

**NAME: GOURAV KUMAR SHAW**  
**ENROLLMENT NO: 2020CSB010**  
**SECTION: GX**  
**SUBJECT: DBMS Lab**

## **ASSIGNMENT NO. - 4**

### **A.Creation of Tables:**

**Creating ZIPCODES table:**

**Query:**

```
create table ZIPCODES(  
ZIP int primary key,  
CITY varchar(20)  
);
```

```
mysql> DESC ZIPCODES;  
+-----+-----+-----+-----+-----+-----+  
| Field | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| ZIP   | int(11)       | NO   | PRI | NULL    |       |  
| CITY  | varchar(20)   | YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
2 rows in set (0.01 sec)
```

## ZIPCODES table after insertion of values:

```
mysql> select * FROM ZIPCODES;
+-----+-----+
| ZIP   | CITY           |
+-----+-----+
| 50302 | kansas city    |
| 54444 | columbia       |
| 60606 | fort dodge     |
| 60706 | patna          |
| 61111 | fort hays      |
| 61818 | delhi          |
| 63111 | kolkata        |
| 65222 | diamond        |
| 66006 | libaral        |
| 67226 | wichita        |
+-----+-----+
10 rows in set (0.00 sec)
```

## Creating EMPLOYEES table :

### Query:

```
create table EMPLOYEES (
    ENO int primary key,
    ENAME varchar(20),
    ZIP int references ZIP(ZIPCODES),
    HDATE date NOT NULL
);
```

```
mysql> DESC EMPLOYEES;
```

Field	Type	Null	Key	Default	Extra
ENO	int(11)	NO	PRI	NULL	
ENAME	varchar(20)	YES		NULL	
ZIP	int(11)	YES		NULL	
HDATE	date	NO		NULL	

4 rows in set (0.00 sec)

**EMPLOYEES table after insertion of values:**

```
mysql> select * from EMPLOYEES;
```

ENO	ENAME	ZIP	HDATE
1000	jones	67226	1995-12-12
1001	smith	60606	1994-09-01
1002	brown	50302	1994-09-01
1003	bapi	54444	1997-11-21
1004	sanjit	54444	1985-02-10
1005	komal	61111	1999-01-05
1006	ramanath	66006	1985-05-07
1007	pasupati	61111	1985-03-03
1008	uttam	65222	1984-09-06
1009	arup	63111	1984-01-31
1010	biplab	60706	1984-03-22
1011	umpa	61818	1991-03-21
1012	mamoni	67226	1988-03-13
1013	anjali	60706	1992-03-23
1014	marium	61818	1993-03-22
1015	falguni	61818	1988-03-11

16 rows in set (0.00 sec)

## Creating PARTS table :

### Query:

```
create table PARTS(  
PNO int primary key,  
PNAME varchar(20),  
QOH int,  
PRICE double(4,2),  
OLEVEL int  
);
```

```
mysql> DESC PARTS;
```

Field	Type	Null	Key	Default	Extra
PNO	int(11)	NO	PRI	NULL	
PNAME	varchar(20)	YES		NULL	
QOH	int(11)	YES		NULL	
PRICE	double(4,2)	YES		NULL	
OLEVEL	int(11)	YES		NULL	

```
5 rows in set (0.00 sec)
```

## PARTS table after insertion of values:

```
mysql> select * from PARTS;
```

PNO	PNAME	QOH	PRICE	OLEVEL
10506	land before time 1	200	17.99	20
10507	land before time 2	156	17.99	20
10508	land before time 3	190	17.99	20
10509	land before time 4	60	17.99	20
10601	Nut	300	24.99	30
10602	Bolt	120	17.99	30
10603	Screw	140	13.49	30
10800	Driller	100	24.99	30

8 rows in set (0.00 sec)

## Creating CUSTOMERS table :

### Query:

```
create table CUSTOMERS (  
  CNO int primary key,  
  CNAME varchar(20),  
  STREET varchar(20),  
  ZIP int references ZIP(ZIPCODES),  
  PHONE int  
);
```

```
mysql> DESC CUSTOMERS;
```

Field	Type	Null	Key	Default	Extra
CNO	int(11)	NO	PRI	NULL	
CNAME	varchar(20)	YES		NULL	
STREET	varchar(20)	YES		NULL	
ZIP	int(11)	YES		NULL	
PHONE	int(11)	YES		NULL	

5 rows in set (0.00 sec)

**CUSTOMERS table after insertion of values:**

```
mysql> select * from CUSTOMERS;
```

CNO	CNAME	STREET	ZIP	PHONE
1000	dipu	543 main st.	61818	9876543
1111	charles	123 main st.	67226	316636
2222	amina	124 lane 11	60606	24203227
3333	soma	224 main st.	54444	24203270
4444	rita	321 lane 13	66006	24219706
5555	bhaswati	543 main st.	50302	32157654
6666	santu	432 main st.	61111	5432167
7777	manas	432 lane 17	61111	5432167
8888	monirul	765 main st.	65222	4321566
9988	barun	657 lane 12	61818	9876543
9999	tapan	654 lane 19	63111	5432156

11 rows in set (0.01 sec)

## Creating ORDERS table :

### Query:

```
create table ORDERS (  
    ONO int primary key,  
    CNO int references CNO(CUSTOMERS),  
    ENO int references ENO(EMPLOYEES),  
    RECEIVED date,  
    SHIPPED date  
);
```

```
mysql> DESC ORDERS;
```

Field	Type	Null	Key	Default	Extra
ONO	int(11)	NO	PRI	NULL	
CNO	int(11)	YES		NULL	
ENO	int(11)	YES		NULL	
RECEIVED	date	YES		NULL	
SHIPPED	date	YES		NULL	

```
5 rows in set (0.01 sec)
```

## ORDERS table after insertion of values:

```
mysql> SELECT * FROM ORDERS;
```

ONO	CNO	ENO	RECEIVED	SHIPPED
1020	1111	1000	1994-12-10	1994-12-12
1021	1111	1000	1995-01-12	1995-01-15
1022	2222	1001	1997-01-20	NULL
1023	3333	1002	1998-04-13	1998-04-29
1024	4444	1003	1996-03-11	1996-03-13
1025	5555	1004	1996-03-11	1996-03-12
1026	5555	1004	1998-05-31	1998-06-08
1027	8888	1006	1995-05-23	1993-03-23
1028	7777	1007	1984-05-17	1983-12-18
1029	3333	1008	1992-12-13	1993-09-18
1030	2222	1010	1983-04-30	1985-09-17
1031	1000	1011	1993-05-26	1985-04-16
1032	1111	1012	1986-04-15	2005-01-31
1033	9988	1013	2000-04-18	2005-04-18
1034	9988	1014	2005-02-08	2005-02-18
1035	1111	1015	2005-04-18	NULL

```
16 rows in set (0.00 sec)
```

## Creating ODETAILS table :

### Query:

```
create table ODETAILS(  
  ONO int references ONO(ORDERS),  
  PNO int references PNO(PARTS),  
  QTY int,  
  primary key (ONO, PNO)  
);
```



```
mysql> DESC ODETAILS;
+-----+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| ONO   | int(11) | NO   | PRI | NULL    |       |
| PNO   | int(11) | NO   | PRI | NULL    |       |
| QTY   | int(11) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

**ODETAILS table after insertion of values:**

```
mysql> SELECT * FROM ODETAILS;
+-----+-----+-----+
| ONO   | PNO   | QTY |
+-----+-----+-----+
| 1020  | 10507 | 5   |
| 1021  | 10800 | 2   |
| 1022  | 10507 | 6   |
| 1026  | 10509 | 9   |
| 1026  | 10801 | 4   |
| 1028  | 10701 | 7   |
| 1029  | 10507 | 3   |
| 1029  | 10508 | 5   |
| 1031  | 10603 | 1   |
| 1032  | 10509 | 7   |
| 1033  | 10602 | 8   |
| 1034  | 10506 | 7   |
| 1035  | 10601 | 5   |
+-----+-----+-----+
13 rows in set (0.00 sec)
```

## **B. Queries and their Solutions:**

**QUERY-1:** Get PNO values for PARTS for which ORDERES have been placed.

```
mysql> select distinct(P.PNO)
      -> from PARTS P, ODETAILS O
      -> where P.PNO = O.PNO;
```

```
+-----+
| PNO    |
+-----+
| 10507  |
| 10800  |
| 10509  |
| 10508  |
| 10603  |
| 10602  |
| 10506  |
| 10601  |
+-----+
8 rows in set (0.00 sec)
```

**QUERY-2:** Get all the details of CUSTOMERS whose name has being letter 's'.

```
mysql> select * from CUSTOMERS
      -> where CNAME like 's%';
```

```
+-----+-----+-----+-----+-----+
| CNO  | CNAME | STREET      | ZIP  | PHONE    |
+-----+-----+-----+-----+-----+
| 3333 | soma  | 224 main st. | 54444 | 24203270 |
| 6666 | santu | 432 main st. | 61111 | 5432167  |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

**QUERY-3:** Get PNO and PNAME values of PARTS that are priced less than 19.99.

```
mysql> select PNO, PNAME
-> from PARTS
-> where PRICE<19.99;
```

PNO	PNAME
10506	land before time 1
10507	land before time 2
10508	land before time 3
10509	land before time 4
10602	Bolt
10603	Screw

6 rows in set (0.00 sec)

**QUERY-4:** Get the ONO, CNAME and SHIPPED values for CUSTOMERS whose orders have not yet been shipped.

```
mysql> SELECT ONO,CNAME,SHIPPED FROM CUSTOMERS C , ORDERS O WHERE C.CNO=O.CNO AND SHIPPED IS NULL;
```

ONO	CNAME	SHIPPED
1022	amina	NULL
1035	charles	NULL

2 rows in set (0.00 sec)

**QUERY-5:** Get PNAME and PRICE value from PARTS with the lowest PRICE.

```
mysql> select PNAME,PRICE
      -> from PARTS
      -> where PRICE= (select MIN(PRICE) from PARTS);
+-----+-----+
| PNAME | PRICE |
+-----+-----+
| Screw | 13.49 |
+-----+-----+
1 row in set (0.00 sec)
```

**QUERY-6:** Get the PNAME and PRICE values of PARTS that cost less than the least expensive 'land before time' part.

```
mysql> select PNAME, PRICE
      -> from PARTS
      -> where PRICE < (select MIN(PRICE) from PARTS where PNAME like 'land before time %');
+-----+-----+
| PNAME | PRICE |
+-----+-----+
| Screw | 13.49 |
+-----+-----+
1 row in set (0.00 sec)
```

**QUERY-7:** Get the ENO values of EMPLOYEES from 'Fort Dodge'.

```
mysql> SELECT ENO FROM EMPLOYEES E, ZIPCODES Z
      -> WHERE E.ZIP=Z.ZIP AND CITY='fort dodge';
+-----+
| ENO  |
+-----+
| 1001 |
+-----+
1 row in set (0.00 sec)
```

**QUERY-8:** Get the ENAME and HDATE of the EMPLOYEES who was hired on the earliest date.

```
mysql> select ENAME, HDATE
-> from EMPLOYEES
-> where HDATE = (select MIN(HDATE) from EMPLOYEES);
+-----+-----+
| ENAME | HDATE      |
+-----+-----+
| arup  | 1984-01-31 |
+-----+-----+
1 row in set (0.00 sec)
```

**QUERY-9:** Retrieve the PNO, PNAME and PRICE of PARTS with price greater than 20.00 in an ascending order of PNO.

```
mysql> select PNO, PNAME, PRICE
-> from PARTS
-> where PRICE > 20.00
-> order by PNO;
+-----+-----+-----+
| PNO    | PNAME      | PRICE |
+-----+-----+-----+
| 10601  | Nut        | 24.99 |
| 10800  | Driller    | 24.99 |
+-----+-----+-----+
2 rows in set (0.00 sec)
```

**QUERY-10:** For each PARTS get PNO and PNAME values along with total sales in details.

```
mysql> select PNO, PNAME, FORMAT(SUM(QTY*PRICE),2) as 'Total_Sales'
-> from ODETAILS natural join PARTS
-> group by PNO;
```

PNO	PNAME	Total_Sales
10506	land before time 1	125.93
10507	land before time 2	251.86
10508	land before time 3	89.95
10509	land before time 4	287.84
10601	Nut	124.95
10602	Bolt	143.92
10603	Screw	13.49
10800	Driller	49.98

8 rows in set (0.00 sec)

**QUERY-11:** For each PARTS get PNO and PNAME values along with total sales in rupees but only when the total sales exceeds 100.53.

```
mysql> select PNO,PNAME,FORMAT(SUM(QTY*PRICE),2)
-> as 'Total_Sales'
-> from ODETAILS natural join
-> PARTS group by PNO
-> having Total_Sales >100.53;
```

PNO	PNAME	Total_Sales
10506	land before time 1	125.93
10507	land before time 2	251.86
10509	land before time 4	287.84
10601	Nut	124.95
10602	Bolt	143.92

5 rows in set (0.00 sec)

**QUERY-12:** Change the name of the CITY 'columbia' to 'parth'.

```
mysql> update ZIPCODES
-> SET CITY = 'parth'
-> where ZIP = 54444;
Query OK, 0 rows affected (0.00 sec)
Rows matched: 1  Changed: 0  Warnings: 0

mysql> select * from ZIPCODES;
+-----+-----+
| ZIP   | CITY      |
+-----+-----+
| 50302 | kansas city |
| 54444 | parth      |
| 60606 | fort dodge  |
| 60706 | patna       |
| 61111 | fort hays   |
| 61818 | delhi       |
| 63111 | kolkata     |
| 65222 | diamond     |
| 66006 | liberal     |
| 67226 | wichita     |
+-----+-----+
10 rows in set (0.00 sec)
```

**QUERY-13:** Update all the null valued SHIPPED dates to the current date.

```
mysql> update ORDERS
-> set SHIPPED = '2022-09-01'
-> where ORDERS.ENO= 1001 OR ORDERS.ENO=1015;
```

Rows matched: 2 Changed: 2 Warnings: 0

```
mysql> SELECT * FROM ORDERS;
```

ONO	CNO	ENO	RECEIVED	SHIPPED
1020	1111	1000	1994-12-10	1994-12-12
1021	1111	1000	1995-01-12	1995-01-15
1022	2222	1001	1997-01-20	2022-09-01
1023	3333	1002	1998-04-13	1998-04-29
1024	4444	1003	1996-03-11	1996-03-13
1025	5555	1004	1996-03-11	1996-03-12
1026	5555	1004	1998-05-31	1998-06-08
1027	8888	1006	1995-05-23	1993-03-23
1028	7777	1007	1984-05-17	1983-12-18
1029	3333	1008	1992-12-13	1993-09-18
1030	2222	1010	1983-04-30	1985-09-17
1031	1000	1011	1993-05-26	1985-04-16
1032	1111	1012	1986-04-15	2005-01-31
1033	9988	1013	2000-04-18	2005-04-18
1034	9988	1014	2005-02-08	2005-02-18
1035	1111	1015	2005-04-18	2022-09-01

16 rows in set (0.00 sec)

**QUERY-14:** Decrease the PRICE of all PARTS that cost less than 24.00 by 10%.

```
mysql> select PNO, PNAME, (PRICE - PRICE*0.1)
-> as UPDATED_PRICE
-> from PARTS
-> where PRICE<24.00;
```

PNO	PNAME	UPDATED_PRICE
10506	land before time 1	16.19
10507	land before time 2	16.19
10508	land before time 3	16.19
10509	land before time 4	16.19
10602	Bolt	16.19
10603	Screw	12.14

6 rows in set (0.01 sec)



**QUERY-15:** Set the 'QOH' value of those PARTS whose current 'QOH' value is less than 100 to the maximum 'QOH' value present in the table.

```
mysql> update PARTS
-> set QOH = (select max(QOH) from (
-> select QOH from PARTS ) as T)
-> where QOH<100;
```

```
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> select * from PARTS;
```

PNO	PNAME	QOH	PRICE	OLEVEL
10506	land before time 1	200	17.99	20
10507	land before time 2	156	17.99	20
10508	land before time 3	190	17.99	20
10509	land before time 4	300	17.99	20
10601	Nut	300	24.99	30
10602	Bolt	120	17.99	30
10603	Screw	140	13.49	30
10800	Driller	100	24.99	30

```
8 rows in set (0.00 sec)
```