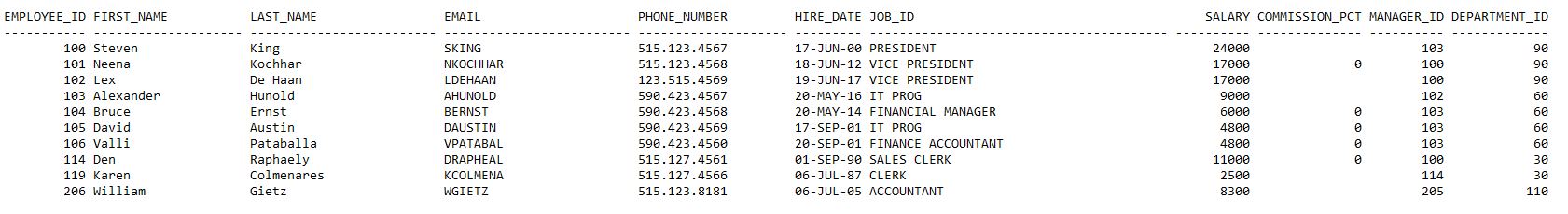
**2CS402 Database Management System**

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| **Practical 6** | |
| **Rollno: 19BCE023** | **Name: BHANDERI MIHIR** |
| **Division: A** | **Batch: A1** |

**PRACTICAL 6**

**Employees Table**

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

**a) Create table client (used to store client information) having following attributes:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Default** | **Attributes** |
| clientno | varchar2 | 6 |  | Primary key at column level/first letter must start with ‘C’ (at column level) |
| name | varchar2 | 20 |  | Not Null |
| city | varchar2 | 15 |  |  |
| pincode | number | 8 |  |  |
| state | varchar2 | 15 |  |  |
| baldue | number | 10, 5 |  |  |

**Query:**

SQL> alter table client add primary key(clientno) add check (clientno like 'C%'**);**

**Output:**

Table altered.

**Query:**

SQL> alter table client modify name not null;

**Output:**

Table altered.

**1. b) Create table product (used to store product information) having following attributes:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Default** | **Attributes** |
| productno | varchar2 | 6 |  | Primary key at table level/first letter must start with ‘P’ (at table level) |
| description | varchar2 | 15 |  | Not Null |
| profitpercent | number | 4, 2 |  | Not Null |
| unitmeasure | varchar2 | 10 |  | Not Null |
| qtyonhand | number | 8 |  | Not Null |
| reorderlvl | number | 8 |  | Not Null |
| sellprice | number | 8, 2 |  | Not Null, Cannot be 0 |
| costprice | number | 8, 2 |  | Not Null, Cannot be 0 |

**Query:**

SQL> alter table product add primary key(productno) add check (productno like 'P%');

**Output:**

Table altered.

**Query:**

SQL> alter table product modify description not null modify profitpercent not null modify unitmeasure not null modify qtyonhand not null modify reorderlvl not null modify sellprice not null modify costprice not null;

**Output:**

Table altered.

**Query:**

SQL> alter table product add check (sellprice != 0) add check (costprice != 0);

**Output:**

Table altered.

**1. c) Create table salesman (used to store salesman information working for the company) having following attributes:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Default** | **Attributes** |
| salesmanno | varchar2 | 6 |  | Primary key at table level /first letter must start with ‘S’ |
| salesmanname | varchar2 | 20 |  | Not Null |
| address1 | varchar2 | 30 |  | Not Null |
| address2 | varchar2 | 30 |  |  |
| city | varchar2 | 20 |  |  |
| pincode | number | 8 |  |  |
| state | varchar2 | 20 |  |  |
| salamt | number | 8, 2 |  | Not Null, Cannot be 0 |
| tgttoget | number | 6, 2 |  | Not Null, Cannot be 0 |
| ytdsales | number | 6, 2 |  | Not Null |
| remarks | varchar2 | 60 |  |  |

**Query:**

SQL> alter table sman add primary key (salesmanno) add check (salesmanno like 'S%') modify salesmanname not null modify address1 not null modify salamt not null add check (salamt != 0) modify tgttoget not null add check (tgttoget != 0) modify ytdsales not null;

**Output:**

Table altered.

**1. d)** **Create table sales\_order (used to store client’s orders) having following attributes:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Default** | **Attributes** |
| orderno | varchar2 | 6 |  | Primary key/first letter must start with ‘O’ |
| clientno | varchar2 | 6 |  | Foreign key (at column level) references clientno of client table. |
| orderdate | date |  |  | Not Null |
| salesmanno | varchar2 | 6 |  | Foreign key (at column level) references salesmanno of salesman table. |
| delaytype | char | 1 | F | Delivery : part (P) / full (F) |
| billyn | char | 1 |  |  |
| delaydate | date |  |  | Cannot be less than orderdate (at table level) |
| orderstatus | varchar2 | 10 |  | Values(‘In Process’,’Fulfilled’,’BackOrder’,’Cancelled’) (at column level) |

**Query:**

SQL> alter table sales\_order add primary key (orderno) add check (orderno like 'O%') ;

**Output:**

Table altered.

**Query:**

SQL> alter table sales\_order add foreign key (clientno) references client(clientno);

**Output:**

Table altered.

**Query:**

SQL> alter table sales\_order add foreign key (salesmanno) references sman(salesmanno);

**Output:**

Table altered.

**Query:**

SQL> alter table sales\_order modify orderdate not null;

**Output:**

Table altered.

**Query:**

SQL> alter table sales\_order modify delaytype default 'F';

**Output:**

Table altered.

**Query:**

SQL> alter table sales\_order add check (orderdate<delaydate);

**Output:**

Table altered.

**Query:**

SQL> alter table sales\_order add check (orderstatus = 'In Process' or orderstatus = 'Fulfilled' or orderstatus = 'Backorder' or orderstatus = 'Cancelled');

**Output:**

Table altered.

**1. e)** **Create table sales\_order\_details (used to store client’s orders with details of each product ordered ) having following attributes:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Default** | **Attributes** |
| orderno | varchar2 | 6 |  | Foreign key references (at table level) orderno of sales\_order table |
| productno | varchar2 | 6 |  | Foreign key (at table level) references productno of product table |
| qtyordered | number | 8 |  |  |
| productrate | number | 10, 2 |  |  |

**Query:**

SQL> alter table sales\_order\_details add foreign key (orderno) references sales\_order(orderno) add foreign key(productno) references product(productno);

**Output:**

Table altered.

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

**Query:**

SQL> alter table sman modify remarks not null;

**Output:**

Table altered.

Table has altered successfully because there were no null values in column

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

We will get violation in one table when we add the data of salesman in product\_details whose data is not there in salesman table  and one more time we get violation of constrain in orderno.

**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.

**Query:**

SQL> delete from sman where salesmanno='S01';

delete from sman where salesmanno='S01'

\*

**Output:**

ERROR at line 1:

ORA-02292: integrity constraint (SYSTEM.SYS\_C007165) violated - child record

Found

**Query:**

SQL> delete from sales\_order where salesmanno='S01';

**Output:**

1 row deleted.

**Query:**

SQL> delete from sman where salesmanno='S01';

**Output:**

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.

**Query:**

SQL> delete from sales\_order where orderno='O19001';

delete from sales\_order where orderno='O19001'

\*

**Output:**

ERROR at line 1:

ORA-02292: integrity constraint (SYSTEM.SYS\_C007172) violated - child record

Found

**Query:**

SQL> delete from sales\_order\_details where orderno='O19001';

**Output:**

1 row deleted.

**Query:**

SQL> delete from sales\_order where orderno='O19001';

**Output:**

1 row deleted.

**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.

**Query:**

SQL> alter table sales\_order drop primary key;

alter table sales\_order drop primary key

\*

**Output:**

ERROR at line 1:

ORA-02273: this unique/primary key is referenced by some foreign keys

**Query:**

SQL> ALTER TABLE SALES\_ORDER\_DETAILS DROP CONSTRAINT SYS\_C007172;

**Output:**

Table altered.

**Query:**

SQL> ALTER TABLE SALES\_ORDER DROP PRIMARY KEY;

**Output:**

Table altered.