

## ASSIGNMENT NO.5

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Enrollment NO. – 2020CSB039

Branch – Computer Science and Technology

Group - GX

Subject – DBMS Laboratory

Q1)

<A. Creation of tables:>

### Customer Table

```
create table Customer(  
  -> cust_id int primary key check(cust_id between 100 and 10000),  
  -> cust_name varchar(20),  
  -> annual_revenue int,  
  -> cust_type varchar(20) check(cust_type in  
( 'MANUFACTURER','WHOLESALE','RETAILER')));
```

Field	Type	Null	Key	Default	Extra
cust_id	int(11)	NO	PRI	NULL	
cust_name	varchar(20)	YES		NULL	
annual_revenue	int(11)	YES		NULL	
cust_type	varchar(20)	YES		NULL	

After insertion of values:-

cust_id	cust_name	annual_revenue	cust_type
106	Paul	566530	MANUFACTURER
209	John	1020780	MANUFACTURER
311	Mary	980000	MANUFACTURER
400	Chris	600000	WHOLESALE
466	Aneesa	850000	WHOLESALE
5443	Irwin	2210000	WHOLESALE
7116	Sean	1510000	RETAILER
7223	Shikha	440000	RETAILER
9099	Ayan	1140000	RETAILER

### Truck Table

```
create table Truck(  
  -> truck_no int primary key,  
  -> driver_name varchar(20));
```

Field	Type	Null	Key	Default	Extra
truck_no	int(11)	NO	PRI	NULL	
driver_name	varchar(20)	YES		NULL	

After insertion of values:-

truck_no	driver_name
123	Benedict
212	Iqbal
255	Samantha
566	Parul
666	Samara
1000	Shawn
1290	Megan

### City Table

create table City(

-> city\_name varchar(20) primary key,

-> population int);

Field	Type	Null	Key	Default	Extra
city_name	varchar(20)	NO	PRI	NULL	
population	int(11)	YES		NULL	

After insertion of values:-

city_name	population
Bangalore	3334321
Chennai	700009
Delhi	2289766
Hyderabad	992126
Kolkata	1328433
Mumbai	889766
Pune	1152543

### Shipment Table

create table Shipment

-> shipment\_no int,

-> cust\_id int references Customer(cust\_id) on delete cascade,

-> truck\_no int references Truck(truck\_no) on delete set NULL,

-> destination varchar(20) references City(city\_name),

-> weight int check(weight<1000),

-> ship\_date date,

-> primary key(shipment\_no,cust\_id));

Field	Type	Null	Key	Default	Extra
shipment_no	int(11)	NO	PRI	NULL	
cust_id	int(11)	NO	PRI	NULL	
truck_no	int(11)	YES		NULL	
destination	varchar(20)	YES		NULL	
weight	int(11)	YES		NULL	
ship_date	date	YES		NULL	

After insertion of values:-

shipment_no	cust_id	truck_no	destination	weight	ship_date
1	209	212	Mumbai	320	2021-09-23
2	106	255	Mumbai	370	2021-10-23
3	106	566	Pune	300	2021-10-31
4	466	1000	Kolkata	200	2020-08-31
5	5443	1290	Delhi	250	2019-03-31
6	466	666	Hyderabad	98	2019-04-12
7	9099	123	Bangalore	56	2018-04-12
8	7116	255	Kolkata	540	2018-05-17
9	7223	666	Chennai	400	2020-05-17
10	400	212	Delhi	120	2021-01-22
11	106	212	Kolkata	150	2020-01-22
12	311	212	Chennai	100	2020-01-22
13	209	212	Pune	800	2020-01-22
14	5443	212	Hyderabad	500	2020-01-22
15	7116	212	Bangalore	50	2020-01-22
16	209	666	Kolkata	50	2020-01-22
17	311	1290	Kolkata	66	2020-01-22
18	400	1290	Kolkata	80	2020-01-22
19	466	123	Kolkata	120	2020-01-22
20	5443	255	Kolkata	160	2020-01-22
21	7223	212	Kolkata	540	2020-01-22
22	9099	212	Kolkata	540	2020-01-22

### <B. Queries >

**a) Give names of customers who have sent packages (shipments) to Kolkata, Chennai and Mumbai.**

```
SELECT cust_name from customer NATURAL JOIN shipment WHERE
shipment.destination='Kolkata' OR shipment.destination='Chennai' OR
shipment.destination='Mumbai'
```

**b) List the names of the driver who have delivered shipments weighing over 200 pounds.**

```
select distinct(driver_name) from Truck,Shipment where Truck.truck_no= Shipment.truck_no
and weight>200;
```

driver_name
Iqbal
Samantha
Parul
Megan
Samara

c) Retrieve the maximum and minimum weights of the shipments. Rename the output as Max\_Weight and Min\_Weight respectively.

select max(weight) as 'Max\_Weight', min(weight) as 'Min\_Weight' from Shipment;

Max_Weight	Min_Weight
800	50

d) For each customer, what is the average weight of the package sent by the customer?

select distinct(cust\_name),avg(weight) from Shipment,Customer where  
Shipment.cust\_id=Customer.cust\_id group by cust\_name;

cust_name	avg(weight)
Aneesa	139.3333
Ayan	298.0000
Chris	100.0000
Irwin	303.3333
John	390.0000
Mary	83.0000
Paul	273.3333
Sean	295.0000
Shikha	470.0000

e) List the names and populations of cities that have received shipments weighing over 100 pounds.

select distinct(city\_name),population from Shipment,City where destination=city\_name and  
weight>100;

city_name	population
Mumbai	889766
Pune	1152543
Kolkata	1328433
Delhi	2289766
Chennai	700009
Hyderabad	992126

**f) List cities that have received shipments from every customer.**

select destination from Shipment group by destination having count(distinct cust\_id)=(select count(cust\_id) from Customer);

destination
Kolkata

**g) For each city, what is the maximum weight of a package sent to that city?**

select city\_name,max(weight) from Shipment,City where Shipment.destination=City.city\_name group by city\_name;

city_name	max(weight)
Bangalore	56
Chennai	400
Delhi	250
Hyderabad	500
Kolkata	540
Mumbai	370
Pune	800

**h) List the name and annual revenue of customers whose shipments have been delivered by truck driver 'IQBAL'.**

select cust\_name,annual\_revenue from Customer,Shipment,Truck where Customer.cust\_id=Shipment.cust\_id and Truck.truck\_no=Shipment.truck\_no and driver\_name='Iqbal';

cust_name	annual_revenue
John	1020780
Chris	600000
Paul	566530
Mary	980000
John	1020780
Irwin	2210000
Sean	1510000
Shikha	440000
Ayan	1140000

i) List drivers who have delivered shipments to every city.

select driver\_name from Truck,Shipment where Shipment.truck\_no=Truck.truck\_no group by driver\_name having count(distinct destination)=(select count(city\_name) from City);

driver_name
Iqbal

j) For each city, with a population over 1 million, what is the minimum weight of a package sent to that city.

select destination,min(weight) from Shipment, City where city\_name=destination and population>1000000 group by destination;

destination	min(weight)
Bangalore	50
Delhi	120
Kolkata	50
Pune	300