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**DATE:**05/05/2021

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**DBMS LAB-3**

**ORDER PROCESSING DATABASE**

**QUESTION:**

Consider the following relations for an Order Processing database application in a company.

CUSTOMER (CUST #: int, cname: String, city: String)

ORDER (order #: int, odate: date, cust #: int, ord-Amt: int)

ITEM (item #: int, unit-price: int)

ORDER-ITEM (order #: int, item #: int, qty: int)

WAREHOUSE (warehouse #: int, city: String)

SHIPMENT (order #: int, warehouse #: int, ship-date: date)

i) Create the above tables by properly specifying the primary keys and the foreign

foreign

keys.

ii) Enter at least five tuples for each relation.

iii) Produce a listing: CUSTNAME, #oforders, AVG\_ORDER\_AMT, where the middle column

is the total

numbers of orders by the customer and the last column is the average order amount for that

customer.

iv) List the order# for orders that were shipped from all warehouses that the company has in a

specific city.

v) Demonstrate how you delete item# 10 from the ITEM table and make that field null in the

ORDER\_ITEM

table.

**PROGRAM CODE:**

```
create database Order_processing;
```

```
use Order_processing;
```

```
CREATE TABLE CUSTOMER
```

```
(
```

```
  cust_no int,
```

```
  cname VARCHAR(15),
```

```
  city VARCHAR(15),
```

```
  PRIMARY KEY(cust_no)
```

```
);
```

```
CREATE TABLE ORDERS(
```

```
  order_no int,
```

```
  odate date,
```

```
  cust_no int,
```

```
  foreign key(cust_no) references CUSTOMER(cust_no) on delete cascade,
```

```
  ord_Amt int,
```

```
  primary key(order_no)
```

```
);
```

```
create table ITEM (
```

```
  item_no int,
```

```
  unit_price int,
```

```
  primary key(item_no)
```

```
);
```

```
create table ORDER_ITEM (
```

```
order_no int,
item_no int,
qty int,
foreign key(order_no) references ORDERS(order_no) on delete cascade,
foreign key(item_no) references ITEM(item_no) on delete SET NULL
);
create table WAREHOUSE(
warehouseno int,
city varchar(30),
primary key(warehouseno)
);
create table SHIPMENT(
order_no int,
warehouseno int,
ship_date date,
foreign key(order_no) references ORDERS(order_no) on delete cascade,
foreign key(warehouseno) references WAREHOUSE(warehouseno) on delete cascade
);
show tables;
insert into CUSTOMER(cust_no,cname,city)values(771,'PUSHPA K','BANGALORE');
insert into CUSTOMER(cust_no,cname,city)values(772,'SUMAN','MUMBAI');
insert into CUSTOMER(cust_no,cname,city)values(773,'SOURAV','CALICUT');
insert into CUSTOMER(cust_no,cname,city)values(774,'LAILA','HYDERABAD');
insert into CUSTOMER(cust_no,cname,city)values(775,'FAIZAL','BANGALORE');
COMMIT;
desc CUSTOMER;
SELECT *FROM CUSTOMER;
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(111,'22-01-02',771,18000);
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(112,'30-07-02',774,6000);
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(113,'03-04-03',775,9000);
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(114,'03-11-03',775,29000);
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(115,'10-12-03',773,29000);
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(116,'19-08-04',772,56000);
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(117,'10-09-04',771,20000);
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(118,'20-11-04',775,29000);
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(119,'13-02-05',774,29000);
```

```
insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(120,'13-10-05',775,29000);
```

```
COMMIT;
```

```
desc ORDERS;
```

```
SELECT *FROM ORDERS;
```

```
insert into ITEM(item_no,unit_price)values(5001,503);
```

```
insert into ITEM(item_no,unit_price)values(5002,750);
```

```
insert into ITEM(item_no,unit_price)values(5003,150);
```

```
insert into ITEM(item_no,unit_price)values(5004,600);
```

```
insert into ITEM(item_no,unit_price)values(5005,890);
```

```
COMMIT;
```

```
desc ITEM;
```

```
SELECT *FROM ITEM;
```

```
insert into ORDER_ITEM(order_no,item_no,qty)values(111,5001,50);
insert into ORDER_ITEM(order_no,item_no,qty)values(112,5003,20);
insert into ORDER_ITEM(order_no,item_no,qty)values(113,5002,50);
insert into ORDER_ITEM(order_no,item_no,qty)values(114,5005,60);
insert into ORDER_ITEM(order_no,item_no,qty)values(115,5004,90);
insert into ORDER_ITEM(order_no,item_no,qty)values(116,5001,10);
insert into ORDER_ITEM(order_no,item_no,qty)values(117,5003,80);
insert into ORDER_ITEM(order_no,item_no,qty)values(118,5005,50);
insert into ORDER_ITEM(order_no,item_no,qty)values(119,5002,10);
insert into ORDER_ITEM(order_no,item_no,qty)values(120,5004,45);
COMMIT;
desc ORDER_ITEM;
SELECT *FROM ORDER_ITEM;
insert into WAREHOUSE(warehouseno,city)values(1,'DELHI');
insert into WAREHOUSE(warehouseno,city)values(2,'BOMBAY');
insert into WAREHOUSE(warehouseno,city)values(3,'CHENNAI');
insert into WAREHOUSE(warehouseno,city)values(4,'BANGALORE');
insert into WAREHOUSE(warehouseno,city)values(5,'BANGALORE');
insert into WAREHOUSE(warehouseno,city)values(6,'DELHI');
insert into WAREHOUSE(warehouseno,city)values(7,'BOMBAY');
insert into WAREHOUSE(warehouseno,city)values(8,'CHENNAI');
insert into WAREHOUSE(warehouseno,city)values(9,'DELHI');
insert into WAREHOUSE(warehouseno,city)values(10,'BANGALORE');
COMMIT;
desc WAREHOUSE;
SELECT *FROM WAREHOUSE;
insert into SHIPMENT(order_no,warehouseno,ship_date)values(111,1,'10-02-02');
insert into SHIPMENT(order_no,warehouseno,ship_date)values(112,5,'10-09-02');
```

```
insert into SHIPMENT(order_no,warehouseno,ship_date)values(113,8,'10-02-03');
insert into SHIPMENT(order_no,warehouseno,ship_date)values(114,3,'10-12-03');
insert into SHIPMENT(order_no,warehouseno,ship_date)values(115,9,'19-01-04');
insert into SHIPMENT(order_no,warehouseno,ship_date)values(116,1,'20-09-04');
insert into SHIPMENT(order_no,warehouseno,ship_date)values(117,5,'10-09-04');
insert into SHIPMENT(order_no,warehouseno,ship_date)values(118,7,'30-11-04');
insert into SHIPMENT(order_no,warehouseno,ship_date)values(119,7,'30-04-05');
insert into SHIPMENT(order_no,warehouseno,ship_date)values(120,6,'21-12-05');
COMMIT;
```

```
desc SHIPMENT;
```

```
SELECT *FROM SHIPMENT;
```

```
/*Produce a listing: CUSTNAME, #oforders, AVG_ORDER_AMT, where the middle
column
```

```
is the total numbers of orders by the customer and the last column is the average
order amount for that customer.*/
```

```
SELECT C.CNAME as CUSTNAME, COUNT(*) as no_of_orders,AVG(O.ord_Amt) as
AVG_ORDER_AMT FROM CUSTOMER C,
```

```
ORDERS O WHERE C.cust_no=O.cust_no GROUP BY C.CNAME;
```

```
/*List the order# for orders that were shipped from all warehouses that the company
has in a specific city.*/
```

```
SELECT order_no FROM WAREHOUSE W, SHIPMENT S WHERE
W.warehouseno=S.warehouseno AND CITY='BANGALORE';
```

```
/*Demonstrate how you delete item# 10 from the ITEM table and make that field
null in the ORDER_ITEM table.*/
```

```
delete from ITEM where item_no=5005;
```

```
select *from ITEM;
```

```
select *from ORDER_ITEM;
```

## OUTPUT SCREENSHOTS:

The screenshot shows the MySQL Workbench interface with the 'OrderProcessing' database selected. The SQL editor contains the following queries:

```
38 ship_date date,  
39 foreign key(order_no) references ORDERS(order_no) on delete cascade,  
40 foreign key(warehouseno) references WAREHOUSE(warehouseno) on delete cascade  
41 );  
42 • show tables;  
43 • insert into CUSTOMER(cust_no,cname,city)values(771,'PUSHPA K','BANGALORE');  
44 • insert into CUSTOMER(cust_no,cname,city)values(772,'SUMAN','MUMBAI');  
45 • insert into CUSTOMER(cust_no,cname,city)values(773,'SOURAV','CALICUT');
```

The 'Result Grid' shows the output of the 'show tables;' query:

Tables_in_order_processing
customer
item
order_item
orders
shipment
warehouse

The screenshot shows the MySQL Workbench interface with the 'OrderProcessing' database selected. The SQL editor contains the following queries:

```
44 • insert into CUSTOMER(cust_no,cname,city)values(772,'SUMAN','MUMBAI');  
45 • insert into CUSTOMER(cust_no,cname,city)values(773,'SOURAV','CALICUT');  
46 • insert into CUSTOMER(cust_no,cname,city)values(774,'LAILA','HYDERABAD');  
47 • insert into CUSTOMER(cust_no,cname,city)values(775,'FAIZAL','BANGALORE');  
48 • COMMIT;  
49 • desc CUSTOMER;  
50 • SELECT *FROM CUSTOMER;  
51 • insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(111,'22-01-02',771,18000);
```

The 'Result Grid' shows the output of the 'SELECT \*FROM CUSTOMER;' query:

cust_no	cname	city
771	PUSHPA K	BANGALORE
772	SUMAN	MUMBAI
773	SOURAV	CALICUT
774	LAILA	HYDERABAD
775	FAIZAL	BANGALORE
* 776	776	776

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: Insurance Bookdealer OrderProcessing x

Limit to 1000 rows

```

59 • insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(119,'13-02-05',774,29000);
60 • insert into ORDERS(order_no,odate,cust_no,ord_Amt)values(120,'13-10-05',775,29000);
61 • COMMIT;
62 • desc ORDERS;
63 • SELECT *FROM ORDERS;
64 • insert into ITEM(item_no,unit_price)values(5001,503);

```

Result Grid

order_no	odate	cust_no	ord_Amt
111	2022-01-02	771	18000
112	2030-07-02	774	6000
113	2003-04-03	775	9000
114	2003-11-03	775	29000
115	2010-12-03	773	29000
116	2019-08-04	772	56000
117	2010-09-04	771	20000
118	2020-11-04	775	29000
119	2013-02-05	774	29000
120	2013-10-05	775	29000
NULL	NULL	NULL	NULL

Administration Schemas

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: Insurance Bookdealer OrderProcessing x

Limit to 1000 rows

```

68 • insert into ITEM(item_no,unit_price)values(5005,890);
69 • COMMIT;
70 • desc ITEM;
71 • SELECT *FROM ITEM;
72 • insert into ORDER_ITEM(order_no,item_no,qty)values(111,5001,50);
73 • insert into ORDER_ITEM(order_no,item_no,qty)values(112,5003,20);
74 • insert into ORDER_ITEM(order_no,item_no,qty)values(113,5002,50);
75 • insert into ORDER_ITEM(order_no,item_no,qty)values(114,5005,60);

```

Result Grid

item_no	unit_price
5001	503
5002	750
5003	150
5004	600
5005	890
NULL	NULL

Administration Schemas

Information



MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: Schemas

Filter objects

- bookdealer
- database1
- insurance
  - Tables
  - Views
  - Stored Procedures
  - Functions
- sys

OrderProcessing x

Limit to 1000 rows

```

79 • insert into ORDER_ITEM(order_no,item_no,qty)values(118,5005,50);
80 • insert into ORDER_ITEM(order_no,item_no,qty)values(119,5002,10);
81 • insert into ORDER_ITEM(order_no,item_no,qty)values(120,5004,45);
82 • COMMIT;
83 • desc ORDER_ITEM;
84 • SELECT *FROM ORDER_ITEM;
85 • insert into WAREHOUSE(warehouseno.city)values(1,'DELHI');
  
```

Result Grid

order_no	item_no	qty
111	5001	50
112	5003	20
113	5002	50
114	5005	60
115	5004	90
116	5001	10
117	5003	80
118	5005	50
119	5002	10
120	5004	45

Administration Schemas Information

Result Grid Form Editor Field Types

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: Schemas

Filter objects

- bookdealer
- database1
- insurance
  - Tables
  - Views
  - Stored Procedures
  - Functions
- sys

OrderProcessing x

Limit to 1000 rows

```

94 • insert into WAREHOUSE(warehouseno,city)values(10,'BANGALORE');
95 • COMMIT;
96 • desc WAREHOUSE;
97 • SELECT *FROM WAREHOUSE;
98 • insert into SHIPMENT(order_no,warehouseno,ship_date)values(111,1,'10-02-02');
99 • insert into SHIPMENT(order_no,warehouseno,ship_date)values(112,5,'10-09-02');
100 • insert into SHIPMENT(order_no,warehouseno,ship_date)values(113,8,'10-02-03');
  
```

Result Grid

warehouseno	city
1	DELHI
2	BOMBAY
3	CHENNAI
4	BANGALORE
5	BANGALORE
6	DELHI
7	BOMBAY
8	CHENNAI
9	DELHI
10	BANGALORE
NULL	NULL

Administration Schemas Information

Result Grid Form Editor Field Types

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator: Insurance Bookdealer OrderProcessing

SCHEMAS

Filter objects

- bookdealer
- database1
- Insurance
  - Tables
  - Views
  - Stored Procedures
  - Functions
- sys

105 • `insert into SHIPMENT(order_no,warehouse,ship_date)values(118,7,'30-11-04');`  
 106 • `insert into SHIPMENT(order_no,warehouse,ship_date)values(119,7,'30-04-05');`  
 107 • `insert into SHIPMENT(order_no,warehouse,ship_date)values(120,6,'21-12-05');`  
 108 • `COMMIT;`  
 109 • `desc SHIPMENT;`  
 110 • `SELECT *FROM SHIPMENT;`  
 111 • `/*Produce a listing: CUSTNAME, #oforders, AVG ORDER AMT. where the middle column`

Result Grid

order_no	warehouse	ship_date
111	1	2010-02-02
112	5	2010-09-02
113	8	2010-02-03
114	3	2010-12-03
115	9	2019-01-04
116	1	2020-09-04
117	5	2010-09-04
118	7	2030-11-04
119	7	2030-04-05
120	6	2021-12-05

Administration Schemas

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator: Insurance Bookdealer OrderProcessing

SCHEMAS

Filter objects

- bookdealer
- database1
- Insurance
  - Tables
  - Views
  - Stored Procedures
  - Functions
- sys

107 • `insert into SHIPMENT(order_no,warehouse,ship_date)values(120,6,'21-12-05');`  
 108 • `COMMIT;`  
 109 • `desc SHIPMENT;`  
 110 • `SELECT *FROM SHIPMENT;`  
 111 • `/*Produce a listing: CUSTNAME, #oforders, AVG_ORDER_AMT, where the middle column`  
 112 • `is the total numbers of orders by the customer and the last column is the average order amount for that custom`  
 113 • `SELECT C.CNAME as CUSTNAME, COUNT(*) as no_of_orders,AVG(O.ord_Amt) as AVG_ORDER_AMT FROM CUSTOMER C,`  
 114 • `ORDERS O WHERE C.cust_no=O.cust_no GROUP BY C.CNAME;`  
 115 • `/*List the order# for orders that were shipped from all warehouses that the company has in a specific city.*/`

Result Grid

CUSTNAME	no_of_orders	AVG_ORDER_AMT
PUSHPA K	2	19000.0000
SUMAN	1	56000.0000
SOURAV	1	29000.0000
LAILA	2	17500.0000
FAIZAL	4	24000.0000

Administration Schemas

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: Insurance Bookdealer OrderProcessing\*

SCHEMAS

Filter objects

- bookdealer
- database1
- insurance
  - Tables
  - Views
  - Stored Procedures
  - Functions
- sys

```

109 • desc SHIPMENT;
110 • SELECT *FROM SHIPMENT;
111 • /*Produce a listing: CUSTNAME, #oforders, AVG_ORDER_AMT, where the middle column
112 • is the total numbers of orders by the customer and the last column is the average order amount for that custom
113 • SELECT C.CNAME as CUSTNAME, COUNT(*) as no_of_orders,AVG(O.ord_Amt) as AVG_ORDER_AMT FROM CUSTOMER C,
114 • ORDERS O WHERE C.cust_no=O.cust_no GROUP BY C.CNAME;
115 • /*List the order# for orders that were shipped from all warehouses that the company has in a specific city.*/
116 • SELECT order_no FROM WAREHOUSE W, SHIPMENT S WHERE W.warehouseno=S.warehouseno AND CITY='BANGALORE';
117 • /*Demonstrate how you delete item# 10 from the ITEM table and make that field null in the ORDER_ITEM table.*/

```

Result Grid

order_no
112
117

Administration Schemas

Information

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: Insurance Bookdealer OrderProcessing\*

SCHEMAS

Filter objects

- bookdealer
- database1
- insurance
  - Tables
  - Views
  - Stored Procedures
  - Functions
- sys

```

111 • /*Produce a listing: CUSTNAME, #oforders, AVG_ORDER_AMT, where the middle column
112 • is the total numbers of orders by the customer and the last column is the average order amount for that custom
113 • SELECT C.CNAME as CUSTNAME, COUNT(*) as no_of_orders,AVG(O.ord_Amt) as AVG_ORDER_AMT FROM CUSTOMER C,
114 • ORDERS O WHERE C.cust_no=O.cust_no GROUP BY C.CNAME;
115 • /*List the order# for orders that were shipped from all warehouses that the company has in a specific city.*/
116 • SELECT order_no FROM WAREHOUSE W, SHIPMENT S WHERE W.warehouseno=S.warehouseno AND CITY='BANGALORE';
117 • /*Demonstrate how you delete item# 10 from the ITEM table and make that field null in the ORDER_ITEM table.*/
118 • delete from ITEM where item_no=5005;
119 • select *from ITEM;

```

Result Grid

item_no	unit_price
5001	503
5002	750
5003	150
5004	600
NULL	NULL

Administration Schemas

Information

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: Insurance Bookdealer OrderProcessing\*

**SCHEMAS**

Filter objects

- bookdealer
- database1
- Insurance
  - Tables
  - Views
  - Stored Procedures
  - Functions
- sys

```
115 /*List the order# for orders that were shipped from all warehouses that the company has in a specific city.*/
116 • SELECT order_no FROM WAREHOUSE W, SHIPMENT S WHERE W.warehouseno=S.warehouseno AND CITY='BANGALORE';
117 /*Demonstrate how you delete item# 10 from the ITEM table and make that field null in the ORDER_ITEM table.*/
118 • delete from ITEM where item_no=5005;
119 • select *from ITEM;
120 • select *from ORDER_ITEM;
```

Result Grid Filter Rows: Export: Wrap Cell Content:

order_no	item_no	qty
111	5001	50
112	5003	20
113	5002	50
114	NULL	60
115	5004	90
116	5001	10
117	5003	80
118	NULL	50
119	5002	10
120	5004	45

Administration Schemas Information

Result Grid Form Editor Field Types