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Batch D1
19BCE245
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Practical 6

Do as Directed.

1) Create the constraints as specified for all the tables.

A) *Create table client*

```
SQL> ed
Wrote file afiedt.buf

  1  CREATE TABLE client1(
  2  clientno varchar2(6) PRIMARY KEY,
  3  name varchar2(20) NOT NULL,
  4  city VARCHAR2(15),
  5  pincode number(6),
  6  state varchar2(15),
  7  baldue number(10,5),
  8  CHECK(clientno LIKE 'C%')
  9* )
SQL> /

Table created.

SQL> spool off;
```

B) *Create table product*

```
SQL> ed
Wrote file afiedt.buf

  1  CREATE TABLE product1 (
  2  productno varchar2(6) PRIMARY KEY,
  3  description varchar2(15) NOT NULL,
  4  profitpercent number(4,2) NOT NULL,
  5  unitmeasure varchar2(10) NOT NULL,
  6  qtyonhand number(8) NOT NULL,
  7  reorderlvl number(8) NOT NULL,
  8  sellprice number(8,2) NOT NULL,
  9  costprice number(8,2) NOT NULL,
 10  CHECK (sellprice <>0),
 11  CHECK (costprice <>0),
 12  CHECK(productno LIKE 'P%')
```

```
 13* )
SQL> /

Table created.

SQL> spool off;
```

C) ***Create table salesman***

```
SQL> ed
Wrote file afiedt.buf

  1  CREATE TABLE salesman1(
  2  salesmanno varchar2(6) CHECK (salesmanno LIKE 'S%') PRIMARY KEY,
  3  salesmanname varchar2(20) NOT NULL,
  4  address1 varchar2(30) NOT NULL,
  5  address2 varchar2(30),
  6  city varchar2(20),
  7  pincode number(8),
  8  state varchar2(20),
  9  salamt number(8,2) NOT NULL CHECK (salamt<>0),
 10  tgttoget number(6,2) NOT NULL CHECK (tgttoget<>0),
 11  ytdsales number(6,2) NOT NULL,
 12  remarks varchar2(60)
 13* )
SQL> /

Table created.

SQL> spool off;
```

D) ***Create table sales_order***

```
SQL> ed
Wrote file afiedt.buf

  1  CREATE TABLE sales_order1(
  2  orderno varchar2(6) CHECK (orderno LIKE 'O%'),
  3  clientno varchar2(6),
  4  orderdate date NOT NULL,
  5  salesmanno varchar2(6),
  6  delaytype char(1) CHECK (delaytype='F' OR delaytype='P'),
  7  billyn char(1),
  8  delaydate date,
  9  orderstatus varchar2(10) CHECK (orderstatus IN('In
Process','Fulfilled','BackOrder','Cancelled'))

 10* )
SQL> /

Table created.

SQL> ed
```

```
Wrote file afiedt.buf

  1  ALTER TABLE
  2  sales_order1
  3* ADD CONSTRAINT PK_sales_order1 PRIMARY KEY(orderno)
SQL> /

Table altered.

SQL> ed
Wrote file afiedt.buf

  1  ALTER TABLE sales_order1
  2  ADD CONSTRAINT FK_sales_order1
  3* FOREIGN KEY (clientno) REFERENCES client1(clientno)
SQL> /

Table altered.

SQL> ed
Wrote file afiedt.buf

  1  ALTER TABLE sales_order1
  2  ADD CONSTRAINT FK_sales_order11
  3* FOREIGN KEY(salesmanno) REFERENCES salesman1(salesmanno)
SQL> /

Table altered.

SQL> ed
Wrote file afiedt.buf

  1  ALTER TABLE sales_order1
  2  ADD CONSTRAINT CHK_delaydate
  3* CHECK(delaydate>=orderdate)
SQL> /

Table altered.

SQL> spool off;
```

E) ***Create table order_details***

```
SQL> ed
Wrote file afiedt.buf

  1  CREATE TABLE sales_order_details1(
  2  orderno varchar2(6),
  3  productno varchar2(6),
  4  qtyordered number(8),
  5  productrate number(10,2)
  6* )
SQL> /
```

```
Table created.

SQL>
SQL> ed
Wrote file afiedt.buf

  1  ALTER TABLE sales_order_details1
  2  ADD CONSTRAINT FK_sales_order_details1
  3* FOREIGN KEY (orderno) REFERENCES sales_order1(orderno)
SQL> /

Table altered.

SQL> ed
Wrote file afiedt.buf

  1  ALTER TABLE sales_order_details1
  2  ADD CONSTRAINT FK_sales_order_details11
  3* FOREIGN KEY (productno) REFERENCES product1(productno)
SQL> /

Table altered.

SQL> spool off;
```

2) **Alter table salesman, add constraint Not Null on remarks column and observe the behavior. Mention your remarks.**

```
SQL> ed
Wrote file afiedt.buf

  1  ALTER TABLE salesman1
  2* MODIFY remarks varchar2(60) NOT NULL
SQL> /

Table altered.

SQL> spool off;
```

• **Remarks** : *We cannot leave remarks column empty when we are inserting details, as we have defined "NOT NULL" constraint in that specific column in salesman1 table.*

3) **Insert data in all the tables as per Practical – 2 and check if any constraint is getting violated.**

```
SQL> insert into client1 values('C01', 'Ivan Bayross', 'Mumbai', 400054, 'Maharashtra',
15000);

1 row created.

SQL> ed
Wrote file afiedt.buf

1 insert all

2 into client1 values('C02', 'Mamta Shah', 'Chennai', 780001, 'Tamil Nadu', 15000)

3 into client1 values('C03', 'Chhaya Patel', 'Mumbai', 400057, 'Maharashtra', 0) 4 into
client1 values('C04', 'Ashni Joshi', 'Bangalore', 560001, 'Karnataka', 5000) 5 into
client1 values('C05', 'Harsh Desai', 'Mumbai', 400060, 'Maharashtra',

2000)
6 into client1 values('C06', 'Deepak Sharma', 'Mangalore', 560050, 'Karnataka',

0)
7* select* from dual

SQL> /
5 rows created.

SQL> insert into product1 values('P00001', '1.44 Floppies', '5', 'Piece', '100', '20', '525',
500);

1 row created.

SQL> ed
Wrote file afiedt.buf

1 insert all
2 into product1 values('P03453', 'Monitors', '6', 'Piece', '10', '3', '12000', '11200') 3 into
product1 values('P06734', 'Mouse', '5', 'Piece', '20', '5', '1050', '500')
4 into product1 values('P07865', '1.22 Floppies', '5', 'Piece', '100', '20', '525',

'500')
5* select * from dual

SQL> /
3 rows created.



SQL> insert into product1 values('P03453', 'P07868', '2', 'Piece', '10', '3', '3150', '3050');
insert into product1 values('P03453', 'P07868', '2', 'Piece', '10', '3', '3150', '3050') *

ERROR at line 1:
ORA-00001: unique constraint (SYSTEM.SYS_C007121) violated

SQL> insert into salesman1 values('S01', 'Aman', 'A/14', 'Worli','Mumbai', 400002,
'Maharashtra', 3000, 100, 50, 'Good');

1 row created.

SQL> ed
Wrote file afiedt.buf

1 insert all

2 into salesman1 values('S02', 'Omkar', '65', 'Nariman', 'Mumbai', 400001,
'Maharashtra', 3000, 200, 100, 'Good')
```

```
3 into salesman1 values('S03', 'Raj', 'P-7', 'Bandra', 'Mumbai', 400032, 'Maharashtra',
3000, 200, 100, 'Good')

4 into salesman1 values('S04', 'Ashish', 65, 'Nariman', 'Mumbai', 400044, 'Maharashtra',
3500, 200, 150, 'Good')

5* select * from dual SQL> /

3 rows created.

SQL> insert into sales_order1 values('019001', 'C01', '12-JAN-16', 'S01', 'F', 'N', '20-
JAN-16', 'In Process');

1 row created.

SQL> ed
Wrote file afiedt.buf

1 insert all

2 into sales_order1 values('019002', 'C02', '25-JAN-17', 'S02', 'P', 'N', '27-JAN- 17',
'Cancelled')

3 into sales_order1 values('046865', 'C03', '18-FEB-17', 'S03', 'F', 'Y', '20-FEB- 17',
'Fulfilled')

4 into sales_order1 values('019003', 'C01', '03-APR-16', 'S01', 'F', 'Y', '07-APR- 16',
'Fulfilled')

5 into sales_order1 values('046866', 'C04', '20-MAY-16', 'S02', 'P', 'N', '22- MAY-16',
'Cancelled')

6 into sales_order1 values('019008', 'C05', '24-MAY-16', 'S04', 'F', 'N', '26- MAY-16', 'In
Process')

7* select * from dual SQL> /

5 rows created.

SQL> ed
Wrote file afiedt.buf

1 insert all
2 into sales_order_details1 values('019001', 'P07965', 2, 8400) 3* select * from dual

SQL> /
insert all
*
ERROR at line 1:
ORA-02291: integrity constraint
(SYSTEM.FK_SALES_ORDER_DETAILS11) violated - parent key not found

SQL> ed
Wrote file afiedt.buf

1 insert all
2 into sales_order_details1 values('019001', 'P07885', 2, 5250) 3* select * from dual

SQL> /
insert all
*
ERROR at line 1:
ORA-02291: integrity constraint
(SYSTEM.FK_SALES_ORDER_DETAILS11) violated - parent key not found
```

```
SQL> ed
Wrote file afiedt.buf

1 insert all
2 into sales_order_details1 values('O19002', 'P00001', 10, 525) 3* select * from dual

SQL> /
1 row created.
```

- **Remarks** :

1. *The details of product ID "P03453" cannot be inserted in product1 table as "UNIQUE" constraint is violated.*
2. *By deleting the associated constraints along with the primary key, we can solve this problem. When we write query which performs the deletion operation of all constraints which are associated with primary key then we can observe that "user_constraines" are also dropped.*

4) Delete data of salesman 'S01' from salesman table and observe the error. Rewrite the query for alteration of table, so that on deletion of 'S01' from salesman, corresponding values associated should also get deleted.

```
SQL> DELETE FROM salesman1 WHERE salesmanno='S01'; DELETE FROM salesman1
WHERE salesmanno='S01'
*
ERROR at line 1:

ORA-02292: integrity constraint (SYSTEM.FK_SALES_ORDER11) violated - child
record found

SQL> ALTER TABLE sales_order1
2 DROP CONSTRAINT FK_sales_order11;

Table altered.

SQL> ALTER TABLE sales_order1
2 ADD CONSTRAINT FK_salesman FOREIGN KEY(salesmanno)

references salesman1(salesmanno) 3 ON DELETE CASCADE;

Table altered.

SQL>
SQL> ALTER TABLE sales_order_details1

2 DROP CONSTRAINT FK_sales_order_details1;

Table altered.

SQL> ALTER TABLE sales_order_details1
2 ADD CONSTRAINT FK_sales_order_details1
```

```
3 FOREIGN KEY (orderno) REFERENCES sales_order1(orderno) 4 ON DELETE
CASCADE;

Table altered.
SQL> DELETE FROM salesman1 WHERE salesmanno='S01'; 1 row deleted.
```

5) **Delete data of order 'O19001' from sales_order table and observe the error. Rewrite the query for alteration of table, so that if you remove 'O19001' from sales_order, corresponding values associated should be set to NULL.**

- Deleted O19002 as O19001 does not exist

6) **Drop primary key constraint on 'orderno' from sales_order table. Observe the error. Write the drop query, so that associated constraints with 'orderno' also gets dropped. Check whether the constraints have dropped from user_constraints table.**

```
SQL> ALTER TABLE sales_order1
2 DROP CONSTRAINT PK_sales_order1;
DROP CONSTRAINT PK_sales_order1 *
ERROR at line 2:
ORA-02273: this unique/primary key is referenced by some foreign keys
SQL> ALTER TABLE sales_order1


2 DROP CONSTRAINT PK_sales_order1 CASCADE;
Table altered.
```

- **Remarks** :

3. *We cannot drop primary key in a usual way as it referenced by other foreign keys of other tables. that doing so, will definitely generate en error.*

4. *We can solve this problem by deleting associated constraints also along with the primary key. When we write query which performs the deletion operation of all constraints which are associated with primary key then we can observe that "user_constraines" are also dropped.*