Institute of Computer Technology

B. Tech Computer Science and Engineering

Sub: Database Management System (2CSE301)

Practical 4: Create tables with various Data Constraints and verify by inserting values in it.

Scenario : Mohan as an engineer know what are the issues when an entry gets wrongly inserted. Thus to avoid such issues Mohan suggested to have constraints so that whenever by mistake also if someone tries to enter data can first get checked and than inserted.

# A) Table Name: Client\_master

Description: Used to store information about clients.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| Product\_no | Varchar | 6 | Primary key/ first letter must start with ‘P’ |

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| Client\_no | Varchar | 6 | Primary key/ first letter must start with ‘C’ |
| Name | Varchar | 15 | Not Null |
| City | Varchar | 15 |  |
| Pincode | Numeric | 8 |  |
| State | Varchar | 15 |  |
| Bal\_due | Numeric | 10,2 |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Client\_no** | **Name** | **City** | **Pincode** | **State** | **Bal\_due** |
| C001 | Ivan | Bombay | 400054 | Maharashtra | 15000 |
| C002 | Vandana | Madras | 780001 | Tamil Nadu | 0 |
| C003 | Pramada | Bombay | 400057 | Maharashtra | 5000 |
| C004 | Basu | Bombay | 400056 | Maharashtra | 0 |
| C005 | Ravi | Delhi | 100001 | Gujarat | 2000 |
| C006 | Rukmani | Bombay | 400050 | Maharashtra | 0 |

Table Code:

create table Client\_master (

client\_no varchar(6) primary key check (client\_no like 'c%'),

name varchar(15) not null,

city varchar(15),

pincode numeric(8),

state varchar(15),

bal\_due numeric(10, 2)

);

insert into Client\_master values ('C001','Ivan','Bombay',400054,'Maharashtra',15000 );

insert into Client\_master values ('C002','Vandana','Madras',780001,'Tamil Nadu', 0 );

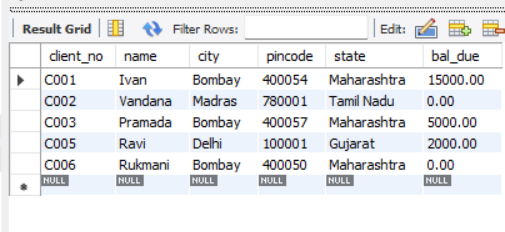
insert into Client\_master values ('C003','Pramada','Bombay',400057,'Maharashtra',5000 );

insert into Client\_master values ('C004','Basu','Bombay',400056,'Maharashtra',0 );

insert into Client\_master values ('C005','Ravi','Delhi',100001,'Gujarat',2000 );

insert into Client\_master values ('C006','Rukmani','Bombay',400050,'Maharashtra',0 );

select \*from Client\_master;



# B) Table Name: Product\_master

Description: Used to store information about products.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Description | | Varchar | | 15 | Not Null | | |  |  |
| P\_percent | | Numeric | | 4,2 | Not Null | | |
| U\_measure | | Varchar | | 10 | Not Null | | |
| Qty\_on\_hand | | Numeric | | 8 | Not Null | | |
| Reorder\_lvl | | Numeric | | 8 | Not Null | | |
| Sell\_price | | Numeric | | 8,2 | Not Null, cannot be 0 | | |
| Cost\_price | | Numeric | | 8,2 | Not Null, cannot be 0 | | |
| Product\_ No | Description | | P\_  Percent | U\_  Measure | | Qty\_on\_ hand | Reorder\_ Lvl | sell\_ price | Cost\_ Price |
| P001 | Floppies | | 5 | Piece | | 100 | 20 | 525 | 500 |
| P002 | Monitor | | 6 | Piece | | 10 | 3 | 12000 | 11280 |
| P003 | Mouse | | 5 | Piece | | 20 | 5 | 1050 | 1000 |
| P004 | Floppies | | 5 | Piece | | 100 | 20 | 525 | 500 |
| P005 | Keyboards | | 2 | Piece | | 10 | 3 | 3150 | 3050 |
| P006 | Cd Drive | | 2.5 | Piece | | 10 | 3 | 5250 | 5100 |
| P007 | 1.44 Drive | | 4 | Piece | | 10 | 3 | 8400 | 8000 |
|  |  | |  |  | |  |  |  |  |

create table Product\_master(

Product\_no varchar(6),

Description varchar(15) not null,

P\_percent numeric(4,2) not null,

U\_measure varchar(10) not null,

Qty\_on\_hand numeric(8) not null,

Reorder\_lvl numeric(8) not null,

Sell\_price numeric(8,2) not null,

Cost\_price numeric(8,2) not null,

primary key(Product\_no),

check (Product\_no like 'P%'),

check (Sell\_price > 0),

check (Cost\_price > 0)

);

insert into product\_master values('P001', 'Floppies', 5, 'Piece', 100, 20, 525, 500);

insert into product\_master values('P002', 'Monitor', 6, 'Piece', 10, 3, 12000, 11280);

insert into product\_master values('P003', 'Mouse', 5, 'Piece', 20, 5, 1050, 1000);

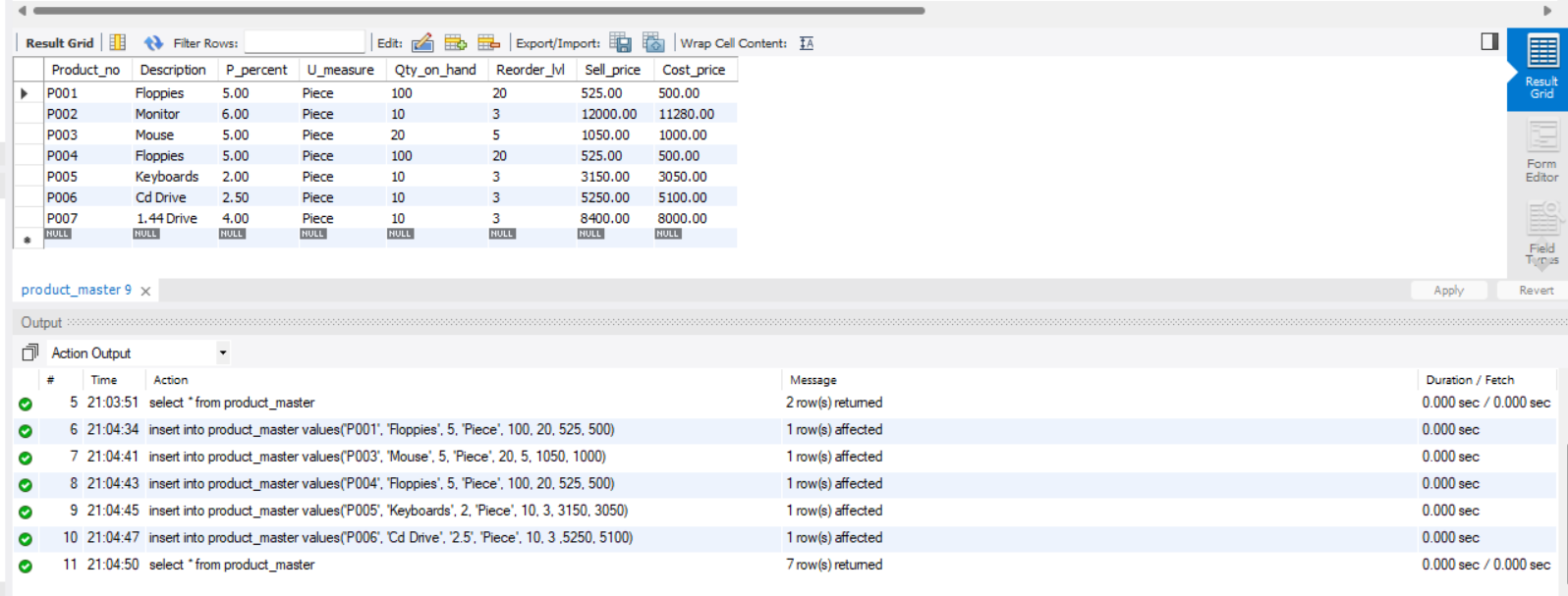
insert into product\_master values('P004', 'Floppies', 5, 'Piece', 100, 20, 525, 500);

insert into product\_master values('P005', 'Keyboards', 2, 'Piece', 10, 3, 3150, 3050);

insert into product\_master values('P006', 'Cd Drive', '2.5', 'Piece', 10, 3 ,5250, 5100);

insert into product\_master values('P007', '1.44 Drive', 4, 'Piece', 10, 3, 8400, 8000);

select \* from product\_master;



# C) Table Name: Salesman\_master

Description: Used to store information about salesman working in the company.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| Order\_no | Varchar | 6 | Primary key/ first letter must start with ‘O’ |

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| S\_no | Varchar | 6 | Primary key/ first letter must start with ‘S’ |
| S\_name | Varchar | 15 | Not Null |
| City | Varchar | 10 |  |
| Pincode | Numeric | 8 |  |
| State | Varchar | 12 |  |
| Sal\_amt | Numeric | 8,2 | Not Null, cannot be 0 |
| Tgt\_to\_get | Numeric | 6,2 | Not Null, cannot be 0 |
| Ytd\_sales | Numeric | 6,2 | Not Null |
| Remarks | Varchar | 20 |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S\_no | S\_name | City | Pincode | State | Sal\_ Amt | Tgt\_ to get | Ytd\_ Sales | remarks |
| S001 | Kiran | Bombay | 400002 | Maharashtar | 3000 | 100 | 50 | Excellent |
| S002 | Manish | Bombay | 400001 | Maharashta | 3000 | 200 | 100 | Good |
| S003 | Ravi | Bombay | 400032 | Maharashta | 3000 | 200 | 100 | Average |
| S004 | Ashish | Bombay | 400044 | Maharashta | 3500 | 200 | 150 | Good |

create table salesman\_master (

s\_no varchar(6),

s\_name varchar(15) not null,

city varchar(10),

pincode numeric(8),

state varchar(12),

sal\_amt numeric(8,2) not null,

tgt\_to\_get numeric(6,2) not null,

ytd\_sales numeric(6,2) not null,

remarks varchar(20),

primary key (s\_no),

check (s\_no like 's%'),

check (sal\_amt > 0),

check (tgt\_to\_get > 0)

);

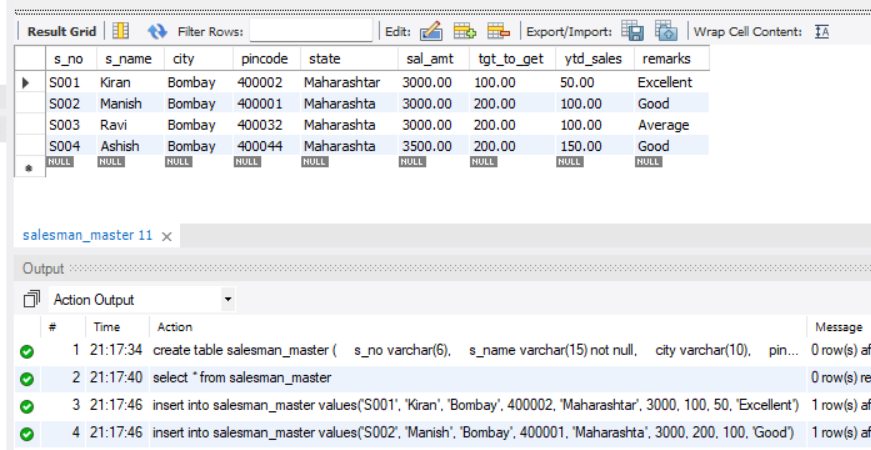
insert into salesman\_master values('S001', 'Kiran', 'Bombay', 400002, 'Maharashtar', 3000, 100, 50, 'Excellent');

insert into salesman\_master values('S002', 'Manish', 'Bombay', 400001, 'Maharashta', 3000, 200, 100, 'Good');

insert into salesman\_master values('S003', 'Ravi', 'Bombay', 400032, 'Maharashta', 3000, 200, 100, 'Average');

insert into salesman\_master values('S004', 'Ashish', 'Bombay', 400044, 'Maharashta', 3500, 200, 150, 'Good');

select \* from salesman\_master;



# D) Table Name: Sales\_order

Description: Used to store client’s orders.

|  |  |  |  |
| --- | --- | --- | --- |
| Order\_date | Date |  |  |
| Client\_no | Varchar | 6 | Foreign key references client\_no of client\_master table. |
| S\_no | Varchar | 6 | Foreign key references s\_no of salesman\_master table. |
| Dely\_type | Char | 1 | Delivery: part(P) / full (F) Default ‘F’ |
| Billed\_yn | Char | 1 |  |
| Dely\_date | Date |  | Cannot be less than order\_date |
| Order\_status | Varchar | 10 | Values(‘inprocess’,’fullfiled’,’backorder’,’cancelled’) |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Order\_no | Order\_date | Client\_no | S\_no | Dely\_ type | Billed\_yn | Dely\_date | Order\_status |
| O1901 | 12-Jan-06 | C001 | S001 | F | N | 20-Jan-06 | In Process |
| O1902 | 25-Jan-06 | C002 | S002 | P | N | 27-Jan-06 | Cancelled |
| O4665 | 18-feb-06 | C003 | S003 | F | Y | 20-Feb-06 | Fullfilled |
| O1903 | 03-Apr-06 | C001 | S001 | F | Y | 07-Apr-06 | Fullfield |
| O4666 | 20-May-06 | C004 | S002 | P | N | 22-May-06 | Cancelled |
| O1908 | 24-May-06 | C005 | S003 | F | N | 26-May-06 | In Process |

create table sales\_order (

order\_no varchar(6),

order\_date date,

client\_no varchar(6),

s\_no varchar(6),

dely\_type char(1) default 'F',

billed\_yn char(1),

dely\_date date,

order\_status varchar(10),

primary key(order\_no),

foreign key(client\_no) references client\_master(client\_no),

foreign key(s\_no) references salesman\_master(s\_no),

check (order\_no like 'O%'),

check (dely\_type like 'F' or dely\_type like 'P'),

check (date(dely\_date) > date(order\_date)),

check (order\_status = 'inprocess' or order\_status = 'fullfiled' or order\_status = 'backorder' or order\_status = 'cancelled')

);

insert into sales\_order values('O1901', '2006-01-12', 'C001', 'S001', 'F', 'N', '2006-01-20', 'inprocess');

insert into sales\_order values('O1902', '2006-01-25', 'C002', 'S002', 'P', 'N', '2006-01-27', 'cancelled');

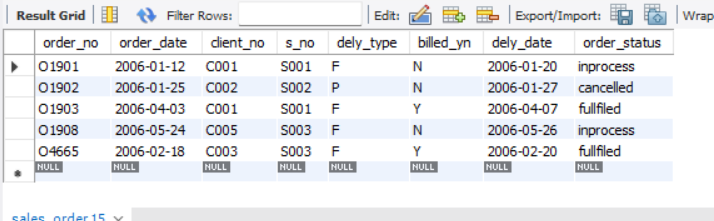
insert into sales\_order values('O4665', '2006-02-18', 'C003', 'S003', 'F', 'Y', '2006-02-20', 'fullfiled');

insert into sales\_order values('O1903', '2006-04-03', 'C001', 'S001', 'F', 'Y', '2006-04-07', 'fullfiled');

insert into sales\_order values('O4666', '2006-05-20', 'C004', 'S002', 'P', 'N', '2006-05-22', 'cancelled');

insert into sales\_order values('O1908', '2006-05-24', 'C005', 'S003', 'F', 'N', '2006-05-26', 'inprocess');

select \* from sales\_order;



# E) Table Name: Sales\_order\_details

Description: Used to store client’s orders with details of each product ordered.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Attributes** |
| Order\_no | Varchar | 6 | Primary Key/ Foreign Key references order\_no of the sales\_order table. |
| Product\_no | Varchar | 6 | Primary Key/ Foreign Key references product\_no of the Product\_master table. |
| Qty\_ordered | Numeric | 8 |  |
| Qty\_disp | Numeric | 8 |  |
| Product\_rate | Numeric | 10,2 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Order\_no** | **Product\_no** | **Qty\_ordered** | **Qty\_disp** | **Product\_rate** |
| O1901 | P001 | 4 | 4 | 525 |
| O1901 | P002 | 2 | 1 | 8400 |
| O1901 | P003 | 2 | 1 | 5250 |
| O1902 | P001 | 10 | 0 | 525 |
| O4665 | P002 | 3 | 3 | 3150 |
| O4665 | P004 | 3 | 1 | 5250 |
| O4665 | P005 | 10 | 10 | 525 |
| O4665 | P003 | 4 | 4 | 1050 |
| O1903 | P006 | 2 | 2 | 1050 |
| O1903 | P004 | 1 | 1 | 12000 |
| O1908 | P005 | 1 | 0 | 8400 |
| O1908 | P007 | 10 | 0 | 1050 |

**create table sales\_order\_details (**

**order\_no varchar(6),**

**product\_no varchar(6),**

**qty\_ordered numeric(8),**

**qty\_disp numeric(8),**

**product\_rate numeric(10, 2),**

**primary key (order\_no, product\_no),**

**foreign key (order\_no) references sales\_order(order\_no),**

**foreign key (product\_no) references product\_master(product\_no)**

**);**

**insert into sales\_order\_details values('O1901', 'P001', '4', '4', '525');**

**insert into sales\_order\_details values('O1901', 'P002', '2', '1', '8400');**

**insert into sales\_order\_details values('O1901', 'P003', '2', '1', '5250');**

**insert into sales\_order\_details values('O1902', 'P001', '10', '0', '525');**

**insert into sales\_order\_details values('O4665', 'P002', '3', '3', '3150');**

**insert into sales\_order\_details values('O4665', 'P004', '3', '1', '5250');**

**insert into sales\_order\_details values('O4665', 'P005', '10', '10', '525');**

**insert into sales\_order\_details values('O4665', 'P003', '4', '4', '1050');**

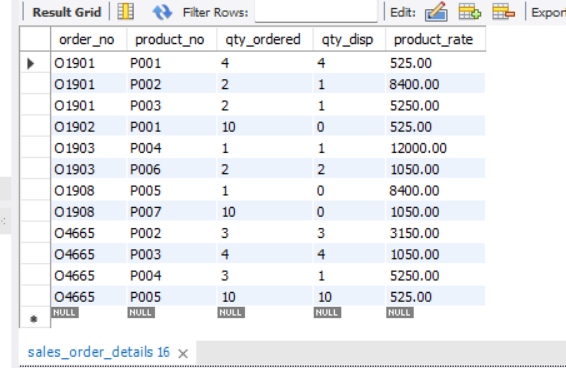
**insert into sales\_order\_details values('O1903', 'P006', '2', '2', '1050');**

**insert into sales\_order\_details values('O1903', 'P004', '1', '1', '12000');**

**insert into sales\_order\_details values('O1908', 'P005', '1', '0', '8400');**

**insert into sales\_order\_details values('O1908', 'P007', '10', '0', '1050');**

**select \* from sales\_order\_details;**

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**Exercise:**

Create Above tables with given constraints and insert data in it.