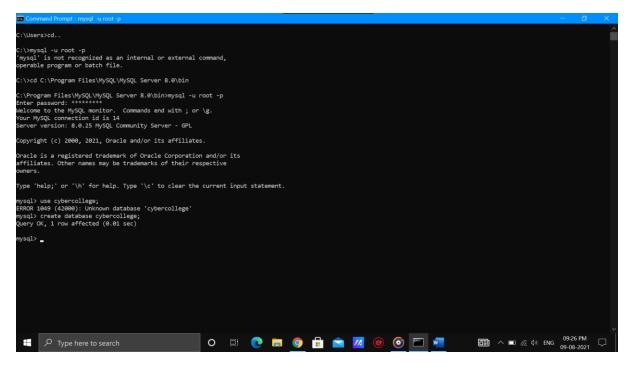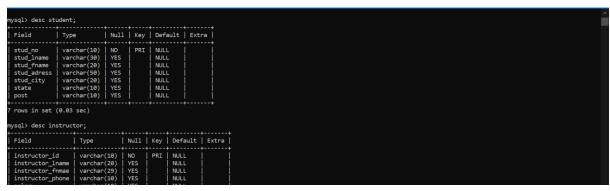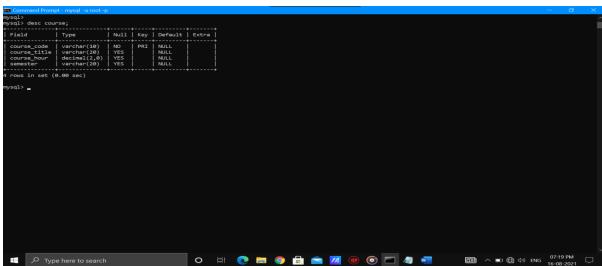1. Create the database named CYBERCOLLEGE and the above tables in the
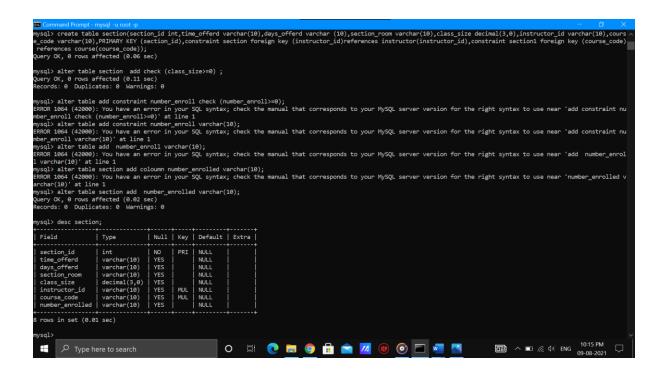
CYBERCOLLEGE database; include the Primary Key Constraint, Referential Integrity
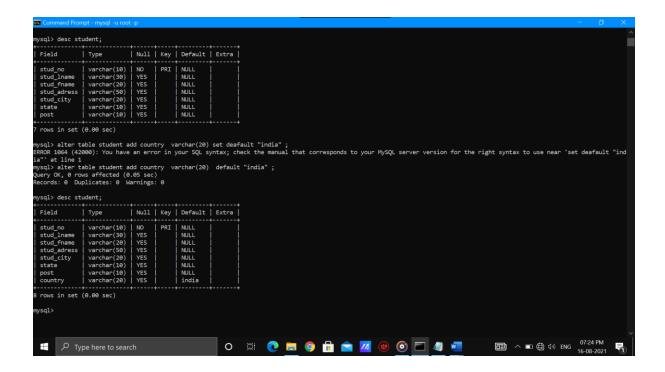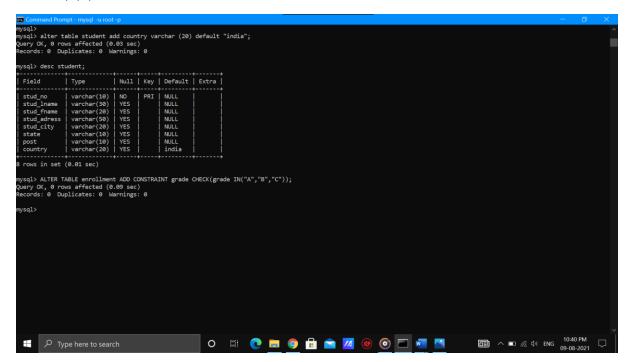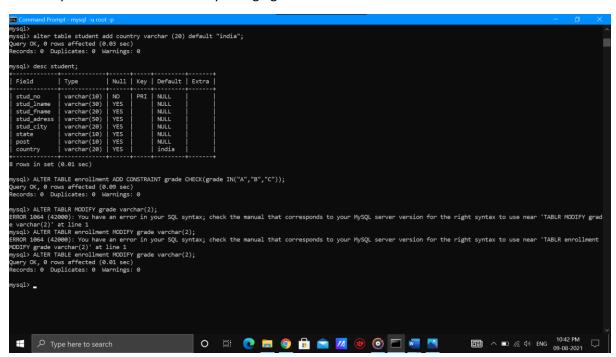
Constraints, and Check Constraints

```
mysql> create table section(section_id int,time_offerd varchar(10),days_offerd varchar (10),section_room varchar(10),class_size decimal(3,0),instructor_id varchar(10),cours
e_code varchar(10),PRIMARY KEY (section_id),constraint section foreign key (instructor_id)references instructor(instructor_id),constraint section1 foreign key (course_code)
 references course(course_code));
Query OK, 0 rows affected (0.06 sec)

mysql> alter table section  add check (class_size>=0) ;
Query OK, 0 rows affected (0.11 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table add constraint number_enroll check (number_enroll>=0);
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 'add constraint nu
mber_enroll check (number_enroll>=0)' at line 1
mysql> alter table add constraint number_enroll varchar(10);
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 'add constraint nu
mber_enroll varchar(10)' at line 1
mysql> alter table add  number_enroll varchar(10);
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 'add  number_enrol
l varchar(10)' at line 1
mysql> alter table section add coloumn number_enrolled varchar(10);
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 'number_enrolled v
archar(10)' at line 1
mysql> alter table section add  number_enrolled varchar(10);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc section;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| section_id     | int          | NO   | PRI | NULL    |       |
| time_offerd    | varchar(10)  | YES  |     | NULL    |       |
| days_offerd    | varchar(10)  | YES  |     | NULL    |       |
| section_room   | varchar(10)  | YES  |     | NULL    |       |
| class_size     | decimal(3,0) | YES  |     | NULL    |       |
| instructor_id  | varchar(10)  | YES  | MUL | NULL    |       |
| course_code    | varchar(10)  | YES  | MUL | NULL    |       |
| number_enrolled| varchar(10)  | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
8 rows in set (0.01 sec)

mysql>
```

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


```
mysql> desc student;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| stud_no     | varchar(10) | NO   | PRI | NULL    |       |
| stud_lname  | varchar(30) | YES  |     | NULL    |       |
| stud_fname  | varchar(20) | YES  |     | NULL    |       |
| stud_adress | varchar(50) | YES  |     | NULL    |       |
| stud_city   | varchar(20) | YES  |     | NULL    |       |
| state       | varchar(10) | YES  |     | NULL    |       |
| post        | varchar(10) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
7 rows in set (0.00 sec)

mysql> alter table student add country  varchar(20) set deafault "india" ;
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 'set deafault "ind
ia"' at line 1
mysql> alter table student add country  varchar(20)  default "india" ;
Query OK, 0 rows affected (0.05 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc student;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| stud_no     | varchar(10) | NO   | PRI | NULL    |       |
| stud_lname  | varchar(30) | YES  |     | NULL    |       |
| stud_fname  | varchar(20) | YES  |     | NULL    |       |
| stud_adress | varchar(50) | YES  |     | NULL    |       |
| stud_city   | varchar(20) | YES  |     | NULL    |       |
| state       | varchar(10) | YES  |     | NULL    |       |
| post        | varchar(10) | YES  |     | NULL    |       |
| country     | varchar(20) | YES  |     | india   |       |
+-------------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)

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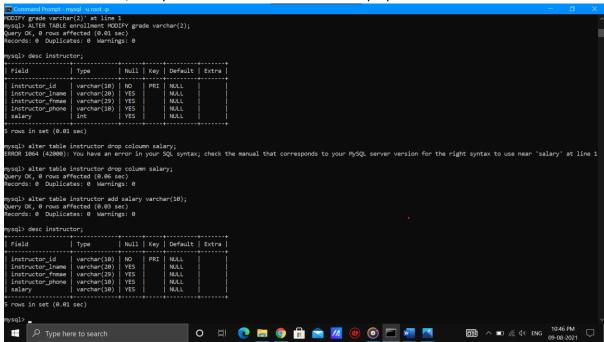
3.Add a constraint to the Grade field in the ENROLMENT table that accepts only the
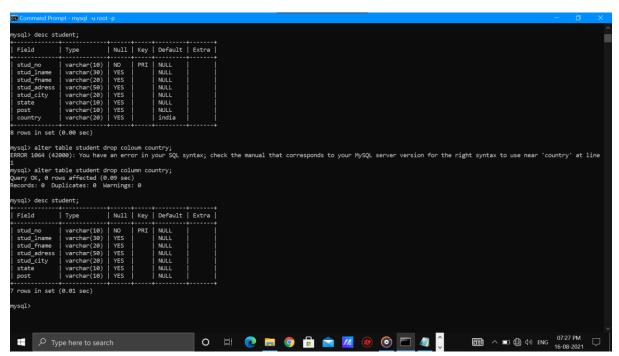
values A,B,C, and 'D'.

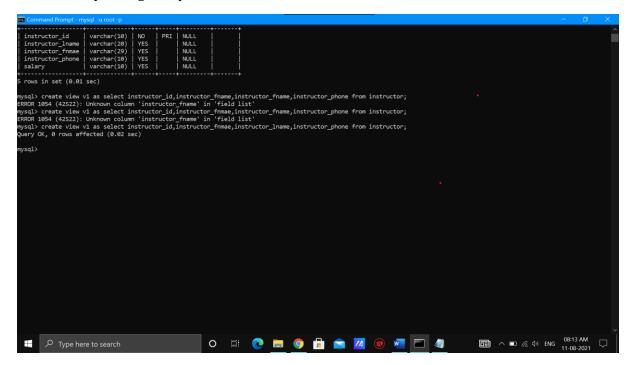4. Modify the ENROLMENT table by changing the width of the field Grade to 2

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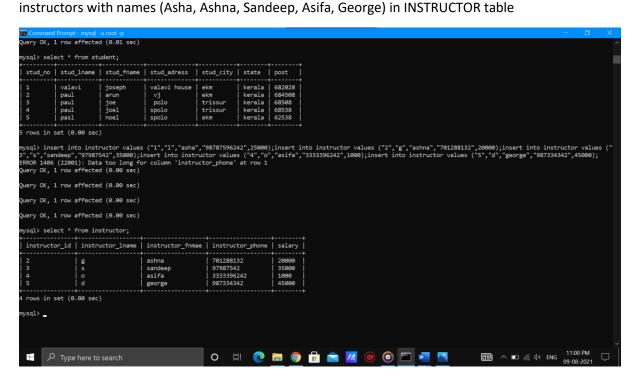


```
MODIFY grade varchar(2)' at line 1
mysql> ALTER TABLE enrollment MODIFY grade varchar(2);
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc instructor;
+-----------------+-------------+------+-----+---------+-------+
| Field           | Type        | Null | Key | Default | Extra |
+-----------------+-------------+------+-----+---------+-------+
| instructor_id   | varchar(10) | NO   | PRI | NULL    |       |
| instructor_lname| varchar(20) | YES  |     | NULL    |       |
| instructor_fnmae| varchar(29) | YES  |     | NULL    |       |
| instructor_phone| varchar(10) | YES  |     | NULL    |       |
| salary          | int         | YES  |     | NULL    |       |
+-----------------+-------------+------+-----+---------+-------+
5 rows in set (0.01 sec)

mysql> alter table instructor drop coloumn salary;
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 'salary' at line 1

mysql> alter table instructor drop column salary;
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table instructor add salary varchar(10);
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc instructor;
+-----------------+-------------+------+-----+---------+-------+
| Field           | Type        | Null | Key | Default | Extra |
+-----------------+-------------+------+-----+---------+-------+
| instructor_id   | varchar(10) | NO   | PRI | NULL    |       |
| instructor_lname| varchar(20) | YES  |     | NULL    |       |
| instructor_fnmae| varchar(29) | YES  |     | NULL    |       |
| instructor_phone| varchar(10) | YES  |     | NULL    |       |
| salary          | varchar(10) | YES  |     | NULL    |       |
+-----------------+-------------+------+-----+---------+-------+
5 rows in set (0.01 sec)

mysql>
```

6.Drop the column Country from the STUDENT table.


```
mysql> desc student;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| stud_no     | varchar(10) | NO   | PRI | NULL    |       |
| stud_lname  | varchar(30) | YES  |     | NULL    |       |
| stud_fname  | varchar(20) | YES  |     | NULL    |       |
| stud_adress | varchar(50) | YES  |     | NULL    |       |
| stud_city   | varchar(20) | YES  |     | NULL    |       |
| state       | varchar(10) | YES  |     | NULL    |       |
| post        | varchar(10) | YES  |     | NULL    |       |
| country     | varchar(20) | YES  |     | india   |       |
+-------------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)

mysql> alter table student drop coloum country;
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 'country' at line 1
mysql> alter table student drop column country;
Query OK, 0 rows affected (0.09 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc student;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| stud_no     | varchar(10) | NO   | PRI | NULL    |       |
| stud_lname  | varchar(30) | YES  |     | NULL    |       |
| stud_fname  | varchar(20) | YES  |     | NULL    |       |
| stud_adress | varchar(50) | YES  |     | NULL    |       |
| stud_city   | varchar(20) | YES  |     | NULL    |       |
| state       | varchar(10) | YES  |     | NULL    |       |
| post        | varchar(10) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
7 rows in set (0.01 sec)

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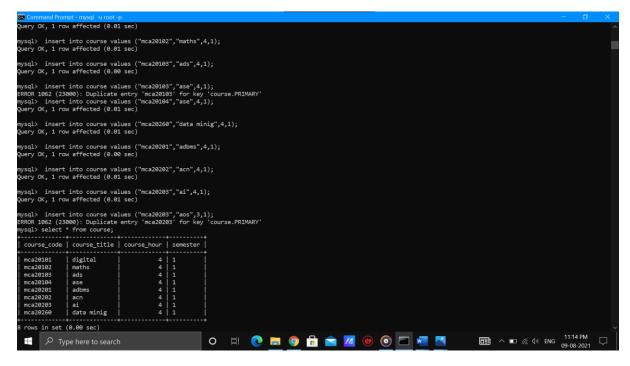
7. Create a view for instructors to display the courses taught by an instructor. Display the personal details but by hiding salary information.
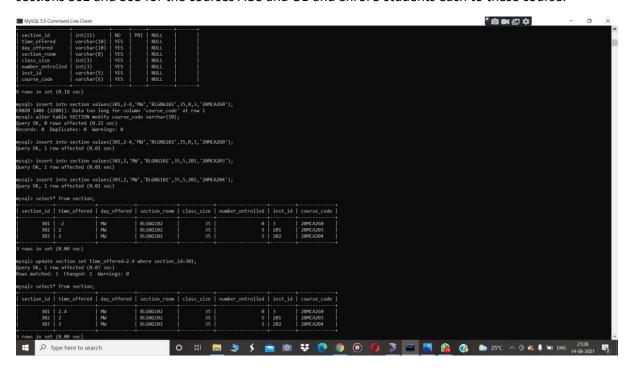

8.Insert details of you and your 5 friends in STUDENT table and the details of 5

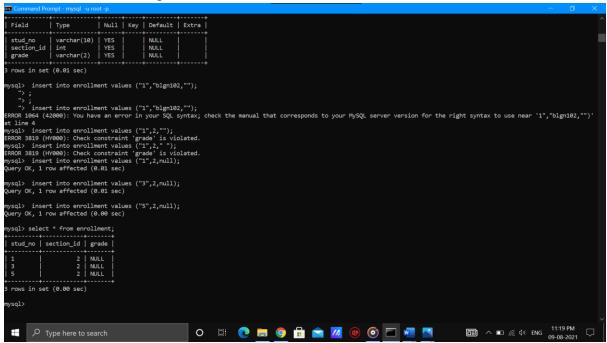instructors with names (Asha, Ashna, Sandeep, Asifa, George) in INSTRUCTOR table

9.Add details of the first and second semester courses. Also add a new course for Data

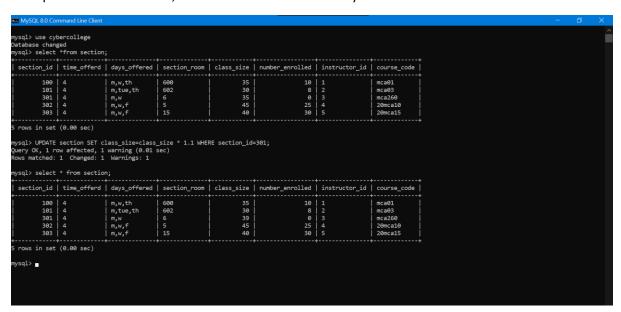Mining with a course code of 20MCA260 worth with credit of 4 hours

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

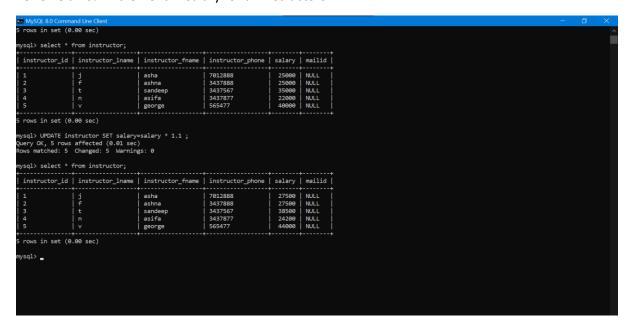sections 302 and 303 for the courses AOS and OB and enrol 5 students each to these course.

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.
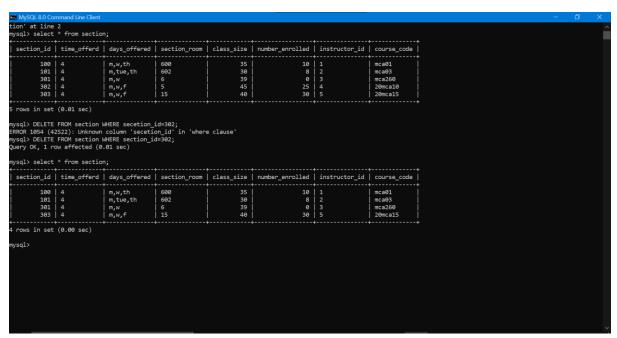

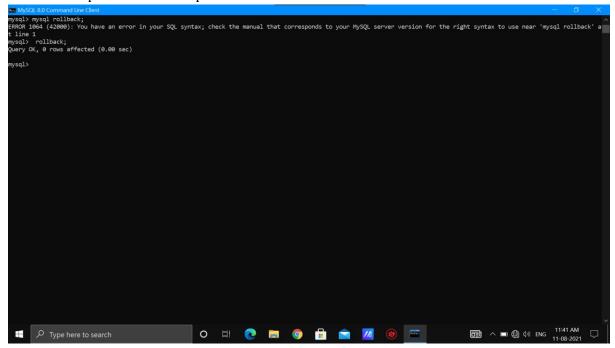12. Update the 301 section, and increase the class sizes by 10%.

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

```
5 rows in set (0.00 sec)

mysql> select * from instructor;
+---------------+-----------------+-----------------+-----------------+--------+--------+
| instructor_id | instructor_lname | instructor_fname | instructor_phone | salary | mailid |
+---------------+-----------------+-----------------+-----------------+--------+--------+
| 1             | j               | asha            | 7012888         | 25000  | NULL   |
| 2             | f               | ashna           | 3437888         | 25000  | NULL   |
| 3             | t               | sandeep         | 3437567         | 35000  | NULL   |
| 4             | n               | asifa           | 3437877         | 22000  | NULL   |
| 5             | v               | george          | 565477          | 40000  | NULL   |
+---------------+-----------------+-----------------+-----------------+--------+--------+
5 rows in set (0.00 sec)

mysql> UPDATE instructor SET salary=salary * 1.1 ;
Query OK, 5 rows affected (0.01 sec)
Rows matched: 5  Changed: 5  Warnings: 0

mysql> select * from instructor;
+---------------+-----------------+-----------------+-----------------+--------+--------+
| instructor_id | instructor_lname | instructor_fname | instructor_phone | salary | mailid |
+---------------+-----------------+-----------------+-----------------+--------+--------+
| 1             | j               | asha            | 7012888         | 27500  | NULL   |
| 2             | f               | ashna           | 3437888         | 27500  | NULL   |
| 3             | t               | sandeep         | 3437567         | 38500  | NULL   |
| 4             | n               | asifa           | 3437877         | 24200  | NULL   |
| 5             | v               | george          | 565477          | 44000  | NULL   |
+---------------+-----------------+-----------------+-----------------+--------+--------+
5 rows in set (0.00 sec)

mysql>
```

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

```
tion' at line 2
mysql> select * from section;
+------------+------------+-------------+--------------+------------+----------------+---------------+-------------+
| section_id | time_offerd | days_offered | section_room | class_size | number_enrolled | instructor_id | course_code |
+------------+------------+-------------+--------------+------------+----------------+---------------+-------------+
| 100        | 4          | m,w,th      | 600          | 35         | 10             | 1             | mca01       |
| 101        | 4          | m,tue,th    | 602          | 30         | 8              | 2             | mca03       |
| 301        | 4          | m,w         | 6            | 39         | 0              | 3             | mca260      |
| 302        | 4          | m,w,f       | 5            | 45         | 25             | 4             | 20mca10     |
| 303        | 4          | m,w,f       | 15           | 40         | 30             | 5             | 20mca15     |
+------------+------------+-------------+--------------+------------+----------------+---------------+-------------+
5 rows in set (0.01 sec)

mysql> DELETE FROM section WHERE secetion_id=302;
ERROR 1054 (42S22): Unknown column 'secetion_id' in 'where clause'
mysql> DELETE FROM section WHERE section_id=302;
Query OK, 1 row affected (0.01 sec)

mysql> select * from section;
+------------+------------+-------------+--------------+------------+----------------+---------------+-------------+
| section_id | time_offerd | days_offered | section_room | class_size | number_enrolled | instructor_id | course_code |
+------------+------------+-------------+--------------+------------+----------------+---------------+-------------+
| 100        | 4          | m,w,th      | 600          | 35         | 10             | 1             | mca01       |
| 101        | 4          | m,tue,th    | 602          | 30         | 8              | 2             | mca03       |
| 301        | 4          | m,w         | 6            | 39         | 0              | 3             | mca260      |
| 303        | 4          | m,w,f       | 15           | 40         | 30             | 5             | 20mca15     |
+------------+------------+-------------+--------------+------------+----------------+---------------+-------------+
4 rows in set (0.00 sec)

mysql>
```

15.Undo the previous delete operation


```
MySQL 8.0 Command Line Client
mysql> mysql rollback;
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 'mysql rollback' a
t line 1
mysql>  rollback;
Query OK, 0 rows affected (0.00 sec)

mysql>
```
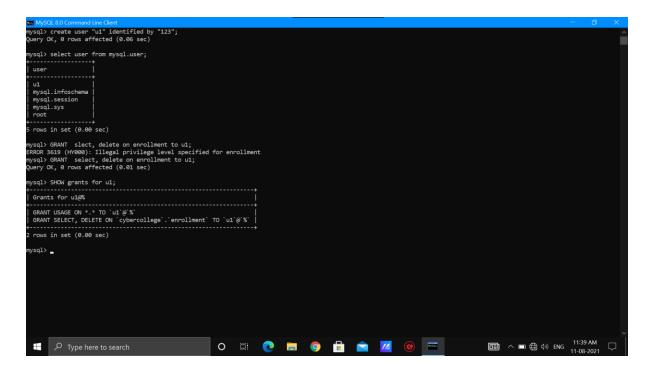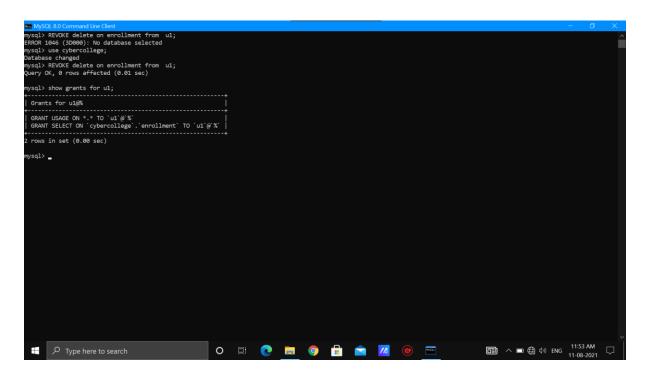
16. Save all the transactions to the database.

```
Query OK, 0 rows affected (0.00 sec)

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

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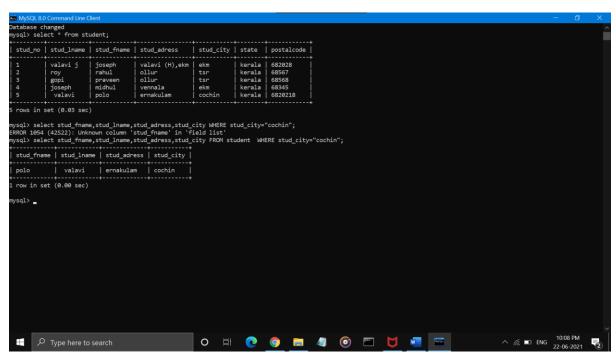
17.Grant the privilege to read and delete from the ENROLMENT table to the User U1.


```
MySQL 8.0 Command Line Client
mysql> create user "u1" identified by "123";
Query OK, 0 rows affected (0.06 sec)

mysql> select user from mysql.user;
+------------------+
| user             |
+------------------+
| u1               |
| mysql.infoschema |
| mysql.session    |
| mysql.sys        |
| root             |
+------------------+
5 rows in set (0.00 sec)

mysql> GRANT  slect, delete on enrollment to u1;
ERROR 3619 (HY000): Illegal privilege level specified for enrollment
mysql> GRANT  select, delete on enrollment to u1;
Query OK, 0 rows affected (0.01 sec)

mysql> SHOW grants for u1;
+-----------------------------------------------------------+
| Grants for u1@%                                           |
+-----------------------------------------------------------+
| GRANT USAGE ON *.* TO `u1`@`%`                            |
| GRANT SELECT, DELETE ON `cybercollege`.`enrollment` TO `u1`@`%` |
+-----------------------------------------------------------+
2 rows in set (0.00 sec)

mysql>
```

18. Revoke the delete privilege from U1

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

20. List the student details who has longest first name

21. Display the name and phone number of the instructors who is handling the coursesAOS and ADBMS.
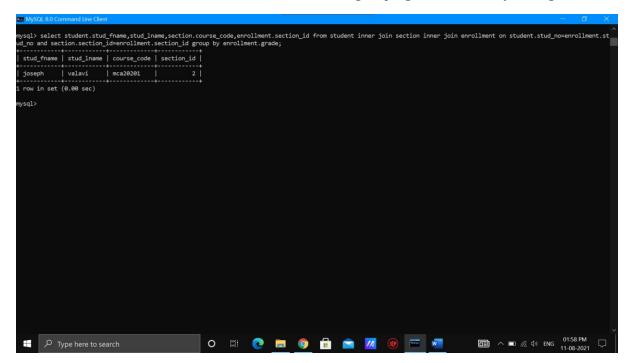
22. List the codes, titles, and credit hours for courses worth 4 hours. Order the results in descending order of course code.
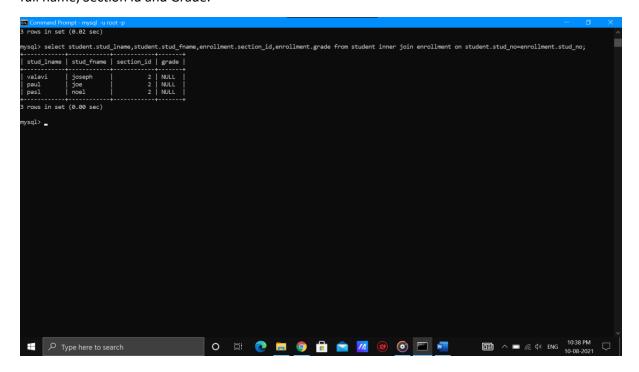

23. Display the names of the students in the descending order along with their phone number.

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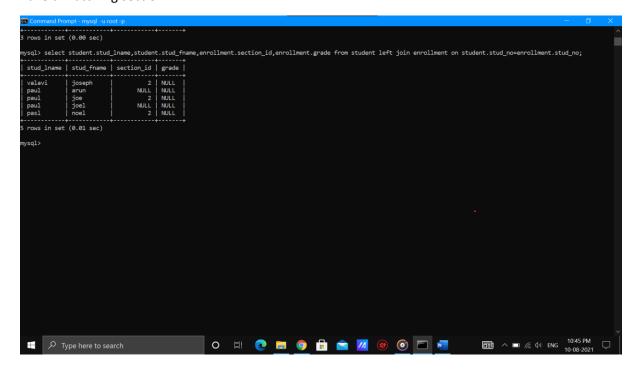

25. Use an inner join between the STUDENT and ENROLMENT tables for showing the
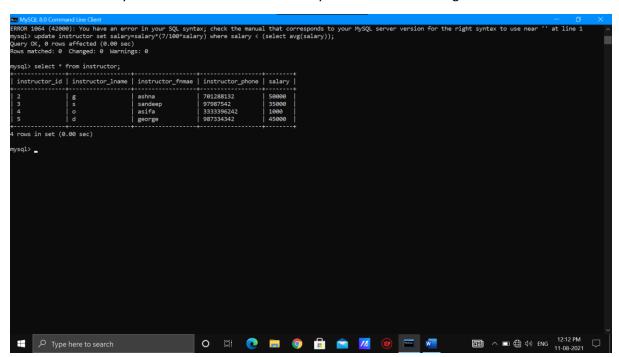
full name, Section id and Grade.

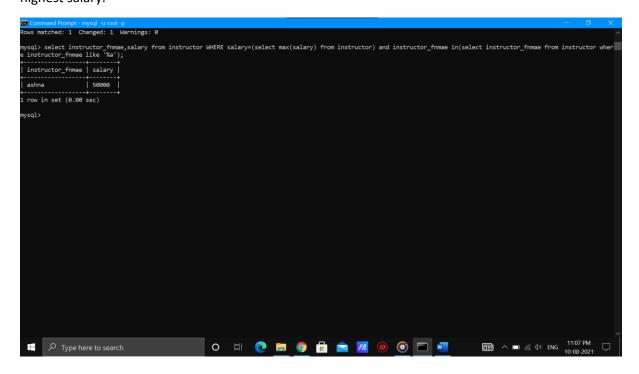26. Use an outer join between the STUDENT and ENROLMENT tables for showing the

full name, Section id and Grade. Include all the students regardless of whether they

have a matching section.

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

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

highest salary.

```
Rows matched: 1   Changed: 1   Warnings: 0

mysql> select instructor_fnmae,salary from instructor WHERE salary=(select max(salary) from instructor) and instructor_fnmae in(select instructor_fnmae from instructor wher
e instructor_fnmae like '%a');
+------------------+--------+
| instructor_fnmae | salary |
+------------------+--------+
| ashna            |  50000 |
+------------------+--------+
1 row in set (0.00 sec)

mysql>
```

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

```
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 3
mysql> select instructor_fnmae,salary from instructor WHERE salary in (select min(salary) from instructor);
+------------------+--------+
| instructor_fnmae | salary |
+------------------+--------+
| asifa            |   1000 |
+------------------+--------+
1 row in set (0.00 sec)

mysql>
```

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

```
Command Prompt - mysql  -u root -p

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 'slect * from stud
ent where stud_city=ekm and "kerala" or "banglore" and  "karnat' at line 1
mysql> select * from student where stud_city=ekm and "kerala" or "banglore" and  "karnataka" or stud_city in("ekm","kerla","banglore","karnataka");
ERROR 1054 (42S22): Unknown column 'ekm' in 'where clause'
mysql> select * from student where stud_city="ekm" and "kerala" or "banglore" and  "karnataka" or stud_city in("ekm","kerla","banglore","karnataka");
+---------+-----------+------------+--------------+-----------+--------+---------+
| stud_no | stud_lname | stud_fname | stud_adress | stud_city | state  | post    |
+---------+-----------+------------+--------------+-----------+--------+---------+
| 1       | valavi    | joseph     | valavi house | ekm       | kerala | 682028  |
| 2       | paul      | arun       | vj           | ekm       | kerala | 684508  |
| 5       | pasl      | noel       | spolo        | ekm       | kerala | 62538   |
+---------+-----------+------------+--------------+-----------+--------+---------+
3 rows in set, 2 warnings (0.00 sec)

mysql>
```