Assignment No 3

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PRN No-03

Subject-DBMS (SQL Lab 3)

1.Create a table vehicles with columns vehicleid int, year int,make varchar(100).Make vehicleid as the primary key and the columns year and make not null.

```
mysql> create table vehicles (vehicleid int primary key,year int not null,ma
ke varchar(100) not null);
Query OK, 0 rows affected (0.03 sec)

mysql> desc vehicles;
+-----------+--------------+------+-----+---------+-------+
| Field     | Type         | Null | Key | Default | Extra |
+-----------+--------------+------+-----+---------+-------+
| vehicleid | int          | NO   | PRI | NULL    |       |
| year      | int          | NO   |     | NULL    |       |
| make      | varchar(100) | NO   |     | NULL    |       |
+-----------+--------------+------+-----+---------+-------+
3 rows in set (0.02 sec)

mysql>
```

2. Add 3 new columns to the vehicles table

a. model varchar(100) not null

b. color varchar(50)

c. note varchar(255)

```
mysql> alter table vehicles add model varchar(100) not null,add color varcha
r(50),add note varchar(255);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc vehicles;
+-----------+--------------+------+-----+---------+-------+
| Field     | Type         | Null | Key | Default | Extra |
+-----------+--------------+------+-----+---------+-------+
| vehicleid | int          | NO   | PRI | NULL    |       |
| year      | int          | NO   |     | NULL    |       |
| make      | varchar(100) | NO   |     | NULL    |       |
| model     | varchar(100) | NO   |     | NULL    |       |
| color     | varchar(50)  | YES  |     | NULL    |       |
| note      | varchar(255) | YES  |     | NULL    |       |
+-----------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)

mysql>
```

3. In the vehicles table, change the note column a NOT NULL column with a maximum of 100 characters.

```
mysql> alter table vehicles modify note varchar(100) not null;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc vehicles;
+-----------+--------------+------+-----+---------+-------+
| Field     | Type         | Null | Key | Default | Extra |
+-----------+--------------+------+-----+---------+-------+
| vehicleid | int          | NO   | PRI | NULL    |       |
| year      | int          | NO   |     | NULL    |       |
| make      | varchar(100) | NO   |     | NULL    |       |
| model     | varchar(100) | NO   |     | NULL    |       |
| color     | varchar(50)  | YES  |     | NULL    |       |
| note      | varchar(100) | NO   |     | NULL    |       |
+-----------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

4. In the vehicles table, modify the data type of the year column from INT to SMALLINT

```
mysql> alter table vehicles modify year smallint;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc vehicles;
+-----------+--------------+------+-----+---------+-------+
| Field     | Type         | Null | Key | Default | Extra |
+-----------+--------------+------+-----+---------+-------+
| vehicleid | int          | NO   | PRI | NULL    |       |
| year      | smallint     | YES  |     | NULL    |       |
| make      | varchar(100) | NO   |     | NULL    |       |
| model     | varchar(100) | NO   |     | NULL    |       |
| color     | varchar(50)  | YES  |     | NULL    |       |
| note      | varchar(100) | NO   |     | NULL    |       |
+-----------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

5. In the vehicles table, modify the color column by setting the maximum length to 20,removing the NOT NULL constraint, and changing its position to appear after the make column.

```
mysql> alter table vehicles modify color varchar(20) not null after make;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc vehicles;
+-----------+--------------+------+-----+---------+-------+
| Field     | Type         | Null | Key | Default | Extra |
+-----------+--------------+------+-----+---------+-------+
| vehicleid | int          | NO   | PRI | NULL    |       |
| year      | smallint     | YES  |     | NULL    |       |
| make      | varchar(100) | NO   |     | NULL    |       |
| color     | varchar(20)  | NO   |     | NULL    |       |
| model     | varchar(100) | NO   |     | NULL    |       |
| note      | varchar(100) | NO   |     | NULL    |       |
+-----------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

6. In vehicles table, rename the column note to vehicleCondition

```
mysql> alter table vehicles change note vehiclecondition varchar(100) not nu
ll;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc vehicles;
+------------------+--------------+------+-----+---------+-------+
| Field            | Type         | Null | Key | Default | Extra |
+------------------+--------------+------+-----+---------+-------+
| vehicleid        | int          | NO   | PRI | NULL    |       |
| year             | smallint     | YES  |     | NULL    |       |
| make             | varchar(100) | NO   |     | NULL    |       |
| color            | varchar(20)  | NO   |     | NULL    |       |
| model            | varchar(100) | NO   |     | NULL    |       |
| vehiclecondition | varchar(100) | NO   |     | NULL    |       |
+------------------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)

mysql>
```

7. Create a table and insert some rows into the table. Add different constraints into the table using alter table statement

```
mysql> create table students(id int,name varchar(50),marks decimal(5,2));
Query OK, 0 rows affected (0.01 sec)

mysql> desc students;
+-------+--------------+------+-----+---------+-------+
| Field | Type         | Null | Key | Default | Extra |
+-------+--------------+------+-----+---------+-------+
| id    | int          | YES  |     | NULL    |       |
| name  | varchar(50)  | YES  |     | NULL    |       |
| marks | decimal(5,2) | YES  |     | NULL    |       |
+-------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

Adding constraints(Primary key,not null,default)

```
mysql> alter table students add primary key(id);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc students;
+--------+--------------+------+-----+---------+-------+
| Field  | Type         | Null | Key | Default | Extra |
+--------+--------------+------+-----+---------+-------+
| id     | int          | NO   | PRI | NULL    |       |
| name   | varchar(50)  | YES  |     | NULL    |       |
| marks  | decimal(5,2) | YES  |     | NULL    |       |
+--------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

```
mysql> alter table students modify name varchar(50) not null;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc students;
+--------+--------------+------+-----+---------+-------+
| Field  | Type         | Null | Key | Default | Extra |
+--------+--------------+------+-----+---------+-------+
| id     | int          | NO   | PRI | NULL    |       |
| name   | varchar(50)  | NO   |     | NULL    |       |
| marks  | decimal(5,2) | YES  |     | NULL    |       |
+--------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

```
mysql> alter table students alter column name set default 'No Name';
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc students;
+--------+--------------+------+-----+---------+-------+
| Field  | Type         | Null | Key | Default | Extra |
+--------+--------------+------+-----+---------+-------+
| id     | int          | NO   | PRI | NULL    |       |
| name   | varchar(50)  | NO   |     | No Name |       |
| marks  | decimal(5,2) | YES  |     | NULL    |       |
+--------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

8. Display the productcode, productname, textdescription from products and productdetails tables

```
mysql> select productcode,productname,textdescription from products inner jo
in productdetails on(productlines.productline=products.productline);
ERROR 1146 (42S02): Table 'classicmodels.productdetails' doesn't exist
mysql> select productcode,productname,textdescription from products inner jo
in using(productline);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual t
hat corresponds to your MySQL server version for the right syntax to use nea
r 'using(productline)' at line 1
mysql> select productcode,productname,textdescription from products inner jo
in productlines using(productline);
+-------------+-----------------------------------------------------+---------------
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
-------------------------------------------+
| productcode | productname                                         | textdescriptio
n



|
+-------------+-----------------------------------------------------+---------------
-------------------------------------------------------------------------------
------------------------------------------
```

9. Display customernumber,customername,ordernumber and status of all the customers using left join

```
mysql> select c.customernumber,customername,ordernumber,status from customer
s c left join orders o on c.customernumber=o.customernumber;
+----------------+----------------------------------+-------------+-------
-----+
| customernumber | customername                     | ordernumber | status
     |
+----------------+----------------------------------+-------------+-------
-----+
|            103 | Atelier graphique                |       10123 | Shippe
d    |
|            103 | Atelier graphique                |       10298 | Shippe
d    |
|            103 | Atelier graphique                |       10345 | Shippe
d    |
|            112 | Signal Gift Stores               |       10124 | Shippe
d    |
|            112 | Signal Gift Stores               |       10278 | Shippe
d    |
|            112 | Signal Gift Stores               |       10346 | Shippe
d    |
|            114 | Australian Collectors, Co.       |       10120 | Shippe
d    |
|            114 | Australian Collectors, Co.       |       10125 | Shippe
d    |
|            114 | Australian Collectors, Co.       |       10223 | Shippe
d    |
|            114 | Australian Collectors, Co.       |       10342 | Shippe
d    |
|            114 | Australian Collectors, Co.       |       10347 | Shippe
d    |
```

10. Join the customers and employees table using Right Join

```
mysql> select * from customers c right join employees e on(c.salesrepemploye
enumber=e.employeenumber);
+---------------+--------------------------------+------------------+----
---------------+-------------------+-----------------+-----------+-------
---------------+-------------------+-----------------+-----------+-------
------+----------------------+-------------+-----------------+---------+-
----------+----------------+-----------+--------------------------+------
-----+----------------------+
| customerNumber | customerName                   | contactLastName | co
ntactFirstName | phone               | addressLine1      | addres
sLine2           | city                | state           | postalCode | countr
y      | salesRepEmployeeNumber | creditLimit | employeeNumber | lastName    |
firstName | extension | email                      | officeCode | repor
tsTo | jobTitle             |
+---------------+--------------------------------+------------------+----
---------------+-------------------+-----------------+-----------+-------
---------------+-------------------+-----------------+-----------+-------
------+----------------------+-------------+-----------------+---------+-
----------+----------------+-----------+--------------------------+------
-----+----------------------+
|          NULL | NULL                           | NULL            | NU
LL             | NULL             | NULL            | NULL
|          NULL | NULL                           | NULL            | NULL
|             NULL |          NULL |            1002 | Murphy      |
Diane      | x5800     | dmurphy@classicmodelcars.com    | 1          |
NULL | President            |
|          NULL | NULL                           | NULL            | NU
LL             | NULL             | NULL            | NULL
|          NULL | NULL                           | NULL            | NULL
|             NULL |          NULL |            1056 | Patterson |
```

11. Use a subquery to return the employees who work in the offices located in the USA.

```
mysql> select * from employees where officecode in(select officecode from of
fices where country ='usa');
+-----------------+-------------+-----------+-----------+---------------------
-----------+-------------+-----------+--------------------+
| employeeNumber | lastName   | firstName | extension | email
           | officeCode | reportsTo | jobTitle           |
+-----------------+-------------+-----------+-----------+---------------------
-----------+-------------+-----------+--------------------+
|            1002 | Murphy     | Diane      | x5800     | dmurphy@classicmodelc
ars.com     | 1          |      NULL | President          |
|            1056 | Patterson  | Mary       | x4611     | mpatterso@classicmode
lcars.com   | 1          |      1002 | VP Sales           |
|            1076 | Firrelli   | Jeff       | x9273     | jfirrelli@classicmode
lcars.com   | 1          |      1002 | VP Marketing       |
|            1143 | Bow        | Anthony    | x5428     | abow@classicmodelcars
.com        | 1          |      1056 | Sales Manager (NA) |
|            1165 | Jennings   | Leslie     | x3291     | ljennings@classicmode
lcars.com   | 1          |      1143 | Sales Rep          |
|            1166 | Thompson   | Leslie     | x4065     | lthompson@classicmode
lcars.com   | 1          |      1143 | Sales Rep          |
|            1188 | Firrelli   | Julie      | x2173     | jfirrelli@classicmode
lcars.com   | 2          |      1143 | Sales Rep          |
|            1216 | Patterson  | Steve      | x4334     | spatterson@classicmod
elcars.com  | 2          |      1143 | Sales Rep          |
|            1286 | Tseng      | Foon Yue   | x2248     | ftseng@classicmodelca
rs.com      | 3          |      1143 | Sales Rep          |
|            1323 | Vanauf     | George     | x4102     | gvanauf@classicmodelc
ars.com     | 3          |      1143 | Sales Rep          |
+-----------------+-------------+-----------+-----------+---------------------
-----------+-------------+-----------+--------------------+
10 rows in set (0.01 sec)
```

12. Display the details from the payments table who has the highest payment

```
mysql> select * from payments where amount=(select max(amount) from payments
);
+----------------+-------------+-------------+------------+
| customerNumber | checkNumber | paymentDate | amount     |
+----------------+-------------+-------------+------------+
|            141 | JE105477    | 2005-03-18  | 120166.58 |
+----------------+-------------+-------------+------------+
1 row in set (0.00 sec)
```

13. Find customers whose payments are greater than the average payment

```
mysql> select customernumber,checknumber,amount from payments where amount >
(select avg(amount) from payments);
+----------------+-------------+-----------+
| customernumber | checknumber | amount    |
+----------------+-------------+-----------+
|            112 | HQ55022     | 32641.98 |
|            112 | ND748579    | 33347.88 |
|            114 | GG31455     | 45864.03 |
|            114 | MA765515    | 82261.22 |
|            114 | NR27552     | 44894.74 |
|            119 | LN373447    | 47924.19 |
|            119 | NG94694     | 49523.67 |
|            121 | DB889831    | 50218.95 |
|            121 | MA302151    | 34638.14 |
|            124 | AE215433    | 101244.59 |
|            124 | BG255406    | 85410.87 |
|            124 | ET64396     | 83598.04 |
|            124 | HI366474    | 47142.70 |
|            124 | HR86578     | 55639.66 |
|            124 | KI131716    | 111654.40 |
```

14. Find the customers who have not placed any orders

```
mysql> select customername from customers where customernumber not in(select
 distinct customernumber from orders);
+-------------------------------+
| customername                  |
+-------------------------------+
| Havel & Zbyszek Co            |
| American Souvenirs Inc        |
| Porto Imports Co.             |
| Asian Shopping Network, Co    |
| Natürlich Autos               |
| ANG Resellers                 |
| Messner Shopping Network      |
| Franken Gifts, Co             |
| BG&E Collectables             |
| Schuyler Imports              |
| Der Hund Imports              |
| Cramer Spezialitäten, Ltd     |
| Asian Treasures, Inc.         |
| SAR Distributors, Co          |
| Kommission Auto               |
| Lisboa Souveniers, Inc        |
| Precious Collectables         |
| Stuttgart Collectable Exchange|
| Feuer Online Stores, Inc      |
| Warburg Exchange              |
| Anton Designs, Ltd.           |
| Mit Vergnügen & Co.           |
| Kremlin Collectables, Co.     |
| Raanan Stores, Inc            |
+-------------------------------+
24 rows in set (0.00 sec)
```