DatabaseFinalProject

(Jouni Juvonen, Väinö Karppi, Juho-Ville Uitto)

Creating the database

In the beginning we needed to determine the size and content of our database. After consideration, we decided to use nine main tables and three junction tables. We thought this structure would accommodate all necessary articles into our database. We designed initial ER-Diagram on paper. This approach aimed to make the development process smoother. During the diagram creation, we encountered some challenges when selecting appropriate names for the tables and their fields. This was due to different opinions in our group. For example, which names were most suitable like Cooking Hardware or Cooking Equipment. However, once this was resolved, the table creation proceeded smoothly. After completing the tables, we were able to generate the final ER-Diagram effortlessly using Microsoft SQL.

Sql Querys

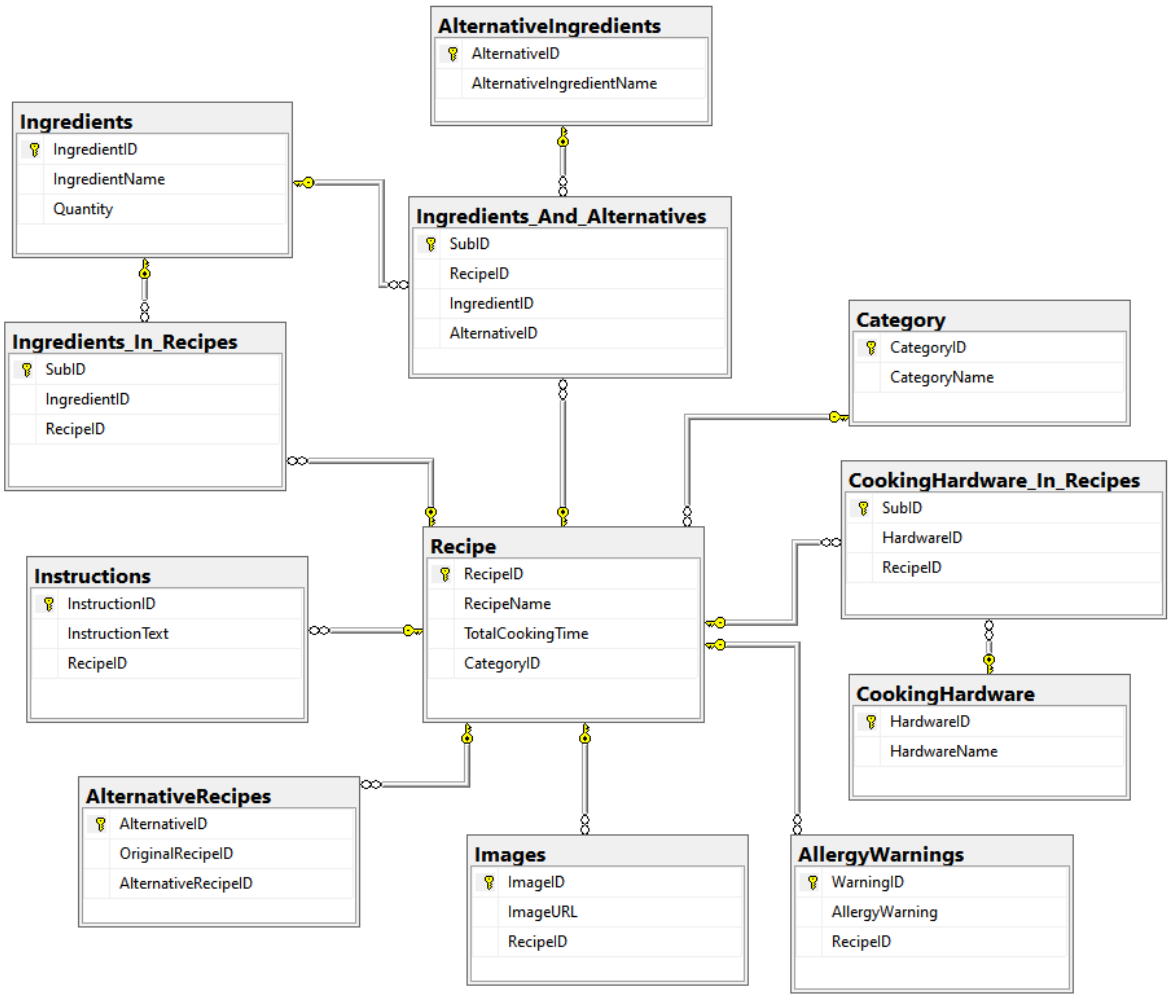
Following the creation of the database, we began developing our insert queries, which were necessary to populate the tables with data. While this step was relatively straightforward, it proved to be time-consuming. We had to carefully consider which data would be relevant and useful, especially in the context of recipes. Fortunately, the initial ER-Diagram provided valuable guidance in ensuring that all required articles were correctly inserted.

Once the insert queries were completed, we needed a method to fetch the data from database. This was bit tricky. This aspect presented some challenges, particularly in determining the appropriate JOIN functions to use when constructing the queries. This problem took us a couple of hours. However, after overcoming these difficulties, we successfully created functional queries and proceeded to finalise our project documentation.

Summary

In conclusion, the project was surprisingly complex. The most challenging aspect was designing a coherent database free from irrelevant information. The table creation queries, on the other hand, were relatively easy to execute, thanks to our prior experience in this area.

ER Diagram



Example query's and results

```sql
--Fetch all recipes with their category names
SELECT Recipe.RecipeName, Category.CategoryName
FROM Recipe
JOIN Category ON Recipe.CategoryID = Category.CategoryID;
```

121 %

Results Messages

	RecipeName	CategoryName
1	Scrambled Eggs	Breakfast
2	Grilled Chicken Salad	Lunch
3	Spaghetti Bolognese	Dinner
4	Chocolate Cake	Dessert
5	Garlic Shrimp Appetizer	Lunch
6	Caesar Salad	Lunch
7	Tomato Basil Soup	Breakfast
8	Beef Stroganoff	Dinner
9	Garlic Mashed Potatoes	Lunch
10	Iced Tea	Dessert

```sql
--Fetch all ingredients for a specific recipe
SELECT Recipe.RecipeName, Ingredients.IngredientName, Ingredients.Quantity
FROM Recipe
JOIN Ingredients_In_Recipes ON Recipe.RecipeID = Ingredients_In_Recipes.RecipeID
JOIN Ingredients ON Ingredients_In_Recipes.IngredientID = Ingredients.IngredientID
WHERE Recipe.RecipeName = 'Spaghetti Bolognese';
```

121 %

Results Messages

	RecipeName	IngredientName	Quantity
1	Spaghetti Bolognese	Spaghetti	200g
2	Spaghetti Bolognese	Ground Beef	300g

```sql
--Fetch all recipes with a specific allergy warning
SELECT Recipe.RecipeName, AllergyWarnings.AllergyWarning
FROM AllergyWarnings
JOIN Recipe ON AllergyWarnings.RecipeID = Recipe.RecipeID
WHERE AllergyWarnings.AllergyWarning = 'Contains gluten';
```

121 %

Results Messages

	RecipeName	AllergyWarning
1	Spaghetti Bolognese	Contains gluten

```sql
--Update the cooking time for a recipe
UPDATE Recipe
SET TotalCookingTime = 45
WHERE RecipeName = 'Spaghetti Bolognese';
```

```sql
--Delete a recipe along with its instructions, ingredients, and hardware references
DELETE FROM Instructions
WHERE RecipeID = (SELECT RecipeID FROM Recipe WHERE RecipeName = 'Spaghetti Bolognese');

DELETE FROM Ingredients_In_Recipes
WHERE RecipeID = (SELECT RecipeID FROM Recipe WHERE RecipeName = 'Spaghetti Bolognese');

DELETE FROM CookingHardware_In_Recipes
WHERE RecipeID = (SELECT RecipeID FROM Recipe WHERE RecipeName = 'Spaghetti Bolognese');

DELETE FROM Recipe
WHERE RecipeName = 'Spaghetti Bolognese';
```