**Data Base**

**Hotel Management System**

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# Data requirements

* The Hotel Management System Requires very detailed data especially with **Payment**, **Facilities**, **Advertisement offers** and **Services**.
* All Entities have an ID Primary key constraint.
* All the data in columns can not be null values.
  1. **Facilities**
* Reserved facility must be bigger than 0.
* Facility coast must be entered in Decimal (7,2) and higher than 0
  1. **Advertisements , Booking and Payment.**
* Advertisement price must be entered in Decimal (7,2) and higher than 0.
* Booking number must be higher than Zero and it’s price must be entered in Decimal (7,2) and higher than Zero.
* Reservation must have start and end date determined

# Logical Schema

This contains the ***Entity Relationship Diagram ( ERD)*** or the ***Internal mapping*** of the Hotel management system.

# Conceptual schema

This contains the ***Physical Schema*** or the ***Conceptual mapping*** of the Hotel management system.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| HOTEL\_ | | | | | | |
| ID | NAME | ADDRESS | COUNTRY | | PHONENO | DESCRIPTION |
|  |  |  |  | |  |  |
| FACILITY\_TYPE | | | | | | |
| ID | NAME | DESC | CAPACITY | | BASE\_COST | COST\_PERIOD |
|  |  |  |  | |  |  |
| FACILITY | | | |  | | |
| ID | NAME | DESC | STATUS | | HOTEL\_ID |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SERVICE\_CATEGORY | | | | |
| ID | NAME | DESC | TYPE |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SERVICES | | | |  | | |
| ID | NAME | HOT\_ID | CAT\_ID | | DESC | RESTRICTION | | NOTES | COMMENT | STATU | TIMES | CAPACITY |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ADVERTISMENT | | | | | | | | |
| ID | NAME | DESC | START\_DATE | END\_DATE | PRICE | INCLUSIONS | EXCLUSIONS | STATUS |

|  |  |
| --- | --- |
| ADV\_PACKAGE | |
| PACKAGE\_ID | ADVERTISEMENT\_ID |
|  | |
| ADV\_SERVICE | |
| SERVICE\_ID | ADVERTISEMENT\_ID1 |
|  |  |
| PACKAGE\_SERVICE | |
| ADVERTISEMENT\_ID1 | SERVICE\_ID |
|  |  |
| RELATION\_FACILITYTYPE\_SERVICE | |
| FACILITY\_TYPE | SERVICE\_ID1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CUSTOMER |  |  |  |  |  |
| ID | NAME | ADDRESS | PHONENO | COUNTRY | EMAIL\_ADDRESS |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| EMPLOYEE |  |  |  |  |
| ID | NAME | PHONENO | EMAIL\_ADDRESS | POSITION |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RESERVATION | | | | | | | | |
| ID | NAME | STATUS | TYPE | PLACEDATETIME | DISC\_PERCENT | DESC | CUST\_ID | EMP\_ID |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| BOOKING\_DETAILS | | | | | | |
| ID | START\_DATE | END\_DATE | QUANTITY | TOTAL\_PRICE | ADV\_ID2 | RESERV\_ID |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| FACILITY\_BOOKING | | | | | | |
| ID | NAME | START\_DATE | END\_DATE | DESC | FACILITY\_ID | BOOKING\_DETAILS\_ID |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PAYMENT | | | | |
| ID | TYPE | TOTAL\_PRICE | RESERVATION\_ID1 |

|  |  |
| --- | --- |
| RELATION\_CUSTOMER\_BOOKING |  |
| CUSTOMER\_ID1 | BOOKING\_DETAILS\_ID1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| OTHERCHARGES |  |  |  |  |
| ID | NAME | TYPE | PRICE | BOOKING\_DETAILS\_ID2 |

# Data definition language statements

CREATE TABLE HOTEL

(

HOTEL\_ID CHAR(10) CONSTRAINT PK\_HOTEL\_ID PRIMARY KEY,

HOTEL\_NAME CHAR(30) NOT NULL,

HOTEL\_ADDRESS VARCHAR(50) NOT NULL,

HOTEL\_COUNTRY CHAR(20) NOT NULL,

HOTEL\_PHONENO INT NOT NULL,

HOTEL\_DESCRIPTION VARCHAR(50) NOT NULL

);

CREATE TABLE FACILITY\_TYPE

(

FACILITY\_TYPE\_ID CHAR(10) CONSTRAINT PK\_FACILITY\_TYPE\_ID PRIMARY KEY,

FACILITY\_TYPE\_NAME VARCHAR(20) NOT NULL,

FACILITY\_TYPE\_DESC VARCHAR(50) NOT NULL,

CAPACITY INT CHECK (CAPACITY > 0) NOT NULL,

BASE\_COST DECIMAL(7,2) CHECK (BASE\_COST > 0) NOT NULL,

COST\_PERIOD DECIMAL(7,2) CHECK (COST\_PERIOD > 0) NOT NULL

);

CREATE TABLE FACILITY

(

FACILITY\_ID CHAR(10) CONSTRAINT PK\_FACILITY\_ID PRIMARY KEY,

FACILITY\_NAME CHAR(20) NOT NULL,

FACILITY\_DESC VARCHAR(50) NOT NULL,

FACILITY\_STATUS CHAR(20) NOT NULL,

HOTEL\_ID CHAR(10) NOT NULL,

CONSTRAINT FK\_HOTEL\_ID FOREIGN KEY (HOTEL\_ID) REFERENCES HOTEL(HOTEL\_ID)

);

CREATE TABLE SERVICE\_CATEGORY

(

SERVICE\_CATEGORY\_ID CHAR(10) CONSTRAINT PK\_SERVICE\_CATEGORY\_ID PRIMARY KEY,

SERVICE\_CATEGORY\_NAME CHAR(20) NOT NULL,

SERVICE\_CATEGORY\_DESC VARCHAR(50) NOT NULL,

SERVICE\_CATEGORY\_TYPE CHAR(20) NOT NULL

);

CREATE TABLE SERVICE

(

SERVICE\_ID CHAR(10) CONSTRAINT PK\_SERVICE\_ID PRIMARY KEY,

SERVICE\_NAME CHAR(20) NOT NULL,

SERVICE\_DESC VARCHAR(100) NOT NULL,

SERVICE\_RESTRICTIONS VARCHAR(100) NOT NULL,

SERVICE\_NOTES VARCHAR(100) NOT NULL,

SERVICE\_COMMENTS VARCHAR(100) NOT NULL,

SERVICE\_STATUS CHAR(20) NOT NULL,

AVAILABLE\_TIMES TIME NOT NULL,

SERVICE\_CAPACITY INT CHECK (SERVICE\_CAPACITY>0) NOT NULL,

SERVICE\_CATEGORY\_ID CHAR(10) NOT NULL,

HOTEL\_ID1 CHAR(10) NOT NULL,

CONSTRAINT FK\_SERVICE\_CATEGORY\_ID FOREIGN KEY (SERVICE\_CATEGORY\_ID) REFERENCES SERVICE\_CATEGORY(SERVICE\_CATEGORY\_ID),

CONSTRAINT FK\_HOTEL\_ID1 FOREIGN KEY (HOTEL\_ID1) REFERENCES HOTEL(HOTEL\_ID)

);

CREATE TABLE ADVERTISEMENT

(

ADVERTISEMENT\_ID INT CONSTRAINT PK\_ADVERTISEMENT\_ID PRIMARY KEY,

ADVERTISEMENT\_NAME CHAR(100) NOT NULL,

ADV\_DESC VARCHAR(100) NOT NULL,

START\_DATE DATETIME NOT NULL,

END\_DATE DATETIME NOT NULL,

PRICE DECIMAL(7,2) CHECK (PRICE>0) NOT NULL,

INCLUSIONS VARCHAR(100) NOT NULL,

EXCLUSIONS VARCHAR(100) NOT NULL,

STATUS CHAR(10) NOT NULL

);

CREATE TABLE ADV\_PACKAGE

(

ADV\_PACKAGE\_ID INT CONSTRAINT PK\_ADV\_PACKAGE\_ID PRIMARY KEY,

ADVERTISEMENT\_ID INT NOT NULL,

CONSTRAINT FK\_ADVERTISEMENT\_ID FOREIGN KEY (ADVERTISEMENT\_ID) REFERENCES ADVERTISEMENT(ADVERTISEMENT\_ID)

);

CREATE TABLE ADV\_SERVICE

(

ADV\_SERVICE\_ID INT CONSTRAINT PK\_ADV\_SERVICE\_ID PRIMARY KEY,

ADVERTISEMENT\_ID1 INT NOT NULL,

CONSTRAINT FK\_ADVERTISEMENT\_ID1 FOREIGN KEY (ADVERTISEMENT\_ID1) REFERENCES ADVERTISEMENT(ADVERTISEMENT\_ID)

);

CREATE TABLE PACKAGE\_SERVICE

(

ADVERTISEMENT\_ID1 INT CONSTRAINT PK\_ADVERTISEMENT\_ID1 PRIMARY KEY,

SERVICE\_ID CHAR(10) NOT NULL,

CONSTRAINT FK\_SERVICE\_ID FOREIGN KEY (SERVICE\_ID) REFERENCES SERVICE(SERVICE\_ID)

);

CREATE TABLE RELATION\_FACILITYTYPE\_SERVICE

(

FACILITY\_TYPE CHAR(10) CONSTRAINT PK\_FACILITY\_TYPE PRIMARY KEY,

SERVICE\_ID1 CHAR(10),

CONSTRAINT FK\_SERVICE\_ID1 FOREIGN KEY (SERVICE\_ID1) REFERENCES SERVICE(SERVICE\_ID)

);

CREATE TABLE CUSTOMER

(

CUSTOMER\_ID CHAR(10) CONSTRAINT PK\_CUSTOMER\_ID PRIMARY KEY,

CUSTOMER\_NAME CHAR(20) NOT NULL,

CUSTOMER\_ADDRESS VARCHAR(50) NOT NULL,

CUSTOMER\_PHONENO INT NOT NULL,

CUSTOMER\_COUNTRY CHAR(20) NOT NULL,

CUSTOMER\_EMAIL\_ADDRESS VARCHAR(50) NOT NULL

);

CREATE TABLE EMPLOYEE

(

EMPLOYEE\_ID CHAR(10) CONSTRAINT PK\_EMPLOYEE\_ID PRIMARY KEY,

EMPLOYEE\_NAME CHAR(20) NOT NULL,

EMPLOYEE\_PHONENO INT NOT NULL,

EMPLOYEE\_EMAIL\_ADDRESS VARCHAR(50) NOT NULL,

EMPLOYEE\_POSITION CHAR(20) NOT NULL

);

CREATE TABLE RESERVATION

(

RESERVATION\_ID CHAR(10) CONSTRAINT PK\_RESERVATION\_ID PRIMARY KEY,

R\_NAME CHAR(20) NOT NULL,

R\_STATUS CHAR(20) NOT NULL,

R\_TYPE CHAR(20) NOT NULL,

R\_PLACEDATETIME DATETIME NOT NULL,

R\_DISCOUNT\_PERCENTAGE INT NOT NULL,

R\_DESCRIPTION VARCHAR(50) NOT NULL,

CUSTOMER\_ID CHAR(10),

EMPLOYEE\_ID CHAR(10),

CONSTRAINT FK\_CUSTOMER\_ID FOREIGN KEY (CUSTOMER\_ID) REFERENCES CUSTOMER(CUSTOMER\_ID),

CONSTRAINT FK\_EMPLOYEE\_ID FOREIGN KEY (EMPLOYEE\_ID) REFERENCES EMPLOYEE(EMPLOYEE\_ID)

);

CREATE TABLE BOOKING\_DETAILS

(

BOOKING\_DETAILS\_ID CHAR(10) CONSTRAINT PK\_BOOKING\_DETAILS\_ID PRIMARY KEY,

BD\_START\_DATE DATETIME NOT NULL,

BD\_END\_DATE DATETIME NOT NULL,

BD\_QUANTITY INT CHECK (BD\_QUANTITY>0) NOT NULL,

BD\_TOTAL\_PRICE DECIMAL(7,2) CHECK (BD\_TOTAL\_PRICE>0) NOT NULL,

ADVERTISEMENT\_ID2 INT,

RESERVATION\_ID CHAR(10),

CONSTRAINT FK\_ADVERTISEMENT\_ID2 FOREIGN KEY (ADVERTISEMENT\_ID2) REFERENCES ADVERTISEMENT(ADVERTISEMENT\_ID),

CONSTRAINT FK\_RESERVATION\_ID FOREIGN KEY (RESERVATION\_ID) REFERENCES RESERVATION(RESERVATION\_ID)

);

CREATE TABLE FACILITY\_BOOKING

(

FACILITY\_BOOKING\_ID INT CONSTRAINT PK\_FACILITY\_BOOKING\_ID PRIMARY KEY,

FB\_NAME CHAR(10) NOT NULL,

FB\_START\_DATE DATETIME NOT NULL,

FB\_END\_DATE DATETIME NOT NULL,

FB\_DESC VARCHAR(100) NOT NULL,

FACILITY\_ID CHAR(10),

BOOKING\_DETAILS\_ID CHAR(10),

CONSTRAINT FK\_FACILITY\_ID FOREIGN KEY (FACILITY\_ID) REFERENCES FACILITY(FACILITY\_ID),

CONSTRAINT FK\_BOOKING\_DETAILS\_ID FOREIGN KEY (BOOKING\_DETAILS\_ID) REFERENCES BOOKING\_DETAILS(BOOKING\_DETAILS\_ID)

);

CREATE TABLE PAYMENT

(

PAYMENT\_ID INT CONSTRAINT PK\_PAYMENT\_ID PRIMARY KEY,

P\_TYPE CHAR(50) NOT NULL,

P\_TOTAL\_PRICE DECIMAL(7,2) NOT NULL,

RESERVATION\_ID1 CHAR(10),

CONSTRAINT FK\_RESERVATION\_ID1 FOREIGN KEY (RESERVATION\_ID1) REFERENCES RESERVATION(RESERVATION\_ID)

);

CREATE TABLE RELATION\_CUSTOMER\_BOOKING

(

CUSTOMER\_ID1 CHAR(10) CONSTRAINT PK\_CUSTOMER\_ID1 PRIMARY KEY,

BOOKING\_DETAILS\_ID1 CHAR(10) NOT NULL,

CUSTOMER\_ID2 CHAR(10),

CONSTRAINT FK\_CUSTOMER\_ID1 FOREIGN KEY (CUSTOMER\_ID2) REFERENCES CUSTOMER(CUSTOMER\_ID),

CONSTRAINT FK\_BOOKING\_DETAILS\_ID1 FOREIGN KEY (BOOKING\_DETAILS\_ID1) REFERENCES BOOKING\_DETAILS(BOOKING\_DETAILS\_ID)

);

CREATE TABLE OTHERCHARGES

(

OTHERCHARGES\_ID CHAR(10) CONSTRAINT PK\_OTHERCHARGES\_ID PRIMARY KEY,

OC\_NAME CHAR(50) NOT NULL,

OC\_TYPE CHAR(50) NOT NULL,

OC\_PRICE DECIMAL(7,2) NOT NULL,

BOOKING\_DETAILS\_ID2 CHAR(10) NOT NULL,

CONSTRAINT FK\_BOOKING\_DETAILS\_ID2 FOREIGN KEY (BOOKING\_DETAILS\_ID2) REFERENCES BOOKING\_DETAILS(BOOKING\_DETAILS\_ID)

);

# Integrity constraints