的功能和对应的数据库视图模式和UI模式
- 3.将数据库视图模式的需求返回给后端，让后端编写相应的函数（这里需要指出具体的函数接口，函数名称，返回值类型），用来操作数据库
- 4.用html实现UI模式，并设置相应跳转接口
- 5.设计登陆注册，使跳转到不同人对应的视图

## 前后端交接：

运行程序，测试后端的功能是否都可以正确地实现，遇到冲突时解决相应的问题。

具体的流程如下：

根据前端html中使用超链接和提交表单等方式，用get和post方法去触发主函数当中的router，从而在router函数中调用后端数据库提供的函数，在执行完毕后用redirect重新跳转路由或者render\_template渲染新的html界面。

如果出现问题，使用单步调试的方法排除bug

测试：


从用户体验的角度，去分析排除可能出现的系统漏洞，比如禁止用户提交空的表单等等。

界面展示

主页面：



顾客页面：



Info

History

Edit\_Info

Complain

Logout

### Items List

Love to see you back.

Search Name


Search

10 records per page

Search:

ID	Name	Specification	Category	Brand	Price	ManuDate	ExpireDate	Note	Purchase	Number
1	Toothbrush 1022	Generic edition	Daily	Brandi	10.0	2017-03-20	2019-03-20		<input type="checkbox"/>	<div>1</div>
2	Toothbrush 1034	Advanced edition	Daily	Brandi	13.0	2017-03-30	2019-03-30		<input type="checkbox"/>	<div>1</div>
3	Toothbrush 1200	Expert edition	Daily	Brandi	15.0	2017-05-01	2019-05-01		<input type="checkbox"/>	<div>1</div>
4	Toothpaste (Mint)	Mint flavored toothpaste	Daily	Brandi	34.0	2017-05-03	2019-05-03		<input type="checkbox"/>	<div>1</div>
5	Toothpaste (Strawberry)	Strawberry flavored toothpaste	Daily	Brandi	34.0	2017-05-04	2019-05-04		<input type="checkbox"/>	<div>1</div>
6	Toothpaste (Blueberry)	Blueberry flavored toothpaste	Daily	Brandi	34.0	2017-05-01	2019-05-01	None	<input type="checkbox"/>	<div>1</div>
7	Tomato	Approximately 150g	Vegetables	Cody	4.0	2017-05-06	2017-05-08	None	<input type="checkbox"/>	<div>1</div>
8	Potato	Approximately 200g	Vegetables	Cody	5.3	2017-05-06	2017-05-08	None	<input type="checkbox"/>	<div>1</div>

顾客购买历史：



Info  
History  
Edit\_Info  
Complain  
Logout

So Honored Contributed for Fudan!


Purchase History

10 records per page

Search:

Item_ID	Shop_ID	Price	Number
Toothbrush 1022	1	10.0	1
Toothbrush 1034	4	13.0	2
Toothbrush 1200	15	15.0	3
Toothpaste (Blueberry)	15	34.0	3
Tomato	1	4.0	1
"Alexa Bliss" Figure	1	130.0	15
"Alexa Bliss" Figure	2	130.0	1
"Alexa Bliss" Figure	3	130.0	1
"Alexa Bliss" Figure	4	130.0	1

顾客投诉



Info  
History  
Edit\_Info  
Complain  
Logout


Submit Your Complain

Category

Bad Service  
Poor taste  
Poor Quality  
Outdated Product  
Fake  
Ohter

Submit

Last access : 30 April 2017



Info  
History  
Edit\_Info  
Complain  
Logout

Be Careful When Editing!

Edit Your Personal Information

Reset Password


Change Phone Number

Change Email-Address

Change Notes

Submit

Last access : 30 April 2017




Info  
History  
Edit\_Info  
Complain  
Logout

Personal Information

BasicCreditNotes

Items	Info
User_ID	1
User_Name	sgz
User_PassWord	She68105028
User_Phone	13923904120
User_Email	rufusmc@gmail.com
Register_Time	2017-04-20 05:40:39



HR Info

Sale History

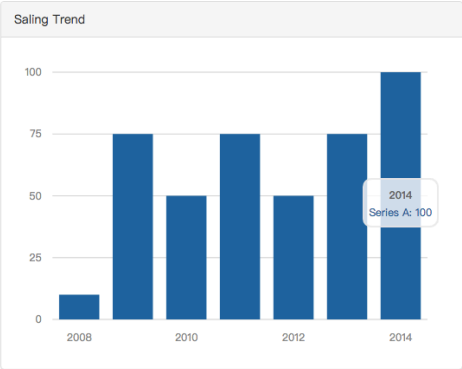
Manage Employee

Return MainPage

Logout

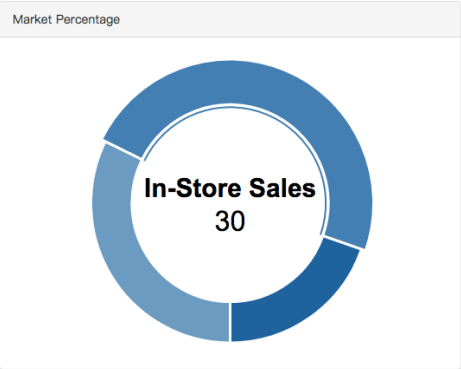
TO BE GREATER!

Salling Trend



Year	Selling Trend
2008	10
2009	75
2010	50
2011	75
2012	50
2013	75
2014	100

Market Percentage



Category	Percentage
In-Store Sales	30

Add New Employee

Employee Name

Department

Employee Password

Employee Idcard

Employee Phone

Employee Address

Employee Position

Employee Note

Employee Salary

[HR Info](#)[Sale History](#)[Manage Employee](#)[Return MainPage](#)[Logout](#)

## Fire Employee

Advanced Tables

Employee_ID	Employee_Name	Phone	Salary	Fire Employee
1	hazelnut	13190248239	5000	<input type="checkbox"/>
2	Darren Young	13655752828	3000	<input type="checkbox"/>
3	Dylan Miley	13890358123	3110	<input type="checkbox"/>
4	Tyrion Lannister	18943284923	3000	<input type="checkbox"/>
5	Rudolf Schenker	15932492383	3000	<input type="checkbox"/>
6	Kristle Wilson	18939483333	3000	<input type="checkbox"/>
7	Zedong Mao	17123941803	3500	<input type="checkbox"/>
8	Randall Johnson	14913840135	4000	<input type="checkbox"/>
11	Collin Cassidy	13942839518	4000	<input type="checkbox"/>
12	Jessie McKay	18712738433	4000	<input type="checkbox"/>
13	Chris Masters	14394389434	3000	<input type="checkbox"/>
14	Fernando Rodriguez	17923493833	3000	<input type="checkbox"/>
16	asfas	123412	1200	<input type="checkbox"/>
17	fasf	3456	330	<input type="checkbox"/>
18	a	2222	200	<input type="checkbox"/>

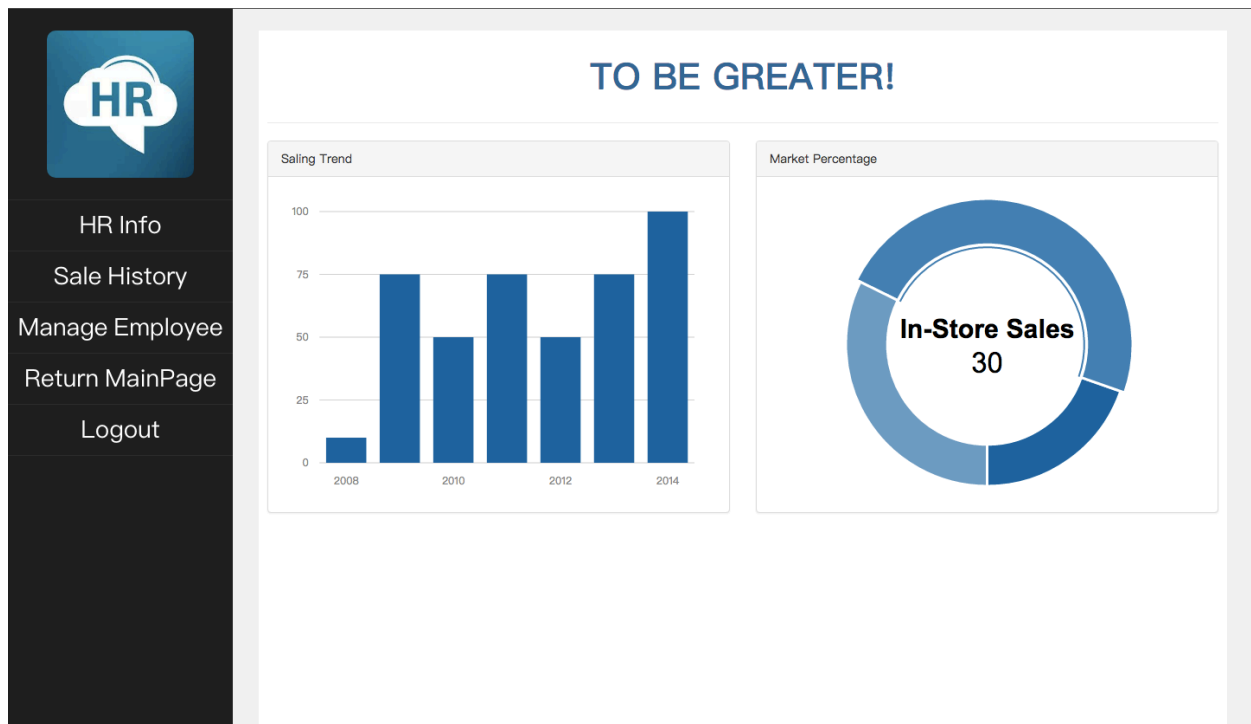
[HR Info](#)[Sale History](#)[Manage Employee](#)[Return MainPage](#)[Logout](#)

## A Brand New Day!

Advanced Tables

Item_ID	Show_ID	Price	Number
1	1	10.0	1
1	12	10.0	3
2	4	13.0	2
2	13	13.0	3
3	12	15.0	3
3	15	15.0	3
6	15	34.0	3
7	1	4.0	1
7	13	4.0	3
9	1	130.0	15
9	2	130.0	1
9	3	130.0	1
9	4	130.0	1






采购部门

Staff No.3

Logout

2017年5月8日18时0分22秒



- Information
- Purchase History
- Supplier List
- Add purchase list

## Add New Purchase List

Welcome Staff, Love to see you back.

Item ID

Purchase ID

Purchase Price

Purchase quantity


Submit

Reset

Staff No.3

Logout

2017年5月8日18时0分11秒



Information

Purchase History

Supplier List

Add purchase list

### Information of suppliers

Supplier Info Tables

10 records per page


Search:

Supplier ID	Supplier Name	Supplier Regtime	Supplier Contact	Supplier Phone	Supplier Mail	Supplier Address	Supplier Note	Delete Supplier
1	Tom	2015-01-03 00:00:00	Judie Grimes	18093583385	jwelfare@outlook.com	Holstenwall 69		<input type="checkbox"/>
2	Morgan Inc.	2017-05-06 09:39:02	Gwyn Morgan	13866667777	gwynmorgan@gmail.com	Waldowstr. 46		<input type="checkbox"/>
3	Doofus	2017-04-01 21:23:09	Doofus DeGoofy	13841093804	doofusdegoofy@outlook.com	Lietzenburger Strasse 74	We hate him	<input type="checkbox"/>
5	lalalapotter	2017-05-08 14:22:44	guangguang	13813713911	guangguang@lalala.com	Zhangjiang Town 1-1008	lalalalalala	<input type="checkbox"/>
6	Li Si	2017-05-08 14:24:47	Li Si	13866667779	lalala@lala.com	HuaTuo Road No.123 1-206	lalaa	<input type="checkbox"/>
7	Wang Wu	2017-05-08 14:26:39	Wang Wu	15712343456	ww@lalala.com	Mitch Street No.12	he is the best supplier!	<input type="checkbox"/>
8	Bang Xiao Liu	2017-05-08 14:27:47	bangbang	13927492749	hasku@fudan.edu.cn	Sixth Street No.6-606		<input type="checkbox"/>
9	Zheng Xiao	2017-05-08 14:28:45	xiaozheng	13738294729	akjs@qq.com	the Main Street No.1		<input type="checkbox"/>

Staff No.3

Logout

2017年5月8日17时59分50秒



Information

Purchase History

Supplier List

Add purchase list

### Information of staff purchase history

History Info Tables

10 records per page

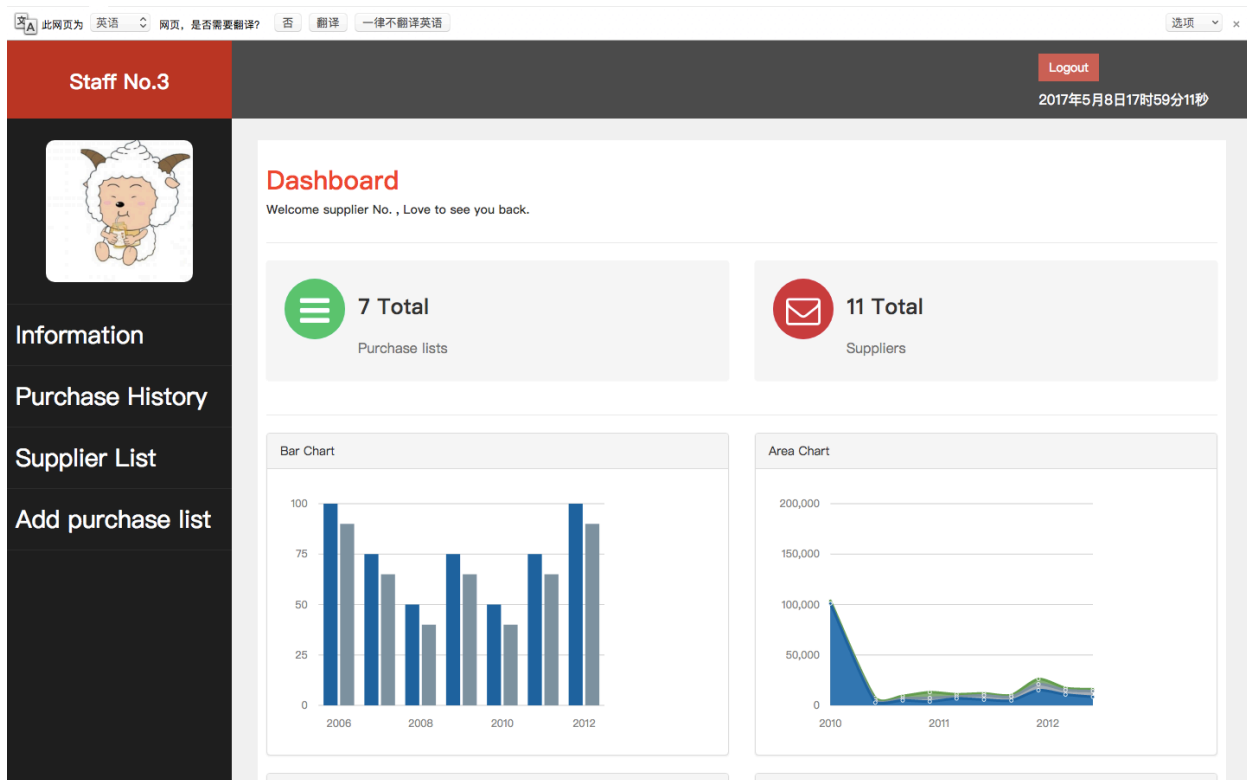
Search:

Purchase ID	Supplier ID	Staff ID	Purchase Time	Purchase Note	Item	Quantity	Item-Price	Total-Price
2	2	3	2017-05-01 23:59:55	None	Toothbrush 1034	30	10.0	300.0
2	2	3	2017-05-01 23:59:55	None	Toothpaste (Mint)	10	100.0	1000.0
2	2	3	2017-05-01 23:59:55	None	Toothpaste (Strawberry)	20	10.0	200.0
2	2	3	2017-05-01 23:59:55	None	Tomato	130	1.0	130.0
2	2	3	2017-05-01 23:59:55	None	Potato	150	1.0	150.0
2	2	3	2017-05-01 23:59:55	None	Yingrenzhixue	6	100.0	600.0
2	2	3	2017-05-01 23:59:55	None	Boxuezheshinu	3	150.0	450.0

Showing 1 to 7 of 7 entries

Previous1Next

屏幕快照 2017-05-08 下午5.59.14[/Users/sgz/Desktop/屏幕快照 2017-05-08 下午5.59.14.png]



Staff No.2 Logout 2017年5月8日17时57分43秒

### Basic Information

Welcome Staff, Love to see you back.

Staff ID

2

Department ID

2

Staff Username

Darren Young

Staff Salary

3000

Password

\*\*\*\*\*

Telephone

13655752828

Address

Kieler Strasse 40

Other Things

屏幕快照 2017-05-08 下午5.57.27[/Users/sgz/Desktop/屏幕快照 2017-05-08 下午5.57.27.png)

供应商



Information

Orders

After-sale service

## Information of complains

Complains Info Tables

10 records per page

Search:

Complain ID	Customer ID	Complain Type	Complain Content	Complain Time	Handle it
1	1	1	So your lackey didn't even bother to look me in the eye while counting my money. How polite. I would like an explanation.	2017-05-01 00:00:00	<input type="checkbox"/>
2	3	3	I fucking puked when I unknowingly put your pork into my mouth. If you're gonna take the easy way out at least do it the man's way. I almost ended up in the hospital and if that turns out to be the case, you bet your ass I'm gonna make your life miserable.	2017-05-02 17:07:36	<input type="checkbox"/>
3	2	2	After working a whole day to provide for my family, I spent my hard-earned money for a box of cookies with no tastes whatsoever? Screw you and your bogus system. Bunch of useless hacks.	2017-05-03 17:14:16	<input type="checkbox"/>
4	5	5	Thought you'd get away with that smart ass? My 50-year-old eyes spot fake shits like a vulture spotting its prey.	2017-05-04 17:27:07	<input type="checkbox"/>
5	8	6	Fire cashier ##5. I've got more class in a fingernail of mine than he has in his entire body. Plus he literally looks and smells like he hasn't showered for a decade.	2017-05-05 17:27:28	<input type="checkbox"/>



Information

Orders

After-sale service

## Information of orders

Orders Info Tables

10 records per page

Search:

Order ID	Item	Quantity	Item-Price	Total-Price
No data available in table				

Showing 0 to 0 of 0 entries


Previous

Next

Supplier No.6

Logout

2017年5月8日18时2分34秒



Information

Orders

After-sale service

### Basic Information

Welcome Supplier, Love to see you back.

Supplier ID

6

Supplier Username

Li Si

Supplier Join Time

2017-05-08 14:24:47

Password

\*\*\*

People In Charge

Li Si

Telephone

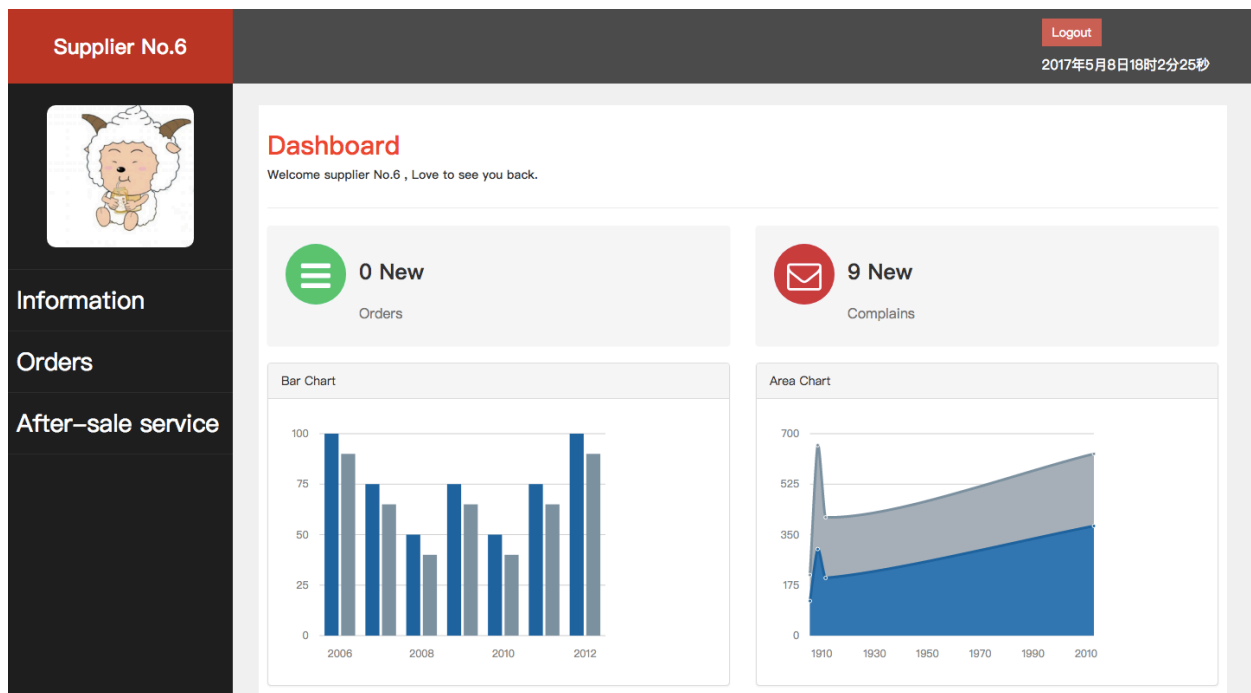
1386667779

Email

lalala@lala.com

Company Address


HuaTuo Road No.123 1-206



Staff No.3

Logout

2017年5月8日18时0分22秒



Information

Purchase History

Supplier List

Add purchase list

Add New Purchase List

Welcome Staff, Love to see you back.

Item ID

Purchase ID

Purchase Price

Purchase quantity

Submit

Reset

## 分工合作

ER图设计（15%）： 肖以恒（70%） 余国榛（10%） 张曾光（10%） 王沛晟（10%）

前端设计（35%）： 余国榛（50%） 张曾光（50%）

后端设计（25%）： 王沛晟（95%） 张曾光（5%）

数据编撰（10%）： 肖以恒（60%） 余国榛（10%） 张曾光（20%） 王沛晟（10%）

架构设计及测试（15%）： 王沛晟（10%） 余国榛（50%） 张曾光（40%）

## 最终结果：

肖以恒（16.5%） 王沛晟（27.75%） 余国榛（27.5%） 张曾光（28.25%）