

Face Mask Sales Management System Website

Zichen XU 20126507

hnyzx3@nottingham.edu.cn

COMP1041-Coursework-2

May 2020

- [Overview](#)
 - [Important !!!](#)
 - [Introduction](#)
 - [Developer](#)
 - [Open Source Libraries](#)
 - [Folder Tree](#)
 - [Database Initialization](#)
- [Functionality](#)
 - [Functionality Flowchart](#)
- [Demo](#)
 - [Demo Initialization](#)
 - [Walkthrough](#)
 - [-1.1: HTTP 503 Error](#)
 - [0.1: Login](#)
 - [0.1.1: Error in login](#)
 - [0.2: Sign up](#)
 - [0.2.1: Error in Sign up](#)
 - [1: Login as Customer](#)
 - [1.1: \(Default\) Messages view](#)
 - [1.2: Shopping Cart view](#)
 - [1.3: Orders view](#)
 - [1.3.1: Cancel Order](#)
 - [1.4: User Profile view](#)
 - [2: Login as Sales Representative](#)
 - [2.1: \(Default\) Messages View](#)
 - [2.2: Statistics view](#)
 - [2.3: Orders view](#)
 - [2.3.1: Cancel Order](#)
 - [2.4: User Profile view](#)
 - [3 : Login as Manager / 4: Administrator](#)
 - [3.1: \(Default\) Messages view](#)
 - [3.2: Quota Management view](#)
 - [3.3: Orders view](#)
 - [3.4: Overview view](#)
 - [3.5: Sales Reps view](#)
 - [3.5.1: Change Region of Sales Reps](#)
 - [3.6: Customer view](#)
 - [3.7: Region view](#)
 - [3.8: Add Sales Reps view](#)
 - [4: Administrator](#)
 - [Database](#)
 - [Structure](#)

- [Customer](#)
- [Sales Reps](#)
- [Manager](#)
- [Orders](#)
- [Entity Relationship Diagram](#)
- [System-wide Evaluation](#)
 - [Privacy](#)
 - [Stability](#)
 - [Security](#)
 - [Performance](#)
 - [Data Visualization](#)
 - [Vulnerability](#)

Overview

Important !!!

The website might even not allow user to login or sign up, if without loading of Google's API, please make sure both the server and your browser can successfully connect to Google services.

Introduction

This coursework project is a *Face Musk Sales Management System* which will be adopted by Woolin Auto to make those process possible:

- Allow Customers to order face masks or cancel the orderings.
- Allow Sales Representatives (Reps) to check and operate his/her sales.
- Allow the Manager to perform admin tasks and check the sale statistics.

Developer

Zichen XU - hnyzx3@nottingham.edu.cn

Open Source Libraries

- **jQuery** 3.5.1 - *jQuery is a fast, small, and feature-rich JavaScript library*
 - Ajax - allows web pages to be updated asynchronously by exchanging data with a web server behind the scenes.

<https://jquery.com/>
- **Bootstrap** 4.5.0 - Bootstrap, the world's most popular front-end open source toolkit, featuring Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful JavaScript plugins.

<https://getbootstrap.com/>

- **Font Awesome** 4.7.0 - the internet's most popular icon toolkit.

<https://fontawesome.com/v4.7.0/>

- **G2Plot** 1.1.3 - an interactive and responsive charting library based on the grammar of graphics.

<https://g2plot.antv.vision/en>

- **Bootstrap Touchspin** 4.3.0 - A mobile and touch friendly input spinner component for Bootstrap.

<https://www.virtuosoft.eu/code/bootstrap-touchspin/>

- **Bootstrap Show Password** 1.2.1 - a show/hide password plugin.

<http://bootstrap-show-password.wenzhixin.net.cn/>

- **Country-region-selector** 0.5.1 - A script to automatically add dynamic, connected country and region dropdowns to your forms.

<http://country-regions.github.io/country-region-selector/>

- **js-sha256** 0.9.0 - A simple SHA-256 hash function for JavaScript supports UTF-8 encoding.

<https://github.com/emn178/js-sha256>

- **98.css** 0.1.12 - A design system for building faithful recreations of old UIs.

<https://jdan.github.io/98.css/>

- **XP.css** 0.2.3 - A CSS framework for building faithful recreations of operating system GUIs.

<https://github.com/botoxparty/XP.css>

- **JavaScript Cookie** 2.2.1 - A simple, lightweight JavaScript API for handling browser cookies.

<https://github.com/js-cookie/js-cookie>

- **Google Fonts** - High-quality fonts to use on your web site.

<https://developers.google.com/fonts/>

- **Google reCAPTCHA** - Protect your site from spam and abuse.

<https://developers.google.com/recaptcha/>

Folder Tree

```
published
  ├── 98.css
  ├── LatoBlack.woff2
  ├── bootstrap-4.5.0-dist
  ├── bootstrap-show-password
  ├── bootstrap-touchspin
  ├── country-regions-country-region-selector
  ├── font-awesome-4.7.0
  ├── g2plot
  └── jquery-3.5.1.js
```

```

js.cookie-2.2.1.min.js
sha256.js
xp.css

src
  img
    fill_in_forms.gif
    kn95_icon.svg
    n95_respirator_hero.png
    n95_respirator_promo.png
    order_empty.png
    sad.png
    shopping_cart.png
    surgical_icon.svg
    surgical_mask_hero.png
    surgical_mask_promo.png
    surgical_n95_respirator_hero.png
    surgical_n95_respirator_promo.png
    windows_xp.jpg
  js
    customer.js
    helper.js
    manager.js
    salesReps.js
    signIn.js
    signUp.js
  php
    customerFunc.php
    helper.php
    helperRedirect.php
    managerFunc.php
    salesRepsFunc.php
    signInFunc.php
    signUpFunc.php
    signUpSalesRepsFunc.php
    updateCustomerInfoFunc.php
    updateSalesRepsInfoFunc.php
    503.php
    admin.php
    customer.php
    index.php
    manager.php
    salesReps.php
    signUp.php
test
  databaseDemo.sql
  readme.md

```

- Those in the **php** folders are all functions or code interacting with Ajax POSTs.
- Those in the **js** folders are all functions manipulating DOM in HTML

- Those in the published folders are all open source packages

Database Initialization

The whole structure of the database can be initialized through `databaseInit.sql` under the main directory in the *cslinux MySQL console*, this will generate all structure needed, as well as accounts for Managers and Admins, but without any accounts for **Customer** or **Sales Reps** to be used. If for some reasons it requires username and password, try `hnyzx3` as username and `20126507` as password.

Full demo scripts as well as readme can be found under the `test` directory

The scripts below are a copy of `databaseInit.sql`

```

# DROP DATABASE IF EXISTS hnyzx3;
# CREATE DATABASE hnyzx3;

USE hnyzx3;

DROP TABLE IF EXISTS orders;
DROP TABLE IF EXISTS customer;
DROP TABLE IF EXISTS salesReps;
DROP TABLE IF EXISTS manager;

CREATE TABLE customer (
    customerID BIGINT NOT NULL PRIMARY KEY
    AUTO_INCREMENT,
    username VARCHAR(15) NOT NULL,
    password VARCHAR(64) NOT NULL,
    realname VARCHAR(255) NOT NULL,
    passportID VARCHAR(20) NOT NULL,
    telephone VARCHAR(20) NOT NULL,
    region VARCHAR(255) NOT NULL,
    email VARCHAR(255) NOT NULL
);

CREATE TABLE salesReps (
    salesRepsID BIGINT NOT NULL PRIMARY KEY
    AUTO_INCREMENT,
    username VARCHAR(15) NOT NULL,
    password VARCHAR(64) NOT NULL,
    realname VARCHAR(255) NOT NULL,
    employeeID VARCHAR(20) NOT NULL,
    telephone VARCHAR(20) NOT NULL,
    region VARCHAR(255) NOT NULL,
    email VARCHAR(255) NOT NULL,
    quotaUsed BIGINT NOT NULL,

```

```

        quotaAll BIGINT NOT NULL
);

CREATE TABLE manager (
    managerID BIGINT NOT NULL PRIMARY KEY AUTO_INCREMENT,
    username VARCHAR(15) NOT NULL,
    password VARCHAR(64) NOT NULL,
    realname VARCHAR(255),
    email VARCHAR(255),
    isAdmin BOOL NOT NULL
);

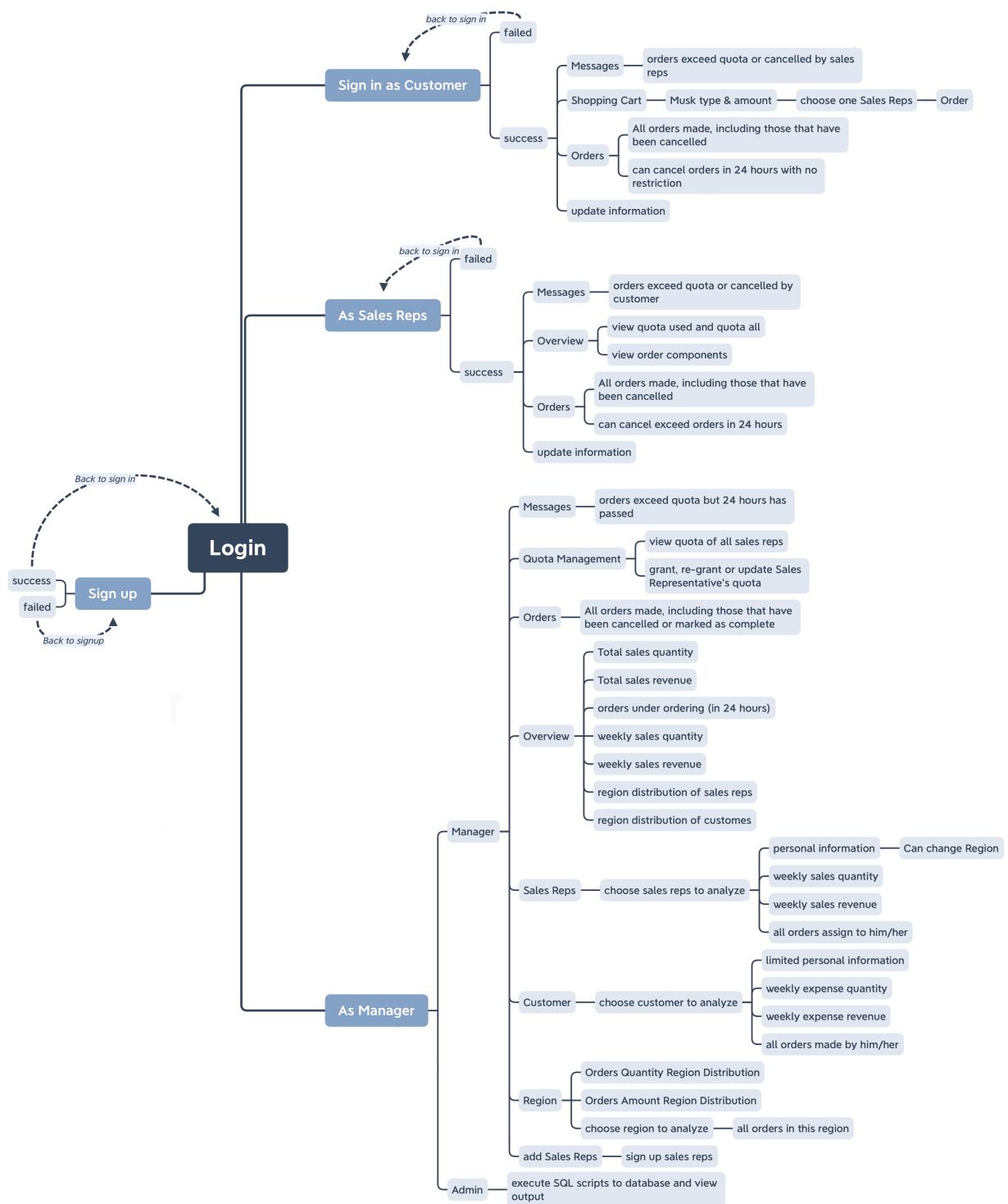
CREATE TABLE orders (
    orderID BIGINT NOT NULL PRIMARY KEY AUTO_INCREMENT,
    time DATETIME NOT NULL,
    N95quantity BIGINT NOT NULL,
    Surgicalquantity BIGINT NOT NULL,
    SurgicalN95quantity BIGINT NOT NULL,
    amount BIGINT NOT NULL,
    region VARCHAR(255) NOT NULL,
    customerID BIGINT NOT NULL,
    salesRepsID BIGINT NOT NULL,
    status int NOT NULL,
    CONSTRAINT fk_customerID FOREIGN KEY (customerID)
    REFERENCES customer(customerID),
    CONSTRAINT fk_salesRepsID FOREIGN KEY (salesRepsID)
    REFERENCES salesReps(salesRepsID)
);

INSERT INTO manager VALUES
(null, 'manager',
'6ee4a469cd4e91053847f5d3fcb61dbcc91e8f0ef10be7748da4c4a1ba382d17', 'Tim
Cook', 'tcook@apple.com', false),
-- username: manager    password: manager
(null, 'sudo',
'24e5e1c2bbef565360c392851175f46821fc21d6725503a600353625b4c9209c', 'God',
'god@outlook.com', true);
-- username: sudo    password: sudo

```

Functionality

Functionality Flowchart



A walkthrough of the whole functionalities can be found in the **Demo.walkthrough** section.

Demo

A demo with screenshots is way better than words and charts only.

This is a barely short demo in that we believe a reasonable, user friendly and clear user interface doesn't really need a 'handbook'.

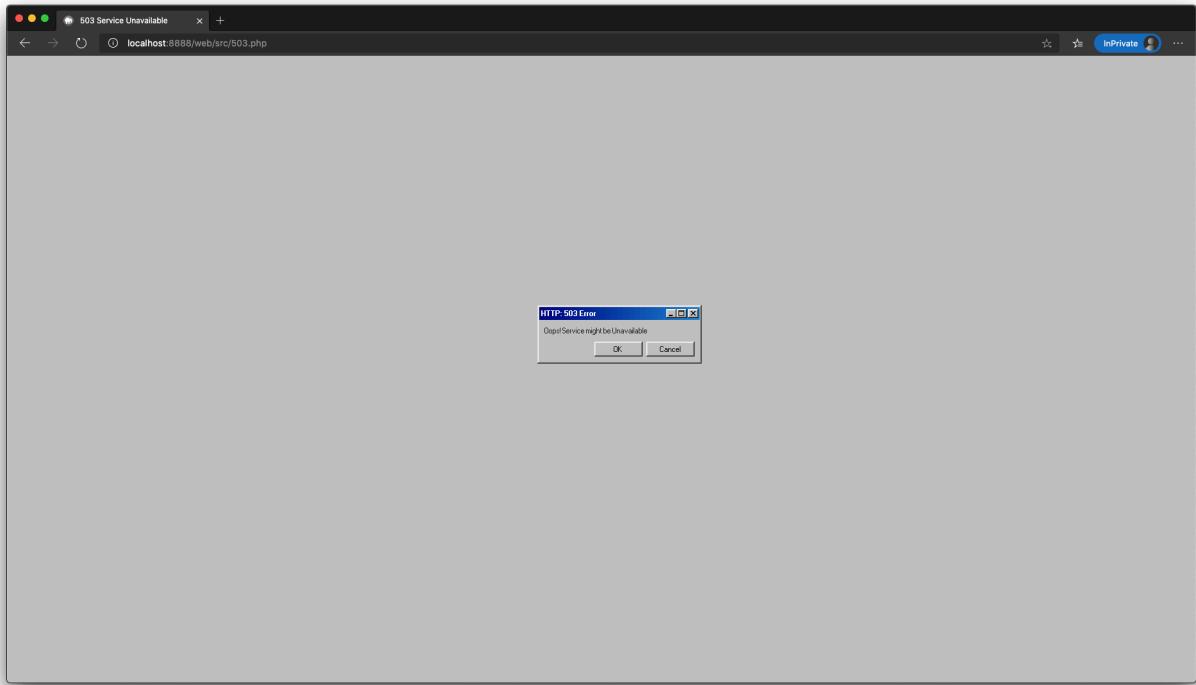
Demo Initialization

Please kindly refer to the **readme.md** under **test** folder.

Walkthrough

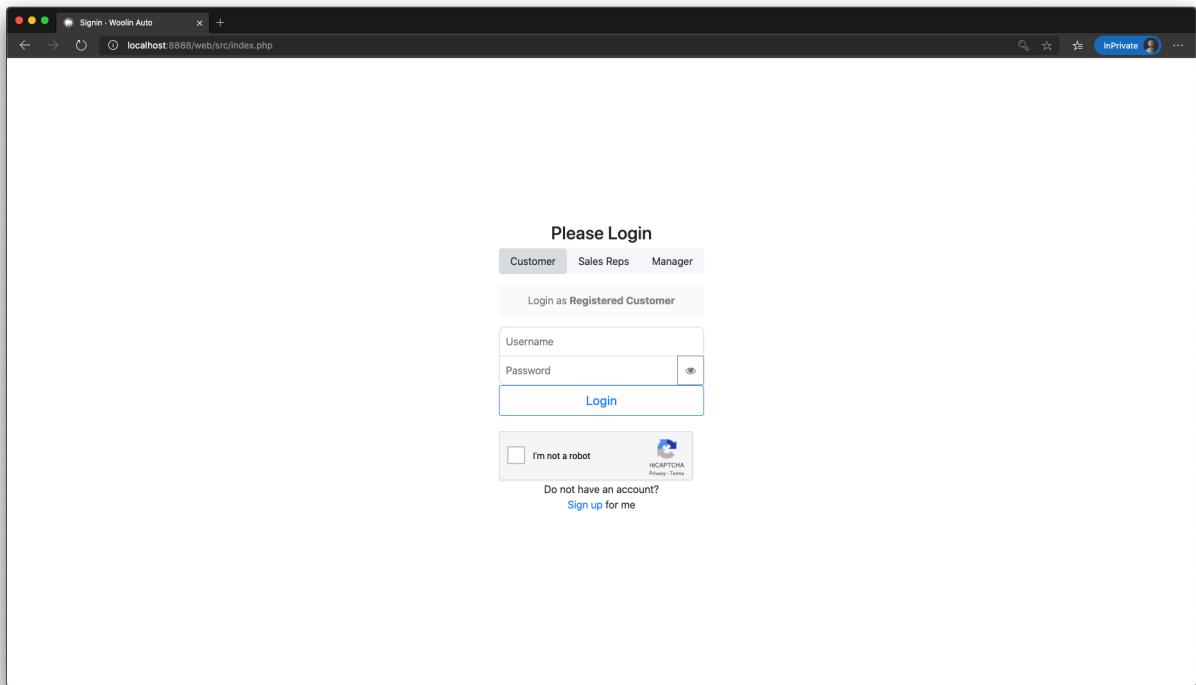
-1.1: HTTP 503 Error

this page will show up when your connection to MySQL database is unstable or lost, or any other situations that are unrecoverable.



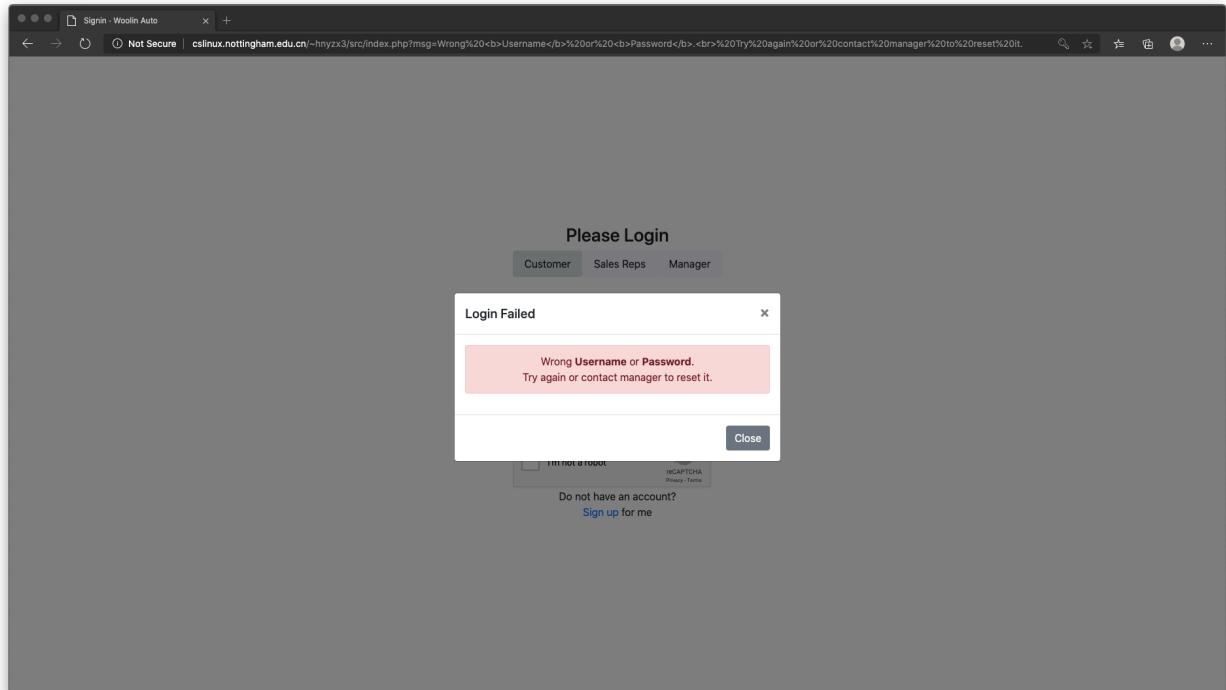
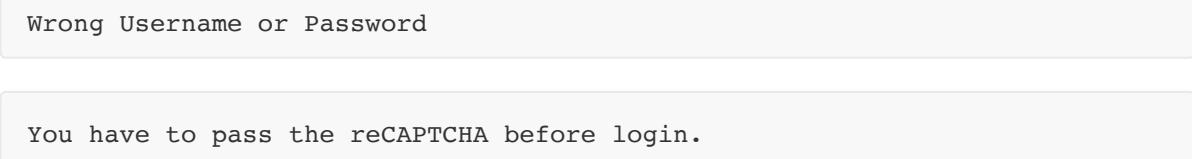
0.1: Login

- user can choose to login as **Customer**, **Sales Reps** or **Manager**, and this role choice will be saved for your convience when the next login.
- the eye icon on the right of password form is for toggle visibility of input password.
- all logins have to pass the Google reCAPTCHA to make sure you are a human :)
(If for some reason you cannot load the reCAPTCHA validator, make sure you can connect to Google Services, or you might not be able to login or sign up)



0.1.1: Error in login

This model will pop up with different error messages depending on the results returned by our server. For example:

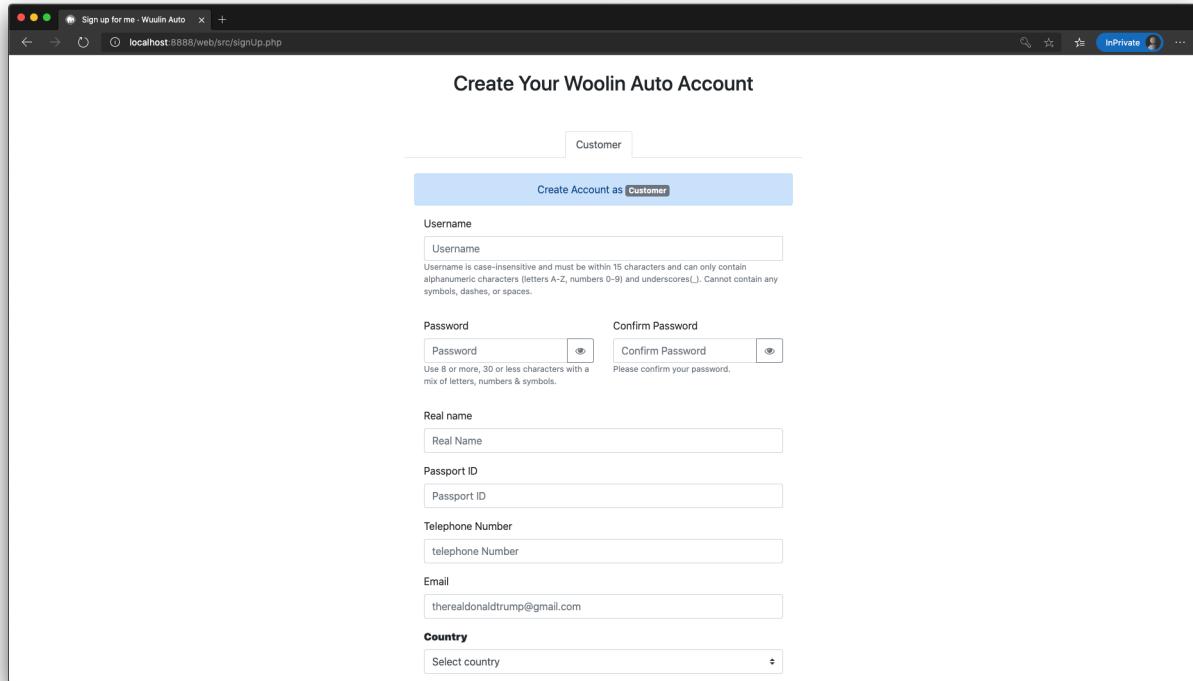


0.2: Sign up

In this page you can sign up as a Customer in Woolin Auto.

Every sign up form has its own respective validation scheme or Regex, such as that user have to type in same password twice or username must be within 15 chars.

Full restriction and Regex methods can be found in Database Structure section.



Sign up for me - Woolin Auto

localhost:8888/web/src/signUp.php

Create Your Woolin Auto Account

Create Account as **Customer**

Customer

Username

Username

Username is case-insensitive and must be within 15 characters and can only contain alphanumeric characters (letters A-Z, numbers 0-9) and underscores(_). Cannot contain any symbols, dashes, or spaces.

Password

Confirm Password

Use 8 or more, 30 or less characters with a mix of letters, numbers & symbols.

Real name

Real Name

Passport ID

Passport ID

Telephone Number

telephone Number

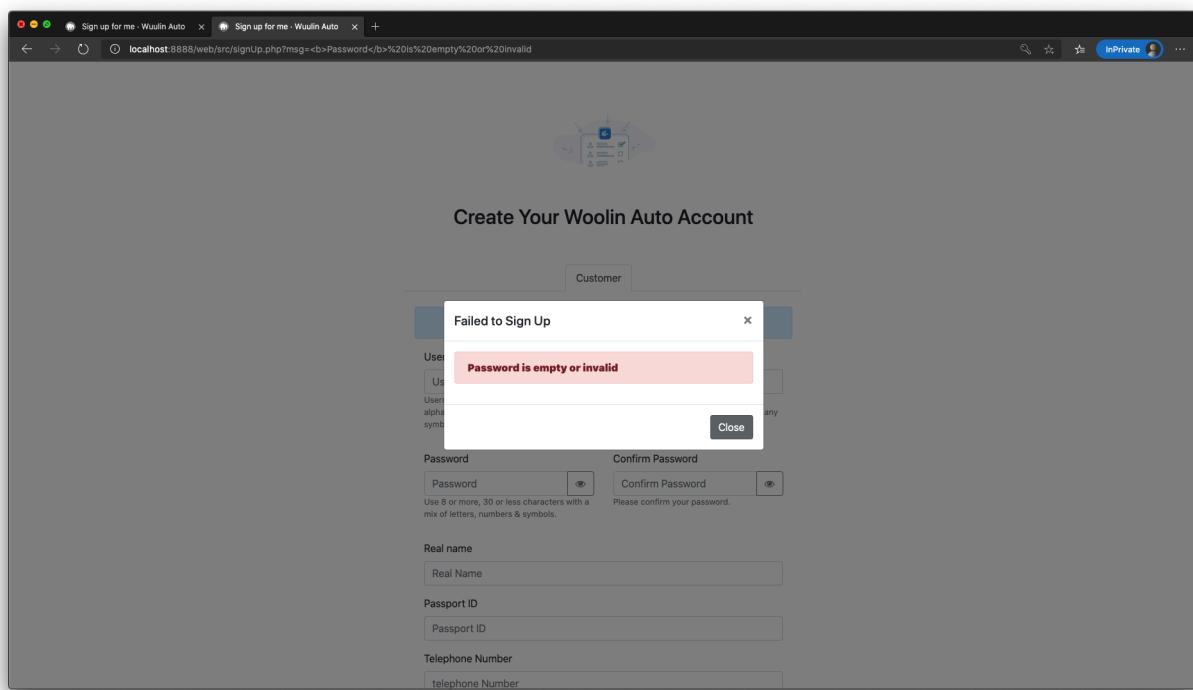
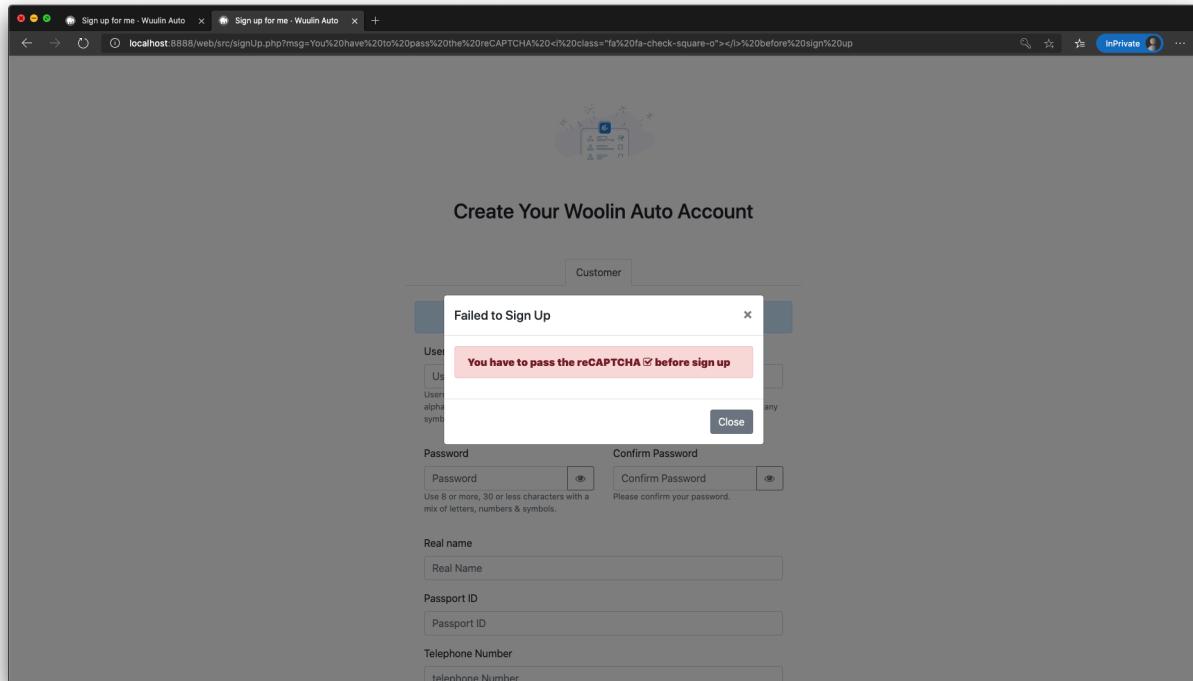
Email

theronaldtrump@gmail.com

Country

Select country

0.2.1: Error in Sign up



and so on ...

1: Login as Customer

Demo Username: customer1 password: customer1password

- The default view is **Messages view**, you can switch to different views by toggling the Navbar on the left.
- The **Log Out** button on the top right will log off your account and take you back to login.

1.1: (Default) Messages view

Messages

An Order has been cancelled by Sales Representative
An order (orderId: 15) at 2020-05-23 17:07:11 has been cancelled by Mike Pence due to exceeding of Sales Representative's mask quota, check and find more information.

An Order has exceed Sales Representative's masks quota
An order (orderId: 11) at 2020-05-12 12:20:01 has exceed Mike Pence's mask quota, check and find more information.

An Order has exceed Sales Representative's masks quota
An order (orderId: 7) at 2020-05-11 15:30:01 has exceed Mike Pence's mask quota, check and find more information.

An Order has exceed Sales Representative's masks quota
An order (orderId: 6) at 2020-05-07 22:20:01 has exceed Barack Obama's mask quota, check and find more information.

An Order has exceed Sales Representative's masks quota
An order (orderId: 2) at 2020-04-16 12:20:01 has exceed Mike Pence's mask quota, check and find more information.

Will be notified if:

- your order exceeds Sales Representative's masks quota.
- your order has been cancelled by Sales Representative due to exceeds of his/her quota.

All with order information and respective Sales Reps info.

1.2: Shopping Cart view

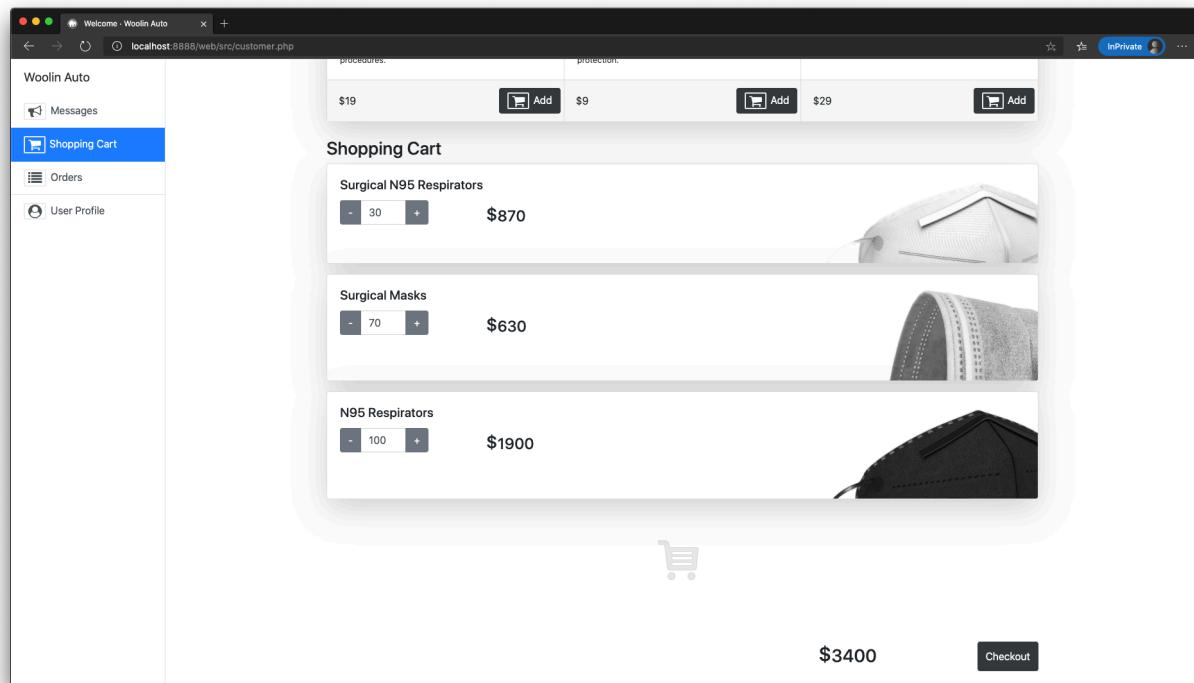
N95 Respirators
Our cost-effective Surgical N95 Respirators line meets Centers for Disease Control and Prevention (CDC) guidelines for protection against TB and is National Institute for Occupational Safety and Health (NIOSH) certified to have a filter efficiency level of 95 percent or greater against particulate aerosols free of oil. As the front lines of filtration, these Surgical N95 Respirators are also Food and Drug Administration (FDA) cleared for use in the OR during surgical procedures.

Surgical Masks
Surgical masks provide the protection users seek, without compromising the comfort and breathability. Cardinal Health offers ASTM Level 3 and ASTM Level 1 surgical masks. Surgical masks are traditionally characterized by surgical ties and closeness of fit. Recommended for use in the Operating Room. ASTM Level 3 Surgical Masks include 4 layers of construction which offer clinicians comfort, protection, and breathability that they seek. Designed for fluid protection.

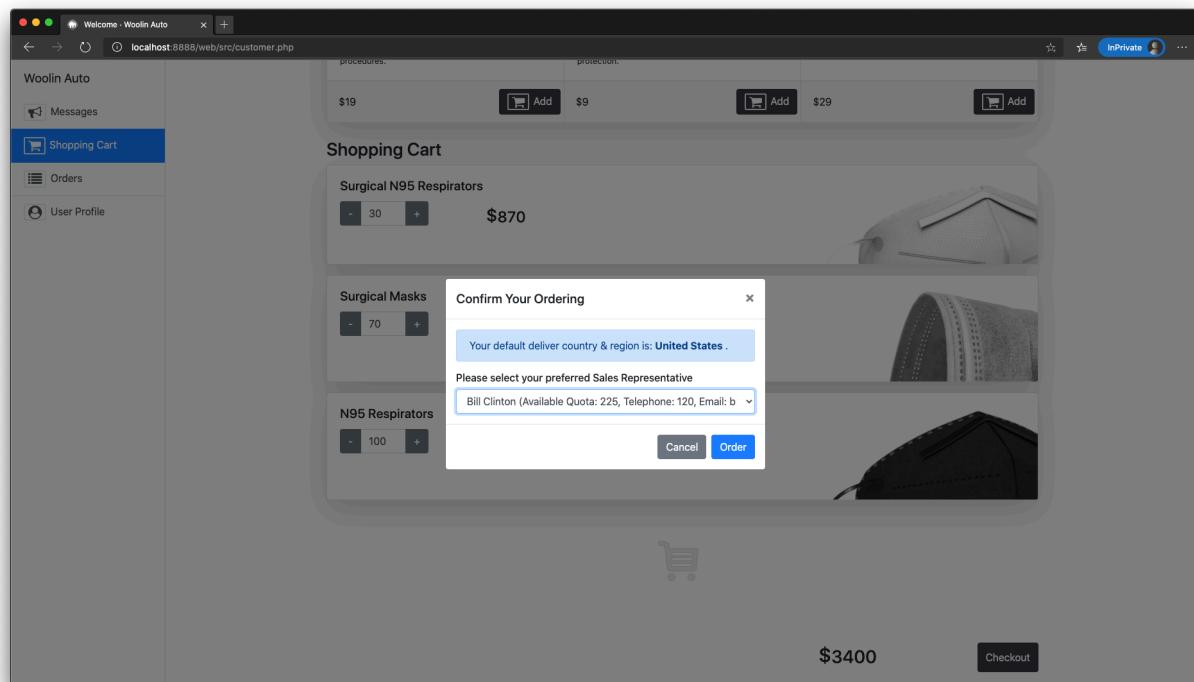
Surgical N95 Respirators
This health care particulate respirator and surgical mask helps provide respiratory protection against certain airborne biological particles. As a disposable particulate respirator, it is intended to help reduce wearer exposure to certain airborne particles including those generated by electrocautery, laser surgery, and other powered medical instruments. As a surgical mask, it is designed to be fluid resistant to splash and spatter of blood and other infectious materials.

	\$19	 Add	\$9	 Add	\$29	 Add
Shopping Cart						

Here you can view descriptions of masks made by Woolin Auto and choose to add different types of masks to your shopping cart by clicking **Add** button on the card, you can choose the amount of every type of masks as well.



When you finally make you mind to make orders, press the **Checkout** button, it will pop up a window for you to choose your preferred Sales Reps (with Sales Rep's name, available quota, telephone as well as email).



Press order to finally submit the order. it will pop out a window showing that it has been successfully submitted.

You can change your mind at any time by clicking **Cancel**. We will not charge you for that :)

1.3: Orders view

This view clearly shows all orders made by you, including:

- Those that are normal (in **White**).
- Those that are cancelled by you (in **Grey**) with disabled Cancel button.
- Those that are cancelled by your sales reps (in **Red**) with no Cancel button.
- and those that exceed Sales Rep's quota (in **Yellow**).

you can only cancel orders that are made within 24 hours

All Orders

2020-05-23 17:33:48

Order ID: 16	Sales Reps ID:	2	Quantity: 100
to: United States	Real name:	Bill Clinton	
	Telephone:	120	Quantity: 70
	Email:	billclinton@gmail.com	

\$3400

Status: **Cancelled by You**

2020-05-23 17:07:11

Order ID: 15	Sales Reps ID:	1	Quantity: 1
to: United States	Real name:	Mike Pence	
	Telephone:	119	Quantity: 1
	Email:	mikepence@gmail.com	

\$57

Status: **Abnormal: Cancelled by Sales Representative**

2020-05-12 14:59:01

Order ID: 12	Sales Reps ID:	3	Quantity: 1000
to: United States	Real name:	Joe Biden	
	Telephone:	121	Quantity: 100
	Email:	joebiden@gmail.com	

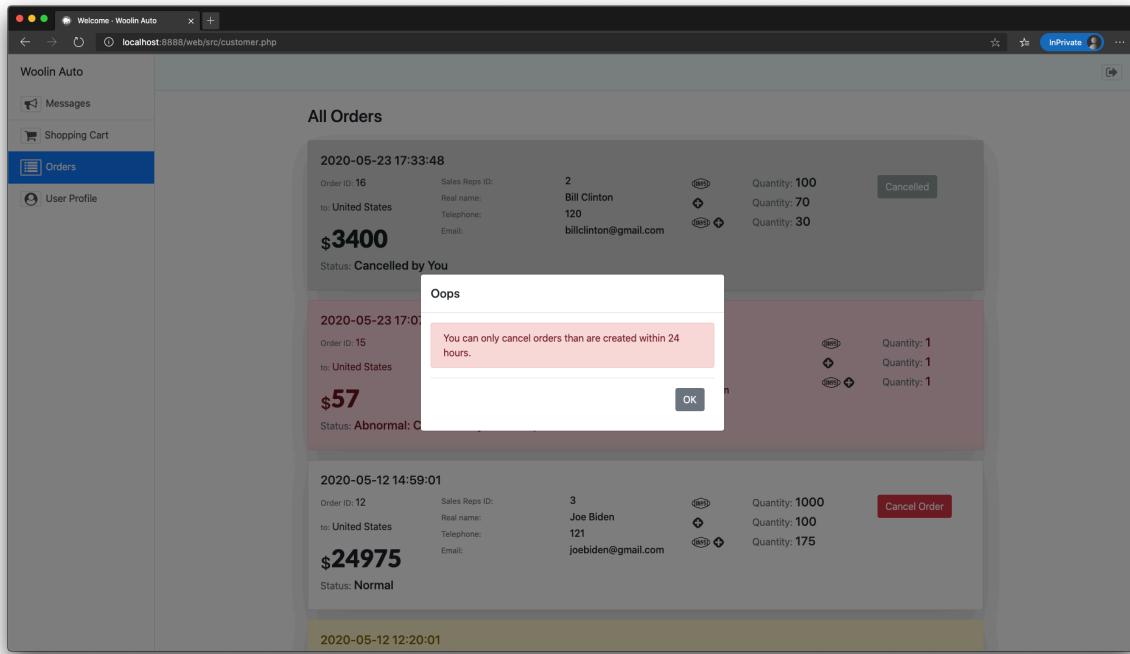
\$24975

Status: **Normal**

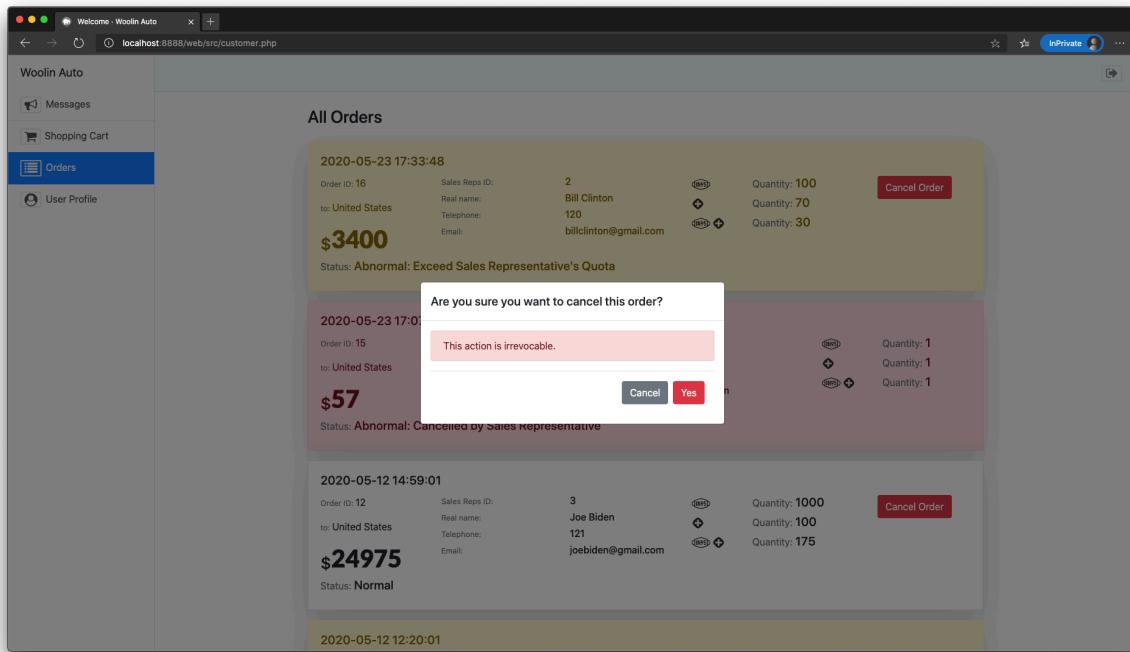
2020-05-12 12:20:01

1.3.1: Cancel Order

- when you cancel orders that are made more than 24 hours ago, it will pop up a window to prevent you from doing so.



- When you cancel orders that are made within 24 hours, it will pop up a alert warning you that this action is irrevocable.



1.4: User Profile view

You can update your user profile **Exclude Username** here. Simply modify all your information and click on the **Update Information** button to update them.

Can change your password by toggling the **Change Password** switch and type in the same new password twice. Otherwise the system will not change your password even if you typed in a new one.

Username
customer1
Username is case-insensitive and must be within 15 characters and can only contain alphanumeric characters (letters A-Z, numbers 0-9) and underscores(_). Cannot contain any symbols, dashes, or spaces.
You may not modify your username once sign up.

Change Password
You may toggle this button if you want to update your password. Otherwise changes on password will not be saved

Password
Use 8 or more, 30 or less characters with a mix of letters, numbers & symbols.

Confirm Password
Please confirm your password.

Real name
Donald Trump

Passport ID
n3205521

Telephone Number
911

Email
donaldtrump@gmail.com

Country
United States

I'm not a robot 
reCAPTCHA
Privacy · Terms

Update Information

2: Login as Sales Representative

Demo Username: salesreps1 password: salesreps1password

- The default view is **Messages view**, you can switch to different views by toggling the Navbar on the left.
- The **Log Out** button on the top right will log off your account and take you back to login.

2.1: (Default) Messages View

Will be notified if:

- Customer's order exceeds your masks quota.
- Customer has cancelled his/her order.

All with order information and respective Sales Reps info.

Messages

An order has been cancelled by Customer
An order (orderId: 17) at 2020-05-23 17:59:55 has been cancelled by customer: Donald Trump, check and find more information.

An order has exceed your masks quota
An order (orderId: 11) at 2020-05-12 12:20:01 from Donald Trump has exceed your mask quota, check and find more information.
You can contact Manager to grant, re-grant, or update your quota.

An order has exceed your masks quota
An order (orderId: 7) at 2020-05-11 15:30:01 from Donald Trump has exceed your mask quota, check and find more information.
You can contact Manager to grant, re-grant, or update your quota.

An order has exceed your masks quota
An order (orderId: 2) at 2020-04-16 12:20:01 from Donald Trump has exceed your mask quota, check and find more information.
You can contact Manager to grant, re-grant, or update your quota.

2.2: Statistics view

you can see:

- The Quota that you have used
- All Quota granted by managers

as well as

- The components of all your orders, eg: from which Customer, how many masks in that order.

Quota

Quota Used: 742 | Quota All: 400

Quota Used: 742

Order Components

Different color represents different customer, different section within same color represents different orders.

Customer Name: Donald Trump (Blue) and Nancy Pelosi (Green)

Customer	Order Component	Count
Donald Trump	Order 1	1422
	Order 2	1522
Nancy Pelosi	Order 1	1425
	Order 2	1029

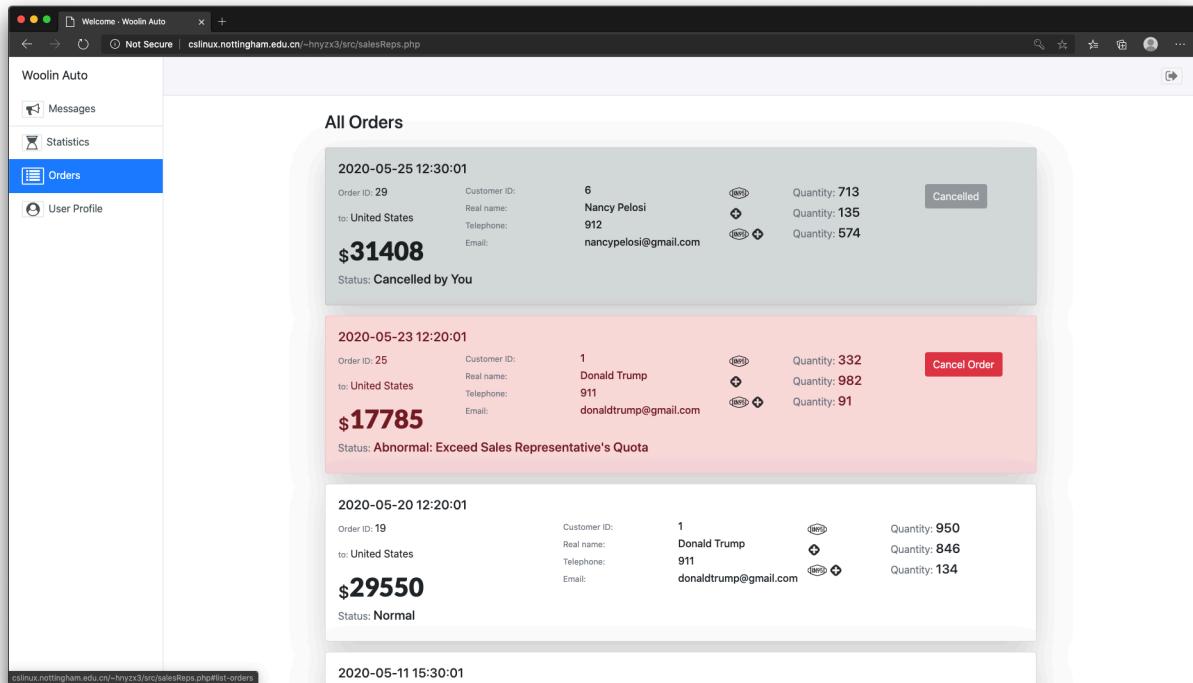
2.3: Orders view

This view clearly shows all orders assigned to you, including:

- Those that are normal (in **White**) and cannot be cancelled by you.
- Those that are cancelled by you (in **Grey**) with disabled Cancel button.
- and those that exceed your quota (in **Red**) with Cancel button.

Those orders that are cancelled by Customer will not appear in this section.

You can cancel orders that exceed your quota and made within 24 hours.



The screenshot shows the 'All Orders' page in the Woolin Auto application. The left sidebar includes 'Messages', 'Statistics', 'Orders' (selected), and 'User Profile'. The main content area is titled 'All Orders' and displays three orders:

- Order ID: 29 (Cancelled by You)**

Customer ID: 6
Real name: Nancy Pelosi
Telephone: 912
Email: nancypelosi@gmail.com
Quantity: 713

\$31408
Status: Cancelled by You
- Order ID: 25 (Abnormal: Exceed Sales Representative's Quota)**

Customer ID: 1
Real name: Donald Trump
Telephone: 911
Email: donaldtrump@gmail.com
Quantity: 332

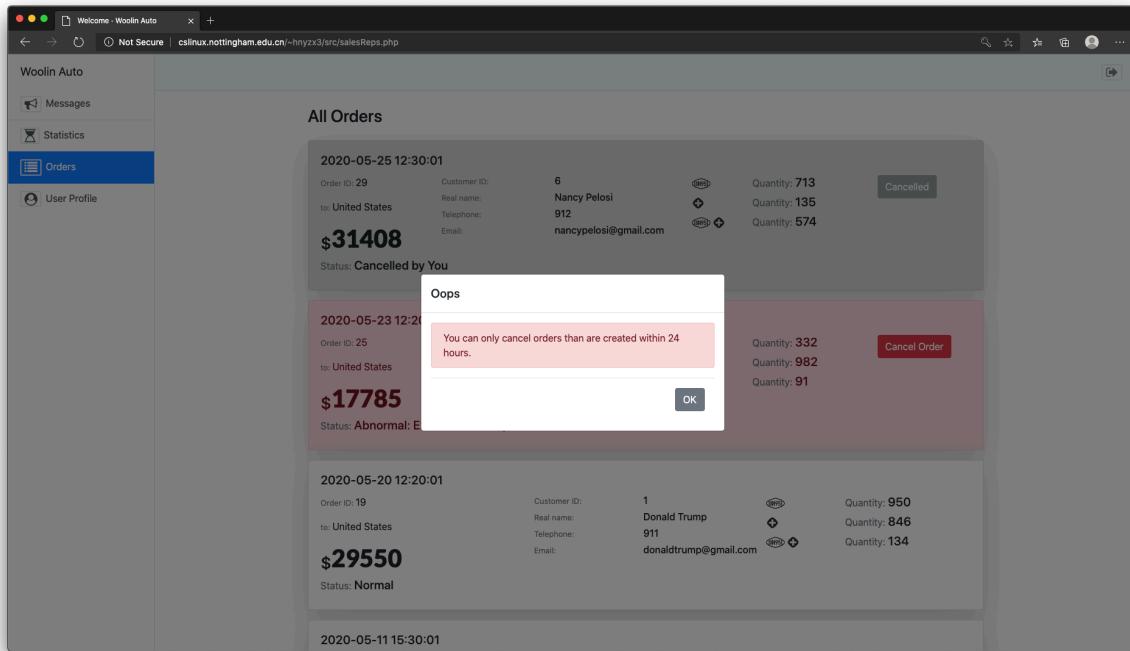
\$17785
Status: Abnormal: Exceed Sales Representative's Quota
- Order ID: 19 (Normal)**

Customer ID: 1
Real name: Donald Trump
Telephone: 911
Email: donaldtrump@gmail.com
Quantity: 950

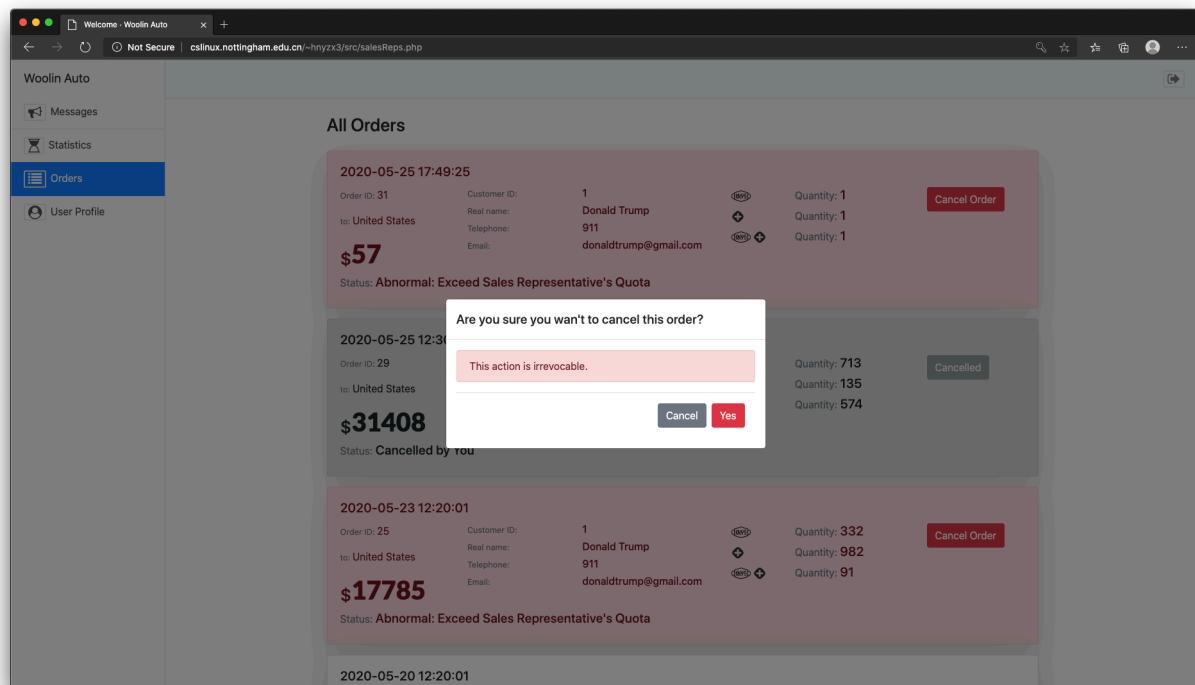
\$29550
Status: Normal

2.3.1: Cancel Order

- when you cancel orders that are anomaly and made more than 24 hours ago, it will pop up a window to prevent you from doing so.



- When you cancel orders that are anomaly and made within 24 hours, it will pop up a alert warning you that this action is irrevocable.



2.4: User Profile view

Sales Reps can update their respective user profile **Exclude Username and Region** here.

Can change their password by toggling the **Change Password** switch and type in the same new password twice. Otherwise system will not change your password even if you typed in a new one.

The **Country & Region** can only be modified by manager.

The screenshot shows a web browser window for 'Woolin Auto' with the URL 'localhost:8888/web/src/salesReps.php'. The page is titled 'User Profile'. On the left, there is a sidebar with links: 'Messages', 'Statistics', 'Orders', and 'User Profile' (which is highlighted in blue). The main content area contains a form for updating user information. The fields include:

- Username:** salesreps1 (with validation text: 'Username is case-insensitive and must be within 15 characters and can only contain alphanumeric characters (letters A-Z, numbers 0-9) and underscore(_). Cannot contain any symbols, dashes, or spaces. You may not modify your username once sign up.')
- Change Password:** A radio button labeled 'Change Password' with the note: 'You may toggle this button if you want to update your password. Otherwise changes on password will not be saved.'
- Password:** A password input field with validation text: 'Use 8 or more, 30 or less characters with a mix of letters, numbers & symbols.'
- Confirm Password:** A password confirmation input field with validation text: 'Please confirm your password.'
- Real name:** Mike Pence
- Employee ID:** 00000001
- Telephone Number:** 119
- Email:** mikepence@gmail.com
- Country:** United States
- reCAPTCHA:** A checkbox labeled 'I'm not a robot' with the reCAPTCHA logo and text: 'reCAPTCHA Privacy - Terms'.

At the bottom is a blue 'Update Information' button.

3 : Login as Manager / 4: Administrator

Manager and Administrator can both login though **Login as Manager** section, but will be taken to different pages as they can perform relatively different operations.

Demo Username: manager password: manager

3.1: (Default) Messages view

will be notified if:

- Customer's order exceeds sales reps masks quota, but 24 hours has passed and has been marked as complete.

All Messages

An order has exceed masks quota, but 24 hours has passed
 An order (orderId: 14) in Taiwan at 2020-05-17 23:30:01 from Jay Chou has exceed Ing-wen Tsai (EmployeeID: 00000007)'s mask quota, but 24 hours has passed and this order is considered as complete and sold. check and find more information.
 You can grant, re-grant, or update Sales Representative's quota.

An order has exceed masks quota, but 24 hours has passed
 An order (orderId: 13) in Taiwan at 2020-05-14 12:20:01 from Jay Chou has exceed Ing-wen Tsai (EmployeeID: 00000007)'s mask quota, but 24 hours has passed and this order is considered as complete and sold. check and find more information.
 You can grant, re-grant, or update Sales Representative's quota.

An order has exceed masks quota, but 24 hours has passed
 An order (orderId: 11) in United States at 2020-05-12 12:20:01 from Donald Trump has exceed Mike Pence (EmployeeID: 00000001)'s mask quota, but 24 hours has passed and this order is considered as complete and sold. check and find more information.
 You can grant, re-grant, or update Sales Representative's quota.

An order has exceed masks quota, but 24 hours has passed
 An order (orderId: 7) in United States at 2020-05-11 15:30:01 from Donald Trump has exceed Mike Pence (EmployeeID: 00000001)'s mask quota, but 24 hours has passed and this order is considered as complete and sold. check and find more information.
 You can grant, re-grant, or update Sales Representative's quota.

An order has exceed masks quota, but 24 hours has passed
 An order (orderId: 6) in United States at 2020-05-07 22:20:01 from Donald Trump has exceed Barack Obama (EmployeeID: 00000004)'s mask quota, but 24 hours has passed and this order is considered as complete and sold. check and find more information.

3.2: Quota Management view

You can grant, re-grant or update Sales Representative's quota in this view

- **Add** (Re-grant) will add the number you typed in to the existing Quota.
- **Set** (Update) will set the number you typed in to the Quota.

The scheme we apply here is that:

- Everytime manager re-grant or update the quota of Sales Reps, the system will go through all orders made by whom and sort them by order date and re-evaluate them. Those orders that are within new quota, but previously marked as Anomaly because of exceed of old quota, will be re-evaluated and marked back to Normal.

And if you do so, there will be a confirming message.

3.3: Orders view

this view clearly shows all orders, including:

- those that are normal (in **White**).
- those that exceed Sales Reps quota (in **Yellow**).
- and those that exceed Sales Reps quota but 24 hours passed are marked as **Complete**.

Those orders that are cancelled by either Customer or Sales Reps will not appear in this section.

All Orders

2020-05-17 23:30:01

Order ID: 14	Customer ID: 2	Sales Reps EmployeeID: 00000007	Quantity: 1000
to: Taiwan	Real name: Jay Chou	Real name: Ing-wen Tsai	Quantity: 1000
	Telephone: 912	Telephone: 125	Quantity: 1000
	Email: jaychou@gmail.com	Email: ing-wentsai@gmail.com	

\$57000

Status: Abnormal: Exceed Sales Representative's Quota [Complete](#)

2020-05-14 12:20:01

Order ID: 13	Customer ID: 2	Sales Reps EmployeeID: 00000007	Quantity: 1000
to: Taiwan	Real name: Jay Chou	Real name: Ing-wen Tsai	Quantity: 1000
	Telephone: 912	Telephone: 125	Quantity: 1000
	Email: jaychou@gmail.com	Email: ing-wentsai@gmail.com	

\$57000

Status: Abnormal: Exceed Sales Representative's Quota [Complete](#)

2020-05-12 14:59:01

Order ID: 12	Customer ID: 1	Sales Reps EmployeeID: 00000003	Quantity: 1000
to: United States	Real name: Donald Trump	Real name: Joe Biden	Quantity: 100
	Telephone: 911	Telephone: 121	Quantity: 175
	Email: donaldtrump@gmail.com	Email: joebiden@gmail.com	

\$24975

Status: Normal

2020-05-12 12:20:01

3.4: Overview view

This view is a mixture of all statistics as *overview*, which includes:

- Total Quantity of all orders.
- Total Revenue of all orders.
- Masks that are under ordering (within 24 hours).
- Total Quantity grouped by weeks (2020 19 means the 19th week of 2020).
- Total Revenue grouped by weeks.
- Region distribution of all Sales Representatives.
- Region distribution of all Customer.

Some of the chart will pop up details of statistics when mouse hover on it :)

Overview

Total Quantity

Category	Value
Anomaly	6142
Normal	24857

Total Revenue

Category	Value
Anomaly	96858
Normal	453993

Mask Under Ordering

2020-05-25 12:30:01

Order ID: 29	Customer ID: 6	Sales Reps EmployeeID: 00000001	Quantity: 713
to: United States	Real name: Nancy Pelosi	Real name: Mike Pence	Quantity: 135
	Telephone: 912	Telephone: 119	
	Email: nancypelosi@gmail.com	Email: mikepence@gmail.com	Quantity: 574

\$31408

Status: Normal

Weekly Quantity

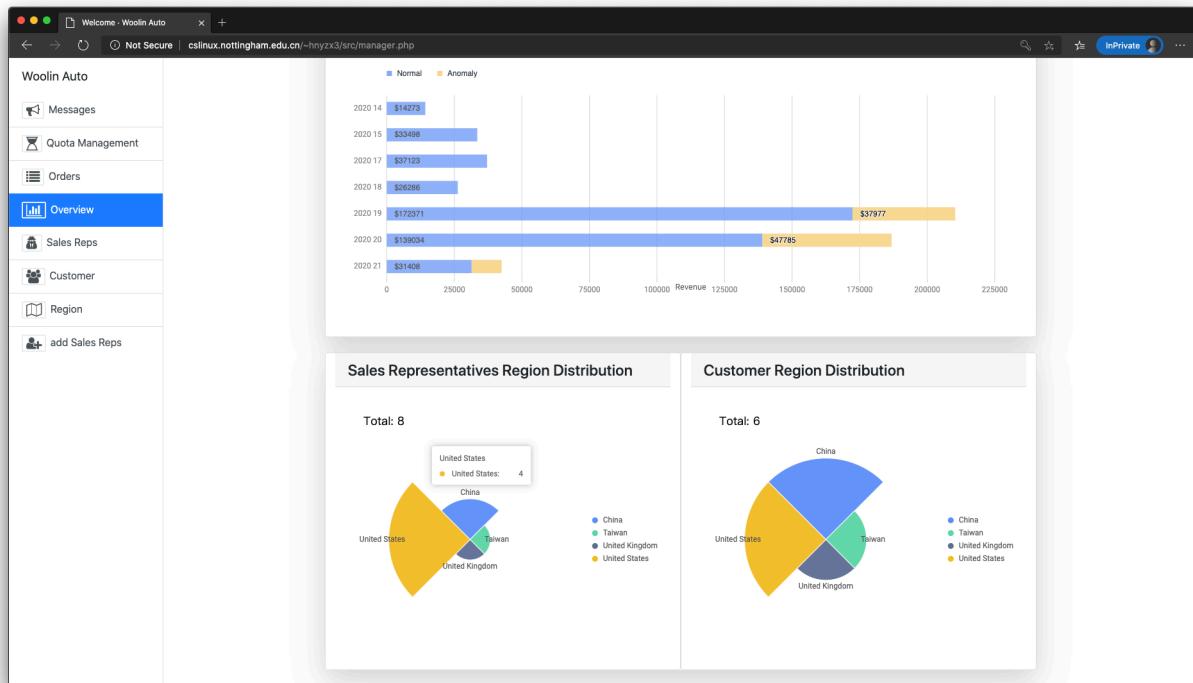
Date	Normal	Anomaly
2020-14	1017	
2020-15	1522	
2020-17	1907	
2020-18	1574	
2020-19	9089	2123
2020-20	8426	2995
2020-21	1422	1024

Weekly Quantity

Date	Normal	Anomaly
2020-14	1017	
2020-15	1522	
2020-17	1907	
2020-18	1574	
2020-19	9089	2123
2020-20	8426	2995
2020-21	1422	1024

Weekly Revenue

Date	Revenue	
2020-14	\$14273	
2020-15	\$33498	
2020-17	\$37123	
2020-18	\$26286	
2020-19	\$172371	\$37977
2020-20	\$139034	\$47785
2020-21	\$31408	

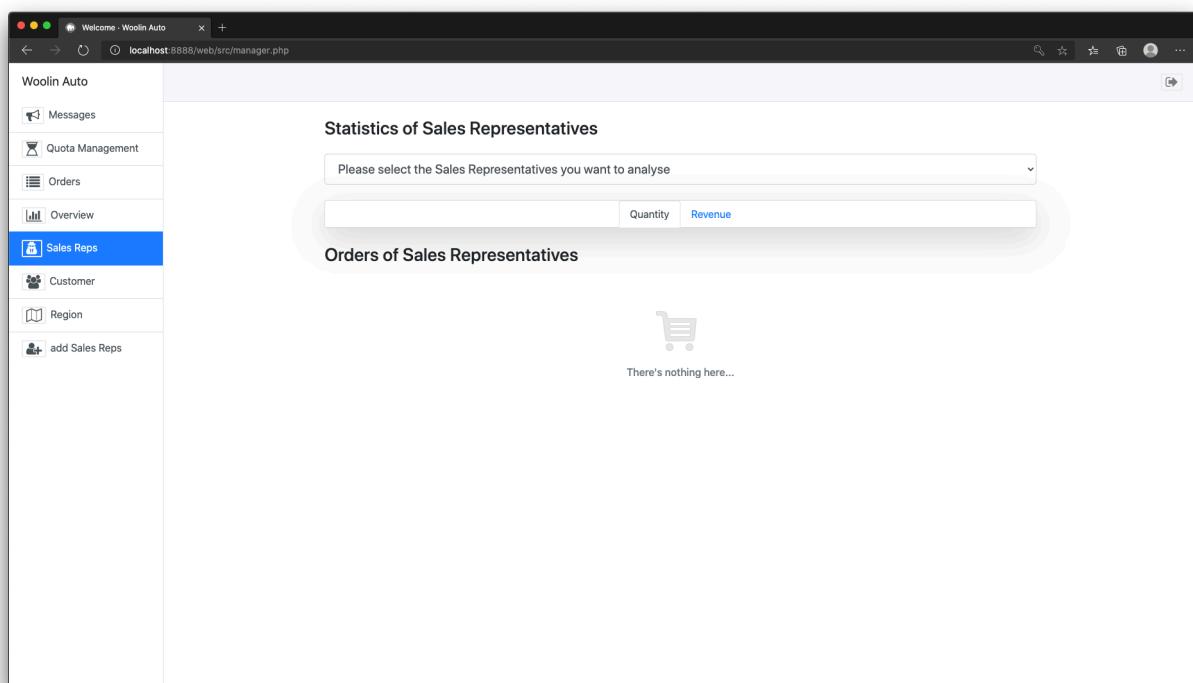


3.5: Sales Reps view

This view shows:

- Personal information about this Sales Reps.
- Can change the Region of Sales Reps
- Weekly quantity/revenue made by this Sales Reps (chart is Interactive)
- All orders assigned to this Sales Reps.

By default it will display a blank space until you choose one Sales Reps.



Statistics of Sales Representatives

Mike Pence

Mike Pence

Sales Reps EmployeeID:	00000001	Telephone:	119	Quota Used:	742
Real name:	Mike Pence	Email:	mikepence@gmail.com	Quota All:	400
Username:	salesreps1	Region:	United States		

Quantity Revenue

Normal Anomaly

Orders of Sales Representatives

2020-05-25 12:30:01

Orders of Sales Representatives

2020-05-25 12:30:01

Order ID: 29 Customer ID: 6 Sales Reps EmployeeID: 00000001 Quantity: 713
to: United States Real name: Nancy Pelosi Real name: Mike Pence + Quantity: 135
Telephone: 912 Telephone: 119 Email: nancypelosi@gmail.com Email: mikepence@gmail.com Quantity: 574
\$31408
Status: Normal

2020-05-23 12:20:01

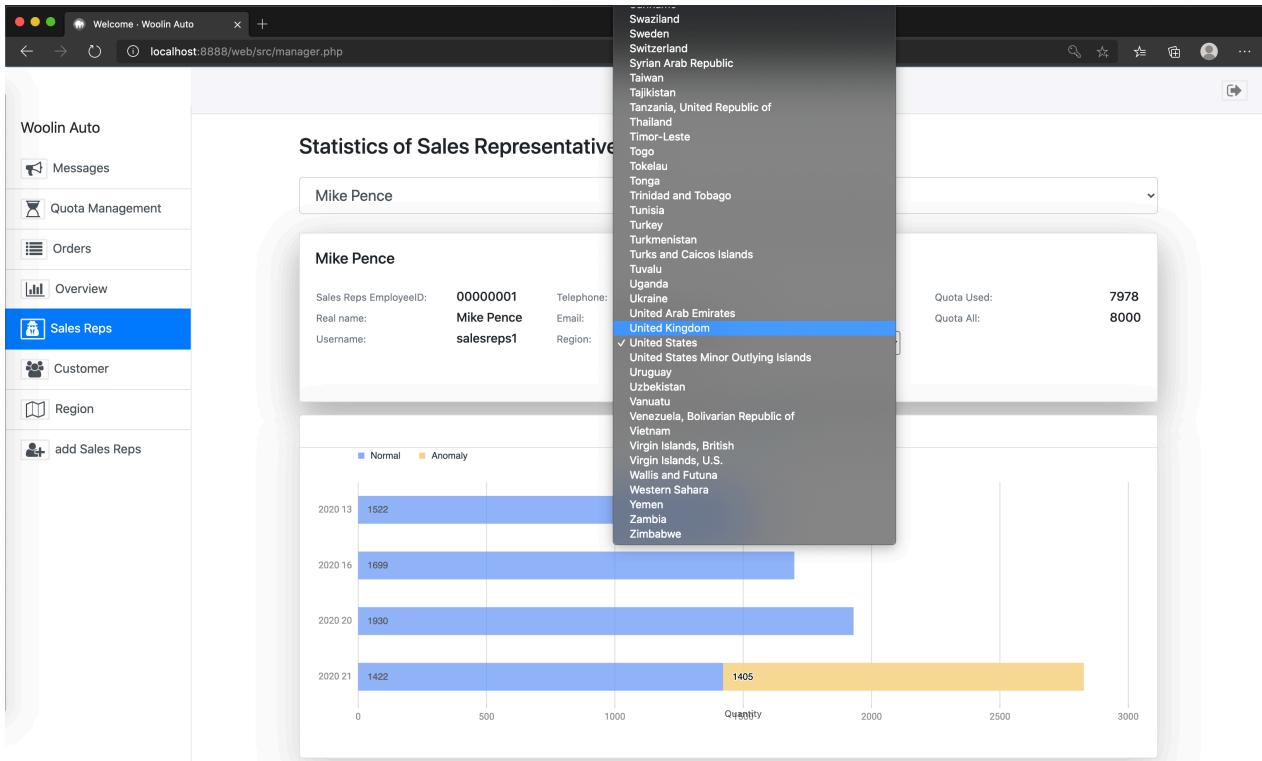
Order ID: 25 Customer ID: 1 Sales Reps EmployeeID: 00000001 Quantity: 332
to: United States Real name: Donald Trump Real name: Mike Pence + Quantity: 982
Telephone: 911 Telephone: 119 Email: donaldtrump@gmail.com Email: mikepence@gmail.com Quantity: 91
\$17785
Status: Abnormal: Exceed Sales Representative's Quota **Complete**

2020-05-20 12:20:01

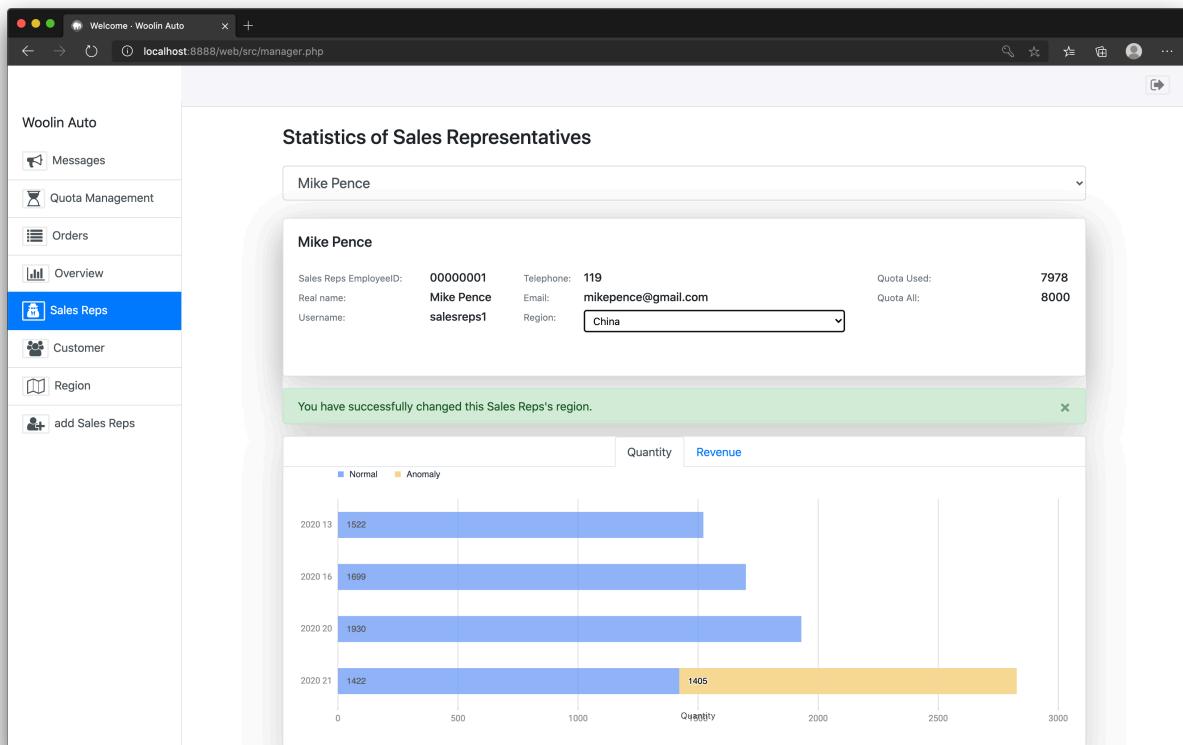
Order ID: 19 Customer ID: 1 Sales Reps EmployeeID: 00000001 Quantity: 950
to: United States Real name: Donald Trump Real name: Mike Pence + Quantity: 846
Telephone: 911 Telephone: 119 Email: donaldtrump@gmail.com Email: mikepence@gmail.com Quantity: 134
\$28550

3.5.1: Change Region of Sales Reps

You can simply change the region of Sales Reps just by select a new Region in the list.



Orders of Sales Representatives

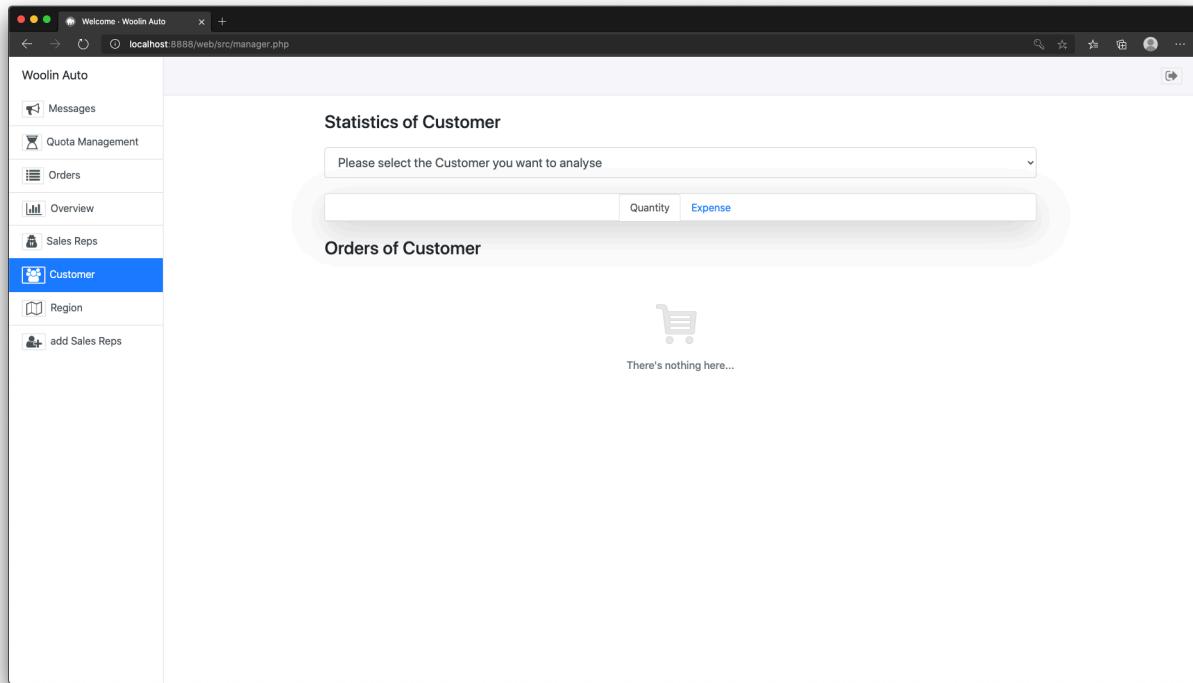


3.6: Customer view

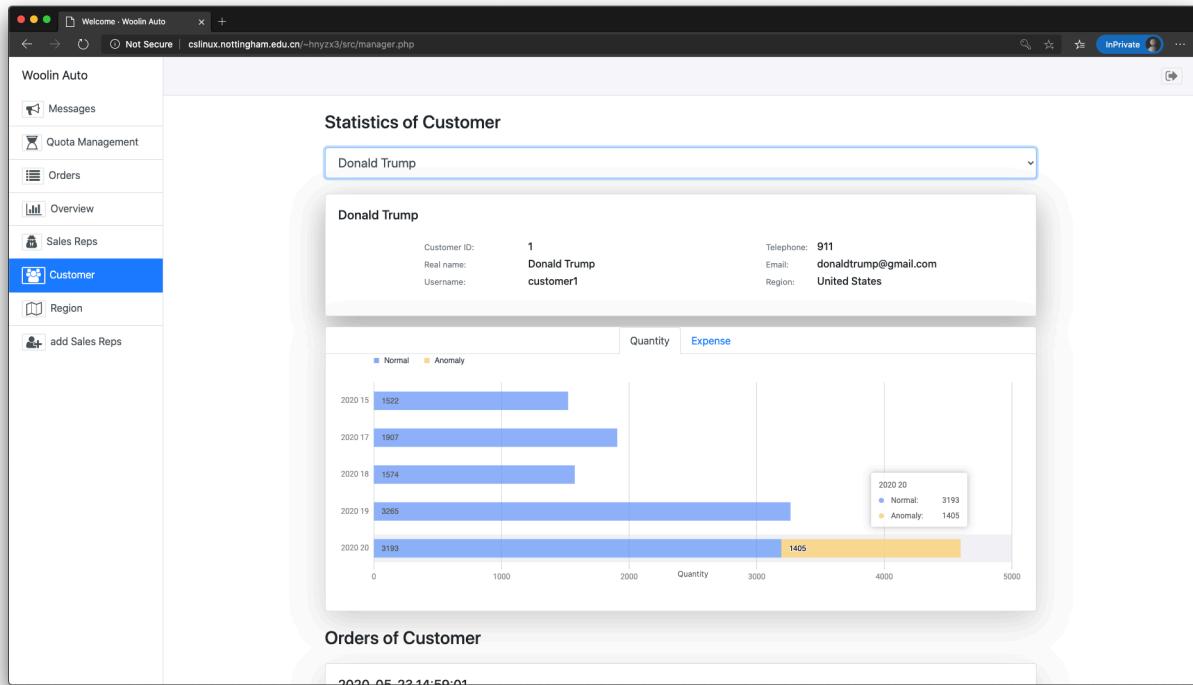
This view shows:

- Personal information about this Customer.
- Weekly quantity/revenue made by this Customer (chart is Interactive)
- all orders made by this Customer.

By default it will display a blank space until you choose one Customer.



This screenshot shows the 'Statistics of Customer' section of the Woolin Auto application. The sidebar on the left is visible with the 'Customer' item selected. The main content area displays a message: 'Please select the Customer you want to analyse'. Below this is a chart section with tabs for 'Quantity' and 'Expense'. A shopping cart icon is present, and the message 'There's nothing here...' is displayed. The chart area is empty.



This screenshot shows the 'Statistics of Customer' section for 'Donald Trump'. The sidebar on the left is visible with the 'Customer' item selected. The main content area displays customer details: Customer ID: 1, Real name: Donald Trump, Username: customer1, Telephone: 911, Email: donaldtrump@gmail.com, and Region: United States. Below this is a chart section with tabs for 'Quantity' and 'Expense'. The chart shows order data for the year 2020, with a tooltip for the final bar: '2020 20' (Normal: 3193, Anomaly: 1405). The chart has a scale from 0 to 5000. The 'Expense' tab is selected. The chart area is empty.

3.7: Region view

This view shows:

- Quantity/revenue with respect to distribution of region
- All orders in this Region

By default it will display only the distribution chart until you choose one Region.

Orders in Region

2020-05-19 11:38:01

Order ID:	Customer ID:	Sales Reps EmployeeID:	Quantity:
18	5	00000007	354
to: China	HuaTeng Ma	Real name: Nanshan Zhong	Quantity: 179
	Telephone: 915	Telephone: 125	
	Email: huatengma@qq.com	Email: nanshanzhong@gmail.com	Quantity: 141

\$12426

2020-05-22 11:30:01

Order ID:	Customer ID:	Sales Reps EmployeeID:	Quantity:
23	4	00000006	194
to: China	Jack Ma	Real name: Wenliang Li	Quantity: 671
	Telephone: 914	Telephone: 20200207	
	Email: jackma@alibaba.com	Email: wenliangli@gmail.com	Quantity: 623

\$27792

2020-05-18 11:30:01

Order ID:	Customer ID:	Sales Reps EmployeeID:	Quantity:
17	4	00000006	956
to: China	Jack Ma	Real name: Wenliang Li	Quantity: 759
	Telephone: 914	Telephone: 20200207	
	Email: jackma@alibaba.com	Email: wenliangli@gmail.com	Quantity: 252

\$32303

3.8: Add Sales Reps view

In this view you can register Sales Reps, as what the manager is responsible for.

add Sales Reps

Username
 Username
Username is case-insensitive and must be within 15 characters and can only contain alphanumeric characters (letters A-Z, numbers 0-9) and underscores(_). Cannot contain any symbols, dashes, or spaces.

Password
 Password
Use 8 or more, 30 or less characters with a mix of letters, numbers & symbols.

Confirm Password
 Confirm Password
Please confirm your password.

Real name
 Real Name

Employee ID
 Employee ID

Telephone Number
 telephone Number

Email
 therealdonaldtrump@gmail.com

Country
 Select country

I'm not a robot 
reCAPTCHA
Privacy + Terms

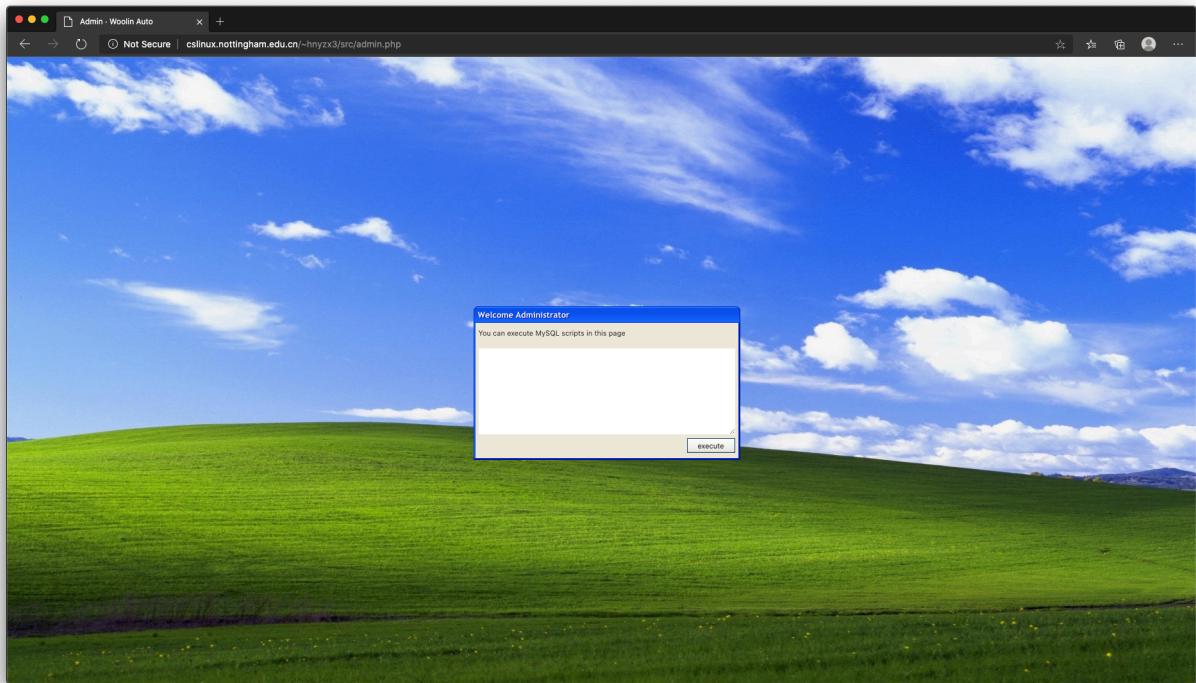
Sign up

4: Administrator

This page can be logged in though the Admin account in the manager section in the login page.

This WIndows XP's wallpaper feels...nerd.

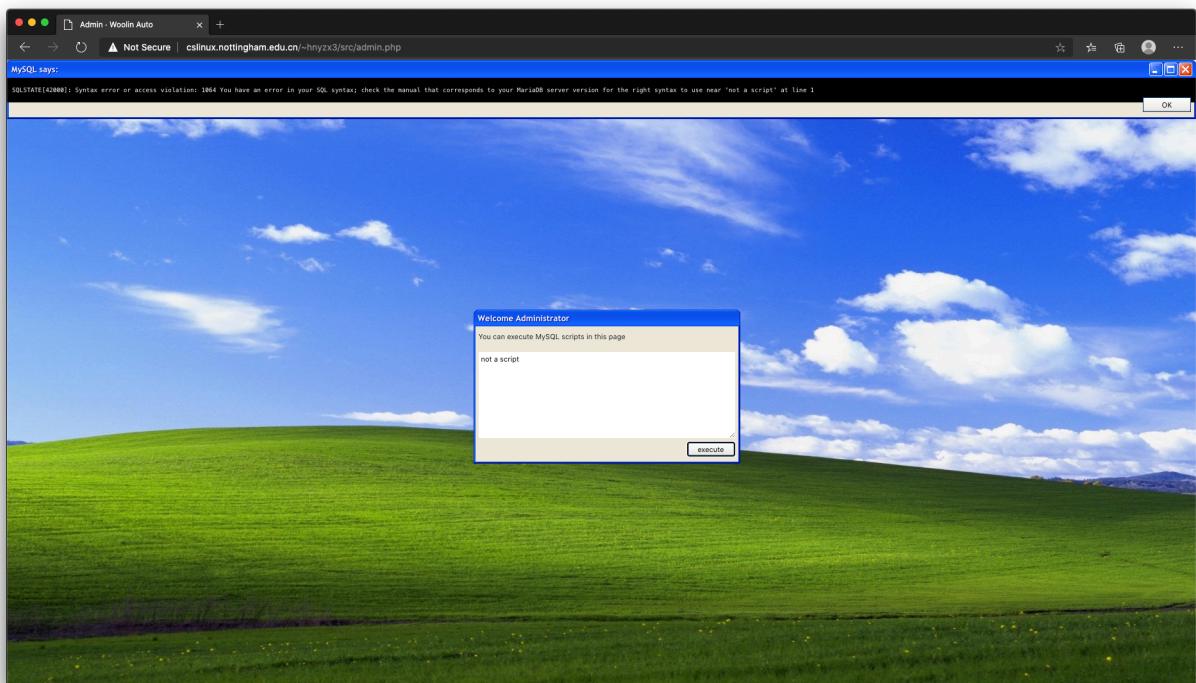
Demo Username: sudo password: sudo

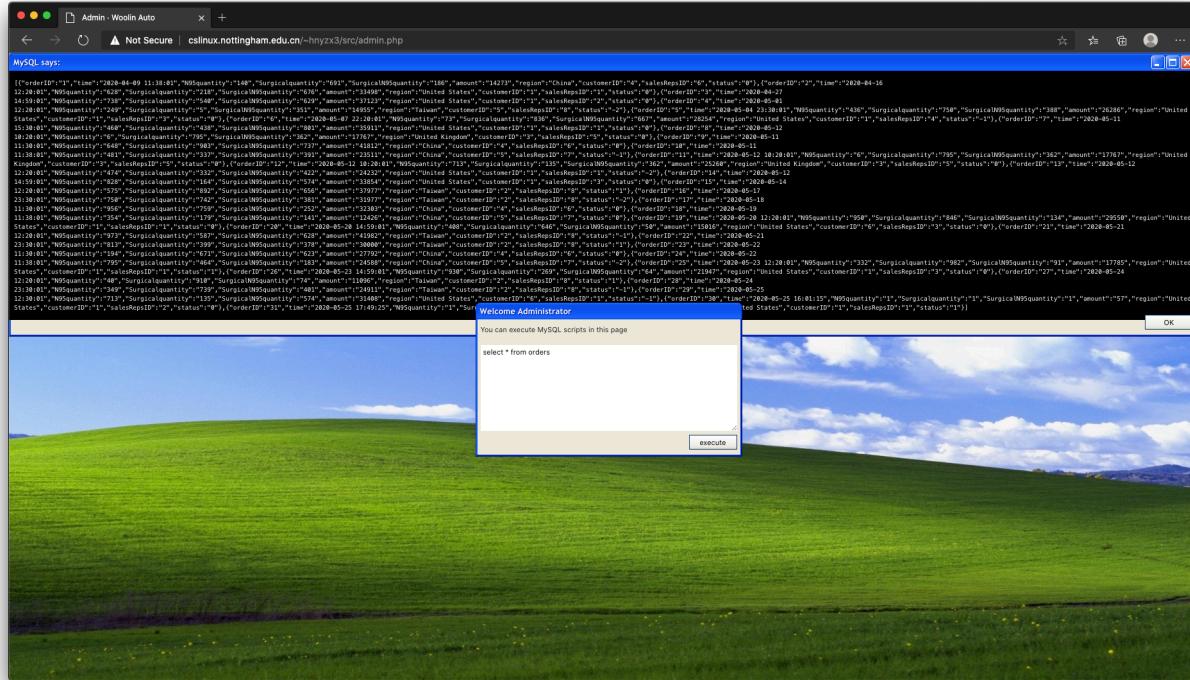


Assuming that the user, as the administrator of the system, has enough knowledge to work on manipulation of MySQL, he/she can operate 'just like sudo in terminal' by typing **MySQL scripts** to the textbox and click **Execute**.

You can exit this **Terminal** and back to login page by typing "**exit()**" and execute.

depending on the your scripts, it will pop up windows showing different messages or JSON objects returned by database.





Database

Structure

- **Customer**

Column	Type	NULL	Comment
customerID	BIGINT	NOT NULL	AUTO_INCREMENT
username	VARCHAR(15)	NOT NULL	Match Twitter Username Regex
password	VARCHAR(64)	NOT NULL	Match Twitter Password Regex
realname	VARCHAR(255)	NOT NULL	Customer Realname
passportID	VARCHAR(20)	NOT NULL	Customer Passport ID
telephone	VARCHAR(20)	NOT NULL	Customer Telephone Number
region	VARCHAR(255)	NOT NULL	Customer Country & Region Full Name
email	VARCHAR(255)	NOT NULL	Match Email Regex

- Sales Reps

Column	Type	NULL	Comment
salesRepsID	BIGINT	NOT NULL	AUTO_INCREMENT
username	VARCHAR(15)	NOT NULL	Match Twitter Username Regex
password	VARCHAR(64)	NOT NULL	Match Twitter Password Regex
realname	VARCHAR(255)	NOT NULL	Sales Reps Realname
employeeID	VARCHAR(20)	NOT NULL	Sales Reps Employee ID
telephone	VARCHAR(20)	NOT NULL	Sales Reps Telephone Number
region	VARCHAR(255)	NOT NULL	Sales Reps Country & Region Full Name
email	VARCHAR(255)	NOT NULL	Match Email Regex
quotaUsed	BIGINT	NOT NULL	Quota Already Used
quotaAll	BIGINT	NOT NULL	Quota Assigned By Manager

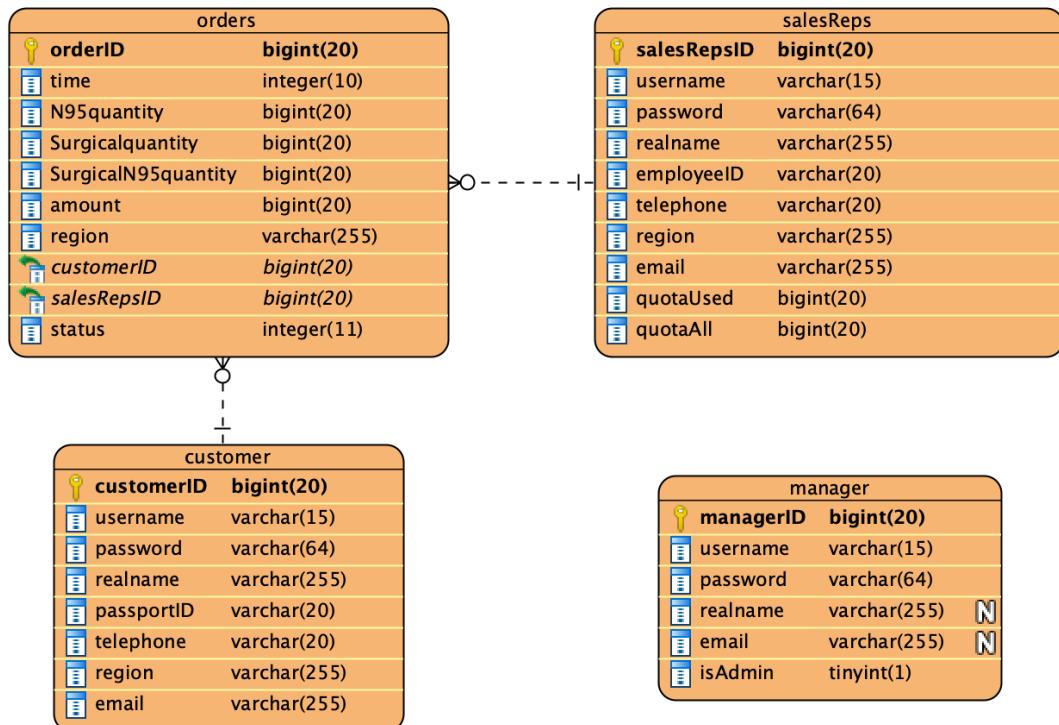
- **Manager**

Column	Type	NULL	Comment
managerID	BIGINT	NOT NULL	AUTO_INCREMENT
username	VARCHAR(15)	NOT NULL	Match Twitter Username Regex
password	VARCHAR(64)	NOT NULL	Match Twitter Password Regex
realname	VARCHAR(255)		Manager Realname
email	VARCHAR(255)		Match Email Regex
isAdmin	BOOL	NOT NULL	Manager is Admin of System

- **Orders**

Column	Type	NULL	Comment
orderID	BIGINT	NOT NULL	AUTO_INCREMENT
time	DATETIME	NOT NULL	Time When Order Added
N95quantity	BIGINT	NOT NULL	Number of N95 Ordered
Surgicalquantity	BIGINT	NOT NULL	Number of Surgical Ordered
SurgicalN95quantity	BIGINT	NOT NULL	Number of SurgicalN95 Ordered
amount	BIGINT	NOT NULL	Total Price Of This Order
region	VARCHAR(255)	NOT NULL	Where This Order Shipped to
customerID	BIGINT	NOT NULL	Foreign Key / Who Ordered
salesRepsID	BIGINT	NOT NULL	Foreign Key / Which Sales Reps Appointed
status	INT	NOT NULL	-2 User Cancelled -1 SalesReps Cancelled 0 Normal 1 Anomaly

Entity Relationship Diagram



System-wide Evaluation

Privacy

User privacy matters a lot, in this approach, to prevent from leaking of password through database storage, this system stores user's password by applying **SHA-256** algorithm on it, rather than purely store bare password in to a fragile database that might be cracked at any time. In this approach, even if your "password" from the database has leaked, people who get this "SHA"ed password still cannot retrieve your original password because SHA-256 algorithm by far cannot reverse engineering. Moreover, this encryption all happens in the front-end, both at sign up or login, so that it will never transmit unencrypted password in the unsafe internet.

Stability

This system has embedded with Google's **reCAPTCHA** on login, sign up as well as updating user information procedure, which can prevent those spam and abuse and make sure that it is REAL HUMAN who is using your system. Even so, it has not yet been equipped with anti-DDoS modules, which might be a vulnerability when it, as a global system, is further deployed on public internet.

Security

This website uses Session to keep the connection between browser and server, however, it's not safe enough as anyone can cheat with server because it's a non-HTTPS connection. To solve this issue and enhance security, a **unique Session ID** will be created once the user login. this *Session ID* consists of the concatenation of your username and password, which have already applied SHA-256, and then apply SHA-256 the second time.

```
uniqueID = sha256( username + sha256( password ) )
```

In this encryption approach, every time user send a HTTP request, the server will evaluate the *Session ID* first, before doing anything related to database manipulation.

This website **catches any error** made by using PHP connecting to database, in this scheme, if any unrecoverable error happened, server will redirect user to 503 page, in order to prevent from doing anything harmful to the database.

This website generally applies PDO parameter binding on every SQL statements that has user input in it, which can largely prevent **SQL Injection Attack** when applied on public internet, and thus protect the database from malicious and unexpected manipulation.

Performance

As we all know, JavaScript is a single-threaded programming language, which means it has one call stack and one memory heap. this might appear that this synchronous might be harmful when communicating with the internet. To solve this blocking, this system generally applies **Asynchronous** to all Ajax requests by utilizing **Callback** functions features, which will not be

blocked on stack if the internet connection is unstable or lost. Moreover, every single POST request requires a JSON_status to be echoed, this also stops it from having bad or interrupted executions on the server-side, but unknown by the client-side.

Data Visualization

From my point of view, data cannot be fully understood if without **Visualizing** it. Nowadays, thanks for the contribution from people in Ant Financial, I could use the open source libraries they provide to visualize the data from database into interactive 2D plots. Thus will reduce the difficulty in featuring, classification and monitoring or those data in a large scale.

Vulnerability

- The Administrator Page gives Admin a command windows and sudo privilege on manipulation of the whole database. Even if the executing the SQL scripts requires double check of login status, there might still have possibility that the admin account been leaked.
- Even though the user password is encrypted with hash encryption, however, other sensitive user information, such as Realname, Telephone and email address, is stored plaintext in database, which might be a threaten to user privacy in case the database been cracked. We are seeking for a new way of storing those sensitive information, such as applying private-key and public-key, or using Certification and end-to-end encryption, or any other authorization approaches that can make sure only the one with username and password can decrypt those data.

European Union General Data Protection Regulation