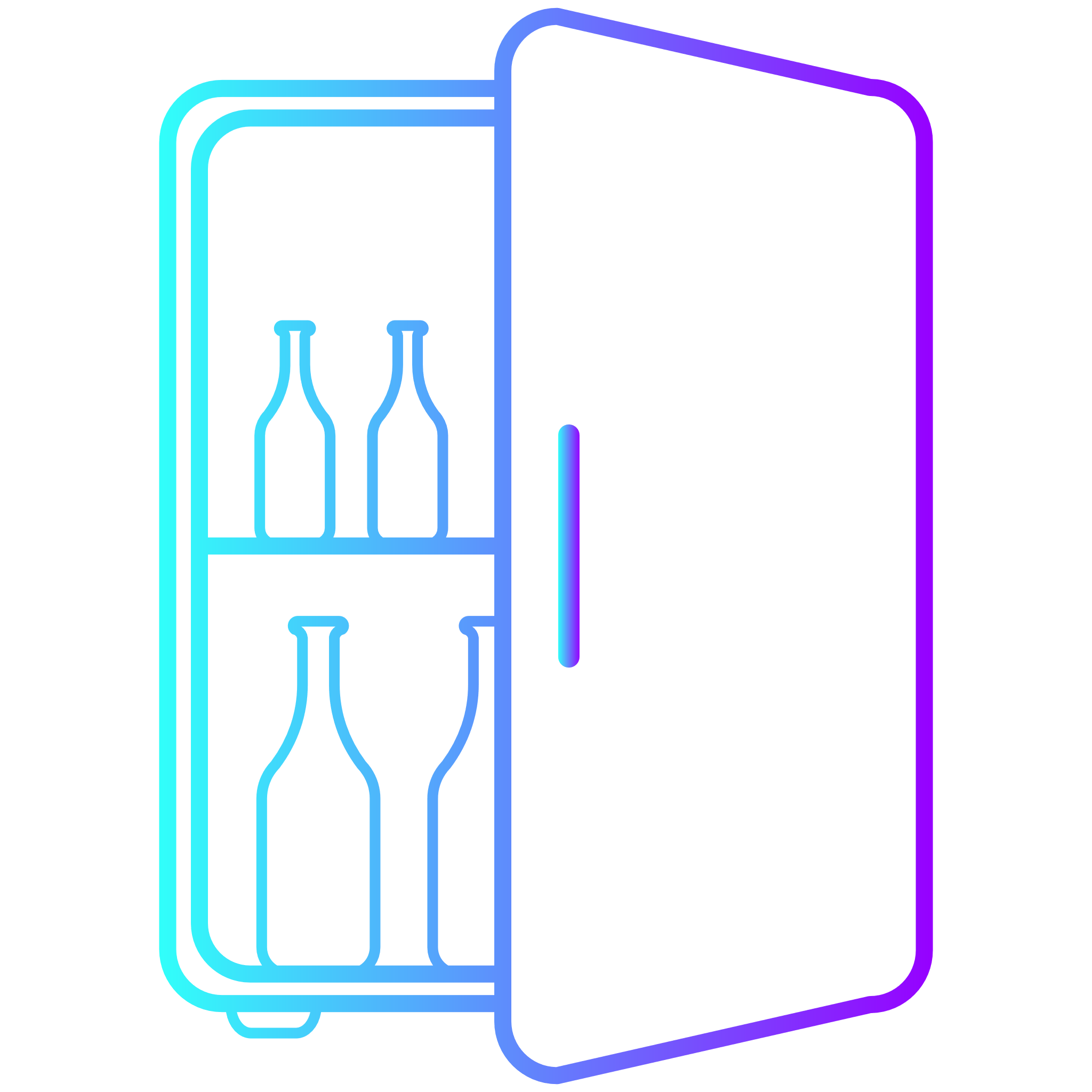
# item

# Freezer Database

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Written in C#  
using Microsoft Access

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Initial Pitch

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Freezer Database

my idea is a database interface which helps you manage your food inventory, it allows you to create “purchase” events which will add food products to your database, with relevant details such as the name, a short description/note (if desired) and the use by/best before date.

my database will remind you when food only has a day left, and will provide a dashboard to easily see what foods (and other produce) are close to going off, I will have a colour system where over 1 month is blue, over 1 week is green, over 3 days is yellow and any less is red (with black signifying food that has gone bad).

I will use a queue to show the recommended food items to use and alternatively a system which is sorted by use by date.

In the future I may decide to implement a system that allows you to scan produce to more easily add to the database, however this may be unfeasible to begin with.

I will create an option to add regularly used food items (allowing you to pick from a drop down menu, and also allowing you to get nutritional information more easily. you will still have to add the use by date when you create an instance (I will consider object oriented programming for this).

the project is designed for anybody who regularly buys perishable food and wishes to keep track of what they have to be more efficient in the use of food.

I am currently planning to use Access™ for my database and am going to be using C# Forms with SQL to present the data for easier consumption.

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Analysis

Interviews

Interview with my end user *manager of a popular family owned café*

**Date of interview – 1/6/19  
Place of interview – End user’s café**

**Q1 – what is a key concern you have that would need to be managed in a potential system?**

My café is often at full capacity, often with dozens of customers at any given time. As a result we tend to be rather busy most of the time; we only have a limited amount of time allocated to the putting away of bought food. I would like the interface to be quick, you should be able to add items quickly and easily.

**Q2 – what additional features would improve the experience of using our system?**

We serve a range of different clients at our establishment. We cater toward multiple different allergies (which can often become complicated and time consuming to keep track of). As a result I would like to propose two additions to your database system: I would like to be able to add a description to some items (enabling the staff to check which ingredients are allergen free at a quick glance). We are also very concerned about cross-contamination. I’d like to have the option to indicate where certain items are to be, and are stored.

**Q3 – would you like to able to differentiate between use by dates and best before dates?**

Selling a customer a meal made from food that has passed it’s best before date is not conducive to an enjoyable meal. For us any food that has passed it’s best before dates should not be served to customers. Differentiating between use by and best before dates is not needed.

Constraints and Limitations

the system must run quickly and smoothly on windows pc’s with 4GB of RAM and a lower tier CPU. the database should be optimised to minimise the use of secondary storage.

my proposed system is currently limited by access to certain hardware, I would like to be able to scan food items with a barcode scanner but I do not have access to these.

Objectives

* Create a food database
* Ability to add foods to database
* Ability to remove foods from database
* Database should display use by dates in a usable manner
* Sort foods from time entered to database and sort foods base on use by date/best before date
  + Consider best before date vs use by date
* Add a table of regularly used food with nutritional information
* When adding foods should input name, use by date and optionally an additional description

Programming Language

i will be using C# as my main programming language. I’ve decided to use C# because of its easy to use ‘user interface’ components and its ability to connect to databases. C# can use SQLite to interact with database tables and can push the data to the interface.

C# has lots of database specific code which is not immediately obvious. as a result I will be using the resources listed below to research the code required to form a functional database:

* Stack Overflow – https://stackoverflow.com
* YouTube – https://youtube.com
* Reddit – https://www.reddit.com
* Microsoft C# Guide – https://docs.microsoft.com/en-us/dotnet/csharp

End Users

the project is designed for anybody who regularly buys perishable food and wishes to keep track of what they have; to be more efficient in the use of food.

as a result of this the main user base will consist of people like parents, home owners or service workers. for example some family owned businesses may wish to use the system to aid in managing their food-stuffs.

the primary reason for the development of this software is to reduce food waste, which is a major problem faced by our country. A report by the Government concluded that on each family wastes around £470 a year on out of date food. Food and agriculture are the largest consumers of water, using 70% of our water. Reducing food waste is a major step in reducing our impact on the environment.

A key point that many people made was concerned around the amount of time it would take to form and manage a database of all the food you buy, I’d like to address that by reminding them that this software is intended only for people that wish to make sure they don’t waste a specific food item. You do not have to add every food item, and the system will not break if you don’t. You may add as many items as you see fit to optimise your food usage and general lifestyle.

Design

Entity Relationship Diagram

A close up of a sign

Description automatically generated

Normalised Tables

TABLE KEY:

|  |  |
| --- | --- |
| **Primary Key** | *Foreign Key* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *itemName* | useBy | additionalNotes | LocationDescription | **itemID** |
| Brown Bread | 20/6/19 | Gluten Free | In breadbin | 0001 |
| Milk Carton | 13/6/19 |  | Fridge Sleeve | 0002 |
|  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **itemName** | foodGroup | caloricDensity |
| M&S Chicken Strips | Protein | 88 |
| Milk Carton | Dairy | 50 |
|  |  |  |

(caloricDensity is measured in calories per 100g)

SQL Commands

various commands may provide useful in my database project, below I will list each command with a brief explanation accompanying it.

|  |  |
| --- | --- |
| SQL Command | Explanation |
| SELECT itemName, useBy, additionalNotes, locationDescription FROM Stock | Retrieves all stock data (except for itemID) for viewing |
| SELECT foodGroup, caloricDensity FROM Nutritional\_Info WHERE itemName = ‘-inputname-‘ | Returns all useful information from database about a specific product (foodGroup and caloricDensity are basic throwaway details, more may be added in the future) |
| a  a  a |  |