

Reference

Outline

- Development
 - Development Environment and Development Tools
 - Platform
- User Requirement Analysis
- Design Ideas
 - Interface Design
 - Validation and Data Security
- Entity-Relationship Diagram
- Database Data Dictionary
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- Explanation of SMS
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Development

- **Development environment and development tools**
 - Operation System: Windows 10
 - Testing Environment: Cslinux
 - Development Environment: MySQL, Web
 - Development Tools: Workbench, XAMPP, Google Chrome
- **Languages**
 1. **Front-End**
 - HTML5
 - CSS
 - JavaScript
 2. **Back-End**
 - PHP
 - MySQL
- **Others**
 - ERD- Visual Paradigm
 - Flow Chart- Visio 2016
 - Mind Map- XMind

User Requirement Analysis

- Visitors without sign in can sign up, view products information and add products to their shopping cart, but they can not order any products.

- Customers can order different kinds and different amounts of products, and they can cancel their orders, view their history orders.
- Sales representatives(reps) can view his customers orders and modify the orders record, cancel the orders or accept the orders.
- Managers can add a new sales rep, grant, re-granted, or update the quota to every sales reps, and they can assign sales reps to a new country. Moreover, managers can view and operate the ordering activities (view all orderings data, status, customers information, sales reps information).

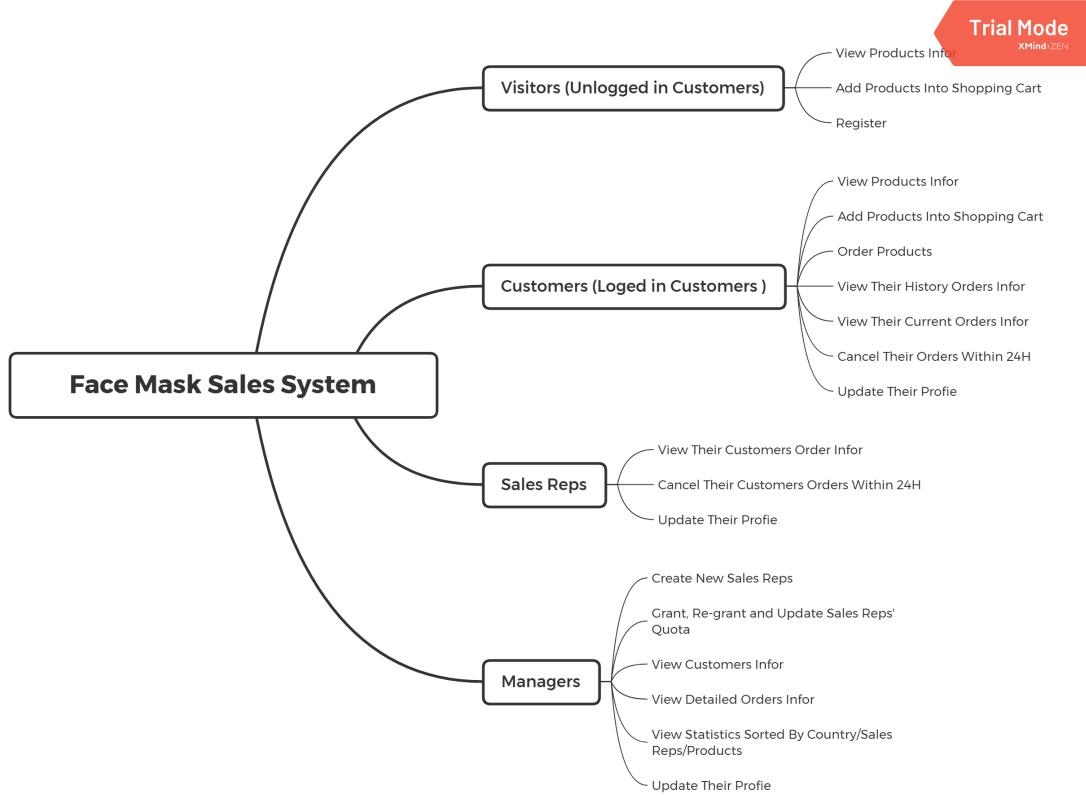


Figure1: Mind Map of The SMS Permission

Design Ideas

Interface Design

Color Scheme: Green (RGB 687864 and 98b879) and Blue (RGB 24305e), Creamy White (RGB eae7dc). These colors are related to natural, ecological and make customer feel safe and buy our products.

Logo: I designed Woolin Auto's Logo by Apps SketchBook and PhotoShop, the background of the logo shapes like a mask. And I modified three products image by PhotoShop adding the logo in the center. The icon of websites are changed to the logo.

Validation and Data Security

1. Use complex password contains at least 8 characters and at most 20 characters with at least one capital letter, at least one lower case letter and at least one number or special character to reduce the possibility of password compromised. MD5 code is used to protect the password transferred to database. And password will never be transferred to font-end.
2. Each page sets a user login verification, unlogged in customers have no permission to use customers page, they only have visitors permission. Managers and sales reps page only

allows logged in managers and sales reps to use. This protect the safety of data and privacy of users.

3. The front-end performs data validation. Each form sets a validation for users' input. Prevents long messages from being passed into the database, and protect the data uniqueness.

Entity-Relationship Diagram (ERD)

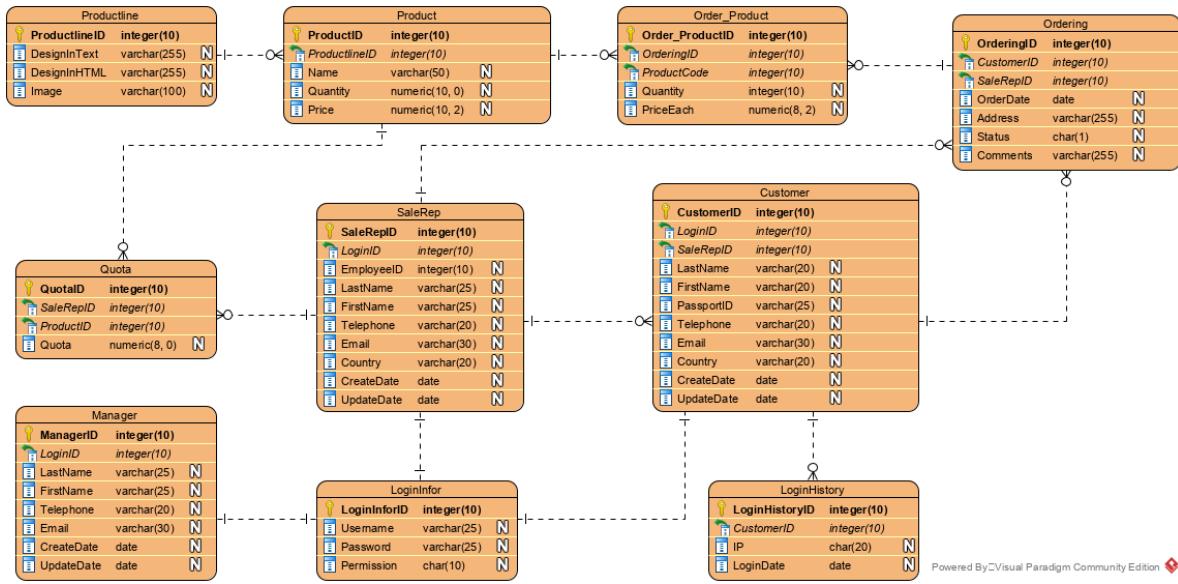


Figure2: ERD

Ten entities: Manager, SaleRep, Customer, LoginInfor, LoginHistory, Quota, Ordering, Order_Product, Product and Productline.

Product and Sale Rep is many-to-many relationship, so associative entity Quota creates and separates the relationship to one-to-many relationship.

Because manager, customer and sales rep have one-to-one relationship with logininfor, so for table design, I combined them into one table called LoginInfor and built a new table called RolePermission, which stores the users' role, then added a foreign key called RolePermissionID to the LoginInfor table.

Database Data Dictionary

TABLE1: RolePermission

Attribute	Type	isNull	Auto-Increase	Description
*RolePermissionID	CHAR(1)	No	No	Primary Key. Use only one char to reduce data redundancy. 0 stands for customers, 1 represents sale reps, 2 means manager.
RoleName	VARCHAR(10)	No	No	Store the name of each role in the SMS, distinguish different users, customer, sale reps and manager.
Permission	CHAR(10)	No	No	Whether users have certain permission. 0 for not, 1 for have. The first char represents the permission of ordering product, second char means the permission of manage customers' orderings, third char means permission of viewing customers infor, forth char represents view users' orderings, fifth char means grant quota to sales rep.

TABLE2: LoginInfor

Attribute	Type	isNull	Auto-Increase	Description
*LoginInforID	INTEGER	No	Yes	Primary Key. Identifier for each users.
RolePermissionID	CHAR(1)	No	No	Foreign key. From RolePermission table.
Username	VARCHAR(20)	No	No	UNIQUE. Username for users to login
Password	VARCHAR(50)	No	No	Password for users to login
LastName	VARCHAR(20)	No	No	User's last name
FirstName	VARCHAR(20)	No	No	User's first name
EmployeeID	VARCHAR(25)	Yes	No	UNIQUE. Employee ID for sales reps
PassportID	VARCHAR(25)	Yes	No	UNIQUE. Passport ID for customers
Telephone	VARCHAR(20)	No	No	User's telephone number
Email	VARCHAR(30)	No	No	UNIQUE. User's email address
Country	VARCHAR(50)	Yes	No	User's country, for customers it's their located country, for sales reps, it's the country that manager assign to.
CreateDate	DATETIME	No	No	Datetime that users create the account.
UpdateDate	DATETIME	Yes	No	Datetime that users update the account.

TABLE3: LoginHistory

Attribute	Type	isNull	Auto-Increase	Description
*LoginHistoryID	INTEGER	No	Yes	Primary Key. Identifier for each login history record.
LoginInforID	INTEGER	No	No	Foreign key. From LoginInfor table.
IP	CHAR(20)	No	No	IP address at which the customer logs in
LoginDate	DATETIME	No	No	Datetime that customers log in the account

TABLE3: Ordering

Attribute	Type	isNull	Auto-Increase	Description
*OrderingID	INTEGER	No	Yes	Primary key. Identifier for the ordering
CustomerLoginInforID	INTEGER	No	No	Foreign key. From LoginInfor table
SaleRepLoginInforID	INTEGER	No	No	Foreign key. From LoginInfor table
OrderDate	DATETIME	No	No	Datetime that customers order products.
Address	VARCHAR(255)	No	No	Address for shipping
Status	CHAR(1)	No	No	Orders status. 0 for canceled, 1 for success, 2 for pending, 3 for anomaly.
Exceeded	CHAR(1)	No	No	Whether any quantity of the product is exceed the sale reps quota, 0 for not, 1 for exceed.
Comments	VARCHAR(255)	Yes	No	Additional information about the order from the user

TABLE3: Productline

Attribute	Type	isNull	Auto-Increase	Description
*ProductlineID	INTEGER	No	Yes	Primary key, identifier for the product
DesignInText	VARCHAR(255)	Yes	No	Text of the product in html design
DesignInHTML	VARCHAR(255)	Yes	No	Statement of html for the product
Image	VARCHAR(100)	Yes	No	Image of the product

TABLE4: Product

Attribute	Type	isNull	Auto-Increase	Description
*ProductID	INTEGER	No	Yes	Primary key. Identifier for the product
ProductlineID	INTEGER	No	No	Foreign key. From Productline table
Name	VARCHAR(50)	No	No	Name of the product
Quantity	NUMERIC(9, 0)	No	No	Total stock of the product
Price	NUMERIC(9, 0)	No	No	Tag price of the product

TABLE5: Order_Product

Attribute	Type	isNull	Auto-Increase	Description
*Order_ProductID	INTEGER	No	Yes	Primary key, Identifier for the order product
OrderingID	INTEGER	No	No	Foreign key. From from Ordering table
ProductID	INTEGER	No	No	Foreign key. From from Product table, distinguish between products
Quantity	INTEGER	No	No	Number of product customers ordered
PriceEach	NUMERIC(8, 0)	No	No	Buying price for each product

TABLE6: Quota

Attribute	Type	isNull	Auto-Increase	Description
*QuotaID	INTEGER	No	Yes	Primary key. Identifier for the quota
LoginInforID	INTEGER	No	No	Foreign key. From LoginInfor table.
ProductID	INTEGER	No	No	Foreign key. From from Product table, distinguish between products
Quota	NUMERIC(8, 0)	No	No	Quota assigned by managers to sales reps

SQL Statements

```
DROP DATABASE if exists `scygd1`;
CREATE DATABASE `scygd1`;
USE `scygd1`;

/*Set Asia/Shanghai's time zone.*/
SET time_zone = "+08:00";

/*Create Table Store Role Permission*/
DROP TABLE IF EXISTS `RolePermission`;

CREATE TABLE `RolePermission` (
    `RolePermissionID` CHAR(1) NOT NULL,
    `RoleName` VARCHAR(10) NOT NULL,
    `Permission` CHAR(10) NOT NULL,
    PRIMARY KEY (`RolePermissionID`)
)ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `RolePermission` (`RolePermissionID`, `RoleName`, `Permission`)
VALUES ('0', 'Customer', '00001');

INSERT INTO `RolePermission` (`RolePermissionID`, `RoleName`, `Permission`)
VALUES ('1', 'Sale Reps', '00110');

INSERT INTO `RolePermission` (`RolePermissionID`, `RoleName`, `Permission`)
VALUES ('2', 'Manager', '11110');

/*Create Table Store All User's LoginInfor*/
DROP TABLE IF EXISTS `LoginInfor`;

CREATE TABLE `LoginInfor` (
    `LoginInforID` INTEGER auto_increment,
    `Username` VARCHAR(20) NOT NULL,
    `Password` VARCHAR(50) NOT NULL,
    `LastName` VARCHAR(20) NOT NULL,
    `FirstName` VARCHAR(20) NOT NULL,
    `EmployeeID` VARCHAR(25),
    `PassportID` VARCHAR(25),
    `Telephone` VARCHAR(20) NOT NULL,
    `Email` VARCHAR(30) NOT NULL,
    `Country` VARCHAR(50),
    `RolePermissionID` CHAR(1) NOT NULL,
    `CreateDate` DATETIME NOT NULL,
    `UpdateDate` DATETIME,
    PRIMARY KEY (`LoginInforID`),
    UNIQUE(`Username`),
    UNIQUE(`Email`),
    UNIQUE(`EmployeeID`),
    UNIQUE(`PassportID`),
    CONSTRAINT FOREIGN KEY (`RolePermissionID`)
    REFERENCES `scygd1`.`RolePermission` (`RolePermissionID`)
)ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

```

INSERT INTO LoginInfor (Username, `Password`, LastName, FirstName, Telephone,
Email, RolePermissionID, CreateDate)
VALUES ('Staff-20200001', MD5('1@234Dbi75'), 'Hunter', 'Monica',
'17857631233', 'smymh1@woolinauto.com', '2', '2020-05-16 16:50:00');

INSERT INTO LoginInfor (Username, `Password`, LastName, FirstName, Telephone,
Email, RolePermissionID, CreateDate)
VALUES ('Staff-20200002', MD5('A32%90i275'), 'Green', 'Rachel',
'17857631234', 'smyrb1@woolinauto.com', '2', '2020-05-18 12:04:00');

INSERT INTO LoginInfor (Username, `Password`, LastName, FirstName, Telephone,
Email, RolePermissionID, CreateDate)
VALUES ('Staff-20200003', MD5('D1590*we32'), 'Cooper', 'Zoey',
'17857631235', 'smyzc1@woolinauto.com', '2', '2020-05-18 12:12:00');

/*Create Table, Store All user's LoginInfor History*/
DROP TABLE IF EXISTS `LoginHistory`;

CREATE TABLE `LoginHistory` (
`LoginHistoryID` INTEGER auto_increment,
`LoginInforID` INTEGER NOT NULL,
`IP` CHAR(20),
`LoginDate` DATETIME NOT NULL,
PRIMARY KEY (`LoginHistoryID`),
CONSTRAINT FOREIGN KEY (`LoginInforID`)
REFERENCES `scygd1`.`LoginInfor` (`LoginInforID`)

)ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

/*Create Table, Store User's Orders*/
DROP TABLE IF EXISTS `ordering`;

CREATE TABLE `ordering` (
`OrderingID` INTEGER auto_increment,
`CustomerLoginInforID` INTEGER NOT NULL,
`SaleRepLoginInforID` INTEGER NOT NULL,
`OrderDate` DATETIME NOT NULL,
`Address` VARCHAR(255) NOT NULL,
`Status` CHAR(1) NOT NULL,
`Exceeded` CHAR(1) NOT NULL,
`Comments` VARCHAR(255),
PRIMARY KEY (`OrderingID`),
CONSTRAINT FOREIGN KEY (`CustomerLoginInforID`)
REFERENCES `scygd1`.`LoginInfor` (`LoginInforID`),
CONSTRAINT FOREIGN KEY (`SaleRepLoginInforID`)
REFERENCES `scygd1`.`LoginInfor` (`LoginInforID`)

)ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

/*Create Table, Store Product Infor For HTML*/
DROP TABLE IF EXISTS `Productline`;

CREATE TABLE `Productline` (
`ProductlineID` INTEGER auto_increment,
`DesignInText` VARCHAR(255),
`DesignInHTML` VARCHAR(255),
`Image` VARCHAR(100),

```

```

        PRIMARY KEY (`ProductlineID`)

)ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO Productline (ProductlineID)
VALUES (NULL);

INSERT INTO Productline (ProductlineID)
VALUES (NULL);

INSERT INTO Productline (ProductlineID)
VALUES (NULL);

/*Create Table, Store All user's LoginInfor History*/
DROP TABLE IF EXISTS `Product`;

CREATE TABLE `Product` (
    `ProductID` INTEGER auto_increment,
    `ProductlineID` INTEGER NOT NULL,
    `Name` VARCHAR(50) NOT NULL,
    `Quantity` NUMERIC(10, 0) NOT NULL,
    `Price` NUMERIC(10, 2) NOT NULL,
    PRIMARY KEY (`ProductID`),
    CONSTRAINT FOREIGN KEY (`ProductlineID`)
    REFERENCES `scygd1`.`Productline` (`ProductlineID`)

)ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO Product (ProductID, ProductlineID, `Name`, Quantity, Price)
VALUES (NULL, '1', 'N95 Respirators', '100000000', '6');

INSERT INTO Product (ProductID, ProductlineID, `Name`, Quantity, Price)
VALUES (NULL, '2', 'Surgical Mask', '100000000', '4');

INSERT INTO Product (ProductID, ProductlineID, `Name`, Quantity, Price)
VALUES (NULL, '3', 'Surgical N95', '100000000', '10');

/*Create Table, Store More detailed Infor That User Ordered*/
DROP TABLE IF EXISTS `order_Product`;

CREATE TABLE `order_Product` (
    `Order_ProductID` INTEGER auto_increment,
    `OrderingID` INTEGER NOT NULL,
    `ProductID` INTEGER NOT NULL,
    `Quantity` INTEGER NOT NULL,
    `PriceEach` NUMERIC(8, 2) NOT NULL,
    PRIMARY KEY (`Order_ProductID`),
    CONSTRAINT FOREIGN KEY (`OrderingID`)
    REFERENCES `scygd1`.`Ordering` (`OrderingID`),
    CONSTRAINT FOREIGN KEY (`ProductID`)
    REFERENCES `scygd1`.`Product` (`ProductID`)

)ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

/*Create Table, Store All Sales Reps' Quota*/
DROP TABLE IF EXISTS `Quota`;

```

```

CREATE TABLE `Quota` (
    `QuotaID` INTEGER auto_increment,
    `LoginInforID` INTEGER NOT NULL,
    `ProductID` INTEGER NOT NULL,
    `Quota` NUMERIC(8, 0) NOT NULL,
    PRIMARY KEY (`QuotaID`),
    CONSTRAINT FOREIGN KEY (`LoginInforID`)
    REFERENCES `scygd1`.`LoginInfor` (`LoginInforID`),
    CONSTRAINT FOREIGN KEY (`ProductID`)
    REFERENCES `scygd1`.`Product` (`ProductID`)

)ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

```

Explanation of SMS

- Notes:
 1. When I took the screenshots, the screen resolution was 1600*900. And I use Google Chrome, the content is presented by cslinux through http://cslinux.nottingham.edu.cn/~scygd1/20124917_Gaole_DAI/src/html/. So when load the websites in higher resolution, it could be seen slightly different.
 2. **Please wait until the page fully loaded** (about 30 seconds) when you visit the website for the first time, otherwise, some icons may have not been loaded yet.
 3. It is just an overview of the websites. **More detailed see the test Instruction file.**

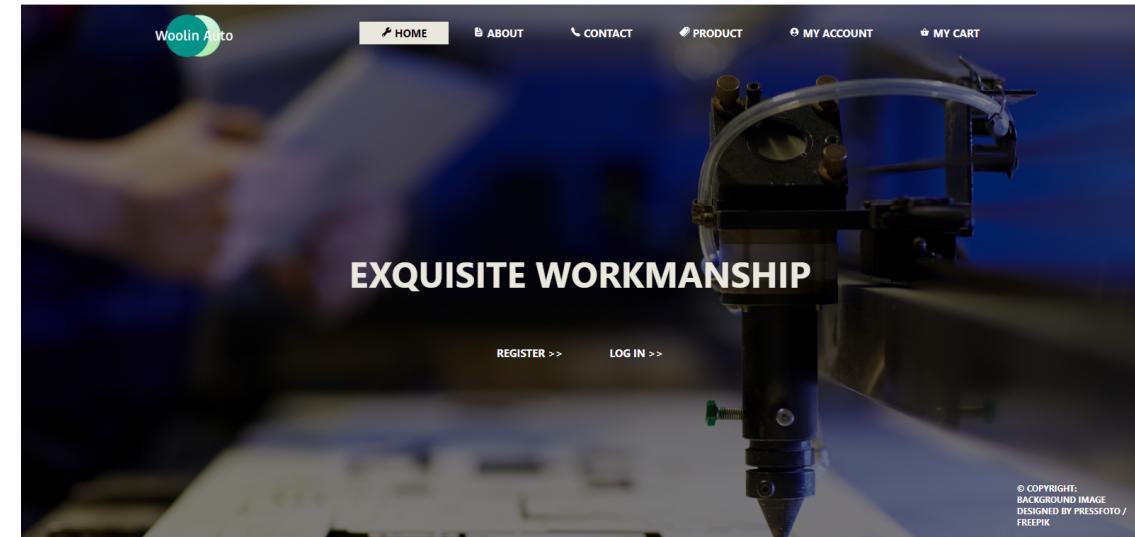


Figure3: index.html

Explanation: You could click HOME, ABOUT, CONTACT, PRODUCT, MY ACCOUNT, MY CART, REGISTER and LOG IN buttons to see more detail about Woolin Auto company and our products.

•

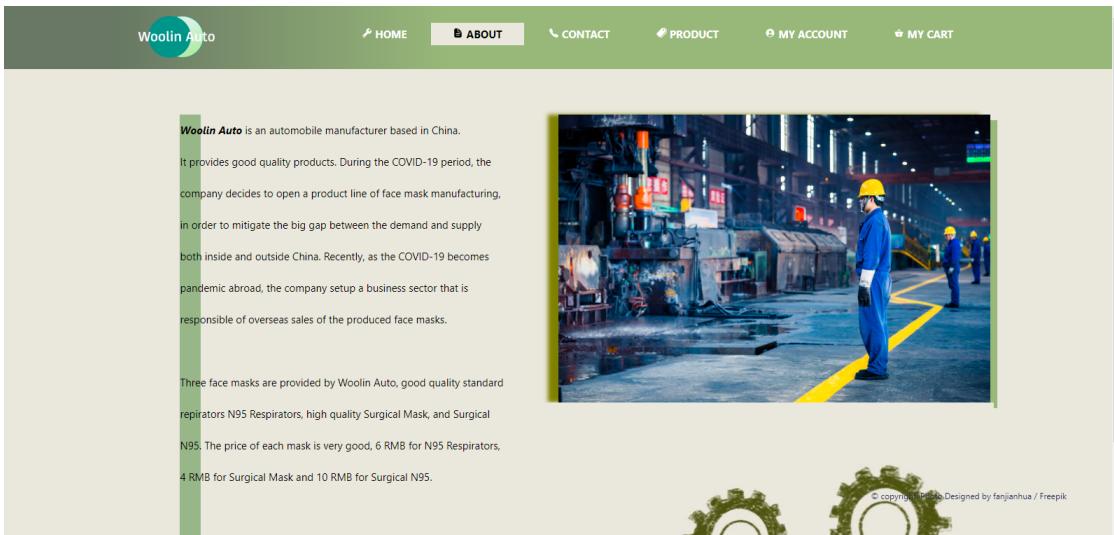


Figure4: visitorAboutPage.html

Explanation: This is the page contains brief introduction about Woolin Auto company.

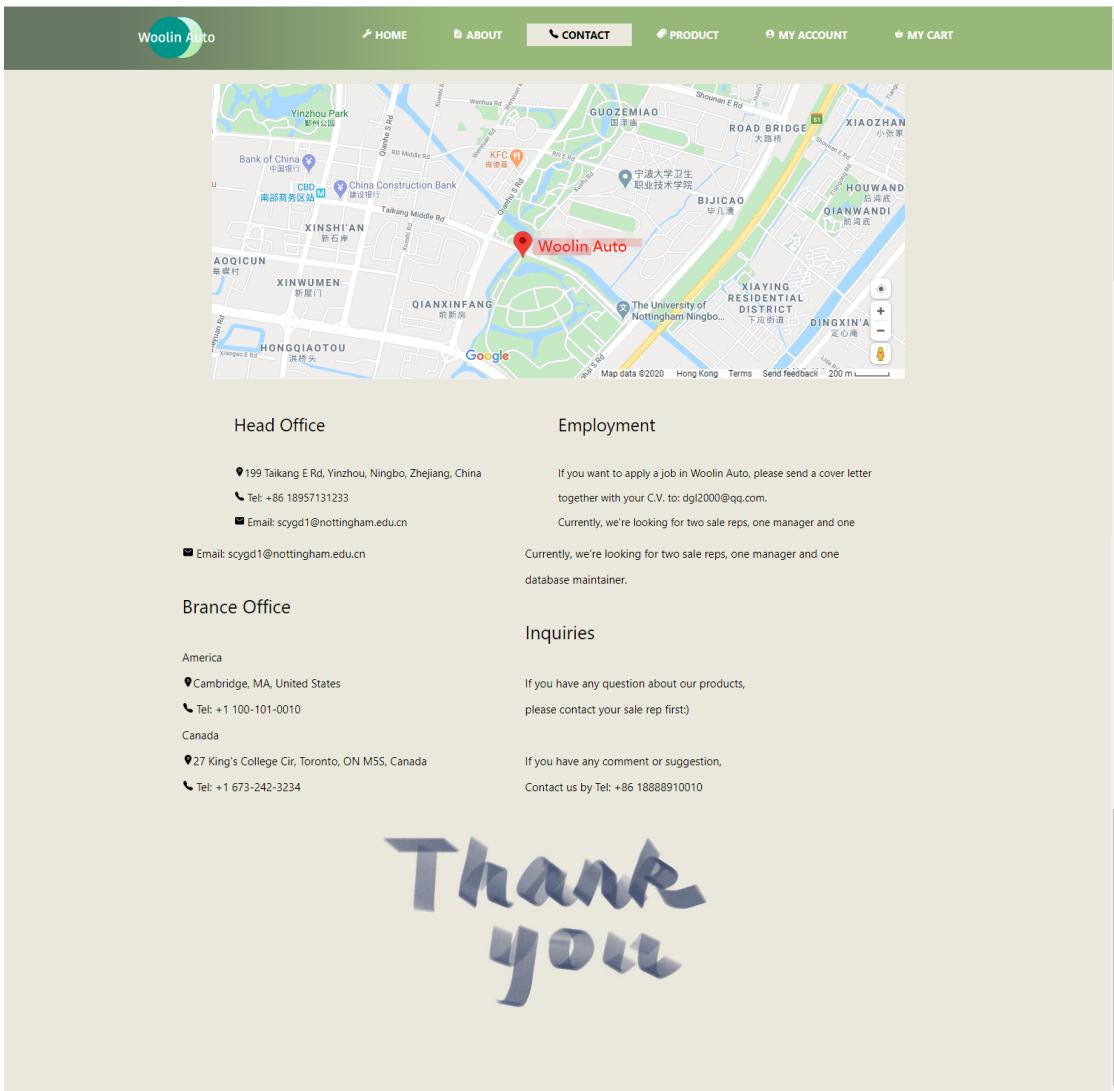


Figure5: visitorContact.html

Explanation: This is the page contains address, tel, email infor about Woolin Auto company.

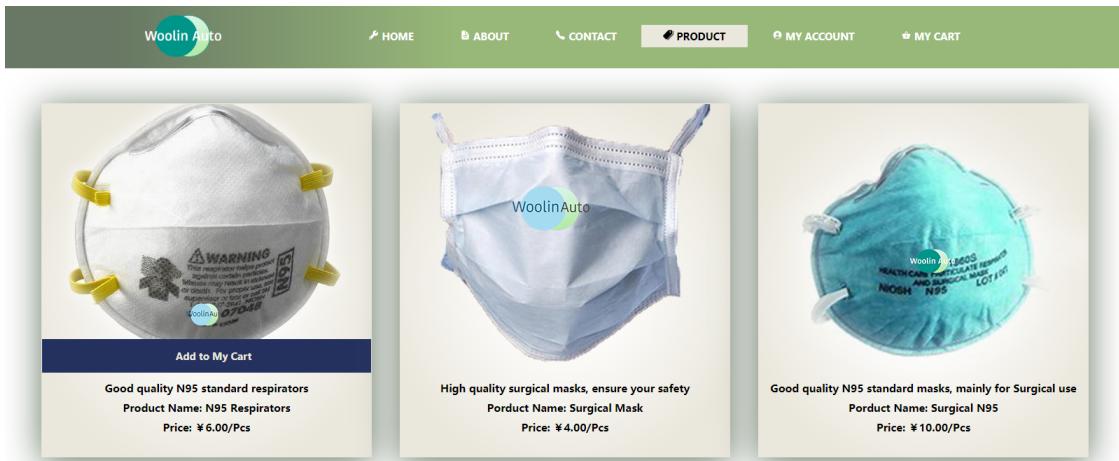


Figure6: visitorProductPage.html

Explanation: This is the product page, contains information about products and visitors could add products into their shopping cart by clicking 'Add to My Cart' button.

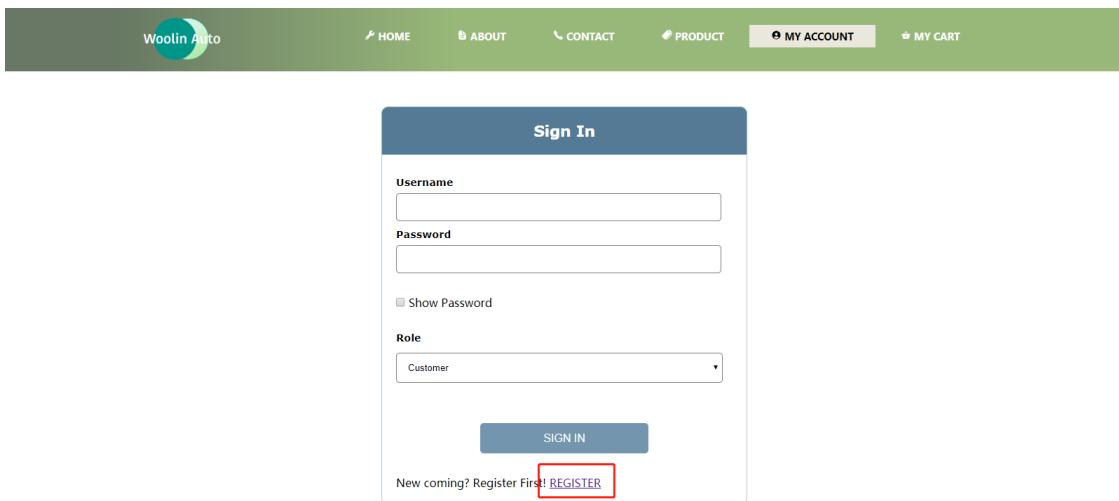


Figure7: signin.html

Explanation: Unlogged in users need to sign in then see their account page. If users have no account, they could click the REGISTER button to sign up.

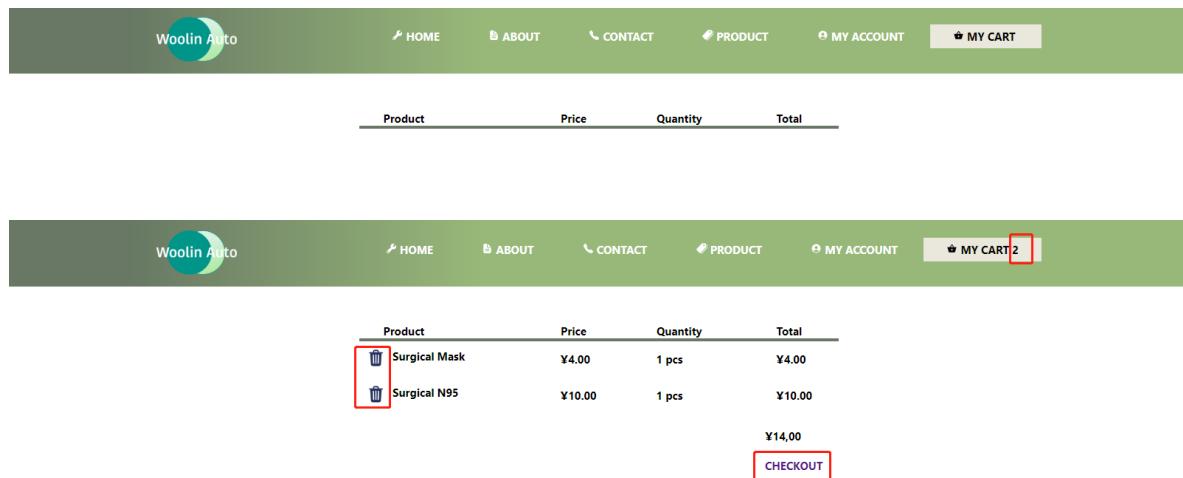


Figure8: visitorCart.html

Explanation: Shopping cart is empty at first, once you click the button in the PRODUCT page, users could see product is added to the cart, the number of products are displayed on the right corner. Users can delete products by clicking the trash button. However, for visitors who are not logged in, order products is not allowed, once they click the CHECKOUT button, sign in page is loaded.

The screenshot shows a registration form with the following fields:

- Confirm Password *: A password input field containing '*****'.
- Show Password: A checkbox labeled "Show Password".
- Country *: A dropdown menu set to "China".
- REGISTER: A blue rectangular button with white text.

A small note at the bottom says "Already have an account? [SIGN IN](#)".

Figure9: register.html

Explanation: Fill in the information as the guidance, then click the REGISTER button, then you could register as a customer.

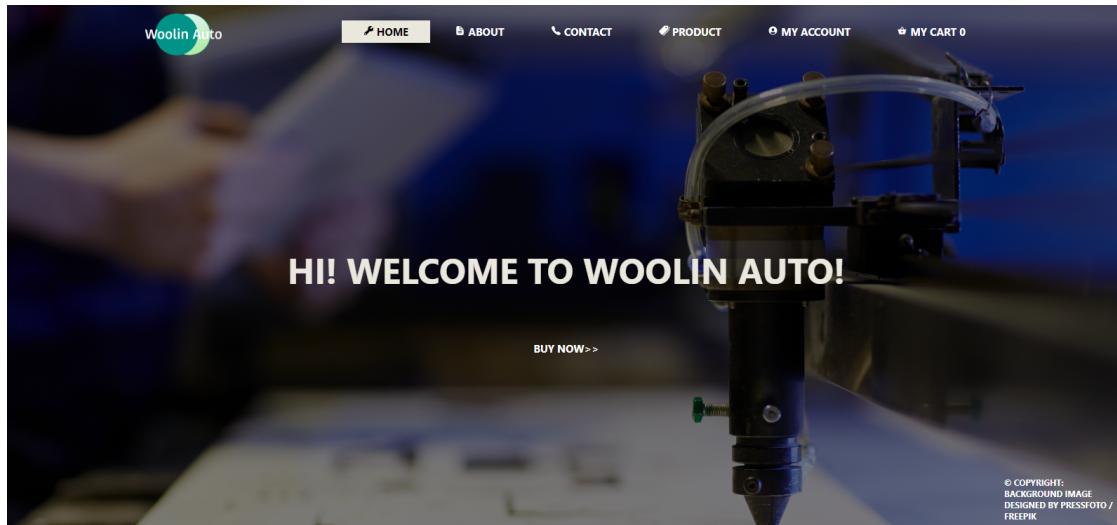


Figure10: customerHomeAfterLogin.html

Explanation: See the home page of customer after log in.

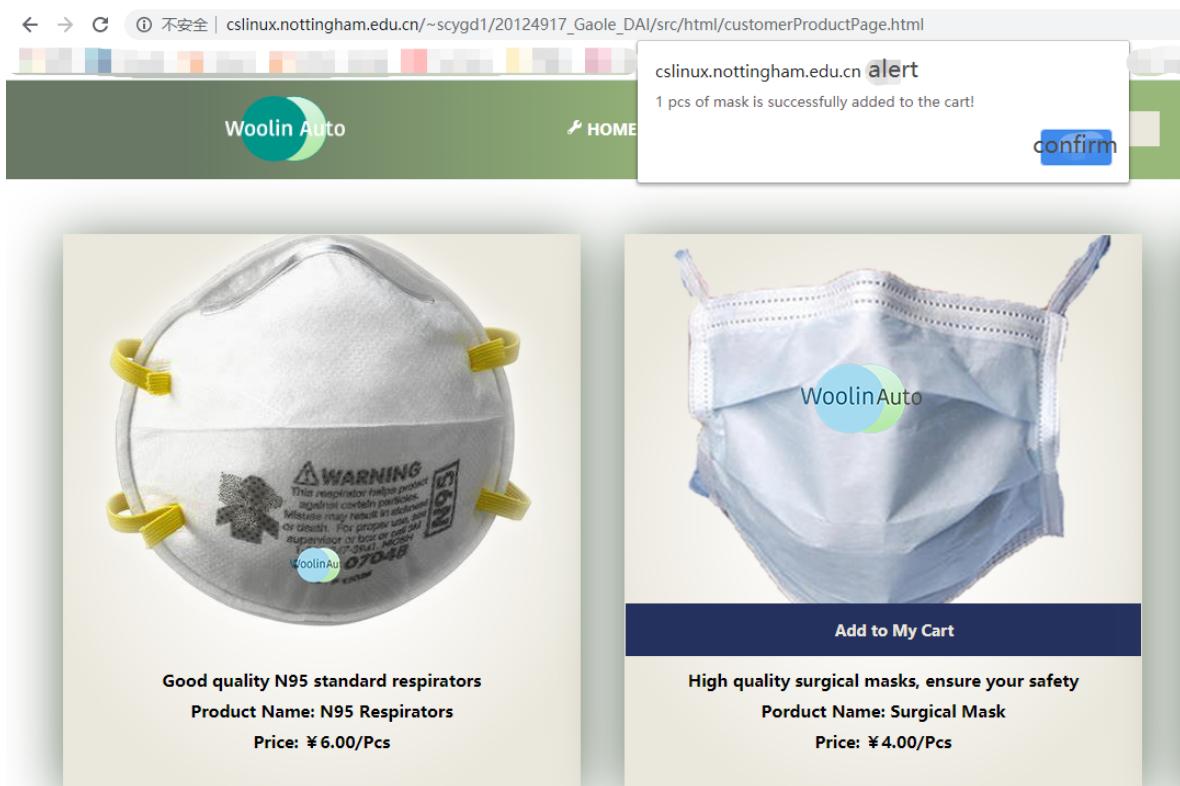


Figure11: customerProductPage.html

Explanation: Click the 'Add to My Cart', you will see the alert telling you that you are successfully add a mask to the cart. Then click the confirm button.

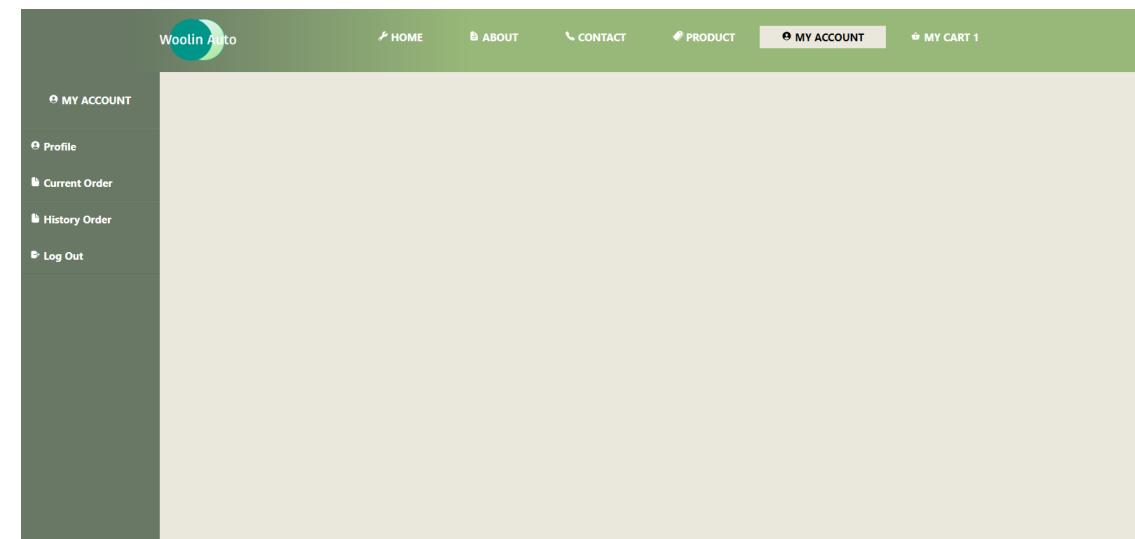


Figure12: customerAccount.html

Explanation: In customer my account page, they could update their profile, see current order, modify(cancel) current orders and view history orders. Click the log out to log out.



ORDERING CONFIRM

Sales Rep *

Please choose a sales rep to contact.

Address *

Comments

CONFIRM

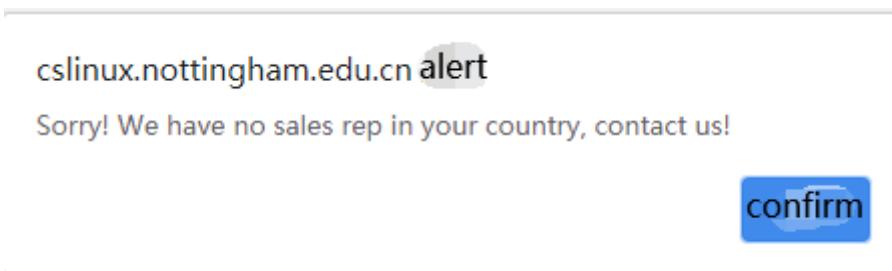


Figure13: customerOrder.html

Explanation: Click the checkout button on the MY CART page, customers could choose a sales rep to contact and filled in the address and comments. If no sales rep is at the same country as customers, customers will see an alert.

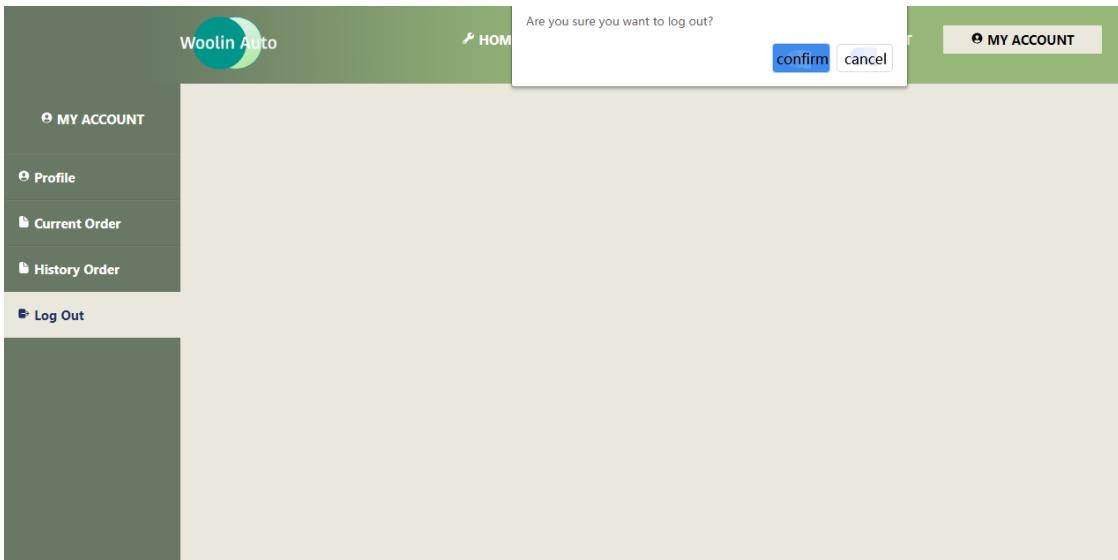


Figure14: customerAccount.html

Explanation: Click the Log Out button, you can choose to log out or stay. Click confirm to log out and click cancel to stay.

The screenshot shows a sign-in form titled "Sign In". It includes fields for "Username" (Staff-20200001), "Password" (redacted), "Role" (Manager), and a "SIGN IN" button. Below the form is a message: "New coming? Register First! [REGISTER](#)".

Figure15: signin.html

Explanation: Sign in the managers account.

Manager Account:

- Username: Staff-20200001

- Password: 1@234Dbi75

- Username: Staff-20200002

- Password: A32%90i275

- Username: Staff-20200003

- Password: D1590*we32

The screenshot shows a sidebar menu under "MANAGEMENT" with options like "Assign Sales Rep", "New Sales Rep", "Country / Quota", "Statistics", "Customers Infor", "Detailed Orders", "Classification", "By Sale Rep", "By Country", and "By Product". The main area displays a "NEW SALES REP" form with fields for "Username", "First Name", "Last Name", "Employee ID", "Telephone", "Email", and "Password".

Figure16: managerHome.html

Explanation: Click the New Sales Rep to assgin new sales.

The screenshot shows a web-based application interface. On the left, a dark green sidebar menu lists various management options: MANAGEMENT, Assign Sales Rep, New Sales Rep, Country / Quota, Statistics, Customers Infor, Detailed Orders, Classification, By Sale Rep, By Country, and By Product. The 'Assign Sales Rep' option is currently selected. The main content area contains a form for assigning a new sales rep. It includes fields for Employee ID (Sale20200001), Telephone (17857631236), Email (smyab1@woolinauto.com), Password (R0826d%aa), Confirm Password (R0826d%aa), and a 'Show Password' checkbox. A note below the password fields states: 'Must have at least 8 characters and at most 20 characters with at least one capital letter, at least one lower case letter and at least one number or special character.' Below these fields is a dropdown menu labeled 'Country' with 'China' selected. At the bottom right is a blue 'SUBMIT' button.

Figure17: managerHome.html

Explanation: NEW SALES REP: Assign a sales rep by clicking the SUBMIT button. Managers will see an alert if submit successfully.

The screenshot shows a table of sales rep information. The columns are Employee Unique ID, Name, Telephone, Email, Country, QuotaID, Product, and Quota. The data consists of 20 rows, each representing a different sales rep. The table is preceded by the same dark green sidebar menu as Figure 17. At the bottom of the table, there are two buttons: 'COUNTRY' and 'QUOTA', both with the text '<< Click the button to modify the country' and '<< Click the button to modify the quota' respectively.

Employee Unique ID	Name	Telephone	Email	Country	QuotaID	Product	Quota
Sale20200001	Alice Brown	17857631236	smyab1@woolinauto.com	Italy	1	N95 Respirators	100
Sale20200001	Alice Brown	17857631236	smyab1@woolinauto.com	Italy	2	Surgical Mask	200
Sale20200001	Alice Brown	17857631236	smyab1@woolinauto.com	Italy	3	Surgical N95	300
Sale20200002	Joey Wong	17857631237	smyjw1@woolinauto.com	Canada	4	N95 Respirators	200
Sale20200002	Joey Wong	17857631237	smyjw1@woolinauto.com	Canada	5	Surgical Mask	300
Sale20200002	Joey Wong	17857631237	smyjw1@woolinauto.com	Canada	6	Surgical N95	400
Sale20200003	Chandler Bing	17857631238	smycb1@woolinauto.com	Australia	7	N95 Respirators	250
Sale20200003	Chandler Bing	17857631238	smycb1@woolinauto.com	Australia	8	Surgical Mask	380
Sale20200003	Chandler Bing	17857631238	smycb1@woolinauto.com	Australia	9	Surgical N95	500
Sale20200004	Phoebe White	17857631239	smypw1@woolinauto.com	China	10	N95 Respirators	600
Sale20200004	Phoebe White	17857631239	smypw1@woolinauto.com	China	11	Surgical Mask	300
Sale20200004	Phoebe White	17857631239	smypw1@woolinauto.com	China	12	Surgical N95	200
Sale20200005	Chris Cooper	17857631240	smycc1@woolinauto.com	Japan	13	N95 Respirators	240
Sale20200005	Chris Cooper	17857631240	smycc1@woolinauto.com	Japan	14	Surgical Mask	700
Sale20200005	Chris Cooper	17857631240	smycc1@woolinauto.com	Japan	15	Surgical N95	500
Sale20200006	Rose Geller	17857631241	smyrg1@woolinauto.com	France	16	N95 Respirators	650
Sale20200006	Rose Geller	17857631241	smyrg1@woolinauto.com	France	17	Surgical Mask	650
Sale20200006	Rose Geller	17857631241	smyrg1@woolinauto.com	France	18	Surgical N95	300
	COUNTRY	<< Click the button to modify the country					
	QUOTA	<< Click the button to modify the quota					

Figure18: managerHome.html

Explanation: Click Country /Quota will show sales reps' information including country and quota for each product. If managers want to modify the country or the quota, click the COUNTRY and QUOTA to modify.

Notes: The quota of sales rep for each product should be 0 when initialed. I have modified the quota before, so it shows like the figure above.

The screenshot shows a web application interface for managing sales. The left sidebar has a dark green background with white text. It includes sections for 'MANAGEMENT' (with 'Assign Sales Rep', 'New Sales Rep', 'Country / Quota', 'Statistics', and 'Customers Infor'), 'Detailed Orders' (with 'Classification' dropdown and 'By Sale Rep', 'By Country', 'By Product' options), and a 'Logout' button.

The main content area has a light beige background. At the top, there are 'MY ACCOUNT' and 'MANAGE' buttons. Below them is a table with columns: LoginInforID, Username, Name, Telephone, Email, and Country. The table contains one row with values: 10, dgl20000618, Gaole Dai, 18957131233, dgl2000@qq.com, China. A message 'TOTAL CUSTOMERS: 1' is displayed below the table.

Figure19: managerHome.html

Explanation: Click Customers Infor to see all customers information and the total amount of customers.

This screenshot is similar to Figure 19, showing the same application interface. The left sidebar and top navigation bar are identical. The main content area now displays a message 'Oops! No Orders Yet!' in the center. A blue 'confirm' button is located at the bottom right of the message area.

Figure20: managerHome.html

Explanation: Click Detailed Orders to see orders, currently, there is no orders. so alert will be displayed.

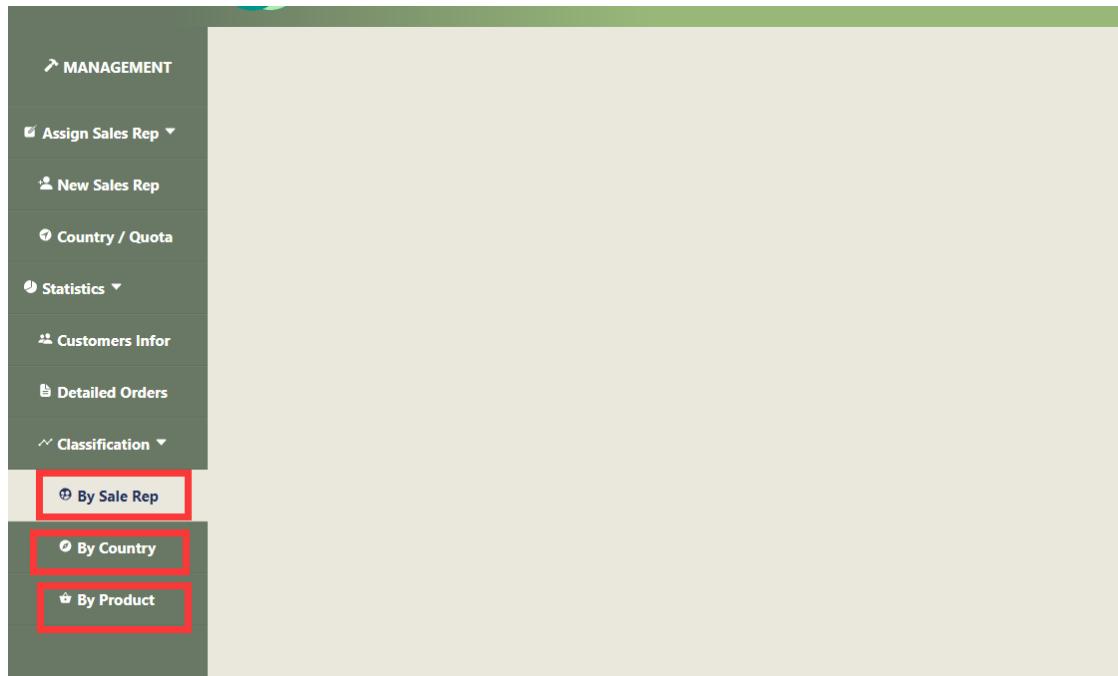


Figure21: managerHome.html

Explanation: Click any of these, you could see orders sorted by them.

A screenshot of a web application's customer order confirmation page. At the top is a navigation bar with a logo, HOME, ABOUT, CONTACT, PRODUCT, MY ACCOUNT, and MY CART (which has 3 items). Below the navigation is a modal window titled "ORDERING CONFIRM". The modal contains the following fields: "Sales Rep *", a dropdown menu set to "Phoebe White 17857631239" with a note below it saying "Please choose a sales rep to contact.", "Address *", a text input field containing "University of Nottingham, Ningbo, China", and "Comments", a text input field containing "Delivered before May 29th". At the bottom right of the modal is a blue "CONFIRM" button.

Figure22: customerOrder.html

Explanation: Since manager assigned sales rep to the same country as customers, customer could choose a sales rep and leave a message for sales and an address for shipping.

The screenshot shows a user interface for managing sales orders. At the top right are 'MY ACCOUNT' and 'MANAGE' buttons. On the left, a sidebar menu under 'MANAGEMENT' includes 'Customer Order', 'Current Order' (selected), 'Normal Order', 'Problem Order', 'History Order', and 'My Quota'. The main content area displays a table of current orders:

CustomerOrderID	Product	Quality	Sales Rep	Telephone	Email	Order Date	Status
2	Surgical Mask	110	Gaole Dai	18957131233	dgl2000@qq.com	2020-05-28 16:02:22	Pending
2	Surgical N95	1	Gaole Dai	18957131233	dgl2000@qq.com	2020-05-28 16:02:22	Pending
MODIFY << Click the button to process orders							

Figure23: saleHome.html

Explanation: Sales reps could click the current Normal Order or current Problem Order button to see customers' orders. Click modify to accept or cancel the orders.

The screenshot shows the 'Modify Order' dialog box. It contains a dropdown menu with three options: 'Cancel Order' (selected), 'Accept Order', and another 'Cancel Order' entry. The rest of the page is identical to Figure 23, showing the sidebar and the order table.

Figure24: saleHome.html

Explanation: Sales reps could choose to accept or cancel current orders. Once they process the orders, these orders will be showed in History Order.

The screenshot shows a table of product quotas under the 'My Quota' section of the sidebar. The table has columns for QuotaID, Product, and Quota.

QuotaID	Product	Quota
10	N95 Respirators	599
11	Surgical Mask	189
12	Surgical N95	198

Figure25: saleHome.html

Explanation: Sales reps could see their quotas of each product when click the My Quota button.

External Library

JQuery Version 3.5.1 had been partly used for simplify the use of JavaScript. And I use JQuery AJAX to separate the font-end and back-end for better maintenance.

Acknowledgement

1. Three images are downloaded from Bing, which have creative commons license.

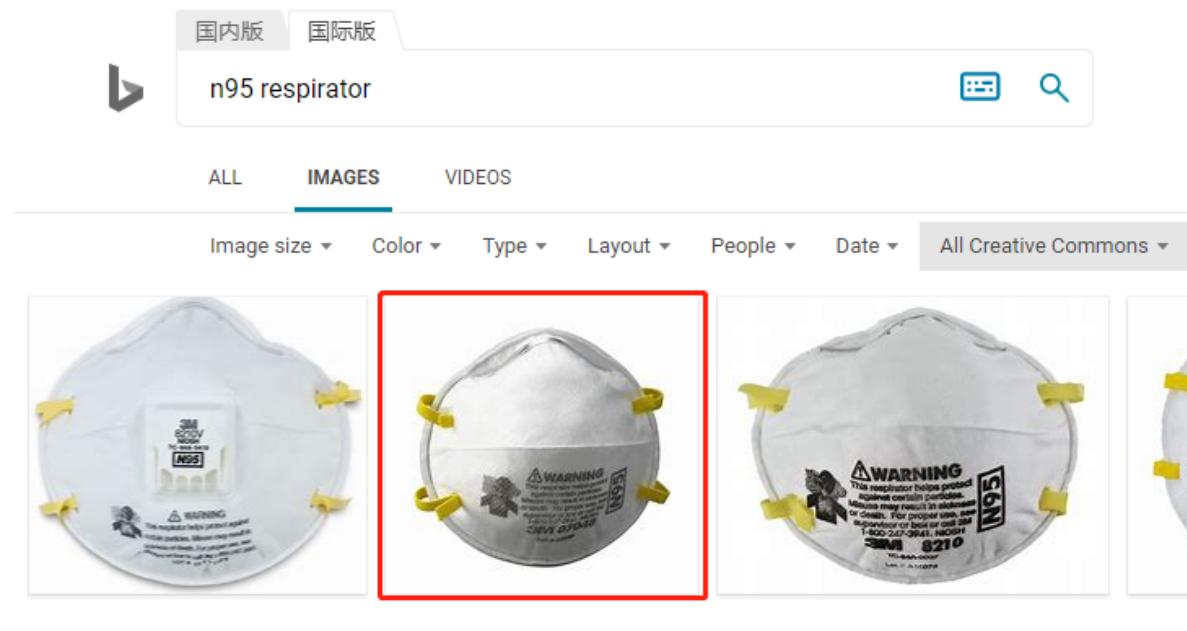


Figure26: Image of N95 Respirator

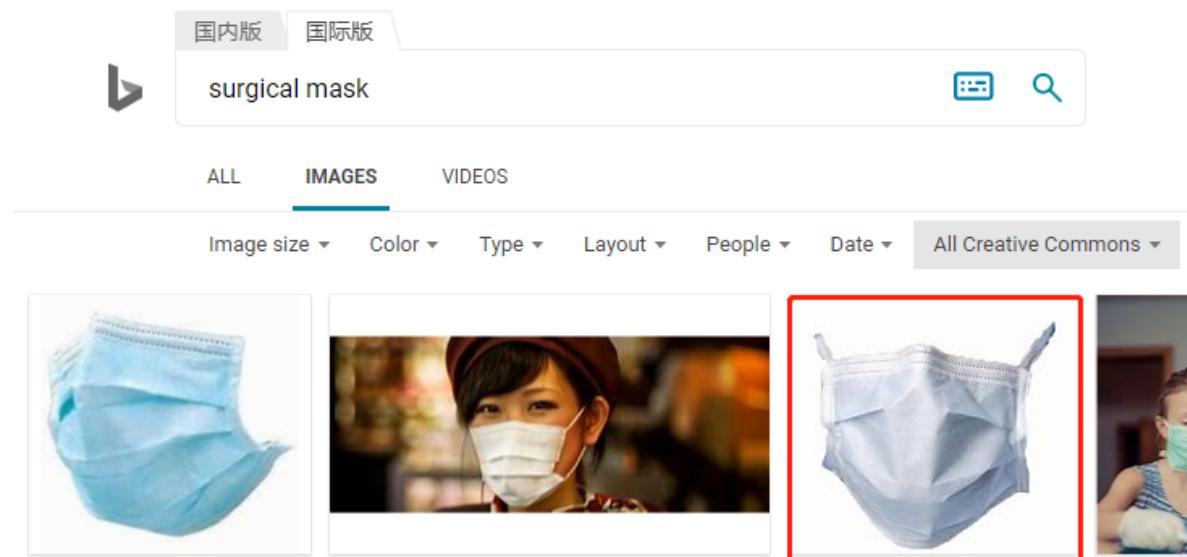


Figure27: Image of Surgical Mask

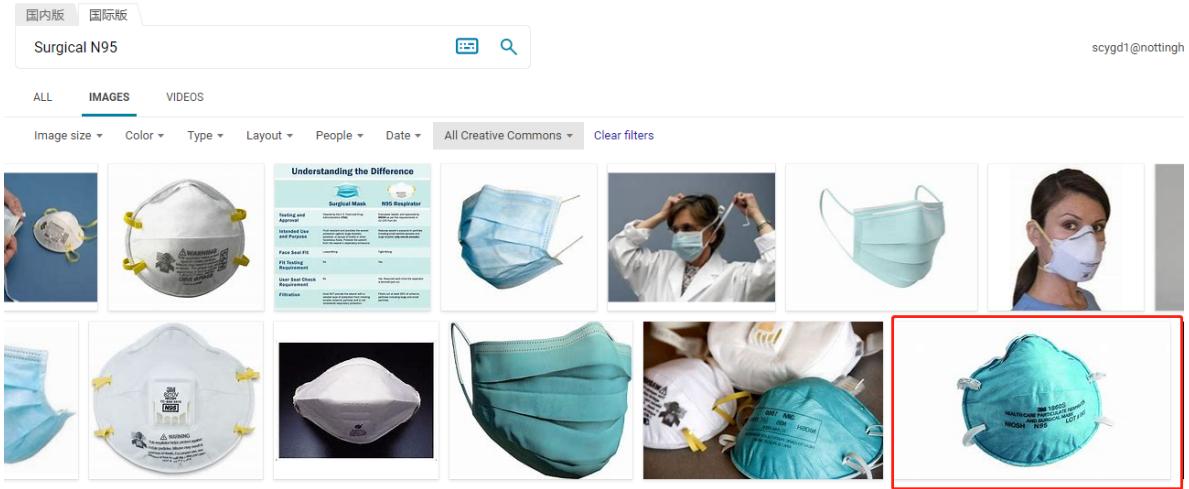


Figure28: Image of Surgical N95

2. All the icons are used from website <https://ionicons.com/>.
3. Two photos are downloaded from website <https://www.freepik.com/>, the background photo of index.html and Figure: customerHomeAfterLogin.html, and an illustration of visitorContact.html and customerContact.html. Since I'm not a premium user of that website, I copied the code on my website to accredit the author as 'License free. txt' asked, find that txt file from src/img/copyright/photo.