



MLR INSTITUTE OF TECHNOLOGY

COMPUTER SCIENCE & ENGINEERING

MICRO PROJECT

MICRO-PROJECT
ON
RESTAURANT
MANAGEMENT
SYSTEM

SUBJECT :- DATA BASE MANMAGEMENT SYSTEM

Faculty Name: Mrs . POONAM KHARE

Title of the Project: *RESTAURANT MANGEMENT SYSTEM*

Team Members Details :-

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Objective of the project:

- The primary objective of the project is to develop a data base on restaurant management system . By using this project,students get an clear idea on how the data base works and how to use.
- By working on this project students are able to understand the uses and accessing of data base systems.

Relevance to the Subject:

- A database management system is system software for creating and managing databases. The DBMS provides the users and programmers with a systematic way to create, retrieve, update and manage data.
- The micro-project on ***Restaurant management system*** helps to understand how the data bases work in restaurants and hotels. Every restaurant have many entities and every entity has many attributes. By identifying the entities ,attributes and relations in the restaurant management system it becomes easier to go forward and work on it.
- Firstly we come up with identifying all the entities ,attributes and relations in the data base and later building up a E-R diagram which gives an overview of the data base. The construction of E-R diagram comes in External level (or) View level.

IDENTIFICATION OF ENTITIES , ATTRIBUTES AND RELATIONS RELATED TO RESTAURANT MANGEMENT SYSTEM.

IDENTIFICATION OF ENTITIES:-

- 1) Restaurant
- 2) Cashier
- 3) Bill
- 4) Manager
- 5) Customer
- 6) Chef
- 7) Waiter
- 8) Item
- 9) Order

IDENTIFICATION OF ATTRIBUTES FOR RESTAURANT :-

- 1) Name
- 2) Ph.no
- 3) Address

IDENTIFICATION OF ATTRIBUTES FOR CASHER:-

- 1) Bill no.
- 2) Name

IDENTIFICATION OF ATTRIBUTES FOR BILL:-

- 1) Order Detail
- 2) Bill no.
- 3) Amount

IDENTIFICATION OF ATTRIBUTES FOR MANAGER:-

- 1) Manager idno.
- 2) Name

IDENTIFICATION OF ATTRIBUTES FOR CUSTOMER:-

- 1) Name
- 2) Phone no.
- 3) Address
- 4) Customer id

IDENTIFICATION OF ATTRIBUTES FOR CHEF:-

- 1) Name
- 2) Chef id.no

IDENTIFICATION OF ATTRIBURES FOR WAITER:-

- 1) Name
- 2) Id no.

IDENTIFICATION OF ATTRIBUTES FOR ITEM:-

- 1) Item no.
- 2) Amount
- 3) Quantity
- 4) Description

IDENTIFICATION OF ATTRIBUTES FOR ORDER:-

- 1) No. of items
- 2) Order no.

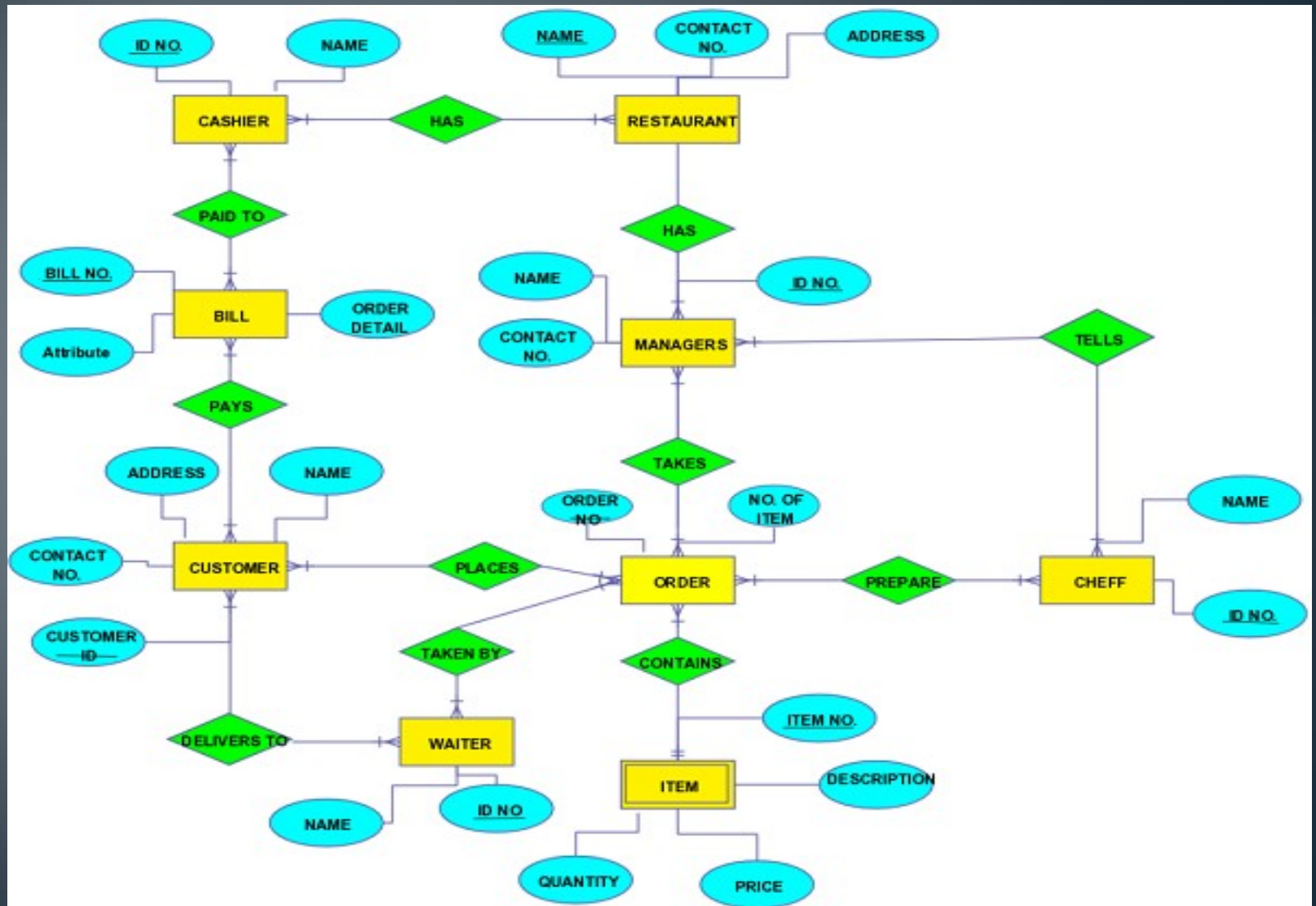
RELATIONS:-

- 1) Restaurant HAS Manager
- 2) Restaurant HAS Cashier
- 3) Bill PAID to Cashier
- 4) Manager TELLS Chef
- 5) Manager TAKES Order
- 6) Customer PLACES Order
- 7) Customer PAYS Bill
- 8) Waiter BRINGS Order
- 9) Waiter DELIVERS TO Customer
- 10) Chef PREPARES Order
- 11) Order CONTAINS Item

Architecture

The **External level/View level** of the data base is represented in the form of E-R diagram. The Entity-Relationship diagram gives the basic idea of how the data base is developed. This is also called as E-R model of data base.

Er-diagram



Implementation:-

- This is implemented by using oracle. Before this we have to convert the above E-R diagram into tables i.e into ***Relational model*** . The **Conceptual level or Logical level** has different models such as Network model, Hierarchical model etc, where as Relational model is among the models of Conceptual level.

RELATIONAL MODEL

TABLE FOR RESTAURANT:-

Name	Ph.no	Address
MARRIOTT	040-27976816	HYDERABAD
HOTEL VICEROY	040-66595754	BANGLORE
TAJ MAHAL	0891-66432342	MUMBAI
SHAN BAGH	9822882221	DELHI
RIVERSIDE	040-66762361	GOA

TABLE FOR CASHIER:-

Bill no	NAME
122321	ANUDEEP SINGH
133221	SANDEEP
144331	VIKRAM
155442	RAHUL
166221	GAUTAM

TABLE FOR BILL:-

ORDER DETAIL	BILL No.	AMOUNT
BIRYANI	122321	Rs.550/-
ROTI & CURRY	133221	Rs.450/-
MANCHURIA	144331	Rs.250/-
CHOUPSEY	155442	Rs.300/-
FINGER CHIPS	166221	Rs.200/-

TABLE FOR MANAGER:-

MANAGER ID No.	NAME
1231	VIJAY RATHOD
1332	ANUP RUBENS
1443	SURYA SETH
1554	AJAY YADAV
1665	SUKESH REDDY

TABLE FOR WAITER

NAME	ID No.
SAI CHANDRA	2234
P.SAMPATH	3321
CHARAN	4321
MAHESH REDDY	4431
GIRISH GOUD	3211

TABLE FOR CUSTOMER:-

CUSTOMER ID	NAME	PHONE No.	ADDRESS
111	MAYANK	9989899121,9911111111	PARADISE
222	KRISHNA	7842784212	BANNERGHUTTA
333	VENKAT	8989858512	AZAD ROAD
444	HASINI	994949122	AGRA
555	SUJANA	998288282	BAGA

TABLE FOR CHEF:-

NAME	CHEF ID No.
BHAGAT SINGH	AA23
HITHESH REDDY	A123
SUHAS NAIDU	BB22
NAYEEM	B123
SAHITHI	C112

TABLE FOR ORDER:-

ITEM No.	AMOUNT	QUANTITY	DESCRIPTION	No.oF ITEMS	ORDER No.
001	Rs.550/-	HALF KG	BIRYANI	2	25
020	Rs.450/-	2 & 100gms	ROTI & CURRY	3	36
050	Rs.250/-	250 gms	MANCHURIA	4	44
093	Rs.300/-	200 gms	CHOUPSEY	1	49
123	Rs.200/-	150 gms	FINGER CHIPS	2	52

After converting into tables or Relational model we need to enter the data into system using SQL commands. Later we work on system using oracle.

NORMALISATION

The process of reducing data redundancy in a relational database is called Normalisation. Normalisation is done to achieve the following 4 goals.

- Arranging data into logical grouping such that each group describes a small part of the whole.
- Minimizing the amount of duplicate data called redundancy stored in a database.
- Organising the data such that when you modify it you can make the changes only in one place.

ADVANTAGES-

- Building database in which you can access and manipulate the data quickly and efficiently without compromising the integrity of data in storage.
- It frees the database from certain insertion, updation and deletion anomalies.
- It reduces the need to restructure the database as new kinds of data are introduced.
- It makes the database more informative to users,including different uses making different queries.
- It avoids the database design in favour of certain queries at the expense of others.
- It allows the operation needed for data access to be simpler than they would be.

Now we are normalizing the tables to obtain tables without redundancy.We should convert the tables into BCNF/3.5NF(Boycee Codd Normal Form).This is called normalization.

TABLE FOR RESTAURANT:-

Name	Ph.no	Address
MARRIOTT	040-27976816	HYDERABAD
HOTEL VICEROY	040-66595754	BANGLORE
TAJ MAHAL	0891-66432342	MUMBAI
SHAN BAGH	9822882221	DELHI
RIVERSIDE	040-66762361	GOA

In the above table the attribute Ph No. gives Address and Name ,that is Ph No. acts as candidate key and remaining all non-key attributes completely depend on key attribute.The above table is already in BCNF so need to normalize again.

FUNCTIONAL DEPENDENCY:-

Ph.no→Name,Address.

TABLE FOR CASHIER:-

BILL No.	NAME
122321	ANUDEEP SINGH
133221	SANDEEP
144331	VIKRAM
155442	RAHUL
166221	GAUTAM

In the above table the attribute BillNo. Serves as candidate key and the non-key attribute(Name) is dependant on key attribute. Therefore the table is already in BCNF.

FUNCTIONAL DEPENDANCY:-

Bill No.-->NAME

TABLE FOR MANAGER:-

MANAGER ID No.	NAME
1231	VIJAY RATHOD
1332	ANUP RUBENS
1443	SURYA SETH
1554	AJAY YADAV
1665	SUKESH REDDY

In the above table the Manager IdNo. gives Name of the manger that means manger id acts as candidate key and the remaining non-key attribute depends on key attribute.Hence the table is in BCNF already.

FUNCTIONAL DEPENDANCY:-

Manager ID No.-->NAME

TABLE FOR BILL:-

ORDER DETAIL	BILL No.	AMOUNT
BIRYANI	122321	Rs.550/-
ROTI & CURRY	133221	Rs.450/-
MANCHURIA	144331	Rs.250/-
CHOUPSEY	155442	Rs.300/-
FINGER CHIPS	166221	Rs.200/-

In the above table the attribute BillNo. gives both OrderDetail and Amount.Here BillNo. acts as candidate key,remaining non-key attributes depends on key attributes.Therefore the tables is already in BCNF.

FUNCTIONAL DEPENDENCY:-

BillNo.-->Orderdetail,Amount.

TABLE FOR CUSTOMER:-

CUSTOMER ID	NAME	PHONE No.	ADDRESS
111	MAYANK	9989899121,9911111111	PARADISE
222	KRISHNA	7842784212	BANNERGHUTTA
333	VENKAT	8989858512	AZAD ROAD
444	HASINI	994949122	AGRA
555	SUJANA	998288282	BAGA

It is not in 1NF because 1NF says that every cell should have atomic values. In PhoneNo. there are two values therefore to make it in 1NF both the values should be placed in different rows. After normalization the table is:-

TABLE FOR CUSTOMER:-

CUSTOMER ID	NAME	PHONE No.	ADDRESS
111	MAYANK	9989899121	PARADISE
111	MAYANK	9911111111	PARADISE
222	KRISHNA	7842784212	BANNERGHUTTA
333	VENKAT	8989858512	AZAD ROAD
444	HASINI	994949122	AGRA
555	SUJANA	998288282	BAGA

The above table is normalized and it satisfies 1NF

TABLE FOR CHEF:-

NAME	CHEF ID No.
BHAGAT SINGH	AA23
HITHESH REDDY	A123
SUHAS NAIDU	BB22
NAYEEM	B123
SAHITHI	C112

In the above table the Chef IdNo. gives Name of the chef that means chef idno acts as candidate key and the chef name which is a non-key attribute depends on key attribute(chef idno.).Hence the table is in BCNF already.

FUNCTIONAL DEPENDANCY:-

ChefIdNo.-->Name

TABLE FOR WAITER:-

NAME	ID No.
SAI CHANDRA	2234
P.SAMPATH	3321
CHARAN	4321
MAHESH REDDY	4431
GIRISH GOUD	3211

In the above table the Waiter IdNo. gives Name of the Waiter that means Waiteridno acts as candidate key and the Waiter name which is a non-key attribute depends on key attribute(Waiter IdNo.).Hence the table is in BCNF already.

FUNCTIONAL DEPENDANCY:-

WaiterIdNo.-->Name

TABLE FOR ORDER:-

ITEM No.	AMOUNT	QUANTITY	DESCRIPTION	No. OF ITEMS	ORDER No.	
001	Rs.550/-	HALF KG	BIRYANI	2	25	
020	Rs.450/-	2 & 100gms	ROTI & CURRY	3	36	
050	Rs.250/-	250 gms	MANCHURIA	4	44	
093	Rs.300/-	200 gms	CHOUPSEY	1	49	
123	Rs.200/-	150 gms	FINGER CHIPS	2	52	

The above table is not in 3NF because there exists transitivity .

FUNCTIONAL DEPENDENCY:-

OrderNo.-->No. of items,Description,ItemNo.

ItemNo.-->Amount,Qunatity,Description.

OrderNo.-->Description

The transitivity is of the form:-

If $A \rightarrow B$

$B \rightarrow c$

then $A \rightarrow C$

Here A is OrderNo.,B is ItemNo and C is Description.To avoid this condition we need to break the table that is decomposing the table to obtain BCNF.

TABLE FOR ITEM:-

ITEM No.	AMOUNT	QUANTITY	DESCRIPTION
001	Rs.550/-	HALF KG	BIRYANI
020	Rs.450/-	2 & 100gms	ROTI & CURRY
050	Rs.250/-	250 gms	MANCHURIA
093	Rs.300/-	200 gms	CHOUPSEY
123	Rs.200/-	150 gms	FINGER CHIPS

Now the table for item is in BCNF because the attribute ITEMNo. acts as candidate key and all the remaining non-key attributes are dependent on key attribute.

FUNCTIONAL DEPENDENCY:-

ITEMNo.-->Amount,Quantity,Description

ORDER DETAIL	BILL No.	AMOUNT
BIRYANI	122321	Rs.550/-
ROTI & CURRY	133221	Rs.450/-
MANCHURIA	144331	Rs.250/-
CHOUPSEY	155442	Rs.300/-
FINGER CHIPS	166221	Rs.200/-

The above table is in BCNF because the attribute OrderNo. acts as key attribute and No.of items acts as non-key attribute. Here nonkey attribute depends on key attribute. Therefore we can say that the table is in BCNF.

FUNCTIONAL DEPENDENCY:-

OrderNo.-->No.of items

DDL COMMANDS

Creating table and inserting values into restaurant:-

Home > SQL > **SQL Commands**

☒ Autocommit Display 10 ▼

```
create table restaurant(R_name varchar2(15),R_phoneno varchar2(15),R_address varchar2(15));
insert into restaurant values('MARRIOTT','040-27976816','HYDERABAD');
insert into restaurant values('HOTELVICEROY','040-66595754','BANGLORE');
insert into restaurant values('TAJMAHAL','0891-66432342','MUMBAI');
insert into restaurant values('SHANBAGH','9822882221','DELHI');
insert into restaurant values('RIVERSIDE','040-66762361','GOA');
select * from restaurant;
```

Results Explain Describe Saved SQL History

R_NAME	R_PHONENO	R_ADDRESS
SHANBAGH	9822882221	DELHI
MARRIOTT	040-27976816	HYDERABAD
HOTELVICEROY	040-66595754	BANGLORE
TAJMAHAL	0891-66432342	MUMBAI
RIVERSIDE	040-66762361	GOA

5 rows returned in 0.00 seconds

[CSV Export](#)

- Creating table and inserting values into cashier:-

Home > SQL > **SQL Commands**

☒ Autocommit Display 10 ▼

```
create table cashier(C_billno varchar2(15),C_name varchar2(15));
insert into cashier values('122321','ANUDEEP SINGH');
insert into cashier values('133221','SANDEEP');
insert into cashier values('144331','VIKRAM');
insert into cashier values('155442','RAHUL');
insert into cashier values('166221','GAUTAM');
select * from cashier;
```

Results Explain Describe Saved SQL History

C_BILLNO	C_NAME
122321	ANUDEEP SINGH
133221	SANDEEP
144331	VIKRAM
155442	RAHUL
166221	GAUTAM

5 rows returned in 0.00 seconds

[CSV Export](#)

DATABASE TRRIGERS

Objective:

1) Creation of Triggers

2) **Implementing Triggers:** Create a transparent audit system for a table restaurant. The system must keep track of the records that are being deleted. The functionality being when a record is deleted the original record details and the date of operation are stored in the audit table then delete is allowed to go through.

Explanation: Here we have created a trigger on restaurant table . our aim is to keep track of records on restaurant table so that if any delete operation is fired on restaurant then our restaurant_audit table will be updated with the information that which record is deleted, who deleted it and on what date it was deleted.

We have restaurant table:

SELECT * FROM restaurant;
OUTPUT :

R_NAME	R_PHONENO	R_ADDRESS
MARRIOTT	040-27976816	HYDERABAD
HOTEL-VICEROY	040-66595754	BANGLORE
TAJMAHAL	0891-66432342	MUMBAI
SHANBAGH	9822882221	DELHI

4 rows returned in 0.00 seconds [CSV Export](#)

2)Creation of audit_restaurant:

```
create table restaurant_audit( R_name varchar2(15),R_phoneno
varchar2(15),R_address varchar2(15),deletedate varchar2(10),
deletedby varchar2(10));
select * from restaurant_audit table;
```

```
SELECT * FROM restaurant1_audit;
```

```
delete from restaurant1 where R_name='MARRIOTT';
```

Results	Explain	Describe	Saved SQL	History
no data found				

3)Creation of triggers:

CREATE OR REPLACE TRIGGER

restaurant_before_delete

BEFORE DELETE

ON restaurant

FOR EACH ROW

DECLARE

v_username varchar2(10);

BEGIN

**-- Find username of person performing the DELETE on
the table**

**SELECT user INTO v_username
FROM dual;**

-- Insert record into audit table

INSERT INTO restaurant_audit

**(R_name,
R_phoneno,
R_address,
deletedate,
deletedby)**

VALUES

**(:old.R_name,
:old.R_phoneno,
:old.R_address,
sysdate,
v_username);**

END;

Output :

```
CREATE OR REPLACE TRIGGER restaurant1_before_delete
BEFORE DELETE
  ON restaurant1
  FOR EACH ROW

DECLARE
  v_username varchar2(10);

BEGIN

  -- Find username of person performing the DELETE on the table
  SELECT user INTO v_username
  FROM dual;

  -- Insert record into audit table
```

Results Explain Describe Saved SQL History

Trigger created.

4) Execution :

A)SELECT * FROM restaurant;

R_NAME	R_PHONENO	R_ADDRESS
MARRIOTT	040-27976816	HYDERABAD
HOTEL-VICEROY	040-66595754	BANGLORE
TAJMAHAL	0891-66432342	MUMBAI
SHANBAGH	9822882221	DELHI

4 rows returned in 0.00 seconds

[CSV Export](#)

B)delete from restaurant where
R_name='MARRIOTT';

```
delete from restaurant1 where R_name='MARRIOTT';
```

Results Explain Describe Saved SQL History

1 row(s) deleted.

C)SELECT * FROM restaurant;

R_NAME	R_PHONENO	R_ADDRESS
HOTEL-VICEROY	040-66595754	BANGLORE
TAJMAHAL	0891-66432342	MUMBAI
SHANBAGH	9822882221	DELHI

3 rows returned in 0.00 seconds [CSV Export](#)

D)SELECT * FROM restaurant_audit;

R_NAME	R_PHONENO	R_ADDRESS	DELETEDATE	DELETEDBY
MARRIOTT	040-27976816	HYDERABAD	30-MAR-15	ANONYMOUS

1 rows returned in 0.00 seconds [CSV Export](#)

Specification:

We work on Oracle 10g
HardDisk

Applications:-

- 1) This restaurant database management system is useful in retrieving , storing and deleting data easily without any problem of redundancy and inconsistency.
- 2) The data can be accessed easily.It can store large amount of data without any confusion and repetition.
- 3) The concept of database management is not only used in restaurant management sytem but also in various systems like Hospital management system,University management system, Library management system etc.

THANK YOU