

DBMS PROJECT

On

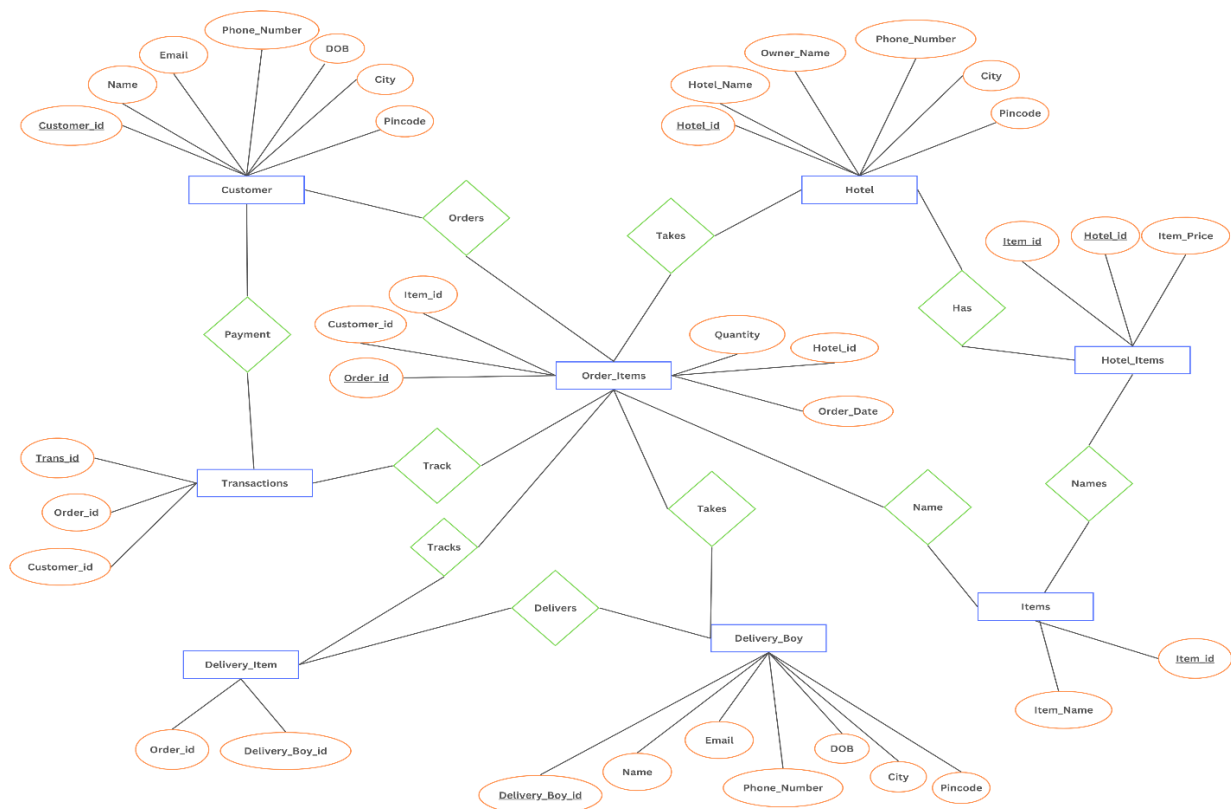
Food Delivery System

Designed by
Neeraj Dattu Dudam (195117)

Problem Statement:

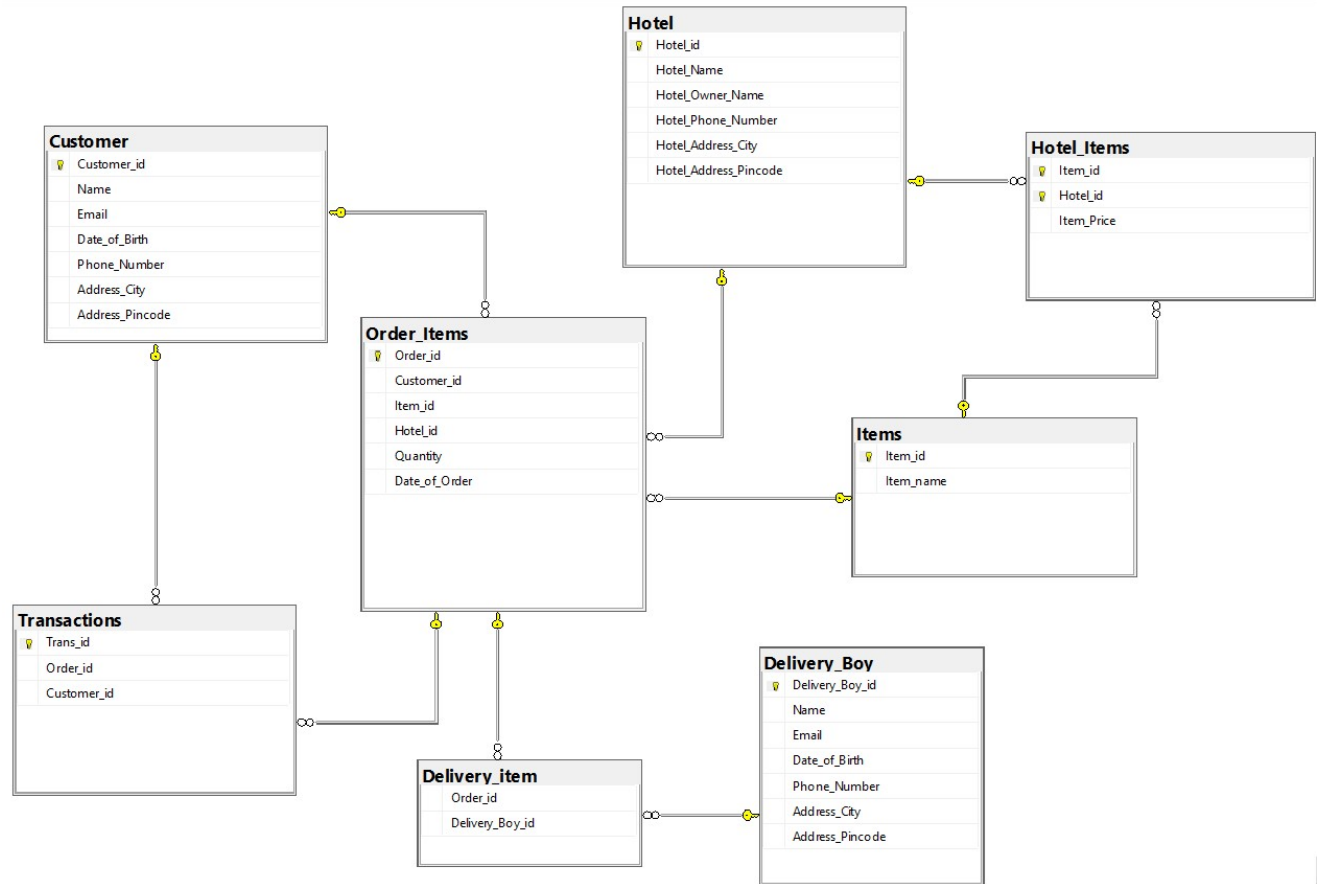
It should provide efficient interface for Food Delivery between Customer, Hotel and Delivery Boy. It should solve frequent customer queries in providing information about the order details like quantity, amount, from the hotel from which the item is ordered, the delivery person who delivered the order, and it should solve queries of the hotel in providing information about the customer and order details. By this system the customer and order their most liked item according to price and hotel and the hotel can analyze their orders.

Entity Relationship Diagram:



Relational Model:

Converted the ER Diagram to relational model using SQL.



Normalisation:

Entity 1: Customer

Attributes:

1. Customer_id
2. Name
3. Email
4. Date_of_Birth

5. City
6. Pincode

Functional Dependencies:

1. Customer_id \rightarrow Name
2. Customer_id \rightarrow Email
3. Customer_id \rightarrow Date_of_Birth
4. Customer_id \rightarrow City
5. Customer_id \rightarrow Pincode

This relation is in 3NF. There is no multivalued attribute, so it is in 1NF, and all the non-candidate keys are depended on primary key, so it is in 2NF. There is no transitive dependency, so it is in 3NF.

*Entity 2: **Hotel***

Attributes:

1. Hotel_id
2. Hotel_Name
3. Hotel_Owner_Name
4. Hotel_Phone_Number
5. Hotel_City
6. Hotel_Pincode

Functional Dependencies:

1. Hotel_id \rightarrow Hotel_Name
2. Hotel_id \rightarrow Hotel_Owner_Name

3. Hotel_id \rightarrow Hotel_Phone_Number
4. Hotel_id \rightarrow Hotel_City
5. Hotel_id \rightarrow Hotel_Pincode

This relation is in 3NF. There is no multivalued attribute, so it is in 1NF, and all the non-candidate keys are depended on primary key, so it is in 2NF. There is no transitive dependency, so it is in 3NF.

Entity 3: Items

Attributes:

1. Item_id
2. Item_Name

Functional Dependencies:

1. Item_id \rightarrow Item_Name

This relation is in 3NF. There is no multivalued attribute, so it is in 1NF, and all the non-candidate keys are depended on primary key, so it is in 2NF. There is no transitive dependency, so it is in 3NF.

Entity 4: Hotel_Items

Attributes:

1. Item_id
2. Hotel_id
3. Item_Price

Functional Dependencies:

1. Item_id, Hotel_id \rightarrow Item_Price

This relation is in 3NF. There is no multivalued attribute, so it is in 1NF, and all the non-candidate keys are depended on primary key, so it is in 2NF. There is no transitive dependency, so it is in 3NF.

*Entity 5: **Delivery_Boy****Attributes:*

1. Delivery Boy id
2. Name
3. Email
4. Date_of_Birth
5. Phone_Number
6. City
7. Pincode

Functional Dependencies:

1. Delivery_Boy_id \rightarrow Name
2. Delivery_Boy_id \rightarrow Email
3. Delivery_Boy_id \rightarrow Date_of_Birth
4. Delivery_Boy_id \rightarrow Phone_Number
5. Delivery_Boy_id \rightarrow City
6. Delivery_Boy_id \rightarrow Pincode

This relation is in 3NF. There is no multivalued attribute, so it is in 1NF, and all the non-candidate keys are depended on primary key, so it is in 2NF. There is no transitive dependency, so it is in 3NF.

*Entity 6: **Order_Items***

Attributes:

1. Order_id
2. Customer_id
3. Item_id
4. Hotel_id
5. Quantity
6. Date_of_Order

Functional Dependencies:

1. Order_id \rightarrow Customer_id
2. Order_id \rightarrow Item_id
3. Order_id \rightarrow Hotel_id
4. Order_id \rightarrow Quantity
5. Order_id \rightarrow Date_of_Order

This relation is in 3NF. There is no multivalued attribute, so it is in 1NF, and all the non-candidate keys are depended on primary key, so it is in 2NF. There is no transitive dependency, so it is in 3NF.

*Entity 7: **Delivery_Item***

Attributes:

1. Order_id
2. Delivery_Boy_id

Functional Dependencies:

No functional Dependencies.

This relation is in 3NF. There is no multivalued attribute, so it is in 1NF, and there are non-candidate so it is in 2NF. There is no transitive dependency, so it is in 3NF.

Entity 8: Transactions

Attributes:

1. Trans_id
2. Order_id
3. Customer_id

Functional Dependencies:

1. Trans_id \rightarrow Order_id
2. Trans_id \rightarrow Customer_id

This relation is in 3NF. There is no multivalued attribute, so it is in 1NF, and all the non-candidate keys are depended on primary key, so it is in 2NF. There is no transitive dependency, so it is in 3NF.

Creating Tables:

1. Customer

```
create table Customer (  
    Customer_id int not null identity (1,1) primary key,  
    Name varchar(30) not null,  
    Email varchar(30) not null,  
    Date_of_Birth date not null,  
    Phone_Number bigint not null,  
    Address_City varchar(30) not null,  
    Address_Pincode int not null  
);
```

2. Hotel

```
create table Hotel (  
    Hotel_id int not null identity (1,1) primary key ,  
    Hotel_Name varchar(30) not null,  
    Hotel_Owner_Name varchar(30) not null,  
    Hotel_Phone_Number bigint not null,  
    Hotel_Address_City varchar(30) not null,  
    Hotel_Address_Pincode int not null  
);
```

3. Items

```
create table Items(  
    Item_id int not null identity (1,1) primary key,  
    Item_name varchar(30) not null  
);
```

4. Hotel_Items

```
create table Hotel_Items (  
    Item_id int not null foreign key references  
    Items(Item_id),  
    Hotel_id int not null foreign key references  
    Hotel(Hotel_id),
```

```

        Item_Price int not null,
        primary key (Item_id, Hotel_id)
    );

```

5. Delivery_Boy

```

create table Delivery_Boy (
    Delivery_Boy_id int not null primary key,
    Name varchar(30) not null,
    Email varchar(30) not null,
    Date_of_Birth date not null,
    Phone_Number bigint not null,
    Address_City varchar(30) not null,
    Address_Pincode int not null
);

```

6. Order_Items

```

create table Order_Items (
    Order_id int not null identity (1,1) primary key,
    Customer_id int not null foreign key references
    Customer(Customer_id),
    Item_id int not null foreign key references
    Items(Item_id),
    Hotel_id int not null foreign key references
    Hotel(Hotel_id),
    Quantity int not null,
    Date_of_Order date not null,
);

```

7. Delivery_Item

```

create table Delivery_item (
    Order_id int not null foreign key references
    Order_Items(Order_id),
    Delivery_Boy_id int not null foreign key references
    Delivery_Boy(Delivery_Boy_id)
);

```

8. Transaction

```
create table Transactions (
    Trans_id int not null identity (1,1) primary key,
    Order_id int not null foreign key references
    Order_Items(Order_id),
    Customer_id int not null foreign key references
    Customer(Customer_id),
);
```

Inserting data into Tables:

1. Customer

```
Insert into Customer Values
(1, 'Neeraj Dattu', 'dnd@gmail.com', '2001-10-19',
9390618882, 'Warangal', 506002),
(2, 'Ram', 'ram@gmail.com', '2001-11-22', 9390618898,
'Warangal', 506002),
(3, 'Ravi', 'ravi@gmail.com', '2001-01-14', 9390619182,
'Warangal', 506002),
(4, 'Rahul', 'rahul@gmail.com', '2001-02-15', 9390628882,
'Warangal', 506002),
(5, 'Ramesh', 'ramesh@gmail.com', '2001-01-23', 9394418982,
'Warangal', 506002),
(6, 'Suresh', 'suresh@gmail.com', '2002-11-05', 9390818982,
'Warangal', 506002),
(7, 'Karthik', 'karthik@gmail.com', '2000-12-19',
9396618882, 'Warangal', 506002),
(8, 'Jagan Dattu', 'jagan@gmail.com', '2001-10-17',
9790618882, 'Warangal', 506002),
(9, 'Shiva', 'shiva@gmail.com', '2001-07-19', 9390618982,
'Warangal', 506002),
(10, 'Prabhas', 'prabhas@gmail.com', '2002-06-19',
9320618882, 'Warangal', 506002),
(11, 'Arjun', 'arjun@gmail.com', '2000-10-19', 9390617882,
'Warangal', 506002),
(12, 'Charan', 'charan@gmail.com', '2002-12-19',
9390518882, 'Warangal', 506002),
(13, 'Venkat', 'venkat@gmail.com', '2002-06-19',
9390718882, 'Warangal', 506002),
(14, 'Varun', 'varun@gmail.com', '2001-05-19', 9390618882,
'Warangal', 506002),
```

```
(15, 'Dhoni', 'dhoni@gmail.com', '2000-01-19', 9390612882,
'Warangal', 506002),
(16, 'Chandra', 'chandra@gmail.com', '2001-11-19',
9360618882, 'Warangal', 506002),
(17, 'Harsha', 'harsha@gmail.com', '2000-11-19',
9390718882, 'Warangal', 506002),
(18, 'Mohan', 'mohan@gmail.com', '2000-07-19', 9390610882,
'Warangal', 506002),
(19, 'Lokesh', 'lokesh@gmail.com', '2003-08-19',
9390328882, 'Warangal', 506002),
(20, 'Vinay', 'vinay@gmail.com', '2004-09-19', 939061482,
'Warangal', 506002),
(21, 'Jagadeesh', 'jagadeesh@gmail.com', '2002-12-19',
9490618882, 'Warangal', 506002),
(22, 'Ravi', 'ravi@gmail.com', '2001-11-19', 9390618872,
'Warangal', 506002);
```

2. Hotel

Insert into Customer Values

```
(1, 'Raghu Mess', 'Raghu', 9876578976, 'Warangal', 506002),
(2, 'Surya Meals and Tiffins', 'Surya', 9874578976,
'Warangal', 506002),
(3, 'Gokul Biryani', 'Gokul', 9876578236, 'Warangal',
506002),
(4, 'Shiva Veg Mess', 'Shiva', 9896578976, 'Warangal',
506002),
(5, 'Maa vanta Gadhi Mess', 'Ramu', 9216578976, 'Warangal',
506002),
(6, 'Star Tiffins', 'Rahul', 9876556276, 'Warangal',
506002),
(7, 'Suprabath Hotel of Meals', 'Suprabath', 8716578976,
'Warangal', 506002),
(8, 'Randi Babu Randi Mess', 'Ram', 9876572316, 'Warangal',
506002),
(9, 'Tini po Bro Tiffins', 'Avinash', 8776578976,
'Warangal', 506002),
(10, 'World Famous Mess', 'Jagan', 9076578976, 'Warangal',
506002);
```

3. Items

```
Insert into Customer Values
(1, 'Idly'),
(2, 'Dosa'),
(3, 'Vada'),
(4, 'Puri'),
(5, 'Masala Dosa'),
(6, 'Upma'),
(7, 'Pesarattu'),
(8, 'Meals'),
(9, 'Full Meals'),
(10, 'Tomato Rice'),
(11, 'Veg Biryani'),
(12, 'Paneer Tomato Rice'),
(13, 'Aloo Rice'),
(14, 'Millet Dosa'),
(15, 'Onion Dosa');
```

4. Hotel_Items

```
Insert into Customer Values
(8, 1, 40),
(9, 1, 80),
(10, 1, 100),
(11, 1, 120),
(12, 1, 150),
(13, 1, 70),
(1, 2, 20),
(2, 2, 30),
(4, 2, 20),
(5, 2, 25),
(7, 2, 30),
(8, 2, 50),
(9, 2, 120),
(10, 2, 100),
(11, 2, 140),
(11, 3, 100),
(8, 4, 40),
```

(9, 4, 80),
(10, 4, 110),
(11, 4, 120),
(12, 4, 190),
(13, 4, 50),
(8, 5, 45),
(9, 5, 83),
(10, 5, 105),
(11, 5, 110),
(12, 5, 140),
(13, 5, 90),
(1, 6, 20),
(2, 6, 30),
(3, 6, 25),
(4, 6, 50),
(5, 6, 70),
(6, 6, 50),
(7, 6, 90),
(14, 6, 80),
(15, 6, 70),
(8, 7, 45),
(9, 7, 85),
(10, 7, 150),
(11, 7, 125),
(12, 7, 155),
(13, 7, 80),
(8, 8, 40),
(9, 8, 60),
(10, 8, 90),
(11, 8, 110),
(12, 8, 120),
(13, 8, 50),
(1, 9, 25),
(2, 9, 35),
(3, 9, 20),
(4, 9, 55),
(5, 9, 50),
(6, 9, 55),
(7, 9, 35),
(14, 9, 70),
(15, 9, 80),

```
(8, 10, 30),
(9, 10, 70),
(10, 10, 120),
(11, 10, 100),
(12, 10, 120),
(13, 10, 80);
```

5. Delivery_Boy

```
Insert into Customer Values
('Naatu', 'dd@gmail.com', '1998-10-19', 9390618882,
'Warangal', 506002),
('Remo', 'rem@gmail.com', '1998-11-22', 9390618898,
'Warangal', 506002),
('Rambo', 'rai@gmail.com', '1998-01-14', 9390619182,
'Warangal', 506002),
('Raman', 'raman@gmail.com', '1998-02-15', 9390628882,
'Warangal', 506002),
('Suresh', 'sesh@gmail.com', '1998-01-23', 9394418982,
'Warangal', 506002),
('Sam', 'suh@gmail.com', '1997-11-05', 9390818982,
'Warangal', 506002),
('Kaithi', 'kark@gmail.com', '2000-12-19', 9396618882,
'Warangal', 506002),
('Jatu', 'jan@gmail.com', '1998-10-17', 9790618882,
'Warangal', 506002),
('Shiva', 'shiva@gmail.com', '1998-07-19', 9390618982,
'Warangal', 506002),
('Phas', 'pras@gmail.com', '1999-06-19', 9320618882,
'Warangal', 506002);
```

6. Order_Items

```
Insert into Customer Values
(1, 1, 2, 2, 2, '2023-03-06'),
(2, 2, 1, 9, 3, '2023-03-07'),
(3, 4, 3, 9, 1, '2023-03-08'),
(4, 3, 4, 6, 2, '2023-03-08'),
(5, 6, 5, 2, 4, '2023-03-08'),
```

```

(6, 8, 6, 6, 5, '2023-03-09'),
(7, 12, 7, 9, 3, '2023-03-09'),
(8, 14, 4, 6, 4, '2023-03-10'),
(9, 17, 7, 6, 5, '2023-03-10'),
(10, 2, 8, 4, 6, '2023-03-11'),
(11, 3, 1, 9, 2, '2023-03-11'),
(12, 5, 3, 6, 3, '2023-03-12'),
(13, 7, 5, 9, 2, '2023-03-12'),
(14, 9, 10, 8, 1, '2023-03-13'),
(15, 10, 15, 9, 2, '2023-03-13'),
(16, 11, 12, 5, 6, '2023-03-13'),
(17, 11, 11, 10, 7, '2023-03-14'),
(18, 11, 2, 9, 2, '2023-03-14'),
(19, 12, 1, 6, 4, '2023-03-14'),
(20, 13, 4, 2, 1, '2023-03-14'),
(21, 14, 11, 7, 2, '2023-03-15'),
(22, 9, 12, 4, 6, '2023-03-15'),
(23, 5, 9, 1, 9, '2023-03-15'),
(24, 8, 6, 6, 4, '2023-03-15'),
(25, 9, 7, 2, 6, '2023-03-15'),
(26, 1, 3, 2, 3, '2023-03-16'),
(27, 2, 4, 9, 2, '2023-03-16'),
(28, 3, 7, 9, 4, '2023-03-16'),
(29, 4, 8, 1, 7, '2023-03-16'),
(30, 5, 2, 2, 11, '2023-03-16'),
(31, 21, 4, 9, 3, '2023-03-16'),
(32, 20, 3, 6, 4, '2023-03-16'),
(33, 22, 2, 9, 1, '2023-03-16');

```

7. Delivery_Item

Insert into Customer Values

```

(1,2),
(2,3),
(3,1),
(4,4),
(5,5),
(6,7),
(7,1),

```


(8, 4) ,
(9, 8) ,
(10, 9) ,
(11, 10) ,
(12, 10) ,
(13, 1) ,
(14, 2) ,
(15, 4) ,
(16, 6) ,
(17, 8) ,
(18, 8) ,
(19, 10) ,
(20, 2) ,
(21, 2) ,
(22, 3) ,
(23, 5) ,
(24, 4) ,
(25, 9) ,
(26, 7) ,
(27, 8) ,
(28, 2) ,
(29, 3) ,
(30, 8) ,
(31, 9) ,
(32, 10) ,
(33, 10) ;

8. Transaction

(1, 1, 1) ,
(2, 2, 2) ,
(3, 3, 4) ,
(4, 4, 3) ,
(5, 5, 6) ,
(6, 6, 8) ,
(7, 7, 12) ,
(8, 8, 14) ,
(9, 9, 17) ,
(10, 10, 2) ,
(11, 11, 3) ,

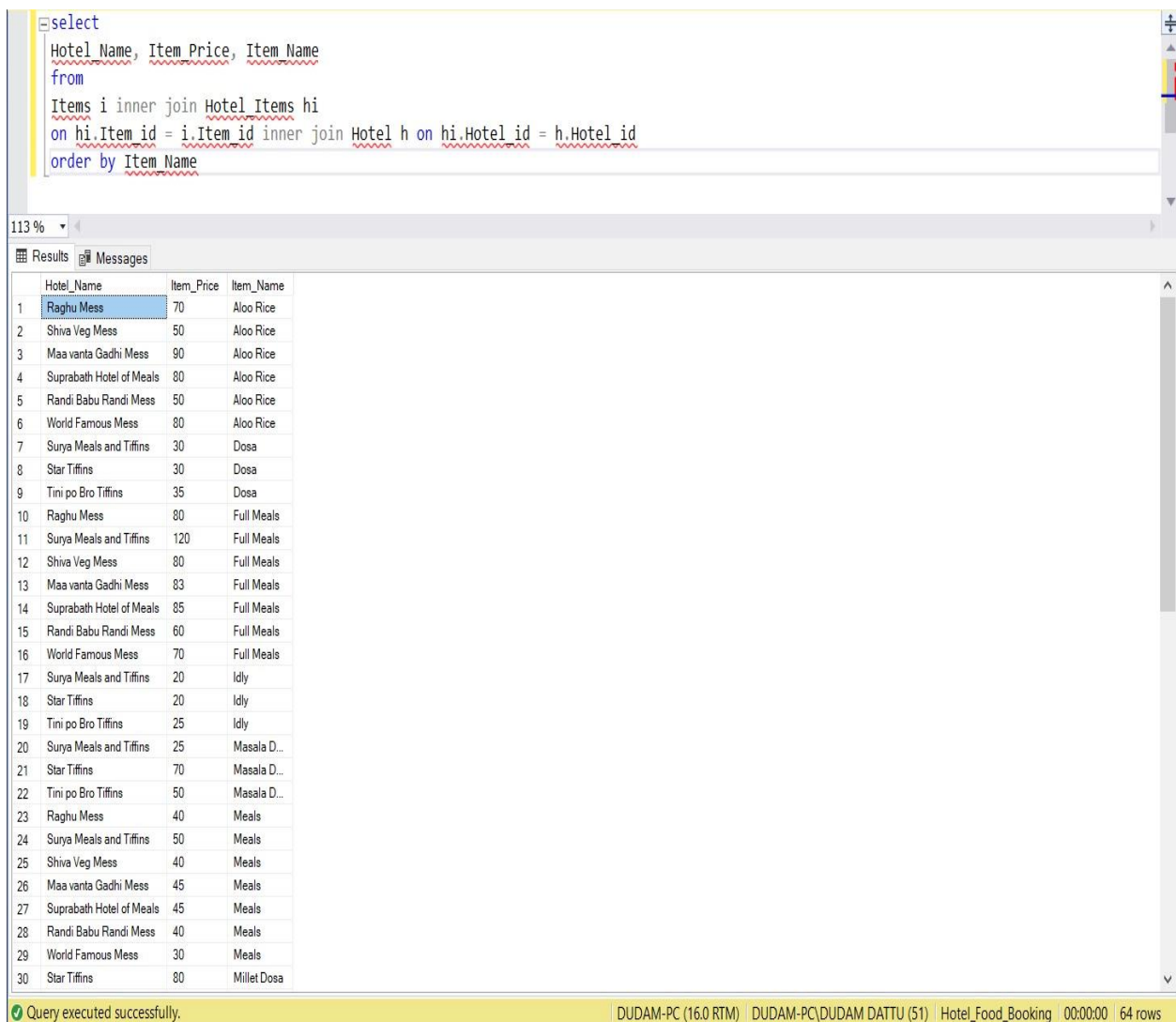
(12, 12, 5),
(13, 13, 7),
(14, 14, 9),
(15, 15, 10),
(16, 16, 11),
(17, 17, 11),
(18, 18, 11),
(19, 19, 12),
(20, 20, 13),
(21, 21, 14),
(22, 22, 9),
(23, 23, 5),
(24, 24, 8),
(25, 25, 9),
(26, 26, 1),
(27, 27, 2),
(28, 28, 3),
(29, 29, 4),
(30, 30, 5),
(31, 31, 21),
(32, 32, 20),
(33, 33, 22);

Executing Queries:

Query 1:

The following query retrieves data from database by doing INNER JOIN and displays Hotel_Name, Item_Price, Item_Name joining three tables Hotel, Hotel_Items, Items.

```
SELECT Hotel_Name, Item_Price, Item_Name FROM Items i
INNER JOIN Hotel_Items hi ON hi.Item_id = i.Item_id
INNER JOIN Hotel h ON hi.Hotel_id = h.Hotel_id ORDER BY
Item_Name
```



The screenshot shows a database query execution window. The query is as follows:

```
select
Hotel Name, Item Price, Item Name
from
Items i inner join Hotel Items hi
on hi.Item id = i.Item id inner join Hotel h on hi.Hotel id = h.Hotel id
order by Item Name
```

The results are displayed in a table with 30 rows and 3 columns: Hotel_Name, Item_Price, and Item_Name. The first row is highlighted.

	Hotel_Name	Item_Price	Item_Name
1	Raghu Mess	70	Aloo Rice
2	Shiva Veg Mess	50	Aloo Rice
3	Maa vanta Gadhi Mess	90	Aloo Rice
4	Suprabath Hotel of Meals	80	Aloo Rice
5	Randi Babu Randi Mess	50	Aloo Rice
6	World Famous Mess	80	Aloo Rice
7	Surya Meals and Tiffins	30	Dosa
8	Star Tiffins	30	Dosa
9	Tini po Bro Tiffins	35	Dosa
10	Raghu Mess	80	Full Meals
11	Surya Meals and Tiffins	120	Full Meals
12	Shiva Veg Mess	80	Full Meals
13	Maa vanta Gadhi Mess	83	Full Meals
14	Suprabath Hotel of Meals	85	Full Meals
15	Randi Babu Randi Mess	60	Full Meals
16	World Famous Mess	70	Full Meals
17	Surya Meals and Tiffins	20	Idly
18	Star Tiffins	20	Idly
19	Tini po Bro Tiffins	25	Idly
20	Surya Meals and Tiffins	25	Masala D...
21	Star Tiffins	70	Masala D...
22	Tini po Bro Tiffins	50	Masala D...
23	Raghu Mess	40	Meals
24	Surya Meals and Tiffins	50	Meals
25	Shiva Veg Mess	40	Meals
26	Maa vanta Gadhi Mess	45	Meals
27	Suprabath Hotel of Meals	45	Meals
28	Randi Babu Randi Mess	40	Meals
29	World Famous Mess	30	Meals
30	Star Tiffins	80	Millet Dosa

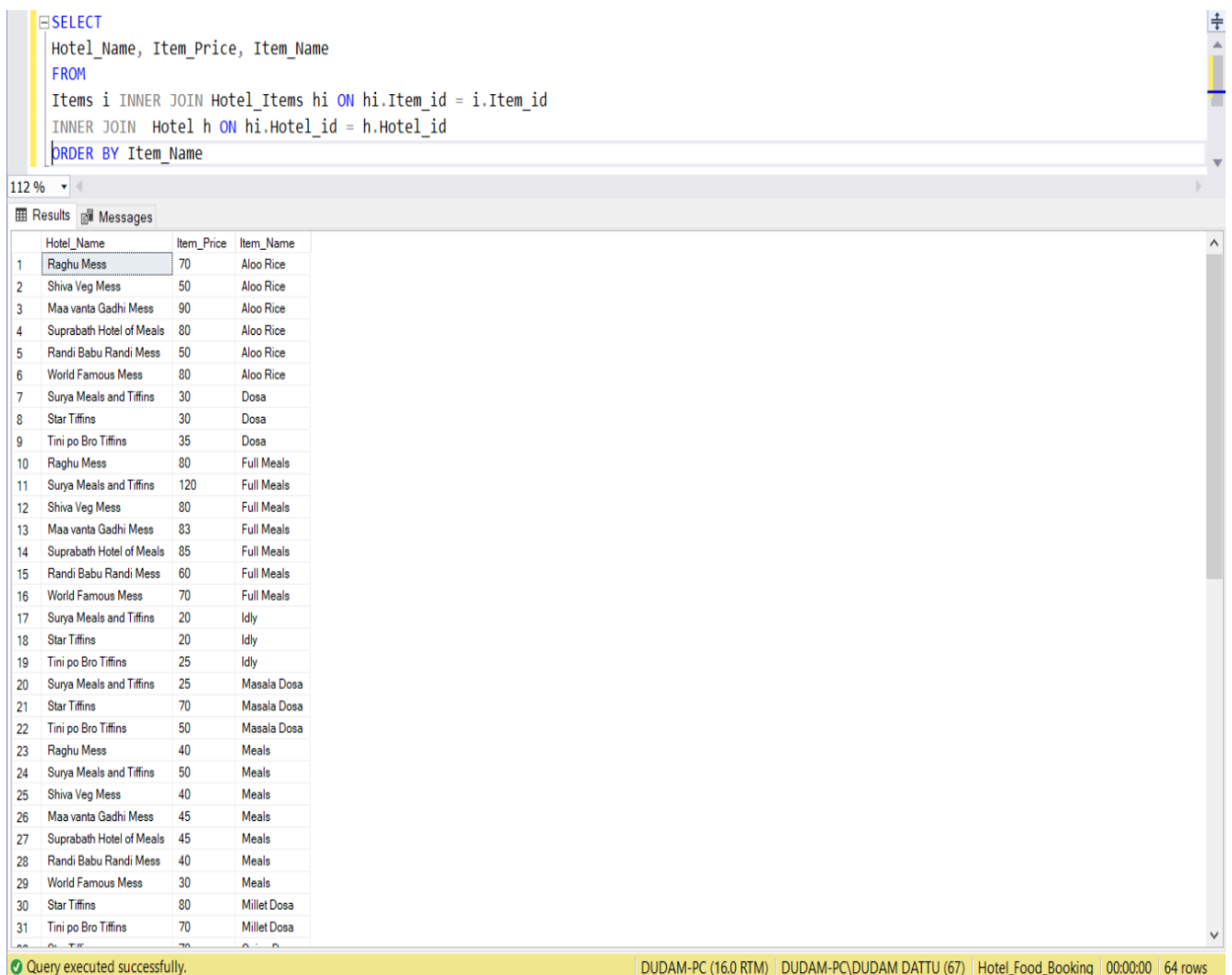
Query executed successfully.

DUDAM-PC (16.0 RTM) | DUDAM-PC\DUDAM DATTU (51) | Hotel_Food_Booking 00:00:00 | 64 rows

Query 2:

The following query retrieves data from database by doing INNER JOIN and done a multiply operation to display amount and displays Date_of_Order, Customer_Name, Item_Name, Quantity, Amount joining four tables Order_Items, Customer, Items, Hotel_Items.

```
SELECT Hotel_Name, Item_Price, Item_Name FROM Items i
INNER JOIN Hotel_Items hi ON hi.Item_id = i.Item_id
INNER JOIN Hotel h ON hi.Hotel_id = h.Hotel_id ORDER BY
Item_Name
```



The screenshot shows a SQL query executed in a database client. The query is as follows:

```
SELECT
Hotel_Name, Item_Price, Item_Name
FROM
Items i INNER JOIN Hotel_Items hi ON hi.Item_id = i.Item_id
INNER JOIN Hotel h ON hi.Hotel_id = h.Hotel_id
ORDER BY Item_Name
```

The results are displayed in a table with 31 rows and 3 columns: Hotel_Name, Item_Price, and Item_Name. The table is sorted by Item_Name in ascending order.

	Hotel_Name	Item_Price	Item_Name
1	Raghu Mess	70	Aloo Rice
2	Shiva Veg Mess	50	Aloo Rice
3	Maa vanta Gadhi Mess	90	Aloo Rice
4	Suprabath Hotel of Meals	80	Aloo Rice
5	Randi Babu Randi Mess	50	Aloo Rice
6	World Famous Mess	80	Aloo Rice
7	Surya Meals and Tiffins	30	Dosa
8	Star Tiffins	30	Dosa
9	Tini po Bro Tiffins	35	Dosa
10	Raghu Mess	80	Full Meals
11	Surya Meals and Tiffins	120	Full Meals
12	Shiva Veg Mess	80	Full Meals
13	Maa vanta Gadhi Mess	83	Full Meals
14	Suprabath Hotel of Meals	85	Full Meals
15	Randi Babu Randi Mess	60	Full Meals
16	World Famous Mess	70	Full Meals
17	Surya Meals and Tiffins	20	Idly
18	Star Tiffins	20	Idly
19	Tini po Bro Tiffins	25	Idly
20	Surya Meals and Tiffins	25	Masala Dosa
21	Star Tiffins	70	Masala Dosa
22	Tini po Bro Tiffins	50	Masala Dosa
23	Raghu Mess	40	Meals
24	Surya Meals and Tiffins	50	Meals
25	Shiva Veg Mess	40	Meals
26	Maa vanta Gadhi Mess	45	Meals
27	Suprabath Hotel of Meals	45	Meals
28	Randi Babu Randi Mess	40	Meals
29	World Famous Mess	30	Meals
30	Star Tiffins	80	Millet Dosa
31	Tini po Bro Tiffins	70	Millet Dosa

Query executed successfully. DUDAM-PC (16.0 RTM) | DUDAM-PC\DUDAM DATTU (67) | Hotel_Food_Booking | 00:00:00 | 64 rows