

1. Create the database named CYBERCOLLEGE and the above tables in the CYBERCOLLEGE database; include the Primary Key Constraint, Referential Integrity Constraints, and Check Constraints.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.6.12-log 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 cybercollege;
Database changed
mysql> show database;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'database' at line 1
mysql> show cybercollege;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'cybercollege' at line 1
mysql> DROP DATABASE;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '' at line 1
mysql> DROP DATABASE CYBERCOLLEGE;
Query OK, 1 row affected (0.33 sec)

mysql> CREATE DATABASE CYBERCOLLEGE;
Query OK, 1 row affected (0.00 sec)

mysql> use cybercollege;
Database changed
mysql> create table student(stud_No VARCHAR(9) primary key,stud_Fname VARCHAR(20),stud_Lname VARCHAR(30),stud_address VARCHAR(50),stud_city VARCHAR(50),state VARCHAR(20),postalcode VARCHAR(9));
Query OK, 0 rows affected (0.29 sec)

mysql> create table instructor(instructor_id VARCHAR(9) primary key,instructor_Fname VARCHAR(20),instructor_Lname VARCHAR(30),instructor_phone VARCHAR(15));
Query OK, 0 rows affected (0.47 sec)

mysql> create table course(course_code VARCHAR(15) primary key,course_Title VARCHAR(25),course_Hours numeric(2,0),semester VARCHAR(20));
Query OK, 0 rows affected (0.39 sec)

mysql> create table section(section_id VARCHAR(7) primary key,time_offered VARCHAR(10),days_offered VARCHAR(10),section_room VARCHAR(8),class_size numeric(3,0) check (class_size >=0),number_enrolled numeric(3,0)
check (number_enrolled >= 0),instructor_id VARCHAR(9) references instructor(instructor_id),course_code VARCHAR(15) references course(course_code));
Query OK, 0 rows affected (0.35 sec)

mysql> create table enrolment(stud_No VARCHAR(9) references student(stud_No),section_id VARCHAR(7) references section(section_id),grade VARCHAR(2));
Query OK, 0 rows affected (2.03 sec)

mysql>
```

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
mysql> DESC student;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_No | varchar(9) | NO | PRI | NULL | |
| stud_Fname | varchar(20) | YES | | NULL | |
| stud_Lname | varchar(30) | YES | | NULL | |
| stud_address | varchar(50) | YES | | NULL | |
| stud_city | varchar(50) | YES | | NULL | |
| state | varchar(20) | YES | | NULL | |
| postalcode | varchar(9) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (1.76 sec)

mysql> DESC instructor;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| instructor_id | varchar(9) | NO | PRI | NULL | |
| instructor_Fname | varchar(20) | YES | | NULL | |
| instructor_Lname | varchar(30) | YES | | NULL | |
| instructor_phone | varchar(15) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.03 sec)

mysql> DESC course;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| course_code | varchar(15) | NO | PRI | NULL | |
| course_title | varchar(25) | YES | | NULL | |
| course_hours | decimal(2,0) | YES | | NULL | |
| semester | varchar(20) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.12 sec)

mysql> DESC section;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| section_id | varchar(7) | NO | PRI | NULL | |
| time_offered | varchar(10) | YES | | NULL | |
| days_offered | varchar(10) | YES | | NULL | |
| section_room | varchar(8) | YES | | NULL | |
| class_size | decimal(3,0) | YES | | NULL | |
| number_enrolled | decimal(3,0) | YES | | NULL | |
| instructor_id | varchar(9) | YES | | NULL | |
| course_code | varchar(15) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.03 sec)
```

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
mysql> DESC section;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| section_id | varchar(7) | NO | PRI | NULL | |
| time_offered | varchar(10) | YES | | NULL | |
| days_offered | varchar(10) | YES | | NULL | |
| section_room | varchar(8) | YES | | NULL | |
| class_size | decimal(3,0) | YES | | NULL | |
| number_enrolled | decimal(3,0) | YES | | NULL | |
| instructor_id | varchar(9) | YES | | NULL | |
| course_code | varchar(15) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.03 sec)

mysql> DESC enrollment;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_No | varchar(9) | YES | | NULL | |
| section_id | varchar(7) | YES | | NULL | |
| grade | varchar(2) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.02 sec)

mysql>
```

2. Add a field Country to the STUDENT table with the default value set to 'India'.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| stud_no | varchar(9) | YES | | NULL | |
| section_id | varchar(2) | YES | | NULL | |
| grade | varchar(2) | YES | | NULL | |
+-----+-----+-----+-----+-----+
3 rows in set (0.02 sec)

mysql> ALTER TABLE student ADD country VARCHAR(15) DEFAULT 'INDIA';
Query OK, 0 rows affected (0.55 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| stud_no | varchar(9) | NO | PRI | NULL | |
| stud_fname | varchar(20) | YES | | NULL | |
| stud_lname | varchar(30) | YES | | NULL | |
| stud_address | varchar(50) | YES | | NULL | |
| stud_city | varchar(50) | YES | | NULL | |
| state | varchar(20) | YES | | NULL | |
| postalcode | varchar(9) | YES | | NULL | |
| country | varchar(15) | YES | | INDIA | |
+-----+-----+-----+-----+-----+
8 rows in set (0.02 sec)

mysql>
mysql>
```

3. Add a constraint to the Grade field in the ENROLMENT table that accepts only the values 'A', 'B', 'C' and 'D'.

```
mysql>
mysql> ALTER TABLE enrolment ADD CONSTRAINT grade CHECK(grade='A' OR grade='B' OR grade='C');
Query OK, 0 rows affected (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

4. Modify the ENROLMENT table by changing the width of the field Grade to 2 .

```
mysql> ALTER TABLE enrolment MODIFY grade varchar(2);
Query OK, 0 rows affected (0.12 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql>
```

5. Add a new column, salary to the INSTRUCTOR table and display its modified schema

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
Records: 0 Duplicates: 0 Warnings: 0

mysql> DESC INSTRUCTOR;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| instructor_id | varchar(9) | NO | PRI | NULL | |
| instructor_fname | varchar(20) | YES | | NULL | |
| instructor_lname | varchar(30) | YES | | NULL | |
| instructor_phone | varchar(15) | YES | | NULL | |
+-----+-----+-----+-----+-----+
4 rows in set (0.06 sec)

mysql> ALTER TABLE instructor ADD salary varchar(10);
Query OK, 0 rows affected (0.55 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> DESC INSTRUCTOR;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| instructor_id | varchar(9) | NO | PRI | NULL | |
| instructor_fname | varchar(20) | YES | | NULL | |
| instructor_lname | varchar(30) | YES | | NULL | |
| instructor_phone | varchar(15) | YES | | NULL | |
| salary | varchar(10) | YES | | NULL | |
+-----+-----+-----+-----+-----+
5 rows in set (0.02 sec)

mysql>
```

6. Drop the column Country from the STUDENT table.

```

c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
5 rows in set (0.02 sec)

mysql> DESC student;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_No | varchar(9) | NO | PRI | NULL | |
| stud_Fname | varchar(20) | YES | | NULL | |
| stud_Lname | varchar(30) | YES | | NULL | |
| stud_address | varchar(50) | YES | | NULL | |
| stud_city | varchar(50) | YES | | NULL | |
| state | varchar(20) | YES | | NULL | |
| postalcode | varchar(9) | YES | | NULL | |
| country | varchar(15) | YES | | INDIA | |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.02 sec)

mysql> ALTER TABLE student DROP COLUMN country;
Query OK, 0 rows affected (0.53 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> DESC student;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_No | varchar(9) | NO | PRI | NULL | |
| stud_Fname | varchar(20) | YES | | NULL | |
| stud_Lname | varchar(30) | YES | | NULL | |
| stud_address | varchar(50) | YES | | NULL | |
| stud_city | varchar(50) | YES | | NULL | |
| state | varchar(20) | YES | | NULL | |
| postalcode | varchar(9) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.07 sec)

mysql>

```

7. Create a view for instructors to display the courses taught by an instructor. Display the personal details but by hiding salary information.

```

mysql> create VIEW INST AS SELECT i.instructor_id,i.instructor_Lname,i.instructor_phone,c.course_code,c.course_Title,c.course_Hours FROM instructor i,course c ;
Query OK, 0 rows affected (0.08 sec)

mysql> DESC INST;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| instructor_id | varchar(9) | NO | | NULL | |
| instructor_Lname | varchar(30) | YES | | NULL | |
| instructor_phone | varchar(15) | YES | | NULL | |
| course_code | varchar(15) | NO | | NULL | |
| course_Title | varchar(25) | YES | | NULL | |
| course_Hours | decimal(2,0) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.02 sec)

```

8. Insert details of you and your 5 friends in STUDENT table and the details of 5 instructors with names (Asha, Ashna, Sandeep , Asifa , George)in INSTRUCTOR table.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
+-----+-----+-----+-----+-----+-----+
| state | varchar(20) | YES | NULL | | |
| postalcode | varchar(9) | YES | NULL | | |
+-----+-----+-----+-----+-----+
7 rows in set (0.02 sec)

mysql> INSERT INTO student VALUES(1,'Lakshmi','C','Avittam','Chelembra','Kerala',6736);
Query OK, 1 row affected (0.03 sec)

mysql> INSERT INTO student VALUES(2,'Ranjana','k','Layam','kannur','Kerala',6756);
Query OK, 1 row affected (0.04 sec)

mysql> INSERT INTO student VALUES(3,'Liya','v','Manjusha','Trivandrum','Kerala',6758);
Query OK, 1 row affected (0.05 sec)

mysql> INSERT INTO student VALUES(4,'Shilpa','k p','Narayaniyam','Kochi','Kerala',6728);
Query OK, 1 row affected (0.40 sec)

mysql> INSERT INTO student VALUES(5,'Manjima','Varghese','Rose','Wayanad','Kerala',6755);
Query OK, 1 row affected (0.04 sec)

mysql> DESC student;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_No | varchar(9) | NO | PRI | NULL | |
| stud_Fname | varchar(20) | YES | | NULL | |
| stud_Lname | varchar(30) | YES | | NULL | |
| stud_address | varchar(50) | YES | | NULL | |
| stud_city | varchar(50) | YES | | NULL | |
| state | varchar(20) | YES | | NULL | |
| postalcode | varchar(9) | YES | | NULL | |
+-----+-----+-----+-----+-----+
7 rows in set (0.05 sec)

mysql> select * from student;
+-----+-----+-----+-----+-----+-----+-----+
| stud_No | stud_Fname | stud_Lname | stud_address | stud_city | state | postalcode |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | Lakshmi | C | Avittam | Chelembra | Kerala | 6736 |
| 2 | Ranjana | k | Layam | kannur | Kerala | 6756 |
| 3 | Liya | v | Manjusha | Trivandrum | Kerala | 6758 |
| 4 | Shilpa | k p | Narayaniyam | Kochi | Kerala | 6728 |
| 5 | Manjima | Varghese | Rose | Wayanad | Kerala | 6755 |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> DESC instructor;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| instructor_id | varchar(9) | NO | PRI | NULL | |
| instructor_Fname | varchar(20) | YES | | NULL | |
| instructor_Lname | varchar(30) | YES | | NULL | |
| instructor_phone | varchar(15) | YES | | NULL | |
| salary | varchar(10) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.02 sec)
```

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
5 rows in set (0.00 sec)

mysql> DESC instructor;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| instructor_id | varchar(9) | NO | PRI | NULL | |
| instructor_Fname | varchar(20) | YES | | NULL | |
| instructor_Lname | varchar(30) | YES | | NULL | |
| instructor_phone | varchar(15) | YES | | NULL | |
| salary | varchar(10) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.02 sec)

mysql> INSERT INTO instructor VALUES(1001,'Asha','k',896534823,35000);
Query OK, 1 row affected (0.03 sec)

mysql> INSERT INTO instructor VALUES(1002,'Ashna','john',896524823,32000);
Query OK, 1 row affected (0.05 sec)

mysql> INSERT INTO instructor VALUES(1003,'Sandeep','Roy',8965256823,33000);
Query OK, 1 row affected (0.05 sec)

mysql> INSERT INTO instructor VALUES(1004,'Asifa','Abu',8928333323,50000);
Query OK, 1 row affected (0.05 sec)

mysql> INSERT INTO instructor VALUES(1005,'George','G',8928256323,40000);
Query OK, 1 row affected (0.06 sec)

mysql> select * from instructor;
+-----+-----+-----+-----+-----+
| instructor_id | instructor_Fname | instructor_Lname | instructor_phone | salary |
+-----+-----+-----+-----+-----+
| 1001 | Asha | k | 896534823 | 35000 |
| 1002 | Ashna | john | 896524823 | 32000 |
| 1003 | Sandeep | Roy | 8965256823 | 33000 |
| 1004 | Asifa | Abu | 8928333323 | 50000 |
| 1005 | George | G | 8928256323 | 40000 |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql>
```

9. Add details of the first and second semester courses. Also add a new course for Data Mining with a course code of 20MCA260 worth with credit of 4 hour.

```
mysql> INSERT INTO course VALUES('20MCA101','MFCS',4,1);
Query OK, 1 row affected (0.05 sec)

mysql> INSERT INTO course VALUES('20MCA103','DFCA',3,1);
Query OK, 1 row affected (0.04 sec)

mysql> INSERT INTO course VALUES('20MCA105','ADS',5,1);
Query OK, 1 row affected (0.04 sec)

mysql> INSERT INTO course VALUES('20MCA107','ASE',3,1);
Query OK, 1 row affected (0.07 sec)

mysql> INSERT INTO course VALUES('20MCA102','ADBMS',3,2);
Query OK, 1 row affected (0.04 sec)

mysql> INSERT INTO course VALUES('20MCA104','ACN',4,2);
Query OK, 1 row affected (0.04 sec)

mysql> INSERT INTO course VALUES('20MCA106','AI',3,2);
Query OK, 1 row affected (0.03 sec)

mysql> INSERT INTO course VALUES('20MCA108','AOS',4,2);
Query OK, 1 row affected (0.05 sec)

mysql> SELECT * FROM COURSE;
```

course_code	course_title	course_Hours	semester
20MCA101	MFCS	4	1
20MCA102	ADBMS	3	2
20MCA103	DFCA	3	1
20MCA104	ACN	4	2
20MCA105	ADS	5	1
20MCA106	AI	3	2
20MCA107	ASE	3	1
20MCA108	AOS	4	2

```
0 rows in set (0.03 sec)
```

```
mysql> INSERT INTO course VALUES('20MCA260','DATA MINING',4,2);
Query OK, 1 row affected (0.37 sec)
```

```
mysql> SELECT * FROM COURSE;
```

course_code	course_title	course_Hours	semester
20MCA101	MFCS	4	1
20MCA102	ADBMS	3	2
20MCA103	DFCA	3	1
20MCA104	ACN	4	2
20MCA105	ADS	5	1
20MCA106	AI	3	2
20MCA107	ASE	3	1
20MCA108	AOS	4	2
20MCA260	DATA MINING	4	2

```
9 rows in set (0.00 sec)
```

10. Add a new section for this new course with section ID as 301. The section should meet in 2-4 on MW in BLGNG102. The class size should be 35, and number enrolled should be 0. The instructor should be 3, and the course is 20MCA260. Also add sections 302 and 303 for the courses AOS and OB and enroll 5 students each to these courses.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
9 rows in set (0.00 sec)

mysql> INSERT INTO section VALUES("301","2-4","mon,wed","BLGNG102",35,0,"3","20MCA260");
Query OK, 1 row affected (0.40 sec)

mysql> SELECT * FROM SECTION;
+-----+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | days_offered | section_room | class_size | number_enrolled | instructor_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 301        | 2-4          | mon,wed      | BLGNG102     | 35         | 0               | 3             | 20MCA260     |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> INSERT INTO section VALUES("302","9-10","mon,fri","BLGNL119",35,0,"3","20MCA108");
Query OK, 1 row affected (0.04 sec)

mysql> INSERT INTO section VALUES("305","9-10","mon,fri","BLGNL109",35,0,"1005","20MCA107");
Query OK, 1 row affected (0.03 sec)

mysql> SELECT * FROM SECTION;
+-----+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | days_offered | section_room | class_size | number_enrolled | instructor_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 301        | 2-4          | mon,wed      | BLGNG102     | 35         | 0               | 3             | 20MCA260     |
| 302        | 9-10         | mon,fri      | BLGNL119     | 35         | 0               | 3             | 20MCA108     |
| 305        | 9-10         | mon,fri      | BLGNL109     | 35         | 0               | 1005          | 20MCA107     |
+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

11. Register yourself along with your 3 friends for this new course by adding a row to the ENROLMENT table. The grade should be null.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
3 rows in set (0.00 sec)

mysql> insert into enrolment values(1,301,NULL);
Query OK, 1 row affected (0.05 sec)

mysql> insert into enrolment values(2,301,NULL);
Query OK, 1 row affected (0.05 sec)

mysql> insert into enrolment values(3,301,NULL);
Query OK, 1 row affected (0.04 sec)

mysql> insert into enrolment values(4,301,NULL);
Query OK, 1 row affected (0.04 sec)

mysql> insert into enrolment values(5,301,NULL);
Query OK, 1 row affected (0.05 sec)

mysql> insert into enrolment values(5,302,NULL);
Query OK, 1 row affected (0.04 sec)

mysql> insert into enrolment values(4,302,NULL);
Query OK, 1 row affected (0.04 sec)

mysql> insert into enrolment values(3,305,NULL);
Query OK, 1 row affected (0.07 sec)

mysql> insert into enrolment values(1,305,NULL);
Query OK, 1 row affected (0.06 sec)

mysql> SELECT * FROM enrolment;
+-----+-----+-----+
| stud_No | section_id | grade |
+-----+-----+-----+
| 1        | 301        | NULL  |
| 2        | 301        | NULL  |
| 3        | 301        | NULL  |
| 4        | 301        | NULL  |
| 5        | 301        | NULL  |
| 5        | 302        | NULL  |
| 4        | 302        | NULL  |
| 3        | 305        | NULL  |
| 1        | 305        | NULL  |
+-----+-----+-----+
9 rows in set (0.00 sec)

mysql>
```

12. Update the 301 section, and increase the class sizes by 10%.


```
mysql> UPDATE section SET class_size=(class_size*1.1) WHERE section_id="301";
Query OK, 1 row affected, 1 warning (0.07 sec)
Rows matched: 1 Changed: 1 Warnings: 1
```

```
mysql> select * from section;
```

section_id	time_offered	days_offered	section_room	class_size	number_enrolled	instructor_id	course_code
301	2-4	mon,wed	BLGNG102	39	0	3	20MCA260
302	9-10	mon,fri	BLGNL119	35	0	3	20MCA108
305	9-10	mon,fri	BLGNL109	35	0	1005	20MCA107

```
3 rows in set (0.00 sec)
```

```
mysql>
```

13. Give a 10% increment in salary for all instructors.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
mysql> select * from instructor;
+----+-----+-----+-----+-----+
| instructor_id | instructor_fname | instructor_lname | instructor_phone | salary |
+----+-----+-----+-----+-----+
| 1001 | Asha | k | 896534823 | 35000 |
| 1002 | Ashna | john | 896524823 | 32000 |
| 1003 | Sandeep | Roy | 8965256823 | 33000 |
| 1004 | Asifa | Abu | 8928333323 | 50000 |
| 1005 | George | G | 8928256323 | 40000 |
+----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> UPDATE instructor SET salary=salary * (salary*10/100);
Query OK, 5 rows affected (0.05 sec)
Rows matched: 5 Changed: 5 Warnings: 0
```

```
mysql> select * from instructor;
+----+-----+-----+-----+-----+
| instructor_id | instructor_fname | instructor_lname | instructor_phone | salary |
+----+-----+-----+-----+-----+
| 1001 | Asha | k | 896534823 | 38500 |
| 1002 | Ashna | john | 896524823 | 35200 |
| 1003 | Sandeep | Roy | 8965256823 | 36300 |
| 1004 | Asifa | Abu | 8928333323 | 55000 |
| 1005 | George | G | 8928256323 | 44000 |
+----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql>
```

14. Delete Section 302 and verify for the rows in ENROLMENT table for that section

```
MySQL 8.0 Command Line Client
```

```
mysql> delete from Section where Section_id=302;
Query OK, 1 row affected (0.26 sec)
```

```
mysql> select * from Section;
```

Section_id	Time_offered	Day_offered	Section_room	Class_size	Number_enrolled	Instructor_id	Course_code
301	2	MW	BLGN102	39	0	13	20MCA6
303	2	MW	BLGN102	35	5	15	20MCA5

```
2 rows in set (0.00 sec)
```

```
mysql>
```


15. Undo the previous delete operation

 MySQL 8.0 Command Line Client

```
mysql> rollback;  
Query OK, 0 rows affected (0.00 sec)
```

16. Save all the transactions to the database.

```
mysql> commit;
Query OK, 0 rows affected (0.00 sec)

mysql>
```

17. Grant the privilege to read and delete from the ENROLMENT table to the User U1.

```
mysql> create user 'U1' identified by '1234';
Query OK, 0 rows affected (0.07 sec)

mysql> select user FROM mysql.user;
+-----+
| user |
+-----+
| U1    |
| root  |
| root  |
|       |
| root  |
+-----+
5 rows in set (0.00 sec)

mysql> GRANT select,delete ON enrolment to U1;
Query OK, 0 rows affected (0.00 sec)

mysql> show grants for 'U1';
+-----+
| Grants for U1@% |
+-----+
| GRANT USAGE ON *.* TO 'U1'@'%' IDENTIFIED BY PASSWORD '*A4B6157319038724E3560894F7F932C8886EBFCF' |
| GRANT SELECT, DELETE ON `cybercollege`.`enrolment` TO 'U1'@'%' |
+-----+
2 rows in set (0.00 sec)

mysql>
```

18. Revoke the delete privilege from U1.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
mysql> select user FROM mysql.user;
+-----+
| user |
+-----+
| U1    |
| root  |
| root  |
| root  |
+-----+
5 rows in set (0.00 sec)

mysql> GRANT select,delete ON enrolment TO U1;
Query OK, 0 rows affected (0.00 sec)

mysql> show grants for 'U1';
+-----+
| Grants for U1@% |
+-----+
| GRANT USAGE ON *.* TO 'U1'@'%' IDENTIFIED BY PASSWORD '**A406157319038724E3560894F7F932C8886BFCF' |
| GRANT SELECT, DELETE ON `cybercollege`.`enrolment` TO 'U1'@'%' |
+-----+
2 rows in set (0.00 sec)

mysql> REVOKE delete ON enrolment FROM U1;
Query OK, 0 rows affected (0.04 sec)

mysql> SHOW GRANTS FOR 'U1';
+-----+
| Grants for U1@% |
+-----+
| GRANT USAGE ON *.* TO 'U1'@'%' IDENTIFIED BY PASSWORD '**A406157319038724E3560894F7F932C8886BFCF' |
| GRANT SELECT ON `cybercollege`.`enrolment` TO 'U1'@'%' |
+-----+
2 rows in set (0.00 sec)

mysql>
```

19. Display the full name and contact details of students living in Kochi.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
mysql> select * from student;
+-----+
| stud_No | stud_Fname | stud_Lname | stud_address | stud_city | state | postalcode |
+-----+
| 1       | Lakshmi   | C          | Avittam     | Cholembra | Kerala | 6736       |
| 2       | Ranjana   | k          | Layam       | kannur    | Kerala | 6756       |
| 3       | Liya      | v          | Manjusha    | Trivandrum | Kerala | 6758       |
| 4       | Shilpa    | k p        | Narayaniyam | Kochi     | Kerala | 6728       |
| 5       | Manjima   | Varghese   | Rose        | Wayanad   | Kerala | 6755       |
+-----+
5 rows in set (0.00 sec)

mysql> select stud_Fname,stud_Lname,stud_address from student where stud_city='kochi';
+-----+
| stud_Fname | stud_Lname | stud_address |
+-----+
| Shilpa     | k p        | Narayaniyam |
+-----+
1 row in set (0.00 sec)

mysql>
```

20. List the student details who has longest first name

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
mysql> select * from student;
+----+-----+-----+-----+-----+-----+-----+
| stud_No | stud_Fname | stud_Lname | stud_address | stud_city | state | postalcode |
+----+-----+-----+-----+-----+-----+-----+
| 1 | Lakshmi | C | Avittam | Chelembra | Kerala | 6736 |
| 2 | Ranjana | k | Layam | kannur | Kerala | 6756 |
| 3 | Liya | v | Manjusha | Trivandrum | Kerala | 6758 |
| 4 | Shilpa | k p | Marayaniyam | Kochi | Kerala | 6728 |
| 5 | Manjima | Varghese | Rose | Wayanad | Kerala | 6755 |
+----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select * from student where length(stud_Fname)=(select max(length(stud_Fname)) from student);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'student)' at line 1
mysql> select * from student where length(stud_Fname)=(select max(length(stud_Fname)) from student);
+----+-----+-----+-----+-----+-----+-----+
| stud_No | stud_Fname | stud_Lname | stud_address | stud_city | state | postalcode |
+----+-----+-----+-----+-----+-----+-----+
| 1 | Lakshmi | C | Avittam | Chelembra | Kerala | 6736 |
| 2 | Ranjana | k | Layam | kannur | Kerala | 6756 |
| 5 | Manjima | Varghese | Rose | Wayanad | Kerala | 6755 |
+----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

21. Display the name and phone number of the instructors who is handling the courses AOS and ADBMS.

```
MySQL 8.0 Command Line Client
mysql> select Instructor_fname,Instructor_phone from Instructor i join Course c join Section s where i.Instructor_id=s
.Instructor_id and s.Course_Code=c.Course_Code and c.Course_Title='AOS' or 'ADBMS';
+-----+-----+
| Instructor_fname | Instructor_phone |
+-----+-----+
| Ashna | 1423 |
+-----+-----+
1 row in set, 1 warning (0.05 sec)
```

22. List the codes, titles, and credit hours for courses worth 4 hours. Order the results in descending order of course code.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
3 rows in set (0.00 sec)

mysql> select course_code,course_title,course_hours from course where course_hours=4 order by course_code desc;
+-----+-----+-----+
| course_code | course_title | course_hours |
+-----+-----+-----+
| 28MCA260   | DATA MINING | 4            |
| 28MCA108   | AOS          | 4            |
| 28MCA104   | ACN          | 4            |
| 28MCA101   | MFCS         | 4            |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>
```

23. Display the names of the students in the descending order along with their phone number.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
mysql> select * from student;
+----+-----+-----+-----+-----+-----+
| stud_No | stud_Fname | stud_Lname | stud_address | stud_city | state | postalcode |
+----+-----+-----+-----+-----+-----+
| 1 | Lakshmi | C | Avittam | Chelembra | Kerala | 6736 |
| 2 | Ranjana | k | Layam | kannur | Kerala | 6756 |
| 3 | Liya | v | Manjusha | Trivandrum | Kerala | 6758 |
| 4 | Shilpa | k p | Narayaniyam | Kochi | Kerala | 6728 |
| 5 | Manjima | Varghese | Rose | Wayanad | Kerala | 6755 |
+----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select stud_Fname,stud_Lname from student order by stud_Fname desc;
+-----+-----+
| stud_Fname | stud_Lname |
+-----+-----+
| Shilpa | k p |
| Ranjana | k |
| Manjima | Varghese |
| Liya | v |
| Lakshmi | C |
+-----+-----+
5 rows in set (0.00 sec)

mysql>
```

24. List the student's name, course code and section id grouping the students by their grade.

```
MySQL 8.0 Command Line Client
mysql> select Student.Stud_fname,Student.Stud_lname,Section.Course_code,Enrolment.Section_id from Student inner join S
ection inner join Enrolment on Student.Stud_no=Enrolment.Stud_no and Section.Section_id=Enrolment.Section_id group by
Enrolment.Grade;
+-----+-----+-----+-----+
| Stud_fname | Stud_lname | Course_code | Section_id |
+-----+-----+-----+-----+
| Meghna | S | 20MCA6 | 301 |
+-----+-----+-----+-----+
1 row in set (0.16 sec)
```

25. Use an inner join between the STUDENT and ENROLMENT tables for showing the full name, Section id and Grade.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
mysql> select student.stud_Fname,student.stud_Lname,enrolment.section_id,enrolment.grade from student inner join enrolment on student.stud_No=enrolment.stud_No;
+-----+-----+-----+-----+
| stud_Fname | stud_Lname | section_id | grade |
+-----+-----+-----+-----+
| Lakshmi | C | 301 | NULL |
| Lakshmi | C | 305 | NULL |
| Ranjana | k | 301 | NULL |
| Liya | v | 301 | NULL |
| Liya | v | 305 | NULL |
| Shilpa | k p | 301 | NULL |
| Shilpa | k p | 302 | NULL |
| Manjima | Varghese | 301 | NULL |
| Manjima | Varghese | 302 | NULL |
+-----+-----+-----+-----+
9 rows in set (0.03 sec)
```

26. Use an outer join between the STUDENT and ENROLMENT tables for showing the full name, Section id and Grade. Include all the students regardless of whether they have a matching section.

```
mysql> select student.stud_fname,student.stud_lname,enrolment.section_id,enrolment.grade from student left join enrolment on student.stud_no=enrolment.stud_no;
```

stud_fname	stud_lname	section_id	grade
Lakshmi	C	301	NULL
Ranjana	k	301	NULL
Liya	v	301	NULL
Shilpa	k p	301	NULL
Manjima	Varghese	301	NULL
Manjima	Varghese	302	NULL
Shilpa	k p	302	NULL
Liya	v	305	NULL
Lakshmi	C	305	NULL

9 rows in set (0.00 sec)

```
mysql>
```

27. Give a 7% salary raise to instructors whose salary is less than the average.

```
MySQL 8.0 Command Line Client
```

```
mysql> update Instructor set salary=salary+(salary*7/100) where salary < (select avg(salary));
```

Query OK, 0 rows affected (0.04 sec)
Rows matched: 0 Changed: 0 Warnings: 0

```
mysql> select * from Instructor;
```

Instructor_id	Instructor_lname	Instructor_fname	Instructor_phone	salary
i1	M	Asha	123	27500
i2	Mathew	Ashna	1423	29700
i3	Santhosh	Sandeep	873	38500
i4	Rasheed	Asifa	965	33000
i5	Davis	George	567	35200
i6	S	Manju	635	1000
i7	Nair	Hema	635	40000

7 rows in set (0.00 sec)

28. List full name and salary of instructors whose last name ends with 'a' and earns highest salary.

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe
```

```
mysql> select * from instructor;
```

instructor_id	instructor_fname	instructor_lname	instructor_phone	salary
1001	Asha	k	896534823	38500
1002	Ashna	John	896524823	35200
1003	Sandeep	Roy	8965254823	36300
1004	Asifa	Abu	892833323	55000
1005	George	G	8928256323	44000

5 rows in set (0.00 sec)

```
mysql> select instructor_fname,salary from instructor where salary=(select max(salary) from instructor) and instructor_fname in(select instructor_fname from instructor where instructor_fname like 'Aa');
```

instructor_fname	salary
Asifa	55000

1 row in set (0.08 sec)

```
mysql>
```

29. Display the details of instructor who draws lowest salary.


```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe

mysql> select * from instructor;
+-----+-----+-----+-----+-----+
| instructor_id | instructor_fname | instructor_lname | instructor_phone | salary |
+-----+-----+-----+-----+-----+
| 1001          | Asha             | k                | 896534823        | 38500  |
| 1002          | Ashna            | john             | 896524823        | 35200  |
| 1003          | Sandeep          | Roy              | 8965256823       | 36300  |
| 1004          | Asifa            | Abu              | 8928333323       | 55000  |
| 1005          | George           | G                | 8928256323       | 44000  |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select * from instructor where salary=(select min(salary) from instructor);
+-----+-----+-----+-----+-----+
| instructor_id | instructor_fname | instructor_lname | instructor_phone | salary |
+-----+-----+-----+-----+-----+
| 1002          | Ashna            | john             | 896524823        | 35200  |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

30. List the students details who lived in Kochi, Kerala or in Bangalore, Karnataka or both

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe

mysql> select * from student;
+-----+-----+-----+-----+-----+-----+
| stud_No | stud_Fname | stud_Lname | stud_address | stud_city | state | postalcode |
+-----+-----+-----+-----+-----+-----+
| 1       | Lakshmi   | C         | Avittam     | Chelembra | Kerala | 6736       |
| 2       | Ranjana  | k         | Layam       | kannur    | Kerala | 6756       |
| 3       | Liya     | v         | Manjusha    | Trivandrum | Kerala | 6758       |
| 4       | Shilpa   | k p       | Narayaniyam | Kochi     | Kerala | 6728       |
| 5       | Manjima  | Varghese  | Rose        | Mayanad   | Kerala | 6755       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select * from student where stud_city='Kochi' or 'Bangalore' and 'karnataka' or stud_city in('Kochi','Bangalore','karnataka');
+-----+-----+-----+-----+-----+-----+
| stud_No | stud_Fname | stud_Lname | stud_address | stud_city | state | postalcode |
+-----+-----+-----+-----+-----+-----+
| 4       | Shilpa    | k p       | Narayaniyam | Kochi     | Kerala | 6728       |
+-----+-----+-----+-----+-----+-----+
1 row in set, 1 warning (0.00 sec)

mysql>
```