Lab 1

CREATE DATABASE Lab1;

USE Lab1;

CREATE TABLE STUDENT (

       SID INT PRIMARY KEY,

       SNAME VARCHAR(25),

       GENDER CHAR(1),

       AGE INT,

       CLASS VARCHAR(20),

       MARKS INT,

       EMAIL VARCHAR(30),

       ADDRESS VARCHAR(35)

);

⊞ Results | 📑 Messages

SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS

1) Insert 15 students with full details including Email and Address.

```
INSERT INTO STUDENT VALUES
(1, 'Hari Acharya','M', 18, '12B', 87, 'acharya@gmail.com', 'Shantinagar'),
(2, 'Rea Sharma', 'F', 19, '11A', 92, 'sharma@yahoo.com', 'Pokhara'),
(3, 'Anisha Chaulagain', 'F', 20, '12A', 79, 'anish.c@gmail.com', 'Dharan'),
(4, 'Kabita Dhungana', 'F', 18, '11B', 83, 'kabita.dhun@hotmail.com', 'Baglung'),
(5, 'Bijay Thapa', 'M', 17, '11A', 68, 'bijaythapa88@gmail.com', 'Chitwan'),
(6, 'Puja Subedi', 'F', 20, '12B', 96, 'puja.subedi@yahoo.com', 'Bhaktapur'),
(7, 'Saroj Karki', 'M', 19, '11B', 72, NULL, 'Makwanpur'),
(8, 'Manisha Joshi', 'F', 18, '11A', 89, 'mj.official@gmail.com', 'Kailali'),
(9, 'Dipesh Raut', 'M', 20, '12B', 94, 'dipeshraut@outlook.com', 'Rupandehi'),
(10, 'Sita Neupane', 'F', 17, '11B', 76, 'sitaneupane123@gmail.com', 'Tanahun'),
(11, 'Roshan Regmi', 'M', 18, '12A', 85, 'roshan.regmi@gmail.com', 'Butwal'),
(12, 'Sweta KC', 'F', 19, '11A', 91, 'swetakc@gmail.com', 'Lalitpur'),
(13, 'Karan Maharjan', 'M', 17, '12B', 90, 'karan.mj@yahoo.com', 'Kathmandu'),
(14, 'Nisha Rijal', 'F', 20, '11A', 74, NULL, 'Dhading'),
(15, 'Saurav Basnet', 'M', 19, '12A', 82, 'sauravbasnet@gmail.com', 'Syangja');
```

2) Display all student records with all columns.

SELECT * FROM Student;

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS
1	1	Hari Acharya	M	18	12B	87	acharya@gmail.com	Shantinagar
2	2	Rea Sharma	F	19	11A	92	sharma@yahoo.com	Pokhara
3	3	Anisha Chaulagain	F	20	12A	79	anish.c@gmail.com	Dharan
4	4	Babita Dhungana	F	18	11B	83	babita.dhun@hotmail.com	Baglung
5	5	Bijaya Thapa	F	17	11A	68	bijayathapa88@gmail.com	Chitwan
6	6	Pujan Subedi	F	20	12B	96	pujan.subedi@yahoo.com	Bharatpur
7	7	Sarojani Karki	F	19	11B	72	NULL	Makwanpur
8	8	Manish Joshi	M	18	11A	89	mj.official@gmail.com	Kailali
9	9	Dipesh Rautey	M	20	12B	94	dipeshrautey@outlook.com	Rupandehi
10	10	Sitashma Neupane	F	17	11B	76	sitashmaneupane123@gmail.com	Tanahun
11	11	Rohan Regmi	M	18	12A	85	rohan.regmi@gmail.com	Butwal
12	12	Sweta KC	F	19	11A	91	swetakc@gmail.com	Lalitpur
13	13	Karan Maharjan	M	17	12B	90	karan.mj@yahoo.com	Kathmandu
14	14	Nishan Rijal	M	20	11A	74	NULL	Dhading
15	15	Saurav Basnet	M	19	12A	82	sauravbasnet@gmail.com	Syangja

Query executed successfully.   ABINASHREGMI\sqlexpress (16...   ABINASHREGMI\dell (63)   master   00:00:00   15 rows

3) Display only SName, Email, and Marks.

SELECT SName, Email, Marks FROM Student;

	SName	Email	Marks
1	Hari Acharya	acharya@gmail.com	87
2	Rea Sharma	sharma@yahoo.com	92
3	Anisha Chaulagain	anish.c@gmail.com	79
4	Babita Dhungana	babita.dhun@hotmail.com	83
5	Bijaya Thapa	bijayathapa88@gmail.com	68
6	Pujan Subedi	pujan.subedi@yahoo.com	96
7	Sarojani Karki	NULL	72
8	Manish Joshi	mj.official@gmail.com	89
9	Dipesh Rautey	dipeshrautey@outlook.com	94
10	Sitashma Neupane	sitashmaneupane123@gmail.com	76
11	Rohan Regmi	rohan.regmi@gmail.com	85
12	Sweta KC	swetakc@gmail.com	91
13	Karan Maharjan	karan.mj@yahoo.com	90
14	Nishan Rijal	NULL	74
15	Saurav Basnet	sauravbasnet@gmail.com	82

Query executed successfully.   ABINASHREGMI\sqlexpress (16...

4) Find students who live in a specific city (use LIKE on Address).

SELECT * FROM Student WHERE Address LIKE '%Kathmandu%';

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS
1	13	Karan Maharjan	M	17	12B	90	karan.mj@yahoo.com	Kathmandu

5) Find students whose email ends with '@gmail.com'.

SELECT * FROM Student WHERE Email LIKE '%@gmail.com';

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS
1	1	Hari Acharya	M	18	12B	87	acharya@gmail.com	Shantinagar
2	3	Anisha Chaulagain	F	20	12A	79	anish.c@gmail.com	Dharan
3	5	Bijaya Thapa	F	17	11A	68	bijayathapa88@gmail.com	Chitwan
4	8	Manish Joshi	M	18	11A	89	mj.official@gmail.com	Kailali
5	10	Sitashma Neupane	F	17	11B	76	sitashmaneupane123@gmail.com	Tanahun
6	11	Rohan Regmi	M	18	12A	85	rohan.regmi@gmail.com	Butwal
7	12	Sweta KC	F	19	11A	91	swetakc@gmail.com	Lalitpur
8	15	Saurav Basnet	M	19	12A	82	sauravbasnet@gmail.com	Syangja

Query executed successfully.   ABINASHREGMI\sqlexpress (16...   ABINASHREGMI\dell (63)

6) Update the Address of a student with a specific StudentID.

UPDATE STUDENT SET ADDRESS = 'Aargakachi' WHERE SID = 9;

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS
1	1	Hari Acharya	M	18	12B	87	acharya@gmail.com	Shantinagar
2	2	Rea Sharma	F	19	11A	92	sharma@yahoo.com	Pokhara
3	3	Anisha Chaulagain	F	20	12A	79	anish.c@gmail.com	Dharan
4	4	Babita Dhungana	F	18	11B	83	babita.dhun@hotmail.com	Baglung
5	5	Bijaya Thapa	F	17	11A	68	bijayathapa88@gmail.com	Chitwan
6	6	Pujan Subedi	F	20	12B	96	pujan.subedi@yahoo.com	Bharatpur
7	7	Sarojani Karki	F	19	11B	72	NULL	Makwanpur
8	8	Manish Joshi	M	18	11A	89	mj.official@gmail.com	Kailali
9	9	Dipesh Rautey	M	20	12B	94	dipeshrautey@outlook.com	Aargakachi
10	10	Sitashma Neupane	F	17	11B	76	sitashmaneupane123@gmail.com	Tanahun
11	11	Rohan Regmi	M	18	12A	85	rohan.regmi@gmail.com	Butwal
12	12	Sweta KC	F	19	11A	91	swetakc@gmail.com	Lalitpur
13	13	Karan Maharjan	M	17	12B	90	karan.mj@yahoo.com	Kathmandu
14	14	Nishan Rijal	M	20	11A	74	NULL	Dhading
15	15	Saurav Basnet	M	19	12A	82	sauravbasnet@gmail.com	Syangja

Query executed successfully.   ABINASHREGMI\sqlexpress (16   ABINASHREGMI\dell (63)

7) List all students who scored more than 80 and are under 20 years old.

SELECT * FROM Student WHERE Marks > 80 AND Age < 20;

Results   Messages

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS
1	1	Suman Acharya	M	18	12B	87	sumanacharya@gmail.com	Biratnagar
2	2	Reema Sharma	F	19	11A	92	reema.sharma@yahoo.com	Pokhara
3	4	Kabita Dhungana	F	18	11B	83	kabita.dhun@hotmail.com	Baglung
4	6	Puja Subedi	F	20	12B	96	puja.subedi@yahoo.com	Bhaktapur
5	8	Manisha Joshi	F	18	11A	89	mj.official@gmail.com	Kailali
6	9	Dipesh Raut	M	20	12B	94	dipeshraut@outlook.com	Aargakachi
7	11	Roshan Regmi	M	18	12A	85	roshan.regmi@gmail.com	Butwal
8	12	Sweta KC	F	19	11A	91	swetakc@gmail.com	Lalitpur
9	13	Karan Maharjan	M	17	12B	90	karan.mj@yahoo.com	Kathmandu
10	15	Saurav Basnet	M	19	12A	82	sauravbasnet@gmail.com	Syangja

Query executed successfully.

8)Count how many students have email addresses from 'yahoo.com'.

SELECT COUNT(*) FROM Student WHERE Email LIKE '%@yahoo.com';
SELECT COUNT(*) AS YahooEmailCount
FROM Student
WHERE Email LIKE '%@yahoo.com';

	YahooEmailCount
1	3

9)Find students who have not provided an email (Email IS NULL).

SELECT * FROM Student WHERE Email IS NULL;

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS
1	7	Sarojani Karki	F	19	11B	72	NULL	Makwanpur
2	14	Nishan Rijal	M	20	11A	74	NULL	Dhading

Query executed successfully.　　　ABINASHREGMI\sqlexpress (16...

10. Display all students ordered by SName alphabetically

SELECT * FROM STUDENT ORDER BY SNAME ASC;

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS
1	3	Anisha Chaulagain	F	20	12A	79	anish.c@gmail.com	Dharan
2	4	Babita Dhungana	F	18	11B	83	babita.dhun@hotmail.com	Baglung
3	5	Bijaya Thapa	F	17	11A	68	bijayathapa88@gmail.com	Chitwan
4	9	Dipesh Rautey	M	20	12B	94	dipeshrautey@outlook.com	Aargakachi
5	1	Hari Acharya	M	18	12B	87	acharya@gmail.com	Shantinagar
6	13	Karan Maharjan	M	17	12B	90	karan.mj@yahoo.com	Kathmandu
7	8	Manish Joshi	M	18	11A	89	mj.official@gmail.com	Kailali
8	14	Nishan Rijal	M	20	11A	74	NULL	Dhading
9	6	Pujan Subedi	F	20	12B	96	pujan.subedi@yahoo.com	Bharatpur
10	2	Rea Sharma	F	19	11A	92	sharma@yahoo.com	Pokhara
11	11	Rohan Regmi	M	18	12A	85	rohan.regmi@gmail.com	Butwal
12	7	Sarojani Karki	F	19	11B	72	NULL	Makwanpur
13	15	Saurav Basnet	M	19	12A	82	sauravbasnet@gmail.com	Syangja
14	10	Sitashma Neupane	F	17	11B	76	sitashmaneupane123@gmail.com	Tanahun
15	12	Sweta KC	F	19	11A	91	swetakc@gmail.com	Lalitpur

Query executed successfully. ABINASHREGMI\sqlexpress (16... ABINASHREGMI\dell (63)

11) Group students by Class and show the highest marks in each class

SELECT CLASS, MAX(MARKS) AS HIGHESTMARK FROM STUDENT GROUP BY CLASS;

	CLASS	HIGHESTMARK
1	11A	92
2	11B	83
3	12A	85
4	12B	96

12) Delete students whose address is 'NULL' or not specified.

DELETE FROM STUDENT WHERE ADDRESS IS NULL;

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS
1	3	Anisha Chaulagain	F	20	12A	79	anish.c@gmail.com	Dharan
2	4	Babita Dhungana	F	18	11B	83	babita.dhun@hotmail.com	Baglung
3	5	Bijaya Thapa	F	17	11A	68	bijayathapa88@gmail.com	Chitwan
4	9	Dipesh Rautey	M	20	12B	94	dipeshrautey@outlook.com	Aargakachi
5	1	Hari Acharya	M	18	12B	87	acharya@gmail.com	Shantinagar
6	13	Karan Maharjan	M	17	12B	90	karan.mj@yahoo.com	Kathmandu
7	8	Manish Joshi	M	18	11A	89	mj.official@gmail.com	Kailali
8	14	Nishan Rijal	M	20	11A	74	NULL	Dhading
9	6	Pujan Subedi	F	20	12B	96	pujan.subedi@yahoo.com	Bharatpur
10	2	Rea Sharma	F	19	11A	92	sharma@yahoo.com	Pokhara
11	11	Rohan Regmi	M	18	12A	85	rohan.regmi@gmail.com	Butwal
12	7	Sarojani Karki	F	19	11B	72	NULL	Makwanpur
13	15	Saurav Basnet	M	19	12A	82	sauravbasnet@gmail.com	Syangja
14	10	Sitashma Neupane	F	17	11B	76	sitashmaneupane123@gmail.com	Tanahun
15	12	Sweta KC	F	19	11A	91	swetakc@gmail.com	Lalitpur

Before

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS
1	3	Anisha Chaulagain	F	20	12A	79	anish.c@gmail.com	Dharan
2	4	Babita Dhungana	F	18	11B	83	babita.dhun@hotmail.com	Baglung
3	5	Bijaya Thapa	F	17	11A	68	bijayathapa88@gmail.com	Chitwan
4	9	Dipesh Rautey	M	20	12B	94	dipeshrautey@outlook.com	Aargakachi
5	1	Hari Acharya	M	18	12B	87	acharya@gmail.com	Shantinagar
6	13	Karan Maharjan	M	17	12B	90	karan.mj@yahoo.com	Kathmandu
7	8	Manish Joshi	M	18	11A	89	mj.official@gmail.com	Kailali
8	14	Nishan Rijal	M	20	11A	74	NULL	Dhading
9	6	Pujan Subedi	F	20	12B	96	pujan.subedi@yahoo.com	Bharatpur
10	2	Rea Sharma	F	19	11A	92	sharma@yahoo.com	Pokhara
11	11	Rohan Regmi	M	18	12A	85	rohan.regmi@gmail.com	Butwal
12	7	Sarojani Karki	F	19	11B	72	NULL	Makwanpur
13	15	Saurav Basnet	M	19	12A	82	sauravbasnet@gmail.com	Syangja
14	10	Sitashma Neupane	F	17	11B	76	sitashmaneupane123@gmail.com	Tanahun
15	12	Sweta KC	F	19	11A	91	swetakc@gmail.com	Lalitpur

After

13. Add a new column PhoneNumber to the student table.

ALTER TABLE Student ADD PhoneNumber VARCHAR(20);

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS	PhoneNumber
1	1	Hari Acharya	M	18	12B	87	acharya@gmail.com	Shantinagar	NULL
2	2	Rea Sharma	F	19	11A	92	sharma@yahoo.com	Pokhara	NULL
3	3	Anisha Chaulagain	F	20	12A	79	anish.c@gmail.com	Dharan	NULL
4	4	Babita Dhungana	F	18	11B	83	babita.dhun@hotmail.com	Baglung	NULL
5	5	Bijaya Thapa	F	17	11A	68	bijayathapa88@gmail.com	Chitwan	NULL
6	6	Pujan Subedi	F	20	12B	96	pujan.subedi@yahoo.com	Bharatpur	NULL
7	7	Sarojani Karki	F	19	11B	72	NULL	Makwanpur	NULL
8	8	Manish Joshi	M	18	11A	89	mj.official@gmail.com	Kailali	NULL
9	9	Dipesh Rautey	M	20	12B	94	dipeshrautey@outlook.com	Aargakachi	NULL
10	10	Sitashma Neupane	F	17	11B	76	sitashmaneupane123@gmail.com	Tanahun	NULL
11	11	Rohan Regmi	M	18	12A	85	rohan.regmi@gmail.com	Butwal	NULL
12	12	Sweta KC	F	19	11A	91	swetakc@gmail.com	Lalitpur	NULL
13	13	Karan Maharjan	M	17	12B	90	karan.mj@yahoo.com	Kathmandu	NULL
14	14	Nishan Rijal	M	20	11A	74	NULL	Dhading	NULL
15	15	Saurav Basnet	M	19	12A	82	sauravbasnet@gmail.com	Syangja	NULL

✅ Query executed successfully.   🔒 ABINASHREGMI\sqlexpress (16...   ABINASHREGMI\dell (63)   master   00:00:

14. Create a view ContactList to display SName, Email, and PhoneNumber.

CREATE VIEW ContactList AS

SELECT SName, Email, PhoneNumber FROM Student;

	SName	Email	PhoneNumber
1	Hari Acharya	acharya@gmail.com	NULL
2	Rea Sharma	sharma@yahoo.com	NULL
3	Anisha Chaulagain	anish.c@gmail.com	NULL
4	Babita Dhungana	babita.dhun@hotmail.com	NULL
5	Bijaya Thapa	bijayathapa88@gmail.com	NULL
6	Pujan Subedi	pujan.subedi@yahoo.com	NULL
7	Sarojani Karki	NULL	NULL
8	Manish Joshi	mj.official@gmail.com	NULL
9	Dipesh Rautey	dipeshrautey@outlook.com	NULL
10	Sitashma Neupane	sitashmaneupane123@gmail.com	NULL
11	Rohan Regmi	rohan.regmi@gmail.com	NULL
12	Sweta KC	swetakc@gmail.com	NULL
13	Karan Maharjan	karan.mj@yahoo.com	NULL
14	Nishan Rijal	NULL	NULL
15	Saurav Basnet	sauravbasnet@gmail.com	NULL

✅ Query executed successfully.   🔒 ABINASHREGMI\sqlexpress (16...

15. Display students whose name starts with 'R' and ends with 'a'.

SELECT * FROM STUDENT WHERE SNAME LIKE 'R%' AND SNAME LIKE '%a';

	SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS	PhoneNumber
1	2	Rea Sharma	F	19	11A	92	sharma@yahoo.com	Pokhara	NULL

16. Find the number of students per city (GROUP BY Address).

SELECT ADDRESS AS CITY, COUNT(*) AS STUDENTCOUNT FROM STUDENT GROUP BY ADDRESS;

	CITY	STUDENTCOUNT
1	Aargakachi	1
2	Baglung	1
3	Bharatpur	1
4	Butwal	1
5	Chitwan	1
6	Dhading	1
7	Dharan	1
8	Kailali	1
9	Kathmandu	1
10	Lalitpur	1
11	Makwanpur	1
12	Pokhara	1
13	Shantinagar	1
14	Syangja	1
15	Tanahun	1

17. Count how many male and female students exist (GROUP BY Gender).

SELECT GENDER, COUNT(*) AS GENDERCOUNT FROM STUDENT GROUP BY GENDER;

⊞ Results ▤ Messages

	GENDER	GENDERCOUNT
1	F	8
2	M	7

18. Create a trigger to prevent updates to Email once it's entered.

19. Find students who have the same address but different names.

SELECT * FROM STUDENT WHERE ADDRESS IN (
   SELECT ADDRESS FROM STUDENT GROUP BY
               ADDRESS HAVING COUNT(DISTINCT SNAME) > 1
)

SID	SNAME	GENDER	AGE	CLASS	MARKS	EMAIL	ADDRESS	PHONE

20) Rename the column Marks to TotalMarks.

EXEC sp_rename 'STUDENT.MARKS', 'TOTALMARKS', 'COLUMN';

	SID	SNAME	GENDER	AGE	CLASS	TOTALMARKS	EMAIL	ADDRESS	PhoneNumber
1	1	Hari Acharya	M	18	12B	87	acharya@gmail.com	Shantinagar	NULL
2	2	Rea Sharma	F	19	11A	92	sharma@yahoo.com	Pokhara	NULL
3	3	Anisha Chaulagain	F	20	12A	79	anish.c@gmail.com	Dharan	NULL
4	4	Babita Dhungana	F	18	11B	83	babita.dhun@hotmail.com	Baglung	NULL
5	5	Bijaya Thapa	F	17	11A	68	bijayathapa88@gmail.com	Chitwan	NULL
6	6	Pujan Subedi	F	20	12B	96	pujan.subedi@yahoo.com	Bharatpur	NULL
7	7	Sarojani Karki	F	19	11B	72	NULL	Makwanpur	NULL
8	8	Manish Joshi	M	18	11A	89	mj.official@gmail.com	Kailali	NULL
9	9	Dipesh Rautey	M	20	12B	94	dipeshrautey@outlook.com	Aargakachi	NULL
10	10	Sitashma Neupane	F	17	11B	76	sitashmaneupane123@gmail.com	Tanahun	NULL
11	11	Rohan Regmi	M	18	12A	85	rohan.regmi@gmail.com	Butwal	NULL
12	12	Sweta KC	F	19	11A	91	swetakc@gmail.com	Lalitpur	NULL
13	13	Karan Maharjan	M	17	12B	90	karan.mj@yahoo.com	Kathmandu	NULL
14	14	Nishan Rijal	M	20	11A	74	NULL	Dhading	NULL
15	15	Saurav Basnet	M	19	12A	82	sauravbasnet@gmail.com	Syangja	NULL

Query executed successfully.   ABINASHREGMI\sqlexpress (16… ABINASHREGMI\dell (63) master 00:00:00 1