

ADBMS-LABCYCLE -1

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 database cybercollege;  
Query OK, 1 row affected (0.27 sec)  
  
mysql> use cybercollege;  
Database changed
```

```
mysql> desc student;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| stud_no        | varchar(9)    | NO   | PRI | NULL    |       |  
| stud_lname     | varchar(30)   | YES  |     | NULL    |       |  
| stud_fname     | varchar(20)   | YES  |     | NULL    |       |  
| stud_address   | varchar(50)   | YES  |     | NULL    |       |  
| stud_city      | varchar(30)   | YES  |     | NULL    |       |  
| state          | varchar(2)    | YES  |     | NULL    |       |  
| postalcode     | varchar(9)    | YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
7 rows in set (0.41 sec)  
  
mysql> desc instructor;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| instructor_id  | varchar(5)    | NO   | PRI | NULL    |       |  
| instructor_lname | varchar(30)   | YES  |     | NULL    |       |  
| instructor_fname | varchar(20)   | YES  |     | NULL    |       |  
| instructor_phone | varchar(8)    | YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
4 rows in set (0.01 sec)  
  
mysql> desc course;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| course_code    | varchar(6)    | NO   | PRI | NULL    |       |  
| course_title   | varchar(25)   | YES  |     | NULL    |       |  
| course_hour    | decimal(2,0)  | YES  |     | NULL    |       |  
| semester       | varchar(20)   | YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
4 rows in set (0.00 sec)
```

```
mysql> desc section;
```

Field	Type	Null	Key	Default	Extra
section_id	decimal(10,0)	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(5)	YES		NULL	
course_code	varchar(6)	YES		NULL	

```
8 rows in set (0.06 sec)
```



```
mysql> desc enrolment;
```

Field	Type	Null	Key	Default	Extra
stud_no	varchar(9)	NO	PRI	NULL	
section_id	varchar(7)	NO	PRI	NULL	
grade	varchar(2)	YES		NULL	

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

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

```
mysql> alter table student add country varchar(20) default 'India';
Query OK, 0 rows affected (2.01 sec)
Records: 0 Duplicates: 0 Warnings: 0
```



```
mysql> desc student;
```

Field	Type	Null	Key	Default	Extra
stud_no	varchar(9)	NO	PRI	NULL	
stud_lname	varchar(30)	YES		NULL	
stud_fname	varchar(20)	YES		NULL	
stud_address	varchar(50)	YES		NULL	
stud_city	varchar(30)	YES		NULL	
state	varchar(2)	YES		NULL	
postalcode	varchar(9)	YES		NULL	
country	varchar(20)	YES		India	

```
8 rows in set (0.24 sec)
```

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

```
mysql> alter table enrolment add constraint grade CHECK(grade='A' or grade='B' or grade='c');
Query OK, 0 rows affected (2.75 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc enrolment;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_no    | varchar(9) | NO   | PRI | NULL    |       |
| section_id | varchar(7) | NO   | PRI | NULL    |       |
| grade      | varchar(2) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.07 sec)
```

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 (0.39 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc enrolment;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_no    | varchar(9) | NO   | PRI | NULL    |       |
| section_id | varchar(7) | NO   | PRI | NULL    |       |
| grade      | varchar(2) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.05 sec)
```

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

```
mysql> alter table instructor add salary varchar(10);
Query OK, 0 rows affected (0.46 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc instructor;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| instructor_id  | varchar(5)    | NO   | PRI | NULL    |       |
| instructor_lname | varchar(30)   | YES  |     | NULL    |       |
| instructor_fname | varchar(20)   | YES  |     | NULL    |       |
| instructor_phone | varchar(8)    | YES  |     | NULL    |       |
| salary         | varchar(10)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.13 sec)
```

6. Drop the column Country from the STUDENT table.

```
mysql> desc student;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_no       | varchar(9)    | NO   | PRI | NULL    |       |
| stud_lname    | varchar(30)   | YES  |     | NULL    |       |
| stud_fname    | varchar(20)   | YES  |     | NULL    |       |
| stud_address  | varchar(50)   | YES  |     | NULL    |       |
| stud_city     | varchar(30)   | YES  |     | NULL    |       |
| state        | varchar(2)    | YES  |     | NULL    |       |
| postalcode    | varchar(9)    | YES  |     | NULL    |       |
| country       | varchar(20)   | YES  |     | India   |       |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.04 sec)

mysql> alter table student drop country;
Query OK, 0 rows affected (1.59 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_no       | varchar(9)    | NO   | PRI | NULL    |       |
| stud_lname    | varchar(30)   | YES  |     | NULL    |       |
| stud_fname    | varchar(20)   | YES  |     | NULL    |       |
| stud_address  | varchar(50)   | YES  |     | NULL    |       |
| stud_city     | varchar(30)   | YES  |     | NULL    |       |
| state        | varchar(2)    | YES  |     | NULL    |       |
| postalcode    | varchar(9)    | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.11 sec)
```

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

```
MariaDB [cybercollege]> 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,c
course c;
Query OK, 0 rows affected (0.103 sec)

MariaDB [cybercollege]> desc inst;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| instructor_id  | varchar(5)    | NO   |     | NULL    |       |
| instructor_lname | varchar(30)   | YES  |     | NULL    |       |
| instructor_phone | varchar(8)    | YES  |     | NULL    |       |
| course_code    | varchar(6)    | NO   |     | NULL    |       |
| course_title   | varchar(25)   | YES  |     | NULL    |       |
| course_hours   | decimal(2,0)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.132 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.

```
mysql> insert into student values(100,'jose','Anna','xyz','thrissur','k',680697);
Query OK, 1 row affected (0.20 sec)

mysql> insert into student values(101,'joy','Advin','xya','kochi','k',680698);
Query OK, 1 row affected (0.17 sec)

mysql> insert into student values(102,'josy','Joel','xyb','tvm','k',680693);
Query OK, 1 row affected (0.10 sec)

mysql> insert into student values(103,'joshy','Alen','xyc','thrissur','k',680697);
Query OK, 1 row affected (0.11 sec)

mysql> insert into student values(104,'joby','Jiya','xyd','thrissur','k',680697);
Query OK, 1 row affected (0.09 sec)

mysql> insert into student values(105,'john','Sincy','xye','thrissur','k',680697);
Query OK, 1 row affected (0.11 sec)

mysql> select * from student;
+-----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_lname | stud_fname | stud_address | stud_city | state | postalcode |
+-----+-----+-----+-----+-----+-----+-----+
| 100     | jose      | Anna      | xyz         | thrissur | k     | 680697     |
| 101     | joy       | Advin     | xya         | kochi    | k     | 680698     |
| 102     | josy      | Joel      | xyb         | tvn      | k     | 680693     |
| 103     | joshy     | Alen      | xyc         | thrissur | k     | 680697     |
| 104     | joby      | Jiya      | xyd         | thrissur | k     | 680697     |
| 105     | john      | Sincy     | xye         | thrissur | k     | 680697     |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

```
mysql> insert into instructor values(100,'jose','Asha',97454566,20000);
Query OK, 1 row affected (0.46 sec)

mysql> insert into instructor values(101,'AC','Ashna',97454566,30000);
Query OK, 1 row affected (0.11 sec)

mysql> insert into instructor values(102,'VP','Sandeep',97454511,35000);
Query OK, 1 row affected (0.08 sec)

mysql> insert into instructor values(103,'Thomas','Asifa',97433511,25000);
Query OK, 1 row affected (0.10 sec)

mysql> insert into instructor values(104,'KP','George',97433500,15000);
Query OK, 1 row affected (0.09 sec)

mysql> select * from instructor;
+-----+-----+-----+-----+-----+
| instructor_id | instructor_lname | instructor_fname | instructor_phone | salary |
+-----+-----+-----+-----+-----+
| 100           | jose             | Asha             | 97454566         | 20000  |
| 101           | AC               | Ashna            | 97454566         | 30000  |
| 102           | VP               | Sandeep          | 97454511         | 35000  |
| 103           | Thomas           | Asifa            | 97433511         | 25000  |
| 104           | KP               | George           | 97433500         | 15000  |
+-----+-----+-----+-----+-----+
5 rows in set (0.04 sec)
```

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.

```
mysql> insert into course values('20MCA1','MFC',9,1);
Query OK, 1 row affected (0.10 sec)

mysql> insert into course values('20MCA2','Digital',12,1);
Query OK, 1 row affected (0.10 sec)

mysql> insert into course values('20MCA3','ADS',10,1);
Query OK, 1 row affected (0.07 sec)

mysql> insert into course values('20MCA4','ASE',8,1);
Query OK, 1 row affected (0.14 sec)

mysql> insert into course values('20MCA5','ADBS',10,2);
Query OK, 1 row affected (0.11 sec)

mysql> insert into course values('20MCA6','ACN',12,2);
Query OK, 1 row affected (0.07 sec)

mysql> insert into course values('20MCA7','AI',7,2);
Query OK, 1 row affected (0.10 sec)

mysql> insert into course values('20MCA8','AOS',8,2);
Query OK, 1 row affected (0.13 sec)

mysql> insert into course values('20MCA26','Data mining',3,2);
ERROR 1406 (22001): Data too long for column 'course_code' at row 1
mysql> insert into course values('2MCA26','Data mining',3,2);
Query OK, 1 row affected (0.08 sec)

mysql> select * from course;
+-----+-----+-----+-----+
| course_code | course_title | course_hour | semester |
+-----+-----+-----+-----+
| 20MCA1      | MFC          | 9           | 1        |
| 20MCA2      | Digital      | 12          | 1        |
| 20MCA3      | ADS          | 10          | 1        |
| 20MCA4      | ASE          | 8           | 1        |
| 20MCA5      | ADBS         | 10          | 2        |
| 20MCA6      | ACN          | 12          | 2        |
| 20MCA7      | AI           | 7           | 2        |
| 20MCA8      | AOS          | 8           | 2        |
| 2MCA26      | Data mining  | 3           | 2        |
+-----+-----+-----+-----+
9 rows in set (0.06 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 enrol 5 students each to these courses.

```
mysql> insert into section values(301,2-4,'MW','BLGNG102',35,0,3,'2MCA26');
Query OK, 1 row affected (0.08 sec)
```

```
mysql> insert into section values(302,2,'MW','BLGNG103',35,0,1,'20MCA8');
Query OK, 1 row affected (0.11 sec)
```

```
mysql> insert into course values('20MCA9','OB',4,2);
Query OK, 1 row affected (0.46 sec)
```

```
mysql> insert into section values(303,2,'MW','BLGNG104',35,0,2,'20MCA9');
Query OK, 1 row affected (0.08 sec)
```

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

section_id	time_offered	days_offered	section_room	class_size	number_enrolled	instructor_id	course_code
301	-2	MW	BLGNG102	35	0	3	2MCA26
302	2	MW	BLGNG103	35	0	1	20MCA8
303	2	MW	BLGNG104	35	0	2	20MCA9

```
3 rows in set (0.04 sec)
```

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.

```
mysql> insert into enrolment values(105,301,' ');
Query OK, 1 row affected (0.10 sec)
```

```
mysql> insert into enrolment values(101,301,' ');
Query OK, 1 row affected (0.09 sec)
```

```
mysql> insert into enrolment values(102,301,' ');
Query OK, 1 row affected (0.08 sec)
```

```
mysql> select *from enrolment;
```

stud_no	section_id	grade
100	302	
100	303	
101	301	
101	302	
101	303	
102	301	
102	303	
103	302	
103	303	
104	302	
104	303	
105	301	
105	302	

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

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

```
mysql> update section set class_size=class_size+(class_size*10/100) where section_id=301;
Query OK, 1 row affected, 1 warning (0.23 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	MW	BLGNG102	39	0	3	2MCA26
302	2	MW	BLGNG103	35	0	1	20MCA8
303	2	MW	BLGNG104	35	0	2	20MCA9

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

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

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

instructor_id	instructor_lname	instructor_fname	instructor_phone	salary
100	jose	Asha	97454566	20000
101	AC	Ashna	97454566	30000
102	VP	Sandeep	97454511	35000
103	Thomas	Asifa	97433511	25000
104	KP	George	97433500	15000

```
5 rows in set (0.05 sec)

mysql> update instructor set salary=salary+(salary*10/100);
Query OK, 5 rows affected (0.11 sec)
Rows matched: 5 Changed: 5 Warnings: 0

mysql> select * from instructor;
```

instructor_id	instructor_lname	instructor_fname	instructor_phone	salary
100	jose	Asha	97454566	22000
101	AC	Ashna	97454566	33000
102	VP	Sandeep	97454511	38500
103	Thomas	Asifa	97433511	27500
104	KP	George	97433500	16500

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


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

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

section_id	time_offered	days_offered	section_room	class_size	number_enrolled	instructor_id	course_code
301	-2	MW	BLNGG102	39	0	3	2MCA26
302	2	MW	BLNGG103	35	0	1	20MCA8
303	2	MW	BLNGG104	35	0	2	20MCA9

```
3 rows in set (0.06 sec)
```

```
mysql> delete from section where section_id=302;
```

Query OK, 1 row affected (0.15 sec)

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

section_id	time_offered	days_offered	section_room	class_size	number_enrolled	instructor_id	course_code
301	-2	MW	BLNGG102	39	0	3	2MCA26
303	2	MW	BLNGG104	35	0	2	20MCA9

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

15. Undo the previous delete operation.

```
mysql> rollback;
```

Query OK, 0 rows affected (0.00 sec)

```
mysql> .
```

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 '12345678';
Query OK, 0 rows affected (0.52 sec)

mysql> select user from mysql.user;
+-----+
| user          |
+-----+
| U1            |
| mysql.infoschema |
| mysql.session  |
| mysql.sys      |
| root          |
| sincy         |
+-----+
6 rows in set (0.00 sec)

mysql> grant select,update on enrolment to U1;
Query OK, 0 rows affected (0.14 sec)

mysql> show grants for 'U1';
+-----+
| Grants for U1@% |
+-----+
| GRANT USAGE ON *.* TO `U1`@`%` |
| GRANT SELECT, UPDATE ON `cybercollege`.`enrolment` TO `U1`@`%` |
+-----+
2 rows in set (0.04 sec)
```

18.Revoke the delete privilege from U1

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

mysql> create user 'U1' identified by '12345678';
Query OK, 0 rows affected (0.52 sec)

mysql> select user from mysql.user;
+-----+
| user |
+-----+
| U1    |
| mysql.infoschema |
| mysql.session    |
| mysql.sys        |
| root             |
| sincy            |
+-----+
6 rows in set (0.00 sec)

mysql> grant select,update on enrolment to U1;
Query OK, 0 rows affected (0.14 sec)

mysql> show grants for 'U1';
+-----+
| Grants for U1@% |
+-----+
| GRANT USAGE ON *.* TO `U1`@`%` |
| GRANT SELECT, UPDATE ON `cybercollege`.`enrolment` TO `U1`@`%` |
+-----+
2 rows in set (0.04 sec)

mysql> revoke delete on enrolment from 'U1';
Query OK, 0 rows affected (0.12 sec)

mysql> show grant for 'U1';
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 'grant for 'U1'' at line 1
mysql> show grants for 'U1';
+-----+
| Grants for U1@% |
+-----+
| GRANT USAGE ON *.* TO `U1`@`%` |
| GRANT SELECT, UPDATE ON `cybercollege`.`enrolment` TO `U1`@`%` |
+-----+
2 rows in set (0.00 sec)
```

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

```
mysql> select * from student;
+-----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_lname | stud_fname | stud_address | stud_city | state | postalcode |
+-----+-----+-----+-----+-----+-----+-----+
| 100     | jose      | Anna      | xyz          | thrissur  | k     | 680697     |
| 101     | joy       | Advin     | xya          | kochi     | k     | 680698     |
| 102     | josy      | Joel      | xyb          | tvn       | k     | 680693     |
| 103     | joshy     | Alen      | xyc          | thrissur  | k     | 680697     |
| 104     | joby      | Jiya      | xyd          | thrissur  | k     | 680697     |
| 105     | john      | Sincy     | xye          | thrissur  | k     | 680697     |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.04 sec)

mysql> select stud_fname,stud_lname,stud_address from student where stud_city='kochi';
+-----+-----+-----+
| stud_fname | stud_lname | stud_address |
+-----+-----+-----+
| Advin      | joy       | xya          |
+-----+-----+-----+
1 row in set (0.00 sec)
```

20. List the student details who has longest first name .

```
mysql> select * from student;
+-----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_lname | stud_fname | stud_address | stud_city | state | postalcode |
+-----+-----+-----+-----+-----+-----+-----+
| 100     | jose      | Anna      | xyz         | thrissur | k     | 680697     |
| 101     | joy       | Advin     | xya         | kochi    | k     | 680698     |
| 102     | josy      | Joel      | xyb         | tvn      | k     | 680693     |
| 103     | joshy     | Alen      | xyc         | thrissur | k     | 680697     |
| 104     | joby      | Jiya      | xyd         | thrissur | k     | 680697     |
| 105     | john      | Sincy     | xye         | thrissur | k     | 680697     |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> select * from student where length(stud_fname)=(select max(length(stud_fname))from student);
+-----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_lname | stud_fname | stud_address | stud_city | state | postalcode |
+-----+-----+-----+-----+-----+-----+-----+
| 101     | joy       | Advin     | xya         | kochi    | k     | 680698     |
| 105     | john      | Sincy     | xye         | thrissur | k     | 680697     |
+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.40 sec)
```

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

```
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 and c.course_title='AOS' or 'ADBMS';
+-----+-----+
| instructor_fname | instructor_phone |
+-----+-----+
| Asifa           | 97433511        |
| Ashna           | 97454566        |
| Sandeep         | 97454511        |
+-----+-----+
3 rows in set, 4 warnings (0.00 sec)
```

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

```
mysql> select * from course;
```

course_code	course_title	course_hour	semester
20MCA1	MFC	9	1
20MCA2	Digital	12	1
20MCA3	ADS	10	1
20MCA4	ASE	8	1
20MCA5	ADBS	10	2
20MCA6	ACN	12	2
20MCA7	AI	7	2
20MCA8	AOS	8	2
20MCA9	OB	4	2
2MCA26	Data mining	3	2

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



```
mysql> select course_code,course_title,course_hour from course where course_hour=4 order by course_code desc;
```

course_code	course_title	course_hour
20MCA9	OB	4

```
1 row in set (0.00 sec)
```

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

```
mysql> select * from student;
```

stud_no	stud_lname	stud_fname	stud_address	stud_city	state	postalcode
100	jose	Anna	xyz	thrissur	k	680697
101	joy	Advin	xya	kochi	k	680698
102	josy	Joel	xyb	tvm	k	680693
103	joshi	Alen	xyc	thrissur	k	680697
104	joby	Jiya	xyd	thrissur	k	680697
105	john	Sincy	xye	thrissur	k	680697

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



```
mysql> select stud_fname,stud_lname from student order by stud_fname desc;
```

stud_fname	stud_lname
Sincy	john
Joel	josy
Jiya	joby
Anna	jose
Alen	joshi
Advin	joy

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

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

```
mysql> select student.stud_fname,student.stud_lname,section.course_code,enrolment.section_id from student
inner join section inner join enrolment on student.stud_no=enrolment.stud_no and section.section_id=enrolm
ent.section_id group by enrolment.grade;
+-----+-----+-----+-----+
| stud_fname | stud_lname | course_code | section_id |
+-----+-----+-----+-----+
| Anna      | jose      | 20MCA8      | 302        |
+-----+-----+-----+-----+
1 row in set (0.06 sec)
```

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

```
mysql> select student.stud_fname,student.stud_lname,enrolment.section_id,enrolment.grade from student in
ner join enrolment on student.stud_no=enrolment.stud_no;
+-----+-----+-----+-----+
| stud_fname | stud_lname | section_id | grade |
+-----+-----+-----+-----+
| Anna      | jose      | 302        |       |
| Anna      | jose      | 303        |       |
| Advin     | joy       | 301        |       |
| Advin     | joy       | 302        |       |
| Advin     | joy       | 303        |       |
| Joel      | josy      | 301        |       |
| Joel      | josy      | 303        |       |
| Alen      | joshy     | 302        |       |
| Alen      | joshy     | 303        |       |
| Jiya      | joby      | 302        |       |
| Jiya      | joby      | 303        |       |
| Sincy     | john      | 301        |       |
| Sincy     | john      | 302        |       |
+-----+-----+-----+-----+
13 rows in set (0.00 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 |
+-----+-----+-----+-----+
| Anna      | jose      | 302        |       |
| Anna      | jose      | 303        |       |
| Advin     | joy       | 301        |       |
| Advin     | joy       | 302        |       |
| Advin     | joy       | 303        |       |
| Joel      | josy      | 301        |       |
| Joel      | josy      | 303        |       |
| Alen      | joshy     | 302        |       |
| Alen      | joshy     | 303        |       |
| Jiya      | joby      | 302        |       |
| Jiya      | joby      | 303        |       |
| Sincy     | john      | 301        |       |
| Sincy     | john      | 302        |       |
+-----+-----+-----+-----+
13 rows in set (0.03 sec)
```

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

```
mysql> update instructor set salary=salary+(salary*7/100) where salary < (select avg(salary));
Query OK, 0 rows affected (0.05 sec)
Rows matched: 0  Changed: 0  Warnings: 0

mysql> select * from instructor;
+-----+-----+-----+-----+-----+
| instructor_id | instructor_lname | instructor_fname | instructor_phone | salary |
+-----+-----+-----+-----+-----+
| 100           | jose             | Asha             | 97454566         | 22000  |
| 101           | AC               | Ashna            | 97454566         | 33000  |
| 102           | VP              | Sandeep          | 97454511         | 38500  |
| 103           | Thomas          | Asifa            | 97433511         | 27500  |
| 104           | KP              | George           | 97433500         | 16500  |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

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

```
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 '%a');
+-----+-----+
| Instructor_fname | salary |
+-----+-----+
| Asha             | 26400  |
+-----+-----+
1 row in set (0.11 sec)
```

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

```
mysql> select * from instructor where salary=(select min(salary)from instructor);
+-----+-----+-----+-----+-----+
| instructor_id | instructor_lname | instructor_fname | instructor_phone | salary |
+-----+-----+-----+-----+-----+
| 104           | KP               | George          | 97433500        | 16500  |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

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

```
mysql> select * from student;
+-----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_lname | stud_fname | stud_address | stud_city | state | postalcode |
+-----+-----+-----+-----+-----+-----+-----+
| 100     | jose      | Anna      | xyz         | thrissur | k     | 680697     |
| 101     | joy       | Advin     | xya         | kochi    | k     | 680698     |
| 102     | josy      | Joel      | xyb         | tvn      | k     | 680693     |
| 103     | joshy     | Alen      | xyc         | thrissur | k     | 680697     |
| 104     | joby      | Jiya      | xyd         | thrissur | k     | 680697     |
| 105     | john      | Sincy     | xye         | thrissur | k     | 680697     |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> select * from student where stud_city='kerala' and 'kochi' or 'banglore' and 'karnataka' or stud_city in('kerala','kochi','banglore','karnataka');
+-----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_lname | stud_fname | stud_address | stud_city | state | postalcode |
+-----+-----+-----+-----+-----+-----+-----+
| 101     | joy       | Advin     | xya         | kochi    | k     | 680698     |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set, 2 warnings (0.00 sec)
```