Part 3- Prototype

Sample Records

Customer_ID	First_Name	Last_Name	Customer_Ad...	Email	Account_Pass...	Phone_Number
1098765432	Meryl	Streep	888 Elm Rd	Meryl.Streep@e...	Legendary#17	5558765432
1234567890	Tobey	Maguire	123 S Ave	Tobey_Maguire...	SpiderMan*02	5558765432
2109876543	Johnny	Depp	777 Oak Ave	Johnny.D@ema...	CaptainJack*16	5559876543
2345678901	Scarlett	Johansson	456 Elm Rd	Scarlett.Johanss...	SecurePass#1	5551234567
3210987654	Kristen	Stewart	666 Manin St	Kris.S@email.c...	TwilightStar#15	5550987654
3456789012	Chris	Hemsworth	789 Oak Ave	Chris.Hemswor...	Celeb#Passwor...	5552345678
4321098765	Will	Smith	555 Elm Rd	Will.Smith@em...	BoxOffice#14P...	5552109876
4567890123	Jennifer	Lawrence	321 Pine Ln	Jennifer.Lawren...	StarSecure#3	5555678901
5432109876	Charlize	Theron	444 Willow Dr	Charlize.TheRo...	Hollywoodstar*...	5553210987
5678901234	Ryan	Reynolds	567 Cedar St	Ryan.Reynolds...	A-List#Pass4	5556789012
5891263473	Keanu	Reeves	999 Willow Dr	Keanu.Reeves@...	MatrixStar*18	5557654321
6543210987	Leonardo	DiCaprio	333 Birch Rd	Leo.DiCap@em...	AwardWinner#12	5554321098
6789012345	Emma	Watson	234 Birch Rd	Emma.Watson...	Famous&Secur...	5557890123
7654321098	Angelina	Jolie	222 Cedar Ave	Angelina.Jolie...	Brad;)<3	5555432109
7890123456	Tom	Hanks	890 Willow Dr	Tom.Hanks@e...	Blockbuster#6	5558901234
8765432109	Brad	Pitt	111 Oak St.	Brad.Pitt@emai...	Superstar*10Pass	5556543210
8901234567	Margot	Robbie	654 Maple Ave	Margot.Robbie...	Hollywood*7Pass	5559876543
8942321473	Angela	Bassett	123 Pine Ln	Angela.Bassett...	OscarWinner#19	5559246530
9012345678	Robert	Downey Jr.	432 Fir Ln	Robert.DJ@em...	IronMan#8Pass	5558765432
9876543210	Gal	Gadot	876 Pine Rd	Gal.Gadot@em...	WonderWoma...	5557654321

Queries

Query 1

```
--1. Multiple Table Join
--Retrieve the names of customers who have placed orders and the employee who took the order.
SELECT C.First_Name, C.Last_Name, E.First_Name AS Employee_FirstName, E.Last_Name AS Employee_LastName
FROM CUSTOMER C
JOIN ORDER_T O ON C.Customer_ID = O.Customer_ID
JOIN EMPLOYEE E ON O.Employee_ID = E.Employee_ID;
```

	First_Name	Last_Name	Employee_FirstName	Employee_LastName
1	Tobey	Maguire	Peter	Panning
2	Kristen	Stewart	Pinnochio	Truthful
3	Tobey	Maguire	Ella	Cinders
4	Margot	Robbie	Alice	Wonder
5	Meryl	Streep	Alice	Wonder

This will be valuable to the company, because at some point, a customer will have an issue, and it will be nice to know which employees completed that order to resolve any disputes.

Query 2

```
--2. Subquery
--Find the number of orders that contained a sepecific product (i.e., 311 or Black Coffee).
SELECT COUNT(Order_ID) as Number_Ordered from ORDER_T
WHERE Order_ID IN (SELECT Order_ID FROM ORDER_PRODUCT WHERE Product_ID = 311)
```

	Number_Ordered
1	3

This will help the company get a better understanding of what products are and are not selling.

Query 3

```
--3. Correlated Subquery
--Retrieve suppliers who we spent above a certain threshold (i.e., 300) for ingredients

SELECT DISTINCT Supplier_ID, Supplier_Name
FROM SUPPLIER s
WHERE EXISTS (
    SELECT 1
    FROM INGREDIENT_SUPPLIER isup
    JOIN INGREDIENT i ON isup.Ingredient_ID = i.Ingredient_ID
    WHERE isup.Supplier_ID = s.Supplier_ID
    AND i.Cost * isup.Amount_Supplied > 300)
```

	Supplier_ID	Supplier_Name
1	111	Supplier 1
2	114	Supplier 4

This will help Bitty and Beau's see where their expenses are being occurred from, as well as knowing if that specific supplier should be negotiated with to save money.

Query 4

```
--4. GROUP BY
--Count the number of orders placed by each customer.

SELECT Customer_ID, COUNT(Order_ID) AS Order_Count
FROM ORDER_T
GROUP BY Customer_ID
```

	Customer_ID	Order_Count
1	1098765432	1
2	1234567890	2
3	3210987654	1
4	8901234567	1

This will help the marketing efforts of Bitty and Beau's by knowing which customers are regulars, and then being able to market to those people as needed.

Query 5

```
--5. GROUP BY with HAVING
--Retrieve suppliers who have supplied ingredients with a total quantity greater than a specified threshold.
SELECT s.Supplier_ID, s.Supplier_Name, SUM(isup.Amount_Supplied) AS TotalSupply
FROM SUPPLIER s
JOIN INGREDIENT_SUPPLIER isup ON s.Supplier_ID = isup.Supplier_ID
GROUP BY s.Supplier_ID, s.Supplier_Name
HAVING SUM(isup.Amount_Supplied) >= 50
```

	Supplier_ID	Supplier_Name	TotalSupply
1	111	Supplier 1	125
2	114	Supplier 4	80

This will be another useful inventory tracking mechanism for Bitty and Beau's. Management will be able to see who the popular suppliers are within the company, and again see who expenses are being paid to.

Query 6

```
--6. ORDER BY
--Retrieve a list of employees ordered by their last name in ascending order.
SELECT Employee_ID, First_Name, Last_Name
FROM EMPLOYEE
ORDER BY Last_Name ASC;
```

	Employee_ID	First_Name	Last_Name
1	8642097531	Ella	Cinders
2	2468135790	Peter	Panning
3	3698521470	Heracles	Strong
4	9753186420	Pinnochio	Truthful
5	1357924680	Alice	Wonder

This query helps the organization keep track of all their employees, not only in their vicinity, but across the nation. This is efficient in knowing their benefits and salaries.

Query 7

```
--7. IN or NOT IN
--Find products that are not included in any order.
SELECT Product_Name
FROM PRODUCT
WHERE Product_ID NOT IN (
    SELECT Product_ID FROM ORDER_PRODUCT
);
```

	Product_Name
1	Warm Cookie
2	Caramel Frappe
3	Choclate Muffin

This query helps the organization to efficiently eliminate unnecessary food products, especially ones that are not currently selling and are impacting revenue.

Query 8

```
--8. Built-in Function (e.g., AVG)
--Calculate the average salary of employees.
SELECT CAST(AVG(Salary) AS NUMERIC(7,2)) AS Average_Salary
FROM EMPLOYEE
```

	Average_Salary
1	41800.00

This query helps the organization stay competitive and fair salary-wise in the food industry and to their employees.

Query 9

```
--9. EXISTS or NOT EXISTS

-- Example: Find customers who have received rewards
SELECT First_Name, Last_Name, Phone_Number
FROM CUSTOMER c
WHERE EXISTS (
    SELECT 1
    FROM REWARD r
    WHERE r.Customer_ID = c.Customer_ID
)
```

	First_Name	Last_Name	Phone_Number
1	Meryl	Streep	5558765432
2	Tobey	Maguire	5558765432
3	Kristen	Stewart	5550987654
4	Keanu	Reeves	5557654321
5	Margot	Robbie	5559876543

This query helps the organization sort through customer data and to quickly retrieve those who want to use their points for redemption.

Query 10

```
--10. Other Advanced SQL
-- Retrieve a list of ingredients used in either Recipe 411 (Plain Coffee) or Recipe 431 (Warmed Cookie)
SELECT
    ri.Ingredient_ID,
    i.Ingredient_Name
FROM
    RECIPE_INGREDIENT ri
JOIN
    INGREDIENT i ON ri.Ingredient_ID = i.Ingredient_ID
WHERE
    ri.Recipe_ID = 411

UNION

SELECT
    ri.Ingredient_ID,
    i.Ingredient_Name
FROM
    RECIPE_INGREDIENT ri
JOIN
    INGREDIENT i ON ri.Ingredient_ID = i.Ingredient_ID
WHERE
    ri.Recipe_ID = 431
```

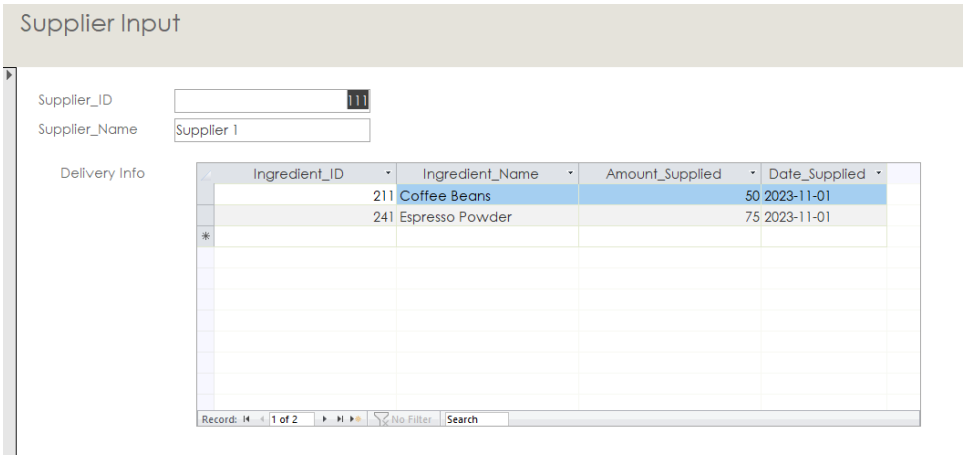
	Ingredient_ID	Ingredient_Name
1	211	Coffee Beans
2	231	Cookie

This query helps the organization keep track of the amount of ingredients used in recipes so that the organization can lower costs on excess orders from suppliers.

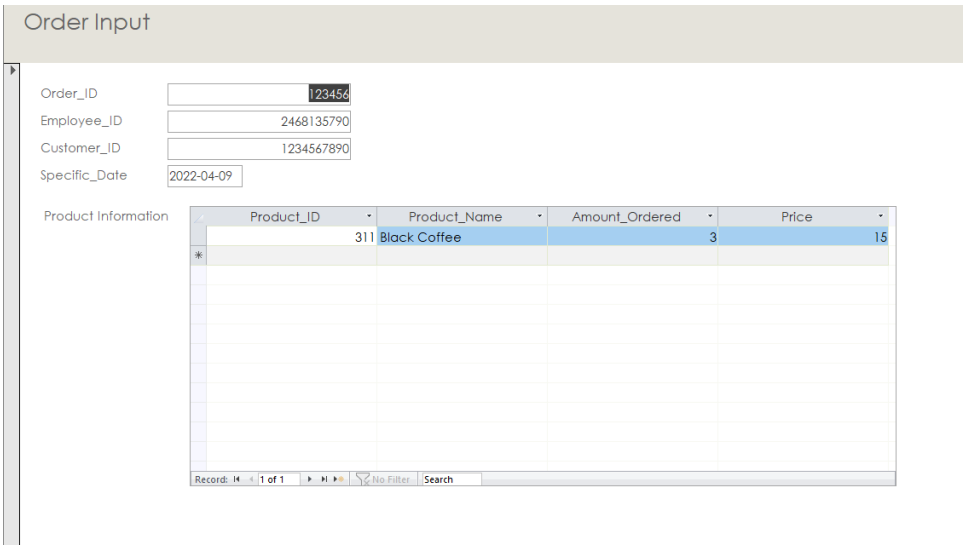
Matrix

	Query 1	Query 2	Query 3	Query 4	Query 5	Query 6	Query 7	Query 8	Query 9	Query 10
Multiple Table Join	x		x		x				x	x
Sub-Query		x	x				x		x	
Correlated Subquery			x							
Group By				x						
Group By with Having					x					
Order by						x				
In or Not in							x			
Calculated Field/Built in Function			x		x			x		
Exists/Not Exists									x	
Advanced SQL			x		x					x

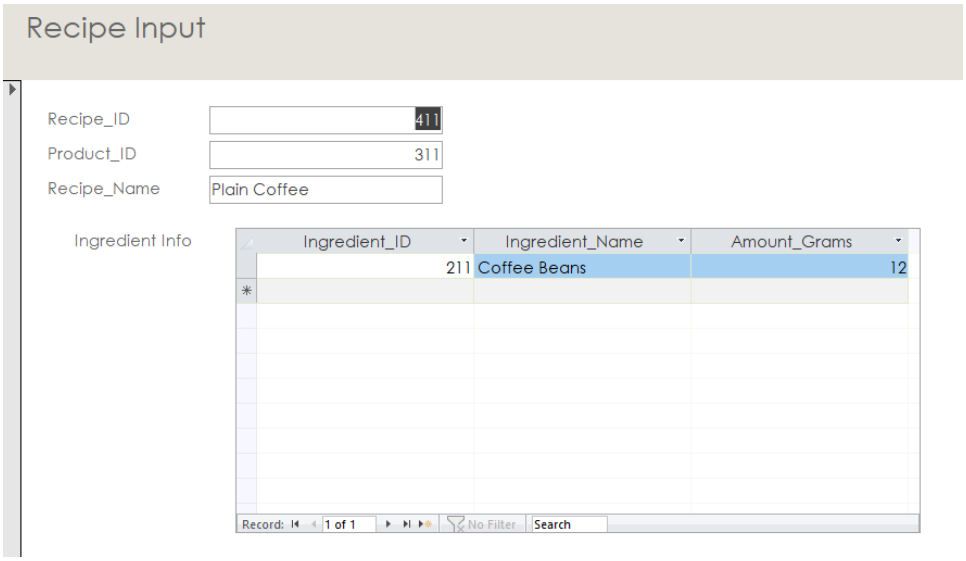
Access Forms and Reports



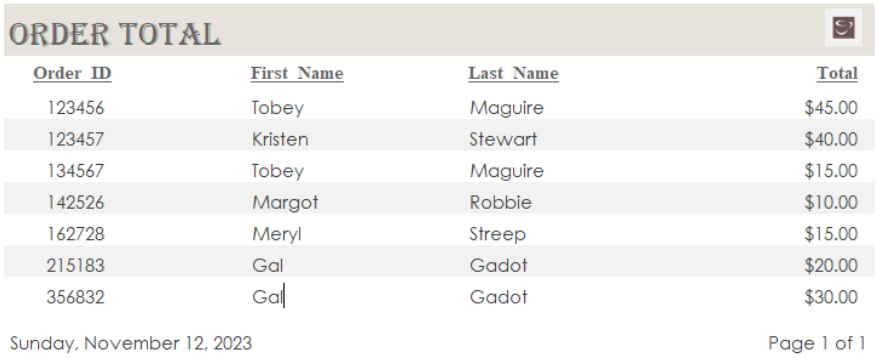
In the supplier, input form we can input new suppliers and what ingredients they supply. This could prove to be useful when we find a new supplier that offers either cheaper prices or better quality.



The order input form allows us to create a new order and give information such as the date it happened, the customer who ordered it and the product that was ordered. It includes a subform that gives more information concerning the product as well. This allows us to input new orders into our database with ease.



The recipe input form allows us to create a recipe and state the ingredient(s) (typically the primary ingredient) needed to create it. This allows us to essentially have a recipe book for our products.



ORDER TOTAL

Order_ID	First_Name	Last_Name	Total
123456	Tobey	Maguire	$45.00
123457	Kristen	Stewart	$40.00
134567	Tobey	Maguire	$15.00
142526	Margot	Robbie	$10.00
162728	Meryl	Streep	$15.00
215183	Gal	Gadot	$20.00
356832	Gal	Gadot	$30.00

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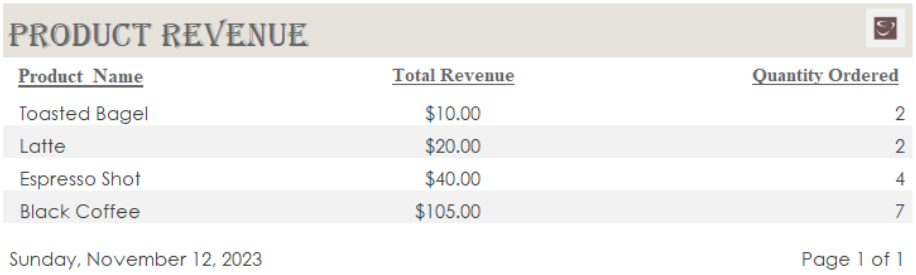
The order total report is to track how much each order is, and what orders were related to each customer.



PRODUCT REVENUE

Product_Name	Total Revenue	Quantity Ordered
Toasted Bagel	$10.00	2
Latte	$20.00	2
Espresso Shot	$40.00	4
Black Coffee	$105.00	7

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The product revenue report shows how much revenue each product is making and how much of each product has been ordered.

INGREDIENT COST TOTAL

Supplier Name	Ingredient Name	Date Supplied	Total
Supplier 1			
	Coffee Beans	2023-11-01	$1,000.00
	Espresso Powder	2023-11-01	$1,125.00
Supplier 2			
	Bagel	2023-11-02	$300.00
Supplier 3			
	Cookie	2023-11-03	$125.00
Supplier 4			
	Chai	2023-11-05	$1,800.00
	Matcha Tea	2023-11-05	$2,500.00
Supplier 5			
	Blueberries	2022-04-10	$10,200.00

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The ingredient cost total shows which items we get from specific suppliers, the date those items are supplied, and how much we spend on those items.