

## **PROGRAM 6: ORDER PROCESSING DATABASE**

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 keys and the foreign keys.

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.2888 seconds.)

```
create table customer( custNo int PRIMARY KEY, cname varchar(10), city varchar(20) )
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.1980 seconds.)

```
create table orderTable( orderNo int primary key, odate date, custNo int, ordAmt int, FOREIGN KEY(custNo) REFERENCES customer(custNo) on update cascade on delete set NULL )
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.2680 seconds.)

```
create table item( itemNo int PRIMARY KEY, unitPrice int )
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.4220 seconds.)

```
create table orderItem( orderNo int, itemNo int, qty int, FOREIGN KEY(orderNo) REFERENCES orderTable(orderNo) on update cascade on delete set NULL, FOREIGN KEY(itemNo) REFERENCES item(itemNo) on update cascade on delete set NULL )
```

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✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.2006 seconds.)

```
create table warehouse( warehouseNo int PRIMARY KEY, city varchar(20) )
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.2612 seconds.)

```
create table shipment( orderNo int, warehouseNo int, shipdate date, FOREIGN KEY(orderNo) REFERENCES orderTable(orderNo) on update cascade on delete set NULL, FOREIGN KEY(warehouseNo) REFERENCES warehouse(warehouseNo) on update cascade on delete set NULL )
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> customer	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> item	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> orderitem	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	48.0 KiB	-
<input type="checkbox"/> ordertable	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> shipment	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	48.0 KiB	-
<input type="checkbox"/> warehouse	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<b>6 tables</b>	<b>Sum</b>	<b>0</b>	<b>InnoDB</b>	<b>utf8mb4_general_ci</b>	<b>176.0 KiB</b>	<b>0 B</b>

ii. Enter at least five tuples for each relation.

✓ 1 row inserted. (Query took 0.0472 seconds.)

```
INSERT INTO `customer` VALUES (1,'Jake','Bangalore')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.1130 seconds.)

```
INSERT INTO `customer` VALUES (2,'Terry','Mumbai')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0700 seconds.)

```
INSERT INTO `customer` VALUES (3,'Charles','Jaipur')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0370 seconds.)

```
INSERT INTO `customer` VALUES (4,'Rosa','Guwahati')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0380 seconds.)


```
INSERT INTO `customer` VALUES (5,'Amy','Bangalore')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0330 seconds.)

```
INSERT INTO `customer` VALUES (6,'Holt','Mumbai')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

←T→				▼	custNo	cname	city
<input type="checkbox"/>	 Edit	 Copy	 Delete		1	Jake	Bangalore
<input type="checkbox"/>	 Edit	 Copy	 Delete		2	Terry	Mumbai
<input type="checkbox"/>	 Edit	 Copy	 Delete		3	Charles	Jaipur
<input type="checkbox"/>	 Edit	 Copy	 Delete		4	Rosa	Guwahati
<input type="checkbox"/>	 Edit	 Copy	 Delete		5	Amy	Bangalore
<input type="checkbox"/>	 Edit	 Copy	 Delete		6	Holt	Mumbai



✓ 1 row inserted. (Query took 0.0678 seconds.)

```
INSERT INTO `ordertable` VALUES (1,'2021-06-01',1,1000)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ 1 row inserted. (Query took 0.1014 seconds.)

```
INSERT INTO `ordertable` VALUES (2,'2021-06-02',1,1500)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ 1 row inserted. (Query took 0.0562 seconds.)

```
INSERT INTO `ordertable` VALUES (3,'2021-06-03',3,1600)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ 1 row inserted. (Query took 0.0412 seconds.)

```
INSERT INTO `ordertable` VALUES (4,'2021-06-04',2,1700)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ 1 row inserted. (Query took 0.0532 seconds.)

```
INSERT INTO `ordertable` VALUES (5,'2021-06-05',4,1200)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ 1 row inserted. (Query took 0.0618 seconds.)

```
INSERT INTO `ordertable` VALUES (6,'2021-06-06',5,1100)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ 1 row inserted. (Query took 0.0400 seconds.)







```
INSERT INTO `ordertable` VALUES (7,'2021-06-07',2,1890)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ 1 row inserted. (Query took 0.2150 seconds.)

```
INSERT INTO `ordertable` VALUES (8,'2021-06-08',4,1999)
```

■ Console [ Edit ] [ Create PHP code ]

←T→				orderNo	odate	custNo	ordAmt
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	2021-06-01	1	1000
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	2021-06-02	1	1500
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	2021-06-03	3	1600
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	2021-06-04	2	1700
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	2021-06-05	4	1200
<input type="checkbox"/>	 Edit	 Copy	 Delete	6	2021-06-06	5	1100
<input type="checkbox"/>	 Edit	 Copy	 Delete	7	2021-06-07	2	1890
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	2021-06-08	4	1999

```
INSERT INTO `item` VALUES (1,1000)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.1390 seconds.)

```
INSERT INTO `item` VALUES (2,100)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.1210 seconds.)

```
INSERT INTO `item` VALUES (3,900)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0312 seconds.)

```
INSERT INTO `item` VALUES (4,700)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0426 seconds.)

```
INSERT INTO `item` VALUES (5,800)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0540 seconds.)

```
INSERT INTO `item` VALUES (6,750)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0320 seconds.)

```
INSERT INTO `item` VALUES (7,850)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0320 seconds.)

```
INSERT INTO `item` VALUES (8,950)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]



✓ 1 row inserted. (Query took 0.0420 seconds.)
































```
INSERT INTO `item` VALUES (9,990)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ 1 row inserted. (Query took 0.0400 seconds.)

```
INSERT INTO `item` VALUES (10,999)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

				▼ itemNo		unitPrice
<input type="checkbox"/>	 Edit	 Copy	 Delete	1		1000
<input type="checkbox"/>	 Edit	 Copy	 Delete	2		100
<input type="checkbox"/>	 Edit	 Copy	 Delete	3		900
<input type="checkbox"/>	 Edit	 Copy	 Delete	4		700
<input type="checkbox"/>	 Edit	 Copy	 Delete	5		800
<input type="checkbox"/>	 Edit	 Copy	 Delete	6		750
<input type="checkbox"/>	 Edit	 Copy	 Delete	7		850
<input type="checkbox"/>	 Edit	 Copy	 Delete	8		950
<input type="checkbox"/>	 Edit	 Copy	 Delete	9		990
<input type="checkbox"/>	 Edit	 Copy	 Delete	10		999

```
INSERT INTO `orderitem` VALUES (1,9,1)
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0864 seconds.)

```
INSERT INTO `orderitem` VALUES (2,8,1)
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0366 seconds.)

```
INSERT INTO `orderitem` VALUES (3,7,1)
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0156 seconds.)

```
INSERT INTO `orderitem` VALUES (4,6,1)
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0844 seconds.)

```
INSERT INTO `orderitem` VALUES (5,5,1)
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0156 seconds.)

```
INSERT INTO `orderitem` VALUES (6,4,1)
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0446 seconds.)

```
INSERT INTO `orderitem` VALUES (7,3,1)
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0260 seconds.)

```
INSERT INTO `orderitem` VALUES (8,10,1)
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

orderNo	itemNo	qty
1	9	1
2	8	1
3	7	1
4	6	1
5	5	1
6	4	1
7	3	1
8	10	1
8	1	1
7	2	8

✓ 1 row inserted. (Query took 0.0230 seconds.)

```
INSERT INTO `warehouse` VALUES (1,'Bengaluru')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.1322 seconds.)

```
INSERT INTO `warehouse` VALUES (2,'Mumbai')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0366 seconds.)

```
INSERT INTO `warehouse` VALUES (3,'Delhi')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0488 seconds.)

```
INSERT INTO `warehouse` VALUES (4,'Chennai')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0156 seconds.)

```
INSERT INTO `warehouse` VALUES (5,'Delhi')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0376 seconds.)

```
INSERT INTO `warehouse` VALUES (6,'Bengaluru')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

← T →				warehouseNo	city
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	Bengaluru
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	Mumbai
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	Delhi
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	Chennai
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	Delhi
<input type="checkbox"/>	 Edit	 Copy	 Delete	6	Bengaluru



✓ 1 row inserted. (Query took 0.0420 seconds.)

```
INSERT INTO `shipment` VALUES (1,5,'2021-06-08')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.1022 seconds.)

```
INSERT INTO `shipment` VALUES (2,2,'2021-06-08')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0400 seconds.)

```
INSERT INTO `shipment` VALUES (3,6,'2021-06-08')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0250 seconds.)

```
INSERT INTO `shipment` VALUES (4,1,'2021-06-08')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0540 seconds.)

```
INSERT INTO `shipment` VALUES (5,6,'2021-06-08')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0350 seconds.)

```
INSERT INTO `shipment` VALUES (6,5,'2021-06-08')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0410 seconds.)

```
INSERT INTO `shipment` VALUES (7,4,'2021-06-08')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0360 seconds.)

```
INSERT INTO `shipment` VALUES (8,3,'2021-06-08')
```

■ [Console](#)

+ Options

orderNo	warehouseNo	shipdate
1	5	2020-06-08
2	2	2020-06-08
3	6	2020-06-08
4	1	2020-06-08
5	6	2020-06-08
6	5	2020-06-08
7	4	2020-06-08
8	3	2020-06-08

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.

✓ Showing rows 0 - 4 (5 total, Query took 0.0156 seconds.) [cname: AMY... - TERRY...]

```
select c.cname, count(o.orderNo) as Number_of_order, avg(o.ordamt) from customer c, orderTable o where c.custNo=o.custNo group by c.cname order by c.cname asc
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25 ▼ Filter rows:

+ Options

				cname ▲ 1	Number_of_order	avg(o.ordamt)
<input type="checkbox"/>	Edit	Copy	Delete	Amy	1	1100.0000
<input type="checkbox"/>	Edit	Copy	Delete	Charles	1	1600.0000
<input type="checkbox"/>	Edit	Copy	Delete	Jake	2	1250.0000
<input type="checkbox"/>	Edit	Copy	Delete	Rosa	2	1599.5000
<input type="checkbox"/>	Edit	Copy	Delete	Terry	2	1795.0000

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

✓ Showing rows 0 - 2 (3 total, Query took 0.0090 seconds.)

```
select DISTINCT orderNo from shipment where warehouseNo in( SELECT warehouseNo from warehouse where city='Bengaluru')
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all

Number of rows: 25 ▼

Filter rows:

Sort by key: None ▼

+ Options

orderNo

3

4

5

v. Demonstrate how you delete item# 10 from the ITEM table and make that field null in the ORDER\_ITEM table.

✓ 1 row affected. (Query took 0.1134 seconds.)

```
# On delete set null used at the end of foreign key definiton while creating order item table hence the item number deleted will  
automatically be set to null in order item delete from item where itemNo=10
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]



✓ Showing rows 0 - 9 (10 total, Query took 0.0020 seconds.)

SELECT \* FROM `orderitem`

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25 ▼ Filter rows:  Sort by key: None ▼

+ Options

orderNo	itemNo	qty
1	9	1
2	8	1
3	7	1
4	6	1
5	5	1
6	4	1
7	3	1
8	NULL	1
8	1	1
7	2	8

☐ Show all | Number of rows: 25 ▼ Filter rows:  Sort by key: None ▼