Design Report
for
Kitchen Zealot

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Farhan Zaman

Version 2.0

November 23, 2019

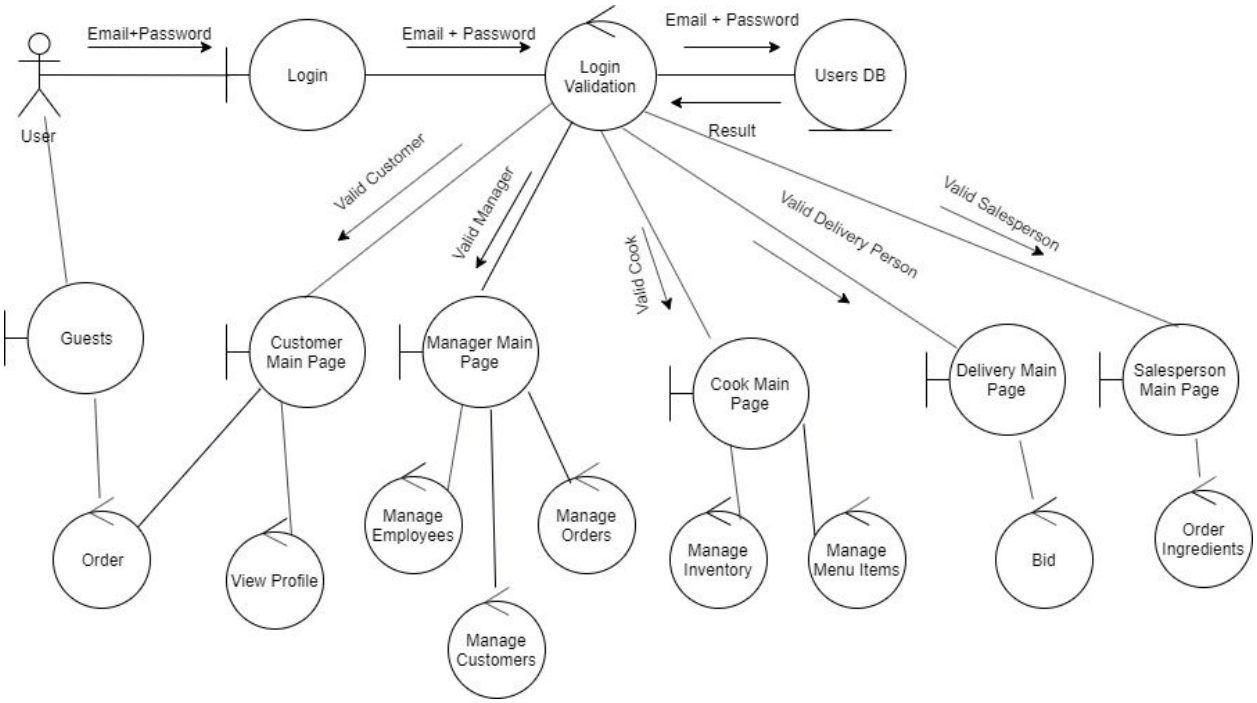
Date	Version	Description	Author
11/2/2019	1.0.0	Initial version of the online restaurant system	Abtahi Chowdhury Abusaleh Masud Safwan Shahid Arman Uddin Farhan Zaman
11/23/2019	2.0.0	This report is meant to provide the data structure and logic to carry out the functionalities dictated by the specification.	Abtahi Chowdhury Abusaleh Masud Safwan Shahid Arman Uddin Farhan Zaman

Table of Contents

1. Introduction

Below you will encounter many diagrams, charts, and pseudocode, as they will assist in breaking down the design of our product. As you continue reading the paper, any questions or confusions that arise will be answered and clarified. Not only does it allow customers (registered users) and guests (unregistered users) to order and receive food, but also gives managers, salespeople, cooks, and delivery people access to their own page to handle services in the company. Delivery people have access to see all the different orders from customers and guests, and bid on them. Salespeople are given comments from cooks, to know and order ingredients that are needed. Cooks are allowed to request more supplies from salespeople, rate salespeople, and change menu items. Managers can approve guest to customers, view order history, view all ratings, start delivery bidding process per order, pay employees, hire/fire employees, and remove warnings.

The **collaboration class diagram** below gives an overview on the entire Kitchen Zealot system.



DB: Database

2. Design

2.1 Use Case Scenarios

View Menu
Normal Scenario 1. Guests, or customers click “Menu” on the homepage to see menu. Customers or Guests who are logged in to the site, can click “Order” to view the menu to order.

Login
Normal Scenario 1. User clicks “Login” button in the navigation bar 2. User is asked to enter their email and password 3. User inputs appropriate information 4. Information is checked against database for validation 5. User is logged in
Exceptional Scenario 1. User clicks login and enters credentials 2. Credentials are not valid 3. Error message is shown 4. User is asked to try again

Continue as Guest
Normal Scenario 1. User clicks on “Login” and then “Continue as Guest” 2. User inputs their phone number and address when ordering
Exceptional Scenario 1. User clicks on “Login” and then “Continue as Guest” 2. User inputs invalid phone number and/or address 3. Input boxes will highlight red to indicate an error

Register

Normal Scenario

1. Guest clicks login
2. Guest clicks “Sign Up”
3. Guest is asked to enter “Name”, “Email”, “Password”, “Phone Number”
4. Guest clicks “Register”
5. A request is sent to the manager to approve
6. Manager approves or disapproves new
7. If approved, then guest info is sent to the database to be added

Exceptional Scenario

1. Guest clicks login
2. Guest clicks “Sign Up”
3. Guest is asked to enter “Name”, “Email”, “Password”, “Phone Number”
4. Guest enters an email already in use
5. Guest clicks “Register”
6. An error message pops up stating the email is already used

Add/Remove Products to Cart

Normal Scenario

1. Customer clicks on order
2. Customer adds an item to the cart with the quantity they want

Order Food

Normal Scenario

Scenario 1: Customer

1. Customer clicks “Order”
2. Customer views menu and clicks “Add to Cart”
3. Customer adjusts quantity
4. Customer click “Check Out”

Scenario 2: Guest

1. Guest clicks “Menu”
2. Guest adds an item to the cart with the quantity they want
3. Guest clicks “Check Out” to place order
4. Guest is prompted to enter their details: Name, Email, Phone Number, Payment Details

View All Placed Orders

Normal Scenario

1. Customer clicks on “My Orders” to view all placed orders

Rate Food/Delivery

Normal Scenario

1. Customers can rate the food(cooks) and the delivery people individually
2. Customer Views order
3. Rate Food
4. Rate Delivery

Bid on Deliveries

Normal Scenario

1. Delivery person can access the pending bid page via a button on the post-login page
2. Delivery person chooses from a list of pending bids
3. Delivery person places bids on that selected order
4. After 15 minutes time runs out, bid is over

Exceptional Scenario

1. Two users input the same bid at the same time

Give Customers Rating

Normal Scenario

1. Delivery person can access the past delivered ordered in the “Delivered Orders” tab
2. Delivery person can view orders by clicking “View” next to the respective order
3. Delivery person can give customers ratings from 1 to 5 and an optional comment

Exceptional Scenario

1. Can’t give a rating if they view the rating they received from said customer

View Delivered Orders

Normal Scenario

1. Delivery person can access the past delivered ordered in the “Delivered Orders” tab

Modify Menu Items

Normal Scenario

1. Cooks can access the “Modify Menu Page” by clicking a button in the navbar
2. Cook choose a menu item they wish to change or add a new menu item

Exceptional Scenario

1. Two cooks may try to delete the same item at the same time

Request Supplies

Normal Scenario

1. Cooks can click a “Request Supplies” button on the navigation bar
2. On the Request Supplies Page, the cook can order the desired supplies by clicking “Order”

Rate Supplies

Normal Scenario

1. Cooks can click “Rate Past Orders’
2. Cooks can click “View” on a past order
3. Cooks can rate from 1 to 5, and write an optional comment

Purchase Supplies

Normal Scenario

1. Salesperson click on “Purchase Supplies”
2. Salesperson can open a list of items and select which items and in what quantity to purchase

Start Bids

Normal Scenario

1. Managers can click “Manage Orders” to view all orders
2. Managers can then click an order to view order details and start bids if appropriate

Exceptional Scenario

1. No current orders

Manage Employees

Normal Scenario

1. Managers can click the “Employees” tab
2. Managers can click “View” next to any Employee to view employee details
3. Managers can hire new employees by manually adding the required information

Exceptional Scenario

1. May go below minimum number of employees

Approve Registration

Normal Scenario

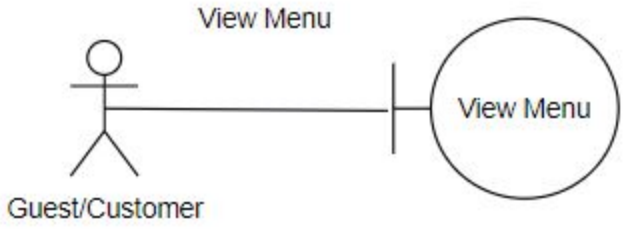
1. Manager clicks “Pending Registrations”
2. Manager can click “View” next to applicants name
3. Manager clicks “Yes” / “No” next to each new guest

Exceptional Scenario

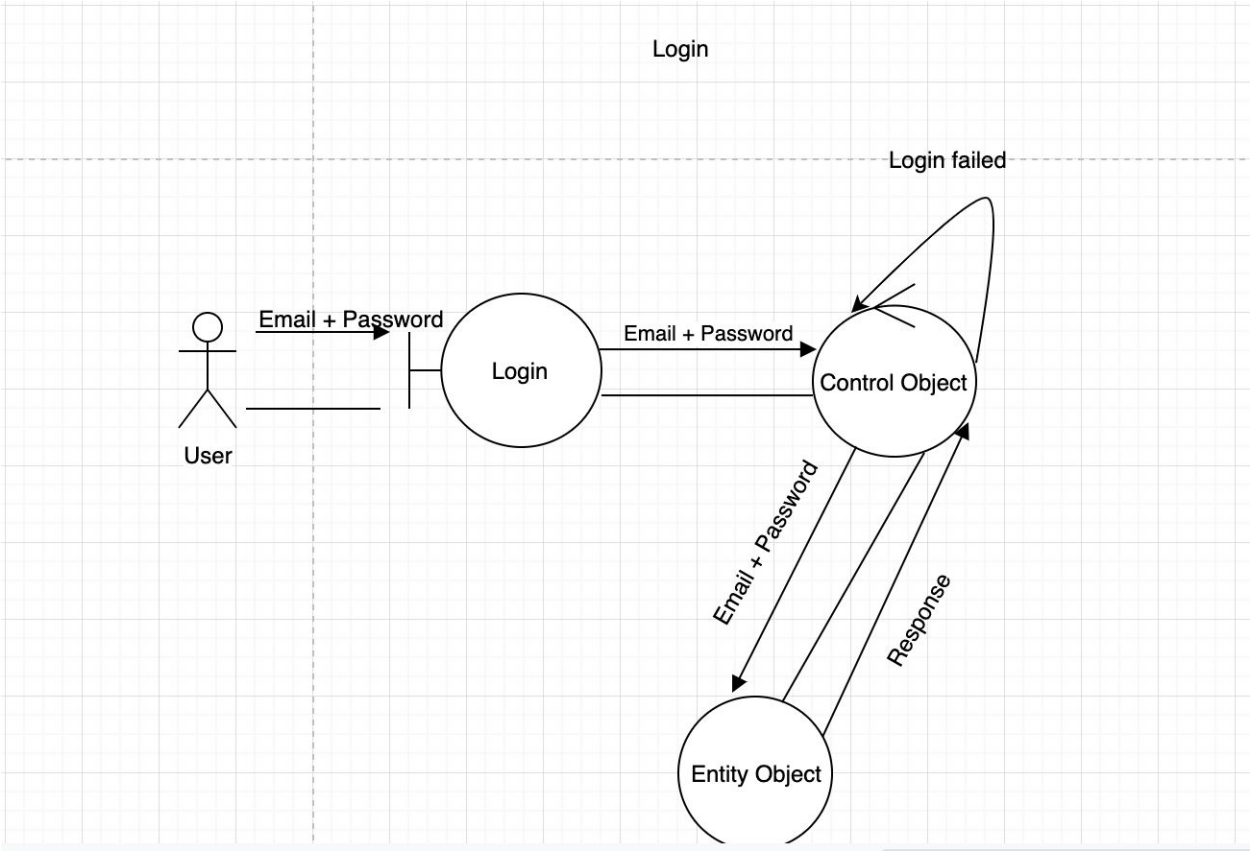
1. Guest may not have order history

2.2 Collaboration Diagrams

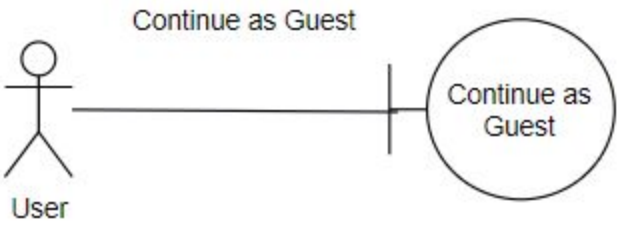
View Menu



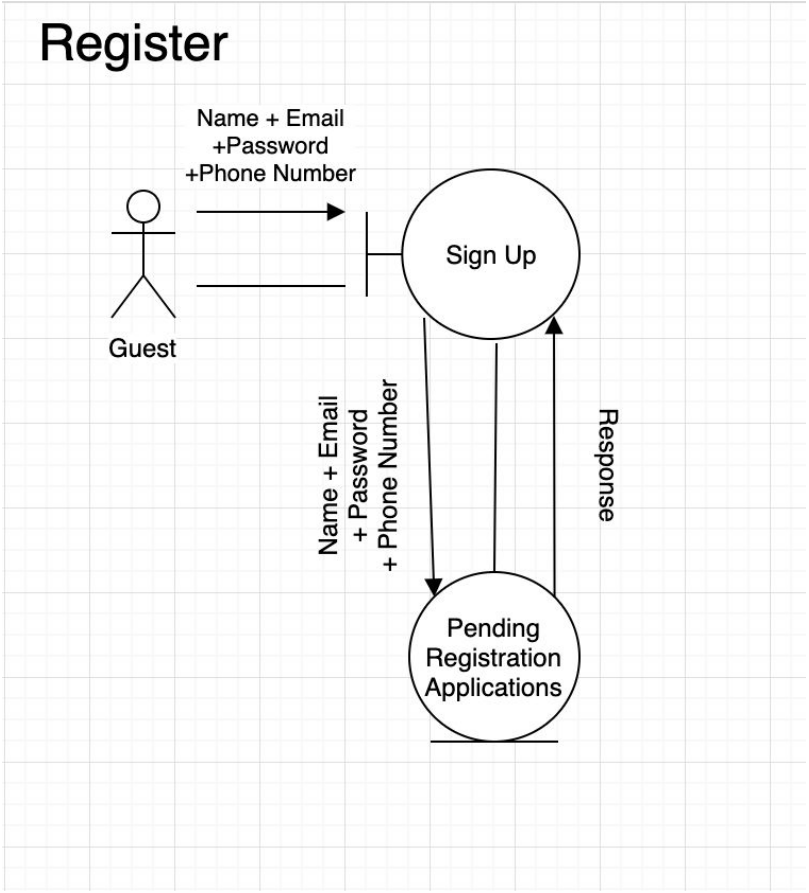
Login



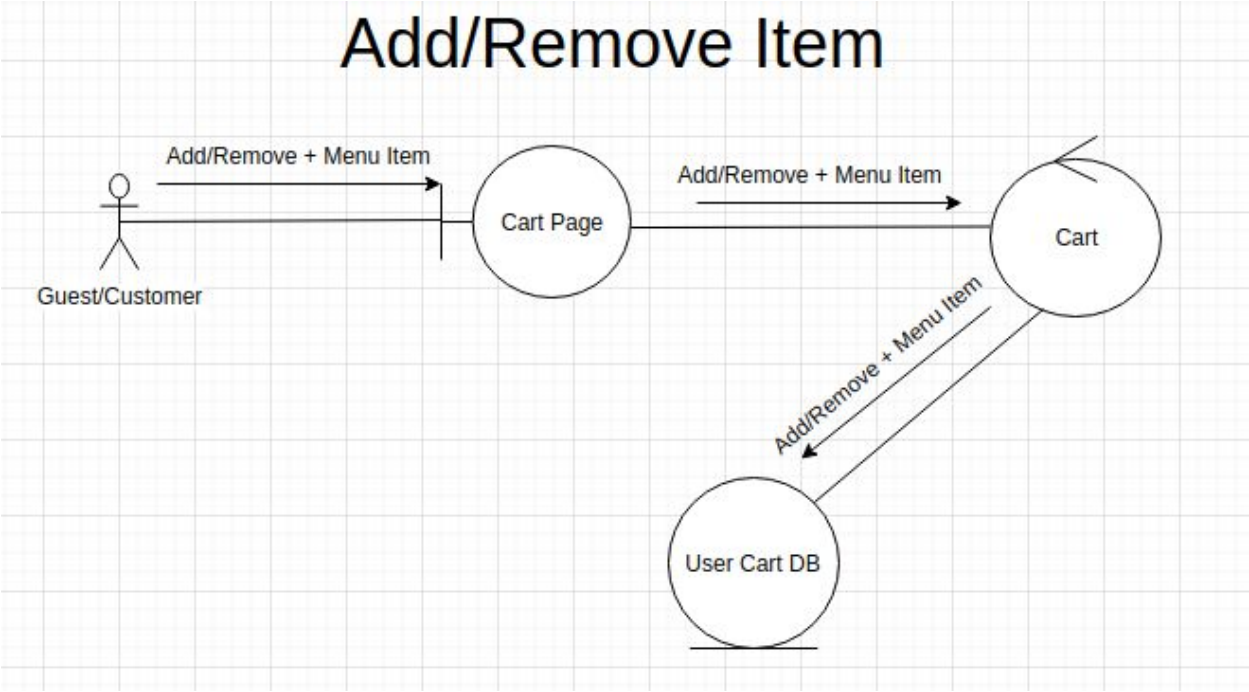
Continue as Guest



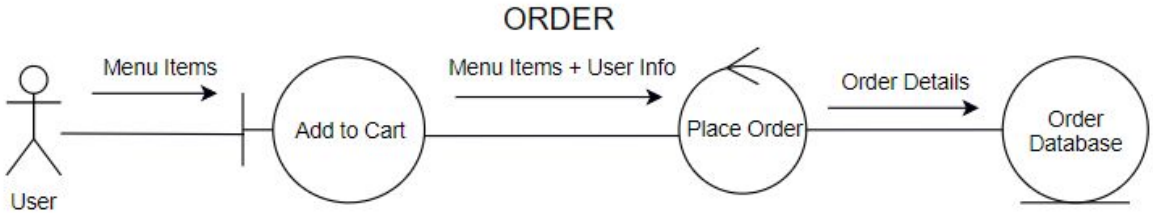
Register



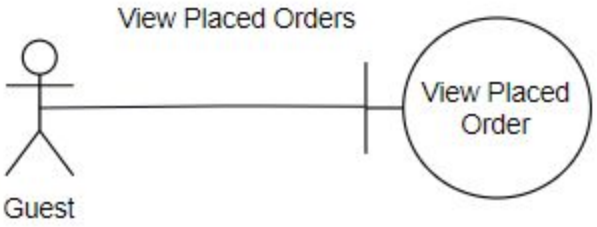
Add/Remove Products to Cart



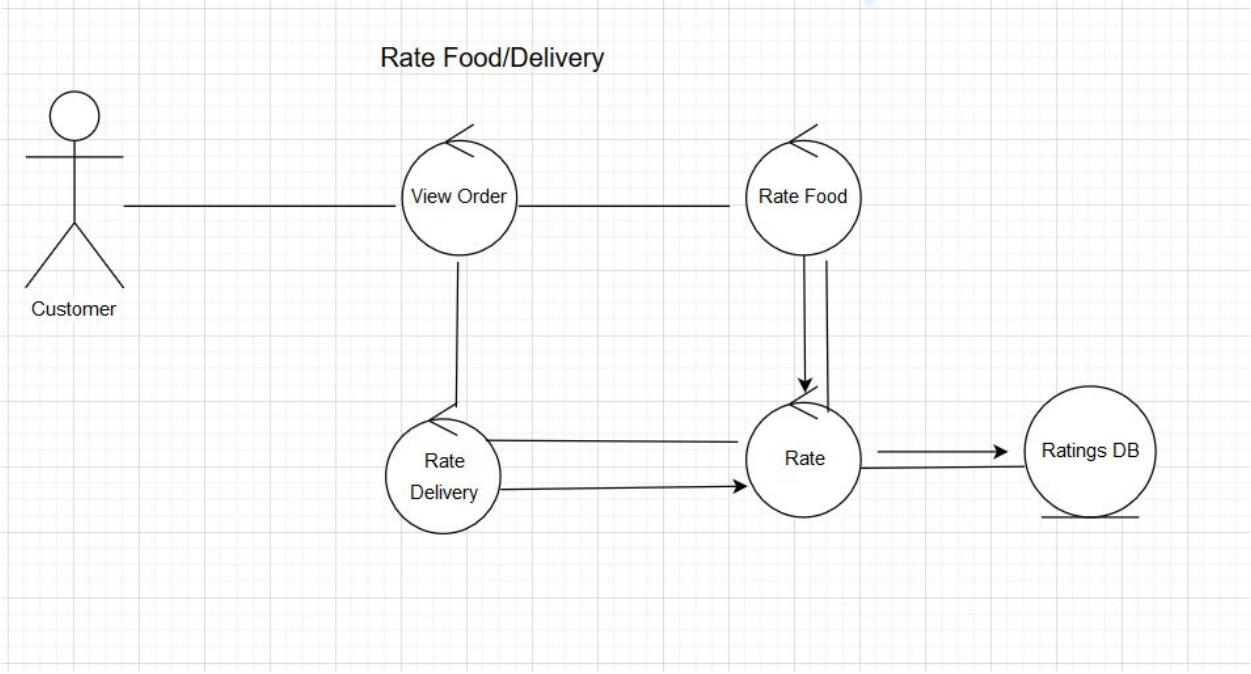
Order Food



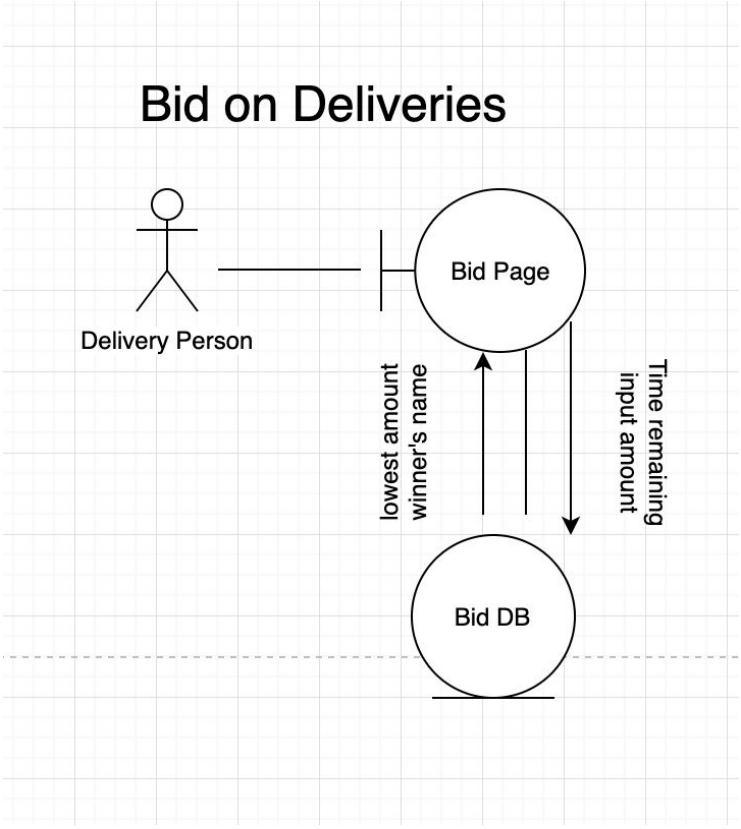
View All Placed Orders



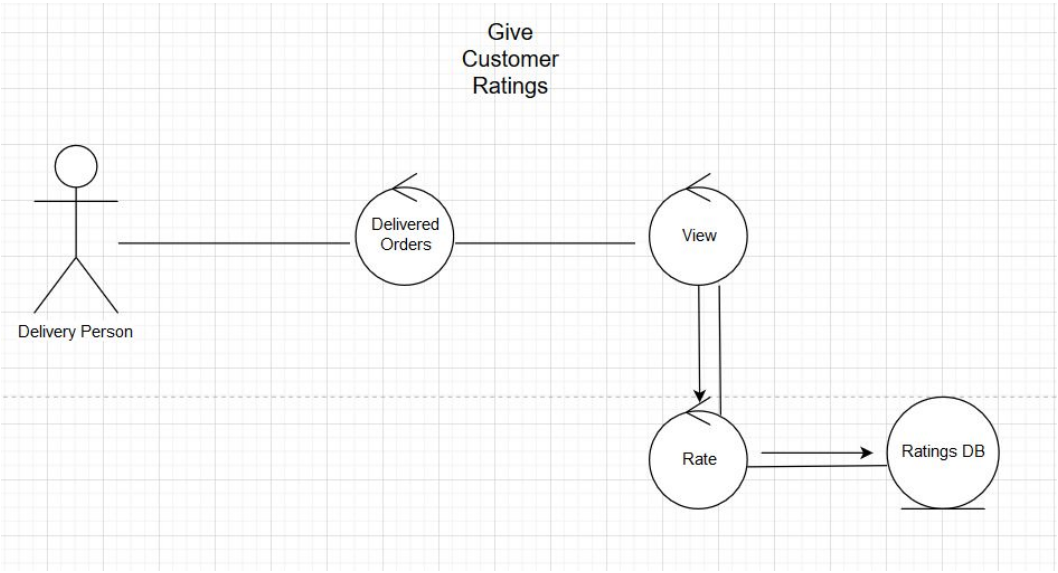
Rate Food/Delivery



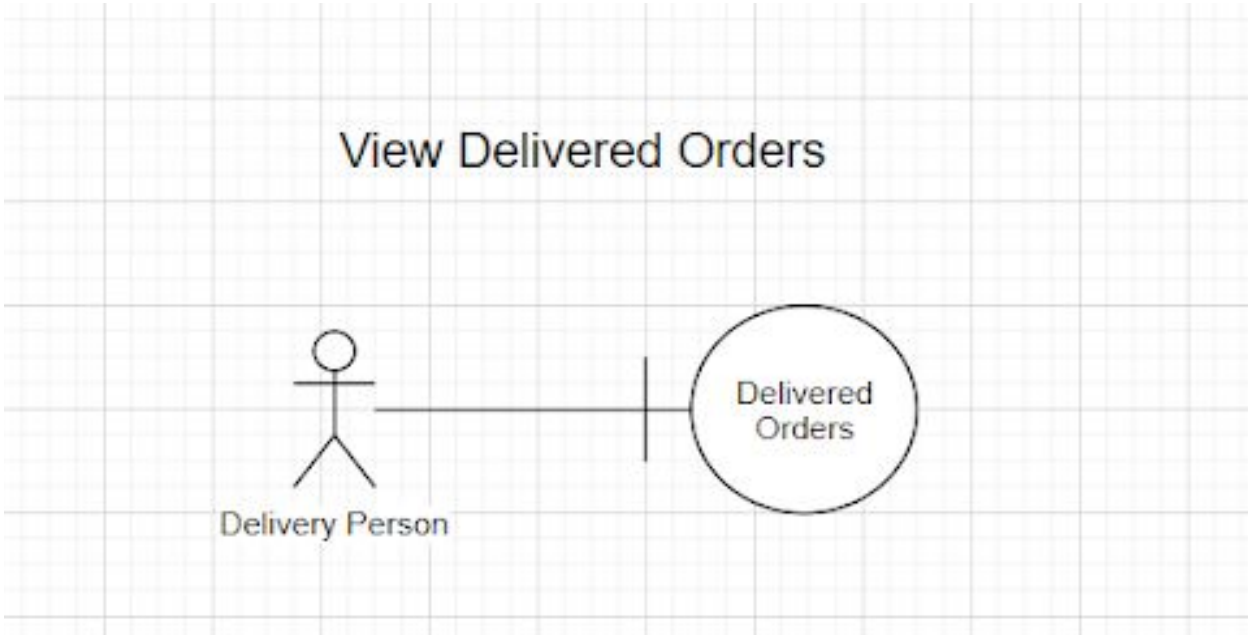
Bid on Deliveries



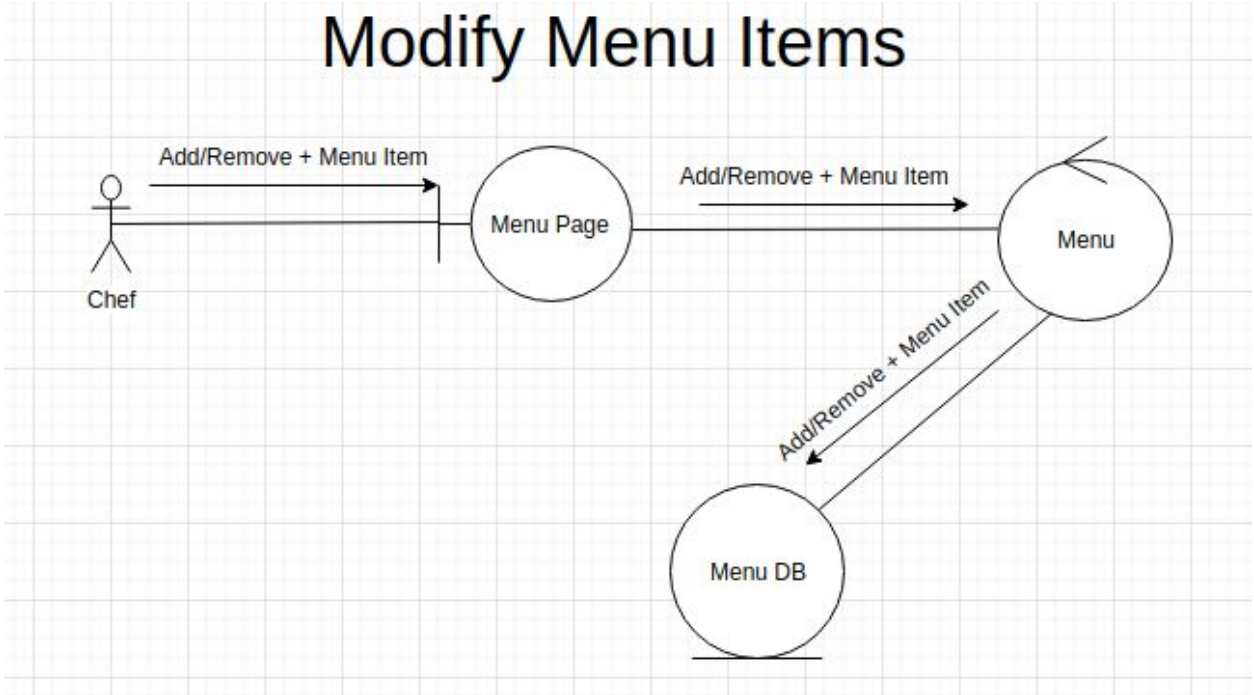
Give Customer Rating



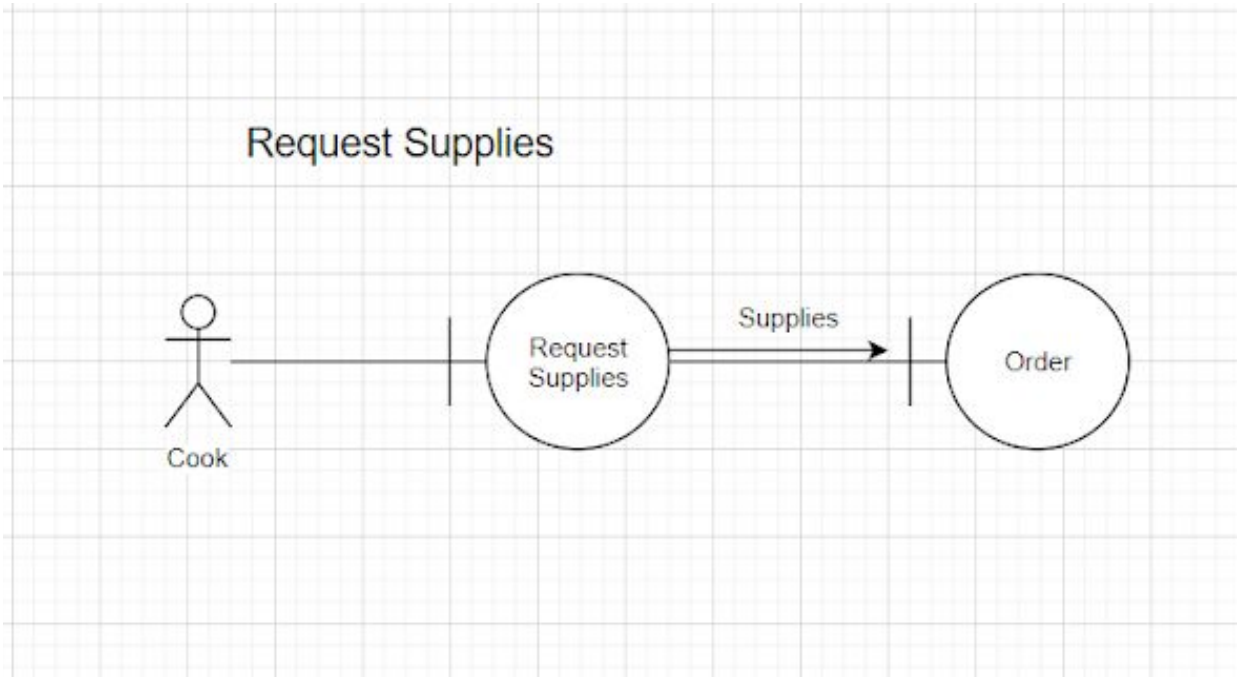
View Delivered Orders



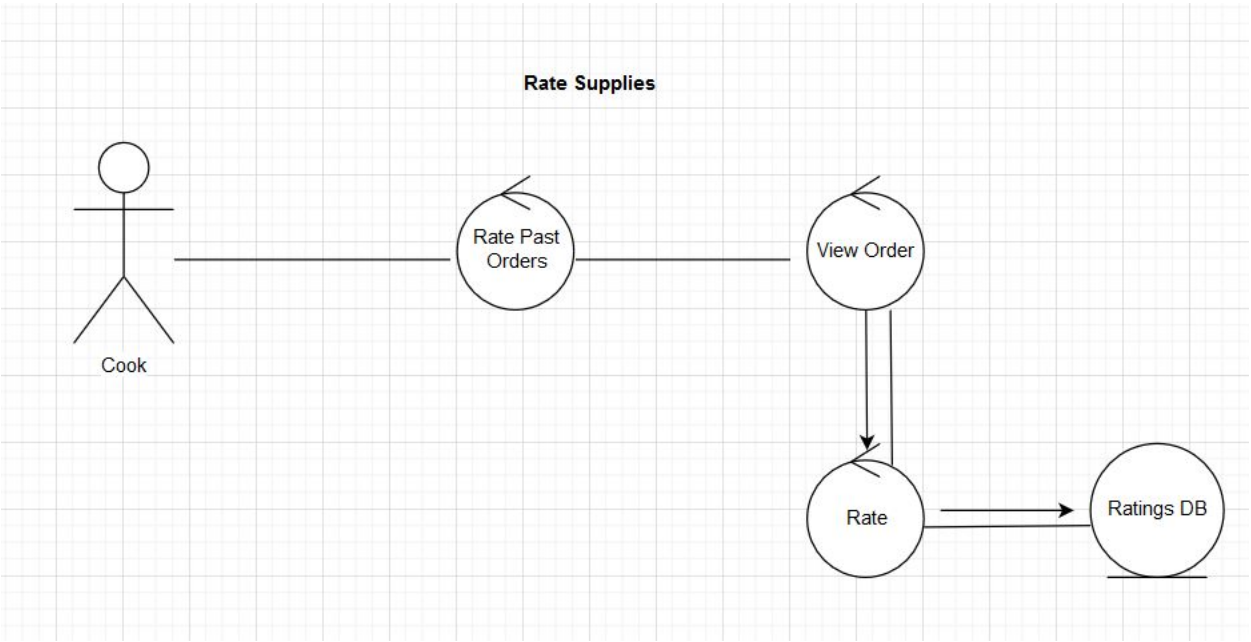
Modify Menu Items



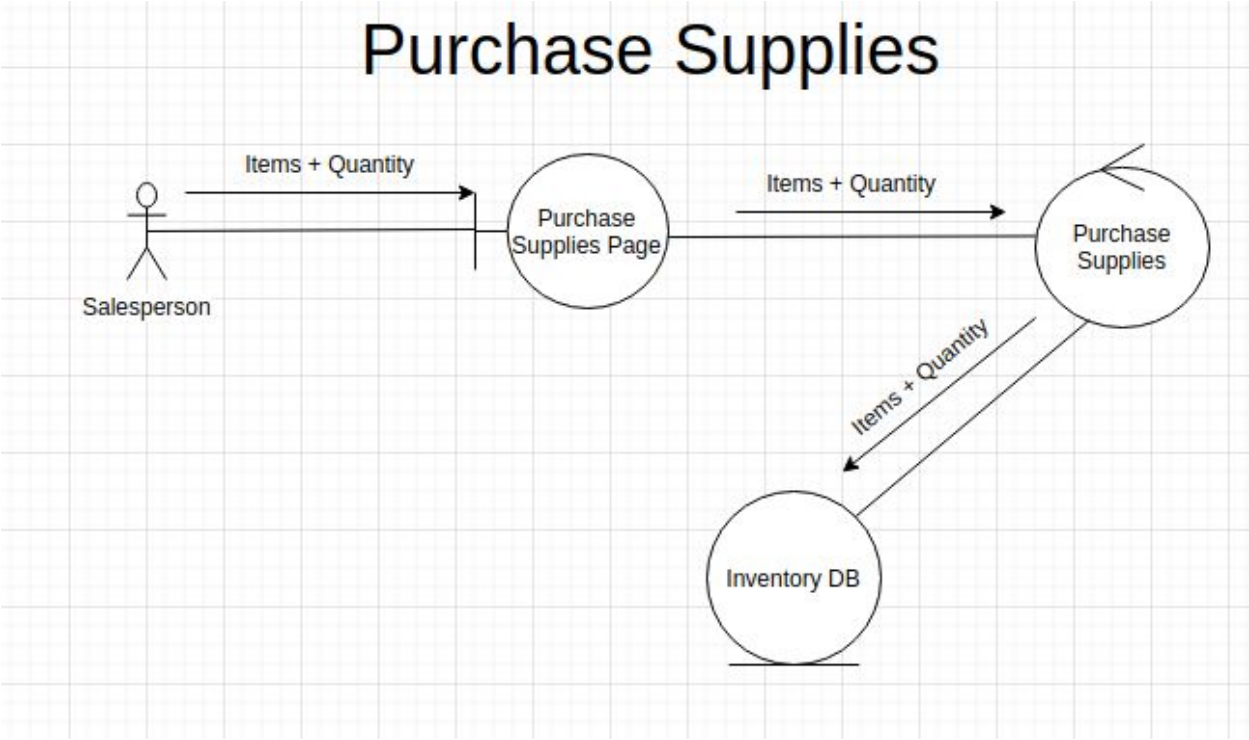
Request Supplies



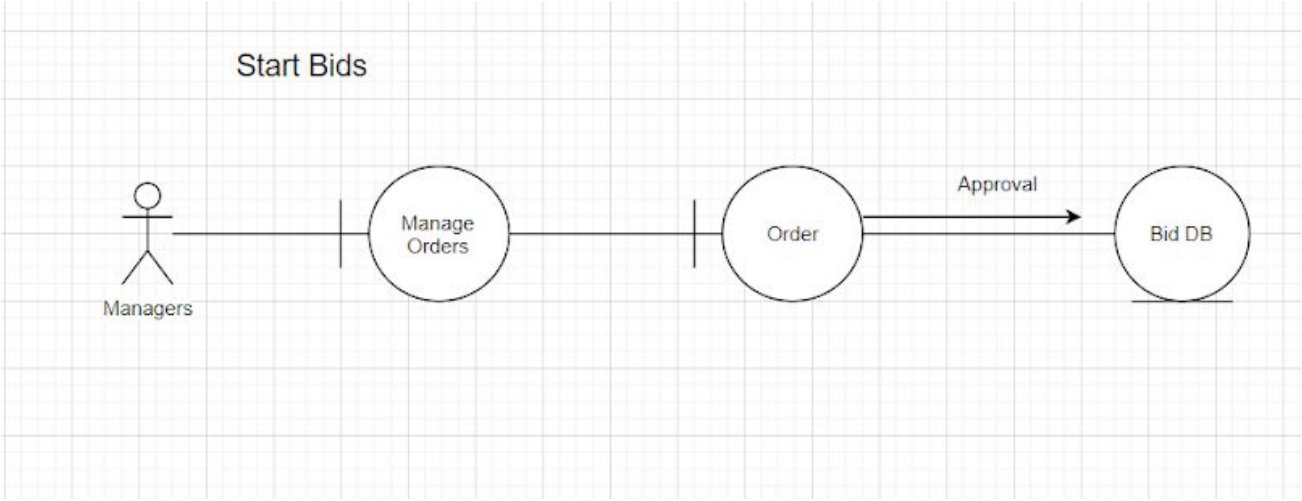
Rate Supplies



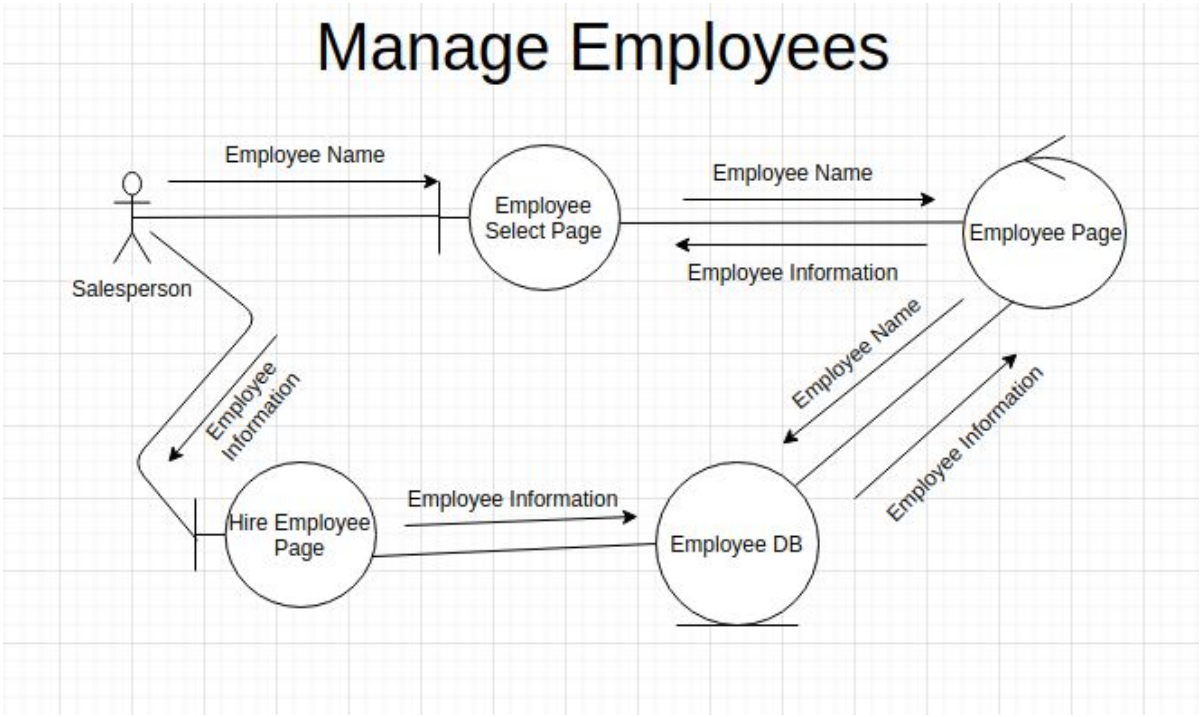
Purchase Supplies



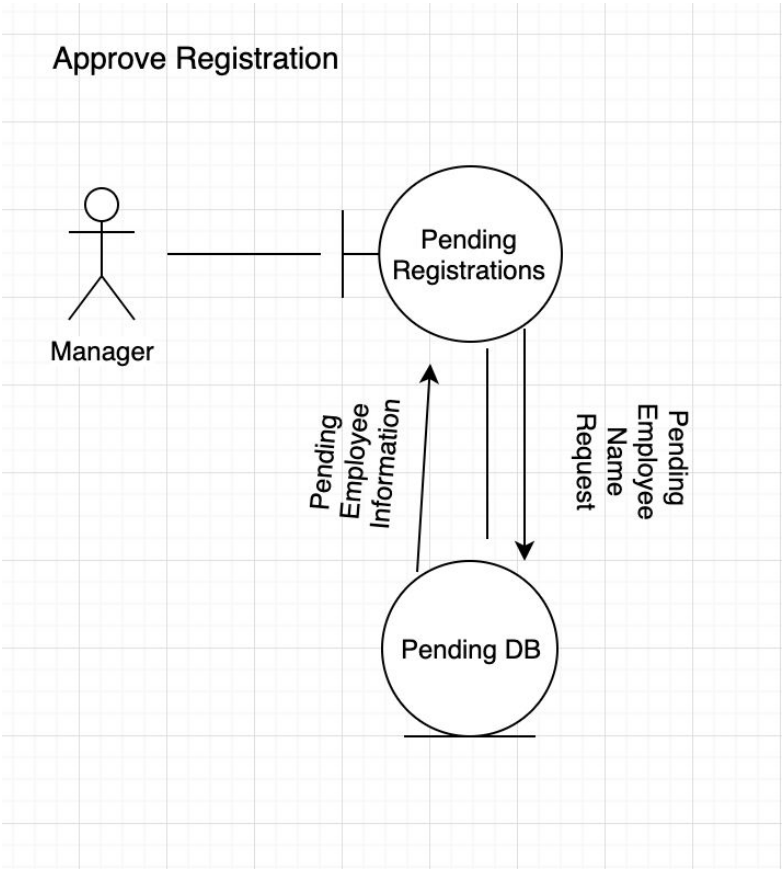
Start Bids



Manage Employees

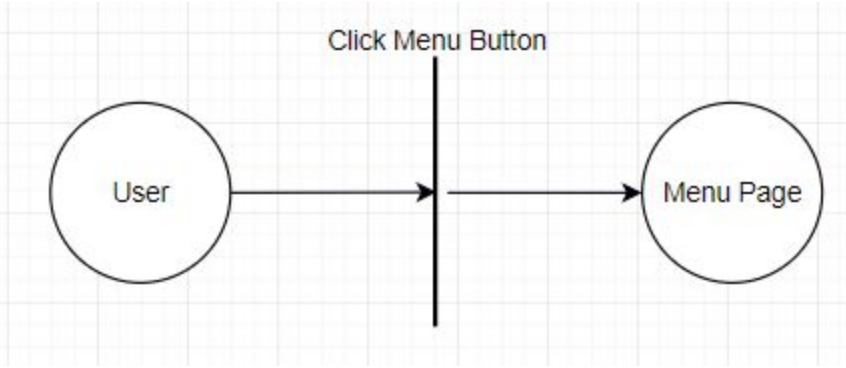


Approve Registration

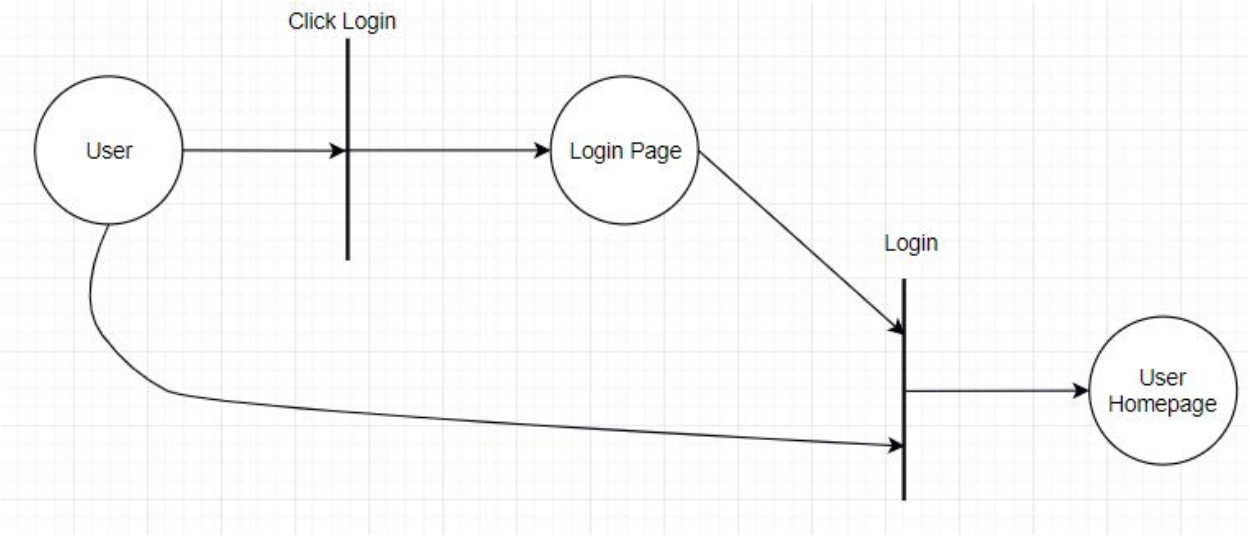


2.2 State Diagrams/ Petri-net

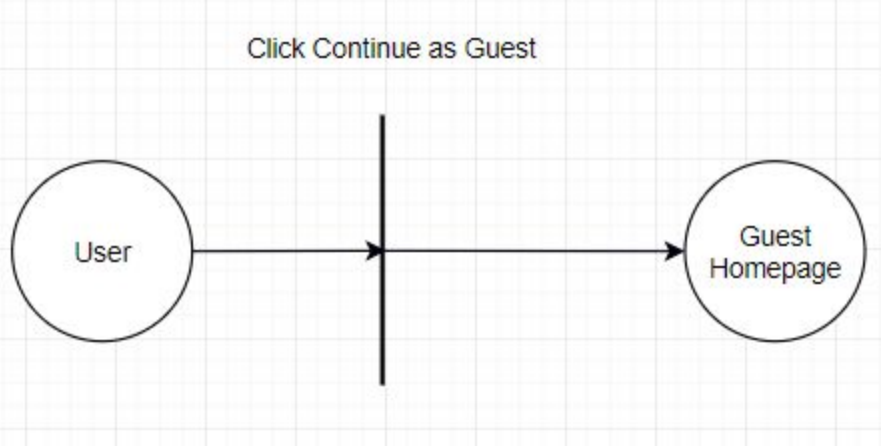
View Menu



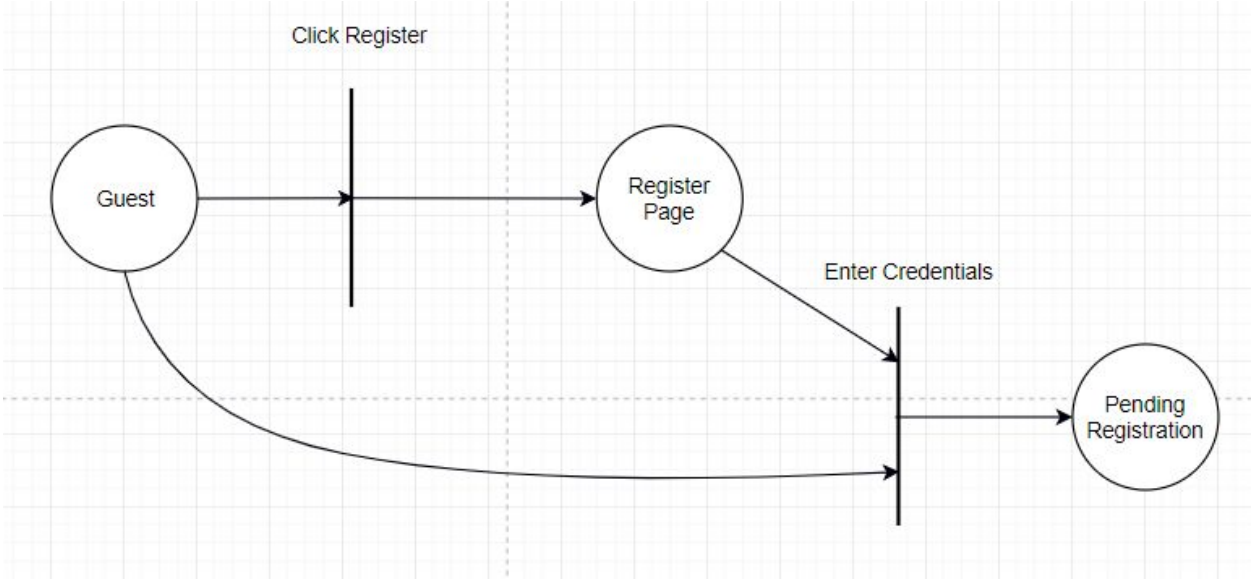
Login



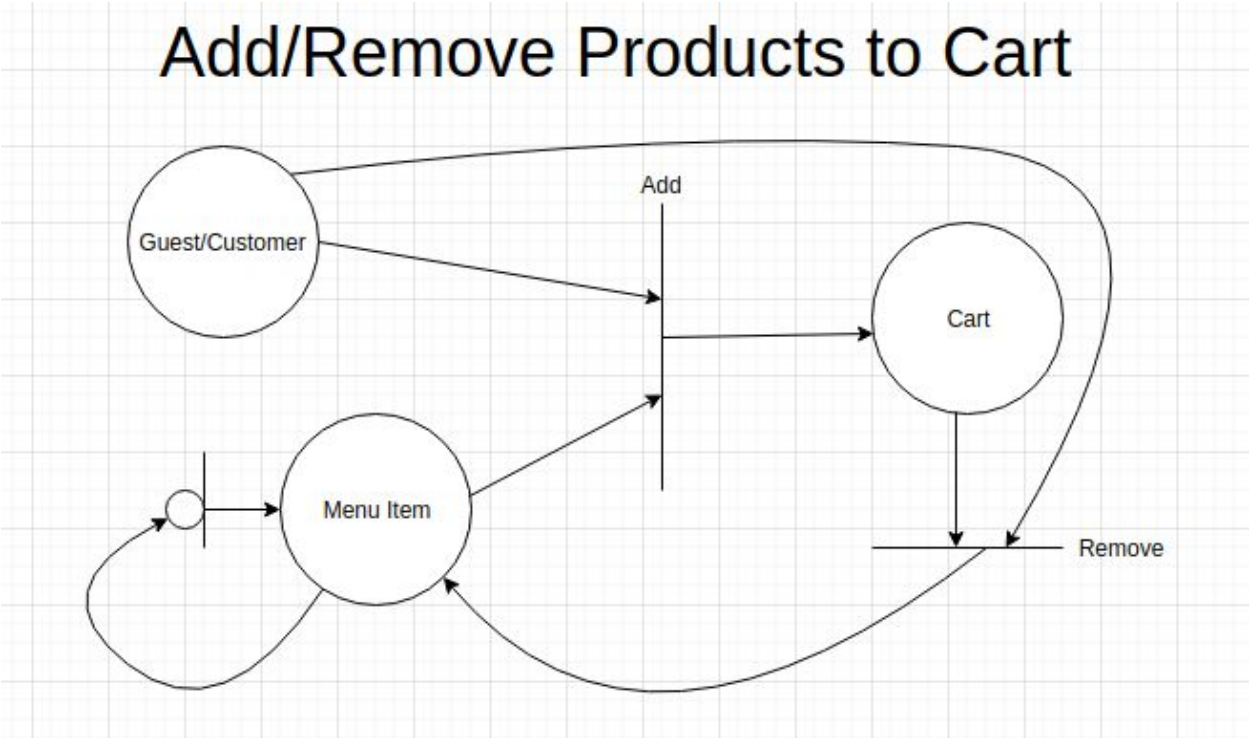
Continue as Guest



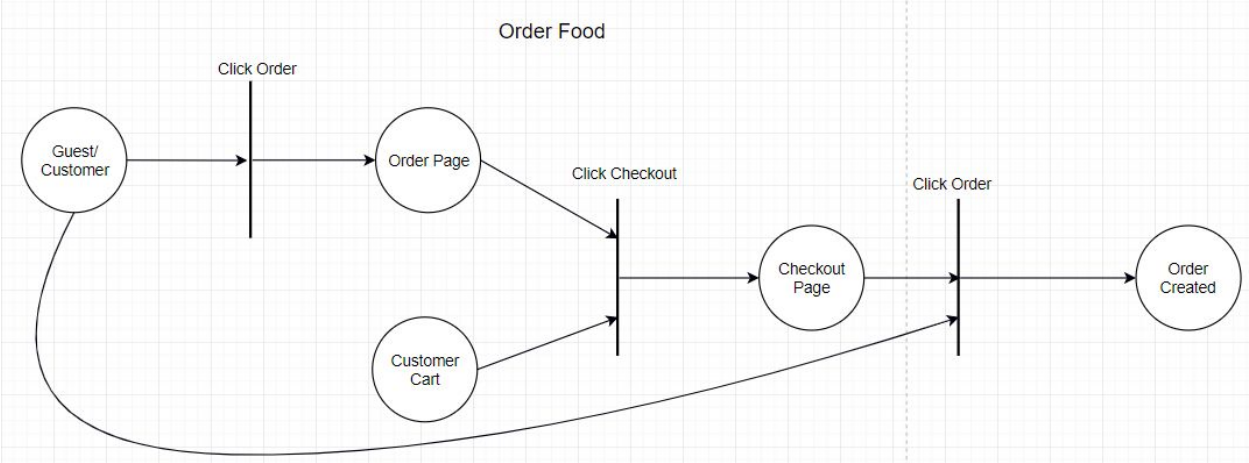
Register



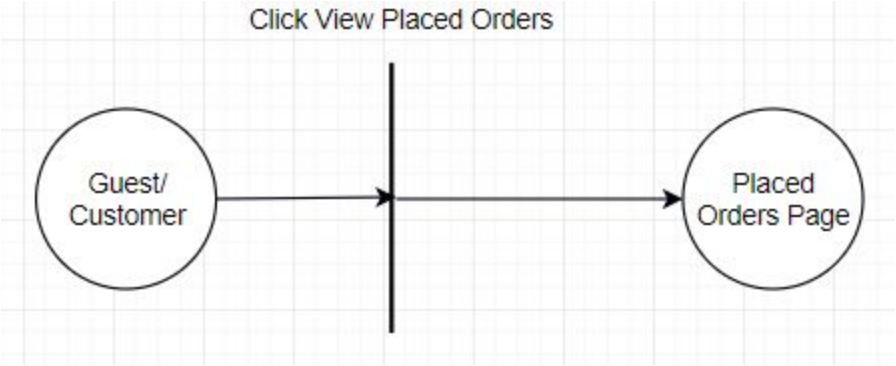
Add/Remove Products to Cart



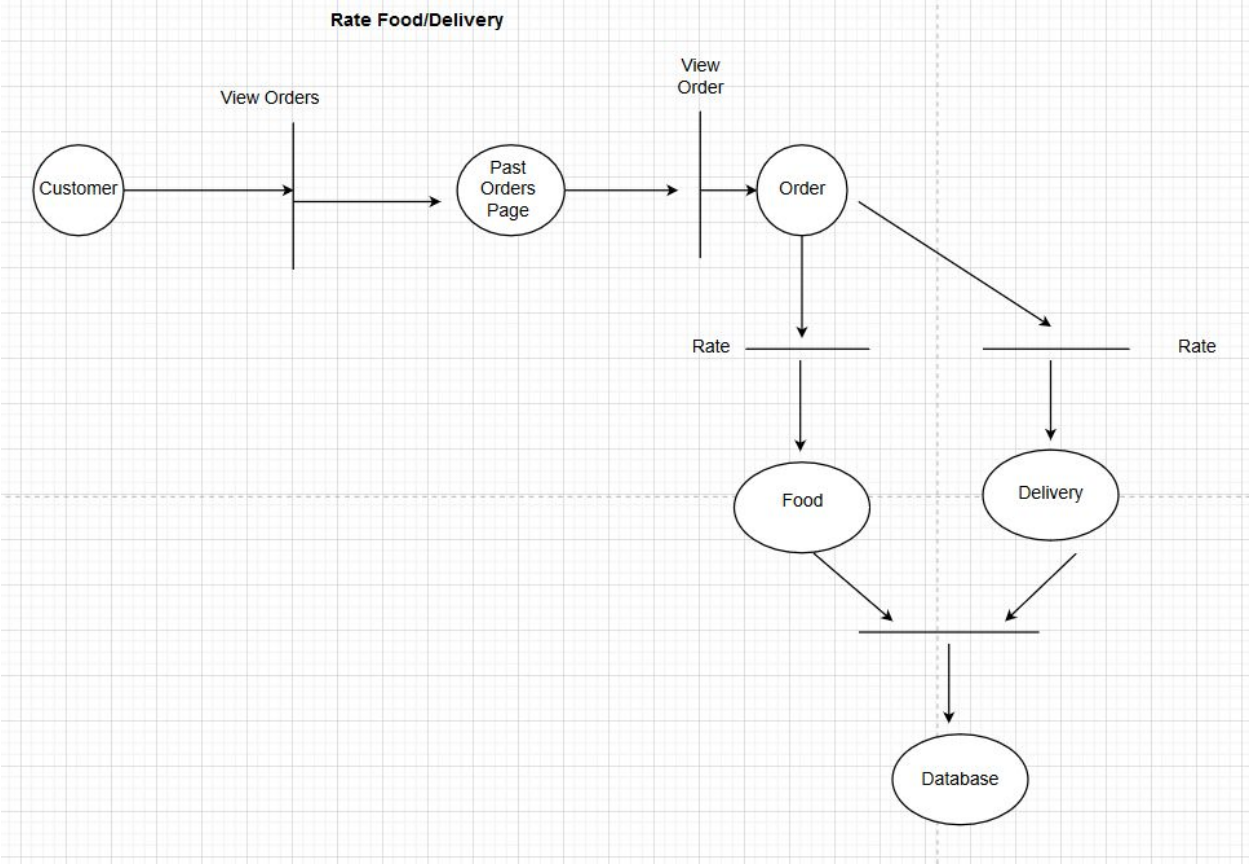
Order Food



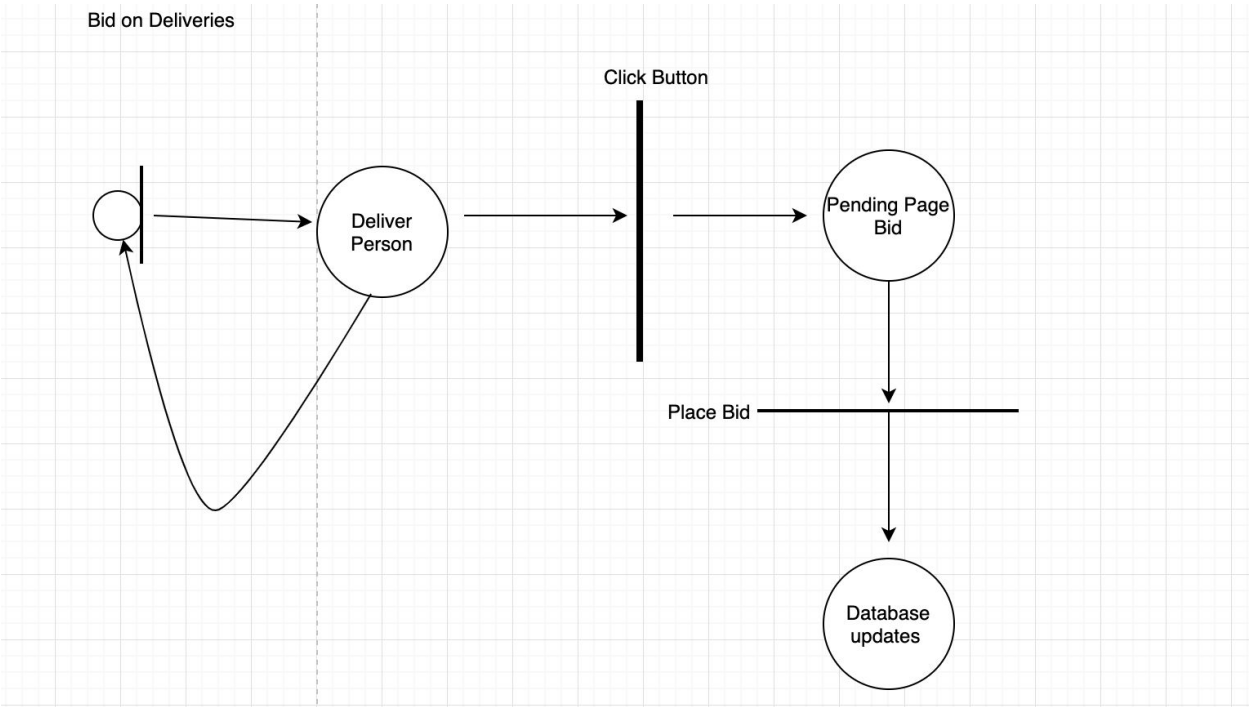
View All Placed Orders



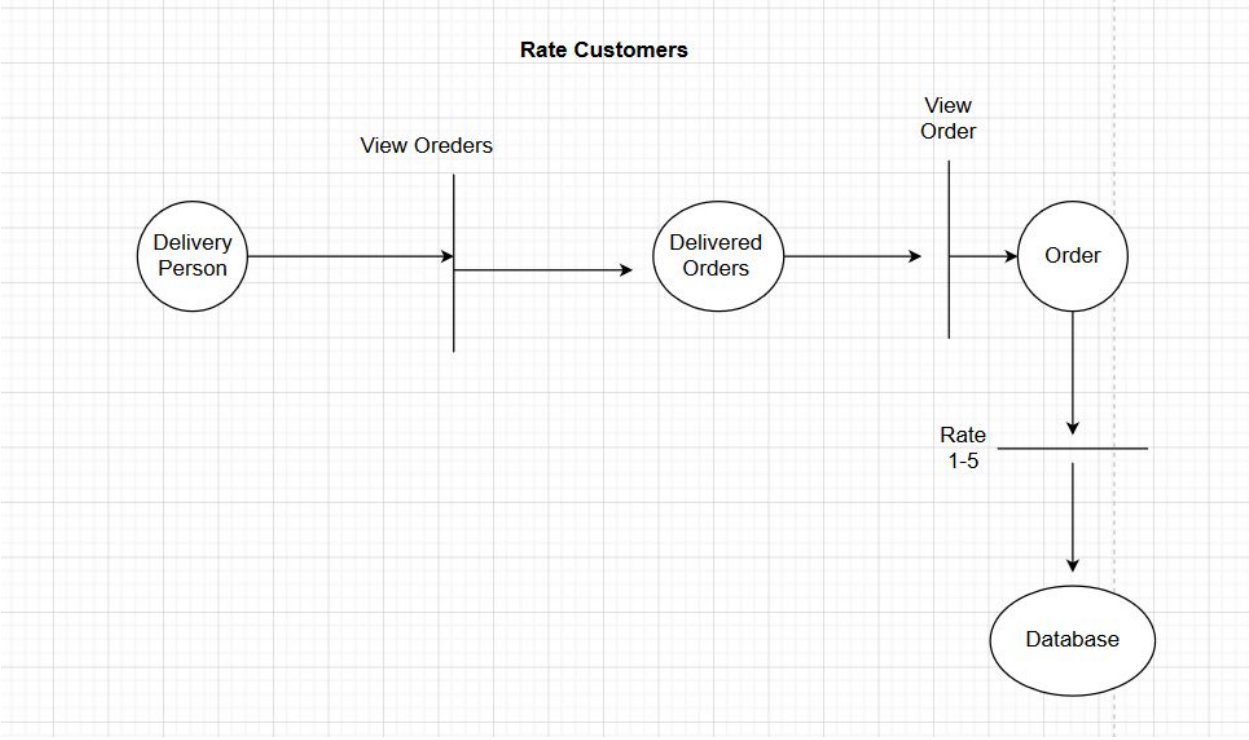
Rate Food/Delivery



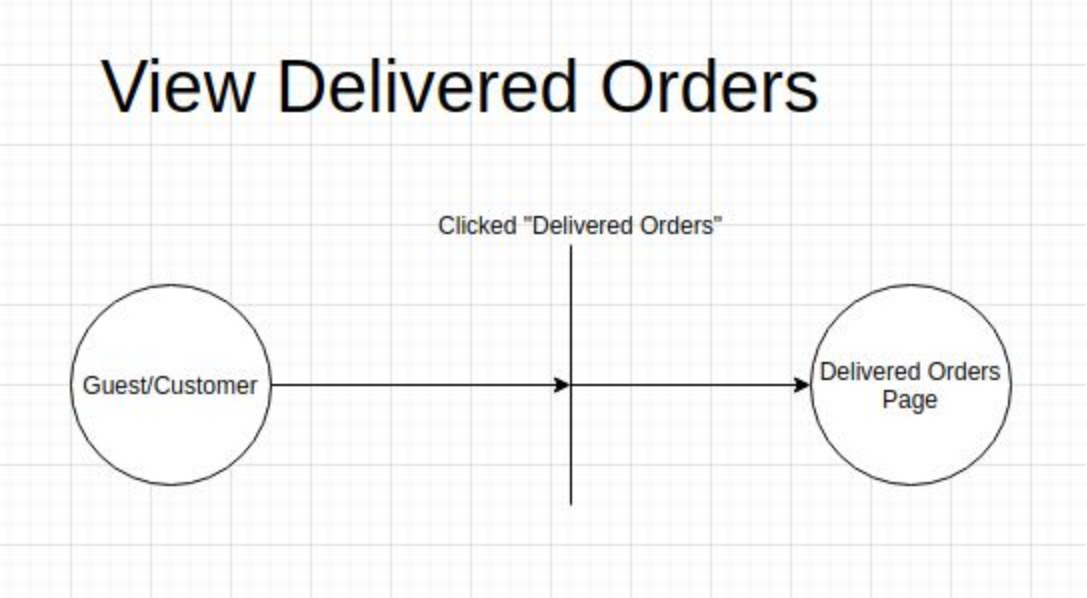
Bid on Deliveries



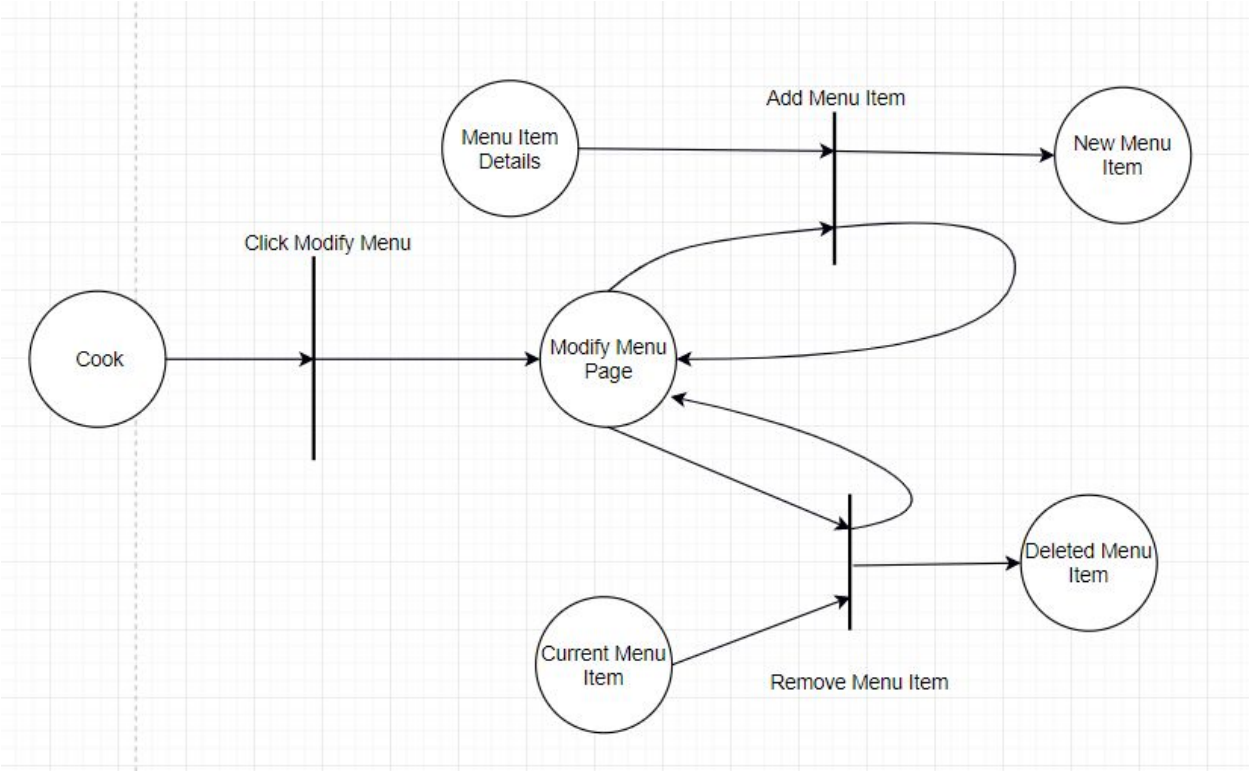
Give Customer Rating



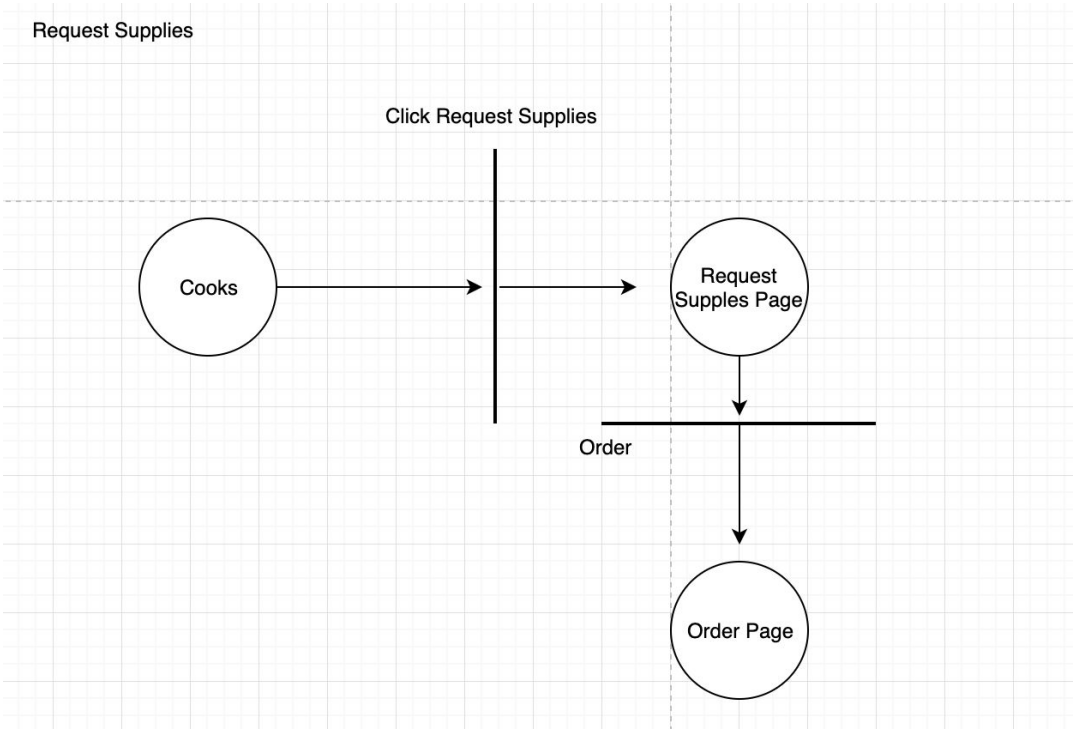
View Delivered Orders



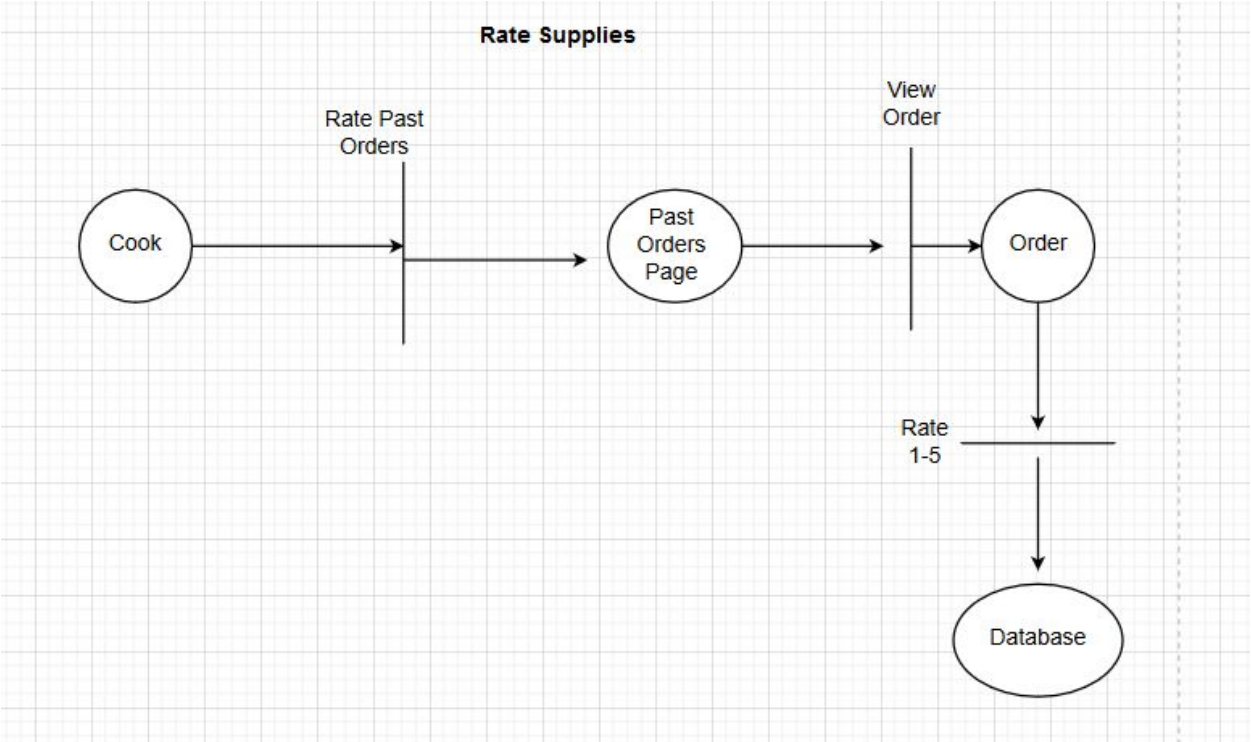
Modify Menu Items



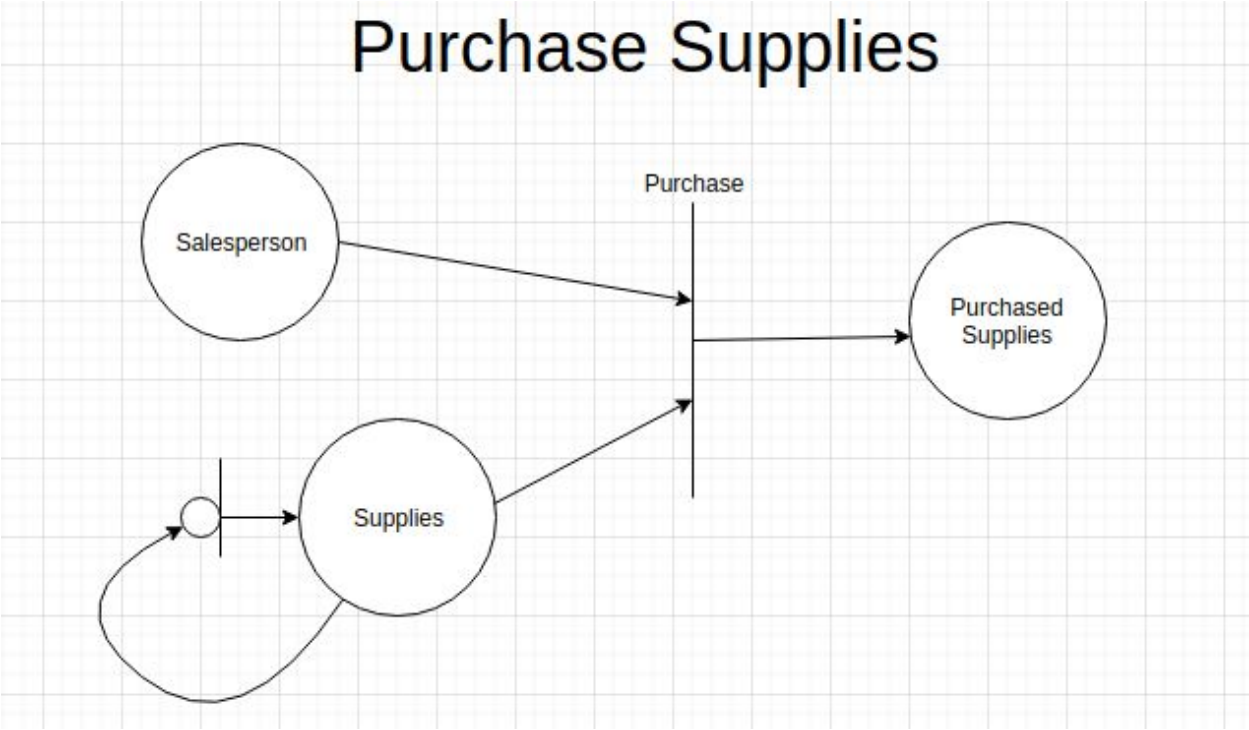
Request Supplies



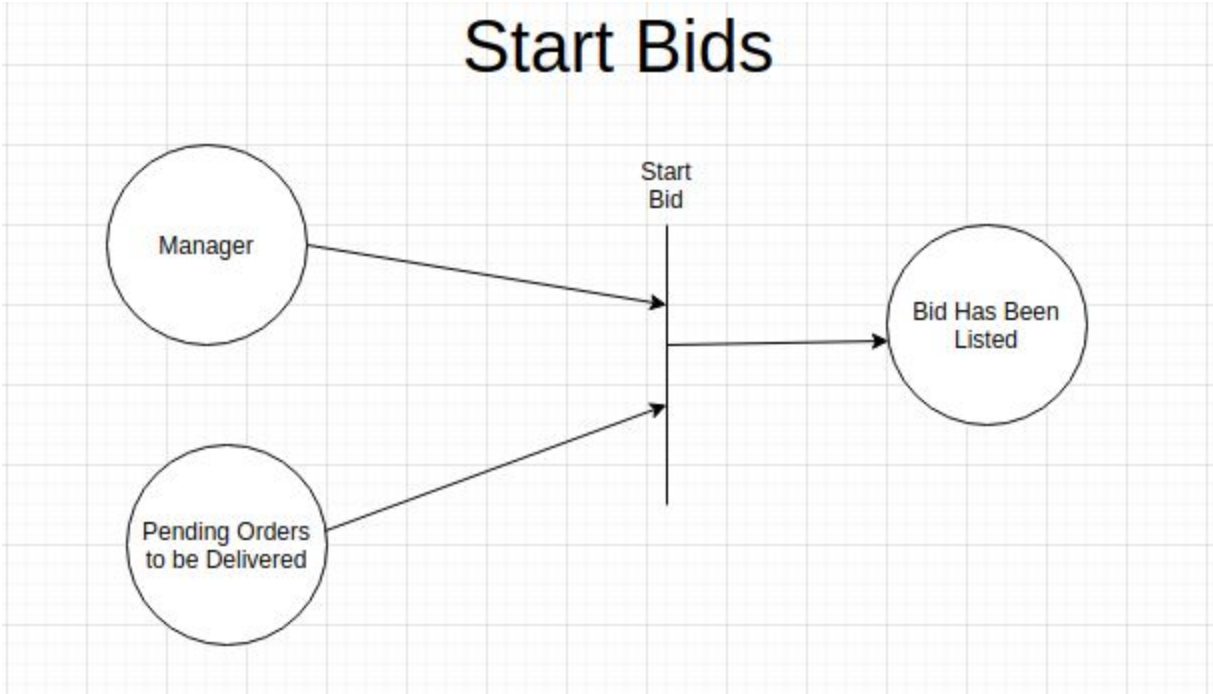
Rate Supplies



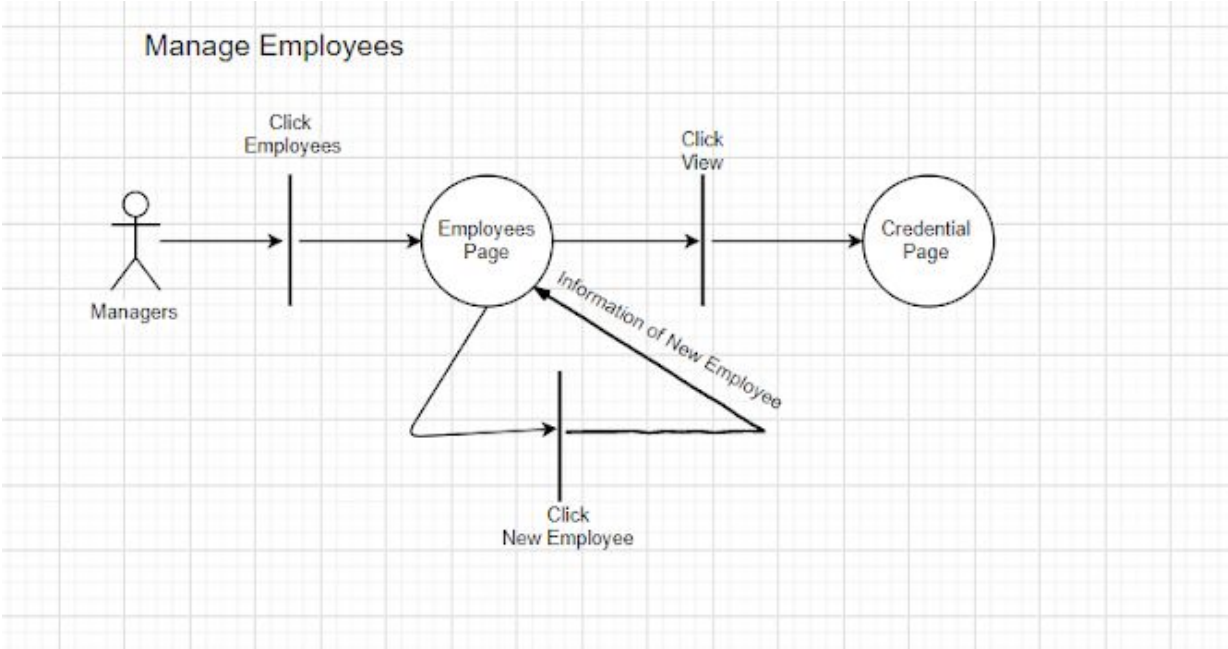
Purchase Supplies



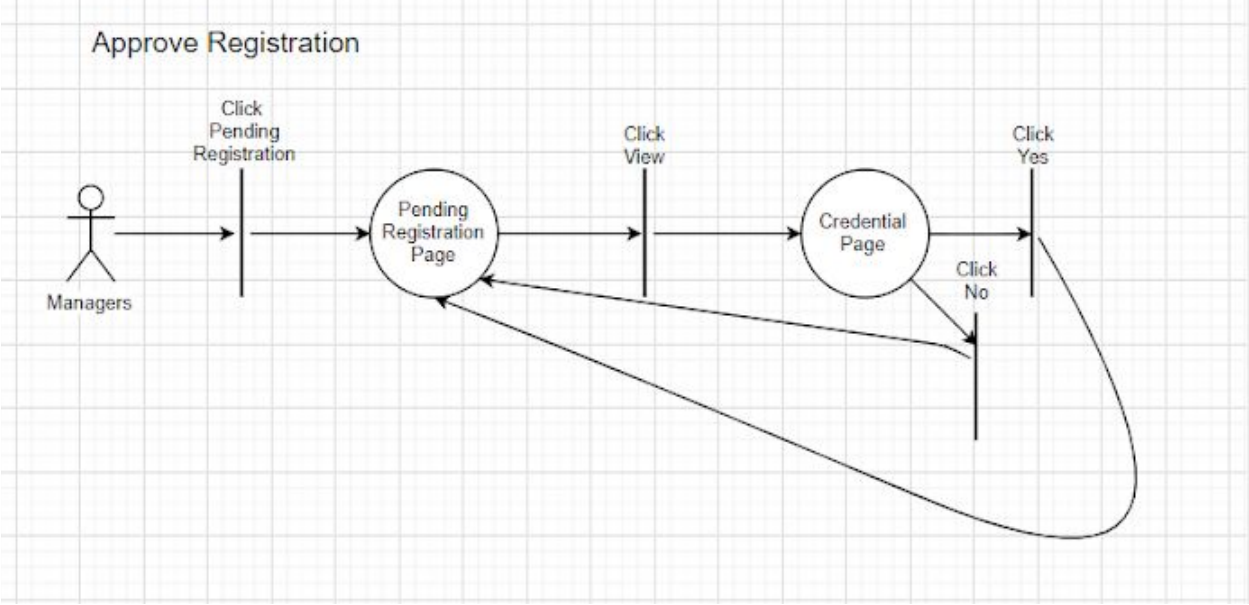
Start Bids



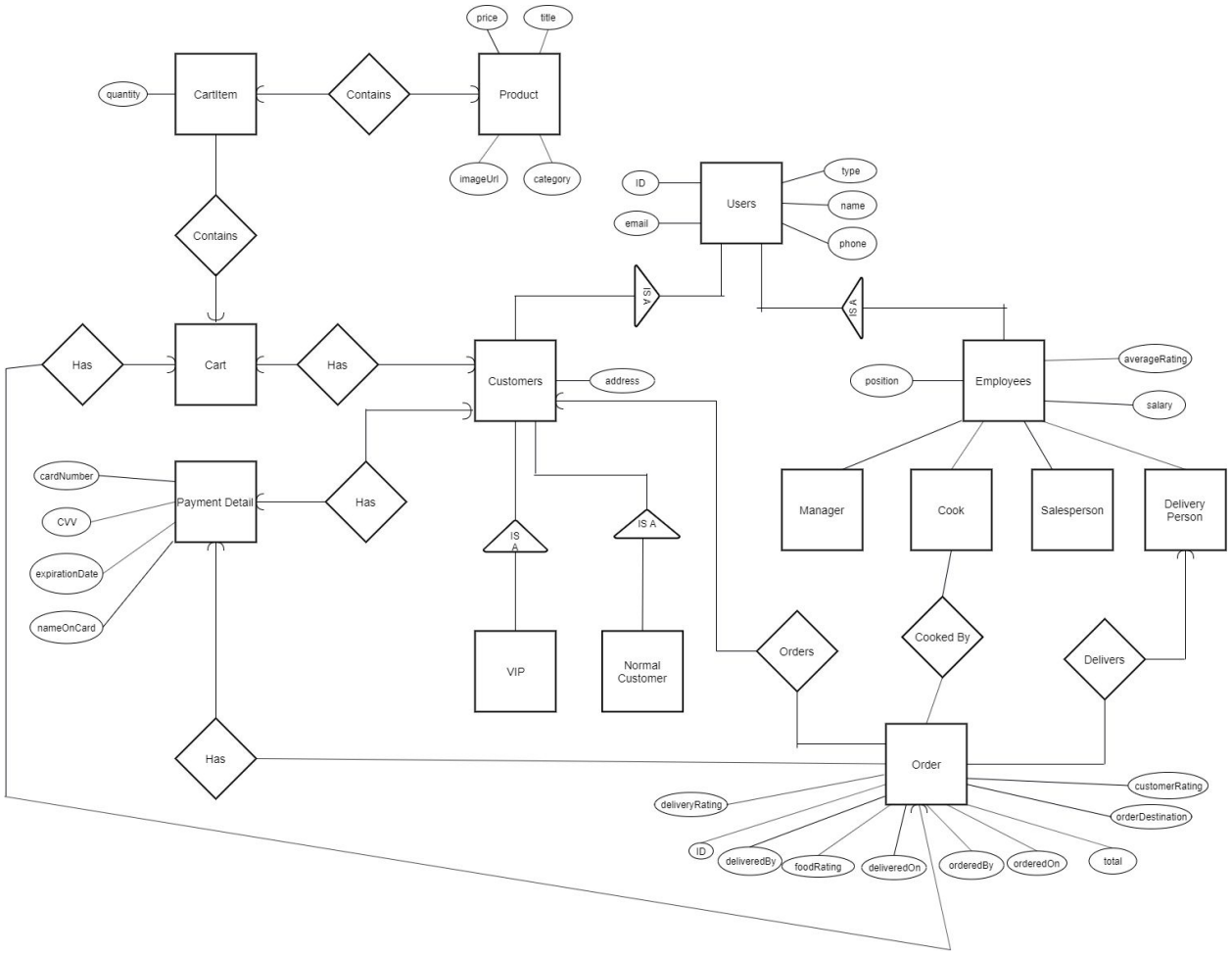
Manage Employees



Approve Registration



3. E/R Diagram


price
title
quantity
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Contains
Product
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type
name
phone
Contains
Is A
Is A
Has
Cart
Has
Customers
address
position
Employees
averageRating
salary
cardNumber
CVV
expirationDate
nameOnCard
Payment Detail
Has
IS A
IS A
Manager
Cook
Salesperson
Delivery Person
VIP
Normal Customer
Orders
Cooked By
Delivers
Has
Order
customerRating
orderDestination
deliveryRating
ID
deliveredBy
foodRating
deliveredOn
orderedBy
orderedOn
total

4. Detailed Design

1. addNewEmployee(formValue)

Input: New Employee Information
Output: None
Description: Add new employee's information to the database

```
addNewEmployee(formValue)
 {
   let secondaryApp =
firebase.initializeApp(environment.firebase,"Secondary");

secondaryApp.auth().createUserWithEmailAndPassword(formValue.email,"123456
").then(userCredentials=>{
     let tempUser:User =
{uid:userCredentials.user.uid,email:userCredentials.user.email,phone:formV
alue.phone,name:formValue.name,type:"employee"};
     this.userServe.addUser(tempUser);
     let tempEmployee:Employee =
{uid:userCredentials.user.uid,position:formValue.position,salary:formValue
.salary};
     this.emplServe.addEmployee(tempEmployee);
     secondaryApp.auth().signOut();
   });
 }
```

2. login(email:string, password:string)

Input: Email, Password
Output: redirected to appropriate URL
Description: Allows a person to login, and DB returns proper type and displays appropriate page

```
 login(email:string, password:string)
 {
   this.afAuth.auth.signInWithEmailAndPassword(email,
password).then(userCredentials=>{
     this.user$.pipe(take(1)).subscribe(user=>{
       this.userServe.getUser(user.uid).pipe(take(1)).subscribe(user=>{
         if(user.type=="customer")
         {
           this.router.navigateByUrl("/" + user.type);
         }
         else
         {
           this.emplServe.getEmployee(user.uid).pipe(take(1)).subscribe(employee=>{
             this.router.navigateByUrl("/" + employee.position);
           })
         }
       })
     })
   }).catch(error=>{this.error = error});
 }
```

3. register(email:string, password:string)

Input: email, password
Output: None
Description: Creates a customer object with the email and password

```
register(email:string, password:string)
{
this.afAuth.auth.createUserWithEmailAndPassword(email,password);
 }
```

4. logout()

Input: none
Output: none
Description: Logs current user out

```
logout()
{
  this.afAuth.auth.signOut();
  this.router.navigateByUrl("");
}
```

5. guestLogin()

Input: none
Output: none
Description: Redirects to guest homepage

```
  guestLogin()
  {
    this.afAuth.auth.signInAnonymously().then(guestCredentials=>{
      this.router.navigateByUrl("/guest");
    });
  }
```

6. addToCart(product:Product)

Input: Product
Output: none
Description: Added product to cart

```
addToCart(product:Product)
 {
   this.authServe.user$.pipe(take(1)).subscribe(user=>{
     this.custServe.getCustomer(user.uid).pipe(take(1)).subscribe(customer=>{
       for(let cartItem of customer.shoppingCart)
       {
         if(cartItem.product.title == product.title)
         {
           cartItem.quantity += 1;
           this.custServe.updateCustomer(user.uid,customer);
           return;
         }
       }
       customer.shoppingCart.push({product:product,quantity:1});
       this.custServe.updateCustomer(user.uid,customer);
     });
   });
 }
```

7. removeFromCart(product:Product)

Input: product
Output: none
Description: Remove product from cart

```
removeFromCart(product:Product)
 {
   this.authServe.user$.pipe(take(1)).subscribe(user=>{
     this.custServe.getCustomer(user.uid).pipe(take(1)).subscribe(customer=>{
       for(let cartIndex = 0;cartIndex<customer.shoppingCart.length;cartIndex++)
       {
         if(customer.shoppingCart[cartIndex].product.title == product.title)
         {
           customer.shoppingCart[cartIndex].quantity -= 1;
           if(customer.shoppingCart[cartIndex].quantity == 0)
           {
             customer.shoppingCart.splice(cartIndex,1);
           }
           this.custServe.updateCustomer(user.uid,customer);
           return;
         }
       }
     });
   });
 }
```

8. getCustomer()

Input: none
Output: customer object
Description: Returns customer object

```
getCustomer()
 {
   return this.custServe.getCurrentCustomer();
 }
```

9. getUser()

Input: none
Output: user object
Description: Returns user object

```
getUser()
 {
   return this.custServe.getCurrentUser();
 }
```

10. updateCart(customer:Customer)

Input: Customer
Output: updated cart
Description: Customer object updates its cart member

```
updateCart(customer:Customer)
 {
   this.authServe.user$.pipe(take(1)).subscribe(user=>{
     this.custServe.updateCustomer(user.uid,customer);
   })
 }
```

11. addToGuestCart(product:Product)

Input: product
Output: none
Description: Adds the product to the guest user's card

```
addToGuestCart(product:Product)
 {
   this.cart = JSON.parse(localStorage.getItem("cart"));
   for(let cartItem of this.cart)
   {
     if(cartItem.product.title == product.title)
     {
       cartItem.quantity += 1;
       localStorage.setItem("cart",JSON.stringify(this.cart));
       this.cart$.next(this.cart);
       return;
     }
   }
   this.cart.push({product:product,quantity:1});
   localStorage.setItem("cart",JSON.stringify(this.cart));
   this.cart$.next(this.cart);
   return;
 }
```

12. removeFromGuestCart(product:Product)

Input: product
Output: none
Description: Remove the product from the guest's cart

```
removeFromGuestCart(product:Product)
 {
   this.cart = JSON.parse(localStorage.getItem("cart"));
   for(let cartIndex = 0;cartIndex < this.cart.length;cartIndex++)
   {
     if(this.cart[cartIndex].product.title == product.title)
     {
       this.cart[cartIndex].quantity -= 1;
       if(this.cart[cartIndex].quantity == 0)
       {
         this.cart.splice(cartIndex,1);
       }
       localStorage.setItem("cart",JSON.stringify(this.cart));
       this.cart$.next(this.cart);
       return;
     }
   }
 }
```

13. addCustomer(customer:Customer)

Input: customer
Output: none
Description: Adds customer

```
addCustomer(customer:Customer)
 {
   this.customerCollection.doc(customer.uid).set(customer);
 }
```

14. removeCustomer(customer:Customer)

Input: customer
Output: None
Description: Removes Customer

```
removeCustomer(customer:Customer)
 {
   this.afs.doc("customers/" + customer.uid).delete();
 }
```

15. updateCustomer(uid:string, customer:Customer)

Input: uid, customer
Output: none
Description: Update customer object

```
updateCustomer(uid:string,customer:Customer)
 {
   this.afs.doc("customers/" + uid).update(customer);
 }
```

16. getCustomer(uid:string) : Observable<Customer>

Input: uid
Output: observable<customer>
Description: Returns an object to observe changes in the customer

```
getCustomer(uid:string):Observable<Customer>
 {
   return this.afs.doc("customers/" + uid).valueChanges() as Observable<Customer>;
 }
```

17. getUser(uid:string) : Observable<User>

Input: uid
Output: observable<user>
Description: Returns an object to observe changes in the user

```
getUser(uid:string):Observable<User>
 {
   return this.userServe.getUser(uid);
 }
```

18. getCurrentUser()

Input: none
Output: user object
Description: Get user object from the database

```
 getCurrentUser()
 {
   return this.authServe.user$.pipe(switchMap(user=>{
     return this.getUser(user.uid);
   }));
 }
```

19. getCurrentCustomer()

Input: none
Output: customer object
Description: Get customer object from the database

```
 getCurrentCustomer()
 {
   return this.authServe.user$.pipe(switchMap(user=>{
     return this.getCustomer(user.uid)
   }));
 }
```

20. addEmployee(employee:Employee)

Input: employee
Output: none
Description: Adds employee to the database

```
addEmployee(employee:Employee)
 {
   this.employeeCollection.doc(employee.uid).set(employee);
 }
```

21. removeEmployee(employee:Employee)

Input: employee
Output: none
Description: Remove employee from the database

```
removeEmployee(employee:Employee)
 {
   this.afs.doc("employees/" + employee.uid).delete();
 }
```

22. getEmployee(uid:string): Observable<Employee>

Input: String of an employee
Output: Returns the name of the employee
Description: Finds the name of the employee in the input and returns it

```
getEmployee(uid:string):Observable<Employee>
 {
   return this.afs.doc("employees/" + uid).valueChanges() as Observable<Employee>;
 }
```

23. getUser(uid:string) : Observable<User>

Input: A string of a user
Output: Returns the name of user
Description: Finds the name of the user in the input and outputs it

```
getUser(uid:string):Observable<User>
 {
   return this.userServe.getUser(uid);  }
```

24. addGuest(guest:Guest)

Input: guest
Output: None
Description: Adds guest to guest database

```
addGuest(guest:Guest)
 {
   this.guestCollection.add(guest);
 }
```

25. removeGuest(guest:Guest)

Input: guest
Output: None
Description: Guest deleted from database

```
removeGuest(guest:Guest)
 {
   this.afs.doc("guests/" + guest.uid).delete();
 }
```

26. getGuest(uid:string) : Observable<Guest>

Input: uid
Output: Returns guest object
Description: Calls the guest object with parameter uid, and returns it.

```
getGuest(uid:string):Observable<Guest>
 {
   return this.afs.doc("guests/" + uid).valueChanges() as Observable<Guest>;
 }
```

27. addOrder(order:Order)

Input: Customer's order
Output: Nothing
Description: Creates an id for the order and adds it into the "orderCollection" database

```
addOrder(order:Order)
{  let id = this.afs.createId()
   this.orderCollection.doc(id).set(order);
   return id; }
```

28. removeOrder(order:Order)

Input: Order object
Output:none
Description: removes an order object

```
removeOrder(order:Order)
{
  this.afs.doc("orders/" + order.uid).delete();
}
```

29. updateOrder(uid:string, order:Order)

Input: takes in string
Output:none
Description: takes in string and updates order

```
updateOrder(uid:string,order:Order)
{
  this.afs.doc("orders/" + uid).update(order);
}
```

30. getOrder(uid:string): Observable<Order>

Input: takes in a string
Output: returns order
Description: Takes a string and returns an order

```
getOrder(uid:string):Observable<Order>
{
  return this.afs.doc("orders/" + uid).valueChanges() as Observable<Order>;
}
```

31. create(product:Product)

Input: product object
Output: none
Description: A Product object is created

```
create(product:Product)
{
  this.productsCollection.add(product);
}
```

32. lookUp(uid:string): Observable<Product>

Input: Any string
Output: The string as the desired product
Description: Takes in a string and a product and returns a string as that product

```
lookup(uid:string):Observable<Product>
  {
    return this.afs.doc('products/'+uid).valueChanges() as Observable<Product>;
  }
```

33. update(uid:string, product:Product)

Input: Any string and any product
Output: Nothing
Description: Changes the specified and replaces it with the product

```
update(uid:string, product:Product)
  {
    return this.afs.doc('products/'+uid).update(product);
  }
```

34. delete(uid:string)

Input: Any string
Output: The string
Description: Finds and deletes a specified string and returns it

```
delete(uid:string)
  {
    return this.afs.doc('products/'+uid).delete();
  }
```

35. addUser(user:User)

Input: Name of any user of type user
Output: Nothing
Description: Adds the specified user

```
  addUser(user:User)
  {
    this.userCollection.doc(user.uid).set(user); }
```

36. removeUser(user:User)

Input: Name of any user of type user
Output: Nothing
Description: Removes the specified user

```
removeUser(user:User)
{
  this.afs.doc("users/" + user.uid).delete();
}
```

37. getUser(uid;string): Observable<User>

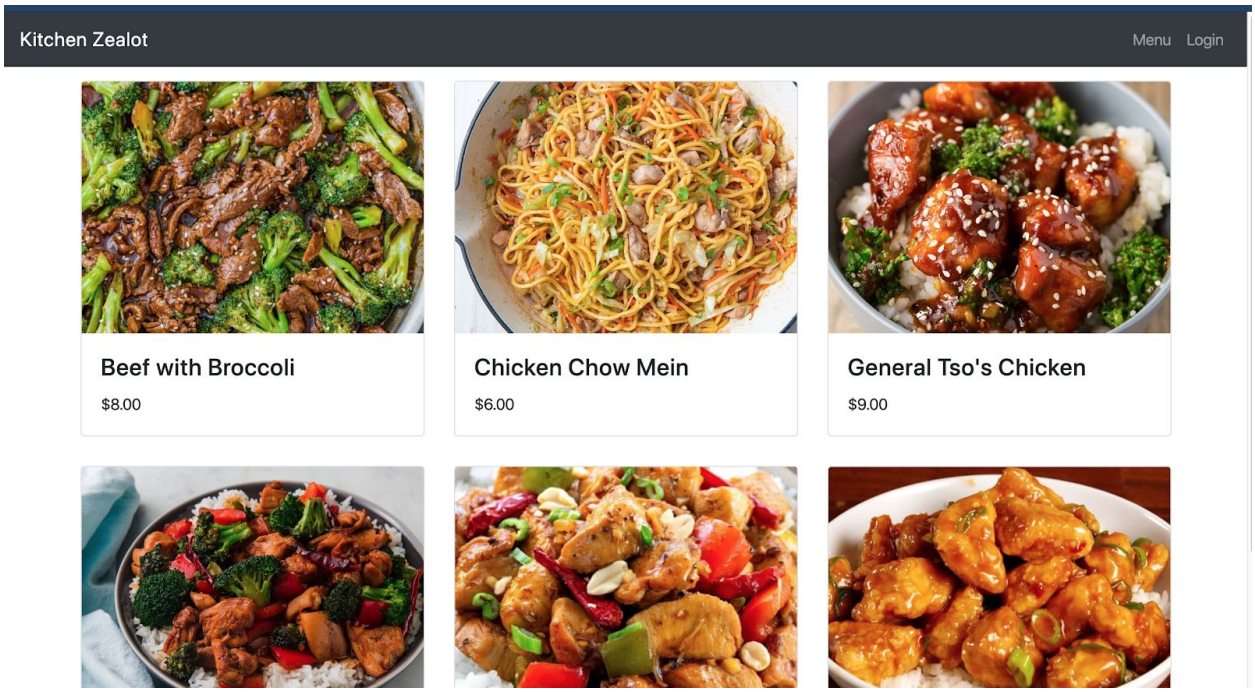
Input: String of the user you want to find
Output: String of the user
Description: Returns the name of the input string, if it exists

```
getUser(uid:string):Observable<User>
{
  return this.afs.doc("users/" + uid).valueChanges() as Observable<User>;
}
```

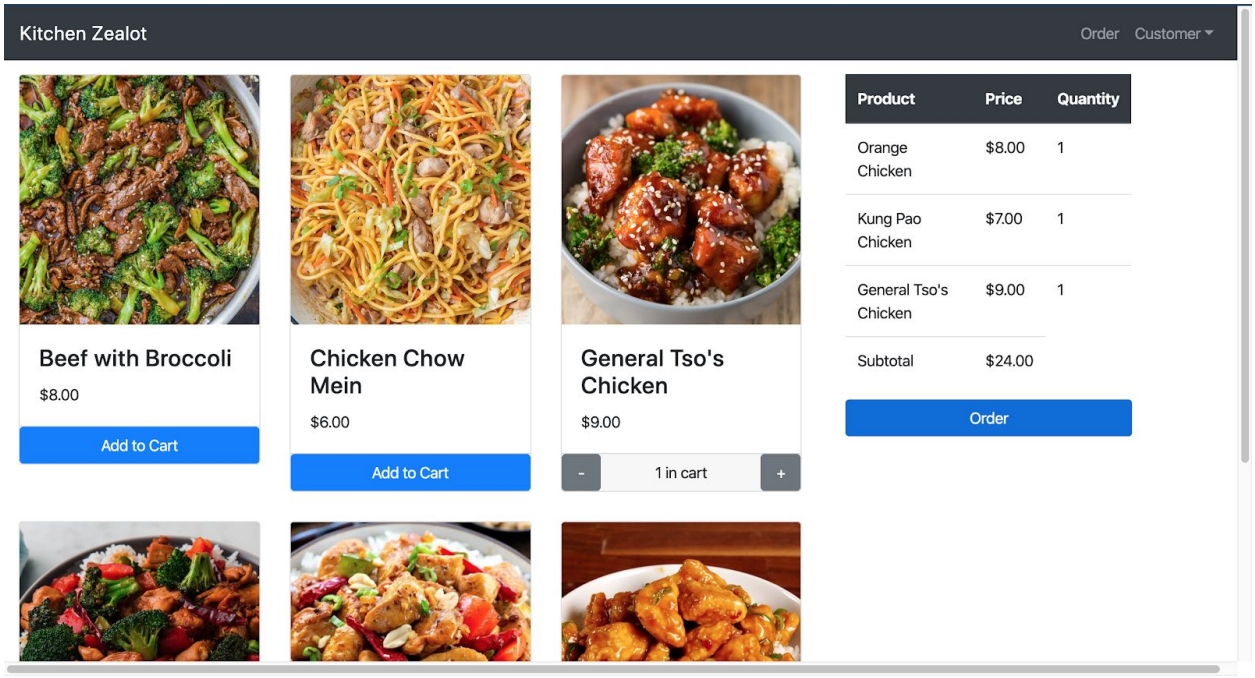
5. System Screens

Main Page

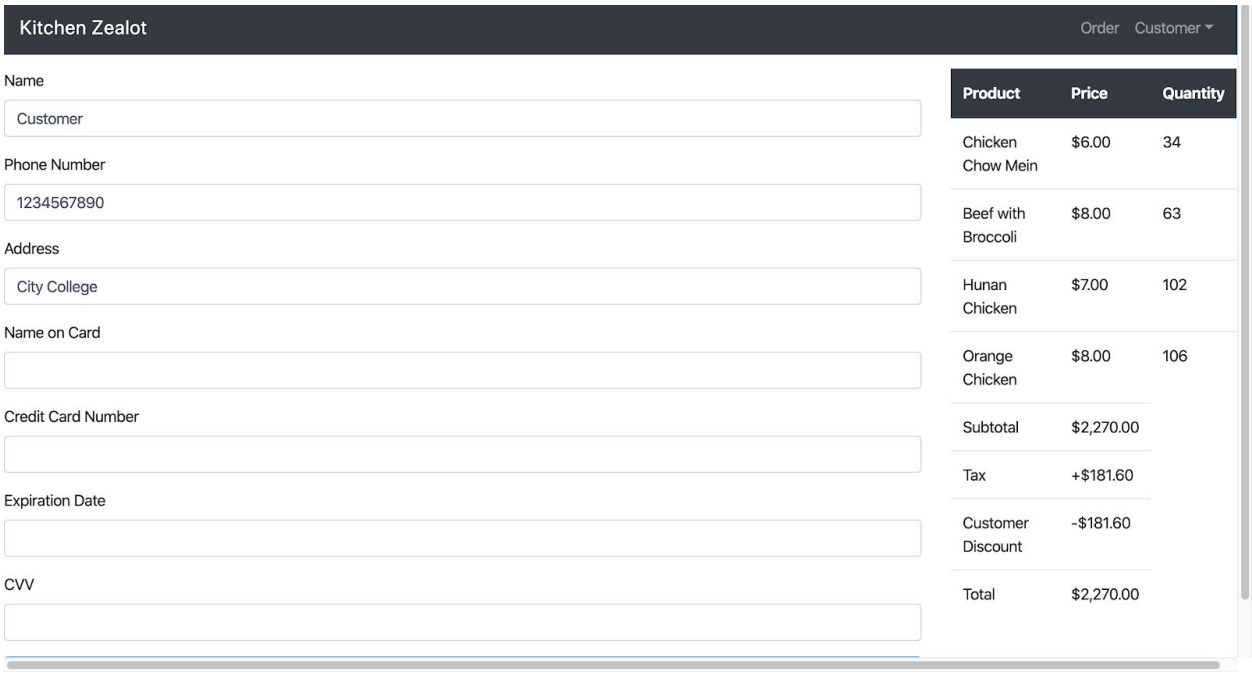
Order Page



Cart



CheckOut Page



6. Minutes

Meeting # 1 (3 hours) : We discussed who are team members are, their skill levels, basic planning of the system, what languages, technologies to learn and use, when we would have future checkpoints, and what parts and roles each of us would fill in

Meeting # 2 (6 hours): We discussed and worked on the Phase 1 template report, and equally distributed the work while bouncing ideas off of each other and improving on it.

Meeting # 3 (6 hours): We discussed and worked on the Phase 2 template report, and equally distributed the work. We each made a handful of diagrams for the use-case and worked together for the general collaboration class diagram.

7. Git Repository

https://github.com/AbtahiChowdhury/csc322