

A top-down view of various Italian ingredients on a white wooden surface. In the top left is a bowl of red tomato sauce with dried herbs. To its right is a pile of dry farfalle (butterfly) pasta. Below the sauce is a small bowl of dried herbs. In the bottom left is a glass jar of farfalle pasta with a copper wire lid. In the center are several ripe red tomatoes with green stems. To the right of the tomatoes is a large pile of dry spaghetti, with a glass jar lying on its side. In the bottom right is a bowl of white cheese cubes. A piece of light-colored fabric is draped across the middle right.

# Italian Restaurant Database Management System

**CS540 - Advanced Database Administration**

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# Agenda

- Overview of Restaurant Management
- Database Design Architecture
- Entity ,Relationship,Attributes,Keys
- Roles of DBA in Administering Restaurant Management System.
- Establishing & Administering the Database.
- DBA Commands
- Reports
- Conclusion

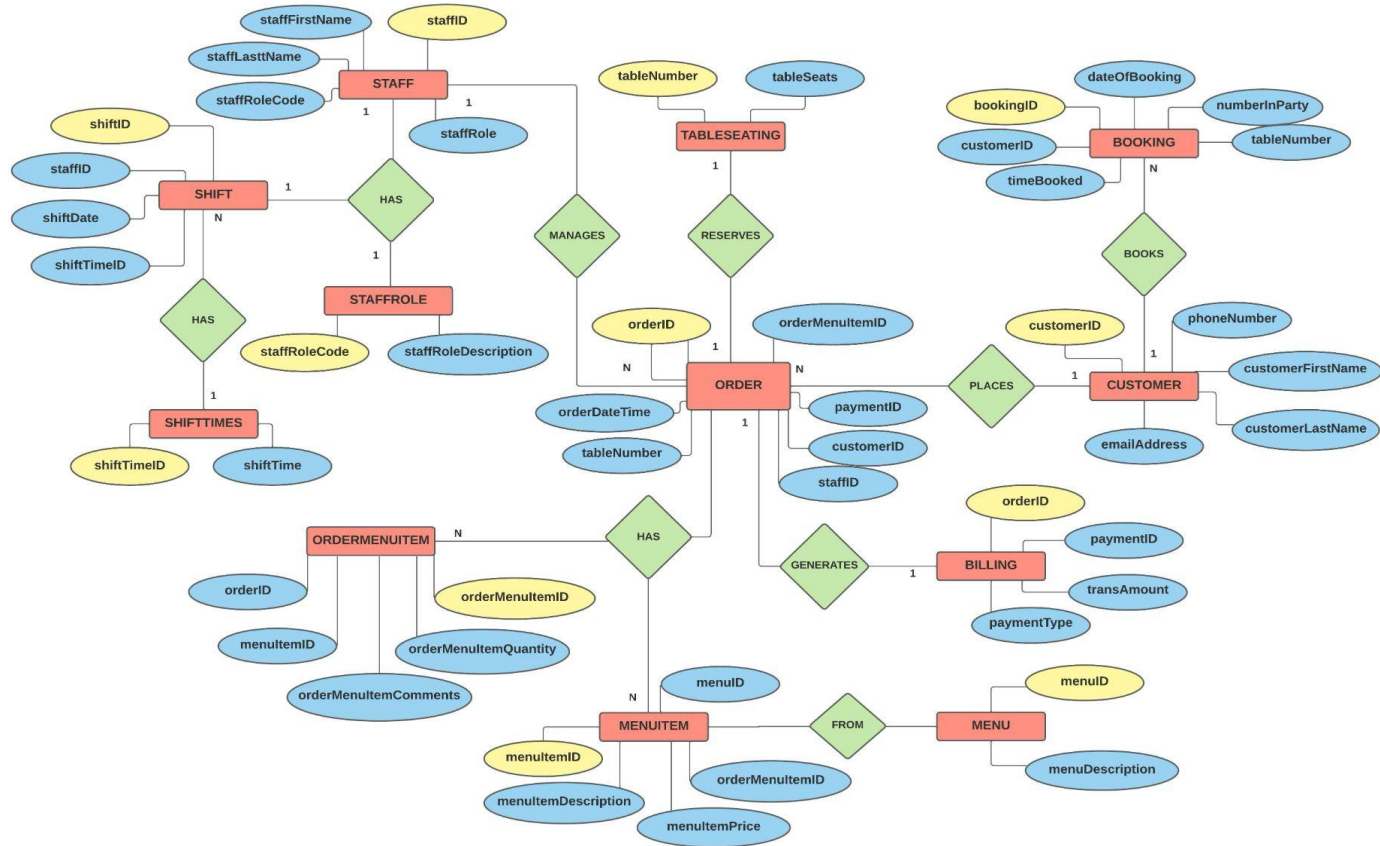


# Overview of Restaurant Management

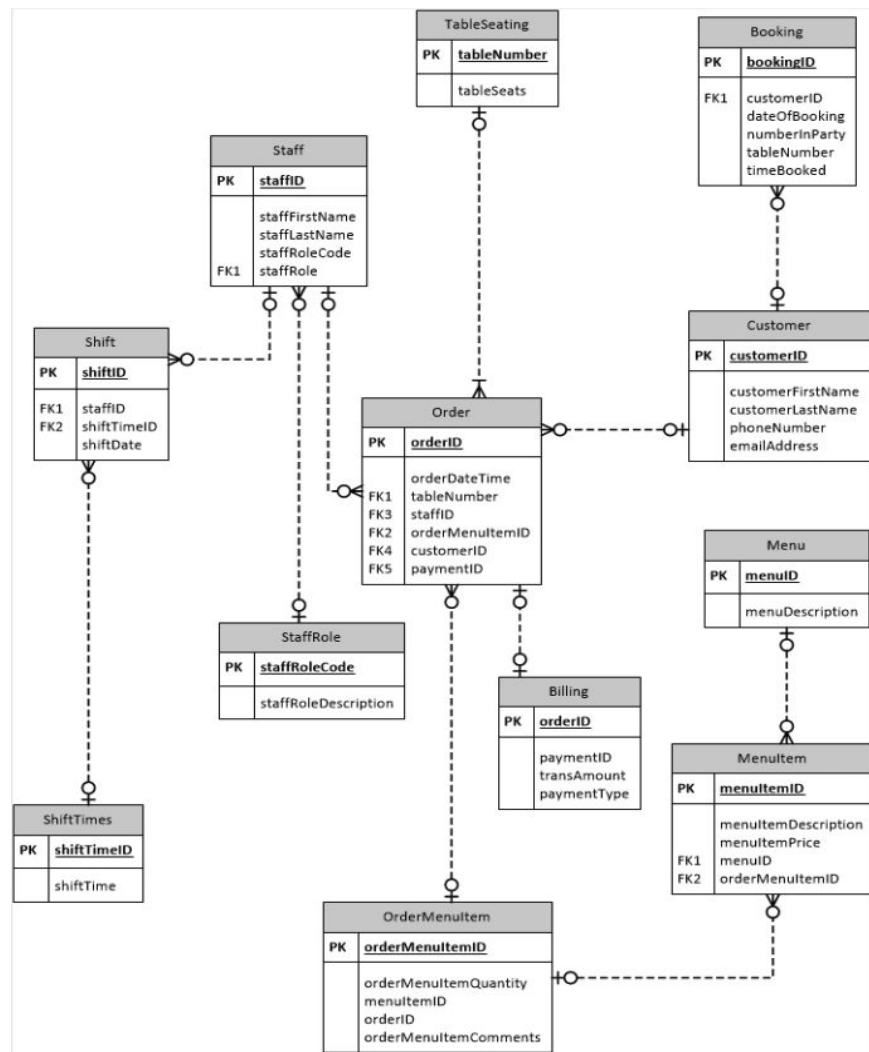
- ★ The Restaurant Management System is a web-based software program.
- ★ It automate a restaurant's day-to-day operations.
- ★ It provides service to both the restaurant and the customer.
- ★ Employees at a restaurant use this restaurant management system to handle customers, their orders and reserve free tables.
- ★ The major goal of this system is to assist restaurant administrator in running their businesses while also assisting customers with online ordering and table reservations.



# Database Design Architecture

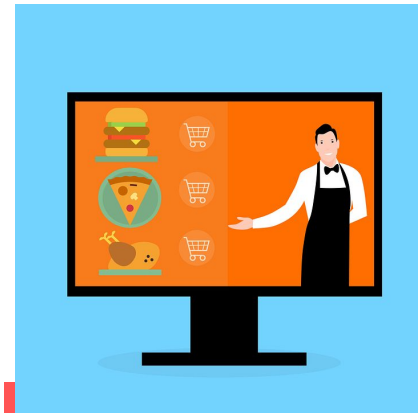


# Entity , Relationships, Attributes,Keys



# Roles of DBA in Administering Restaurant Management System

- ★ Decides the Hardware devices & installation of software.
- ★ Managing Data Integrity
- ★ Decides Data Recovery & Back up methods
- ★ Tuning Database Performance
- ★ Capacity Issues
- ★ Database Design and Database Content
- ★ Database accessibility
- ★ Decides validation checks on data
- ★ Monitoring Performance
- ★ Provides help & support to user



# Establishing & Administering Database.

```
[oracle@localhost oracle]$ sqlplus sys/oracle as sysdba
```

```
SQL*Plus: Release 19.0.0.0.0 - Production on Mon Apr 11 15:49:11 2022  
Version 19.3.0.0.0
```

```
Copyright (c) 1982, 2019, Oracle. All rights reserved.
```

```
Connected to:  
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production  
Version 19.3.0.0.0
```



# Creating Tablespace

```
SQL> select tablespace_name from dba_tablespaces;
```

```
TABLESPACE_NAME
```

```
-----
```

```
SYSTEM
```

```
SYSAUX
```

```
TEMP
```

```
USERS
```

```
APEX_1291597703607401
```

```
UNDOTBS2
```

```
6 rows selected.
```

```
SQL> CREATE TABLESPACE italianREST
2 DATAFILE 'italianR_data.dbf' SIZE 1M
3 AUTOEXTEND ON NEXT 1M;
```

Tablespace created.

```
SQL> select tablespace_name from dba_tablespaces;
```

```
TABLESPACE_NAME
```

```
-----
```

```
SYSTEM
```

```
SYSAUX
```

```
TEMP
```

```
USERS
```

```
APEX_1291597703607401
```

```
UNDOTBS2
```

```
ITALIANREST
```

```
7 rows selected.
```



# Creating Table in Tablespace

```
SQL> CREATE TABLE customer (  
2  customerFirstName VARCHAR(30),  
3  customerLastName VARCHAR(30),  
4  phoneNumber INT,  
5  emailAddress VARCHAR(30),  
6  customerID INT,  
7  PRIMARY KEY (customerID)  
8  ) TABLESPACE ITALIANREST;
```

Table created.

```
SQL> INSERT INTO customer VALUES ('Blake','Bates',2878999087,'bbates90@gmail.com',001);
```

1 row created.

# Creation of Users

- ★ DBA needs to create the multiple users for the access of databases. In this case Chefs & Waiters.
- ★ User shoumya is created with shoumya as password.
- ★ Session privilege is granted to the user shoumya to connect safely.

```
SELECT username, default_tablespace, profile, authentication_type
FROM dba_users
Where account_status = 'OPEN' and username = 'SHOUMYA'
```

Script Output x Query Result x

SQL | All Rows Fetched: 1 in 0.02 seconds

	USERNAME	DEFAULT_TABLESPACE	PROFILE	AUTHENTICATION_TYPE
1	SHOUMYA	USERS	DEFAULT	PASSWORD

```
--command to create the user

CREATE USER shoumya IDENTIFIED BY shoumya;
```

Script Output x

Task completed in 0.392 seconds

User SHOUMYA created.

```
--Grant session to user

GRANT CREATE SESSION TO shoumya;
```

Script Output x

Task completed in 0.239 seconds

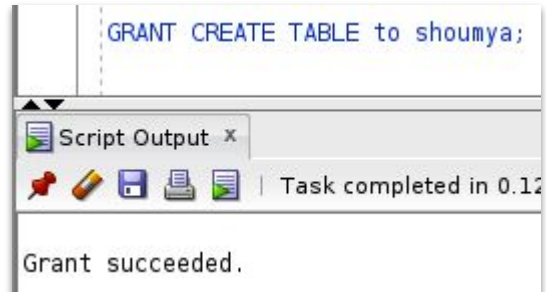
Grant succeeded.

# User Grant Privileges

```
SQL> create table test(id int PRIMARY KEY, name varchar(20)) ;  
create table test(id int PRIMARY KEY, name varchar(20))  
*  
ERROR at line 1:  
ORA-01031: insufficient privileges  
  
SQL> █
```

- ★ Error while creation of table without the access
- ★ As soon as the privilege is given the user can create the table.

```
SQL> create table test(id int PRIMARY KEY, name varchar(20));  
  
Table created.  
  
SQL> █
```



# User Revoke Privileges

- ★ REVOKE CREATE TABLE - User cannot create tables.
- ★ REVOKE CREATE SESSION - User cannot connect.

```
--Revoke from the creating table
REVOKE CREATE TABLE FROM shoumya;
```

Script Output x

Task completed in 0.107 seconds

Revoke succeeded.

PRIVILEGE

-----

CREATE SESSION

SQL> █

```
REVOKE CREATE SESSION FROM shoumya;
```

Script Output x

Task completed in 0.078 seconds

Revoke succeeded.

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Username? ('') shoumya

Password? (\*\*\*\*\*?) \*\*\*\*\*

ERROR:

ORA-01017: invalid username/password; logon denied

Username? (RETRYING) ('shoumya/\*\*\*\*\*') shoumya

Password? (RETRYING) (\*\*\*\*\*?) \*\*\*\*\*

ERROR:

ORA-01045: user SHOUMYA lacks CREATE SESSION privilege; logon denied

Username? (RETRYING) ('shoumya/\*\*\*\*\*') █

# Alter & Lock An User

```
--updating the password of the user
ALTER USER shoumya IDENTIFIED BY singh;
```

Script Output x

Task completed in 0.872 seconds

User SHOUMYA altered.

★ User Password is updated,so login denied.

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```
Username? ('') shoumya
Password? (*****?) *****
ERROR:
ORA-01017: invalid username/password; logon denied
Username? (RETRYING) ('shoumya/*****') shoumya
```

```
--Lock the user
ALTER USER shoumya ACCOUNT LOCK;
```

Script Output x

Task completed in 0.298 seconds

User SHOUMYA altered.

★ User is Locked.

```
Username? ('') shoumya
Password? (*****?) *****
ERROR:
ORA-28000: The account is locked.
Username? (RETRYING) ('shoumya/*****') 
```

# User Profile Creation

- ★ Following command will assign the resources to the user based on the predefined profiles.

```
CREATE PROFILE CRM_USERS LIMIT
  SESSIONS_PER_USER      UNLIMITED
  CPU_PER_SESSION        UNLIMITED
  CPU_PER_CALL            3000
  CONNECT_TIME            15;
```

Script Output x

Task completed in 0.264 seconds

Profile CRM\_USERS created.

```
CREATE USER singh IDENTIFIED BY singh12345
PROFILE CRM_USERS;
```

Script Output x

Task completed in 0.153 seconds

Profile CRM\_USERS created.

User SINGH created.

# Accessing & Dropping the Profile

```
SELECT
*
FROM
dba_profiles
WHERE
PROFILE = 'CRM_USERS'
ORDER BY
resource_type,
resource_name;
```

Script Output x Query Result x

SQL | All Rows Fetched: 17 in 0.061 seconds

	PROFILE	RESOURCE_NAME	RESOURCE_TYPE	LIMIT	COMMON	INHERITED	IMPLICIT
1	CRM_USERS	COMPOSITE_LIMIT	KERNEL	DEFAULT	NO	NO	NO
2	CRM_USERS	CONNECT_TIME	KERNEL	15	NO	NO	NO
3	CRM_USERS	CPU_PER_CALL	KERNEL	3000	NO	NO	NO
4	CRM_USERS	CPU_PER_SESSION	KERNEL	UNLIMITED	NO	NO	NO
5	CRM_USERS	IDLE_TIME	KERNEL	DEFAULT	NO	NO	NO
6	CRM_USERS	LOGICAL_READS_PER_CALL	KERNEL	DEFAULT	NO	NO	NO
7	CRM_USERS	LOGICAL_READS_PER_SESSION	KERNEL	DEFAULT	NO	NO	NO
8	CRM_USERS	PRIVATE_SGA	KERNEL	DEFAULT	NO	NO	NO

```
--dropping the user profile
DROP PROFILE CRM_USERS CASCADE;
```

Script Output x

Task completed in 0.677 seconds

Profile CRM\_USERS dropped.



# Redo Log

```
--Switching to log file
```

```
select * from v$log;
```

Query Result x

SQL | All Rows Fetched: 3 in 0.05 seconds

GROUP#	THREAD#	SEQUENCE#	BYTES	BLOCKSIZE	MEMBERS	ARCHIVED	STATUS	FIRST_CHANGE#	FIRST_TIME	NEXT_CHANGE#	NEXT_TIME	CON_ID
1	1	1	25 209715200	512	1 NO	INACTIVE		3231514	13-APR-22	3345333	16-APR-22	0
2	2	1	26 209715200	512	1 NO	CURRENT		3345333	16-APR-22	18446744073709551615 (null)		0
3	3	1	24 209715200	512	1 NO	INACTIVE		3130442	13-APR-22	3231514	13-APR-22	0

```
--To multiplex the redo logs, first, we must identify how many groups and members exist.
```

```
select group#, member from v$logfile order by group#, member;
```

Script Output x

Query Result x

SQL | All Rows Fetched: 3 in 0.268 seconds

GROUP#	MEMBER
1	1 /u01/app/oracle/oradata/ORCLCDB/redo01.log
2	2 /u01/app/oracle/oradata/ORCLCDB/redo02.log
3	3 /u01/app/oracle/oradata/ORCLCDB/redo03.log

# Memory Management

- ★ Memory is used based on the most uses
- ★ Single point of control
- ★ Overall system performance enhancement
- ★ Load distribution

```
SHOW PARAMETER MEMORY_TARGET;
```

Script Output x

Task completed in 0.133 seconds

NAME	TYPE	VALUE
memory_target	big integer	0

```
--show cache  
SHOW PARAMETER db_cache_size;
```

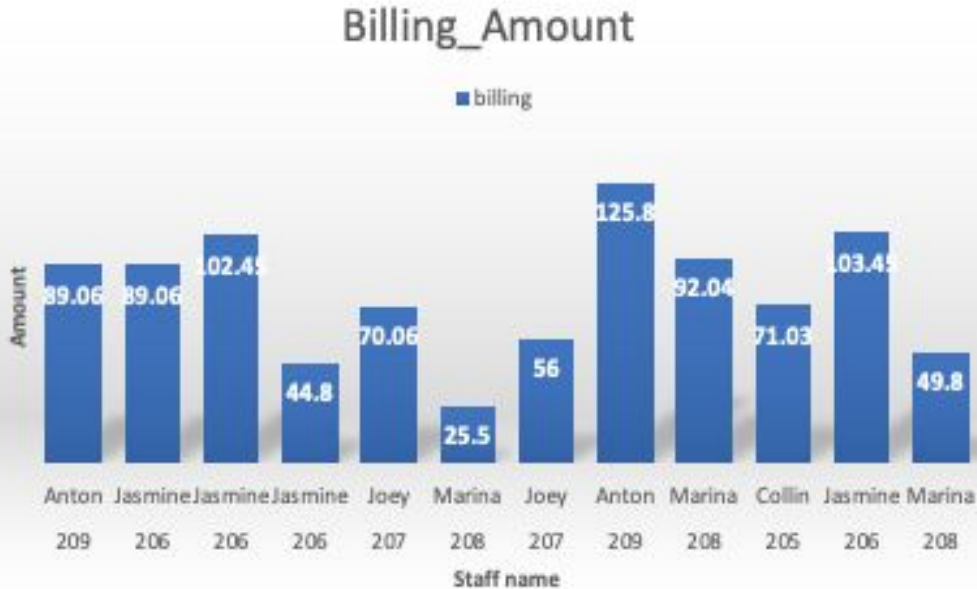
Script Output x

Task completed in 0.097 seconds

NAME	TYPE	VALUE
db_cache_size	big integer	0

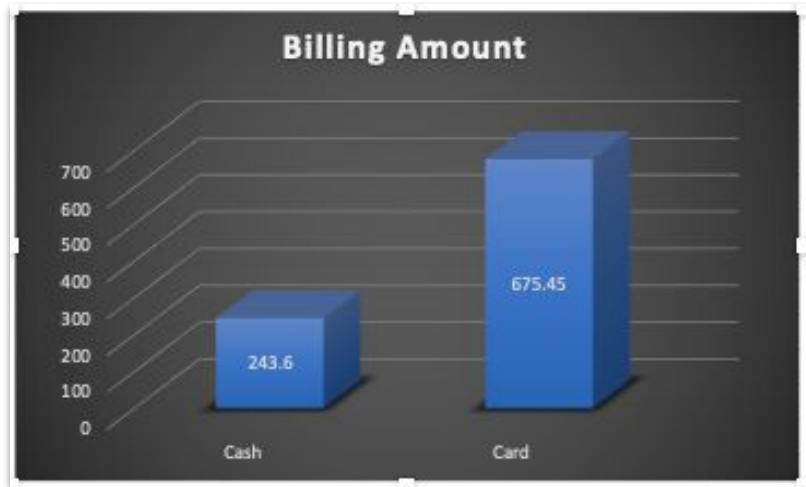
# Reports

```
select s.staffid,s.stafffirstname as name,  
transAmount as billing  
FROM billing b  
join  
orders o  
on b.orderid =o.orderid  
join staff s  
on s.staffid = o.staffid
```



**This query will return the total amount of billing based on each staff member.**

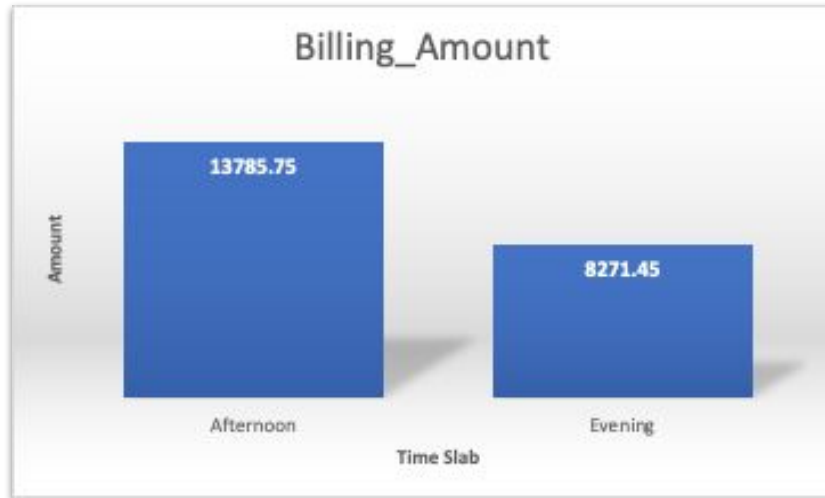
# Reports



```
select paymenttype, sum(transAmount) as  
billing  
FROM billing b  
join  
orders o  
on b.orderid =o.orderid  
join staff s  
on s.staffid = o.staffid  
group by paymenttype
```

**This query will return the total payment based on paymenttype.**

# Reports



```
select s.shifttimeid, sum(transAmount) as  
billing  
FROM billing b  
join  
orders o  
on b.orderid =o.orderid  
join staff s  
on s.staffid = o.staffid  
join shift s  
on s.staffid= s.staffid  
group by s.shifttimeid
```

**This query will return the payment based on the shifts**

# Conclusion

There are many benefits in using restaurant database management system ,as it reduces the stress management,better customer experience and better communication.





# Thankyou!

Any questions?