PROJECT ON "RESTAURANT DATABASE MANAGEMENT SYSTEM"



Presented by Jeet Panchal
Guided by Mr. Chintan Patel

Table of Contents

Topic	Page
	no.
INTRODUCTION	3
MISSION	3
OBJECTIVES	3
ER diagram	4
Menultems table	5
Customers table	6
Orders table	7
Order_Items table	8
Queries	9-28

INTRODUCTION

The aim of this project is to create a Restaurant Management Database (RMD) is an online application for restaurant management. This system wakes to provide service facilities to restaurants and to the customer. The services which are provided are food ordering, reservation of the table by the customer through the system online, menu information management, and report.

The main goal of this project is to make the customers satisfied to get the food from anywhere

- To develop the online ordering and reservation system in restaurants.
- To develop a user interface for an online restaurant management system to provide online menu information for customers to order

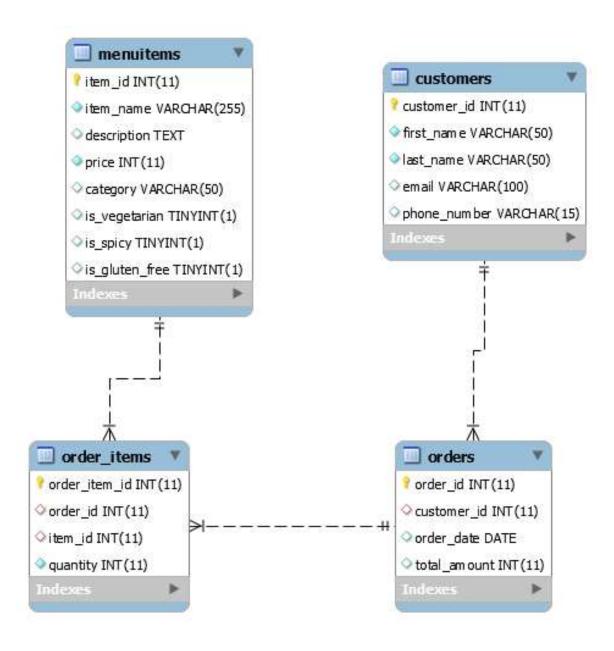
Mission statement

The objective is to help the customer to order food online and get them delivered through an interactive application.

Objectives

- The application should support customer registration
- Registered customers should gain access through username and password
- There must be an interactive menu with all details
- Customers should be allowed to browse the menu
- Customers can place an order by adding the menu item to the cart.

ER diagram



Menultems table

i	tem_id	item_name	description	price	category	is_vegetarian	is_spicy	is_gluten_free
1		Paneer Tikka	Grilled cottage cheese with spices.	250	Appetizer	1	1	0
2		Chana Masala	Chickpeas in a spicy tomato and onion gravy.	180	Main Course	1	1	0
3		Aloo Gobi	Potato and cauliflower cooked with spices.	150	Main Course	1	1	0
4	+	Baingan Bharta	Smoked and mashed eggplant with spices.	190	Main Course	1	1	0
5		Malai Kofta	Fried vegetable balls in a creamy tomato-based	220	Main Course	1	0	0
6		Paneer Butter Masala	Paneer in a rich tomato and butter gravy.	240	Main Course	1	0	0
7	•	Palak Paneer	Cottage cheese in a creamy spinach sauce.	210	Main Course	1	0	0
8		Jeera Rice	Basmati rice cooked with cumin seeds.	80	Side Dish	1	0	0
9		Tandoori Roti	Whole wheat Indian flatbread cooked in a tand	40	Bread	1	0	0
1	0	Veg Biryani	Fragrant rice dish with mixed vegetables and sp	220	Main Course	1	0	0
1	1	Vegetable Samosa	Fried pastry filled with spiced vegetables.	50	Appetizer	1	1	0
1	2	Mango Lassi	Refreshing yogurt drink with mango pulp.	70	Beverage	1	0	0
1	3	Gulab Jamun	Sweet milk-based dessert balls soaked in sugar	80	Dessert	1	0	0
1	4	Aloo Paratha	Whole wheat bread stuffed with spiced potatoes.	90	Bread	1	0	0
1	.5	Pani Puri	Crispy hollow balls filled with spicy tamarind wat	60	Appetizer	1	1	0
1	6	Bhindi Masala	Okra cooked with spices and tomatoes.	170	Main Course	1	0	0
1	7	Methi Thepla	Fenugreek flavored flatbread.	55	Bread	1	0	0
1	8	Raita	Yogurt with cucumber, mint, and spices.	45	Side Dish	1	0	0
1	9	Dahi Vada	Lentil dumplings in yogurt with sweet and spicy	70	Appetizer	1	1	0
2	0	Mushroom Matar	Mushrooms and peas in a tomato-based gravy.	190	Main Course	1	0	0
2	1	Pav Bhaji	Mashed vegetables in a spicy tomato gravy ser	180	Main Course	1	1	0
2	2	Tofu Tikka	Grilled tofu with spices.	180	Appetizer	1	1	0
2	3	Vegetable Pulao	Fragrant rice dish with mixed vegetables and sp	160	Main Course	1	0	0
2	4	Kadai Paneer	Paneer in a spicy tomato and bell pepper gravy.	210	Main Course	1	1	0
2	5	Vegetable Korma	Mixed vegetables in a creamy coconut and cash	190	Main Course	1	0	0
2	6	Masala Dosa	Crispy rice crepes filled with spiced potatoes.	110	Main Course	1	0	0
2	7	Onion Pakoras	Fried fritters with onions and spices.	60	Appetizer	1	1	0
2	8	Coconut Chutney	Chutney made from coconut and spices.	40	Side Dish	1	0	0
2	9	Vegetable Upma	Savory semolina porridge with vegetables.	90	Main Course	1	0	0
3	0	Kaju Katli	Cashew nut fudge.	120	Dessert	1	0	0

Customers table

	customer_id	first_name	last_name	email	phone_number
•	1	John	Doe	john@example.com	+1-123-456-7890
	2	Alice	Smith	alice@example.com	+1-234-567-8901
	3	David	Johnson	david@example.com	+1-345-678-9012
	4	Emily	Brown	emily@example.com	+1-456-789-0123
	5	Michael	Lee	michael@example.com	+1-567-890-1234
	6	Sarah	Wilson	sarah@example.com	+1-678-901-2345
	7	James	Martin	james@example.com	+1-789-012-3456
	8	Olivia	Davis	olivia@example.com	+1-890-123-4567
	9	Daniel	Garcia	daniel@example.com	+1-901-234-5678
	10	Sophia	Rodriguez	sophia@example.com	+1-012-345-6789
	11	Liam	Lopez	liam@example.com	+1-123-456-7890
	12	Mia	Hall	mia@example.com	+1-234-567-8901
	13	William	Clark	william@example.com	+1-345-678-9012
	14	Ava	White	ava@example.com	+1-456-789-0123
	15	Benjamin	Scott	benjamin@example.com	+1-567-890-1234
	16	Ella	Young	ella@example.com	+1-678-901-2345
	17	Henry	Wright	henry@example.com	+1-789-012-3456
	18	Sofia	Adams	sofia@example.com	+1-890-123-4567
	19	Christopher	Harris	christopher@example	+1-901-234-5678
	20	Grace	Lewis	grace@example.com	+1-012-345-6789
	21	Lucas	Green	lucas@example.com	+1-123-456-7890
	22	Aria	Martin	aria@example.com	+1-234-567-8901
	23	Liam	Turner	liam@example.com	+1-345-678-9012
	24	Zoe	Morris	zoe@example.com	+1-456-789-0123
	25	Jackson	Parker	jackson@example.com	+1-567-890-1234
	26	Sophia	Russell	sophia@example.com	+1-678-901-2345
	27	William	Bell	william@example.com	+1-789-012-3456
	28	Emma	Hill	emma@example.com	+1-890-123-4567
	29	Mason	Coleman	mason@example.com	+1-901-234-5678
	30	jimmy	jons	jimmy@example.com	+1-504-562-5896

Orders table

	order_id	customer_id	order_date	total_amount
١	1	1	2023-11-01	4250
	2	2	2023-11-02	3575
	3	3	2023-11-02	2800
	4	4	2023-11-03	5325
	5	5	2023-11-03	1995
	6	6	2023-11-04	4560
	7	7	2023-11-05	3725
	8	8	2023-11-06	3080
	9	9	2023-11-07	6500
	10	10	2023-11-08	2275
	11	11	2023-11-08	3920
	12	12	2023-11-09	4950
	13	13	2023-11-10	3195
	14	14	2023-11-10	5675
	15	15	2023-11-11	2760
	16	16	2023-11-12	7320
	17	17	2023-11-13	1825
	18	18	2023-11-14	6490
	19	19	2023-11-14	3375
	20	20	2023-11-15	4160
	21	21	2023-11-16	2910
	22	22	2023-11-17	4675
	23	23	2023-11-18	5140
	24	24	2023-11-18	6290
	25	25	2023-11-19	5575
	26	26	2023-11-20	3760
	27	27	2023-11-21	3975
	28	28	2023-11-22	4820
	29	29	2023-11-22	2240
	30	30	2023-11-23	4400

Order_Items table

order_item_id	order_id	item_id	quantity
1	1	1	2
2	1	3	1
3	2	4	3
4	2	6	2
5	3	8	4
6	3	10	1
7	4	12	2
8	4	14	1
9	5	16	2
10	5	18	3
11	6	20	1
12	6	22	2
13	7	24	3
14	7	26	2
15	8	28	1
16	8	30	2
17	9	22	3
18	9	14	4
19	10	26	1
20	10	18	2
21	11	20	2
22	11	12	1
23	12	24	3
24	12	26	2
25	13	18	1
26	13	20	2
27	14	2	3
28	14	4	4
29	15	6	1
30	15	8	2

Query 1:- List the names and email addresses of customers.

SELECT first_name, email FROM Customers;

	first_name	email
•	John	john@example.com
	Alice	alice@example.com
	David	david@example.com
	Emily	emily@example.com
	Michael	michael@example.com
	Sarah	sarah@example.com
	James	james@example.com
	Olivia	olivia@example.com
	Daniel	daniel@example.com
	Sophia	sophia@example.com
	Liam	liam@example.com
	Mia	mia@example.com
	William	william@example.com
	Ava	ava@example.com
	Benjamin	benjamin@example.com
	Ella	ella@example.com
	Henry	henry@example.com
	Sofia	sofia@example.com
	Christopher	christopher@example
	Grace	grace@example.com
	Lucas	lucas@example.com
	Aria	aria@example.com
	Liam	liam@example.com
	Zoe	zoe@example.com
	Jackson	jackson@example.com
	Sophia	sophia@example.com
	William	william@example.com
	Emma	emma@example.com
	Mason	mason@example.com
	jimmy	jimmy@example.com

Explanation:- This SQL query selects the "first_name" and "email" columns from the "Customers" table. It retrieves the first names and email addresses of all customers in the database.

Query 2:- Calculate the total revenue for a specific date

SELECT SUM(total_amount) AS total_revenue

FROM Orders

WHERE order_date = '2023-11-08';

total_revenu				
•	6195			

Explanation:- the query retrieves the total revenue from orders placed on November 8, 2023. The result will be a single value representing the sum of the "total_amount" for those orders.

Query 3:- Find the spicy menu items.

SELECT * FROM Menultems WHERE is_spicy = true;

item_id	item_name	description	price	category	is_vegetarian	is_spicy	is_gluten_free
1	Paneer Tikka	Grilled cottage cheese with spices.	250	Appetizer	1	1	0
2	Chana Masala	Chickpeas in a spicy tomato and onion gravy.	180	Main Course	1	1	0
3	Aloo Gobi	Potato and cauliflower cooked with spices.	150	Main Course	1	1	0
4	Baingan Bharta	Smoked and mashed eggplant with spices.	190	Main Course	1	1	0
11	Vegetable Samosa	Fried pastry filled with spiced vegetables.	50	Appetizer	1	1	0
15	Pani Puri	Crispy hollow balls filled with spicy tamarind wat	60	Appetizer	1	1	0
19	Dahi Vada	Lentil dumplings in yogurt with sweet and spicy	70	Appetizer	1	1	0
21	Pav Bhaji	Mashed vegetables in a spicy tomato gravy ser	180	Main Course	1	1	0
22	Tofu Tikka	Grilled tofu with spices.	180	Appetizer	1	1	0
24	Kadai Paneer	Paneer in a spicy tomato and bell pepper gravy.	210	Main Course	1	1	0
27	Onion Pakoras	Fried fritters with onions and spices.	60	Appetizer	1	1	0

Explanation:- This SQL query retrieves all rows from the "MenuItems" table where the "is_spicy" column has a value of 'true'. In other words, it selects all menu items that are categorized as spicy. The result will be a list of menu items that meet this condition.

Query 4:- Find menu items that are not spicy nor gluten-free

SELECT * FROM Menultems WHERE is_spicy = false AND is_gluten_free = false;

item_id	item_name	description	price	category	is_vegetarian	is_spicy	is_gluten_free
5	Malai Kofta	Fried vegetable balls in a creamy tomato-based	220	Main Course	1	0	0
6	Paneer Butter Masala	Paneer in a rich tomato and butter gravy.	240	Main Course	1	0	0
7	Palak Paneer	Cottage cheese in a creamy spinach sauce.	210	Main Course	1	0	0
8	Jeera Rice	Basmati rice cooked with cumin seeds.	80	Side Dish	1	0	0
9	Tandoori Roti	Whole wheat Indian flatbread cooked in a tand	40	Bread	1	0	0
10	Veg Biryani	Fragrant rice dish with mixed vegetables and sp	220	Main Course	1	0	0
12	Mango Lassi	Refreshing yogurt drink with mango pulp.	70	Beverage	1	0	0
13	Gulab Jamun	Sweet milk-based dessert balls soaked in sugar	80	Dessert	1	0	0
14	Aloo Paratha	Whole wheat bread stuffed with spiced potatoes.	90	Bread	1	0	0
16	Bhindi Masala	Okra cooked with spices and tomatoes.	170	Main Course	1	0	0
17	Methi Thepla	Fenugreek flavored flatbread.	55	Bread	1	0	0
18	Raita	Yogurt with cucumber, mint, and spices.	45	Side Dish	1	0	0
20	Mushroom Matar	Mushrooms and peas in a tomato-based gravy.	190	Main Course	1	0	0
23	Vegetable Pulao	Fragrant rice dish with mixed vegetables and sp	160	Main Course	1	0	0
25	Vegetable Korma	Mixed vegetables in a creamy coconut and cash	190	Main Course	1	0	0
26	Masala Dosa	Crispy rice crepes filled with spiced potatoes.	110	Main Course	1	0	0
28	Coconut Chutney	Chutney made from coconut and spices.	40	Side Dish	1	0	0
29	Vegetable Upma	Savory semolina porridge with vegetables.	90	Main Course	1	0	0
30	Kaju Katli	Cashew nut fudge.	120	Dessert	1	0	0

Explanation:- This SQL query retrieves all rows from the "Menultems" table where both the "is_spicy" and "is_gluten_free" columns have values of 'false'. In other words, it selects menu items that are neither spicy nor gluten-free. The result will be a list of menu items that meet these conditions.

Query 5:- List customers who have placed orders.

SELECT DISTINCT c.first_name, c.last_name , o.customer_id

FROM Customers c

INNER JOIN Orders o ON c.customer_id = o.customer_id;

	first_name	last_name	customer_id
•	John	Doe	1
	Alice	Smith	2
	David	Johnson	3
	Emily	Brown	4
	Michael	Lee	5
	Sarah	Wilson	6
	James	Martin	7
	Olivia	Davis	8
	Daniel	Garcia	9
	Sophia	Rodriguez	10
	Liam	Lopez	11
	Mia	Hall	12
	William	Clark	13
	Ava	White	14
	Benjamin	Scott	15
	Ella	Young	16
	Henry	Wright	17
	Sofia	Adams	18
	Christopher	Harris	19
	Grace	Lewis	20
	Lucas	Green	21
	Aria	Martin	22
	Liam	Turner	23
	Zoe	Morris	24
	Jackson	Parker	25
	Sophia	Russell	26
	William	Bell	27
	Emma	Hill	28
	Mason	Coleman	29
	jimmy	jons	30

Explanation:- This SQL query retrieves distinct first names, last names, and customer IDs by joining the "Customers" (c) and "Orders" (o) tables on the "customer_id" column. It ensures that each unique customer's information is included only once, even if they have placed multiple orders. The query creates a list of customers who have made orders, showing

their first names, last names, and associated customer IDs.

Query 6:- Calculate the total revenue for each day.

SELECT order_date, SUM(total_amount) AS daily_revenue

FROM Orders

GROUP BY order_date

ORDER BY order_date;

	order_date	daily_revenue
Þ	2023-11-01	4250
	2023-11-02	6375
	2023-11-03	7320
	2023-11-04	4560
	2023-11-05	3725
	2023-11-06	3080
	2023-11-07	6500
	2023-11-08	6195
	2023-11-09	4950
	2023-11-10	8870
	2023-11-11	2760
	2023-11-12	7320
	2023-11-13	1825
	2023-11-14	9865
	2023-11-15	4160
	2023-11-16	2910
	2023-11-17	4675
	2023-11-18	11430
	2023-11-19	5575
	2023-11-20	3760
	2023-11-21	3975
	2023-11-22	7060
	2023-11-23	4400

Explanation:- This SQL query calculates the daily revenue by summing the "total_amount" for orders, grouped by their "order_date". It creates a list of daily revenue figures and sorts them in ascending order based on the "order_date"

Query 7:- Find the top 5 most expensive menu items.

SELECT * FROM Menultems

ORDER BY price DESC

LIMIT 5;

	item_id	item_name	description	price	category	is_vegetarian	is_spicy	is_gluten_free
•	1	Paneer Tikka	Grilled cottage cheese with spices.	250	Appetizer	1	1	0
	6	Paneer Butter Masala	Paneer in a rich tomato and butter gravy.	240	Main Course	1	0	0
	5	Malai Kofta	Fried vegetable balls in a creamy tomato-based	220	Main Course	1	0	0
	10	Veg Biryani	Fragrant rice dish with mixed vegetables and sp	220	Main Course	1	0	0
	7	Palak Paneer	Cottage cheese in a creamy spinach sauce.	210	Main Course	1	0	0

Explanation:- This SQL query retrieves the top 5 menu items by sorting them in descending order based on their "price." In other words, it fetches the 5 most expensive menu items.

Query 8:- Find the customers who spent the most.

SELECT c.first_name, c.last_name, SUM(o.total_amount) AS total_spent

FROM Customers c

INNER JOIN Orders o ON c.customer_id = o.customer id

GROUP BY c.customer_id

ORDER BY total_spent DESC

LIMIT 5;

	first_name	last_name	total_spent
١	Ella	Young	7320
	Daniel	Garcia	6500
	Sofia	Adams	6490
	Zoe	Morris	6290
	Ava	White	5675

Explanation:- This SQL query retrieves the first name, last name, and the total amount spent by the top 5 customers with the highest spending. It does so by joining the "Customers" and "Orders" tables, grouping the results by customer, calculating the sum of the total amount spent, and then ordering the results in descending order by the total spent. The "LIMIT 5" restricts the output to the top 5 spenders.

Query 9:- List the menu items ordered by customers on a specific date.

SELECT o.order_date, m.item_name

FROM Orders o

INNER JOIN Order_Items oi ON o.order_id = oi.order id

INNER JOIN Menultems m ON oi.item_id = m.item_id

WHERE $o.order_date = '2023-11-08';$

	order_date	item_name
Þ	2023-11-08	Masala Dosa
	2023-11-08	Raita
	2023-11-08	Masala Dosa
	2023-11-08	Raita
	2023-11-08	Mushroom Matar
	2023-11-08	Mango Lassi
	2023-11-08	Mushroom Matar
	2023-11-08	Mango Lassi

Explanation:- This SQL query retrieves a list of menu items ("item_name") for orders placed on a specific date ("2023-11-08"). It does so by joining the "Orders," "Order_Items," and "MenuItems" tables and filtering the results based on the specified date.

Query 10:- Calculate the average order total.

SELECT AVG(total_amount) AS average_order_total

FROM Orders;

average_order_total

• 4184.6667

Explanation:- This SQL query calculates the average total order amount by taking the average of the "total_amount" from the "Orders" table, and it assigns the result to the alias "average_order_total".

Query 11:- Find customers who have not placed any orders.

SELECT c.first_name, c.last_name

FROM Customers c

LEFT JOIN Orders o ON c.customer_id = o.customer_id

WHERE o.customer_id IS NULL;



Explanation:- This SQL query retrieves the "first_name" and "last_name" of customers who have not placed any orders. It performs a left join between the "Customers" and "Orders" tables and filters the results to include only those where there is no matching order (where "o.customer_id" is NULL)

Query 12:- Calculate the total quantity of each menu item ordered.

SELECT m.item_name, SUM(oi.quantity) AS total_quantity_ordered

FROM Menultems m

LEFT JOIN Order_Items oi ON m.item_id = oi.item_id

GROUP BY m.item_id;

	item_name	total_quantity_ordered
•	Paneer Tikka	4
	Chana Masala	6
	Aloo Gobi	2
	Baingan Bharta	14
	Malai Kofta	NULL
	Paneer Butter Masala	6
	Palak Paneer	NULL
	Jeera Rice	12
	Tandoori Roti	NULL
	Veg Biryani	4
	Vegetable Samosa	NULL
	Mango Lassi	6
	Gulab Jamun	NULL
	Aloo Paratha	10
	Pani Puri	NULL
	Bhindi Masala	4
	Methi Thepla	NULL
	Raita	12
	Dahi Vada	NULL
	Mushroom Matar	10
	Pav Bhaji	NULL
	Tofu Tikka	10
	Vegetable Pulao	NULL
	Kadai Paneer	12
	Vegetable Korma	NULL
	Masala Dosa	10
	Onion Pakoras	NULL
	Coconut Chutney	2
	Vegetable Upma	NULL
	Kaju Katli	4

Explanation:- This SQL query retrieves the total quantity ordered for each menu item, even if no orders have been placed for some items. It uses a LEFT JOIN between the "MenuItems" and "OrderItems" tables, grouping the results by menu item and calculating the sum of ordered quantities

for each item. This query provides a comprehensive overview of item popularity, including items with no orders.

Query 13:- Find the average total amount for orders placed on Mondays.

SELECT AVG(total_amount) AS avg_total_amount

FROM Orders

WHERE DAYOFWEEK(order_date) = 2;



Explanation:- This SQL query calculates the average total amount of orders placed on a Monday (day number 2 in the week). It filters the orders that were made on Mondays using the "DAYOFWEEK" function and then computes the average "total_amount" for those orders, labeling it as "avg_total_amount."

Query 14:- Find the most popular menu category (the one with the highest total quantity ordered).

SELECT m.category, SUM(oi.quantity) AS total_quantity_ordered

FROM Menultems m

JOIN Order_Items oi ON m.item_id = oi.item_id

GROUP BY m.category

ORDER BY total_quantity_ordered DESC

LIMIT 1;

	category	total_quantity_ordered
•	Main Course	68

Explanation:- This SQL query retrieves the category with the highest total quantity ordered. It does this by joining the "MenuItems" and "OrderItems" tables based on the "item_id," grouping the results by category, calculating the total quantity ordered in each category, and then ordering the categories by the total quantity in descending order. Finally, it limits the output to just the category with the highest total quantity ordered.

Query 15:- List the names of customers who have ordered 'Paneer Tikka'.

SELECT distinct c.first_name, c.last_name

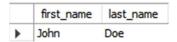
FROM Customers c

JOIN Orders o ON c.customer_id = o.customer_id

JOIN Order_Items oi ON o.order_id = oi.order_id

JOIN Menultems m ON oi.item_id = m.item_id

WHERE m.item_name = 'Paneer Tikka';



Explanation:- This SQL query retrieves the distinct first names and last names of customers who have ordered "Paneer Tikka." It achieves this by joining multiple tables (Customers, Orders, Order_Items, and Menultems) and filtering the results based on the specified item name, 'Paneer Tikka.'

Query 16:- List the menu items that have been ordered more than 5 times.

SELECT m.item_name, COUNT(oi.order_item_id) AS order_count

FROM Menultems m

LEFT JOIN Order_Items oi ON m.item_id = oi.item_id

GROUP BY m.item id

HAVING order_count > 5;

	item_name	order_count
Þ	Raita	6
	Mushroom Matar	6
	Masala Dosa	6

Explanation:- This SQL query counts the number of times each menu item has been ordered (order count) by joining the "MenuItems" table with the "Order_Items" table. It then groups the results by "item_id" and includes only those items with an order count greater than 5 using the HAVING clause.

Query 17:- List the menu items ordered in the last 1 day.

SELECT m.item_name, oi.quantity

FROM Menultems m

JOIN Order_Items oi ON m.item_id = oi.item_id

JOIN Orders o ON oi.order_id = o.order_id

WHERE o.order_date >= DATE(NOW()) - INTERVAL 1 DAY;

	item_name	quantity
•	Masala Dosa	1
	Raita	2
	Masala Dosa	1
	Raita	2
	Mushroom Matar	2
	Mango Lassi	1
	Mushroom Matar	2
	Mango Lassi	1
	Kadai Paneer	3
	Masala Dosa	2
	Kadai Paneer	3
	Masala Dosa	2
	Raita	1
	Mushroom Matar	2
	Raita	1
	Mushroom Matar	2
	Chana Masala	3
	Baingan Bharta	4
	Chana Masala	3
	Baingan Bharta	4
	Paneer Butter	1
	Jeera Rice	2
	Paneer Butter	1
	Jeera Rice	2
	Veg Biryani	2

Explanation:- This SQL query retrieves the "item_name" and "quantity" for items ordered in the last 24 hours. It combines data from the "MenuItems," "OrderItems," and "Orders" tables and filters for orders placed within the past day using the "o.order_date" condition.

Adani Institute of Digital Technology Management