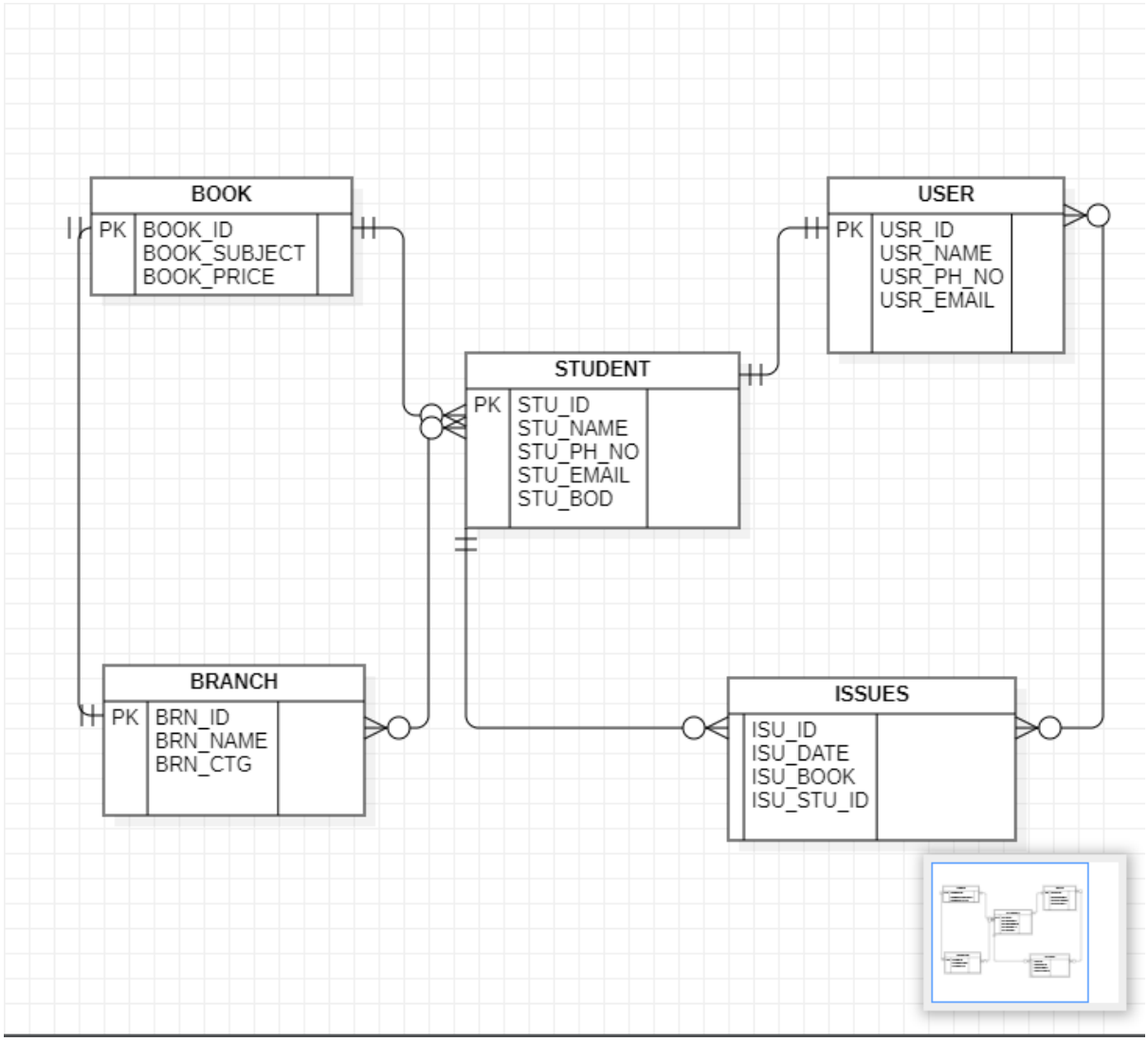

COLLEGE
MANAGEMENT
SYSTEM

- INTRODUCTION

A college management system is an online software designed to help colleges and higher education institutes to manage their day to day activities efficiently. An ideal college management system should enable institutes to manage all of their activities - from admission to report cards online without any hassle.

The project is totally built at administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the College, Faculty, Student, Course.

- ER DIAGRAM


BOOK
PK
BOOK_ID
BOOK_SUBJECT
BOOK_PRICE
USER
PK
USR_ID
USR_NAME
USR_PH_NO
USR_EMAIL
STUDENT
PK
STU_ID
STU_NAME
STU_PH_NO
STU_EMAIL
STU_BOD
BRANCH
PK
BRN_ID
BRN_NAME
BRN_CTG
ISSUES
ISU_ID
ISU_DATE
ISU_BOOK
ISU_STU_ID

DATABASE DESIGN

DATABASES : COLLEGE

TABLES:

A) STUDENT

B) BOOK

C) USER

D) BRANCH

E) ISSUES

- CREATING TABLE

A) STUDENT

```
create table student(stu_id int ...' at line 2
MariaDB [college_database]> create table student(stu_id int primary key,
    -> stu_name varchar(35),
    -> stu_ph_no int,
    -> stu_email varchar(25),
    -> stu_DOB date);
Query OK, 0 rows affected (0.014 sec)
```

B) BOOK

```
MariaDB [college_database]> CREATE TABLE book(book_id int primary key,
    -> book_subjects varchar(25),
    -> book_price int);
Query OK, 0 rows affected (0.011 sec)
```

```
MariaDB [college_database]> ALTER TABLE book ADD FOREIGN KEY(stud_id) REFERENCES student(stu_id);
Query OK, 0 rows affected (0.036 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

C) USER

```
MariaDB [college_database]> create table user(usr_id int primary key,
    -> usr_name varchar(25),
    -> usr_ph_no int,
    -> usr_email varchar(30));
Query OK, 0 rows affected (0.008 sec)
```

D) BRANCH

```
MariaDB [college_database]> create table branch(brn_id int primary key,
    -> brn_name varchar(20),
    -> brn_ctg varchar(20));
Query OK, 0 rows affected (0.008 sec)
```

E) ISSUES

```
MariaDB [college_database]> create table issues(isu_id int unique,
    -> isu_date DATE,
    -> isu_book_id int,
    -> isu_stu_id int);
Query OK, 0 rows affected (0.022 sec)
```

- TABLES IN DATABASES

```
MariaDB [college_database]> SHOW TABLES;
+----------------------------+
| Tables_in_college_database |
+----------------------------+
| book                       |
| branch                     |
| issues                     |
| student                    |
| user                       |
+----------------------------+
5 rows in set (0.001 sec)

MariaDB [college_database]>
```

DATA DEFINATION LANGUAGE (DDL)

- CREATING TABLES

1) STUDENT

```
MariaDB [college_database]> DESC STUDENT;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| stu_id    | int(11)     | NO   | PRI | NULL    |       |
| stu_name  | varchar(35) | YES  |     | NULL    |       |
| stu_ph_no | int(11)     | YES  |     | NULL    |       |
| stu_email | varchar(25) | YES  |     | NULL    |       |
| stu_DOB   | date        | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
```

2) BOOK

```
MariaDB [college_database]> DESC BOOK;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| book_id       | int(11)     | NO   | PRI | NULL    |       |
| book_subjects | varchar(25) | YES  |     | NULL    |       |
| book_price    | int(11)     | YES  |     | NULL    |       |
| stud_id       | int(11)     | YES  | MUL | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
```

3) USER

```
MariaDB [college_database]> DESC USER;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| usr_id    | int(11)     | NO   | PRI | NULL    |       |
| usr_name  | varchar(25) | YES  |     | NULL    |       |
| usr_ph_no | int(11)     | YES  |     | NULL    |       |
| usr_email | varchar(30) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
```

4) BRANCH

```
MariaDB [college_database]> DESC BRANCH;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| brn_id   | int(11)     | NO   | PRI | NULL    |       |
| brn_name | varchar(20) | YES  |     | NULL    |       |
| brn_ctg  | varchar(20) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
```

5) ISSUES

```
MariaDB [college_database]> DESC ISSUES;
+-------------+---------+------+-----+---------+-------+
| Field       | Type    | Null | Key | Default | Extra |
+-------------+---------+------+-----+---------+-------+
| isu_id      | int(11) | YES  | UNI | NULL    |       |
| isu_date    | date    | YES  |     | NULL    |       |
| isu_book_id | int(11) | YES  |     | NULL    |       |
| isu_stu_id  | int(11) | YES  |     | NULL    |       |
+-------------+---------+------+-----+---------+-------+
```

B) ALTER TABLE

1) ALTER TABLE ADD COLUMN

```
MariaDB [college_database]> ALTER TABLE ISSUES
    -> ADD FOREIGN KEY(ISU_STU_ID)
    -> REFERENCES STUDENT(STU_ID)
    -> ON DELETE SET NULL;
Query OK, 0 rows affected (0.039 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

2) ALTER TABLE MODIFY COLUMN

```
MariaDB [college_database]> alter table branch
    -> modify brn_name varchar(30);
Query OK, 0 rows affected (0.011 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

3) ALTER TABLE RENAME COLUMN

```
MariaDB [college_database]> alter table user
    -> rename user06;
Query OK, 0 rows affected (0.008 sec)
```

4) ALTER TABLE DROP COLUMN

```
MariaDB [college_database]> alter table user
    -> rename user06;
Query OK, 0 rows affected (0.008 sec)
```

C) RENAME TABLE

```
MariaDB [college_database]> alter table user
    -> rename user06;
Query OK, 0 rows affected (0.008 sec)
```

D) TRUNCATE TABLE

```
MariaDB [college_database]> truncate branch;
Query OK, 0 rows affected (0.026 sec)
```

E) DROP TABLE

```
MariaDB [college_database]> drop table branch;
Query OK, 0 rows affected (0.007 sec)
```

- DATA MANIPULATION LANGUAGE (DML)

A) INSERT INTO TABLE

```
MariaDB [college_database]> insert into student(stu_id,stu_name,stu_email,stu_DOB) VALUES(101,'MOHIT SACHDEV','MOHIT@GMAIL.COM','15-07-1999');
Query OK, 1 row affected, 1 warning (0.005 sec)

MariaDB [college_database]> insert into student(stu_id,stu_name,stu_email,stu_DOB) VALUES(102,'SUNIL RANE','SUNIL@GMAIL.COM','15-07-1989');
Query OK, 1 row affected, 1 warning (0.002 sec)

MariaDB [college_database]> insert into student(stu_id,stu_name,stu_email,stu_DOB) VALUES(103,'SUNNY ADE','SUNNY@GMAIL.COM','13-07-1998');
Query OK, 1 row affected, 1 warning (0.002 sec)

MariaDB [college_database]> insert into student(stu_id,stu_name,stu_email,stu_DOB) VALUES(104,'RAJ THAKRE','RAJ@GMAIL.COM','13-08-1996');
Query OK, 1 row affected, 1 warning (0.003 sec)

MariaDB [college_database]> insert into student(stu_id,stu_name,stu_email,stu_DOB) VALUES(105,'ADI CHIKANE','ADI@GMAIL.COM','23-08-1998');
Query OK, 1 row affected, 1 warning (0.003 sec)
```

B) UPDATE INTO TABLE

```
MariaDB [college_database]> UPDATE STUDENT
    -> SET STU_ID=111
    -> WHERE STU_ID='MOHIT SACHDEV';
Query OK, 0 rows affected (0.003 sec)
Rows matched: 0  Changed: 0  Warnings: 0
```

DELETE INTO TABLE

```
MariaDB [college_database]> DELETE FROM STUDENT WHERE STU_ID=105;
Query OK, 1 row affected (0.003 sec)
```

- DATA QUERY LANGUAGE (DQL)

A) SELECT QUERY

```
MariaDB [college_database]> SELECT * FROM STUDENT;
+--------+----------+------------+------------------+------------+
| stu_id | stu_name | stu_ph_no  | stu_email        | stu_DOB    |
+--------+----------+------------+------------------+------------+
|    101 | ANKITA   | 2147483647 | ANKITA@GMAIL.COM | 0000-00-00 |
|    102 | MOHIT    | 2147483647 | MOHIT@GMAIL.COM  | 0000-00-00 |
|    103 | RAJ      | 2147483647 | RAJ@GMAIL.COM    | 0000-00-00 |
|    104 | ADI      | 2147483647 | ADI@GMAIL.COM    | 0000-00-00 |
|    105 | HINA     | 2147483647 | HINA@GMAIL.COM   | 0000-00-00 |
|    106 | SAMI     | 2147483647 | SAMI@GMAIL.COM   | 0000-00-00 |
+--------+----------+------------+------------------+------------+
```

```
MariaDB [college_database]> select * from book;
+---------+---------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+---------------+------------+---------+
|     111 | chemistry     |        250 |     101 |
|     112 | biology       |        240 |     102 |
|     113 | physics       |        440 |     103 |
|     114 | maths         |        340 |     104 |
|     115 | history       |        640 |     105 |
|     116 | polity        |        640 |     106 |
+---------+---------------+------------+---------+
```

B) ORDER BY

```
MariaDB [college_database]> SELECT stu_name,stu_id from student order by stu_id;
+----------+--------+
| stu_name | stu_id |
+----------+--------+
| ANKITA   |    101 |
| MOHIT    |    102 |
| RAJ      |    103 |
| ADI      |    104 |
| HINA     |    105 |
| SAMI     |    106 |
+----------+--------+
6 rows in set (0.000 sec)
```

C) SELECT QUERY WITH SPECIFIC COLUMN

```
MariaDB [college_database]> select stu_id,stu_name,stu_ph_no from student;
+--------+----------+------------+
| stu_id | stu_name | stu_ph_no  |
+--------+----------+------------+
|    101 | ANKITA   | 2147483647 |
|    102 | MOHIT    | 2147483647 |
|    103 | RAJ      | 2147483647 |
|    104 | ADI      | 2147483647 |
|    105 | HINA     | 2147483647 |
|    106 | SAMI     | 2147483647 |
+--------+----------+------------+
6 rows in set (0.000 sec)
```

D) SELECT QUERY WITH COLUMN NAME CHANGE

```
MariaDB [college_database]> select stu_name as s_name from student;
+--------+
| s_name |
+--------+
| ANKITA |
| MOHIT  |
| RAJ    |
| ADI    |
| HINA   |
| SAMI   |
+--------+
6 rows in set (0.000 sec)
```

E) DISTINCT QUERY

```
MariaDB [college_database]> select distinct book_subjects from book;
+---------------+
| book_subjects |
+---------------+
| chemistry     |
| biology       |
| physics       |
| maths         |
| history       |
| polity        |
+---------------+
6 rows in set (0.001 sec)
```

- USING WHERE CLAUSE

A) WITH COMPARISON OPERATOR

```
MariaDB [college_database]> select * from book where book_price='640';
+---------+---------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+---------------+------------+---------+
|     115 | history       |        640 |     105 |
|     116 | polity        |        640 |     106 |
+---------+---------------+------------+---------+
2 rows in set (0.002 sec)
```

```
MariaDB [college_database]> select book_id,book_subjects from book where book_price<=440;
+---------+---------------+
| book_id | book_subjects |
+---------+---------------+
|     111 | chemistry     |
|     112 | biology       |
|     113 | physics       |
|     114 | maths         |
+---------+---------------+
4 rows in set (0.000 sec)
```

- USING LOGICAL OPERATOR

A) USING AND OPERATOR

```
MariaDB [college_database]> SELECT * FROM BOOK WHERE BOOK_PRICE<440 AND BOOK_SUBJECTS='CHEMISTRY';
+---------+---------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+---------------+------------+---------+
|     111 | chemistry     |        250 |     101 |
+---------+---------------+------------+---------+
1 row in set (0.002 sec)

MariaDB [college_database]> SELECT * FROM BOOK WHERE BOOK_PRICE>440 AND BOOK_SUBJECTS='HISTORY';
+---------+---------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+---------------+------------+---------+
|     115 | history       |        640 |     105 |
+---------+---------------+------------+---------+
1 row in set (0.000 sec)
```

B) USING AND/OR OPERATOR

```
MariaDB [college_database]> SELECT * FROM BOOK WHERE BOOK_ID>111 AND BOOK_SUBJECTS='MATHS' OR BOOK_PRICE>240;
+---------+---------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+---------------+------------+---------+
|     111 | chemistry     |        250 |     101 |
|     113 | physics       |        440 |     103 |
|     114 | maths         |        340 |     104 |
|     115 | history       |        640 |     105 |
|     116 | polity        |        640 |     106 |
+---------+---------------+------------+---------+
5 rows in set (0.002 sec)
```

C) USING BETWEEN CLAUSE

```
MariaDB [college_database]> SELECT * FROM BOOK WHERE BOOK_PRICE BETWEEN 240 AND 440;
+---------+---------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+---------------+------------+---------+
|     111 | chemistry     |        250 |     101 |
|     112 | biology       |        240 |     102 |
|     113 | physics       |        440 |     103 |
|     114 | maths         |        340 |     104 |
+---------+---------------+------------+---------+
4 rows in set (0.001 sec)
```

D) USING IN CLAUSE

```
MariaDB [college_database]> SELECT * FROM BOOK WHERE BOOK_PRICE IN(240,250,240);
+---------+---------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+---------------+------------+---------+
|     111 | chemistry     |        250 |     101 |
|     112 | biology       |        240 |     102 |
+---------+---------------+------------+---------+
2 rows in set (0.000 sec)
```

- BUILT IN SQL FUNCTIONS :

  - STRING
  - MATH
  - DATE
  - AGGREGATE

- STRING FUNCTION

(A) CONCAT

```
MariaDB [college_database]> select concat('ankita',101);
+----------------------+
| concat('ankita',101) |
+----------------------+
| ankita101            |
+----------------------+
1 row in set (0.001 sec)

MariaDB [college_database]> select concat('ankita',' ',101);
+--------------------------+
| concat('ankita',' ',101) |
+--------------------------+
| ankita 101               |
+--------------------------+
```

(B) LOWER

```
MariaDB [college_database]> select lower('MOHIT');
+-----------------+
| lower('MOHIT') |
+-----------------+
| mohit          |
+-----------------+
1 row in set (0.001 sec)
```

(C) UPPER

```
MariaDB [college_database]> select upper('hina');
+---------------+
| upper('hina') |
+---------------+
| HINA          |
+---------------+
1 row in set (0.000 sec)
```

(D) REPLACE

```
MariaDB [college_database]> select replace('hina','h','r');
+-------------------------+
| replace('hina','h','r') |
+-------------------------+
| rina                    |
+-------------------------+
1 row in set (0.000 sec)
```

(E) REVERSE

```
MariaDB [college_database]> select reverse('adi');
+----------------+
| reverse('adi') |
+----------------+
| ida            |
+----------------+
1 row in set (0.000 sec)
```

(F) LENGTH

```
MariaDB [college_database]> select length('mohit');
+-----------------+
| length('mohit') |
+-----------------+
|               5 |
+-----------------+
1 row in set (0.001 sec)
```

(G) SUBSTRING

```
MariaDB [college_database]> select substring('ankita',3,8);
+--------------------------+
| substring('ankita',3,8) |
+--------------------------+
| kita                     |
+--------------------------+
1 row in set (0.000 sec)
```

(H) LTRIM

```
MariaDB [college_database]> select ltrim(stu_ph_no) from student;
+------------------+
| ltrim(stu_ph_no) |
+------------------+
| 2147483647       |
| 2147483647       |
| 2147483647       |
| 2147483647       |
| 2147483647       |
| 2147483647       |
+------------------+
```

(I) RTRIM

```
MariaDB [college_database]> select rtrim(stu_email) from student;
+------------------+
| rtrim(stu_email) |
+------------------+
| ANKITA@GMAIL.COM |
| MOHIT@GMAIL.COM  |
| RAJ@GMAIL.COM    |
| ADI@GMAIL.COM    |
| HINA@GMAIL.COM   |
| SAMI@GMAIL.COM   |
+------------------+
6 rows in set (0.000 sec)
```

- MATH FUNCTION

A) ABS

```
MariaDB [college_database]> select abs(-5);
+---------+
| abs(-5) |
+---------+
|       5 |
+---------+
1 row in set (0.000 sec)
```

B) MOD

```
MariaDB [college_database]> select mod(7,3);
+----------+
| mod(7,3) |
+----------+
|        1 |
+----------+
1 row in set (0.000 sec)
```

C) FLOOR

```
MariaDB [college_database]> select floor(77.45);
+--------------+
| floor(77.45) |
+--------------+
|           77 |
+--------------+
1 row in set (0.001 sec)
```

D) CEILING

```
MariaDB [college_database]> select ceil(77.45);
+-------------+
| ceil(77.45) |
+-------------+
|          78 |
+-------------+
1 row in set (0.000 sec)
```

E) TRUNCATE

```
MariaDB [college_database]> select truncate(88.44,1);
+-------------------+
| truncate(88.44,1) |
+-------------------+
|              88.4 |
+-------------------+
1 row in set (0.000 sec)
```

F) EXP

```
MariaDB [college_database]> select exp(7);
+--------------------+
| exp(7)             |
+--------------------+
| 1096.6331584284585 |
+--------------------+
1 row in set (0.001 sec)
```

G) POWER

```
MariaDB [college_database]> select power(8,3);
+------------+
| power(8,3) |
+------------+
|        512 |
+------------+
1 row in set (0.000 sec)
```

H) SQRT

```
MariaDB [college_database]> select sqrt(244);
+--------------------+
| sqrt(244)          |
+--------------------+
| 15.620499351813308 |
+--------------------+
1 row in set (0.000 sec)
```

- DATE

A) CURDATE

```
MariaDB [college_database]> select curdate();
+------------+
| curdate()  |
+------------+
| 2023-02-26 |
+------------+
1 row in set (0.001 sec)
```

B) NOW

```
MariaDB [college_database]> select now();
+---------------------+
| now()               |
+---------------------+
| 2023-02-26 15:19:01 |
+---------------------+
1 row in set (0.000 sec)
```

C) SYSDATE

```
MariaDB [college_database]> select sysdate();
+---------------------+
| sysdate()           |
+---------------------+
| 2023-02-26 15:19:27 |
+---------------------+
1 row in set (0.000 sec)
```

D) LAST_DAY (DATE)

```
MariaDB [college_database]> select last_day('2023-02-27');
+-------------------------+
| last_day('2023-02-27') |
+-------------------------+
| 2023-02-28             |
+-------------------------+
1 row in set (0.000 sec)
```

E) MONTH(DATE)

```
MariaDB [college_database]> select month('2023-03-25');
+----------------------+
| month('2023-03-25') |
+----------------------+
|                    3 |
+----------------------+
1 row in set (0.001 sec)
```

F) YEAR(DATE)

```
MariaDB [college_database]> select year(now());
+-------------+
| year(now()) |
+-------------+
|        2023 |
+-------------+
1 row in set (0.000 sec)
```

- AGGREGATE FUNCTION

A) COUNT FUNCTION

```
MariaDB [college_database]> select count(book_price) from book;
+--------------------+
| count(book_price) |
+--------------------+
|                  6 |
+--------------------+
1 row in set (0.001 sec)
```

B) AVERAGE FUNCTION

```
MariaDB [college_database]> select avg(book_price) from book;
+------------------+
| avg(book_price) |
+------------------+
|        425.0000 |
+------------------+
1 row in set (0.000 sec)
```

C) SUM FUNCTION

```
MariaDB [college_database]> select sum(book_price) from book;
+------------------+
| sum(book_price) |
+------------------+
|            2550 |
+------------------+
1 row in set (0.001 sec)
```

D) MIN FUNCTION

```
MariaDB [college_database]> select min(book_price) from book;
+------------------+
| min(book_price) |
+------------------+
|             240 |
+------------------+
1 row in set (0.001 sec)
```

E) MAX FUNCTION

```
MariaDB [college_database]> select max(book_price) from book;
+-----------------+
| max(book_price) |
+-----------------+
|             640 |
+-----------------+
1 row in set (0.000 sec)
```

- GROUP BY CLAUSE

```
MariaDB [college_database]> select avg(book_price),book_subjects from book group by book_subjects;
+-----------------+---------------+
| avg(book_price) | book_subjects |
+-----------------+---------------+
|        240.0000 | biology       |
|        250.0000 | chemistry     |
|        640.0000 | history       |
|        340.0000 | maths         |
|        440.0000 | physics       |
|        640.0000 | polity        |
+-----------------+---------------+
6 rows in set (0.001 sec)
```

```
MariaDB [college_database]> select book_subjects,book_id from book order by book_id;
+---------------+---------+
| book_subjects | book_id |
+---------------+---------+
| chemistry     |     111 |
| biology       |     112 |
| physics       |     113 |
| maths         |     114 |
| history       |     115 |
| polity        |     116 |
+---------------+---------+
6 rows in set (0.000 sec)
```

- HAVING CLAUSE

```
MariaDB [college_database]> select book_subjects,min(book_price) from book group by book_subjects having min(book_price)>250;
+--------------+----------------+
| book_subjects | min(book_price) |
+--------------+----------------+
| history      |            640 |
| maths        |            340 |
| physics      |            440 |
| polity       |            640 |
+--------------+----------------+
4 rows in set (0.001 sec)
```

- LIKE OPERATOR

```
MariaDB [college_database]> select * from student where stu_email like'a%';
+--------+----------+------------+-------------------+------------+
| stu_id | stu_name | stu_ph_no  | stu_email         | stu_DOB    |
+--------+----------+------------+-------------------+------------+
|    101 | ANKITA   | 2147483647 | ANKITA@GMAIL.COM | 0000-00-00 |
|    104 | ADI      | 2147483647 | ADI@GMAIL.COM     | 0000-00-00 |
+--------+----------+------------+-------------------+------------+
2 rows in set (0.000 sec)
```

```
MariaDB [college_database]> select stu_name from student where stu_email like'_%_';
+----------+
| stu_name |
+----------+
| ANKITA   |
| MOHIT    |
| RAJ      |
| ADI      |
| HINA     |
| SAMI     |
+----------+
6 rows in set (0.000 sec)
```

- UNION

```
MariaDB [college_database]> select stu_name as student_name from student
    -> union
    -> select stu_id from student;
+--------------+
| student_name |
+--------------+
| ANKITA       |
| MOHIT        |
| RAJ          |
| ADI          |
| HINA         |
| SAMI         |
| 101          |
| 102          |
| 103          |
| 104          |
| 105          |
| 106          |
+--------------+
12 rows in set (0.001 sec)
```

➢ SUBQUERY

- SINGLE ROW SUBQUERY

```
MariaDB [college_database]> select stu_name from student where stu_id=101;
+----------+
| stu_name |
+----------+
| ANKITA   |
+----------+
1 row in set (0.001 sec)
```

```
MariaDB [college_database]> select book_price from book where book_id=111;
+-------------+
| book_price |
+-------------+
|         250 |
+-------------+
1 row in set (0.000 sec)
```

- SUBQUERY WITH IN

```
MariaDB [college_database]> select book_price from book where book_subjects in('chemistry','physics','polity');
+------------+
| book_price |
+------------+
|        250 |
|        440 |
|        640 |
+------------+
3 rows in set (0.001 sec)
```

- SUBQUERY WITH ANY

```
MariaDB [college_database]> select * from book where book_price>any(select book_price from book where book_id=111);
+---------+---------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+---------------+------------+---------+
|     113 | physics       |        440 |     103 |
|     114 | maths         |        340 |     104 |
|     115 | history       |        640 |     105 |
|     116 | polity        |        640 |     106 |
+---------+---------------+------------+---------+
4 rows in set (0.000 sec)

MariaDB [college_database]> select * from book where book_price>any(select book_price from book where book_id=114);
+---------+---------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+---------------+------------+---------+
|     113 | physics       |        440 |     103 |
|     115 | history       |        640 |     105 |
|     116 | polity        |        640 |     106 |
+---------+---------------+------------+---------+
3 rows in set (0.000 sec)
```

- SUBQUERY WITH ALL

```
MariaDB [college_database]> select * from book where book_price>all(select book_price from book where book_id=114);
+---------+--------------+------------+---------+
| book_id | book_subjects | book_price | stud_id |
+---------+--------------+------------+---------+
|     113 | physics       |        440 |     103 |
|     115 | history       |        640 |     105 |
|     116 | polity        |        640 |     106 |
+---------+--------------+------------+---------+
3 rows in set (0.000 sec)
```

- JOIN

```
MariaDB [college_database]> select student.stu_id,stu_name,book.book_id from student left join book on stu_id=book_id;
+--------+----------+---------+
| stu_id | stu_name | book_id |
+--------+----------+---------+
|    101 | ANKITA   |    NULL |
|    102 | MOHIT    |    NULL |
|    103 | RAJ      |    NULL |
|    104 | ADI      |    NULL |
|    105 | HINA     |    NULL |
|    106 | SAMI     |    NULL |
+--------+----------+---------+
6 rows in set (0.001 sec)

MariaDB [college_database]> select student.stu_id,stu_name,book.book_id from student right join book on stu_id=book_id;
+--------+----------+---------+
| stu_id | stu_name | book_id |
+--------+----------+---------+
|   NULL | NULL     |     111 |
|   NULL | NULL     |     112 |
|   NULL | NULL     |     113 |
|   NULL | NULL     |     114 |
|   NULL | NULL     |     115 |
|   NULL | NULL     |     116 |
+--------+----------+---------+
6 rows in set (0.000 sec)
```

- VIEW

```
MariaDB [college_database]> create view vwstudent as
    -> select stu_id,stu_name,stu_ph_no,stu_email
    -> from student;
Query OK, 0 rows affected (0.004 sec)

MariaDB [college_database]> select * from vwstudent;
+--------+----------+------------+------------------+
| stu_id | stu_name | stu_ph_no  | stu_email        |
+--------+----------+------------+------------------+
|    101 | ANKITA   | 2147483647 | ANKITA@GMAIL.COM |
|    102 | MOHIT    | 2147483647 | MOHIT@GMAIL.COM  |
|    103 | RAJ      | 2147483647 | RAJ@GMAIL.COM    |
|    104 | ADI      | 2147483647 | ADI@GMAIL.COM    |
|    105 | HINA     | 2147483647 | HINA@GMAIL.COM   |
|    106 | SAMI     | 2147483647 | SAMI@GMAIL.COM   |
+--------+----------+------------+------------------+
6 rows in set (0.001 sec)
```