DATA DESIGN REPORT

# DESIGN PROCESS

## ERD Diagram

### Customer table

There are 11 tables in Wholey Moley Foods ERD diagram.

The Customers table will track customer information which are name, address, date of birth and credit status.

CustomerID will be a Primary Key because each customer has only one ID and accountID will be a Foreign Key which references from Accounts table.

I had separate name column to first name (fName) and last name (lName) that we could easy to management and access data. For the address column, I had separate it to street number (streetNum), street name (streetName), area (suburb) and city so we can track more details about customer then we can statistic that customer from. I also added customer type column, day of birth, mobile number (mobile) and gender (sex) so that we could use that information to support client business such as running event for birthday of customer. Furthermore, this table has customer type (customerType) to track if customer paying by cash or they want to ignore giving information so they can become anonymous customer. The last one I had added that is credit status (creditStatus) to check availability of payment.

### Accounts table

Accounts table will track the payment of customer, customer may don’t have account if they are paying cash or they reject to create, and customer also can have more than 1 account If I would like to do.

Accounts table has accountID which is Primary Key because each account is unique, and it also have customerID as Foreign Key references from Customer table.

This table has account balance (accBalance) which will show the availability payment of customer, the table also has the date of last payment (lastPayDate) and total amount of money that customer had paid (lastPayTotal) to track time and amount money customer had spent. The last column one is payment type (paymentType) to show what kind of payment that customer used.

### Branch table

Branch table will follow all the information about the Branch of client which will track the Branch name, address, phone number, employee.

The branchID will be a Primary Key because each Branch is unique, following that is branch name (branchName) column which will store the name of branch. EmployeeID will be Foreign Key references from Employee table. Address column will be separated to street number (streetNum), street name (streetName), area (suburb) and city to easy management. Branch will be a phone number column (phone) so customer or employee can contact and the last one need to track that how many employees works for the branch (employeeCount).

### Positions table

Positions table will show about the job details of employee.

Positions table will have a positionID which is Primary Key because each position of job is unique. This table will have job title (jobTitle) column which show the name of the job then it has a pay rate (payrate) column to show how much employee get pay per hour, and last thing is skill sets (skillSets) column which describe what skills employee need to fit that position.

### Employee Table

Employee Table will follow all personal information and history of work.

Each employee will have an employeeID which is Primary Key, and position of employee (positionID) which show the job of them, then next one is branch ID (branchID) which is Foreign Key references from Branch table to show where are they working. Each employee has a history ID (historyID) so the manager can track their work history in EmployeeHistory table. This table has all personal information of employee such as first name and last name, street number, street name, suburb, city, day of birth, mobile phone number, and email address.

### Employee History Table

Employee History Table will save working history of employee so manager can track which employee used to work or how many currently working.

This table has composite key that is employee ID (employeeID) and history ID (historyID) which is Primary Key because each employee could have many work history and employee ID also is Foreign Key references from Employee table. Employee History table also has worked status (workStatus) column to display availability of work or finished. It has start date (startDate) and finished date (endDate) column to store when the employee starts and if they finished, it will store finished date. The last column is note so manager could take note about that employee as a reference.

### Item table

Item table will store all information about the product that client is selling.

Each item will have unique item ID (itemID) because item is unique. Each item will have branch ID (branchID) references from Branch table to track where this item belongs to. Item also has name (itemName), ingredients column to track details of product which will help some sensitive customer know that are they buying. The manufacture date (mfd) track when the item had made, the expire date (exp) will track when the item will expire, and size column will show the size of item. The price column track how much customer have to pay for that product.

### Pack table

Pack table shows information about the pack that could have many items such as gift pack or event pack.

The pack table has a pack ID (packID) as a Primary Key because each pack is unique, and it also has pack name (packName) to store the name of pack.

* PackItem table

PackItem table use composite Primary Key that means that the pack ID (packID) and item ID (itemID) are Primary Key because each pack can have many items so we can store with the same value of pack ID but have different item ID to make it become unique key. Moreover, when we store Orders value, if just only item ID value that means customer only order item, and if order has pack ID and item ID that mean customer order pack. The item ID is also a Foreign Key references from Item table.

### Orders table

Orders table has an order ID (orderID) which is Primary Key because each order ID is unique. Orders table also has customer ID, employee ID, branch ID, item ID and pack ID as a Foreign Key references from Customer, Employee, Branch, Item, Pack tables. Customer ID will track who make the order, employee ID will track who take this order, branch ID will show where this order has made, item ID and pack ID will store which item or pack be ordered. This table also has order date (orderDate) to store the day that order had made and pick up branch (pickBranch) to store the location that customer will pick up. The last one is pick up date (pickDate) to store when customer will pick up.

### Bills table

Bills table has branch ID (branchID) and order ID (orderID) as a Primary Key because the orders could make from 1 branch, but the bill belong to another branch or an order could separate to 02 bills for 02 branches. The Bills table also has a total money (total) column to track amount of money customer will pay. Furthermore, with branch ID, total the manager could track the income each month for each branch. It also has a payment type (paymentType) to track which way customer will pay, cash or card.

## Design Issues

### Namely

At beginning, I got some namely issues such as use “address” to store full address instead of separate to street number, street name, suburb and city so when I insert data to table, it harder to access and management.

### Foreign Key

I was references Foreign Key to wrong table so it cost me that the data can not flow to the right table and can not access to that data.

I also got the issue about can not make foreign key because I was referenced to the table has composite key because they can not find the primary key of that table.