Department of Computer Science and Engineering

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NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL

B.Tech Project Report

Database Management Systems for Hotel Management

DATABASE THAT HANDLES ALL INCOMING INFORMATION IN THE HOTEL MANGEMENT SYSTEM

Under the guidance of

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1. ABSTRACT

In our project, on “Hotel Management System”, we have tried to show how the Data/information in hotels is managed. This is just an overview of management in hotels. This has been achieved by dividing the project into various modules. Customer is provided with different services like checking in, checking out, and editing entries or can be advance payments etc. If the customer wants he/she can cancel his/her booking. Enquiry about any customer or employee can be made either by customer Id or customer name. Enquiry about rooms available can also be made. Our project also includes the module for employee information. It will generate reports for customer, employees (working in the hotel) and Bill for customer is generated when the customer will check out from the hotel. We have included only few modules, as our purpose is to only have the idea or to study about how the management is done in hotels. By adding many more modules this type of project can have scope in various hotels.

After going thought the existing system, problem was identified and the scope of development was finalized.

2. INRODUCTION

Our project on “Hotel Management System” gives idea about the management in hotels. The package gives all the information regarding the check in or check out facilities of the customer. The customer can make his or her booking for rooms and food. It gives details of the customer and the time of arrival and departure of customer. The package also provides the facility of searching the customer or an employee working in that particular hotel by name / by the provided Id. It gives a detailed report of the customer and the room occupied by him/her. It gives the information about the employees working in hotels. This software is very useful to the departments for managing their activities.

Although, hotels are already having well-developed software for information management, we just want to study how this is done. So, we selected hotel management system as our project. We visited various hotels and gone through their software. In most of the hotels the back-end used only MS-ACCESS. We have included SQL as well in our project since it is pure relational database. In one of the hotels, we found that they have the problem that their software does not show the room vacant as soon as it being vacant. The status of room is updated only after 12 hours or 24 hours depending upon the time period they have taken. They were facing problem in providing rooms to customers. In our project we have tried to solve this problem and at any moment of time the status of room that whether it is vacant or occupied is shown correctly.

Developing software on a topic like “Hotel Management System” has much scope. It can be made more attractive and many more modules can be attached to provide various services to customers. Our project provides various services to the customers like booking (advance/current), cancellation of advance booking, enquiring about any customer (by name/customer Id) or about room availability. The project has Scope in hotels since the routine activities of managing departments become easy.

3. APPLICATION USED (tentative):

- MySQL

4.SYSTEM ANALYSIS:

CURRENT SYSTEM:

The existing system in various hotels includes either manual work or some software that does not fulfill all the requirements. The existing system has the problem that information about the room is not updated at the time when the room is being vacated. The information is updated after a particular time period (For e.g., after 12 hours or 24 hours).

RECOGNITION OF NEED

SOCIAL AND ECONOMIC FACTOR:

A wave of social & economic changes often follows in the wake of the new technology. New opportunities may arise to improve on a hotel management process or to do something that was not previously possible. Changes in the way individuals are organized into employee & guests may then be necessary, & they complete for economic resources with established units.

TECHNOLOGICAL FACTOR:

People have never before in a time when the scope of scientific inquiry was so broad, so when the speed of applying the new technology for many changes in the organization.

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HIGH LEVEL DECISION AND OPERATING PROCESS:

In response to technological, socio-economic factors, top level managers may decide to recognize operations & introduce new schemes.

EXISTING SYSTEM AND ITS DISADVANTAGES

In this phase we carry out the task of defining the problem or in other words we define our need for this project. The organization was using the conventional methods (Excel Sheet or Register) for keeping the information about Hotel Management System i.e., records of hotel management system activities. There is various type of activities performed in dayshift & nightshift. It was quite laborious task & involves large number of data records deployed for this purpose.

DISADVANTAGES

- The word manual itself makes the existing system outdated in today's high-tech world.
- Processing of application manually takes a lot of time.
- Coordinating various departments in this respect is not only time taking but is also a cumbersome process. • A lot of time is also wasted in summing up records & repairing day wise reports of activities happened on server.
- The system is not deprived of common manual mistakes.
- The staff is also deviated from its main stream work, by paying more time to manual processing of information. As a result, need of employingmore staff is being felt, which involves a lot of expenditure.
- The system is also prone to insecurities.

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•Sometime same activity happens multiple times due to lack of proper communication among (DBAs).

• This manual does not help Head of the hotel in taking decisions at various levels.

All above points define the disadvantages of conventional methods & suggest developing the new system.

ADVANTAGES OF PROPOSED SYSTEM:

•Huge reduction in the number of pages being used for the data storage.

• Back up facility provided in case of data loss.

• Reduction in cycle time till the updated data will be available.

•Speedy retrieval of data.

•Compatible with the advance versions for future perspective.

• Cost benefits.

5. SYSTEM DESIGN

ENTITY RELATIONSHIP TABLE

Entities, relationship between entities:

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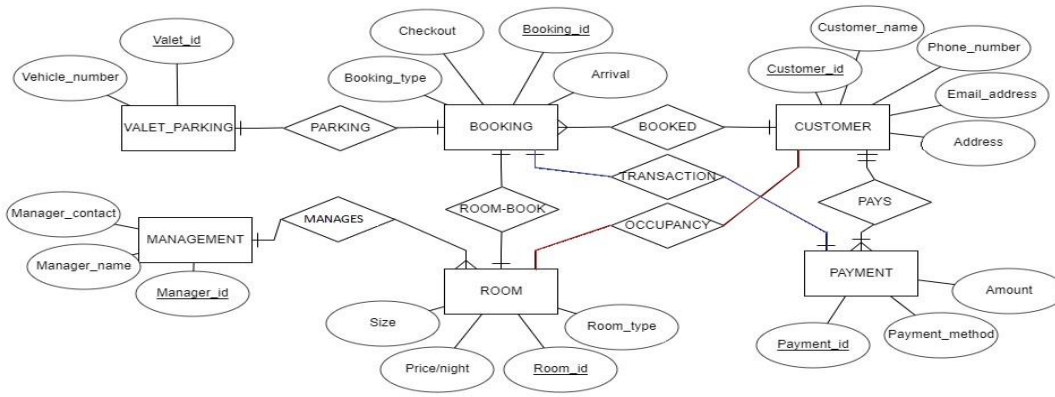
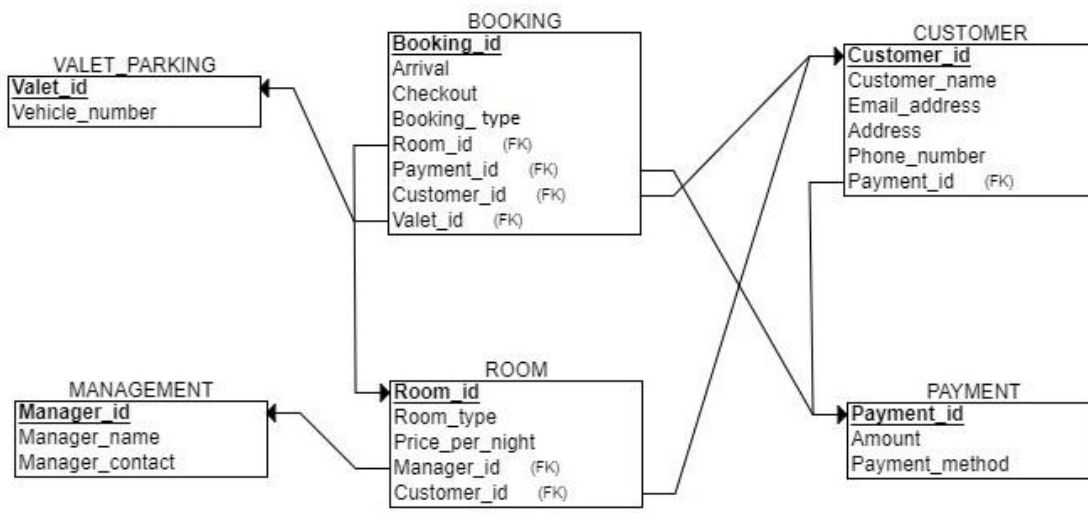
HOTEL MANAGEMENT DATABASE



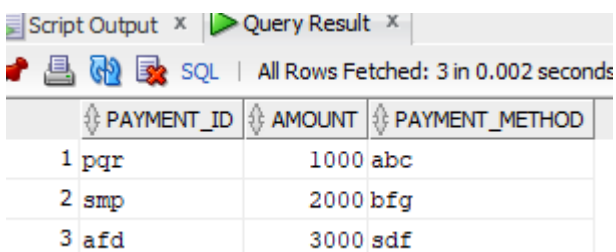
Information about all tables and attributes:

RELATIONAL SCHEMA



6.DATABASE DESIGN / TABLES

```
create table PAYMENT (
Payment_idchar(6) not null, Amount int not null,
Payment_methodvarchar(20) not null,
primary key(Payment_id)
);
insert into MPAYMENT
values('pqr',1000,'abc');
insert into MPAYMENT
values('smp',2000,'bfg');
insert into MPAYMENT
values('afd',3000,'sdf');
select *
from MPAYMENT;
```



	PAYMENT_ID	AMOUNT	PAYMENT_METHOD
1	pqr	1000	abc
2	smp	2000	bfg
3	afd	3000	sdf

```
create table CUSTOMER (
```

Customer_idchar(5) not null, Customer_name varchar(20) not null,

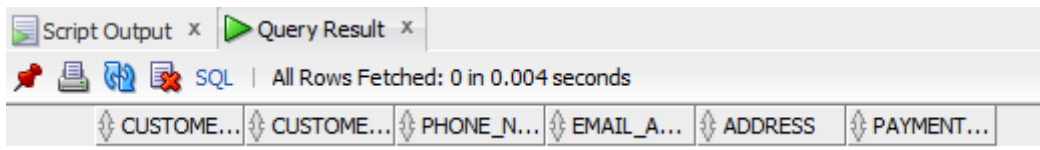
Phone_numberchar(10) not null,Email_address varchar(20),

Address varchar(20) not null, Payment_id char(6),

primary key(Customer_id),

foreign key(Payment_id) references PAYMENT(payment_id)

);

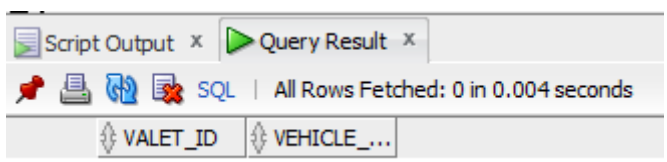


create table VALET_PARKING (

Valet_idchar(3) not null, Vehicle_number char(10) not null,

primary key(Valet_id)

);



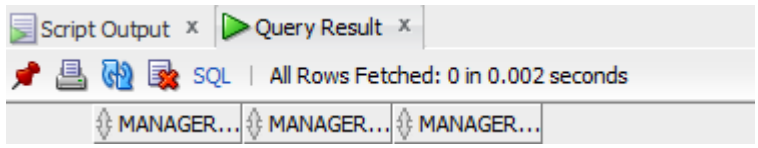
create table MANAGEMENT (

Manager_idchar(3) not null, Manager_name varchar(20) not null,

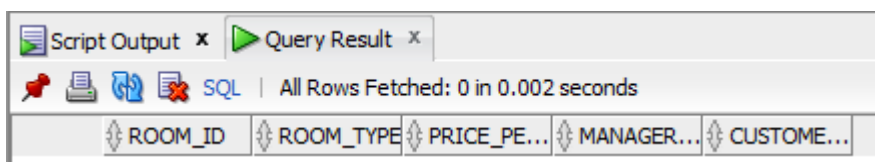
Manager_contactchar(8) not null,

primary key(Manager_id)

);




```
create table ROOM (
Room_idchar(4) not null, Room_type varchar(20) not null,
Price_per_nightint not null, Manager_idchar(3) not null,
Customer_idchar(4),
primary key(Room_id),
foreign key(Manager_id) references MANAGEMENT(Manager_id),
foreign key(Customer_id) references CUSTOMER(Customer_id)
);
```




```
create table BOOKING (
Booking_idchar(6) not null, Booking_type varchar(20) not null,
Arrival datetime not null, Checkout datetime not null,
Customer_idchar(5) not null, Room_id char(4) not null,
Payment_idchar(6) not null, Valet_id char(3),
primary key(Booking_id),
foreign key(Customer_id) references CUSTOMER(Customer_id),
```

foreign key(Room_id) references ROOM(Room_id),

foreign key(Payment_id) references PAYMENT(Payment_id),

foreign key(Valet_id) references VALET_PARKING(Valet_id)

);

7.System Implementation

HOTEL MANAGEMENT DATABASE

ENTITIES:

BOOKING

ATTRIBUTES:

Booking_id char(6)(Primary key), Booking_type varchar(20), Arrival datetime,

Checkout datetime;

Table is in BCNF.

CUSTOMER

Attributes:

Customer_idchar(5)(Primary key), Customer_name varchar(20), Phone_number char(10),

Email_addressvarchar(20), Address varchar(20);

Table is in BCNF.

ROOM

Attributes:

Room_idchar(4)(Primary key), Room_type varchar(10), Price/night int;

Table is in BCNF.

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PAYMENT

Attributes:

Payment_idchar(6)(Primary key), Amount int, Payment_method varchar(20);

Table is in BCNF.

MANAGEMENT

Attributes:

Manager_idchar(3)(Primary key), Manager_name varchar(20), Manager_contact char(8);

Table is in BCNF.

VALET PARKING

Attributes:

Valet_idchar(3)(Primary key), Vehicle_number char(10);

Table is in BCNF.

All tables and relations are in BCNF.

Relations:

ROOM-BOOK

From ROOM to BOOKING.

Type: one-one.

BOOKED

From BOOKING to CUSTOMER.

Type: many-one.

PAYS

From CUSTOMER to PAYMENT.

Type: one-many, mandatory.

TRANSACTION

From BOOKING to PAYMENT.

Type: one-one.

MANAGES

From MANAGEMENT to ROOM.

Type: one-many.

PARKING

Between VALET_PARKING and BOOKING.

Type: one-one.

DETAILS

IDs

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payment_id starts with "1" and has 6 digits

customer_id starts with "2" and has 5 digits

valet_id starts with "3" and has 3 digits

manager_id starts with "4" and has 3 digits

room_id starts with "5" and has 4 digits (2nd digit indicating the floor number)

booking_id starts with "6" and has 6 digits

ROOM TYPES PRICE/NIGHT

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rtype1:single non ac	1000/-
rtype2:double non ac	2000/-
rtype3:single ac	3000/-
rtype4:double ac	4000/-
rtype5:single suite	5000/-
rtype6:double suite	6000/-
rtype7:single villa	7000/-
rtype8:double villa	8000/-

BOOKING TYPE

btype1:website

btype2:app

btype3:on spot

PAYMENT TYPE

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ptype1:net banking

ptype2:credit/debit card

ptype3:paytm

ptype4:tez

ptype5:bhimupi

ptype6:cash
