ROLLNO:19131A05Q6

Part A

Aim: SQL commands:

i) Create table
ii) View structure of table
iii) Alter table for adding/deleting columns and modifying columns
iv) Insert data into table
v) View data in the table (for all records, specfic attributes and specific records)
vi) To Update records
vii) Delete records
viii) To eliminate duplicate rows when using a select statement
ix) Drop table

Prerequisite: Oracle.

Outcome: Table is created and records are inserted and viewed.

Theory:

SQL CREATE TABLE Syntax

```
CREATE TABLE table_name
(
column_name1 data_type(size) constraints,
column_name2 data_type(size) constraints,
column_name3 data_type(size) constraints,
....
);
```

SQL INSERT INTO Syntax

It is possible to write the INSERT INTO statement in two forms.

The first form does not specify the column names where the data will be inserted, only their values:

```
INSERT INTO table_name
VALUES (value1,value2,value3,...);
```

The second form specifies both the column names and the values to be inserted:

```
INSERT INTO table_name (column1,column2,column3,...)
VALUES (value1,value2,value3,...);
```

SQL SELECT Syntax

```
SELECT column_name(s) FROM table_name;
```

and

```
SELECT * FROM table_name;
```

and

```
SELECT column_name(s) FROM table_name WHERE condition
```

SQL DELETE Syntax

```
DELETE FROM table_name WHERE condition;
```

SQL UPDATE Syntax

```
UPDATE table_name
SET column1 = value1, column2 = value2, ...
WHERE condition;
```

Procedure:

1. Formulate the query for given problem.
2. Write the SQL query with proper input.
3. Execute the query.

Practice Exercise:

S.no	Query statement
1	(a) Create an Account with the following attributes acctno - Account Number – Integer bal – Balance – Interger (b) Add column acctHolderName attribute with type Number (c) Change column acctHolderName type to varchar (d) Delete column acctHolderName
2	Create the Depositor table with th following attributes custname – Customer Name – varchar custID – Customer ID – Integer
3	Create the Loan table with the following attributes loan_no_loan number – Integer br_name – Branch name – varchar amount –loan amount – float
4	Create the Borrower with the following attributes custname – Customer Name – varchar loan_no – loan number – Integer
5	Create Department Table with following columns and constraints:

ROLLNO:19131A05Q6

	Column name **Type & Size** Dept_no numeric(2) Dname varchar(15) Location varchar(12)
6	Create Emp table with following columns and constraints: **Column name** **Type & Size** Emp_no numeric(4) Ename varchar(20) Gender char(1) Job varchar(12) Mgr numeric(4) Hiredate date Salary numeric(8) Comm numeric(8) Dept_no numeric(2)
7	Insert following data into Department table: **Dept_no** **Dname** **Location** 10 ACCOUNTING NEW YORK 20 RESEARCH DALLAS 30 SALES CHICAGO 40 MARKETING BOSTON
8	Insert following data into Emp table: **E_no** **Ename** **Gender** **Job** **Mgr** **Hiredate** **Salary** **Comm** **Dept_no** 7369 Smith M CLERK 7902 17-DEC-80 8000 - 20 7499 Allen F SALESMAN 7698 20-FEB-81 16000 3000 30 7521 Ward M SALESMAN 7698 22-FEB-81 12500 5000 30 7566 Jones F MANAGER 7839 02-APR-81 29750 - 20 7654 Martin M SALESMAN 7698 28-SEP-81 12500 14000 30

ROLLNO:19131A05Q6

7698	Blake	M	MANAGER	7839	01-MAY-81	28500	-	30
7782	Clark	M	MANAGER	7839	09-JUN-81	24500	-	10
7788	Scott	M	ANALYST	7566	09-DEC-82	30000	-	20
7839	King	M	PRESIDENT	-	17-NOV-81	50000	-	10
7844	Turner	M	SALESMAN	7698	08-SEP-81	15000	-	30
7876	Adams	M	CLERK	7788	12-JAN-83	11000	-	20
7900	James	M	CLERK	7698	03-DEC-81	95000	-	30
7902	Ford	M	ANALYST	7566	03-DEC-81	30000	-	20
7934	Miller	F	CLERK	7782	23-JAN-82	13000	-	10

9	Display all the information of the EMP table?
10	Display all the information of the Department table?
11	Display name of all the departments?
12	Display all department name along with location?
13	Display name and salary of all female employees.
14	Display name of all male employees in department no 20.
15	Display name of all employee whose salary is more than 10000.
16	Display information of all clerks.
17	Display Employee no. and name of all male who is getting salary less than 20000.
18	Display information of all employees working in Dept. no. 20.
19	Display unique Jobs from EMP table?
20	Display the struc ture of all tables.

Instructions:

1. Write and execute the query in Oracle/SQL server.
2. Paste the snapshot of the output in input & output section.

Part B

ROLLNO:19131A05Q6

Code:
Perform the operation and paste the running code here.

ROLLNO:19131A05Q6

Input & Output:

1) a)

```
mysql> create table account(acctno int,bal int);
Query OK, 0 rows affected (0.09 sec)
```

b)

```
mysql> alter table account add acctholdername int;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

c)

```
mysql> alter table account modify acctholdername varchar(20);
Query OK, 0 rows affected (0.11 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

d)

```
mysql> alter table account drop column acctholdername;
Query OK, 0 rows affected (0.09 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

2)

```
mysql> create table depositor(custname varchar(20),custid int);
Query OK, 0 rows affected (0.06 sec)
```

3)

```
mysql> create table Loan(loan_no int,br_name varchar(20),amount float(10,2));
Query OK, 0 rows affected, 1 warning (0.04 sec)
```

4)

```
mysql> create table borrower(custname varchar(20),loan_no int);
Query OK, 0 rows affected (0.04 sec)
```

5)

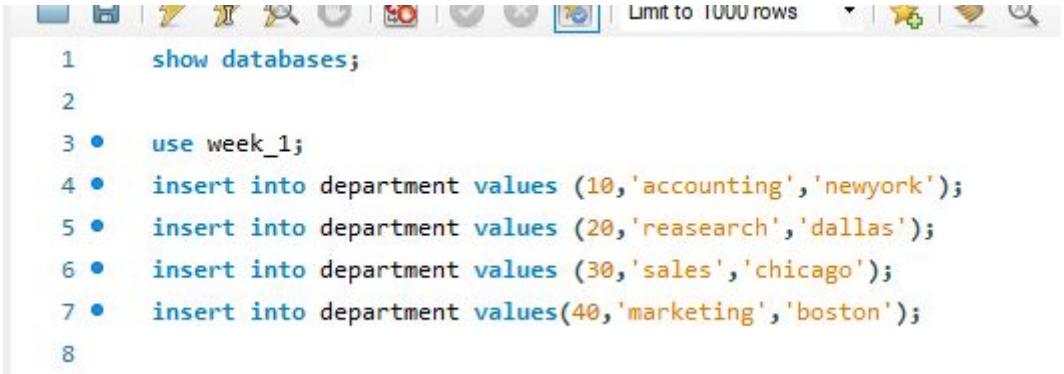
```
mysql> create table borrower(custname varchar(20),loan_no int);
Query OK, 0 rows affected (0.04 sec)
```

6)

```
mysql> create table Emp(Emp_no int,Ename varchar(20),Gender char(1),Job varchar(12),Mgr int,Hiredate date,Salary int,Comm int,Dept_no
int);
Query OK, 0 rows affected (0.07 sec)

mysql>
```

7)



ROLLNO:19131A05Q6

8)

Query 1 | SQL File 1*

Limit to 1000 rows

```
use week_1;
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7782,'clark','M','manager',7839,'1981-6-9',24500,10);
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7788,'scott','M','analyst',7566,'1982-12-9',30000,20);
insert into Emp(Emp_no,Ename,Gender,Job,Hiredate,Salary,Dept_no) values (7839,'king','M','president','1981-11-17',50000,10);
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7844,'turner','M','salesman','7698','1981-10-8',15000,30
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7876,'adams','M','clerk','7788','1983-01-12',11000,20);
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7900,'james','M','clerk','7698','1981-12-03',95000,30);
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7902,'ford','M','analyst','7566','1981-12-03',30000,20);
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7934,'miller','F','clerk','7782','1982-01-23',13000,10);
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Comm,Dept_no) values(7499,'Allen','F','SALESMAN',7698,'1981-02-20',16000,
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Comm,Dept_no) values(7521,'Ward','M','SALESMAN',7698,'1981-02-22',12500,5
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values(7566,'Jones','F','MANAGER',7839,'1981-04-02',29750,20);
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Comm,Dept_no) values(7654,'Martin','M','SALESMAN',7698,'1981-09-28',12500
insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values(7698,'Blake','M','MANAGER',7839,'1981-05-01',28500,30);
```

12	21:18:58	show databases	5 row(s) returned	0.000 sec / 0.000 sec
13	21:18:58	use week_1	0 row(s) affected	0.000 sec
14	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7782,'clark','M','mana...	1 row(s) affected	0.015 sec
15	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7788,'scott','M','analy...	1 row(s) affected	0.000 sec
16	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,Hiredate,Salary,Dept_no) values (7839,'king','M','president','...	1 row(s) affected	0.000 sec
17	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7844,'turner','M','sale...	1 row(s) affected	0.000 sec
18	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7876,'adams','M','cler...	1 row(s) affected	0.016 sec
19	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7900,'james','M','clerk...	1 row(s) affected	0.000 sec
20	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7902,'ford','M','analys...	1 row(s) affected	0.000 sec
21	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values (7934,'miller','F','clerk','...	1 row(s) affected	0.000 sec
22	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Comm,Dept_no) values(7499,'Allen','F','...	1 row(s) affected	0.000 sec
23	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Comm,Dept_no) values(7521,'Ward','M'...	1 row(s) affected	0.000 sec
24	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values(7566,'Jones','F','MAN...	1 row(s) affected	0.000 sec
25	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Comm,Dept_no) values(7654,'Martin','...	1 row(s) affected	0.016 sec
26	21:18:58	insert into Emp(Emp_no,Ename,Gender,Job,mgr,Hiredate,Salary,Dept_no) values(7698,'Blake','M','MAN...	1 row(s) affected	0.000 sec

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

Emp_no	Ename	Gender	Job	Mgr	Hiredate	Salary	Comm	Dept_no
7782	clark	M	manager	7839	1981-06-09	24500	NULL	10
7788	7782	M	analyst	7566	1982-12-09	30000	NULL	20
7839	king	M	president	NULL	1981-11-17	50000	NULL	10
7844	turner	M	salesman	7698	1981-10-08	15000	NULL	30
7876	adams	M	clerk	7788	1983-01-12	11000	NULL	20
7900	james	M	clerk	7698	1981-12-03	95000	NULL	30
7902	ford	M	analyst	7566	1981-12-03	30000	NULL	20
7934	miller	F	clerk	7782	1982-01-23	13000	NULL	10
7499	Allen	F	SALESMAN	7698	1981-02-20	16000	3000	30
7521	Ward	M	SALESMAN	7698	1981-02-22	12500	5000	30
7566	Jones	F	MANAGER	7839	1981-04-02	29750	NULL	20
7654	Martin	M	SALESMAN	7698	1981-09-28	12500	14000	30
7698	Blake	M	MANAGER	7839	1981-05-01	28500	NULL	30

9) **select *from Emp;**

Result Grid | Filter Rows:

dept_no	dname	location
10	accounting	newyork
10	accounting	newyork
20	reasearch	dallas
30	sales	chicago
40	marketing	boston

10) **select * from department;**

ROLLNO:19131A05Q6

11)

```
mysql> select dname from department;
+------------+
| dname      |
+------------+
| accounting |
| accounting |
| reasearch  |
| sales      |
| marketing  |
+------------+
5 rows in set (0.00 sec)
```

12)

```
mysql> select dname,location from department;
+------------+----------+
| dname      | location |
+------------+----------+
| accounting | newyork  |
| accounting | newyork  |
| reasearch  | dallas   |
| sales      | chicago  |
| marketing  | boston   |
+------------+----------+
5 rows in set (0.00 sec)
```

13)

```
mysql> select Ename,salary from Emp where Gender='F';
+--------+--------+
| Ename  | salary |
+--------+--------+
| miller |  13000 |
| Allen  |  16000 |
| Jones  |  29750 |
+--------+--------+
3 rows in set (0.00 sec)
```

14)

```
mysql> select Ename from Emp where Gender='M' and Dept_no=20;
+-------+
| Ename |
+-------+
| scott |
| adams |
| ford  |
| Smith |
+-------+
4 rows in set (0.01 sec)
```

ROLLNO:19131A05Q6

15)

```
mysql> select Ename from Emp where salary>10000;
+--------+
| Ename  |
+--------+
| clark  |
| scott  |
| king   |
| turner |
| adams  |
| james  |
| ford   |
| miller |
| Allen  |
| Ward   |
| Jones  |
| Martin |
| Blake  |
+--------+
13 rows in set (0.00 sec)
```

16)

```
mysql> select * from Emp where Job='clerk';
+--------+--------+--------+-------+------+------------+--------+------+---------+
| Emp_no | Ename  | Gender | Job   | Mgr  | Hiredate   | Salary | Comm | Dept_no |
+--------+--------+--------+-------+------+------------+--------+------+---------+
|   7876 | adams  | M      | clerk | 7788 | 1983-01-12 |  11000 | NULL |      20 |
|   7900 | james  | M      | clerk | 7698 | 1981-12-03 |  95000 | NULL |      30 |
|   7934 | miller | F      | clerk | 7782 | 1982-01-23 |  13000 | NULL |      10 |
|   7369 | Smith  | M      | CLERK | 7920 | 1980-12-17 |   8000 | NULL |      20 |
+--------+--------+--------+-------+------+------------+--------+------+---------+
4 rows in set (0.00 sec)
```

17)

```
mysql> select Emp_no,Ename from Emp where Gender='M' and Salary<20000
    -> ;
+--------+--------+
| Emp_no | Ename  |
+--------+--------+
|   7844 | turner |
|   7876 | adams  |
|   7521 | Ward   |
|   7654 | Martin |
|   7369 | Smith  |
+--------+--------+
5 rows in set (0.00 sec)
```

ROLLNO:19131A05Q6

18)

```
mysql> select * from Emp where Dept_no=20;
+--------+-------+--------+---------+------+------------+--------+------+---------+
| Emp_no | Ename | Gender | Job     | Mgr  | Hiredate   | Salary | Comm | Dept_no |
+--------+-------+--------+---------+------+------------+--------+------+---------+
|   7788 | scott | M      | analyst | 7566 | 1982-12-09 |  30000 | NULL |      20 |
|   7876 | adams | M      | clerk   | 7788 | 1983-01-12 |  11000 | NULL |      20 |
|   7902 | ford  | M      | analyst | 7566 | 1981-12-03 |  30000 | NULL |      20 |
|   7566 | Jones | F      | MANAGER | 7839 | 1981-04-02 |  29750 | NULL |      20 |
|   7369 | Smith | M      | CLERK   | 7920 | 1980-12-17 |   8000 | NULL |      20 |
+--------+-------+--------+---------+------+------------+--------+------+---------+
5 rows in set (0.00 sec)
```

19)

```
mysql> select distinct Job from Emp;
+-----------+
| Job       |
+-----------+
| manager   |
| analyst   |
| president |
| salesman  |
| clerk     |
+-----------+
5 rows in set (0.00 sec)
```

ROLLNO:19131A05Q6

```
mysql> desc department;
+----------+--------------+------+-----+---------+-------+
| Field    | Type         | Null | Key | Default | Extra |
+----------+--------------+------+-----+---------+-------+
| dept_no  | decimal(2,0) | YES  |     | NULL    |       |
| dname    | varchar(15)  | YES  |     | NULL    |       |
| location | varchar(12)  | YES  |     | NULL    |       |
+----------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> desc borrower;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| custname | varchar(20) | YES  |     | NULL    |       |
| loan_no  | int         | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
2 rows in set (0.05 sec)

mysql> desc depositor;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| custname | varchar(20) | YES  |     | NULL    |       |
| custid   | int         | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> desc loan;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| loan_no | int         | YES  |     | NULL    |       |
| br_name | varchar(20) | YES  |     | NULL    |       |
| amount  | float(10,2) | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

20)

```
mysql> desc Emp;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| Emp_no   | int         | YES  |     | NULL    |       |
| Ename    | varchar(20) | YES  |     | NULL    |       |
| Gender   | char(1)     | YES  |     | NULL    |       |
| Job      | varchar(12) | YES  |     | NULL    |       |
| Mgr      | int         | YES  |     | NULL    |       |
| Hiredate | date        | YES  |     | NULL    |       |
| Salary   | int         | YES  |     | NULL    |       |
| Comm     | int         | YES  |     | NULL    |       |
| Dept_no  | int         | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
9 rows in set (0.03 sec)
```

Observation & Learning:

learnt and practiced ddl commands and recorded the o/p's perfectly :-)

ROLLNO:19131A05Q6

Conclusion:

Questions:

1. What is DDL (Data Definition Language)?
2. How the strings are inserted into the table?
3. What happen if one attribute is not there in insertion list?
4. What happen if domain type of data inserted is different from that of column?
5. What happen if where clause is not given in query?
6. What are the various comparison operator used in condition part?

Answers:

1) A DDL is a language used to define data structures and modify data.
For example, DDL commands can be used to add, remove, or modify tables within in a database.

2)by using Varchar(n) datatype,where n is the max length of a string
ex: sname varchar(20),

3)specify the remaining attributes and insert data into them only (or)
simply insert NULL in that place

```
INSERT Leads VALUES('name','cityName',null,'anotherValue');
```

```
4)use MODIFY command with ALTER
  ex:alter table [tablename] modify [attributename] [newdatatype];
5)unnecessary tubles will also get selected
6)    =    (equal to)
     <>     (not equal to)
     >      (greater than)
     <      (less than)
     >=     (greater than or equal to)
     <=     (less than or equal to)
```