DATABASE MANAGEMENT SYSTEMS (DBMS) LAB

M.Sc. Computer Science

First Year, Semester-II, Paper-VI

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FOREWORD

Since its establishment in 1976, Acharya Nagarjuna University has been forging ahead in the path of progress and dynamism, offering a variety of courses and research contributions. I am extremely happy that by gaining 'A+' grade from the NAAC in the year 2024, Acharya Nagarjuna University is offering educational opportunities at the UG, PG levels apart from research degrees to students from over 221 affiliated colleges spread over the two districts of Guntur and Prakasam.

The University has also started the Centre for Distance Education in 2003-04 with the aim of taking higher education to the door step of all the sectors of the society. The centre will be a great help to those who cannot join in colleges, those who cannot afford the exorbitant fees as regular students, and even to housewives desirous of pursuing higher studies. Acharya Nagarjuna University has started offering B.Sc., B.A., B.B.A., and B.Com courses at the Degree level and M.A., M.Com., M.Sc., M.B.A., and L.L.M., courses at the PG level from the academic year 2003-2004 onwards.

To facilitate easier understanding by students studying through the distance mode, these self-instruction materials have been prepared by eminent and experienced teachers. The lessons have been drafted with great care and expertise in the stipulated time by these teachers. Constructive ideas and scholarly suggestions are welcome from students and teachers involved respectively. Such ideas will be incorporated for the greater efficacy of this distance mode of education. For clarification of doubts and feedback, weekly classes and contact classes will be arranged at the UG and PG levels respectively.

It is my aim that students getting higher education through the Centre for Distance Education should improve their qualification, have better employment opportunities and in turn be part of country's progress. It is my fond desire that in the years to come, the Centre for Distance Education will go from strength to strength in the form of new courses and by catering to larger number of people. My congratulations to all the Directors, Academic Coordinators, Editors and Lesson-writers of the Centre who have helped in these endeavors.

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206CP24: DATABASE MANAGEMENT SYSTEMS (DBMS) LAB
SYLLABUS
206CP242 DBMS LAB
LAB Cycle – I

Aim: Marketing Company wishes to computerize their operations by using following tables.

Table Name: Client_Master
Description: This table stores the information about the clients.

Column Name	Data Type	Size	Attribute
Client no	Varchar2	6	Primary Key and first letter should starts with 'C'
Name	Varchar2	l0	Not null
Addressl	Varchar2	l0	
Address2	Varchar2	l0	
City	Varchar2	10	
State	Varchar2	l0	
Pincode	Number	6	Not null
Bal_due	Number	10,2	

Table Name: Product_master
Description: This table stores the information about products.

Column Name	Data Type	Size	Attribute
Product_no	Yarchar2	6	Primary Key and first letter should starts with 'P'
Description	Varchar2	l0	Not null
Profit_percent	Number	2.2	Not null
Unit_measure	Varchar2	10	
Qty_on_hand	Number	8	
Record_lvl	Number	8	
Sell_price	Number	8.2	Not null. can't be 0
Cost_price	Number	8.2	Not null. can't be 0

Table Name: salesman_master
Description: This table stores the salesmen working in the company

Column Name	Data Type	Size	Attribute
Salesman_id	Varchar2	6	Primary Key and first letter should starts with 'S'
Name	Varchar2	10	Not null
Address I	Varchar2	10	
Address2	Varchar2	10	
City	Varchar2	10	
State	Varchar2	10	
Pincode	Number	6	Not null
Sal_amt	Number	8.2	Should not null and zero
Target_amt	Number	6,2	Should not null and zero
Remarks	Varchar2	l0	

Table Name: sales_order
Description: This table stores the information about orders

Column Name	Data Type	Size	Attribute
S_order_no	Varchar2	6	Primary Key and fisrt char is 'O'
S_order_date	Date		
Client_no	Varchar2	6	Foreign key
Delve_address	Varchar2	20	
Salesman_no	Varchar2	6	Foreign key
Delve_type	Varchar2	1	Delivery part(P)/Full(F) and default 'F'
Billed_yn	Char	1	
Delve_date	Date		Can't be less than the s order date
Order_status	Varchar2	10	Values in 'lN PROCESS'. FULFILLED', 'BACK ORDER, 'CANCELLED'

Table Name: sales_order_details
Description: This table stores the information about products ordered

Column Name	Data Type	Size	Attribute
S_order_no	Varchar2	6	Primary key, foreign key references sales order table
Product_no	Varchar2	6	Primary key, foreign key references product master table
Qty_ordered	Number	8	
Qty_disp	Number	8	
Product_rate	Number	10.2	

Table Name: Challan_master
Description: This table stores the information about challan made for orders

Column Name	Data Type	Size	Attribute
Challan_no	Varchar2	6	Primary key, first two letters must start with 'CH'
S_order_no	Varchar2	6	Foreign key references sales order
Challan_date	Date		
Billed_yn	Char	1	Values in 'Y', 'N' default 'N'

Table Name: Challan_Details
Description: This table stores the information about challan details.

Column Name	Data Type	Size	Attribute
Challan_no	Varchar2	6	Primary key, foreign key references challan master table
Product_no	Varchar2	6	Primary key, foreign key references product master table
Qty_disp	Number	4.2	Not null

Solve the following queries by using above tables.

1. Retrieve the list of names and cities of all the clients.
2. List the various products available from product_master.
3. Find out the clients who stay in a city whose second letter is ,a'.
4. Find the list of all clients who stay in the city ‘CHENNAI, or ‘DELHI'.
5. List all the clients located at 'CHENNAI'.
6. Print the information from sales order as the order the places in the month of January.
7. Find the products with description as 'Floppy Drive' and, pen drive'.
8. Find the products whose selling price is grater than 2000 and less than or equal to 5000.
9. Find the products whose selling price is more than 1500 and also find the new selling price as original selling price * 15.
10. Find the products in the sorted order of their description.
11. Divide the cost of product '540 HDD' by difference between its price and I 00.
12. List the product number, description, sell price of products whose description begin with letter 'M'.
13. List all the orders that were cancelled in the month of March.
14. Count the total number of orders.
15. Calculate the average price of all the products.
16. Determine the maximum and minimum product prices.
17. Count the number of products having price grater than or equal to 1500.
18. Find all the products whose quantity on hand is less than reorder level.
19. Find out the challan details whose quantity dispatch is high.
20. Find out the order status of the sales order, whose order delivery is maximum in the month of March.
21. Find out the total sales made by the each salesman.
22. Find the total revenue gained by the each product sales in the period of Q1 and Q2 of year 2006.
23. Print the description and total qty sold for each product.
24. Find the value of each product sold.
25. Calculate the average qty sold for each client that has a maximum order value of 1,50,000.
26. List the products which has highest sales.
27. Find out the products and their quantities that will have to deliver in the current month.
28. Find the product number and descriptions of moving products.
29. Find the names of clients who have purchased 'CD DRIVE'.
30. List the product numbers and sales order numbers of customers having quantity ordered less than 5 from the order details for the product ' 1.44 Floppies'.
31. Find the product numbers and descriptions of non-moving products.
32. Find the customer names and address for the clients, who placed the order '019001',
33. Find the client names who have placed orders before the month of May, 2006.
34. Find the names of clients who have placed orders worth of 10000 or more.
35. Find out if the product is '1.44 drive' is ordered by any client and print the client number, name to whom it is sold.

Cycle-II

Aim:
A Manufacturing Company deals with various parts and various suppliers supply these parts. It consists of three tables to record its entire information. Those are as follows.

S(SNO,SNAME,CTTY,STATUS)
P(PNO,PNAME,COLOR,WEIGTH,CITY,COST)
SP(SNO,PNO,QTY)
J(JNO.JNAME,CITY)
SPJ(SNO,PNO,JNO,QRY)

1. Get Suppliers Names for Suppliers who supply at least one red part.
2. Get Suppliers Names for Suppliers who do not supply part 'P2'
3. Using Group by with Having Clause, Get the part numbers for all the parts supplied by more than one supplier.
4. Get supplier numbers for suppliers with status value less the current max status value.
5. Get the total quantity of the part 'P2' supplied.
6. Get the part color, supplied by the supplier 'S I'
7. Get the names of the parts supplied by the supplier 'Smith' and "Black"
8. Get the Project numbers, whose parts are not in Red Color, from London.
9. Get the suppliers located from the same city.
10. Get the suppliers, who does not supply any part.
11. Find the pnames of parts supplied by London Supplier and by
12. no one else.
13. Find the sno's of suppliers who charge more for some part than the average cost of that Part.
14. Find the sid's of suppliers who supply only red parts.
15. Find the sid's of suppliers who supply a red and a green part.
16. Find the sid's of suppliers who supply a red or green part.

Cycle III

An Airline System would like to keep track their information by using the following relations.

Flights (flno integer, from string, to string, distance integer, price integer)
Aircraft (aid integer, aname string, cruising_range integer)
Certified (eid integer, aid integer)
Employees (eid integer, ename string, salary real)

Note that the employees relation describes pilots and other kinds of employees as well; every pilot is certified for aircraft and only pilots are certified to fly. Resolve the following queries.

l. For each pilot who is certified for more than three aircraft, find the eid's and the maximum cruising range of the aircraft that he (or She) certified for.
2. Find the names of pilots whose salary is less than the price of the cheapest route from Los Angeles to Honolulu.
3. Find the name of the pilots certified from some Boeing aircraft.
4. For all aircraft with cruising range over 1,000 miles, find the name of the aircraft and the average salary of all pilots certified for this aircraft.
5. Find the aid's of all aircraft than can be used from Los Angels to Chicago.
6. Print the enames of pilots who can operate planes with cruising range greater than 3,000 miles, but are not certified by Boeing aircraft.
7. Find the total amount paid to employees as salaries.
8. Find the eid's of employees who are certified for exactly three aircrafts.
9. Find the eid's of employee who make second highest salary.
10. Find the aid's of all than can be used on non-stop flights from Bonn to Chennai.

Cycle IV

Employee Database

Aim: An enterprise wishes to maintain a database to automate its operations. Enterprise divided into to certain departments and each department consists of employees. The following two tables describes the automation schemas.

DEPT (DEPTNO, DNAME, LOC)
EMP (EMPNO,ENAMEJOB,MG&HIREDATE,SAL,COMM,DEPTNO)

l. Create a view, which contain employee names and their manager names working in sales department.
2. Determine the names of employee, who earn more than there managers.
3. Determine the names of employees, who take highest salary in their departments.
4. Determine the employees, who located at the same place.
5. Determine the employees, whose total salary is like the minimum salary of any department.
6. Update the employee salary by 25%o, whose experience is greater than l0 years.
7. Delete the employees, who completed 32 years of service.
8. Determine the minimum salary of an employee and his details, who join on the same date.
9. Determine the count of employees, who are taking commission and not taking commission.
10. Determine the department does not contain any employees.
11. Find out the details of top 5 earners of company. (Note Employee Salaries should not be duplicate like 5k,4k,4k,3k,2k)
12. Display those managers name whose salary is more than an average salary of his employees.
13. Display the names of the managers who is having maximum number of employees working under him?
14. In which year did most people join the company? Display the year and number of employees.
15. Display ename, dname even if there no employees working in a particular department(use outer join).

MongoDB

1. Create students and teacher objects in MongoDB. The teacher object must consist of students enrolled.
    - List all the teachers
    - Display the information of the teacher based on id
    - Updates the teachers name for id value 2
    - Delete data with id=2 from student
    - List all the students assigned to a teacher
    - List all the teacher without students
    - List teachers of a student.

2. Create a login template to check whether the user is a valid user

3. Repeat the above cycle III & IV with MongoDB

CONTENTS

206CP24: DATABASE MANAGEMENT SYSTEMS (DBMS) LAB

OBJECTIVES:

The objectives of a DBMS (Database Management System) Lab are focused on providing practical experience in working with databases, understanding the core concepts of DBMS, and implementing the theoretical knowledge acquired during lectures. Through hands-on practice, students develop essential skills to design, create, manage, and query databases efficiently.

1. **AIM: Marketing Company wishes to computerize their operations by using following tables.**

1. TABLE NAME: CLIENT_MASTER

Description: This table stores the information about the clients

Column Name	Data Type	Size	Attribute
Client_no	Varchar2	6	Primary Key and first letter should starts with 'C'
Name	Varchar2	10	Not null
Address1	Varchar2	10	
Address2	Varchar2	10	
City	Varchar2	10	
State	Varchar2	10	
Pincode	Number	6	Not null
Bal_due	**Number**	**10,2**	

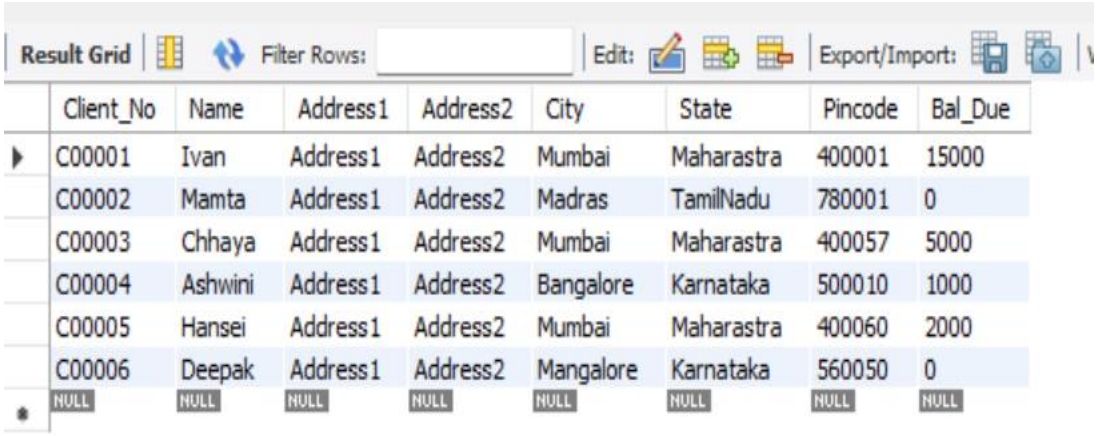
Solution:

```
Create Table Client_Master(
Client_No Varchar(6) Primary Key,
Name Varchar(10) NOT NULL,
Address1 Varchar(10),
Address2 Varchar(10),
City Varchar(10),
State Varchar(10),
Pincode int (6) NOT NULL,
Bal_Due int (10)
);
```

describe Client_Master;

insert into Client_Master values('C00001','Ivan','Address1','Address2','Mumbai','Maharastra', 400001, 15000);
insert into Client_Master values('C00002','Mamta','Address1','Address2','Madras', 'TamilNadu', 780001,0);
insert into Client_Master values('C00003','Chhaya','Address1','Address2','Mumbai', 'Maharastra', 400057,5000);
insert into Client_Master values('C00004','Ashwini','Address1','Address2','Bangalore','Karnataka', 500010,1000);**
insert into Client_Master values('C00005','Hansei','Address1','Address2','Mumbai', 'Maharastra', 400060,2000);
insert into Client_Master values('C00006','Deepak','Address1','Address2','Mangalore', 'Karnataka', 560050,0);

select * from Client_Master;


Result Grid | Filter Rows: | Edit: | Export/Import:

Client_No	Name	Address1	Address2	City	State	Pincode	Bal_Due
C00001	Ivan	Address1	Address2	Mumbai	Maharastra	400001	15000
C00002	Mamta	Address1	Address2	Madras	TamilNadu	780001	0
C00003	Chhaya	Address1	Address2	Mumbai	Maharastra	400057	5000
C00004	Ashwini	Address1	Address2	Bangalore	Karnataka	500010	1000
C00005	Hansei	Address1	Address2	Mumbai	Maharastra	400060	2000
C00006	Deepak	Address1	Address2	Mangalore	Karnataka	560050	0
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

2. TABLE NAME: PRODUCT_MASTER

Description: This table stores the information about products.

Column Name	Data Type	Size	Attribute
Product_No	Varchar2	6	Primary Key and first letter should starts with 'P'
Description	Varchar2	10	Not null
Profit_Percent	Number	2,2	Not null
Unit_Measure	Varchar2	10	
Qty_On_Hand	Number	8	
Record_Lvl	Number	8	
Sell_Price	Number	8,2	Not null, can't be 0
Cost_Price	Number	8,2	Not null, can't be 0

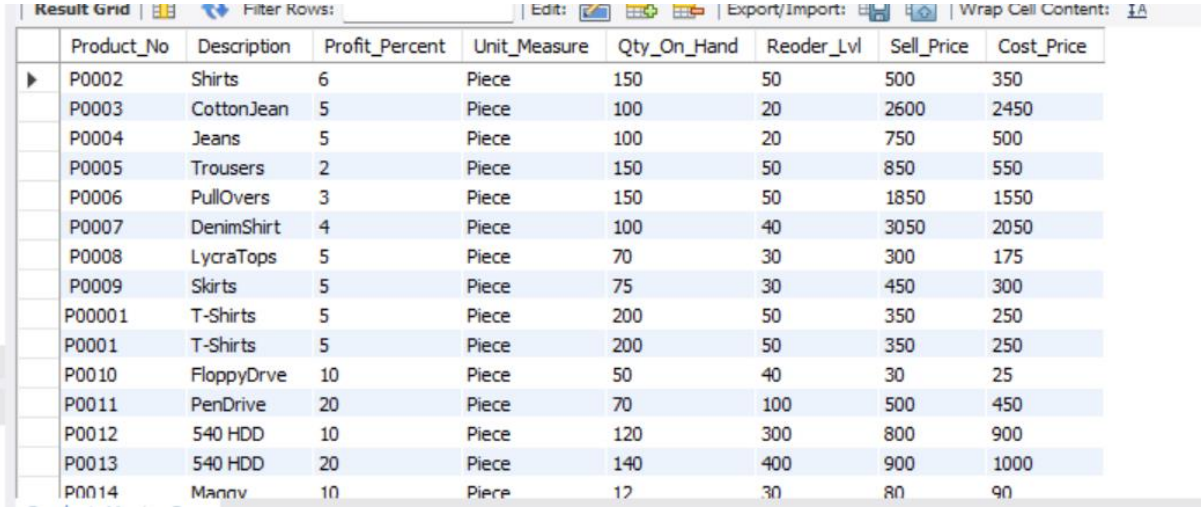
Solution:

```
Create Table Product_Master(
Product_No Varchar(6) Primary Key,
Description Varchar(10) Not Null,
Profit_Percent int(2) Not Null,
Unit_Measure Varchar(10),
Qty_On_Hand int(8),
Reoder_Lvl int(8),
Sell_Price int(8) Not Null,
Cost_Price int(8) Not Null
);

describe Product_Master;

insert into Product_Master values ('P0001','T-Shirts', 5, 'Piece', 200, 50, 350, 250);
insert into Product_Master values (' P0002','Shirts', 6, 'Piece', 150, 50, 500, 350);
insert into Product_Master values (' P0003','CottonJean', 5, 'Piece', 100, 20, 2600, 2450);
insert into Product_Master values (' P0004','Jeans', 5, 'Piece', 100, 20, 750, 500);
insert into Product_Master values (' P0005','Trousers', 2, 'Piece', 150, 50, 850, 550);
insert into Product_Master values (' P0006','PullOvers', 2.5, 'Piece', 150, 50, 1850, 1550);
insert into Product_Master values (' P0007','DenimShirt', 4, 'Piece', 100, 40, 3050, 2050);
insert into Product_Master values (' P0008','LycraTops', 5, 'Piece', 70, 30, 300, 175);
insert into Product_Master values (' P0009','Skirts', 5, 'Piece', 75, 30, 450, 300);
insert into Product_Master values('P0010','FloppyDrve',10, 'Piece', 50,40,30,25);
insert into Product_Master values('P0011','PenDrive',20, 'Piece', 70,100,500,450);
insert into Product_Master values('P0012', '540 HDD',10, 'Piece', 120,300,800,900);
insert into Product_Master values('P0013', '540 HDD',20, 'Piece', 140,400,900,1000);
insert into Product_Master values('P0014', 'Maggy',10, 'Piece', 12,30,80,90);
insert into Product_Master values('P0015', 'Mango',100, 'Piece', 10,30,20,30);
insert into Product_Master values('P07885', 'CDDRIVE',2.5, 'Piece', 10,3,5250,5100);
insert into Product_Master values('P03453', 'Monitor',6, 'Piece', 10,3,12000,11200);
insert into Product_Master values('P08975', '1.44 Drve',5, 'Piece', 10,3,1050,1000);
insert into Product_Master values('P08865', '1.22 Drve',5, 'Piece', 2,3,1050,1000);
insert into Product_Master values ('P07868','Keyboards',2,'piece',10 ,3, 3150, 3050);
insert into Product_Master values ('P07869','1.44Floppy',2,'piece',7 ,2, 315, 305);

select * from Product_Master;
```



Product_No	Description	Profit_Percent	Unit_Measure	Qty_On_Hand	Reoder_Lvl	Sell_Price	Cost_Price
P0002	Shirts	6	Piece	150	50	500	350
P0003	CottonJean	5	Piece	100	20	2600	2450
P0004	Jeans	5	Piece	100	20	750	500
P0005	Trousers	2	Piece	150	50	850	550
P0006	PullOvers	3	Piece	150	50	1850	1550
P0007	DenimShirt	4	Piece	100	40	3050	2050
P0008	LycraTops	5	Piece	70	30	300	175
P0009	Skirts	5	Piece	75	30	450	300
P00001	T-Shirts	5	Piece	200	50	350	250
P0001	T-Shirts	5	Piece	200	50	350	250
P0010	FloppyDrve	10	Piece	50	40	30	25
P0011	PenDrive	20	Piece	70	100	500	450
P0012	540 HDD	10	Piece	120	300	800	900
P0013	540 HDD	20	Piece	140	400	900	1000
P0014	Maggy	10	Piece	12	30	80	90

3. TABLE NAME: SALESMAN_MASTER

Description: This table stores the salesmen working in the company

Column Name	Data Type	Size	Attribute
Salesman_id	Varchar2	6	Primary Key and first letter should starts with 'S'
Name	Varchar2	10	Not null
Address1	Varchar2	10	
Address2	Varchar2	10	
City	Varchar2	10	
State	Varchar2	10	
Pincode	Number	6	Not null
Sal_amt	Number	8,2	Should not null and zero
Target_amt	Number	6,2	Should not null and zero
Remarks	Varchar2	10	

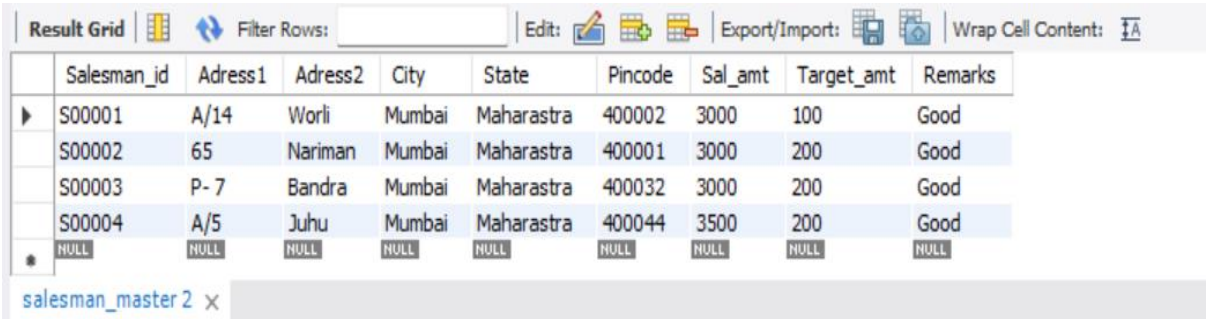
Solution:

```
CREATE TABLE salesman_master(
Salesman_id VARCHAR(10) PRIMARY KEY NOT NULL,
Adress1 VARCHAR(10),
Adress2 VARCHAR(10),
City VARCHAR(10),
State VARCHAR(10),
Pincode int(6) NOT NULL,
Sal_amt int(8) NOT NULL,
Target_amt int(6) NOT NULL,
Remarks VARCHAR(10)
);
```

describe salesman_master;

insert into Salesman_Master
values('S00001','A/14','Worli','Mumbai','Maharastra',400002,3000,100,'Good');
insert into Salesman_Master
values('S00002','65','Nariman','Mumbai','Maharastra',400001,3000,200,'Good');
insert into Salesman_Master values('S00003','P-
7','Bandra','Mumbai','Maharastra',400032,3000,200,'Good');
insert into Salesman_Master
values('S00004','A/5','Juhu','Mumbai','Maharastra',400044,3500,200,'Good');

select * from salesman_master;


Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Salesman_id	Adress1	Adress2	City	State	Pincode	Sal_amt	Target_amt	Remarks
S00001	A/14	Worli	Mumbai	Maharastra	400002	3000	100	Good
S00002	65	Nariman	Mumbai	Maharastra	400001	3000	200	Good
S00003	P-7	Bandra	Mumbai	Maharastra	400032	3000	200	Good
S00004	A/5	Juhu	Mumbai	Maharastra	400044	3500	200	Good
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

salesman_master 2

4. TABLE NAME: SALES_ORDER
Description: This table stores the information about orders

Column Name	Data Type	Size	Attribute
S_order_no	Varchar2	6	Primary Key and fisrt char is 'O'
S_order_date	Date		
Client_no	Varchar2	6	Foreign key
Delve_address	Varchar2	20	
Salesman_no	Varchar2	6	Foreign key
Delve_type	Varchar2	1	Delivery: part(P)/Full(F) and default 'F'
Billed_yn	Char	1	
Delve_date	Date		Can't be less than the s_order_date
Order_status	Varchar2	10	Values in 'IN PROCESS', FULFILLED', 'BACK ORDER, 'CANCELLED'

Solution:

CREATE TABLE Sales_Order(
S_order_no VARCHAR(6) PRIMARY KEY,
Client_No VARCHAR(6) REFERENCES Client_Master,
S_order_date DATE,
Salesman_id VARCHAR(6) REFERENCES salesman_master,
Delve_address VARCHAR (20),
Delve_type VARCHAR (1),

```
Billed_yn VARCHAR (1),
Delve_date DATE,
Order_status VARCHAR(10),
CONSTRAINT CK_DELIVTYPE CHECK(Delve_type IN('P','F')),
CONSTRAINT CK_DELIVDATE CHECK(Delve_date > S_order_date ),
CONSTRAINT CK_ORDERSTATUS CHECK(Order_status IN('IN
PROCESS','FULFILLED','BACKORDER','CANCELLED'))
);

describe Sales_Order;

insert into Sales_Order values('O19001','C00001','2004-06-12','S00001','Mumbai','F','N',
'2004-06-14','IN PROCESS');
insert into Sales_Order values('O19002','C00002','2004-06-25','S00002','Chennai','P','N',
'2004-06-27','CANCELLED');
insert into Sales_Order values('O46865','C00003','2004-02-18','S00003','Vizag','F','Y', '2004-
02-20','FULFILLED');
insert into Sales_Order values('O19003','C00003','2004-02-18','S00004','Vizag','F','Y', '2004-
02-20','FULFILLED');
insert into Sales_Order values('O46866','C00004','2004-05-20','S00005','Vizag','P','N', '2004-
05-22','CANCELLED');
insert into Sales_Order values('O46877','C00005','2004-03-20','S00006','Vizag','P','N', '2004-
03-22','CANCELLED');

select * from Sales_Order;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

S_order_no	Client_No	S_order_date	Salesman_id	Delve_address	Delve_type	Billed_yn	Delve_date	Order_status
O19001	C00001	2004-06-12	S00001	Mumbai	F	N	2004-06-14	IN PROCESS
O19002	C00002	2004-06-25	S00002	Chennai	P	N	2004-06-27	CANCELLED
O19003	C00003	2004-02-18	S00004	Vizag	F	Y	2004-02-20	FULFILLED
O46865	C00003	2004-02-18	S00003	Vizag	F	Y	2004-02-20	FULFILLED
O46866	C00004	2004-05-20	S00005	Vizag	P	N	2004-05-22	CANCELLED
O46877	C00005	2004-03-20	S00006	Vizag	P	N	2004-03-22	CANCELLED
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Sales_Order 2 x Apply

5. TABLE NAME: SALES_ORDER_DETAILS

Description: This table stores the information about products ordered

Column Name	Data Type	Size	Attribute
S_order_no	Varchar2	6	Primary key, foreign key references sales_order table
Product_no	Varchar2	6	Primary key, foreign key references product_master table
Qty_ordered	Number	8	
Qty_disp	Number	8	
Product_rate	Number	10,2	

Solution:

```
CREATE TABLE Sales_Order_Details(
S_order_no VARCHAR (6) REFERENCES SALES_ORDER,
Product_no VARCHAR (6) REFERENCES PRODUCT_MASTER,
Qty_ordered int(8),
Qty_disp int (8),
Product_rate int(10)
);

describe Sales_Order_Details;

insert into Sales_Order_Details values('O19001','P00001',5,4,525);
insert into Sales_Order_Details values('O19002','P00002',2,2,5250);
insert into Sales_Order_Details values('O46865','P00003',10,3,4140);
insert into Sales_Order_Details values('O19003','P00004',10,5,12000);
insert into Sales_Order_Details values('O46866','P00005',16,7,1050);

select * from Sales_Order_Details;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Conte

S_order_no	Product_no	Qty_ordered	Qty_disp	Product_rate
O19001	P00001	5	4	525
O19002	P00002	2	2	5250
O46865	P00003	10	3	4140
O19003	P00004	10	5	12000
O46866	P00005	16	7	1050

Sales_Order_Details 2 ×

6. TABLE NAME: CHALLAN_MASTER

Description: This table stores the information about challans made for orders.

Column Name	Data Type	Size	Attribute
Challan_no	Varchar2	6	Primary key, first two letters must start with 'CH'
S_order_no	Varchar2	6	Foreign key references sales_order
Challan_date	Date		
Billed_yn	Char	1	Values in 'Y', 'N' default 'N'

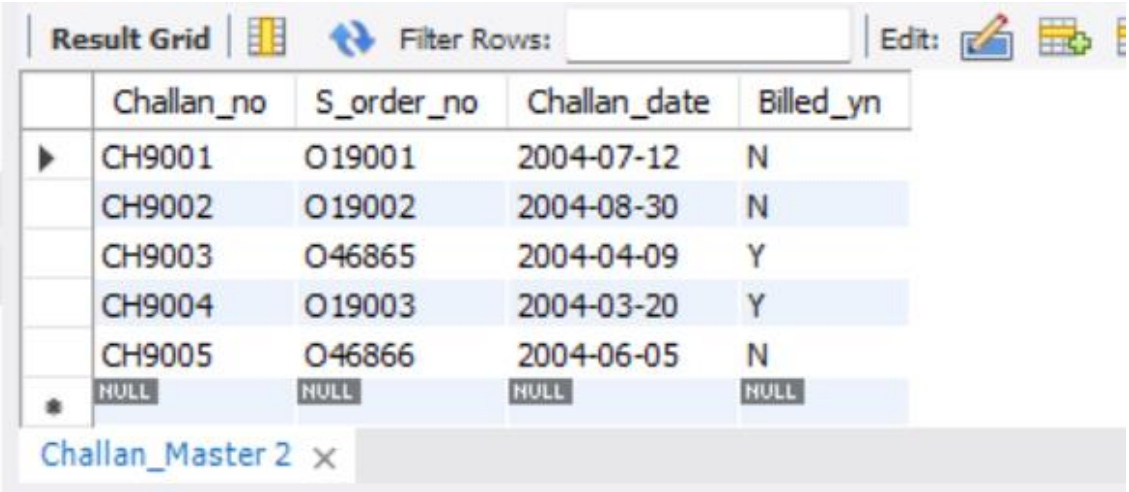
Solution:

```
create table Challan_Master(
Challan_no      varchar(6) Primary key,
S_order_no varchar(6) references Sales_Order, Challan_date date   NOT NULL,
Billed_yn varchar(6)   DEFAULT 'N', CHECK (Billed_yn in ('Y','N')));

describe Challan_Master;

insert into Challan_Master values ('CH9001', 'O19001','2004-07-12', 'N');
insert into Challan_Master values ('CH9002', 'O19002','2004-08-30', 'N');
insert into Challan_Master values ('CH9003', 'O46865','2004-04-09', 'Y');
insert into Challan_Master values ('CH9004', 'O19003','2004-03-20', 'Y');
insert into Challan_Master values ('CH9005', 'O46866','2004-06-05', 'N');

select * from Challan_Master;
```



7. TABLE NAME: CHALLAN_DETAILS

Description: This table stores the information about challan detail.

Column Name	Data Type	Size	Attribute
Challan_no	Varchar2	6	Primary key, foreign key references challan_master table
Product_no	Varchar2	6	Primary key, foreign key references product_master table
Qty_disp	Number	4,2	Not null

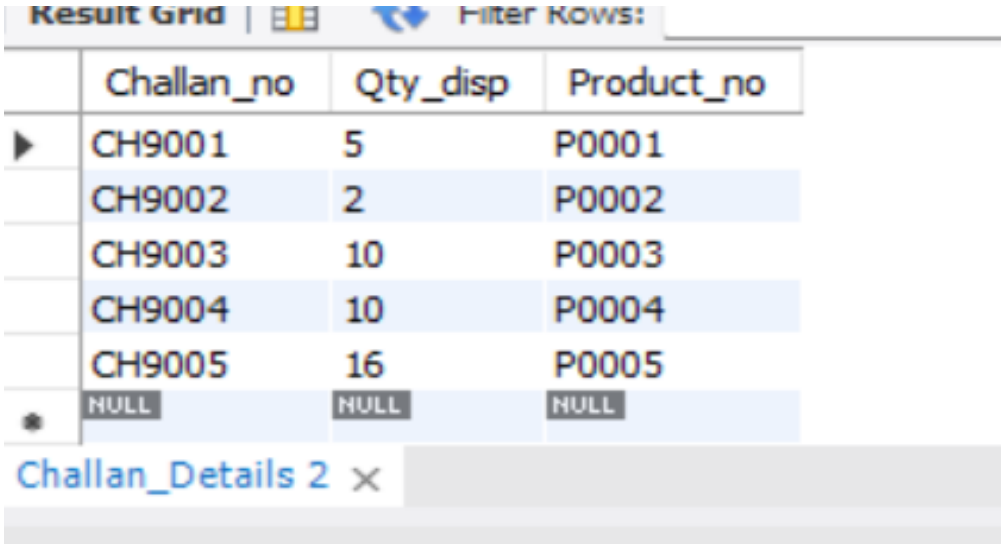
Solution:

```
create table Challan_Details(
Challan_no varchar(6),
Qty_disp int(4) not null,
Product_no varchar(6) references Product_Master,
Primary key (Challan_no, Product_no)
);

describe Challan_Details;

insert into Challan_Details values ('CH9001', 5, 'P0001');
insert into Challan_Details values ('CH9002', 2, 'P0002');
insert into Challan_Details values ('CH9003', 10, 'P0003');
insert into Challan_Details values ('CH9004', 10, 'P0004');
insert into Challan_Details values ('CH9005',16, 'P0005');

select * from Challan_Details;
```



QUERIES

Solve the following queries by using above tables.

1. Retrieve the list of names and cities of all the clients.
2. List the various products available from product_master.
3. Find out the clients who stay in a city whose second letter is ‘a’.
4. Find the list of all clients who stay in the city ‘ CHENNAI’ or ‘DELHI’.
5. List all the clients located at ‘CHENNAI’.
6. Print the information from sales order as the order the places in the month of January.
7. Find the products with description as ‘Floppy Drive’ and ‘Pen drive’.
8. Find the products whose selling price is grater than 2000 and less than or equal to 5000.
9. Find the products whose selling price is more than 1500 and also find the new selling price as original selling price *15.
10. Find the products in the sorted order of their description.
11. Divide the cost of product ‘540 HDD’ by difference between its price and 100.
12. List the product number, description, sell price of products whose description begin with letter ‘M’.
13. List all the orders that were cancelled in the month of March.
14. Count the total number of orders.
15. Calculate the average price of all the products.
16. Determine the maximum and minimum product prices.
17. Count the number of products having price grater than or equal to 1500.
18. Find all the products whose quantity on hand is less than reorder level.
19. Find out the challan details whose quantity dispatch is high.
20. Find out the order status of the sales order, whose order delivery is maximum in the month of March.
21. Find out the total sales made by the each salesman.
22. Find the total revenue gained by the each product sales in the period of Q1 and Q2 of year 2006.
23. Print the description and total qty sold for each product.
24. Find the value of each product sold.
25. Calculate the average qty sold for each client that has a maximum order value of 1,50,000.
26. List the products which has highest sales.
27. Find out the products and their quantities that will have to deliver in the current month.
28. Find the product number and descriptions of moving products.
29. Find the names of clients who have purchased ‘CD DRIVE’.
30. List the product numbers and sales order numbers of customers having quantity ordered less than 5 from the order details for the product ‘1.44 Floppies’.
31. Find the product numbers and descriptions of non-moving products.
32. Find the customer names and address for the clients,who placed the order ‘019001’.

1. Retrieve the list of names and cities of all the clients.

Select Name, City From Client_Master

Output:

Result Grid | Filter Ro

Name	City
Ivan	Mumbai
Mamta	Madras
Chhaya	Mumbai
Ashwini	Bangalore
Hansei	Mumbai
Deepak	Mangalore

2. List the various products available from product_master.

Select Product_No, Description From Product_Master;

Output:

Product_No	Description
P0002	Shirts
P0003	CottonJean
P0004	Jeans
P0005	Trousers
P0006	PullOvers
P0007	DenimShirt
P0008	LycraTops
P0009	Skirts
P00001	T-Shirts
P0001	T-Shirts
P0010	FloppyDrve
P0011	PenDrive
P0012	540 HDD
P0013	540 HDD

3. Find out the clients who stay in a city whose second letter is 'a'.

*Select * From Client_Master Where City Like '_A%';*

Output:

Client_No	Name	Address1	Address2	City	State	Pincode	Bal_Due
C00002	Mamta	Address1	Address2	Madras	TamilNadu	780001	0
C00004	Ashwini	Address1	Address2	Bangalore	Karnataka	500010	1000
C00006	Deepak	Address1	Address2	Mangalore	Karnataka	560050	0
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

4. Find the list of all clients who stay in the city 'Mumbai' or 'Madras'.
*Select * From Client_Master Where City in ('Mumbai','Madras');*

Output:

Client_No	Name	Address1	Address2	City	State	Pincode	Bal_Due
C00001	Ivan	Address1	Address2	Mumbai	Maharastra	400001	15000
C00002	Mamta	Address1	Address2	Madras	TamilNadu	780001	0
C00003	Chhaya	Address1	Address2	Mumbai	Maharastra	400057	5000
C00005	Hansei	Address1	Address2	Mumbai	Maharastra	400060	2000
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

5. List all the clients located at 'Mumbai'.
*Select * From Client_Master Where City = 'Mumbai';*

Output:

Client_No	Name	Address1	Address2	City	State	Pincode	Bal_Due
C00001	Ivan	Address1	Address2	Mumbai	Maharastra	400001	15000
C00003	Chhaya	Address1	Address2	Mumbai	Maharastra	400057	5000
C00005	Hansei	Address1	Address2	Mumbai	Maharastra	400060	2000
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

6. Print the information from sales order as the order the places in the month of June.
*Select * From Sales_Order Where monthname(Delve_date)= 'June';*

Output:

S_order_no	Client_No	S_order_date	Salesman_id	Delve_address	Delve_type	Billed_yn	Delve_date	Order_status
O19001	C00001	2004-06-12	S00001	Mumbai	F	N	2004-06-14	IN PROCESS
O19002	C00002	2004-06-25	S00002	Chennai	P	N	2004-06-27	CANCELLED
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

7. Find the products with description as 'FloppyDrve' or 'PenDrive'.
Select Product_No, Description From Product_Master Where Description = 'FloppyDrve' or 'PenDrive';

Output:

Result Grid | Filter Rows:

Product_No	Description
P0010	FloppyDrve
NULL	NULL

8. Find the products whose selling price is grater than 2000 and less than or equal to 5000.
Select Product_No, Description From Product_Master Where (Sell_Price > 2000 and Sell_Price <= 5000);

Output:

Result Grid | Filter Rows:

Product_No	Description
P0003	CottonJean
P0007	DenimShirt
P07868	Keyboards
NULL	NULL

9. Find the products whose selling price is more than 1500 and also find the new selling price as original selling price*15

*Select Product_No, Description , Sell_Price, (Sell_Price) * 15 'new Sell_Price' From Product_Master Where Sell_Price > 1500;*

Output:

Product_No	Description	Sell_Price	new Sell_Price
P0003	CottonJean	2600	39000
P0006	PullOvers	1850	27750
P0007	DenimShirt	3050	45750
P03453	Monitor	12000	180000
P07868	Keyboards	3150	47250
P07885	CDDRIVE	5250	78750

10. Find the products in the sorted order of their description
*Select * From Product_Master ORDER BY Description*;

Output:

Product_No	Description	Profit_Percent	Unit_Measure	Qty_On_Hand	Reoder_Lvl	Sell_Price	Cost_Price
P08865	1.22 Drve	5	Piece	2	3	1050	1000
P08975	1.44 Drve	5	Piece	10	3	1050	1000
P07869	1.44Floppy	2	piece	7	2	315	305
P0012	540 HDD	10	Piece	120	300	800	900
P0013	540 HDD	20	Piece	140	400	900	1000
P07885	CDDRIVE	3	Piece	10	3	5250	5100
P0003	CottonJean	5	Piece	100	20	2600	2450
P0007	DenimShirt	4	Piece	100	40	3050	2050
P0010	FloppyDrve	10	Piece	50	40	30	25
P0004	Jeans	5	Piece	100	20	750	500
P07868	Keyboards	2	piece	10	3	3150	3050
P0008	LycraTops	5	Piece	70	30	300	175
P0014	Maggy	10	Piece	12	30	80	90
P0015	Mango	100	Piece	10	30	20	30

11. Divide the cost of product '540 HDD' by difference between its price and 100.

Update Product_Master Set Cost_Price = (Cost_Price/(Cost_Price-100)) Where Description='540 HDD';

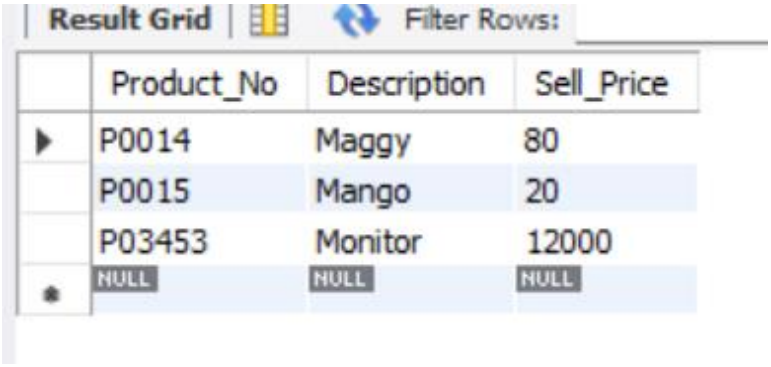
Output:

Product_No	Description	Profit_Percent	Unit_Measure	Qty_On_Hand	Reoder_Lvl	Sell_Price	Cost_Price
P00001	T-Shirts	5.00	Piece	200	50	350.00	250.00
P00002	Shirts	6.00	Piece	150	50	500.00	350.00
P00003	Cotton Jeans	5.00	Piece	100	20	2600.00	2450.00
P00004	Jeans	5.00	Piece	100	20	750.00	500.00
P00005	Trousers	2.00	Piece	150	50	850.00	550.00
P00006	Pull Overs	2.50	Piece	150	50	1850.00	1550.00
P00007	Denim Shirts	4.00	Piece	100	40	3050.00	2050.00
P00008	Lycra Tops	5.00	Piece	70	30	300.00	175.00
P00009	Skirts	5.00	Piece	75	30	450.00	300.00
P00010	Floppy Drive	10.00	Piece	50	40	30.00	25.00
P00011	Pen Drive	20.00	Piece	70	100	500.00	450.00
P00012	540 HDD	10.00	Piece	120	300	800.00	1.12
P00013	540 HDD	20.00	Piece	140	400	900.00	-0.01
P00014	Maggy	10.00	Piece	12	30	80.00	90.00
P00015	Mango	100.00	Piece	10	30	20.00	30.00

12. List the product number, description, sell price of products whose description begin with letter 'M'.

Select Product_No, Description, Sell_Price From Product_Master Where Description Like 'M%';

Output:



Result Grid | Filter Rows:

Product_No	Description	Sell_Price
P0014	Maggy	80
P0015	Mango	20
P03453	Monitor	12000
NULL	NULL	NULL

13. List all the orders that were cancelled in the month of March.

*Select * From Sales_Order Where Order_status='Cancelled' and monthname(Delve_date) = 'March';*

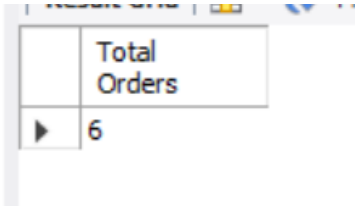
Output:

S_order_no	Client_No	S_order_date	Salesman_id	Delve_address	Delve_type	Billed_yn	Delve_date	Order_status
O46877	C00005	2004-03-20	S00006	Vizag	P	N	2004-03-22	CANCELLED
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

14. Count the total number of orders.

select Count(*) 'Total Orders' From Sales_Order;

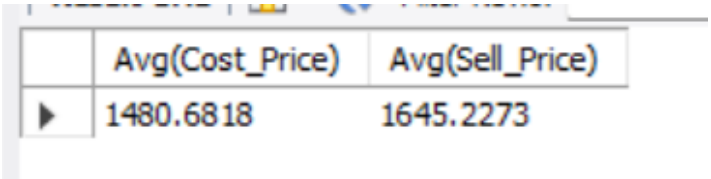
Output:



Total Orders
6

15. Calculate the average price of all the products.
Select Avg(Cost_Price) , Avg(Sell_Price) from Product_Master;

Output:



Avg(Cost_Price)	Avg(Sell_Price)
1480.6818	1645.2273

16. Determine the maximum and minimum product prices.

Select Min(Sell_Price) 'Min_Price', Max(Sell_Price) 'Max_Price' From Product_Master;

Output:

	Min_Price	Max_Price
▶	20	12000

17. Count the number of products having price greater than or equal to 1500.
Select Count(*) From Product_Master Where Sell_price >= 1500;

Output:

	Count(*)
▶	6

18. Find all the products whose quantity on hand is less than reorder level.

Select Description From Product_Master Where Qty_On_Hand < Reoder_Lvl;

Output:

Result Grid | Filter R

	Description
▶	PenDrive
	540 HDD
	540 HDD
	Maggy
	Mango
	1.22 Drve

19. Find out the challan details whose quantity dispatch is high.

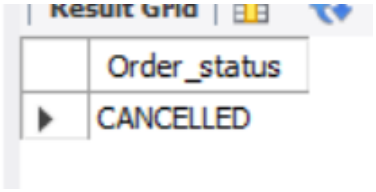
Select Challan_no ,MAX(Qty_disp) AS HighestDISPATCH from Challan_Details GROUP BY Challan_no ORDER BY MAX(Qty_disp) DESC;

Output:

	Challan_no	HighestDISPATCH
▶	CH9005	16
	CH9003	10
	CH9004	10
	CH9001	5
	CH9002	2

20. Find out the order status of the sales order, whose order delivery is maximum in the month of March.
Select Order_status from Sales_Order where monthname(Delve_date) = 'March';

Output:

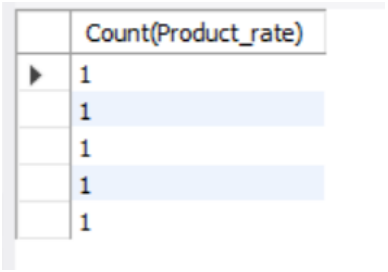


	Order_status
▶	CANCELLED

21. Find out the total sales made by each salesman.

Select Count(Product_rate) from Sales_Order_Details Group by S_order_no;

Output:

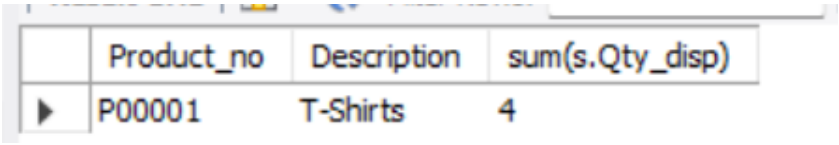


	Count(Product_rate)
▶	1
	1
	1
	1
	1

22. Print the description and total qty sold for each product.

Select s.Product_no,p.Description,sum(s.Qty_disp) from Sales_Order_Details s, Product_Master p where p.Product_No = s.product_no group by s.product_no,p.Description;

Output:

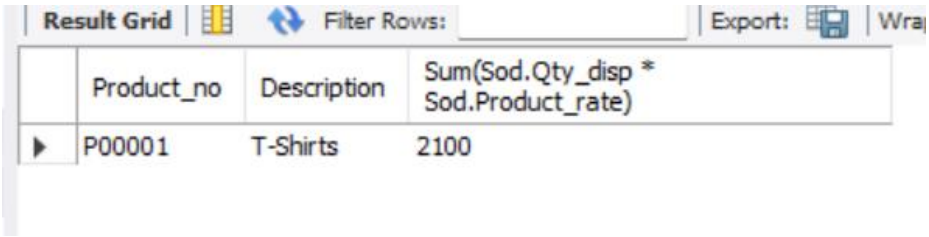


	Product_no	Description	sum(s.Qty_disp)
▶	P00001	T-Shirts	4

23. Find The Value of Each Product Sold.

*Select Sod.Product_no, Pm.Description, Sum(Sod.Qty_disp * Sod.Product_rate) From Sales_Order_Details Sod, Product_Master Pm Where Pm.Product_No = Sod.Product_no Group By Pm.Product_No, Pm.Description;*

Output:



Result Grid | Filter Rows: | Export: | Wra

	Product_no	Description	Sum(Sod.Qty_disp * Sod.Product_rate)
▶	P00001	T-Shirts	2100

24. Calculate The Average Quantity Sold For Each Client That Has A Maximum Order Value Of 15000.00.

*Select Cm.Client_no, Avg(Sod.Qty_disp) Avgsales From Sales_Order_Details Sod, Client_Master Cm , Sales_Order So Where Cm.Client_No = So.Client_no And So.S_order_no = Sod.S_order_no Group By Cm.Client_No Having Max(Sod.Qty_ordered * Sod.Product_rate) > 15000;*

Output:

	Client_no	Avgsales
▶	C00003	4.0000
	C00004	7.0000

25 Find out the products and their quantities that will have to deliver in the current month.

SELECT Sod.Product_no, Pm.Description, sum(Sod.Qty_ordered) FROM Sales_Order_Details Sod, Sales_Order So, Product_Master Pm WHERE Pm.Product_No = Sod.Product_no AND So.s_order_no = Sod.s_order_no GROUP BY Sod.Product_no, Pm.Description;

Output:

	Product_no	Description	sum(Sod.Qty_ordered)
▶	P00001	T-Shirts	5

25. Find the product_no and description of moving products.

select Product_no, Description from Product_Master where Description like '%Floppy%' union select Product_no, Description from Product_Master where Description like '%Drive%' union select Product_no, Description from Product_Master where Description like '%HDD%';

Output:

	Product_no	Description
▶	P0010	FloppyDrve
	P07869	1.44Floppy
	P0011	PenDrive
	P07885	CDDRIVE
	P0012	540 HDD
	P0013	540 HDD

26. Find the names of clients who have purchased 'CD DRIVE'.

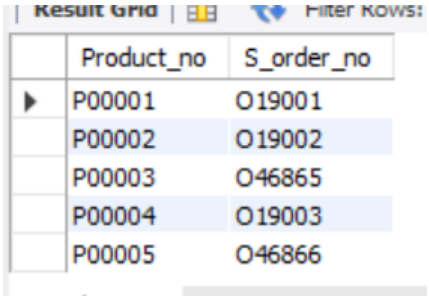
select Client_Master.Name from Client_Master, Product_Master, Sales_Order_Details, Sales_Order where Product_Master.Product_No= Sales_Order_Details.Product_no and Sales_Order_Details.S_order_no=Sales_Order.S_order_no and Sales_Order.Client_No=Client_Master.Client_No and Product_Master.Description='CD DRIVE';

Output:

27. List the product_no and s_order_no of customers haaving qty ordered less than 5 from the order details table for the product "1.44 Floppy".

select Sales_Order_Details.Product_no, Sales_Order_Details. S_order_no from Product_Master, Sales_Order_Details where Product_Master.Description='1.44Floppy' and Sales_Order_Details.Qty_ordered;

Output:



28. Find the product numbers and descriptions of non-moving products.

SELECT Product_No, Description FROM Prodcut_Master WHERE Product_No NOT IN(SELECT Product_No FROM Sales_Order_Details);

Output:


Result Grid | Filter Rows:

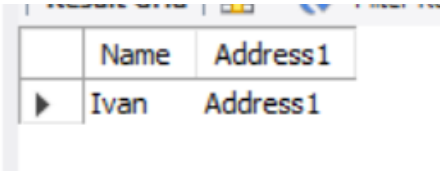
PRODUCT_NO	DESCRIPTION
P0002	Shirts
P0003	CottonJean
P0004	Jeans
P0005	Trousers
P0006	PullOvers
P0007	DenimShirt
P0008	LycraTops
P0009	Skirts
P0001	T-Shirts
P0002	Shirts
P0003	CottonJean
P0004	Jeans
P0005	Trousers
P0006	PullOvers
P0010	FloppyDrve

PRODUCT_MASTER 14

29. Find the customer names and address for the clients, who placed the order 'O19001'.

SELECT Name, Address1 FROM Client_Master WHERE Client_No IN(SELECT Client_No FROM Sales_Order WHERE S_order_no = 'O19001');

Output:



Name	Address1
Ivan	Address1