**Fundamental of Database (CMPS352)**

**Homework #2**

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| --- | --- |
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| **Total (100)** |  |

**Collect your answers and the output for each question to one file.**

* Submit a printed copy to you instructor before the deadline.
* Submit a softcopy online to Blackboard.

**Write the SQL statements for all the following questions.**

1. Create the following tables:

Customer

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | Data type | size | Note |
| custNo | Number | 3 | PK |
| cname | Varchar2 | 25 | Unique |
| city | Varchar2 | 12 |  |

Solution:

create table customer (custno number(3), cname varchar2(25), city varchar2(12), constraint customer\_custno\_pk primary key (custno), constraint customer\_cname\_uk unique (cname));

Item

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | Data type | size | Note |
| ItemNo | Number | 3 | PK |
| UnitPrice | Number | 6,2 |  |

Solution:

create table item (itemno number(3), unitprice number(6,2), constraint item\_itemno\_pk primary key (itemno));

Orders

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | Data type | size | Note |
| OrderNo | Number | 3 | PK |
| Odate | Date |  | NN |
| CustNo | Number | 3 | FK- Customer |
| Ord\_amt | Number | 5 |  |

Solution:

create table orders (orderno number(3), odate date not null, custno number(3), ord\_amt number(5),constraint orders\_orderno\_pk primary key (orderno), constraint orders\_custno\_fk foreign key (custno) references customer(custno));

Order\_Item

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | Data type | size | Note |
| OrderNo | Number | 3 | PK |
| ItemNo | Number | 3 | PK |
| Qty | Number | 5 |  |

Solution:

create table order\_item (orderno number(3), itemno number(3), qty number(5), constraint order\_item\_orderno\_itemno\_pk primary key (orderno, itemno));

Shipment

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | Data type | size | Note |
| OrderNo | Number | 3 | PK |
| WarehouseNo | Varchar2 | 3 | PK |
| Ship\_date | Date |  |  |

Solution:

create table shipment (orderno number(3), warehouseno varchar2(3), ship\_date date, constraint shipment\_orderno\_whno\_pk primary key (orderno, warehouseno));

Warehouse

|  |  |  |  |
| --- | --- | --- | --- |
| Field name | Data type | size | Note |
| WarehouseNo | Varchar2 | 3 | PK |
| City | Varchar2 | 12 |  |

Solution:

create table warehouse (warehouseno varchar2(3), city varchar2(12),constraint warehouse\_warehouseno\_pk primary key (warehouseno));

1. Fill the table by following data:

Customer

|  |  |  |
| --- | --- | --- |
| custNo | Cname | City |
| 11 | Sara | Doha |
| 22 | Fatma | Doha |
| 33 | Omar | Khor |
| 44 | Ali | Shimal |
| 55 | Hassan | Khor |

Solution:

insert into customer (custno, cname, city) values (11,'SARA','DOHA');

insert into customer (custno, cname, city) values (22,'FATMA','DOHA');

insert into customer (custno, cname, city) values (33,'OMAR','KHOR');

insert into customer (custno, cname, city) values (44,'ALI','SHIMAL');

insert into customer (custno, cname, city) values (55,'HASSAN','KHOR');

|  |  |  |  |
| --- | --- | --- | --- |
| OrderNo | Odate | CustNo | Ord\_amt |
| 21 | 03-Apr-02 | 11 | 10000 |
| 22 | 09-Mar-04 | 22 | 11000 |
| 23 | 23-Jan-01 | 33 | 14000 |
| 24 | 11-Aug-08 | 44 | 16000 |
| 25 | 06-Oct-10 | 55 | 20000 |

Orders

Solution:

insert into orders (orderno, odate, custno, ord\_amt) values (21,'3 Apr 02',11, 10000);

insert into orders (orderno, odate, custno, ord\_amt) values (22,'9 Mar 04',22, 11000);

insert into orders (orderno, odate, custno, ord\_amt) values (23,'23 Jan 01',33, 14000);

insert into orders (orderno, odate, custno, ord\_amt) values (24,'11 Aug 08',44, 16000);

insert into orders (orderno, odate, custno, ord\_amt) values (25,'6 oct 10',55, 20000);

Item

|  |  |
| --- | --- |
| ItemNo | UnitPrice |
| 1 | 1100 |
| 2 | 1200 |
| 3 | 1300 |
| 4 | 1400 |
| 5 | 1500 |

Solution:

insert into item (itemno, unitprice) values (1,1100);

insert into item (itemno, unitprice) values (2,1200);

insert into item (itemno, unitprice) values (3,1300);

insert into item (itemno, unitprice) values (4,1400);

insert into item (itemno, unitprice) values (5,1500);

Order\_Item

|  |  |  |
| --- | --- | --- |
| OrderNo | ItemNo | Qty |
| 21 | 1 | 20 |
| 25 | 5 | 30 |
| 22 | 2 | 40 |
| 24 | 4 | 10 |
| 23 | 3 | 60 |

Solution:

insert into order\_item (orderno, itemno, qty) values(21,1,20);

insert into order\_item (orderno, itemno, qty) values(25,5,30);

insert into order\_item (orderno, itemno, qty) values(22,2,40);

insert into order\_item (orderno, itemno, qty) values(24,4,10);

insert into order\_item (orderno, itemno, qty) values(23,3,60);

Shipment

|  |  |  |
| --- | --- | --- |
| OrderNo | WarehouseNo | Ship\_date |
| 21 | W1 | 11-Jan-02 |
| 25 | W2 | 24-Feb-10 |
| 22 | W3 | 13-Jun-05 |
| 24 | W4 | 16-Sep-09 |
| 23 | W5 | 28-Apr-03 |

Solution:

insert into shipment (orderno, warehouseno, ship\_date) values (21, 'W1', '11 jan 02');

insert into shipment (orderno, warehouseno, ship\_date) values (25, 'W2', '24 feb 10');

insert into shipment (orderno, warehouseno, ship\_date) values (22, 'W3', '13 jun 05');

insert into shipment (orderno, warehouseno, ship\_date) values (24, 'W4', '16 sep 09');

insert into shipment (orderno, warehouseno, ship\_date) values (23, 'W5', '28 apr 03');

Warehouse

|  |  |
| --- | --- |
| WarehouseNo | City |
| W1 | Najma |
| W2 | Khor |
| W3 | Doha |
| W4 | Muntza |
| W5 | Rayaan |

Solution:

insert into warehouse (warehouseno, city) values ('W1', 'NAJMA');

insert into warehouse (warehouseno, city) values ('W2', 'KHOR');

insert into warehouse (warehouseno, city) values ('W3', 'DOHA');

insert into warehouse (warehouseno, city) values ('W4', 'MUNTZA');

insert into warehouse (warehouseno, city) values ('W5', 'RAYAAN');

1. Create view for all customers with their orders.

Solution:

create view cust\_with\_order as select c.custno, c.cname, c.city, o.orderno, o.odate, o.ord\_amt from customer c, orders o where c.custno=o.custno;

1. Create a query to display the orderNo and Ship\_date for all orders shipped from warehouseNo W2.

Solution:

select orderno, ship\_date from shipment where warehouseno ='W2';

1. Create a query to display the warehouse information from which the customer named “Fatma” was supplied his orders. Produce a listing: orderNo, WarehouseNo,

Solution:

select w.city, w.warehouseno from warehouse w, customer c , shipment s, orders o where w.warehouseno=s.warehouseno and s.orderno=o.orderno and o.custno = c.custno and c.cname = 'FATMA';

1. Create a query to display the cname,No\_of\_orders, Avg\_order\_amt, where the middle column is the total number of orders and last column is the average order amount for that customer.

Solution:

select c.cname, count(o.orderno) no\_of\_order, avg(o.ord\_amt) avg\_order\_amt from customer c, orders o where c.custno = o.custno group by cname;

1. Create a query to display the orders that were not shipped within 30 days of ordering.

Solution:

select o.orderno, o.odate, o.custno, o.ord\_amt from orders o, shipment s where o.orderno = s.orderno and s.ship\_date-o.odate > 30;

1. Create a query to display the orderNo for orders that were shipped from all warehouse that the company has in Rayaan.

Solution:

select s.orderno from shipment s, warehouse w where w.warehouseno = s.warehouseno and w.city = 'RAYAAN';

1. Delete all orders for customer named "Sara".

Solution:

delete from orders where custno =( select custno from customer where cname = 'SARA');

1. List all items that have a price greater than the average price.

Solution:

select \* from item where unitprice > (select avg(unitprice) from item);

1. Find the item with the maximum unit price.

Solution:

select itemno from item where unitprice = (select max(unitprice) from item);

1. List all customer names whose orders were shipped from a warehouse in the same city as they live in.

Solution:

select c.cname from customer c, warehouse w, shipment s, orders o where c.custno=o.custno and o.orderno=s.orderno and s.warehouseno=w.warehouseno and c.city=w.city;