Criterion E: Product development

List of Techniques Used in Development

Tools in Microsoft Access were used for development. These tools were required to employ these complex techniques:

1. Complex Query Development for Data Retrieval from Tables in the Database
2. Embedded Macros for Database Navigation, Print Commands and Record Saving Functions.
3. Authentic Data Representation on Forms and Reports through Linking Tables and Queries as Sources.

Each complex technique will be explored and demonstrated individually with evidence of functionality.

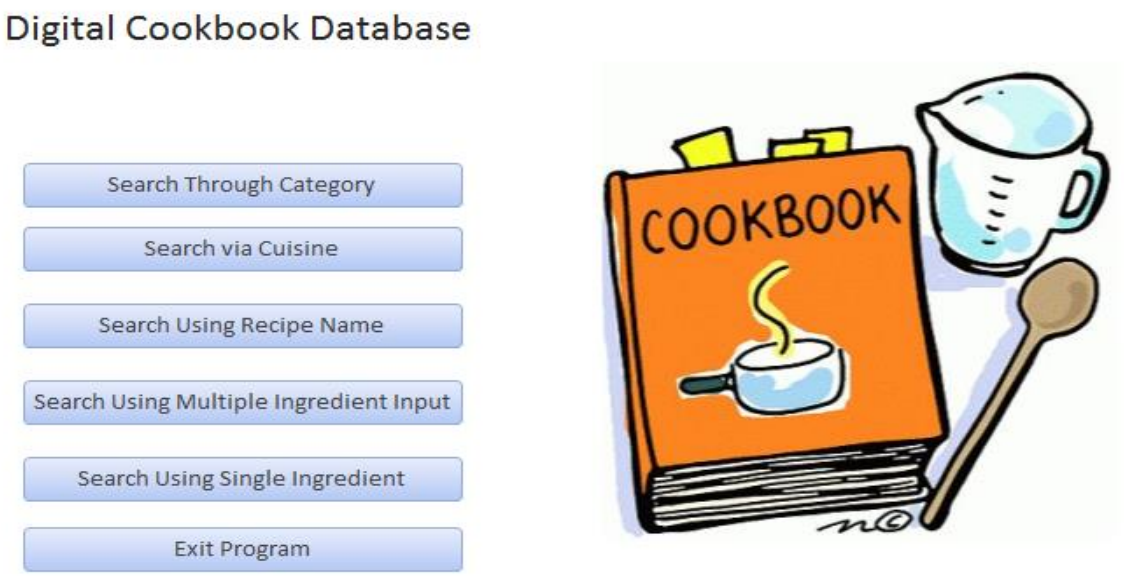


Figure 1 - Database Homepage

When the database file is executed, the client will immediately be directed to this 'Home Screen' form, due to the 'AutoExec' macro. The AutoExec macro runs as soon as the database has been launched.

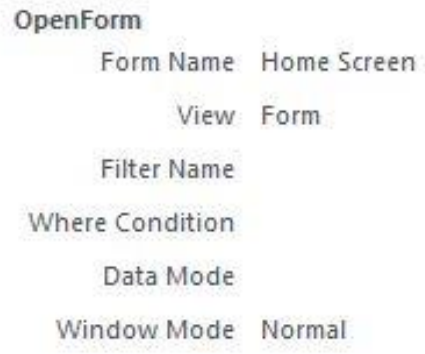
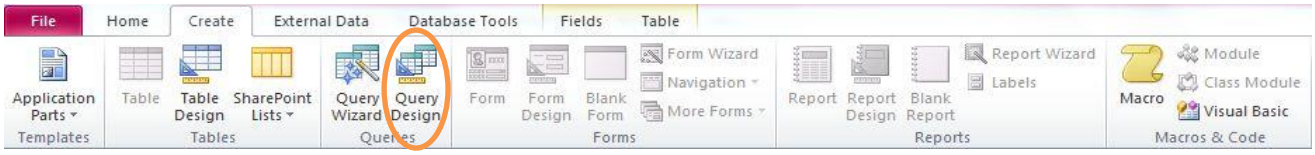


Figure 2- following function performed by AutoExec

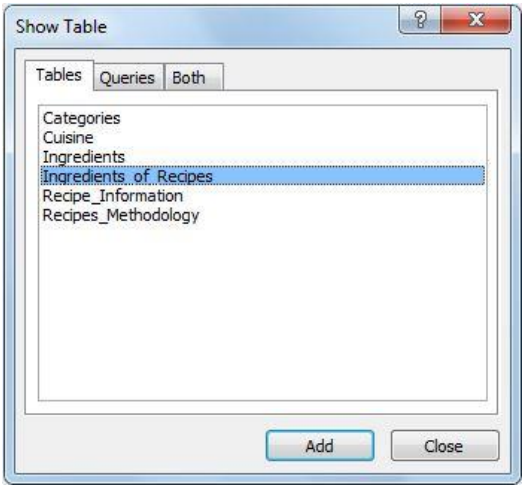
Complex Query Development for Data Retrieval from Tables in the Database

Nearly all functions in this database require queries. There are three types of different queries in this database; one, prompts the user to input information from a single field and then output the record(s) that correspond to that input. Two, prompts the user to provide multiple inputs one by one, and then output records that have all the values that the user input. Three, prompts the user to input information from a single field and then outputs the record(s) that correspond to that input from two or more tables.

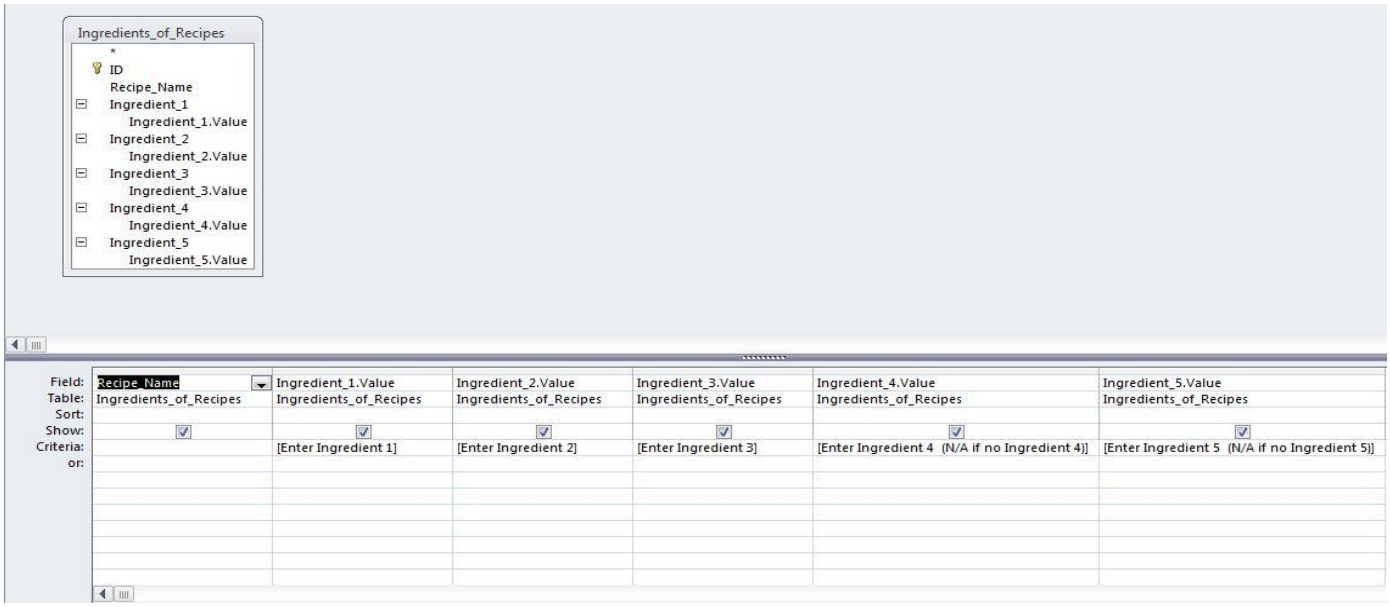
The construction of all the queries is similar, with nearly the same steps followed to create the queries. However, they are constructed from different tables and have different criteria for parameter value e.g. a query that outputs the information about a recipe by taking ingredients as input, is constructed as follows:



First we go on create and click on Query design where the program opens a prompt for us to choose a table or query from. We will choose the 'Ingredient_Searcher_Query' table as shown



Once this table is selected and the button 'Add' is clicked, all fields from the table are added and the following is display is set:



Now in order to set the user prompt, in the criteria of 'Ingredient_1', 'Ingredient_2', 'Ingredient_3', 'Ingredient_4', and 'Ingredient_5' a prompt instruction is set. This will inform the user that she has to input the 'Ingredient_1', 'Ingredient_2', 'Ingredient_3', 'Ingredient_4', and 'Ingredient_5' individually in each of their prompts. Once the 5 ingredients are input, the program searches for and outputs any and all recipes that have all the listed ingredients. The entire function is constructed as follows:

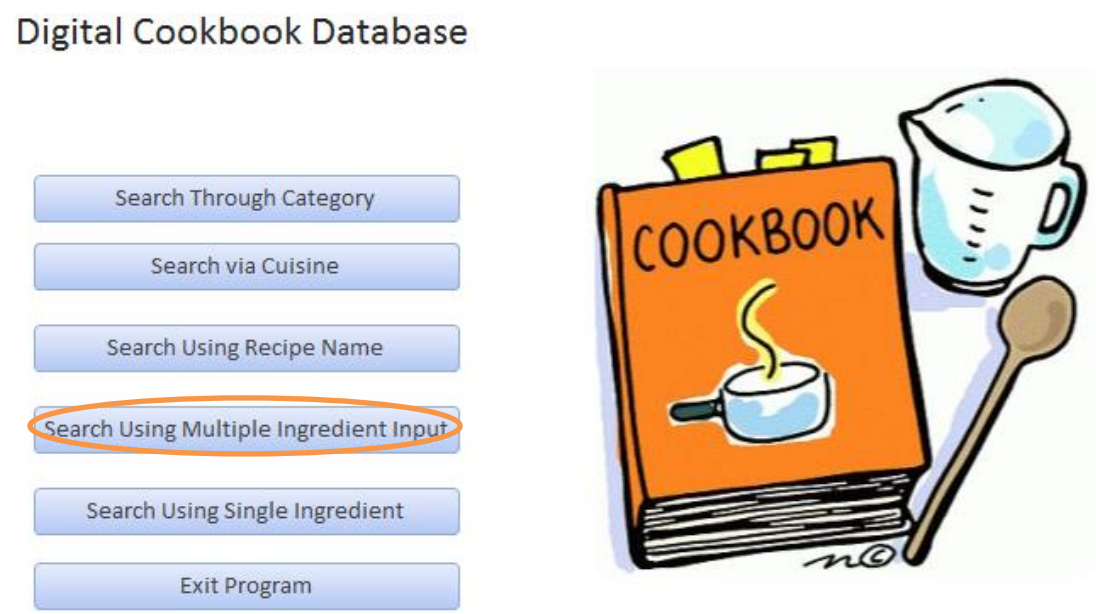


Figure 3-User clicks on 'Search Using Multiple Ingredient Input' button

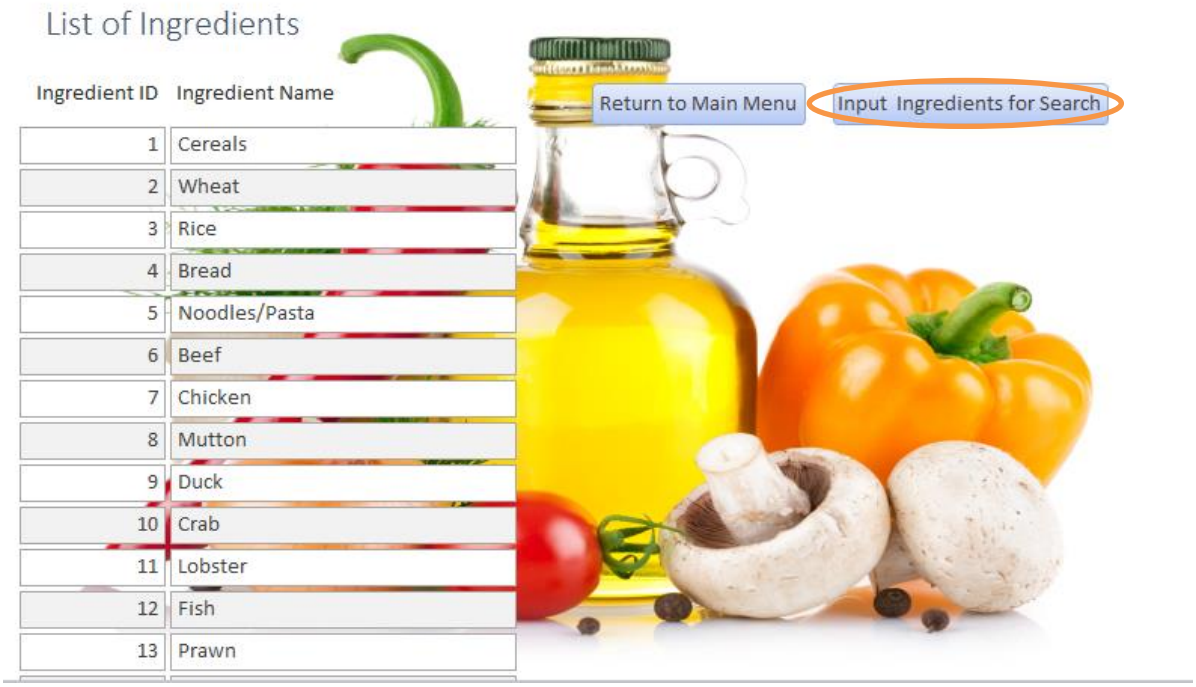


Figure 4-user clicks 'Input Ingredients for Search' button to run the query

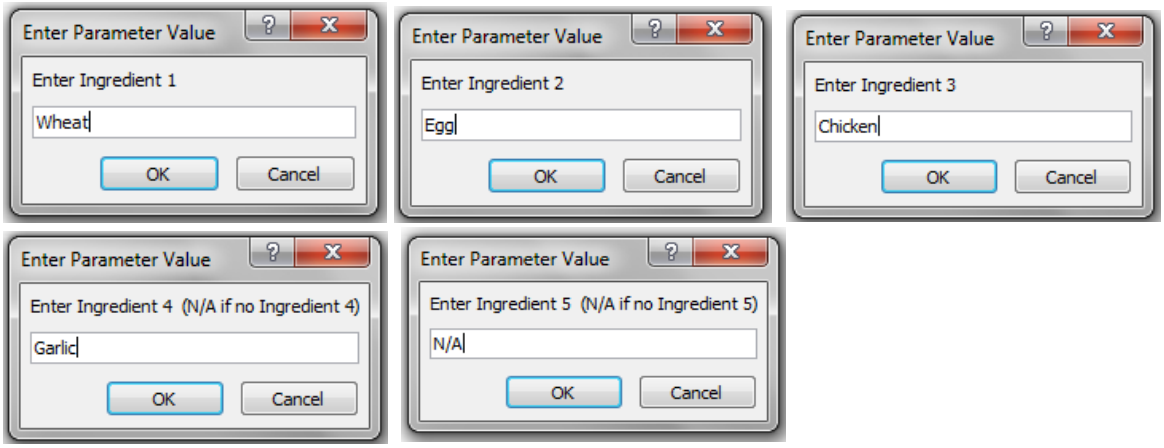
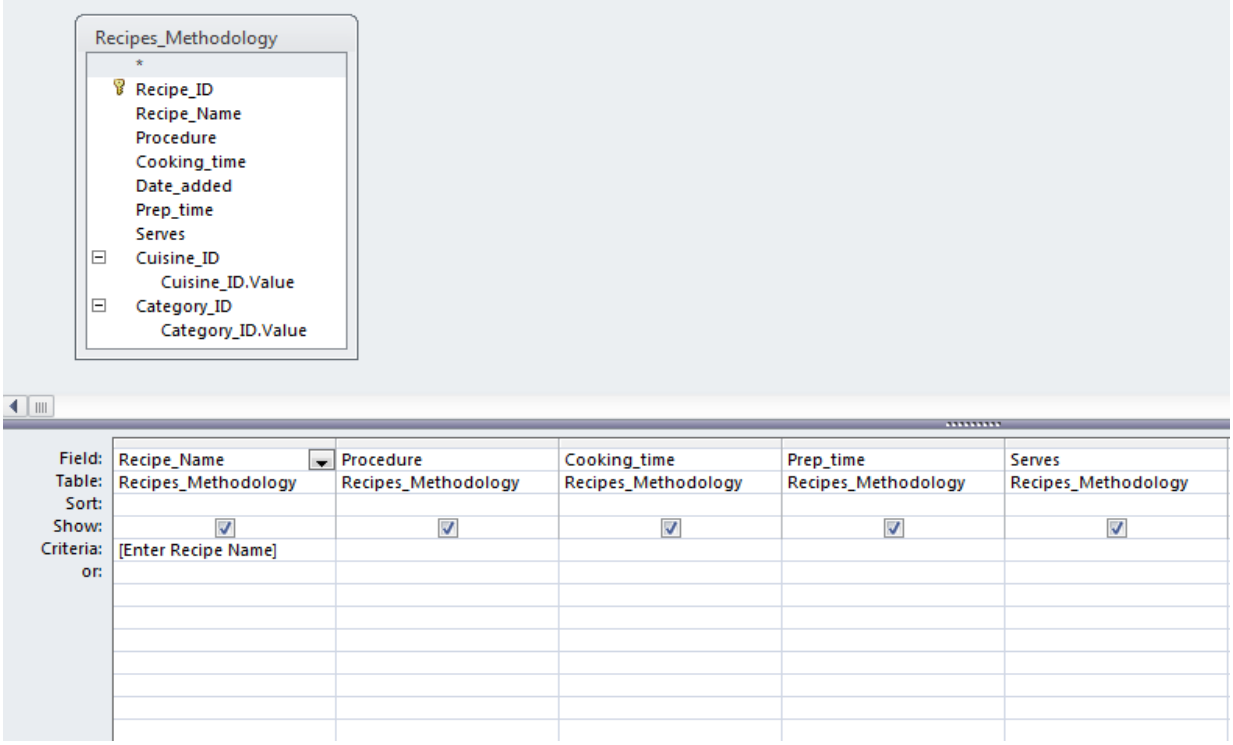


Figure 5- User inputs the ingredient name in each prompt

Figure 6-query retrieves a recipe that uses the ingredients that the user input

Another type of query used in the database functions by searching and retrieving information of a recipe methodology by searching with the name of the recipe. This 'Recipes_Methodology_Search_Query' has also been developed though similar steps. The following query design is constructed from the 'Recipes_Methodology' Table:



The criterion is set for the user to input the recipe name she wants to use for her search. The program will search and retrieve the complete record of the cooking methodology for the recipe name that the user input. To explain this query function the example of the multiple inputs will be continued.

Figure 7 - User clicks on 'View Method of Cooking' button

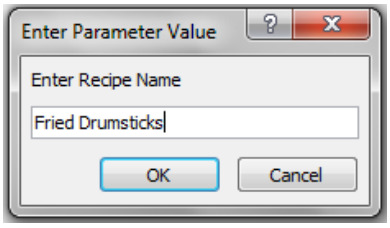


Figure 8-User inputs the name of the recipe in the prompt

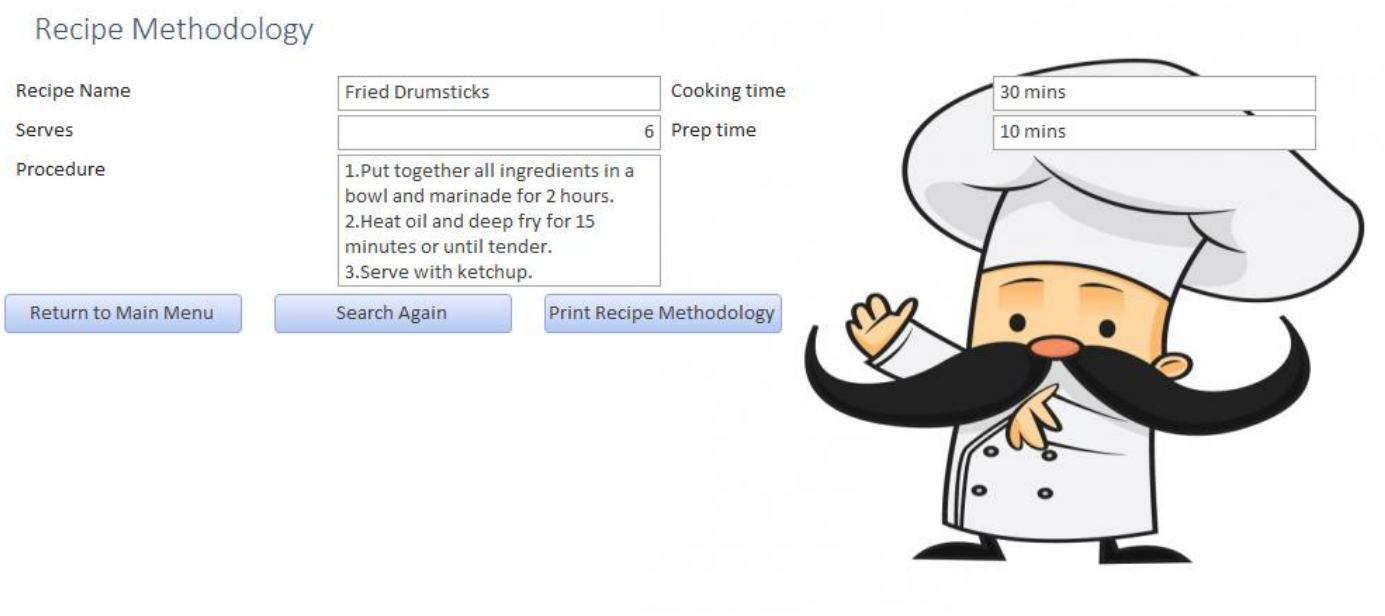
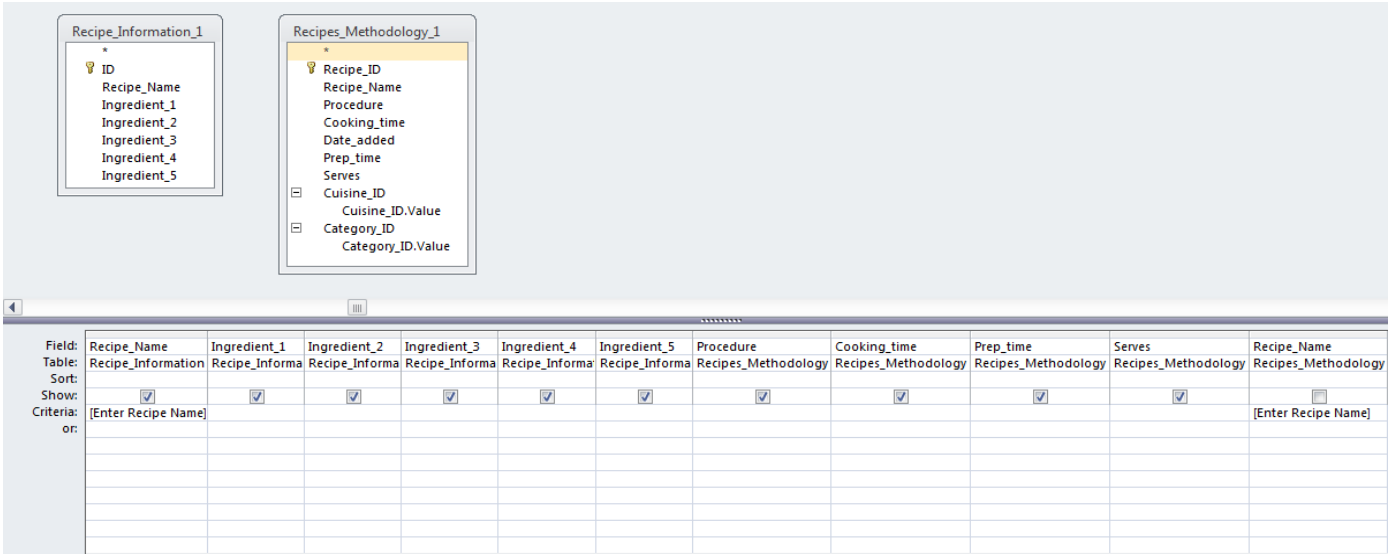


Figure 9 - The recipe methodology for the recipe name input is retrieved through the query and displayed as a report

The third query function in this database involves using a single user prompt to retrieve data from two tables within the same query. Similar to the previous two queries, it also has the same initial steps, but instead of using one table as a data source, this query makes use of two: 'Recipe_Information' table and 'Recipes_Methodology' table. Thus the following query is designed as the 'Recipe_Information_Query':



For this query to function, the information that the user would be prompted to enter should be the same in both the tables e.g. Recipe Name. Thus when the user will input a recipe name, information of that particular recipe will be retrieved from both the tables. However, that would mean that the 'Recipe Name' field would be output twice alongside the rest of the information (once from both tables). Therefore, one of

the ‘Recipe Name’ fields has been marked as hidden, by unchecking the ‘Show’ function on that particular field in the query design. This function is executed as such:

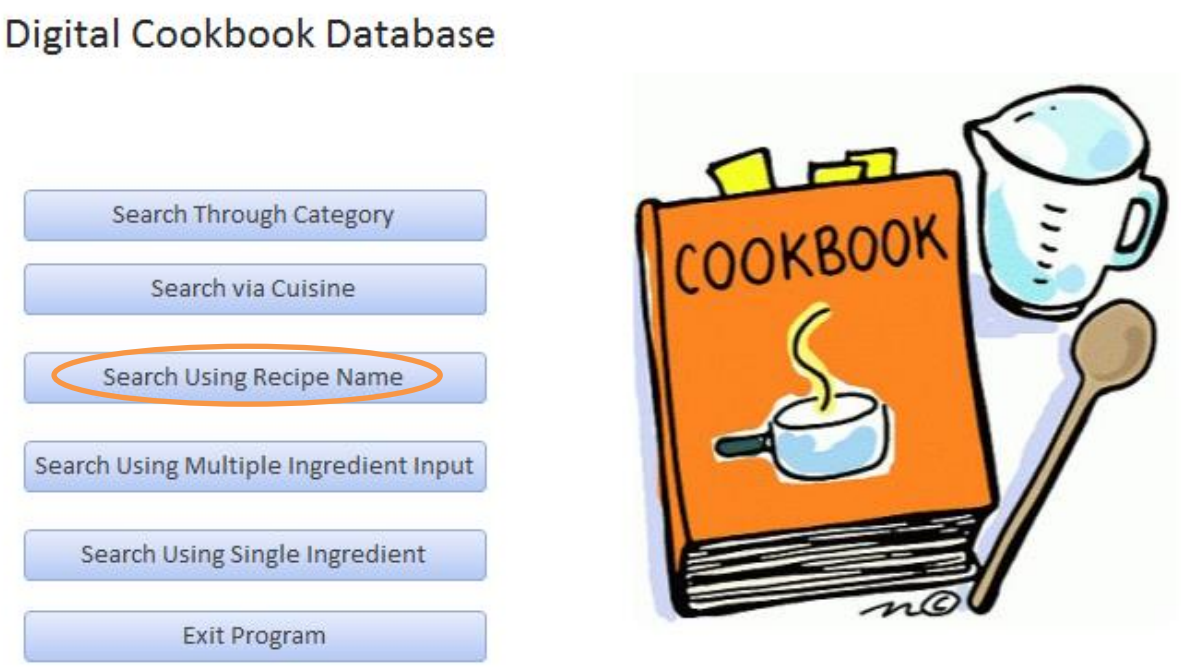


Figure 10 - The user clicks the 'Search Using Recipe Name' Button

Figure 11 - The list of recipes opens up displaying Recipe Names with their respective IDs. The user can click the 'Open Complete Recipe Information' button to run the query

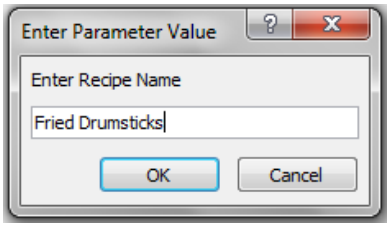


Figure 12 - The user inputs the Recipe Name in the prompt

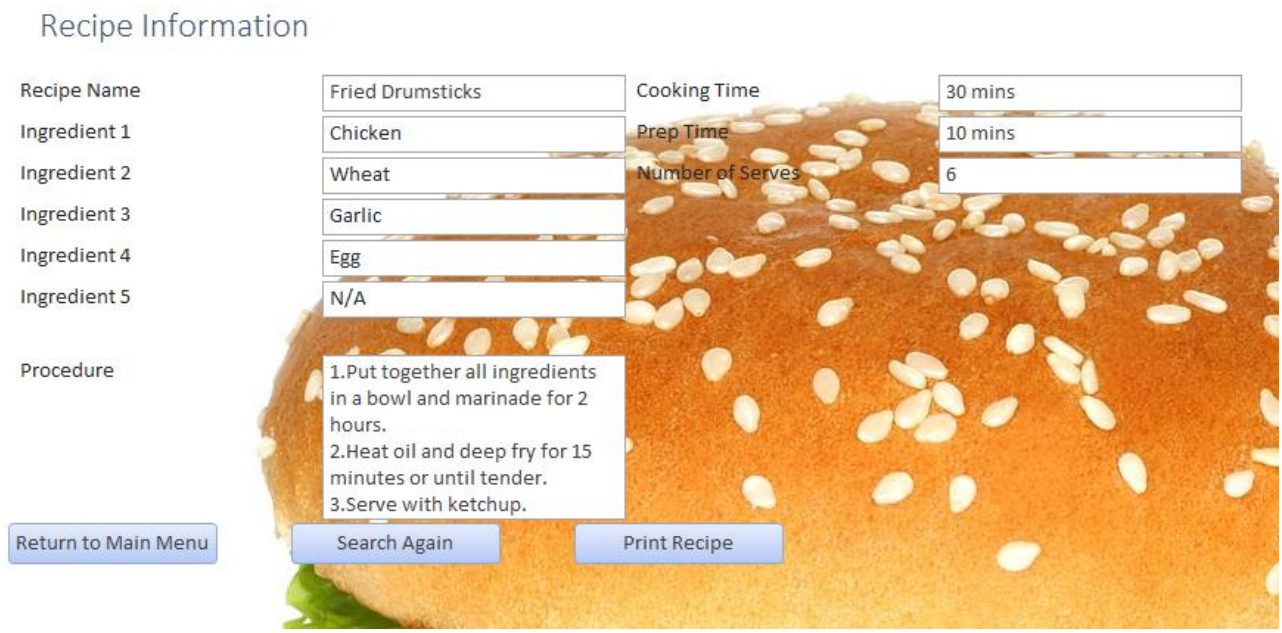
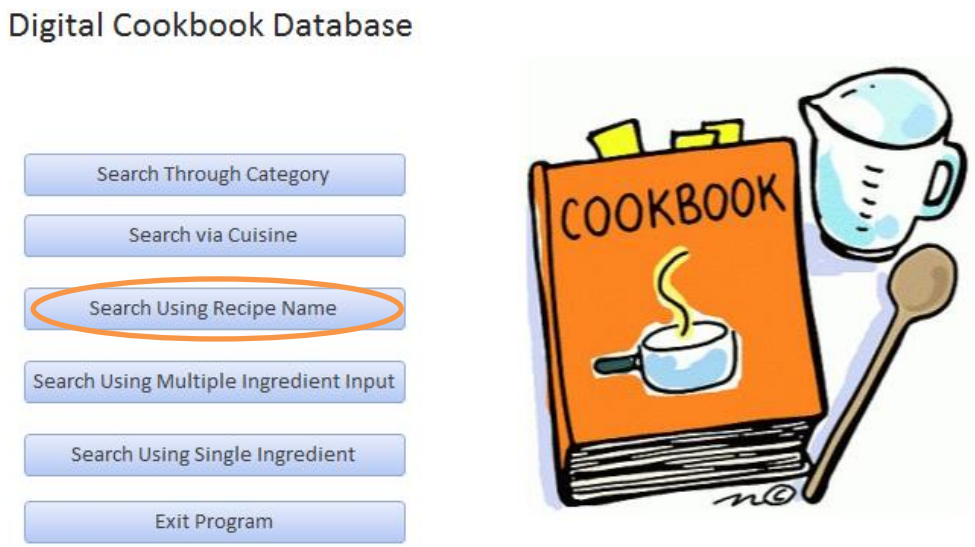


Figure 13 - The query retrieves and displays information of this particular Recipe Name from both the tables in form of a report

Embedded Macros for Database Navigation, Print Commands and Record Saving Functions

This database contains buttons with embedded macros. These buttons are placed on forms and reports, to perform functions such as navigating between forms and reports, printing when required, moving between records to view and edit data, saving that data, and exiting the database application.

The macro that moves the user from one report/form to another involves two functions. First it would open the next form/report and then close the current.



Once the user clicks ‘Search via cuisine’, the following macro is executed:

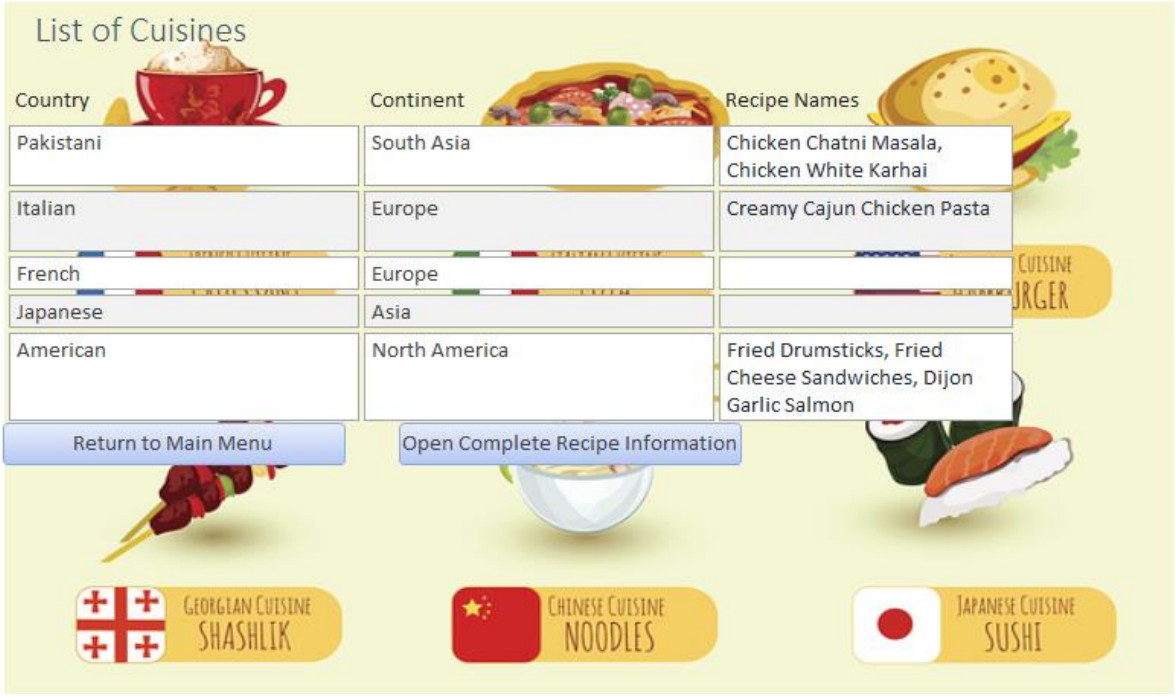
OpenReport

Report Name	List of Symptoms
View	Report
Filter Name	
Where Condition	
Window Mode	Normal

CloseWindow

Object Type	Form
Object Name	Home Screen
Save	Prompt

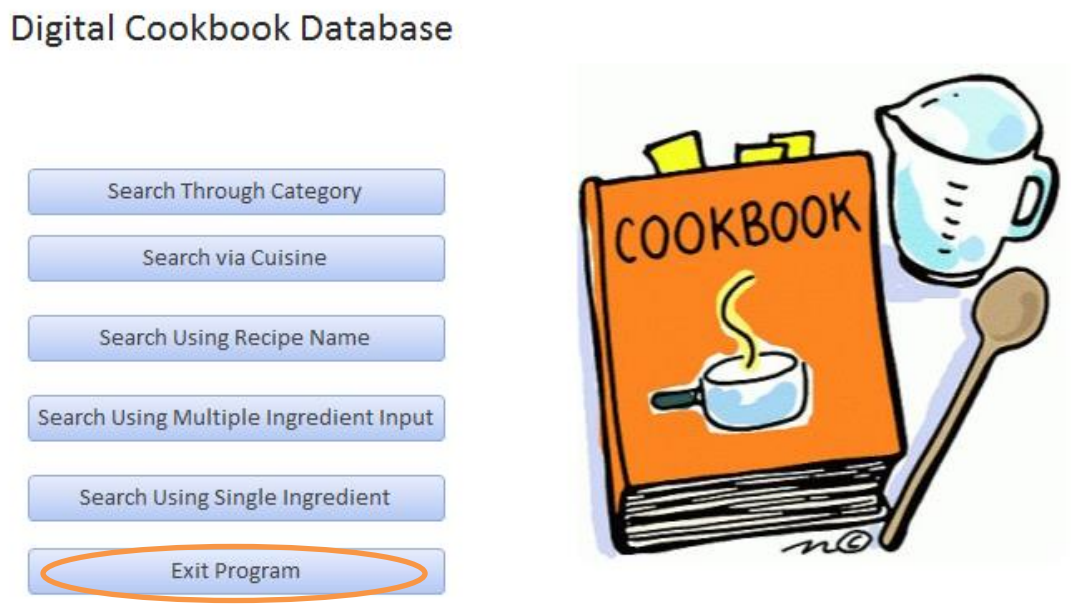
This macro first opens the ‘List of Symptoms’ report and then closes the Home Screen form. Thus, once the user clicks the ‘Search by Symptoms’ button the report opens up:



Another embedded macro is the ‘Print Recipe’ macro.

The ‘print report’ button enables the print function through this macro:

Another macro function is the ‘Close Database’. This closes the database. This can only be performed from the Home Screen form:



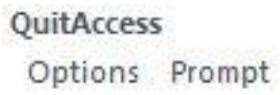


Figure 14-the following macro is executed when the user presses 'Exit Program'

Authentic Data Representation on Forms and Reports through Linking Tables and Queries as Sources

All forms and reports that allow the user to view from tables and queries, use these tables and queries as their data sources. The data sources have been used in three ways. One; data is viewed from a table in form of a report. Two; a data source is used, is as the search result of a query being displayed on a report.

In this database, one way that data types are used, is as a list of viewable records in form of a report. Various lists in this database use this type of data representation, where particular records from a source table are displayed in form a report e.g. the 'List_of_Recipes' displays the 'Recipe ID' and the 'Recipe Name' as such:

All the records are listed in chronological order for the fields that were imported from the 'Recipes_Methodology' table as shown in Data section of the report properties:

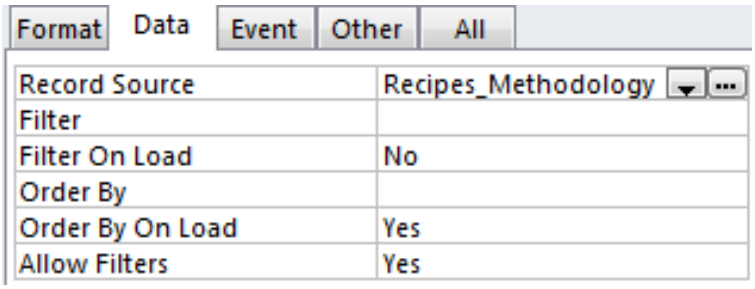


Figure 15 - The records displayed are imported from the 'Recipe_Methodology' table

Another way data is used in this database, is by the representation of query results in form of reports. Similar to representation of fields and their data from tables, information from query search results are also displayed in form of reports within this database. These reports use the data from the query search results as source for the report. The difference between data retrieved from a table and data retrieved from a query, is that the query report only outputs selected records whereas a table report outputs all records in the table. When data is retrieved from a table, it looks like the following:

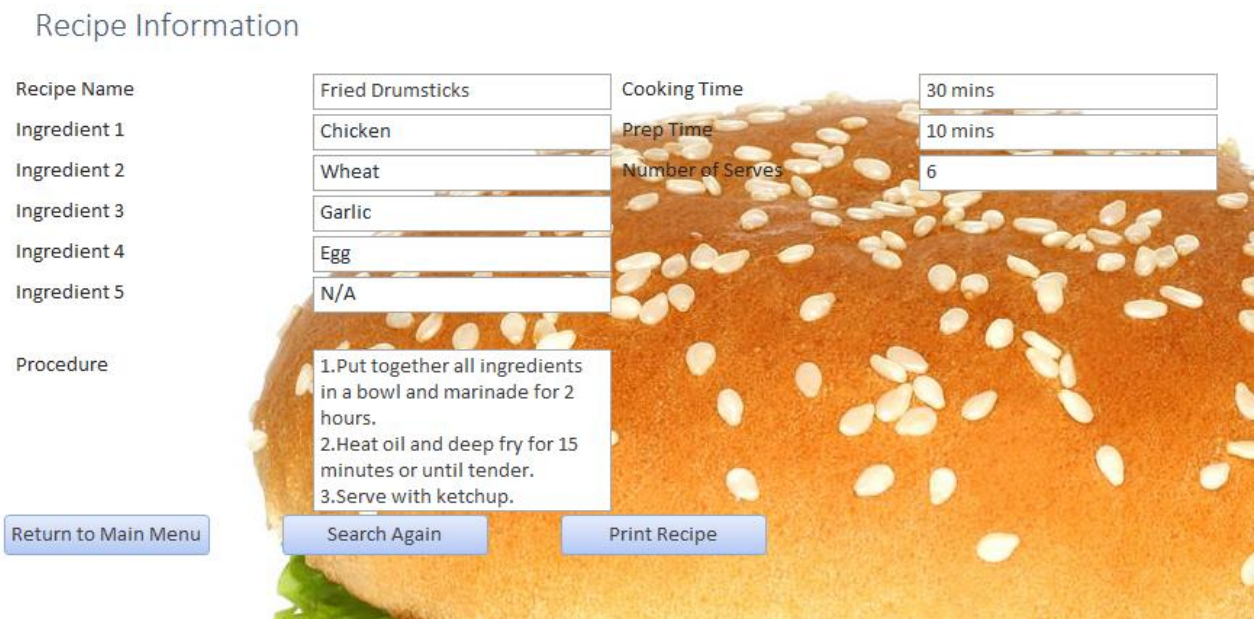


Figure 16 - This report was generated when the user input the Recipe Name in the user prompt

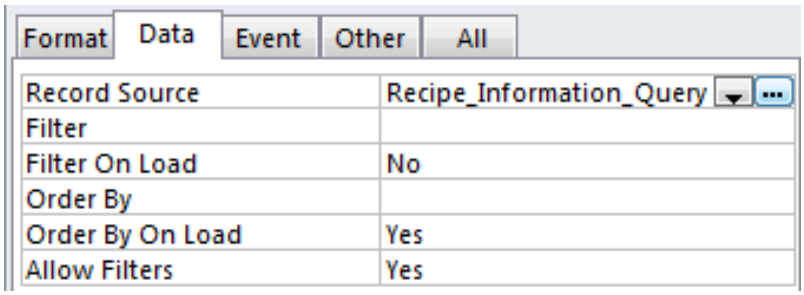


Figure 17 - The record source for this report is the 'Recipe_Information_Query' as shown in the Data section of the report properties

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