DBMS ASSIGNMENT 1

NAME: ARYAN KASHIKAR

ROLL NO.: D2 32

Aim : Introduction to Oracle 11g database and demonstrate Data Definition Language

[DDL] command for the creation of tables.

Purpose of database: To book hotel reservations for their client hotels.

Q1)Hotel (Hotel_No, Name, City)

● Hotel_No numeric with 03 digits and should be primary key

● Name Not Null upto 20 characters

● City Not Null upto 15 characters

SQL> create table Hotel(

    2   Hotel_no number(3),

    3   Name varchar2(20) NOT NULL,

    4   City varchar2(15) NOT NULL,

    5   CONSTRAINT H_NO_PK PRIMARY KEY(Hotel_no));

Table created.

```
SQL> create table Hotel(
  2   Hotel_no number(3),
  3   Name varchar2(20) NOT NULL,
  4   City varchar2(15) NOT NULL,
  5   CONSTRAINT H_NO_PK PRIMARY KEY(Hotel_no));

Table created.
```

SQL> DESC Hotel;

 Name   Null?   Type

 -- -------- --------------------------

 HOTEL_NO   NOT NULL NUMBER(3)

 NAME   NOT NULL VARCHAR2(20)

 CITY   NOT NULL VARCHAR2(15)

```
SQL> DESC Hotel;
 Name                                          Null?    Type
 ---------------------------------------- -------- --------------------------
 ----
 HOTEL_NO                                      NOT NULL NUMBER(3)
 NAME                                          NOT NULL VARCHAR2(20)
 CITY                                          NOT NULL VARCHAR2(15)
```

SQL> INSERT INTO Hotel (Hotel_No, Name, City) VALUES (111, 'Empire Hotel', 'Delhi');

1 row created.

SQL> INSERT INTO Hotel (Hotel_No, Name, City) VALUES (235, 'Park Place', 'Delhi');

1 row created.

SQL> INSERT INTO Hotel (Hotel_No, Name, City) VALUES (432, 'Brownstone Hotel', 'Mumbai');

1 row created.

SQL> INSERT INTO Hotel (Hotel_No, Name, City) VALUES (498, 'James Plaza', 'Mumbai');

1 row created.

SQL> INSERT INTO Hotel (Hotel_No, Name, City) VALUES (193, 'Devon Hotel', 'Pune');

1 row created.

SQL> INSERT INTO Hotel (Hotel_No, Name, City) VALUES (437, 'Clairmont Hotel', 'Pune');

1 row created.

SQL> SELECT * FROM Hotel;

```
  HOTEL_NO NAME                     CITY

---------- -------------------- --------------
       111 Empire Hotel          Delhi

       235 Park Place            Delhi

       432 Brownstone Hotel       Mumbai

       498 James Plaza            Mumbai

       193 Devon Hotel            Pune

       437 Clairmont Hotel       Pune
```

6 rows selected.

```
SQL> SELECT * FROM Hotel;

  HOTEL_NO NAME                       CITY
---------- -------------------- ----------------
       111 Empire Hotel               Delhi
       235 Park Place                 Delhi
       432 Brownstone Hotel           Mumbai
       498 James Plaza                Mumbai
       193 Devon Hotel                Pune
       437 Clairmont Hotel            Pune

6 rows selected.
```

Constraint violations:

SQL>   insert into Hotel values(111,'Radisson','Nagpur');

 insert into Hotel values(111,'Radisson','Nagpur')

*

ERROR at line 1:

ORA-00001: unique constraint (ARYAN.H_NO_PK) violated

SQL>   insert into Hotel values(999,'','');

 insert into Hotel values(999,'','')

                                        *

ERROR at line 1:

ORA-01400: cannot insert NULL into ("ARYAN"."HOTEL"."NAME")

```
SQL>  insert into Hotel values(111,'Radisson','Nagpur');
 insert into Hotel values(111,'Radisson','Nagpur')
*
ERROR at line 1:
ORA-00001: unique constraint (ARYAN.H_NO_PK) violated


SQL>  insert into Hotel values(999,'','');
 insert into Hotel values(999,'','')
                                    *
ERROR at line 1:
ORA-01400: cannot insert NULL into ("ARYAN"."HOTEL"."NAME")
```

Q2)Room (Room_No, @Hotel_No, Type, Price)

● Hotel_No and Room_No combined refer to the primary key of the Room table.

● Hotel_No is a foreign key which refers to the primary key of the Hotel table.

● Type of room is a one-character code that refers to AC (A) or Non-AC (N) [Apply

● check constraint]

● Price refers to the price of the room per night, numeric with precision 7 and scale 2,not

null,

SQL> CREATE TABLE Room(

   2   Room_no number(3),

   3   Hotel_no number(3),

   4   Type varchar2(1),

   5   Price number(7,2) NOT NULL,

   6   CONSTRAINT R_H_NO_PK PRIMARY KEY(Hotel_no,Room_no),

   7   CONSTRAINT H_NO_FK FOREIGN KEY(Hotel_no) REFERENCES Hotel(Hotel_no),

   8   CONSTRAINT TYPE_CHK CHECK(Type in('A','N')));

Table created.

SQL> DESC Room;

Name	Null?	Type
ROOM_NO	NOT NULL	NUMBER(3)
HOTEL_NO	NOT NULL	NUMBER(3)
TYPE		VARCHAR2(1)
PRICE	NOT NULL	NUMBER(7,2)

```
SQL> CREATE TABLE Room(
  2    Room_no number(3),
  3    Hotel_no number(3),
  4    Type varchar2(1),
  5    Price number(7,2) NOT NULL,
  6    CONSTRAINT R_H_NO_PK PRIMARY KEY(Hotel_no,Room_no),
  7    CONSTRAINT H_NO_FK FOREIGN KEY(Hotel_no) REFERENCES Hotel(Hotel_no),
  8    CONSTRAINT TYPE_CHK CHECK(Type in('A','N')));

Table created.

SQL> DESC Room;
 Name                                      Null?    Type
 ----------------------------------------- -------- -------------------------
 ----
 ROOM_NO                                   NOT NULL NUMBER(3)
 HOTEL_NO                                  NOT NULL NUMBER(3)
 TYPE                                               VARCHAR2(1)
 PRICE                                     NOT NULL NUMBER(7,2)
```


SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (313, 111, 'A', 1450.00);

1 row created.

SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (412, 111, 'N', 1450.00);

1 row created.

SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (267, 235, 'N', 1750.00);

1 row created.

SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (289, 235, 'N', 1950.00);

1 row created.

SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (876, 432, 'A', 1240.00);

1 row created.

SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 432, 'A', 1240.00);

1 row created.

SQL> SELECT * FROM Room;

```
   ROOM_NO    HOTEL_NO T        PRICE
---------- ---------- - ----------
       313        111 A        1450
```

412	111 N	1450
267	235 N	1750
289	235 N	1950
876	432 A	1240
898	432 A	1240

6 rows selected.

```
SQL> SELECT * FROM Room;

   ROOM_NO   HOTEL_NO T       PRICE
---------- ---------- - ----------
       313        111 A       1450
       412        111 N       1450
       267        235 N       1750
       289        235 N       1950
       876        432 A       1240
       898        432 A       1240

6 rows selected.
```

Constraint violations:

SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 235, 'A', 1240.00);

1 row created.

SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 238, 'A', 1240.00);

INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 238, 'A', 1240.00)

*

ERROR at line 1:

ORA-02291: integrity constraint (ARYAN.H_NO_FK) violated - parent key not found

SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 238, 'AC', 1240.00);

INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 238, 'AC', 1240.00)

                                                                            *

ERROR at line 1:

ORA-12899: value too large for column "ARYAN"."ROOM"."TYPE" (actual: 2,

maximum: 1)

```
SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 235, 'A', 1240.00);

1 row created.

SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 238, 'A', 1240.00);
INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 238, 'A', 1240.00)
*
ERROR at line 1:
ORA-02291: integrity constraint (ARYAN.H_NO_FK) violated - parent key not found


SQL> INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 238, 'AC', 1240.00);
INSERT INTO Room (Room_No, Hotel_No, Type, Price) VALUES (898, 238, 'AC', 1240.00)
                                                                             *
ERROR at line 1:
ORA-12899: value too large for column "ARYAN"."ROOM"."TYPE" (actual: 2,
maximum: 1)
```

Q3)Guest (Guest_No, Name, DOB, Gender, Phone_No, Adhar_No)

● Guest_No- Primary Key, 5 characters

● Name up to 15 characters Not Null

● DOB should be date data type and check for current age should be greater than 18

● and above. If less than 18 do not allow to enter

● Gender - 1 char: Check constraint M or F letter and should be Not Null

● Phone_No- Numeric 10 digits must be Unique

● Adhar_No must be unique

SQL> CREATE TABLE Guest(

   2   Guest_no varchar2(5),

   3   Name varchar2(15) NOT NULL,

   4   DOB date,

   5   dummy date default sysdate,

   6   Gender varchar2(1) NOT NULL,

   7   Phone_no number(10),

   8   Adhar_no number(16),

   9   CONSTRAINT G_NO_PK PRIMARY KEY(Guest_no),

  10   CONSTRAINT CHK_AGE CHECK(((dummy-DOB)-365)>=18),

  11   CONSTRAINT CHK_GEN CHECK(Gender in ('M','F')),

  12   CONSTRAINT UNI_PH UNIQUE(Phone_no),

  13   CONSTRAINT UNI_ADH UNIQUE(Adhar_no));

Table created.

SQL> DESC Guest;

Name	Null?	Type
GUEST_NO	NOT NULL	VARCHAR2(5)
NAME	NOT NULL	VARCHAR2(15)

DOB	DATE
DUMMY	DATE
GENDER	NOT NULL VARCHAR2(1)
PHONE_NO	NUMBER(10)
ADHAR_NO	NUMBER(16)

```
SQL> CREATE TABLE Guest(
  2   Guest_no varchar2(5),
  3   Name varchar2(15) NOT NULL,
  4   DOB date,
  5   dummy date default sysdate,
  6   Gender varchar2(1) NOT NULL,
  7   Phone_no number(10),
  8   Adhar_no number(16),
  9   CONSTRAINT G_NO_PK PRIMARY KEY(Guest_no),
 10   CONSTRAINT CHK_AGE CHECK(((dummy-DOB)-365)>=18),
 11   CONSTRAINT CHK_GEN CHECK(Gender in ('M','F')),
 12   CONSTRAINT UNI_PH UNIQUE(Phone_no),
 13   CONSTRAINT UNI_ADH UNIQUE(Adhar_no));

Table created.

SQL> DESC Guest;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------------------
 ----
 GUEST_NO                                  NOT NULL VARCHAR2(5)
 NAME                                      NOT NULL VARCHAR2(15)
 DOB                                                DATE
 DUMMY                                              DATE
 GENDER                                    NOT NULL VARCHAR2(1)
 PHONE_NO                                           NUMBER(10)
 ADHAR_NO                                           NUMBER(16)
```

SQL> insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

   2   values('G1000','Anand','10-Apr-2003','M',1000000001,1000000000000001);

1 row created.

SQL>

```
SQL> insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

  2   values('G1001','Om','11-Apr-2003','M',1000000002,1000000000000002);


1 row created.


SQL>

SQL> insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

  2   values('G1002','Naina','3-Apr-2003','F',1000000003,1000000000000003);


1 row created.


SQL>

SQL> insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

  2   values('G1003','Manisha','30-Mar-2003','F',1000000004,1000000000000004);


1 row created.


SQL>

SQL> insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

  2   values('G1004','Sam','31-Mar-2003','M',1000000005,1000000000000005);


1 row created.


SQL> SELECT * FROM Guest;
```

```
GUEST NAME              DOB         DUMMY       G    PHONE_NO    ADHAR_NO
----- --------------- --------- --------- - ---------- ----------
G1000 Anand            10-APR-03 08-MAY-23 M 1000000001 1.0000E+15

G1001 Om               11-APR-03 08-MAY-23 M 1000000002 1.0000E+15

G1002 Naina            03-APR-03 08-MAY-23 F 1000000003 1.0000E+15

G1003 Manisha          30-MAR-03 08-MAY-23 F 1000000004 1.0000E+15

G1004 Sam              31-MAR-03 08-MAY-23 M 1000000005 1.0000E+15
```

```
SQL> SELECT * FROM Guest;

GUEST NAME              DOB         DUMMY      G    PHONE_NO    ADHAR_NO
----- --------------- --------- --------- - ---------- ----------
G1000 Anand            10-APR-03 08-MAY-23 M 1000000001 1.0000E+15
G1001 Om               11-APR-03 08-MAY-23 M 1000000002 1.0000E+15
G1002 Naina            03-APR-03 08-MAY-23 F 1000000003 1.0000E+15
G1003 Manisha          30-MAR-03 08-MAY-23 F 1000000004 1.0000E+15
G1004 Sam              31-MAR-03 08-MAY-23 M 1000000005 1.0000E+15
```

Constraint violations:

SQL>   insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

  2   values('G1010','Isha','27-May-2022','F',1000000011,1000000000000011);

 insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

*

ERROR at line 1:

ORA-02290: check constraint (ARYAN.CHK_AGE) violated

SQL>   insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

  2   values('G1009','Isha','27-May-2003','F',1000000010,1000000000000010);

1 row created.

SQL>   insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

    2   values('G1009','Disha','27-May-2003','F',1000000010,1000000000000010);

  insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)

*

ERROR at line 1:

ORA-00001: unique constraint (ARYAN.G_NO_PK) violated

```
SQL>  insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)
  2  values('G1010','Isha','27-May-2022','F',1000000011,1000000000000011);
 insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)
*
ERROR at line 1:
ORA-02290: check constraint (ARYAN.CHK_AGE) violated


SQL>  insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)
  2  values('G1009','Isha','27-May-2003','F',1000000010,1000000000000010);

1 row created.

SQL>  insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)
  2  values('G1009','Disha','27-May-2003','F',1000000010,1000000000000010);
 insert into Guest(Guest_no,Name,DOB,Gender,Phone_no,Adhar_no)
*
ERROR at line 1:
ORA-00001: unique constraint (ARYAN.G_NO_PK) violated
```


Q4)Booking (@Hotel_No, @Guest_No, Date_From, Date_To, @Room_No)

● Hotel_No refers to the primary key of the Hotel table

● Guest_No refers to the primary key of the Guest table

● Room_No refers to primary key of the Room table

● Date_From and Date_To should be date datatype and not null

● Date_From should be earlier than Date_To

SQL> CREATE TABLE Booking(

```
  2    Hotel_no number(3),

  3    Guest_no varchar2(5),

  4    Room_no number(3),

  5    Date_from date NOT NULL,

  6    Date_to date NOT NULL,

  7    CONSTRAINT H_NO_FK_B FOREIGN KEY(Hotel_no) REFERENCES Hotel(Hotel_no),

  8    CONSTRAINT G_NO_FK_B FOREIGN KEY(Guest_no) REFERENCES Guest(Guest_no),

  9    CONSTRAINT R_NO_FK_B FOREIGN KEY(Hotel_no,Room_no) REFERENCES

 10    Room(Hotel_no,Room_no));
```

Table created.

```
SQL> DESC Booking;

 Name                                     Null?     Type

 --------------------------------------- -------- ---------------------------

 HOTEL_NO                                           NUMBER(3)

 GUEST_NO                                           VARCHAR2(5)

 ROOM_NO                                            NUMBER(3)

 DATE_FROM                                 NOT NULL DATE

 DATE_TO                                   NOT NULL DATE
```

```
SQL> CREATE TABLE Booking(
  2   Hotel_no number(3),
  3   Guest_no varchar2(5),
  4   Room_no number(3),
  5   Date_from date NOT NULL,
  6   Date_to date NOT NULL,
  7   CONSTRAINT H_NO_FK_B FOREIGN KEY(Hotel_no) REFERENCES Hotel(Hotel_no),

  8    CONSTRAINT G_NO_FK_B FOREIGN KEY(Guest_no) REFERENCES Guest(Guest_no),

  9    CONSTRAINT R_NO_FK_B FOREIGN KEY(Hotel_no,Room_no) REFERENCES
 10   Room(Hotel_no,Room_no));

Table created.

SQL> DESC Booking;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------------------
 ----
 HOTEL_NO                                           NUMBER(3)
 GUEST_NO                                           VARCHAR2(5)
 ROOM_NO                                            NUMBER(3)
 DATE_FROM                                 NOT NULL DATE
 DATE_TO                                   NOT NULL DATE
```

SQL> insert into Booking values(111,'G1000',313,'23-Mar-2023','24-Mar-2023');

1 row created.

SQL>   insert into Booking values(235,'G1001',267,'24-Mar-2023','25-Mar-2023');

1 row created.

SQL>   insert into Booking values(432,'G1002',876,'25-Mar-2023','26-Mar-2023');

1 row created.

SQL> SELECT * FROM Booking;

HOTEL_NO GUEST   ROOM_NO DATE_FROM DATE_TO

---------- ----- ---------- --------- ---------

        111 G1000   313 23-MAR-23 24-MAR-23

        235 G1001   267 24-MAR-23 25-MAR-23

        432 G1002   876 25-MAR-23 26-MAR-23

SQL>   insert into Booking values(432,'G1002',876,'25-Mar-2023','26-Mar-2023');

1 row created.

```
SQL> SELECT * FROM Booking;

  HOTEL_NO GUEST     ROOM_NO DATE_FROM DATE_TO
---------- ----- ---------- --------- ---------
       111 G1000        313 23-MAR-23 24-MAR-23
       235 G1001        267 24-MAR-23 25-MAR-23
       432 G1002        876 25-MAR-23 26-MAR-23
```


Constraint violations:

SQL>

SQL>   insert into Booking values(431,'G1002',877,'25-Mar-2023','26-Mar-2023');

  insert into Booking values(431,'G1002',877,'25-Mar-2023','26-Mar-2023')

*

ERROR at line 1:

ORA-02291: integrity constraint (ARYAN.R_NO_FK_B) violated - parent key not

found

SQL>   insert into Booking values(235,'G1001',412,'24-Mar-2023','25-Mar-2023');

  insert into Booking values(235,'G1001',412,'24-Mar-2023','25-Mar-2023')

*

ERROR at line 1:

ORA-02291: integrity constraint (ARYAN.R_NO_FK_B) violated - parent key not

found

SQL>   insert into Booking values(431,'G1099',877,'25-Mar-2023','26-Mar-2023');

  insert into Booking values(431,'G1099',877,'25-Mar-2023','26-Mar-2023')

*

ERROR at line 1:

ORA-02291: integrity constraint (ARYAN.R_NO_FK_B) violated - parent key not

found

SQL> insert into Booking values(432,'G1099',876,'25-Mar-2023','26-Mar-2023');

insert into Booking values(432,'G1099',876,'25-Mar-2023','26-Mar-2023')

*

ERROR at line 1:

ORA-02291: integrity constraint (ARYAN.G_NO_FK_B) violated - parent key not

found

```
SQL>
SQL>  insert into Booking values(431,'G1002',877,'25-Mar-2023','26-Mar-2023'
);
 insert into Booking values(431,'G1002',877,'25-Mar-2023','26-Mar-2023')
*
ERROR at line 1:
ORA-02291: integrity constraint (ARYAN.R_NO_FK_B) violated - parent key not
found


SQL>  insert into Booking values(431,'G1099',877,'25-Mar-2023','26-Mar-2023'
);
 insert into Booking values(431,'G1099',877,'25-Mar-2023','26-Mar-2023')
*
ERROR at line 1:
ORA-02291: integrity constraint (ARYAN.R_NO_FK_B) violated - parent key not
found


SQL> insert into Booking values(432,'G1099',876,'25-Mar-2023','26-Mar-2023')
;
insert into Booking values(432,'G1099',876,'25-Mar-2023','26-Mar-2023')
*
ERROR at line 1:
ORA-02291: integrity constraint (ARYAN.G_NO_FK_B) violated - parent key not
found
```