DATA BASE

HOTEL MANAGEMENT SYSTEM

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1. 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.

1.1. Facilities

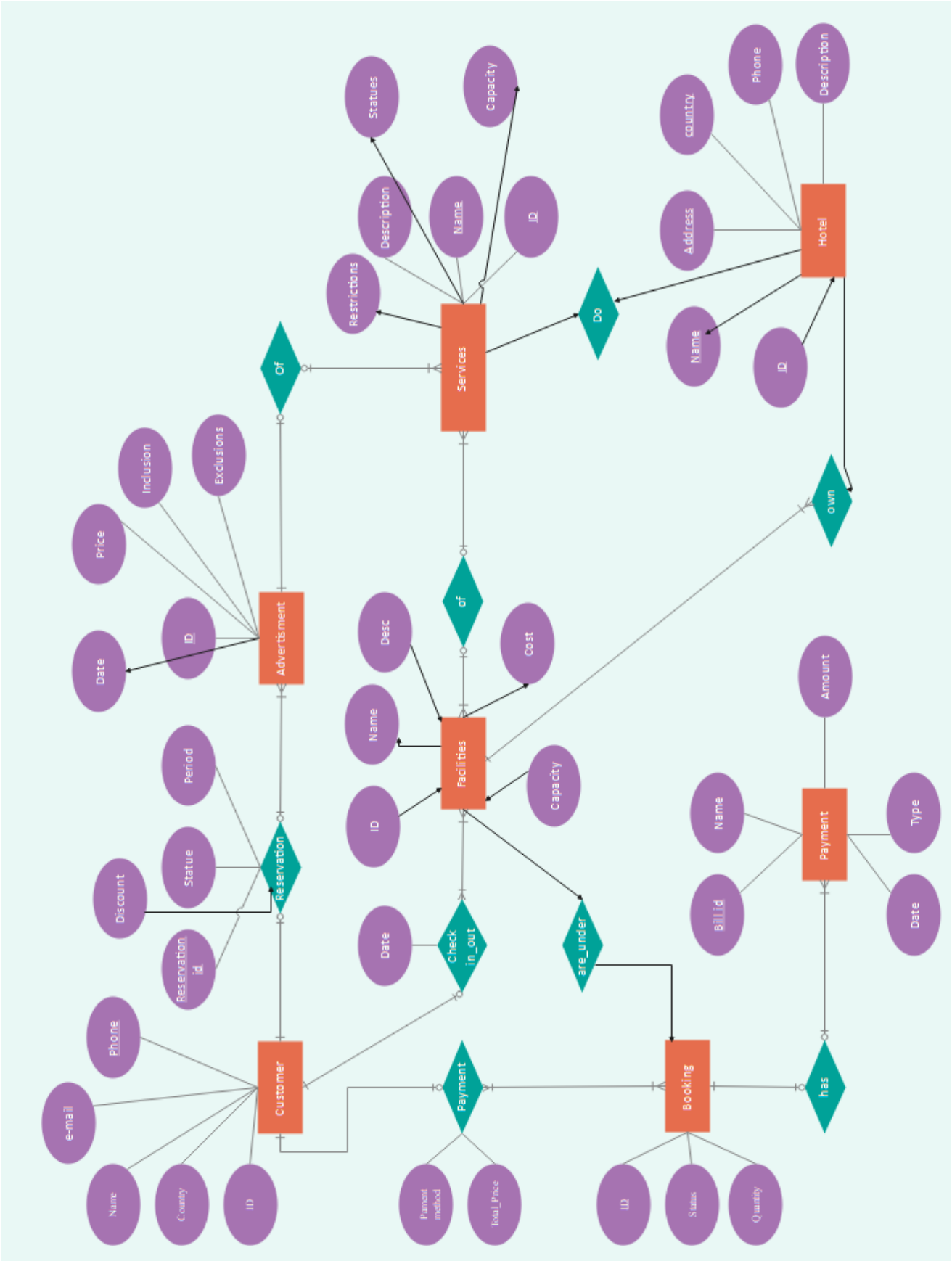
- Reserved facility must be bigger than 0.
- Facility cost must be entered in Decimal (7,2) and higher than 0

1.2. 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

2. LOGICAL SCHEMA

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


Hotel
Description
Phone
country
Address
Name
ID
Do
Services
Statues
Capacity
Description
Name
ID
Restrictions
Of
Inclusion
Exclusions
Price
ID
Date
Advertisment
own
of
Desc
Cost
Name
ID
Facilities
Capacity
Period
Statue
Discount
Reservation id
Reservation
Date
Check in_out
are_under
Amount
Name
Billid
Payment
Type
Date
Phone
e-mail
Name
Country
ID
Customer
Payment
Payment method
Total Price
Booking
ID
Status
Quantity
has

3. 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

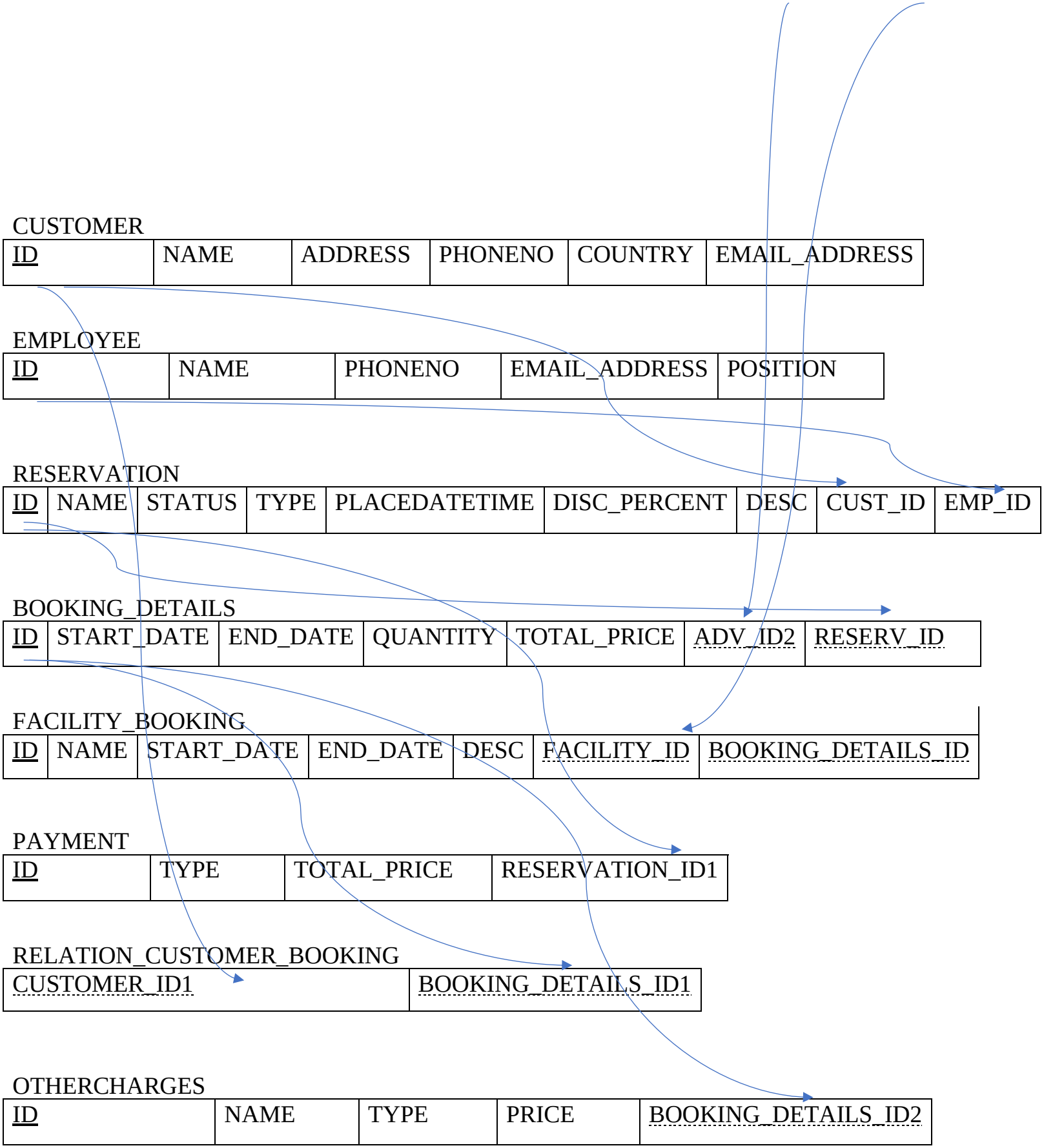
SERVICE_ID	ADVERTISEMENT_ID1

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

4. 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,
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```
    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,
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```
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)
);
```

5. INTEGRITY CONSTRAINTS

All Integrity Constraints of this system is clearly shown in the DDL above. They are all about the entities having Primary key and foreign key, each. Between having a nt null values. Some of the Entity attributes have specific ranges and values to be cheeked with like what I mentioned in the Data requirements at the start page of this Documentation.

6. . CONCLUSION

In this project I did my best to implement what I learned during the course. With some research self-learning I reached to this point. I can mention some of the resources that helped me a lot.

- ✓ Database Fundamentals Course from MaharaTech - ITI Online Platform.
- ✓ Data Analysis Advanced track _- FWD.