Roll No.: 2043

GROUP B-ASSIGNMENT:04

Title: Design any database with at least 3 entities and relationships between them.

Draw suitable ER/EER diagram for the system. Design and implement a database using DDL and DCL commands.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*create database & switch to it\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

mysql> CREATE DATABASE university;

Query OK, 1 row affected (0.01 sec)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*display list of databases\*\*\*\*\*\*\*\*\*\*\*\*\*\*

mysql> SHOW DATABASES;

+--------------------+

| Database |

+--------------------+

| college |

| company1 |

| information\_schema |

| mysql |

| performance\_schema |

| practical1 |

| sakila |

| sql\_hr |

| sql\_inventory |

| sql\_invoicing |

| sql\_store |

| sys |

| university |

| world |

| zubairpathan |

+--------------------+

15 rows in set (0.00 sec)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*select database\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

mysql> USE university;

Database changed

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*create tables\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

mysql> CREATE TABLE course( id INT PRIMARY KEY, name VARCHAR(30), duration INT );

Query OK, 0 rows affected (0.06 sec)

mysql> INSERT INTO course(id , name , duration) VALUES (101 , "CS" , 2), (102 , "IT" , 3),(103 , "E&TC" , 3),(104 , "ELECTRICAL", 4),(105 ,"MECHANICAL" , 3);

Query OK, 1 row affected (0.02 sec)

mysql> CREATE TABLE student(roll\_no INT PRIMARY KEY, s\_name VARCHAR(20), s\_city VARCHAR(20), id INT, FOREIGN KEY (id) REFERENCES course(id));

Query OK, 0 rows affected (0.06 sec)

mysql> INSERT INTO student (roll\_no , s\_name , s\_city , id )VALUES(1 , "AAMIR" , "SOLAPUR", 102 ),(2 , "PRAJWAL" , "PUNE" , 105 ), (3 , "NIKHIL" , "PUNE" , 103),(4 , "RUSHIKESH" , "PUNE" , 101),(5 , "MUSTAFFA" , "PHURSUNGI" , 104),(6 , "MAYUR" , "NASHIK" , 102),(7 , "HARSHAD" , "DAUND" , 104),(8, "SAHIL" , "BHEKRAI NAGAR", 101),(9, "OM" , "DAUND" , 102),(10, "TANISHQ" , "LONI KALBHOR", 105);

Query OK, 1 row affected (0.02 sec)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*display list of tables\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

mysql> show tables;

+----------------------+

| Tables\_in\_university |

+----------------------+

| course |

| student |

+----------------------+

2 rows in set (0.00 sec)

\*\*\*\*\*\*\*\*\*\*\*\*\*display schema of tables\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

mysql> desc student;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| roll\_no | int | NO | PRI | NULL | |

| s\_name | varchar(20) | YES | | NULL | |

| s\_city | varchar(20) | YES | | NULL | |

| id | int | YES | MUL | NULL | |

+---------+-------------+------+-----+---------+-------+

4 rows in set (0.01 sec)

mysql> SELECT \* FROM course;

+-----+------------+----------+

| id | name | duration |

+-----+------------+----------+

| 101 | CS | 2 |

| 102 | IT | 3 |

| 103 | E&TC | 3 |

| 104 | ELECTRICAL | 4 |

| 105 | MECHANICAL | 3 |

|  |  |  |
| --- | --- | --- |
|  |  |  |

mysql> SELECT \* from student;

+---------+-----------+---------------+------+

| roll\_no | s\_name | s\_city | id |

+---------+-----------+---------------+------+

| 1 | AAMIR | SOLAPUR | 102 |

| 2 | PRAJWAL | PUNE | 105 |

| 3 | NIKHIL | PUNE | 103 |

| 4 | RUSHIKESH | PUNE | 101 |

| 5 | MUSTAFFA | PHURSUNGI | 104 |

| 6 | MAYUR | NASHIK | 102 |

| 7 | HARSHAD | DAUND | 104 |

| 8 | SAHIL | BHEKRAI NAGAR | 101 |

| 9 | OM | DAUND | 102 |

| 10 | TANISHQ | LONI KALBHOR | 105 |

+---------+-----------+---------------+------+

\*\*\*\*\*\*\*\*\*\*\*\*\*alter schema of table\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1)ADD COLUMN

mysql> ALTER TABLE student ADD COLUMN age INT NOT NULL DEFAULT 20;

Query OK, 0 rows affected (0.04 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| roll\_no | int | NO | PRI | NULL | |

| s\_name | varchar(20) | YES | | NULL | |

| s\_city | varchar(20) | YES | | NULL | |

| id | int | YES | MUL | NULL | |

| age | int | NO | | 20 | |

+---------+-------------+------+-----+---------+-------+

5 rows in set (0.01 sec)

2) DROP COLUMN

EX:- add column marks then drop it.

mysql> ALTER TABLE student ADD COLUMN marks INT ;

Query OK, 0 rows affected (0.04 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| roll\_no | int | NO | PRI | NULL | |

| s\_name | varchar(20) | YES | | NULL | |

| s\_city | varchar(20) | YES | | NULL | |

| id | int | YES | MUL | NULL | |

| age | int | NO | | 20 | |

| marks | int | YES | | NULL | |

+---------+-------------+------+-----+---------+-------+

6 rows in set (0.00 sec)

mysql> ALTER TABLE student DROP COLUMN marks;

Query OK, 0 rows affected (0.04 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| roll\_no | int | NO | PRI | NULL | |

| s\_name | varchar(20) | YES | | NULL | |

| s\_city | varchar(20) | YES | | NULL | |

| id | int | YES | MUL | NULL | |

| age | int | NO | | 20 | |

+---------+-------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

3) RENAME

mysql> SHOW TABLES;

+----------------------+

| Tables\_in\_university |

+----------------------+

| course |

| student |

+----------------------+

2 rows in set (0.00 sec)

mysql> ALTER TABLE student RENAME TO candidate;

Query OK, 0 rows affected (0.04 sec)

mysql> SHOW TABLES;

+----------------------+

| Tables\_in\_university |

+----------------------+

| candidate |

| course |

+----------------------+

2 rows in set (0.01 sec)

4) CHANGE

mysql> ALTER TABLE student CHANGE COLUMN age stu\_age INT NOT NULL;

Query OK, 0 rows affected (0.04 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| roll\_no | int | NO | PRI | NULL | |

| s\_name | varchar(20) | YES | | NULL | |

| s\_city | varchar(20) | YES | | NULL | |

| id | int | YES | MUL | NULL | |

| stu\_age | int | NO | | NULL | |

+---------+-------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

6) MODIFY

--modifying datatype

mysql> ALTER TABLE student MODIFY stu\_age VARCHAR(2);

Query OK, 10 rows affected (0.13 sec)

Records: 10 Duplicates: 0 Warnings: 0

mysql> desc student;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| roll\_no | int | NO | PRI | NULL | |

| s\_name | varchar(20) | YES | | NULL | |

| s\_city | varchar(20) | YES | | NULL | |

| id | int | YES | MUL | NULL | |

| stu\_age | varchar(2) | YES | | NULL | |

+---------+-------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

--modifying constraint

mysql> ALTER TABLE student MODIFY s\_city VARCHAR(20) NOT NULL;

Query OK, 0 rows affected (0.15 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;

+---------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+-------------+------+-----+---------+-------+

| roll\_no | int | NO | PRI | NULL | |

| s\_name | varchar(20) | YES | | NULL | |

| s\_city | varchar(20) | NO | | NULL | |

| id | int | YES | MUL | NULL | |

| stu\_age | varchar(2) | YES | | NULL | |

+---------+-------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

7) UPDATE

--before updating

mysql> SELECT \* FROM student;

+---------+-----------+---------------+------+---------+

| roll\_no | s\_name | s\_city | id | stu\_age |

+---------+-----------+---------------+------+---------+

| 1 | AAMIR | SOLAPUR | 102 | 20 |

| 2 | PRAJWAL | PUNE | 105 | 20 |

| 3 | NIKHIL | PUNE | 103 | 20 |

| 4 | RUSHIKESH | PUNE | 101 | 20 |

| 5 | MUSTAFFA | PHURSUNGI | 104 | 20 |

| 6 | MAYUR | NASHIK | 102 | 20 |

| 7 | HARSHAD | DAUND | 104 | 20 |

| 8 | SAHIL | BHEKRAI NAGAR | 101 | 20 |

| 9 | OM | DAUND | 102 | 20 |

| 10 | TANISHQ | LONI KALBHOR | 105 | 20 |

+---------+-----------+---------------+------+---------+

1. rows in set (0.00 sec)

--after updating

mysql> UPDATE student SET s\_city = "PUNE CITY" WHERE s\_city = "PUNE";

Query OK, 3 rows affected (0.01 sec)

Rows matched: 3 Changed: 3 Warnings: 0

mysql> SELECT \* FROM student;

+---------+-----------+---------------+------+---------+

| roll\_no | s\_name | s\_city | id | stu\_age |

+---------+-----------+---------------+------+---------+

| 1 | AAMIR | SOLAPUR | 102 | 20 |

| 2 | PRAJWAL | PUNE CITY | 105 | 20 |

| 3 | NIKHIL | PUNE CITY | 103 | 20 |

| 4 | RUSHIKESH | PUNE CITY | 101 | 20 |

| 5 | MUSTAFFA | PHURSUNGI | 104 | 20 |

| 6 | MAYUR | NASHIK | 102 | 20 |

| 7 | HARSHAD | DAUND | 104 | 20 |

| 8 | SAHIL | BHEKRAI NAGAR | 101 | 20 |

| 9 | OM | DAUND | 102 | 20 |

| 10 | TANISHQ | LONI KALBHOR | 105 | 20 |

+---------+-----------+---------------+------+---------+

10 rows in set (0.00 sec)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Grant & Revoke privileges\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

mysql> CREATE USER Zubair111@localhost;

Query OK, 0 rows affected (0.00 sec)

mysql> GRANT SELECT ON university.student to Zubair111@localhost;

Query OK, 0 rows affected (0.01 sec)

mysql> GRANT UPDATE ON university.course to Zubair111@localhost;

Query OK, 0 rows affected (0.01 sec)

mysql> REVOKE SELECT ON university.student FROM Zubair111@localhost;

Query OK, 0 rows affected (0.01 sec)

mysql> REVOKE UPDATE ON university.student FROM Zubair111@localhost;

ERROR 1147 (42000): There is no such grant defined for user 'Zubair' on host 'localhost' on table 'student'

mysql> REVOKE UPDATE ON university.course FROM Zubair111@localhost;

Query OK, 0 rows affected (0.01 sec)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Display all granted privileges\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

mysql> SHOW GRANTS FOR Zubair111@localhost;

+-------------------------------------------------------------------+

| Grants for Zubair111@localhost |

+-------------------------------------------------------------------+

| GRANT USAGE ON \*.\* TO `Zubair111`@`localhost` |

| GRANT UPDATE ON `university`.`course` TO `Zubair111`@`localhost` |

| GRANT SELECT ON `university`.`student` TO `Zubair111`@`localhost` |

+-------------------------------------------------------------------+

3 rows in set (0.00 sec)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Check all privileges\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

mysql> SELECT USER FROM MYSQL.USER;

+------------------+

| USER |

+------------------+

| Zubair |

| Zubair111 |

| Zubair123 |

| mysql.infoschema |

| mysql.session |

| mysql.sys |

| root |

+------------------+

7 rows in set (0.01 sec)

C:\Users\Admin>mysql -u Zubair111

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 26

Server version: 8.0.35 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE university;

Database changed

mysql> SELECT \* FROM student;

+---------+-----------+---------------+------+-------+------------+

| roll\_no | s\_name | s\_city | id | marks | d\_o\_b |

+---------+-----------+---------------+------+-------+------------+

| 1 | AAMIR | SOLAPUR | 102 | 85 | 2004-07-07 |

| 2 | PRAJWAL | PUNE CITY | 105 | 66 | 2003-11-18 |

| 3 | NIKHIL | PUNE CITY | 103 | 82 | 2004-02-29 |

| 4 | RUSHIKESH | PUNE CITY | 101 | 68 | 2005-08-25 |

| 5 | MUSTAFFA | PHURSUNGI | 104 | 55 | 2004-03-07 |

| 6 | MAYUR | NASHIK | 102 | 82 | 2004-04-22 |

| 7 | HARSHAD | DAUND | 104 | 48 | 2004-05-01 |

| 8 | SAHIL | BHEKRAI NAGAR | 101 | 63 | 2004-09-13 |

| 9 | OM | DAUND | 102 | 80 | 2004-03-12 |

| 10 | TANISHQ | LONI KALBHOR | 105 | 54 | 2003-06-09 |

+---------+-----------+---------------+------+-------+------------+

10 rows in set (0.00 sec)

mysql> **UPDATE** course SET duration=4 WHERE c\_id=2;

Query OK, 1 row affected (0.01 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT \* FROM course;

ERROR 1142 (42000): SELECT command denied to user 'Zubair111'@'localhost' for table 'course'

mysql> UPDATE student SET s\_name = "NIK" WHERE roll\_no = 3;

ERROR 1142 (42000): UPDATE command denied to user 'Zubair111'@'localhost' for table 'student'

mysql> \q

Bye

mysql> SHOW GRANTS;

| Grants for root@localhost |

| GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, RELOAD, SHUTDOWN, PROCESS, FILE, REFERENCES, INDEX, ALTER, SHOW DATABASES, SUPER, CREATE TEMPORARY TABLES, LOCK TABLES, EXECUTE, REPLICATION SLAVE, REPLICATION CLIENT, CREATE VIEW, SHOW VIEW, CREATE ROUTINE, ALTER ROUTINE, CREATE USER, EVENT, TRIGGER, CREATE TABLESPACE, CREATE ROLE, DROP ROLE ON \*.\* TO `root`@`localhost` WITH GRANT OPTION |

| GRANT APPLICATION\_PASSWORD\_ADMIN,AUDIT\_ABORT\_EXEMPT,AUDIT\_ADMIN,AUTHENTICATION\_POLICY\_ADMIN,BACKUP\_ADMIN,BINLOG\_ADMIN,BINLOG\_ENCRYPTION\_ADMIN,CLONE\_ADMIN,CONNECTION\_ADMIN,ENCRYPTION\_KEY\_ADMIN,FIREWALL\_EXEMPT,FLUSH\_OPTIMIZER\_COSTS,FLUSH\_STATUS,FLUSH\_TABLES,FLUSH\_USER\_RESOURCES,GROUP\_REPLICATION\_ADMIN,GROUP\_REPLICATION\_STREAM,INNODB\_REDO\_LOG\_ARCHIVE,INNODB\_REDO\_LOG\_ENABLE,PASSWORDLESS\_USER\_ADMIN,PERSIST\_RO\_VARIABLES\_ADMIN,REPLICATION\_APPLIER,REPLICATION\_SLAVE\_ADMIN,RESOURCE\_GROUP\_ADMIN,RESOURCE\_GROUP\_USER,ROLE\_ADMIN,SENSITIVE\_VARIABLES\_OBSERVER,SERVICE\_CONNECTION\_ADMIN,SESSION\_VARIABLES\_ADMIN,SET\_USER\_ID,SHOW\_ROUTINE,SYSTEM\_USER,SYSTEM\_VARIABLES\_ADMIN,TABLE\_ENCRYPTION\_ADMIN,TELEMETRY\_LOG\_ADMIN,XA\_RECOVER\_ADMIN ON \*.\* TO `root`@`localhost` WITH GRANT OPTION |

| GRANT PROXY ON ``@`` TO `root`@`localhost` WITH GRANT OPTION |

3 rows in set (0.00 sec)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*create ,display & remove index\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1)CREATE INDEX

mysql> CREATE INDEX stu\_city ON student(s\_city);

Query OK, 0 rows affected (0.37 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> CREATE INDEX stu\_details ON student(roll\_no , s\_name , id);

Query OK, 0 rows affected (0.07 sec)

Records: 0 Duplicates: 0 Warnings: 0

2) DISPLAY INDEX

mysql> SHOW INDEX FROM student;

+---------+------------+-------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| Table | Non\_unique | Key\_name | Seq\_in\_index | Column\_name | Collation | Cardinality | Sub\_part | Packed | Null | Index\_type | Comment | Index\_comment | Visible | Expression |

+---------+------------+-------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| student | 0 | PRIMARY | 1 | roll\_no | A | 10 | NULL | NULL | | BTREE | | | YES | NULL |

| student | 1 | id | 1 | id | A | 5 | NULL | NULL | YES | BTREE | | | YES | NULL |

| student | 1 | stu\_city | 1 | s\_city | A | 7 | NULL | NULL | YES | BTREE | | | YES | NULL |

| student | 1 | stu\_details | 1 | roll\_no | A | 10 | NULL | NULL | | BTREE | | | YES | NULL |

| student | 1 | stu\_details | 2 | s\_name | A | 10 | NULL | NULL | YES | BTREE | | | YES | NULL |

| student | 1 | stu\_details | 3 | id | A | 10 | NULL | NULL | YES | BTREE | | | YES | NULL |

+---------+------------+-------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

6 rows in set (0.03 sec)

3) DELETE INDEX

mysql> DROP INDEX stu\_city ON student;

Query OK, 0 rows affected (0.04 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> DROP INDEX stu\_details ON student;

Query OK, 0 rows affected (0.03 sec)

Records: 0 Duplicates: 0 Warnings: 0

--after deleting

mysql> SHOW INDEX FROM student;

+---------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| Table | Non\_unique | Key\_name | Seq\_in\_index | Column\_name | Collation | Cardinality | Sub\_part | Packed | Null | Index\_type | Comment | Index\_comment | Visible | Expression |

+---------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| student | 0 | PRIMARY | 1 | roll\_no | A | 10 | NULL | NULL | | BTREE | | | YES | NULL |

| student | 1 | id | 1 | id | A | 5 | NULL | NULL | YES | BTREE | | | YES | NULL |

+---------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

2 rows in set (0.00 sec)