EXAM NO. _____

Department of Computer Science & I.T.

NAME : _____

_____

ROLL NO. : _____

CLASS : _____ DIVISION : _____

SUBJECT : _____

Vishnu Waman Thakur Charitable Trust's
Bhaskar Waman Thakur College Of Science,
Yashvant Keshav Patil College Of Commerce
Vidhya Dayanand Patil College Of Arts
M.B. Estate, Viva College Road, Virar (West), Pin - 401 303
Tel.: (02525) 2515276 / 2515278

Vishnu Waman Thakur Charitable Trust

Bhaskar Waman Thakur College Of Science,

Yashvant Keshav Patil College Of Commerce,

Vidhya Dayanand Patil College Of Arts.

M.B Estate, Viva College Road, Virar. (West), Pin -401303. Tel. : (0250) 2515276/2515278

CERTIFICATE

Roll no. : 184 *Exam seat No.:* _____

This is of Certify that ~~shri./~~Kumari. Bhoomi Prajapati

Of FYIT *class has satisfactorily completed the course in*

_____ *Practical /Assignments as Prescribed*

By University Of Mumbai For The year 20 23 *to 20* 24

Professor – in -charge

Date

Head Of Department

External Examiner

College Stamp

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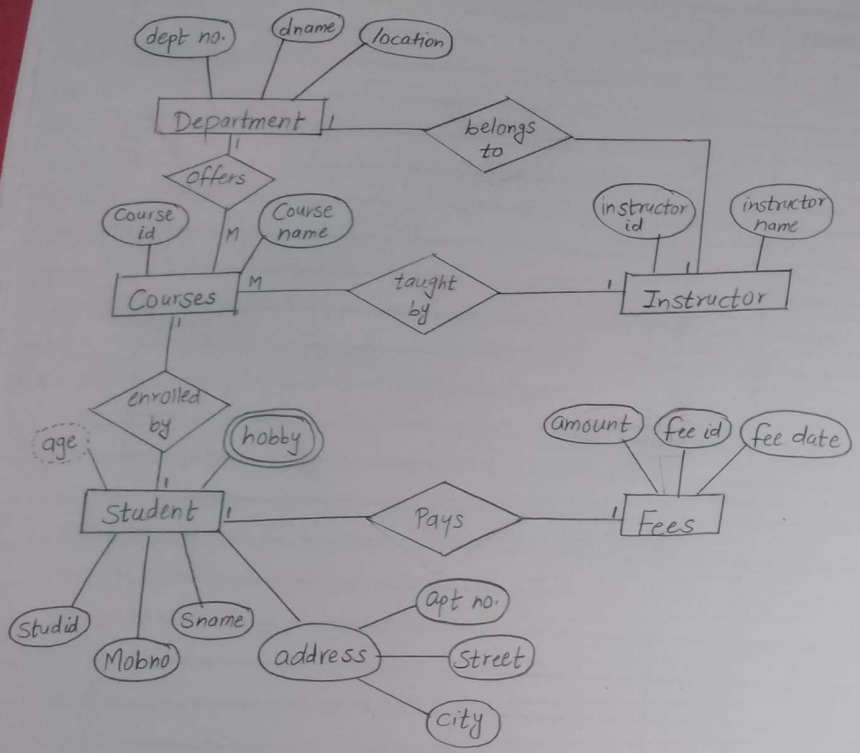
BRILLIANT



Practical NO-01

Aim : Draw E-R diagram and Convert entities and relationships to relation table for a given scenario.

Case study NO-01

Draw an E-R diagram for following -

i) Department offers Courses.
ii) Student enrolls for the Courses.
iii) Instructors are appointed for various Courses.
iv) Instructors are belongs to department.
v) Student pay fees.

Practical No. 02

Aim: Write relational algebra queries on the tables created in Pr - 1

1) Select those tuples of Student relation where City is Virar
   σ city = "virar" (student)
2) Find all tuples of fees where amount is greater than 15000
   σ amount > 15000 (fee)
3) Find those tuples pertaining to student relation living at Bolinj road and city virar.
   σ street = "Bolinj Rd" $\wedge$ City = "virar"
4) List all department no. and department name.
   π deptno, dname (Department)
5) Find all student living in City, 'virar'.
   π sname (σ city = "virar" (Student))
6) Find the names of Student enrolled for the various Courses.
   π sname (student $\bowtie$ studid = studid $\bowtie$ Enrolled by
   $\bowtie$ Course id = Courseid Courses
   π sname (σ studid (student $\bowtie$ enrolled by $\bowtie$ Courses))

mysql > show databases;

Database
fyit
mysql
test

mysql > Show databases;

Database
fyit
fyit batch 8
mysql
test

mysql > show tables;

Tables_in_fyit batch 8
Customer

mysql > desc Customer;

Field	Type	Null	Key	Default	Extra
Custno	int (11)	YES		NULL	
Cname	Varchar (30)	YES		NULL	
City	Varchar (20)	YES		NULL	

mysql > desc orders;

Field	Type	Null	Key	Default	Extra
Orderid	int (11)	YES		NULL	
amount	decimal (7,2)	YES		NULL	

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Date

Practical NO. 03

Aim: Defining data

- ✓ Viewing all databases
  - SHOW DATABASES;
- ✓ Creating a database
  - CREATE DATABASE fyit batch 8;
  - USE fyit batch 8;
- ✓ Viewing all Tables in a database
  - SHOW TABLES;
- ✓ Creating Tables

Without Constraints

CREATE TABLE customer (Custno int, Cname varchar (30), City varchar (20))

CREATE TABLE Orders (orderid int, Amount decimal (7,2));

Show tables;

desc Customer;

desc Order;

mysql > alter table orders add qty int;
mysql > desc orders;

Field Extra	Type	Null	Key	Default
Order id	int (11)	YES		NULL
amount	decimal (7,2)	YES		NULL
qty	int (11)	YES		NULL

mysql > desc customer ;

Field Extra	Type	NULL	Key	Default
Custno	int (11)	YES		NULL
Cname	Varchar (30)	YES		NULL
City	Varchar (20)	YES		NULL
Credit limit	int (11)	YES		NULL

mysql > show tables ;

Tables_in_fyit batch 8
Orders

✓ Altering a Table

Q. Alter table orders to add a column 'qty' with data type int
Alter table orders Add qty int;
Select * From orders;

Q. Alter table Customer to add column 'Creditlimit' with data type int
Alter table Customer Add Creditlimit int;
Select * from Customer;
desc Customer;

✓ Dropping / Truncating / Renaming Table

Q. Rename table Customer to New Cust
Rename table Customer to New Cust
Show tables;

Q. Truncate all data of the Orders table
mysql > Truncate table orders;

Q. Drop the newly renamed table new cust
mysql > Drop table new cust;
Show tables;

mysql > show tables ;

Tables_in_fyit batch 8 pract 4
Customer
Orders

mysql > select * from customer ;

Custno	Cname	City
1	Anjali	Virar
2	Shrushti	Vasai
3	aditi	Dadar
4	disha	Dadar

mysql > select * from orders ;

Order Id	Amount
10	10000.00
11	35000.00
12	24089.00

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Practical No. 04

Aim: Manipulating Data.

✓ Creating Tables
Without Constraints

```
Create table Customer (Custno int, Cname Varchar(30), City Varchar(20));
Create table Orders (orderid int, Amount decimal(7,2));

Show tables;
```

✓ Inserting / Updating / Deleting Records in a Table

```
Insert into customer values (1, "Anjali", "Virar");
Insert into Customer values (2, "Shrushti", "Vasai");
Insert into Customer values (3, "Aditi", "Dadar");
Insert into Customer values (4, "Disha", "Dadar");

Insert into Orders values (10, 10000);
Insert into Orders values (11, 35000);
Insert into Orders values (12, 24089);

Select * from Customer;
```

```
mysql > update Customer set city = 'banglore' where city = 'virar';
mysql > select * from customer;
```

Custno	Cname	City
1	Anjali	banglore
2	Shrushti	vasai
3	aditi	dadar
4	disha	dadar

```
mysql > select * from customer;
```

Custno	Cname	City
1	Anjali	banglore
2	Shrushti	vasai

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Q. Update Customers living in City 'virar' to 'Banglore'

```
Update Customer
set City = 'Banglore'
where City = 'virar';
```

Q. Delete Customers living in City 'Dadar'

```
Delete from Customer
where City = 'Dadar';
```

mysql > desc Customer;

Field Extra	Type	Null	Key	Default
Custno	Varchar(10)		PRI	
Cname	Varchar(30)			
addr	Varchar(30)			
City	Varchar(20)			
Creditlimit	int(11)	YES		NULL

mysql > desc product;

Field Default	Type	Null	key		Extra
Productno	Varchar(10)		PRI		
description	Varchar(20)				
unit measure	int(11)	YES		NULL	
qtyonhand	int(11)	YES		NULL	
Sellprice	decimal(7,2)	YES		NULL	
Costprice	decimal(7,2)	YES		NULL	

my sql > desc salesmanmaster;

Field Default	Type	Null	key		Extra
Salesmanno	Varchar (10)		PRI		
Sname	Varchar (20)				
address	Varchar (30)	YES		NULL	
City	Varchar (20)	YES		NULL	
Salesamt	decimal (10,2)	YES		NULL	
target	decimal (10,2)	YES		NULL	

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Practical No. 05

Aim: Creating and managing the tables.

Create tables in database:

1. Customer Table
   Create table customer (custno varchar (10) not null, Cname varchar (30) not null, addr varchar (30) not null, City varchar (20) not null, Creditlimit int, primary key (custno));

2. Product Table
   Create table product (productno varchar (10) not null, description varchar (20) not null, unitmeasure int, qtyonhand int, Sellprice decimal (7,2), Costprice decimal (7,2), primary key (Productno));

3. Salesmanmaster Table
   Create table Salesmanmaster (Salesmanno varchar (10) not null, Sname varchar (20) not null, address varchar (30), City Varchar (20), Salesamt decimal (10,2), target decimal (10,2), primary key (Salesmanno));

mysql > desc Salesorder ;

Field	Type	Null	Key	Default	Extra
Orderno	varchar (10)		PRI		
Custno	varchar (10)				
Orderdt	date	YES		NULL	
Salesmanno	varchar (10)				
Orderstatus	varchar (25)	YES		NULL	

mysql > desc salesorderdetails ;

Field	Type	Null	Key	Default	Extra
Orderno	varchar (10)				
productno	varchar (10)				
qtyordered	int (11)	YES		NULL	
qtydisp	int (11)	YES		NULL	

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4. Sales_Order table
Create table Salesorder (Orderno varchar (10) not null, Custno Varchar (10) not null, orderdt date, Salesmanno Varchar (10) not null, Orderstatus varchar (25), primary key (orderno), foreign key (custno) references customer (custno), foreign key (Salesmanno) refrences Salesmanmaster (salesmanno));

5. Salesorderdetails table
Create table Salesorderdetails (orderno varchar (10) not null, productno Varchar (10) not null, qtyordered int, qtydisp int, foreign key (orderno) references Salesorder (orderno), foreign key (productno) references product (productno));

mysql > Select * from customer ;

Custno	Cname	addr	City	Creditlimit
C1	Aakash singh	mainstreet	delhi	50000
C2	Mayur rai	Ranade road	mumbai	45000
C3	Sagar mehta	Karol Baug	delhi	70000
C4	Kunal thakre	Link road	mumbai	20000
C5	Pankaj akre	Savarkar marg	Banglore	55000

Insertion of data in Tables

1. Customer Table

```
insert into customer (custno, Cname, addr, city, creditlimit)
Values ("C1", "Akash singh", "main street", "delhi", 50000);

insert into Customer (custno, Cname, addr, City, Creditlimit)
Values ("C2", "Mayur rai", "Ranade road", "mumbai", 45000);

Insert into Customer (custno, Cname, addr, city, Creditlimit)
Values ("C3", "Sagar mehta", "Karol Baug", "delhi", 70000);

insert into Customer (Custno, Cname, addr, city, Creditlimit)
Values ("C4", "Kunal thakre", "Link road", "mumbai", 20000);

insert into Customer (Custno, Cname, addr, city, Creditlimit)
Values ("C5", "Pankaj akre", "savarkar marg", "Banglore", 55000);

Select * from Customer ;
```

mysql > select * from product;

Productno Costprice	description	Unit-measure	Qtyonhand	Sellprice	Costprice
P1	t-shirts	1	50	350.00	300.00
P2	jeans	1	45	1000.00	900.00
P3	trousers	1	60	670.00	550.00
P4	Skirts	1	80	500.00	400.00
P5	Shirts	1	65	2000.00	1500.00

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2. Product Table

Insert into product (productno, description, unitmeasure, qtyonhand, Sellprice, Costprice) Values ("P1", "T-shirts", 1, 50, 350, 300);

insert into product (productno, description, unitmeasure, qtyonhand, Sellprice, Costprice) values ("P2", "Jeans", 1, 45, 1000, 900);

insert into product (productno, description, unitmeasure, qtyonhand, sellprice, Costprice) values ("P3", "Trousers", 1, 60, 670, 550);

insert into product (productno, description, unitmeasure, qtyonhand, sellprice, Costprice) values ("P4", "Skirts", 1, 80, 500, 400);

Insert into product (productno, description, unitmeasure, qtyonhand, Sellprice, Costprice) Values ("P5", "shirts", 1, 65, 2000, 1500);

Select * from product ;

mysql > select * from salesmanmaster ;

Salesmanno	Sname	address	city	salesamt	target
S1	Toral jain	R.J campus	mumbai	95000	100000
S2	Eshan singh	S.V road	mumbai	200000	175000
S3	Parwa mehta	karol baug	delhi	90000	75000
S4	Raj malhotra	N.V road	banglore	50000	40000
S5	Aniruddha marathe	Link road	mumbai	100000	85000

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3. Salesmanmaster Table

Insert into Salesmanmaster (salesmanno, Sname, address, city, Salesamt, target) Values ("S1", "Toral Jain", "R.J. Campus", "mumbai", 95000.00, 100000.00);

insert into Salesmanmaster (salesmanno, sname, address, city, Salesamt, target) Values ("S2", "Eshan Singh", "S.V. road", "mumbai", 200000.00, 175000);

insert into Salesmanmaster (Salesmanno, Sname, address, City, Salesamt, target) Values ("S3", "Parswa mehta", "Karol Baug", "delhi", 90000, 75000);

insert into Salesmanmaster (salesmanno, Sname address, City, Salesamt, target) values ("S4", "Raj malhotra", "N.V. road", "Banglore", 50000, 40000);

insert into Salesmanmaster (Salesmanno, Sname, address, City, Salesamt, target) values ("S5", "Aniruddha marathe", "Link road", "mumbai", 100000, 85000);

Select * from Salesmanmaster ;

mysql > select * from salesorder;

Orderno	Custno	Orderdt	Salesmanno	Orderstatus
C1	C1	2015-03-12	S1	In process
C2	C1	2015-07-06	S2	Fulfilled
C3	C2	2015-08-10	S2	Fulfilled
C4	C3	2015-12-23	S3	Cancelled
C5	C4	2015-09-04	S1	Fulfilled
C6	C1	2015-11-12	S2	Fulfilled

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4. Salesorder Table

insert into Salesorder (orderno, custno, Orderdt, Salesmanno, Orderstatus) Values ("01", "C1", 2015-03-12", "S1", "In process");

insert into Salesorder(orderno, custno, orderdt, salesmanno, Orderstatus) values ("02", "C1", 2015-07-06", "S2", "Fulfilled");

insert into Salesorder (orderno, custno, orderdt, Salesmanno, Orderstatus) values ("03", "C2", 2015-08-10", "S2", "Fulfilled");

insert into Salesorder (orderno, custno, Orderdt, Salesmanno, Orderstatus) values ("04", "C3", 2015-12-23", "S3", "Cancelled");

insert into Salesorder (orderno, Custno, Orderdt, Salesmanno, Orderstatus) values ("05", "C4", "2015-09-04", "S1", Fulfilled");

insert into Salesorder (orderno, custno, Orderdt, Salesmanno, Orderstatus) values ("06", "C1", "2015-11-12", "S2", "Fulfilled");

Select * from Salesorder;

mysql > Select * from Salesorderdetails ;

Orderno	Productno	qtyordered	qtydisp
01	P1	100	10
01	P2	120	60
02	P3	300	300
02	P1	100	100
03	P2	220	220
04	P1	120	0
05	P3	400	400
06	P2	300	300

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5. Salesorderdetails Table

insert into Salesorderdetails (Orderno, productno qtyordered, qtydisp)
Values ("01", "P1", 100, 10);

insert into Salesorderdetails (orderno, productno, qtyordered, qtydisp)
Values ("01", "P2", 120, 60);

insert into salesorderdetails (Orderno, productno, qtyordered qtydisp)
values ("02", "P3", 300, 300);

insert into salesorderdetails (orderno, productno, qtyordered, qtydisp)
Values ("02", "P1", 100, 100);

insert into Salesorderdetails (orderno, productno, qtyordered qtydisp)
Values ("03", "P2", 220, 220);

insert into Salesorderdetails (orderno productno, qtyordered qtydisp)
values ("04", "P1", 120, 0);

insert into Salesorderdetails (orderno, productno, qtyordered, qtydisp)
values ("05", "P3", 400, 400);

insert into Salesorderdetails (orderno, productno, qtyordered, qtydisp)
values ("06", "P2", 300, 300);

Select * from Salesorderdetails ;

BRILLIANT

mysql >

description	qtyonhand
jeans	45

mysql >

custno	cname
C1	Aakash Singh
C2	Mayur rai
C3	Sagar mehta
C4	Kunal thakre

mysql >

Product no	description
P2	jeans
P3	trousers
P4	Skirts

mysql >

Salesmanno	Sname
S5	Aniruddha marathe

mysql >

Custno	Cname
C3	Sagar mehta

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Practical No. 06

Aim: Restricting and sorting data.
(Based on tables created in Practical No. 05)

Q.1. Find the description and quantity on hand of the product P2.

```
Select description, qtyonhand
from product where productno = "P2";
```

Q.2. Find out customers living in city "Delhi" and "Mumbai".

```
Select Custno, Cname from Customer where City in
("Delhi", "mumbai");
```

Q.3. Find out products for which sell price is in the range of Rs. 500 and Rs. 1000

```
Select productno, description from product
where sellprice between 500 and 1000;
```

Q.4 Find out Salesman whose name starts with 'A'.

```
Select Salesmanno, Sname
from Salesman master where Sname like 'A%';
```

Q.5. Find out Customers whose name starts with 's' and ends with 'a'

```
Select custno, Cname
from customer
where cname like 's%a';
```

mysql >

City
delhi
mumbai
banglore

mysql> empty set

mysql>

no_of_customers	City
1	banglore
2	delhi
2	mumbai

mysql>

NO-of_orders	orderstatus
4	fulfilled

mysql>

Productno	description
P2	jeans
P5	Shirts
P4	skirts
P1	t-shirts
P3	trousers

mysql>

Cname
Sagar mehta
Pankaj akre
Mayur rai
kunal thakre
Aakash singh

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Q.6. Find distinct Customer cities
```
Selet distinct city
from Customer;
```

Q.7. Find the Salesman with null target value.
```
Select Sname
from Salesmanmaster
where target is null;
```

Q.8. Find out total no. of customers living in each city
```
Select Count (custno) as No_of_customers, city
from Customer
group by city;
```

Q.9. Find out total orders for order details for orderno greater than 3
```
Select Count (Orderno) as No_of_orders, orderstatus
from Salesorder
group by orderstatus
having Count (Orderno) > 3;
```

Q.10. Sort the product data in ascending data.
```
Select productno, description
from product
Order by description;
```

Q.11. Sort Customer names in descending order
```
Select Cname
from Customer
order by Cname desc;
```

BRILLIANT

mysql>

avg (creditlimit)
48000.0000

mysql>

min (salesamt)
50000.00

mysql>

max (sellprice)
2000.00

mysql>

sum (qtyordered)
1660

mysql>

Count (custno)
5

mysql>

abs(-2)
2

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Practical No. 07

Aim: Aggregate and mathematical functions.

A) Aggregate Functions

1. Display average credit limit of all customers.
```
Select avg (creditlimit)
from Customer;
```

2. Display minimum Salesamount of the salesmaster.
```
Select min (salesamt)
from Salesmanmaster;
```

3. Display maximum sellprice of the product.
```
Select max (sellprice)
from product;
```

4. Display total quantity ordered from Salesorderdetails
```
Select Sum (qtyordered)
From Salesorderdetails;
```

5. Count total number of Customers.
```
Select count (custno)
From Customers;
```

mysql>

Ceiling (-6.43)
-6

mysql>

mod (29,3)
2

mysql>

Power (3,3)
27.000000

mysql

Sqrt (49)
7.000000

mysql>

round (7.536432,2)
5.69

mysql>

truncate (7.536432,2)
7.53

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B] Math Functions

1. mysql > select ABS (-2);
returns absolute value of a given number

2. mysql > select ceiling (-6.43);
rounds a number upto the nearest integar

3. mysql > select MOD (29,3);
Calculates remainder of a number divided by another number

4. mysql > Select power (3,3);
takes the first Specified number and raises it to the power of the second number.

5. mysql > select SQRT (49);
Calculates Square root of a given number

6. mysql > Select ROUND (5.693893,2);
Rounds a number to a specified number of decimal places

7. mysql > Select TRUNCATE (7.536432,2);
Same as round function.

mysql>

orderno	Cname	Orderdt
01	Aakash Singh	2015-03-12
02	Aakash Singh	2015-07-06
03	Mayur rai	2015-08-10
05	Kunal thakre	2015-09-04
06	Aakash Singh	2015-11-12
04	Sagar mehta	2015-12-23

mysql>

Orderno	Sname	Orderdt
NULL	Raj malhotra	NULL
NULL	Aniruddha marathe	NULL
01	Taral jain	2015-03-12
02	Eshan Singh	2015-07-06
03	Eshan singh	2015-08-10
04	Parswa mehta	2015-12-23
05	Taral jain	2015-09-04
06	Eshan Singh	2015-11-12

mysql>

OrderNO	Sname	Orderdt
NULL	Raj malhotra	NULL
NULL	Aniruddha marathe	NULL
01	Taral jain	2015-03-12
02	Eshan Singh	2015-07-06
03	Eshan Singh	2015-08-10
04	parwa mehta	2015-12-23
05	Taral jain	2015-09-04
06	Eshan Singh	2015-11-12

Practical No. 08

Aim: Joins

➤ Join Queries

Q.1. Find all customers who have placed orders.

```
Select orderno, Cname, Orderdt;
from Salesorder inner join Customer
On salesorder.custno = Customer.custno
Order by orderdt;
```

Q.2. Find all Salesman who have taken the orders

```
Select orderno, sname, orderdt
from salesmanmaster left join Salesorder
on Salesmanmaster.salesmanno = salesorder.salesmanno
Order by orderno;
```

Q.3. Find all Salesman who have taken the Orders

```
Select Orderno, Sname, Orderdt
from Salesorder right join Salesmanmaster
On salesorder.salesmanno = Salesmanmaster.salesmanno
order by orderno;
```