

# ADBMS LAB

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.

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

```
MySQL 5.5 Command Line Client
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 'grade char(2))' at line 1
mysql> create table enrolment(stud_no varchar(9) not null references student(stud_no),section_id varchar(7) not null references section(section_id),primary key(stud_no,section_id),grade varchar(2));
Query OK, 0 rows affected (0.41 sec)

mysql> select * from student;
Empty set (0.00 sec)

mysql> desc student;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_no | varchar(9) | NO | PRI | | |
| stud_fname | varchar(30) | YES | | NULL | |
| stud_lname | varchar(30) | YES | | NULL | |
| stud_address | varchar(50) | YES | | NULL | |
| stud_city | varchar(30) | YES | | NULL | |
| state | varchar(2) | YES | | NULL | |
| postalCode | varchar(6) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.04 sec)

mysql> alter table student add country varchar(20) default 'India';
Query OK, 0 rows affected (0.15 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| stud_no | varchar(9) | NO | PRI | | |
| stud_fname | varchar(30) | YES | | NULL | |
| stud_lname | varchar(30) | YES | | NULL | |
| stud_address | varchar(50) | YES | | NULL | |
| stud_city | varchar(30) | YES | | NULL | |
| state | varchar(2) | YES | | NULL | |
| postalCode | varchar(6) | YES | | NULL | |
| country | varchar(20) | YES | | India | |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.05 sec)

mysql>
```

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

```
MySQL 5.5 Command Line Client
+-----+-----+-----+
| Asha | | 44900 |
+-----+-----+-----+
1 row in set (0.06 sec)

mysql> ALTER TABLE enrolment ADD CONSTRAINT grade CHECK (grade IN ('A', 'B', 'C'));
Query OK, 0 rows affected (0.12 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql>
```

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

Query: ALTER TABLE enrolment MODIFY grade VARCHAR(2);

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

```
MySQL 5.5 Command Line Client
mysql> use cybercollegebd;
Database changed
mysql> alter table enrolment modify grade varchar(2);
Query OK, 0 rows affected (0.22 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc instructor;
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 'desc instructor' at line 1
mysql> desc instructor;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| inst_id | varchar(5) | NO | PRI | NULL | |
| inst_fname | varchar(20) | YES | | NULL | |
| inst_lname | varchar(30) | YES | | NULL | |
| inst_phone | varchar(8) | YES | | NULL | |
+-----+
4 rows in set (0.22 sec)

mysql> alter table instructor add salary varchar(10);
Query OK, 0 rows affected (0.35 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc instructor;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| inst_id | varchar(5) | NO | PRI | NULL | |
| inst_fname | varchar(20) | YES | | NULL | |
| inst_lname | varchar(30) | YES | | NULL | |
| inst_phone | varchar(8) | YES | | NULL | |
| salary | varchar(10) | YES | | NULL | |
+-----+
5 rows in set (0.05 sec)

mysql>
```

#### 6. Drop the column Country from the STUDENT table.

```
+-----+
| inst_phone | varchar(8) | YES | | NULL | |
| salary | varchar(10) | YES | | NULL | |
+-----+
5 rows in set (0.05 sec)

mysql> alter table student drop country;
Query OK, 0 rows affected (0.27 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(30) | YES | | NULL | |
| state | varchar(2) | 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 5.5 Command Line Client
1 row in set, 1 warning (0.00 sec)

mysql> create view inst as select i.inst_id,i.inst_fname,i.inst_phone,c.course_title from instructor i join course c join section s where i.inst_id=s.inst_id and s.course_code=c.course_code;
Query OK, 0 rows affected (0.31 sec)

mysql> select * from inst;
+-----+-----+-----+-----+
| inst_id | inst_fname | inst_phone | course_title |
+-----+-----+-----+-----+
| 201     | Asha      | 98968564   | AOS          |
| 202     | Ashna     | 9895236    | AI           |
+-----+-----+-----+-----+
2 rows in set (0.18 sec)

mysql>
```

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 5.5 Command Line Client
mysql> insert into student values(101,'Junaid','Ansar','Moozhikkal','Areekode','Kerala',676693);
ERROR 1406 (22001): Data too long for column 'state' at row 1
mysql> insert into student values(101,'Junaid','Ansar','Moozhikkal','Areekode','K',676693);
Query OK, 1 row affected (0.10 sec)

mysql> insert into student values(102,'Midhun','Madhav','Palakkal','Machad','K',676693);
Query OK, 1 row affected (0.05 sec)

mysql> insert into student values(103,'Madonna','Thomas','Tharayil','choodel','K',676693);
Query OK, 1 row affected (0.05 sec)

mysql> insert into student values(104,'Sidharth','PS','Madathipara','Neeleshorm','K',676693);
Query OK, 1 row affected (0.13 sec)

mysql> insert into student values(105,'Shrishti','Clint','parayil','calicut','K',676693);
Query OK, 1 row affected (0.00 sec)

mysql> select* from student;
+-----+-----+-----+-----+-----+-----+
| stud_no | stud_fname | stud_lname | stud_address | stud_city | state | postalCode |
+-----+-----+-----+-----+-----+-----+
| 101     | Junaid    | Ansar      | Moozhikkal  | Areekode  | K     | 676693     |
| 102     | Midhun    | Madhav     | Palakkal    | Machad    | K     | 676693     |
| 103     | Madonna   | Thomas     | Tharayil    | choodel   | K     | 676693     |
| 104     | Sidharth  | PS         | Madathipara | Neeleshorm | K     | 676693     |
| 105     | Shrishti  | Clint      | parayil     | calicut   | K     | 676693     |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.08 sec)

mysql>
```

```

MySQL 5.5 Command Line Client
mysql> insert into instructor values(201,'Asha','K',98968564);
ERROR 1136 (21501): Column count doesn't match value count at row 1
mysql> desc instructor;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| inst_id | varchar(5) | NO | PRI | NULL | |
| inst_fname | varchar(20) | YES | | NULL | |
| inst_lname | varchar(30) | YES | | NULL | |
| inst_phone | varchar(8) | YES | | NULL | |
| salary | varchar(10) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
0 rows in set (0.05 sec)

mysql> insert into instructor values(201,'Asha',' ',98968564,20000);
Query OK, 1 row affected (0.07 sec)

mysql> insert into instructor values(202,'Ashna',' ',9895236,20500);
Query OK, 1 row affected (0.04 sec)

mysql> insert into instructor values(203,'Sandeep',' ',9965321,30000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into instructor values(204,'Asifa',' ',9526431,40000);
Query OK, 1 row affected (0.05 sec)

mysql> insert into instructor values(205,'George',' ',9512431,1000);
Query OK, 1 row affected (0.01 sec)

mysql> select* from instructor;
+-----+-----+-----+-----+-----+
| inst_id | inst_fname | inst_lname | inst_phone | salary |
+-----+-----+-----+-----+-----+
| 201 | Asha | | 98968564 | 20000 |
| 202 | Ashna | | 9895236 | 20500 |
| 203 | Sandeep | | 9965321 | 30000 |
| 204 | Asifa | | 9526431 | 40000 |
| 205 | George | | 9512431 | 1000 |
+-----+-----+-----+-----+-----+
0 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 hours

```

MySQL 5.5 Command Line Client
+-----+-----+-----+-----+
| course_hours | int(2) | YES | NULL |
| semester | varchar(20) | YES | NULL |
+-----+-----+-----+-----+
4 rows in set (0.05 sec)

mysql> insert into course values('20MCA101','MECS',4,1);
Query OK, 1 row affected (0.01 sec)

mysql> insert into course values('20MCA102','ADS',3,1);
Query OK, 1 row affected (0.01 sec)

mysql> insert into course values('20MCA103','DIGITAL',3,1);
Query OK, 1 row affected (0.01 sec)

mysql> insert into course values('20MCA104','ASE',5,1);
Query OK, 1 row affected (0.58 sec)

mysql> insert into course values('20MCA201','DBMS',4,2);
Query OK, 1 row affected (0.01 sec)

mysql> insert into course values('20MCA202','ACN',4,2);
Query OK, 1 row affected (0.00 sec)

mysql> insert into course values('20MCA203','AOS',2,2);
Query OK, 1 row affected (0.01 sec)

mysql> insert into course values('20MCA204','AI',2,2);
Query OK, 1 row affected (0.01 sec)

mysql> insert into course values('20MCA260','DATA MINING',4,2);
Query OK, 1 row affected (0.05 sec)

mysql> select* from COURSE;
+-----+-----+-----+-----+
| course_code | course_title | course_hours | semester |
+-----+-----+-----+-----+
| 20MCA101 | MECS | 4 | 1 |
| 20MCA102 | ADS | 3 | 1 |
| 20MCA103 | DIGITAL | 3 | 1 |
| 20MCA104 | ASE | 5 | 1 |
| 20MCA201 | DBMS | 4 | 2 |
| 20MCA202 | ACN | 4 | 2 |
| 20MCA203 | AOS | 2 | 2 |
| 20MCA204 | AI | 2 | 2 |
| 20MCA260 | DATA MINING | 4 | 2 |
+-----+-----+-----+-----+
9 rows in set (0.00 sec)

mysql>

```

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.

```
MySQL 5.5 Command Line Client
+-----+-----+-----+-----+-----+-----+-----+
| section_id | int(11) | NO | PRI | NULL | | |
| time_offered | varchar(10) | YES | | NULL | | |
| day_offered | varchar(10) | YES | | NULL | | |
| section_room | varchar(8) | YES | | NULL | | |
| class_size | int(3) | YES | | NULL | | |
| number_entrolled | int(3) | YES | | NULL | | |
| inst_id | varchar(5) | YES | | NULL | | |
| course_code | varchar(6) | YES | | NULL | | |
+-----+-----+-----+-----+-----+-----+-----+
0 rows in set (0.18 sec)

mysql> insert into section values(301,2-4,'MW','BLGNG102',35,0,3,'20MCA260');
ERROR 1406 (22001): Data too long for column 'course_code' at row 1
mysql> alter table SECTION modify course_code varchar(10);
Query OK, 0 rows affected (0.21 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> insert into section values(301,2-4,'MW','BLGNG102',35,0,3,'20MCA260');
Query OK, 1 row affected (0.01 sec)

mysql> insert into section values(302,2,'MW','BLGNG102',35,5,201,'20MCA203');
Query OK, 1 row affected (0.01 sec)

mysql> insert into section values(303,2,'MW','BLGNG102',35,5,202,'20MCA204');
Query OK, 1 row affected (0.01 sec)

mysql> select* from section;
+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | day_offered | section_room | class_size | number_entrolled | inst_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+
| 301 | 2-4 | MW | BLGNG102 | 35 | 0 | 3 | 20MCA260 |
| 302 | 2 | MW | BLGNG102 | 35 | 5 | 201 | 20MCA203 |
| 303 | 2 | MW | BLGNG102 | 35 | 5 | 202 | 20MCA204 |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> update section set time_offered=2.4 where section_id=301;
Query OK, 1 row affected (0.07 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select* from section;
+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | day_offered | section_room | class_size | number_entrolled | inst_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+
| 301 | 2.4 | MW | BLGNG102 | 35 | 0 | 3 | 20MCA260 |
| 302 | 2 | MW | BLGNG102 | 35 | 5 | 201 | 20MCA203 |
| 303 | 2 | MW | BLGNG102 | 35 | 5 | 202 | 20MCA204 |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 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 5.5 Command Line Client
+-----+-----+-----+
| stud_no | section_id | grade |
+-----+-----+-----+
| 101 | 201 | |
| 101 | 301 | |
| 102 | 301 | |
| 103 | 301 | |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

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

```
mysql> update section class_size=class_size+(class_size*10/100) where section_id=301;
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 '=class_size+(class_size*10/100) where section_id=301' at line 1
mysql> update section class_size=class_size+(class_size * 10/100) where section_id=301;
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 '=class_size+(class_size * 10/100) where section_id=301' at line 1
mysql> update section set class_size=class_size*(class_size * 10/100) where section_id=301;
Query OK, 1 row affected (0.08 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select* from section;
+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | day_offered | section_room | class_size | number_entrolled | inst_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+
| 301 | 2.4 | MW | BLG6102 | 39 | 0 | 3 | 20WCA260 |
| 302 | 2 | MW | BLG6102 | 35 | 5 | 201 | 20WCA203 |
| 303 | 2 | MW | BLG6102 | 35 | 5 | 202 | 20WCA204 |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

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

```
MySQL 5.5 Command Line Client
ERROR 1146 (42S02): Table 'cybercollegebd.instructor' doesn't exist
mysql> select* from instructor;
+-----+-----+-----+-----+-----+
| inst_id | inst_fname | inst_lname | inst_phone | salary |
+-----+-----+-----+-----+-----+
| 201 | Asha | | 98968564 | 20000 |
| 202 | Ashna | | 9895236 | 20500 |
| 203 | Sandeep | | 9965321 | 30000 |
| 204 | Asifa | | 9526431 | 40000 |
| 205 | George | | 9512431 | 1000 |
+-----+-----+-----+-----+-----+
5 rows in set (0.04 sec)

mysql> update instructor set salary=salary*(salary*10/100);
Query OK, 5 rows affected (0.07 sec)
Rows matched: 5 Changed: 5 Warnings: 0

mysql> select* from instructor;
+-----+-----+-----+-----+-----+
| inst_id | inst_fname | inst_lname | inst_phone | salary |
+-----+-----+-----+-----+-----+
| 201 | Asha | | 98968564 | 22000 |
| 202 | Ashna | | 9895236 | 22550 |
| 203 | Sandeep | | 9965321 | 33000 |
| 204 | Asifa | | 9526431 | 44000 |
| 205 | George | | 9512431 | 1100 |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select* from
```

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

```
mysql> select * from enrolment;
+----+-----+-----+
| stud_no | section_id | grade |
+----+-----+-----+
| 101     | 201        |       |
| 101     | 301        |       |
| 102     | 302        |       |
| 103     | 301        |       |
+----+-----+-----+
4 rows in set (0.00 sec)

mysql> select * from section;
+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | day_offered | section_room | class_size | number_entrolled | inst_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+
| 301        | 2.4          | MW          | BLGW6102    | 39         | 0                | 3       | 20WCA260    |
| 302        | 2            | MW          | BLGW6102    | 35         | 5                | 201     | 20WCA203    |
| 303        | 2            | MW          | BLGW6102    | 35         | 5                | 202     | 20WCA204    |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

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

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

mysql> delete e,s from enrolment as e,section as s where e.section_id=s.section_id and s.section_id='302';
Query OK, 2 rows affected (0.00 sec)

mysql> select * from section;
+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | day_offered | section_room | class_size | number_entrolled | inst_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+
| 301        | 2.4          | MW          | BLGW6102    | 39         | 0                | 3       | 20WCA260    |
| 303        | 2            | MW          | BLGW6102    | 35         | 5                | 202     | 20WCA204    |
+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from enrolment;
+----+-----+-----+
| stud_no | section_id | grade |
+----+-----+-----+
| 101     | 201        |       |
| 101     | 301        |       |
| 103     | 301        |       |
+----+-----+-----+
3 rows in set (0.00 sec)
```

## 15. Undo the previous delete operation

```
mysql> rollback to savepoint x;
Query OK, 0 rows affected (0.05 sec)

mysql> select * from enrolment;
+----+-----+-----+
| stud_no | section_id | grade |
+----+-----+-----+
| 101     | 201        |       |
| 101     | 301        |       |
| 102     | 302        |       |
| 103     | 301        |       |
+----+-----+-----+
4 rows in set (0.00 sec)

mysql> select * from section;
+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | day_offered | section_room | class_size | number_entrolled | inst_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+
| 301        | 2.4          | MW          | BLGW6102    | 39         | 0                | 3       | 20WCA260    |
| 302        | 2            | MW          | BLGW6102    | 35         | 5                | 201     | 20WCA203    |
| 303        | 2            | MW          | BLGW6102    | 35         | 5                | 202     | 20WCA204    |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (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 5.5 Command Line Client
mysql> CREATE USER 'U1' IDENTIFIED BY '12345678';
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT user FROM mysql.user;
+-----+
| user |
+-----+
| U1    |
| U1@localhost |
| root  |
+-----+
3 rows in set (0.00 sec)

mysql> GRANT SELECT, UPDATE ON enrolment TO U1;
Query OK, 0 rows affected (0.12 sec)

mysql> SHOW GRANTS FOR 'U1';
+-----+
| Grants for U1@% |
+-----+
| GRANT USAGE ON *.* TO 'U1'@'%' IDENTIFIED BY PASSWORD '**84AAC12F54AB666ECFC2A83C676908C8BB381B1' |
| GRANT SELECT, UPDATE ON `cybercollegebd`.`enrolment` TO 'U1'@'%' |
+-----+
2 rows in set (0.04 sec)

mysql>
```

## 18. Revoke the delete privilege from U1

```
MySQL 5.5 Command Line Client
ERROR 1306 (HY000): Operation CREATE USER failed for 'U1'@'%'
mysql> SELECT user FROM mysql.user;
+-----+
| user |
+-----+
| U1    |
| U1@localhost |
| root  |
+-----+
3 rows in set (0.00 sec)

mysql> SHOW GRANTS FOR 'U1';
+-----+
| Grants for U1@% |
+-----+
| GRANT USAGE ON *.* TO 'U1'@'%' IDENTIFIED BY PASSWORD '**84AAC12F54AB666ECFC2A83C676908C8BB381B1' |
| GRANT SELECT, DELETE ON `cybercollegebd`.`enrolment` TO 'U1'@'%' |
+-----+
2 rows in set (0.00 sec)

mysql> REVOKE delete ON enrolment FROM 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 '**84AAC12F54AB666ECFC2A83C676908C8BB381B1' |
| GRANT SELECT ON `cybercollegebd`.`enrolment` TO 'U1'@'%' |
+-----+
2 rows in set (0.00 sec)

mysql>
```



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

```
MySQL 5.5 Command Line Client
ERROR 1093 (HY000): You can't specify target table 'instructor' for update in FROM clause
mysql> select * from student;
+----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_fname | stud_lname | stud_address | stud_city | state | postalCode |
+----+-----+-----+-----+-----+-----+-----+
| 101 | Junaïd | Ansar | Moozhikkal | kerala | K | 676693 |
| 102 | Midhun | Madhav | Palakkal | Machad | K | 676693 |
| 103 | Madonna | Thomas | Tharayil | choodel | K | 676693 |
| 104 | Sidharth | PS | Madathipara | kochi | K | 676693 |
| 105 | Shrishti | Clint | parayil | calicut | K | 676693 |
+----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.42 sec)

mysql> select stud_fname,stud_lname,stud_address from student where stud_city='kochi';
+-----+-----+-----+
| stud_fname | stud_lname | stud_address |
+-----+-----+-----+
| Sidharth | PS | Madathipara |
+-----+-----+-----+
1 row in set (0.02 sec)

mysql>
```

20. List the student details who has longest first name

```
MySQL 5.5 Command Line Client
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> select * from student;
ERROR 1046 (3D000): No database selected
mysql> use cybercollegebd;
Database changed
mysql> select * from student;
+----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_fname | stud_lname | stud_address | stud_city | state | postalCode |
+----+-----+-----+-----+-----+-----+-----+
| 101 | Junaïd | Ansar | Moozhikkal | Areekode | K | 676693 |
| 102 | Midhun | Madhav | Palakkal | Machad | K | 676693 |
| 103 | Madonna | Thomas | Tharayil | choodel | K | 676693 |
| 104 | Sidharth | PS | Madathipara | Neeleshorm | K | 676693 |
| 105 | Shrishti | Clint | parayil | calicut | K | 676693 |
+----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.20 sec)

mysql> select * from student where length(stud_fname)=(select max(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 'from 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 |
+----+-----+-----+-----+-----+-----+-----+
| 104 | Sidharth | PS | Madathipara | Neeleshorm | K | 676693 |
| 105 | Shrishti | Clint | parayil | calicut | K | 676693 |
+----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql>
```

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

AOS and ADBMS.

```
MySQL 5.5 Command Line Client
1 row in set, 1 warning (0.09 sec)

mysql> select *from instructor;
+-----+-----+-----+-----+-----+
| inst_id | inst_fname | inst_lname | inst_phone | salary |
+-----+-----+-----+-----+-----+
| 201     | Asha       |             | 98968564   | 22000   |
| 202     | Ashma      |             | 9895236    | 22550   |
| 203     | Sandeep    |             | 9965321    | 33000   |
| 204     | Asifa      |             | 9526431    | 44000   |
| 205     | George     |             | 9512431    | 1100    |
+-----+-----+-----+-----+-----+
3 rows in set (0.04 sec)

mysql> select *from section;
+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | day_offered | section_room | class_size | number_entrolled | inst_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+
| 301        | 2.4          | MW          | BLWG102      | 39         | 0                | 3       | 20MCA260    |
| 302        | 2            | MW          | BLWG102      | 35         | 5                | 201     | 20MCA260    |
| 303        | 2            | MW          | BLWG102      | 35         | 5                | 202     | 20MCA260    |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select *from course;
+-----+-----+-----+-----+
| course_code | course_title | course_hours | semester |
+-----+-----+-----+-----+
| 20MCA101    | MFCS         | 4            | 1         |
| 20MCA102    | AOS          | 3            | 1         |
| 20MCA103    | DIGITAL      | 3            | 1         |
| 20MCA104    | ASE          | 5            | 1         |
| 20MCA201    | DBMS         | 4            | 2         |
| 20MCA202    | ACN          | 4            | 2         |
| 20MCA203    | AOS          | 2            | 2         |
| 20MCA204    | AI           | 2            | 2         |
| 20MCA205    | OB           | 2            | 2         |
| 20MCA260    | DATA MINING | 4            | 2         |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

mysql> select inst_fname,inst_phone from instructor i join course c join section s where i.inst_id=s.inst_id and s.course_code=c.course_code and c.course_title='AOS' or 'DBMS';
+-----+-----+
| inst_fname | inst_phone |
+-----+-----+
| Asha       | 98968564   |
+-----+-----+
1 row in set, 1 warning (0.00 sec)

mysql>
```

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

```
3 rows in set (0.09 sec)

mysql> select in.inst_fname,in.inst_phone as instructor,co.course_title as course from instructor in, course co where course_title='AOS' and 'DBMS';
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 'in, course co where course_title='AOS' and 'DBMS'' at line 1
mysql> select in.inst_fname,in.inst_phone as instructor,co.course_title as course from instructor in, course co where course_title='AOS' and 'DBMS';
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 'in, course co where course_title='AOS' and 'DBMS'' at line 1
mysql> select in.inst_fname,in.inst_phone as instructor,co.course_title as course from instructor in, course co where course_title='AOS' and 'DBMS';
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 'in, course co where course_title='AOS' and 'DBMS'' at line 1
mysql> select n.inst_fname,n.inst_phone as instructor,co.course_title as course from instructor n, course co where course_title='AOS' and 'DBMS';
Empty set, 1 warning (0.17 sec)

mysql> select n.inst_fname,n.inst_phone as instructor,co.course_title as course from instructor n, course co where course_title='AOS' and 'DBMS';
Empty set, 1 warning (0.00 sec)

mysql> select course_code,course_title,course_hours from course where course_hours=4 order by desc=course_code;
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 'desc=course_code' at line 1
mysql> select course_code,course_title,course_hours from course where course_hours=4 order by desc course_code;
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 'desc course_code' at line 1
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 |
+-----+-----+-----+
| 20MCA260    | DATA MINING | 4            |
| 20MCA202    | ACN          | 4            |
| 20MCA201    | DBMS         | 4            |
| 20MCA101    | MFCS         | 4            |
+-----+-----+-----+
4 rows in set (0.17 sec)

mysql>
```

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

```

4 rows in set (0.17 sec)

mysql> select * from student;
+----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_fname | stud_lname | stud_address | stud_city | state | postalCode |
+----+-----+-----+-----+-----+-----+-----+
| 101 | Junaid | Ansar | Moozhikkal | Areekode | K | 676693 |
| 102 | Midhun | Madhav | Palakkal | Machad | K | 676693 |
| 103 | Madonna | Thomas | Tharayil | choodel | K | 676693 |
| 104 | Sidharth | PS | Madathipara | Neeleshom | K | 676693 |
| 105 | Shrishti | Clint | parayil | calicut | K | 676693 |
+----+-----+-----+-----+-----+-----+-----+

5 rows in set (0.59 sec)

mysql> select stud_fname,stud_lname order by stud_fname desc;
ERROR 1054 (42S22): Unknown column 'stud_fname' in 'field list'
mysql> select stud_fname,stud_lname order by stud_fname desc;
ERROR 1054 (42S22): Unknown column 'stud_fname' in 'field list'
mysql> select stud_fname,stud_lname from student order by stud_fname desc;
+-----+-----+
| stud_fname | stud_lname |
+-----+-----+
| Sidharth | PS |
| Shrishti | Clint |
| Midhun | Madhav |
| Madonna | Thomas |
| Junaid | Ansar |
+-----+-----+

5 rows in set (0.41 sec)

mysql>

```

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

```

MySQL 5.5 Command Line Client

1 row in set (0.41 sec)

mysql> select *from student;
+----+-----+-----+-----+-----+-----+-----+
| stud_no | stud_fname | stud_lname | stud_address | stud_city | state | postalCode |
+----+-----+-----+-----+-----+-----+-----+
| 101 | Junaid | Ansar | Moozhikkal | kerala | K | 676693 |
| 102 | Midhun | Madhav | Palakkal | Machad | k | 676596 |
| 103 | Madonna | Thomas | Tharayil | choodel | K | 676693 |
| 104 | Sidharth | PS | Madathipara | kochi | K | 676693 |
| 105 | Shrishti | Clint | parayil | calicut | K | 676693 |
+----+-----+-----+-----+-----+-----+-----+

5 rows in set (0.00 sec)

mysql> select *from enrolment;
+----+-----+-----+
| stud_no | section_id | grade |
+----+-----+-----+
| 101 | 201 | |
| 101 | 301 | |
| 102 | 301 | |
| 103 | 301 | |
+----+-----+-----+

4 rows in set (0.00 sec)

mysql> select *from section;
+-----+-----+-----+-----+-----+-----+-----+
| section_id | time_offered | day_offered | section_room | class_size | number_entrolled | inst_id | course_code |
+-----+-----+-----+-----+-----+-----+-----+
| 301 | 2.4 | Mw | BLGK102 | 30 | 0 | 3 | 20MCA260 |
| 302 | 2 | Mw | BLGK102 | 35 | 5 | 201 | 20MCA203 |
| 303 | 2 | Mw | BLGK102 | 35 | 5 | 202 | 20MCA204 |
+-----+-----+-----+-----+-----+-----+-----+

3 rows in set (0.00 sec)

mysql> select student.stud_fname,student.stud_lname,section.course_code,entrolment.section_id from student inner join section inner join entrolment on student.stud_no=entrolment.stud_no and section.section_id=entrolment.section_id group by entrolment.grade ;
+-----+-----+-----+-----+
| stud_fname | stud_lname | course_code | section_id |
+-----+-----+-----+-----+
| Junaid | Ansar | 20MCA260 | 301 |
+-----+-----+-----+-----+

1 row in set (0.00 sec)

mysql>

```

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

```
MySQL 5.5 Command Line Client
mysql> select s.stud_fname, s.stud_lname as student, co.course_code as course, se.section_id as section from student s, course co, section se group by se.grade;
ERROR 1054 (42S22): Unknown column 'se.grade' in 'group statement'
mysql> select s.stud_fname, s.stud_lname as student, co.course_code as course, se.section_id as section from student s, course co, section se group by grade;
ERROR 1054 (42S22): Unknown column 'grade' in 'group statement'
mysql> select s.stud_fname, s.stud_lname as student, co.course_code as course, se.section_id, se.grade as section from student s, course co, section se group by grade;
ERROR 1054 (42S22): Unknown column 'se.grade' in 'field list'
mysql> select s.stud_fname, s.stud_lname as student, co.course_code as course, se.section_id as section from student s, course co, section se group by enrolment.grade;
ERROR 1054 (42S22): Unknown column 'enrolment.grade' in 'group statement'
mysql> select student.stud_fname, student.stud_lname, enrolment.section_id, enrolment.grade from enrolment inner join student on student.stud_id=enrolment.stud_id;
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 'enrolment inner join student on student.stud_id=enrolme
ent.stud_id' at line 1
mysql> select student.stud_fname, student.stud_lname, enrolment.section_id, enrolment.grade from enrolment inner join student on student.stud_no=enrolment.stud_no;
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 'enrolment inner join student on student.stud_no=enrolme
ent.stud_no' at line 1
mysql> select student.stud_fname, student.stud_lname, enrolment.section_id, enrolment.grade from student inner join student on student.stud_no=enrolment.stud_no;
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 inner join student on student.stud_no=enrolment
.stud_no' at line 1
mysql> select student.stud_fname, student.stud_lname, enrolment.section_id, enrolment.grade from student inner join instructor on student.stud_no=enrolment.stud_no;
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 inner join instructor on student.stud_no=enrolme
ent.stud_no' at line 1
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;
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 inner join enrolment on student.stud_no=enrolme
ent.stud_no' at line 1
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;
ERROR 1054 (42S22): Unknown column 'student.lname' in 'field list'
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;
ERROR 1054 (42S22): Unknown column 'stud.lname' in 'field list'
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;
mysql>
+-----+-----+-----+-----+
| stud_fname | stud_lname | section_id | grade |
+-----+-----+-----+-----+
| Junaid     | Ansar      | 201        |       |
| Junaid     | Ansar      | 301        |       |
| Midhun     | Madhav     | 301        |       |
| Madonna    | Thomas     | 301        |       |
+-----+-----+-----+-----+
4 rows in set (0.09 sec)

mysql>
```

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

```
MySQL 5.5 Command Line Client
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;
mysql>
+-----+-----+-----+-----+
| stud_fname | stud_lname | section_id | grade |
+-----+-----+-----+-----+
| Junaid     | Ansar      | 201        |       |
| Junaid     | Ansar      | 301        |       |
| Midhun     | Madhav     | 301        |       |
| Madonna    | Thomas     | 301        |       |
| Sidharth   | PS         | NULL       | NULL  |
| Shrishti   | Clint      | NULL       | NULL  |
+-----+-----+-----+-----+
6 rows in set (0.55 sec)

mysql>
```

section.

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

```
MySQL 5.5 Command Line Client
cybercollege
cybercollegebd
mysql
performance_schema
plsql
test
10 rows in set (0.13 sec)

mysql> use cybercollegebd;
Database changed
mysql> select * from instructor;
+----+-----+-----+-----+-----+
| inst_id | inst_fname | inst_lname | inst_phone | salary |
+----+-----+-----+-----+-----+
| 201 | Asha | | 98968564 | 22000 |
| 202 | Ashna | | 9895236 | 22550 |
| 203 | Sandeep | | 9965321 | 33000 |
| 204 | Asifa | | 9526431 | 44000 |
| 205 | George | | 9512431 | 1100 |
+----+-----+-----+-----+-----+
5 rows in set (0.35 sec)

mysql> update instructor set salary=salary*(salary<(select avg(salary)))
ERROR 1305 (42000): FUNCTION cybercollegebd.salary does not exist
mysql> update instructor set salary=salary*(salary<(select avg(salary)))
Query OK, 0 rows affected (0.09 sec)
Rows matched: 0 Changed: 0 Warnings: 0

mysql> select * from instructor;
+----+-----+-----+-----+-----+
| inst_id | inst_fname | inst_lname | inst_phone | salary |
+----+-----+-----+-----+-----+
| 201 | Asha | | 98968564 | 22000 |
| 202 | Ashna | | 9895236 | 22550 |
| 203 | Sandeep | | 9965321 | 33000 |
| 204 | Asifa | | 9526431 | 44000 |
| 205 | George | | 9512431 | 1100 |
+----+-----+-----+-----+-----+
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 5.5 Command Line Client
1 row in set (0.36 sec)

mysql> select * from instructor;
+----+-----+-----+-----+-----+
| inst_id | inst_fname | inst_lname | inst_phone | salary |
+----+-----+-----+-----+-----+
| 201 | Asha | | 98968564 | 22000 |
| 202 | Ashna | | 9895236 | 22550 |
| 203 | Sandeep | | 9965321 | 33000 |
| 204 | Asifa | | 9526431 | 44000 |
| 205 | George | | 9512431 | 1100 |
+----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select inst_fname,salary from instructor where salary=(select max(salary) from instructor)and inst_fname in(select inst_fname from instructor where inst_fname like 'Aa');
+-----+-----+
| inst_fname | salary |
+-----+-----+
| Asifa | 44000 |
+-----+-----+
1 row in set (0.00 sec)

mysql>
```

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

```
MySQL 5.5 Command Line Client

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> use cybercollegebd;
Database changed
mysql> select * from instructor;
+----+-----+-----+-----+-----+
| inst_id | inst_fname | inst_lname | inst_phone | salary |
+----+-----+-----+-----+-----+
| 201 | Ache | | 98960564 | 22000 |
| 202 | Ashna | | 9895236 | 22550 |
| 203 | Sandeep | | 9965321 | 33000 |
| 204 | Asifa | | 9526431 | 44000 |
| 205 | George | | 9512431 | 1100 |
+----+-----+-----+-----+-----+
5 rows in set (0.24 sec)

mysql> select * from instructor where salary=(select min(salary)from instructor);
+----+-----+-----+-----+-----+
| inst_id | inst_fname | inst_lname | inst_phone | salary |
+----+-----+-----+-----+-----+
| 205 | George | | 9512431 | 1100 |
+----+-----+-----+-----+-----+
1 row in set (0.10 sec)

mysql>
```

salary.

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

```
MySQL 5.5 Command Line Client

2 rows in set, 2 warnings (0.00 sec)

mysql> select * from student;
+----+-----+-----+-----+-----+-----+
| stud_no | stud_fname | stud_lname | stud_address | stud_city | state | postalCode |
+----+-----+-----+-----+-----+-----+
| 101 | Junaid | Ansar | Moozhikkal | kerala | K | 676693 |
| 102 | Midhun | Madhav | Palakkal | Machad | K | 676693 |
| 103 | Madonna | Thomas | Tharayil | choodel | K | 676693 |
| 104 | Sidharth | PS | Madathipara | kochi | K | 676693 |
| 105 | Shrishti | Clint | parayil | calicut | K | 676693 |
+----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select * from student where stud_city='kochi' and 'kerala' or 'bangalor' and 'karnadaka' or stud_city in('kochi','kerala','bagalor','karnadaka') ;
+----+-----+-----+-----+-----+-----+
| stud_no | stud_fname | stud_lname | stud_address | stud_city | state | postalCode |
+----+-----+-----+-----+-----+-----+
| 101 | Junaid | Ansar | Moozhikkal | kerala | K | 676693 |
| 104 | Sidharth | PS | Madathipara | kochi | K | 676693 |
+----+-----+-----+-----+-----+-----+
2 rows in set, 2 warnings (0.00 sec)

mysql>
```