TITLE: CA Implementation Document

NAME: Darragh Mac Lochlainn

STUDENT NUMBER: 20076319

MODULE: Relational Databases

DATE: 03 / 12 / 2017

Table Of Contents:

Introduction:

This is the implementation document, for Relational Databases Continuous Assesment, of my Cake Store database. This document covers the changes in the Entity Relationship Diagram from the previous document, the sql implementation, an overview of the normalised tables, a list of frequent queries and a brief overview of user privileges. This document is in a zipped folder with an sql file and a png of the ERD.

Business Description:

Stores:
No change in this entity.

Employees:
Schedule instance was removed for normalisation and all subtypes were removed. Subtypes were replaced with Job Title instance. May now make one or more Recipies.

Customers:
Loyalty Card was removed due to redundancy.

Menus:
primary key changed to Name instead of Date Made. Price instance was removed due to normalisation. Must have or more non-transferrable Menu Items.

Recipies:
This new entity was added. Stores a primary key of Name and may have Description stored. Must be made by one and only Employee. Must make up one and only one Prepared Items.

Prepared Items:
This new entity was added. Stores a primary key of Name and must have an Amount stored. Must have one or more Recipies. Must be made up of one or more Ingredients List. Must be sold as one or more non-transferrable Menu Items.

Menu Items:
This entity was non-transferrable. The Name and Amount instances were removed, And Cost was added. Must be on one and only one Menu. Must be made as one and only one Prepared Items.

Ingredients List:

This new entity was added. Must make one and only one Prepared Items. Must list one and only one Ingredients.

Ingredients:

Amount was changed to Description and is now optional. May be listed by one or more Ingredients Lists. Must be affected by on or more Some Dates
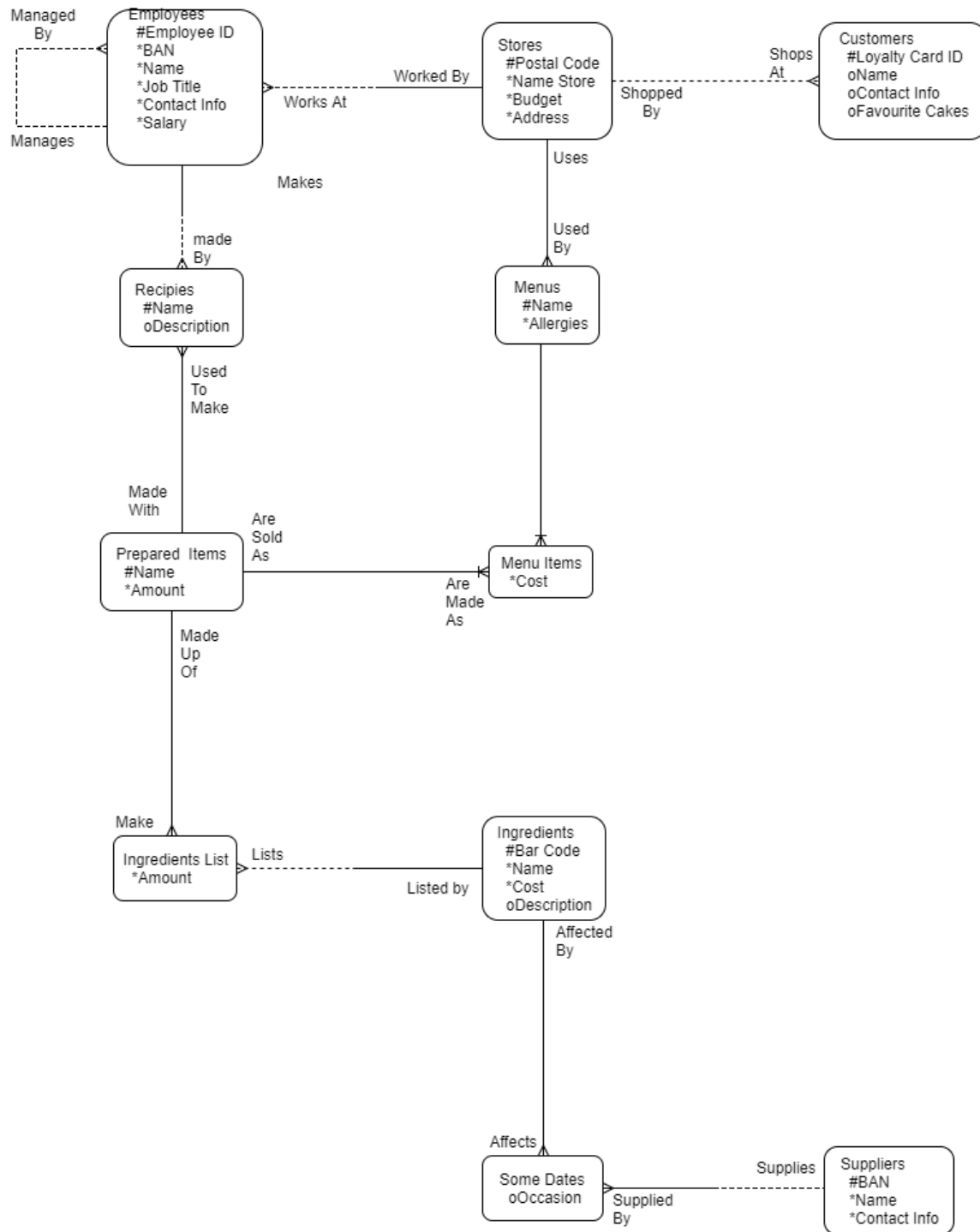
Some Dates:

This new entity was added. May have Occasions stored. This replaced the redundant Special Items entity. Must affect one and only one Ingredients. Must have one and only one Supplier

Suppliers:

No Change to this entity. May supply for one or more Some Dates.

Entity Relationship Diagram:

Normalised Tables:

stores(postal_code, name_store, budget, address)

customers(loyaltyCard_ID, nameCustomers, contactInfo, favCakes, postal_code)

employees(employee_ID, banEmployees, nameEmployees, jobTitle, contactInfo, salary, postal_code, manager_ID)

menus(nameMenus, allergies, postal_code)

preparedItems(namePreparedItems, amount)

recipies(nameRecipies, descriptionRecipie, employee_ID, namePreparedItems)

menuItems(costMenu, nameMenus, namePreparedItems)

ingredients(barCode, nameIngredients, costIngredients, decriptionIngredient)

ingredientsList(amount, namePreparedItems, barCode)

suppliers(banSuppliers, nameSuppliers, contactInfo)

someDates(occassion, banSuppliers, barCode)

Table Mapping:

Table Name: stores

Field	Type	Size	Constraints	Description
postal_code	char	7	Primary Key	The postal code of the store.
name_store	char	30	Not Null	The name of the store.
budget	number	10,0	Not Null	The annual amount of money the store works with in a year.
address	char	50	Not Null	The physical adddress of the store.

Table Name: customers

Field	Type	Size	Constraints	Description
loyaltyCard_ID	char	7	Primary Key	The ID number of the customer's loyalty card.
nameCustomers	char	30		The name of the custome.
contactInfo	char	30		Information to contact the customer.
favCakes	char	30		The customer's favourite cake type.
postal_code	char	7	Foreign Key	The physical adddress of the store.

Table Name: employees

Field	Type	Size	Constraints	Description
employee_ID	char	7	Primary Key	The ID number of the employee.
banEmployees	char	22	Not Null	The bank account number of the employee.
nameEmployees	char	30	Not Null	The name of the employe.
jobTitle	char	15	Not Null	The title of the employee's job.
contactInfo	char	50	Not Null	Information to contact the employe.
salary	number	7,2	Not Null	The amount of money the employee earns per week.
manager_ID	char	7		The ID number of the manager of the employe.
postal_code	char	7	Foreign Key	The physical adddress of the store.

Table Name: menus

Field	Type	Size	Constraints	Description
nameMenus	char	20	Primary Key	The name of the menu.
allergies	char	30	Not Null	A list of allergies present in the menu.
postal_code	char	7	Foreign Key	The physical adddress of the store.

Table Name: preparedItems

Field	Type	Size	Constraints	Description
namePreparedItems	char	20	Primary Key	The name of the prepared foods.
amount	number	3,0	Not Null	The amount of prepared foods.

Table Name: recipies

Field	Type	Size	Constraints	Description
nameRecipies	char	20	Primary Key	The name of the recipies.
descriptionRecipie	char	80		A description of what the recipie will make.
employee_ID	char	7	Foreign Key	The ID number of the employee.
namePreparedItems	char	20	Foreign Key	The name of the prepared foods.

Table Name: menuitems

Field	Type	Size	Constraints	Description
costMenu	Number	5,2	Not Null	The cost of the menu item.
nameMenus	char	20	Foreign Key	The name of the menu.
namePreparedItems	char	30	Foreign Key	The name of the prepared foods.

Table Name: ingredients

Field	Type	Size	Constraints	Description
barCode	number	12,0	Primary Key	The barcode of the ingredient.
nameIngredients	char	20		The name of the ingredient.
costIngredients	number	5,2		The cost of the ingredient.
decriptionIngredient	char	30		A description of the ingredient.

Table Name: ingredientsLists

Field	Type	Size	Constraints	Description
amount	number	4,0	Not Null	The ammount of ingredients needed for the prepared item.
namePreparedItems	char	20	Foreign Key	The name of the prepared foods.
barCode	number	12,0	Foreign Key	The barcode of the ingredient.

Table Name: suppliers

Field	Type	Size	Constraints	Description
banSuppliers	char	22	Primary Key	The bank account number of the supplier.
nameSuppliers	char	30		The name of the supplier.
contactInfo	char	30		Information to contact the supplier.

Table Name: someDates

Field	Type	Size	Constraints	Description
occassion	char	15		A specific occasion such as birthdays or christmas.
banSuppliers	char	20	Foreign Key	The bank account number of the supplier.
barCode	number	12,0	Foreign Key	The barcode of the ingredient.

Frequent Queries:

SELECT postal_code, name_store, budget, address
FROM   store
WHERE   budget <= 20000;
        Looking for all stores with a budget less then or equal to 20000.

SELECT loyaltyCard_ID, nameCustomers, contactInfo, favCakes, postal_code
FROM   customers
WHERE   favCakes IN('Chocolate');
        Looking for all customers who like chocolate cake.

SELECT employee_ID, banEmployees, nameEmployees, jobTitle, contactInfo,
salary, postal_code
FROM   employee
WHERE   nameEmployees LIKE '%Smith';
        Looking for all employees with the last name smith.

SELECT nameMenus, allergies, postal_code
FROM   menu
WHERE   allergies LIKE 'Nuts';
        Looking for all menus that have nut allergies.

SELECT namePreparedItems, amount
FROM   preparedItems
WHERE   amount <= 25;
        Looking for all items that are 25 or fewer

SELECT nameRecipies, descriptionRecipie, employee_ID, namePreparedItems
FROM   recipie
WHERE   nameRecipies = 'Apple Pie';
        Looking for all recipies of apple pie.

SELECT costMenu, nameMenus, namePreparedItems
FROM   menuItems
WHERE   costMenu <= 20.00;
        Looking for all items that cost €20 or less.

SELECT barCode, nameIngredients, costIngredients, decriptionIngredient
FROM   ingredient
WHERE   nameIngredients LIKE 'Sugar';
        Looking for all sugar ingredients.

```
SELECT  amount, barcode, namePreparedItems
FROM    ingredientsLists
WHERE   amount <= 40;
        Looking for all Lists that have 40 or less ingredients

SELECT  banSuppliers, nameSuppliers, contactInfo
FROM    suppliers
WHERE   nameSuppliers LIKE '%SMITH' AND contactInfo LIKE '%@email.com';
        Looking for all suppliers that use an email.

SELECT  occassion, banSuppliers, barCode
FROM    someDates
WHERE   occassion =  'Annual';
        Looking for all annual dates.
```

User Priveliges:

Most tables are read and write for most staff. All tables may be read and updated by admins. Employees, Suppliers and Stores may only be updated by managers and higher. These are sensitive and must be restricted to authorised personnel.