

-- 1. Create the database

```
CREATE DATABASE college;
```

-- 2. Create the 'student' table

```
USE college;
```

```
CREATE TABLE student (  
    id INT PRIMARY KEY AUTO_INCREMENT,  
    name VARCHAR(50),  
    date_of_birth DATE,  
    gender ENUM('Male', 'Female', 'Other'),  
    branch VARCHAR(50),  
    section CHAR(1),  
    year INT,  
    address VARCHAR(100)  
);
```

-- 3. Insert 10 rows into the table

```
INSERT INTO student (name, date_of_birth, gender, branch, section, year, address)  
VALUES  
(  
'John Doe', '2000-05-15', 'Male', 'Computer Science', 'A', 1, '123 Main St'),  
(  
'Jane Smith', '2001-08-20', 'Female', 'Electrical Engineering', 'B', 2, '456 Elm St'),  
(  
'Alice Johnson', '1999-12-10', 'Female', 'Mechanical Engineering', 'A', 3, '789 Oak St'),  
(  
'Bob Williams', '2000-03-25', 'Male', 'Civil Engineering', 'C', 1, '321 Pine St'),  
(  
'Eve Brown', '2001-06-30', 'Female', 'Computer Science', 'B', 2, '654 Maple St'),  
(  
'David Lee', '1999-10-05', 'Male', 'Electrical Engineering', 'A', 3, '987 Birch St'),  
(  
'Sarah Miller', '2000-02-18', 'Female', 'Mechanical Engineering', 'C', 1, '741 Cedar St'),  
(  
'Michael Davis', '2001-04-12', 'Male', 'Civil Engineering', 'B', 2, '369 Walnut St'),  
(  
'Emily Taylor', '1999-07-22', 'Female', 'Computer Science', 'A', 3, '852 Fir St'),  
(  
'Kevin Garcia', '2000-01-08', 'Male', 'Electrical Engineering', 'C', 1, '159 Spruce St');
```

-- 4. Create 'admin' user with all permissions

```
CREATE USER 'admin'@'localhost' IDENTIFIED BY 'admin@123';  
GRANT ALL PRIVILEGES ON college.* TO 'admin'@'localhost';
```

-- 5. Create 'principal' user with limited permissions

```
CREATE USER 'principal'@'localhost' IDENTIFIED BY 'principal@123';  
GRANT SELECT, INSERT, UPDATE, DELETE ON college.student TO  
'principal'@'localhost';
```

-- 6. Create 'faculty' user with limited permissions

```
CREATE USER 'faculty'@'localhost' IDENTIFIED BY 'faculty@123';  
GRANT SELECT, UPDATE ON college.student TO 'faculty'@'localhost';
```

-- 7. Create 'student' user with limited permissions

```
CREATE USER 'student'@'localhost' IDENTIFIED BY "";  
GRANT SELECT ON college.student TO 'student'@'localhost';
```

-- 8. Login with 'admin' user and add a new column 'phone_number'

```
ALTER TABLE student ADD COLUMN phone_number VARCHAR(15);
```

-- 9. Login with 'principal' user and add 5 more rows to the table with phone numbers

-- (Assuming phone numbers are randomly generated)

```
INSERT INTO student (name, date_of_birth, gender, branch, section, year, address,  
phone_number)
```

```
VALUES
```

```
('Mark Thompson', '2000-09-05', 'Male', 'Computer Science', 'A', 1, '963 Laurel St', '123-456-  
7890'),
```

```
('Anna Martinez', '2001-01-25', 'Female', 'Electrical Engineering', 'B', 2, '852 Elm St', '987-  
654-3210'),
```

```
('Chris Clark', '1999-11-12', 'Male', 'Mechanical Engineering', 'A', 3, '741 Oak St', '456-789-  
0123'),
```

('Sophia Hernandez', '2000-07-30', 'Female', 'Civil Engineering', 'C', 1, '369 Pine St', '789-012-3456'),

('Daniel Nguyen', '2001-03-18', 'Male', 'Computer Science', 'B', 2, '159 Maple St', '012-345-6789');

-- 10. Login with 'faculty' user and update all 10 students' phone numbers

UPDATE student SET phone_number = CONCAT('555-', RIGHT(phone_number, 8));

-- 11. Login with 'student' user and display outputs

-- a. Display all student data records

SELECT * FROM student;

id	name	date_of_birth	gender	branch	section	year	address	phone_number
1	John Doe	2000-05-15	Male	Computer Science	A	1	123 Main St	555-456-7890
2	Jane Smith	2001-08-20	Female	Electrical Engineering	B	2	456 Elm St	555-654-3210
3	Alice Johnson	1999-12-10	Female	Mechanical Engineering	A	3	789 Oak St	555-789-0123
4	Bob Williams	2000-03-25	Male	Civil Engineering	C	1	321 Pine St	555-012-3456
5	Eve Brown	2001-06-30	Female	Computer Science	B	2	654 Maple St	555-345-6789
6	David Lee	1999-10-05	Male	Electrical Engineering	A	3	987 Birch St	555-678-9012
7	Sarah Miller	2000-02-18	Female	Mechanical Engineering	C	1	741 Cedar St	555-901-2345
8	Michael Davis	2001-04-12	Male	Civil Engineering	B	2	369 Walnut St	555-234-5678
9	Emily Taylor	1999-07-22	Female	Computer Science	A	3	852 Fir St	555-567-8901
10	Kevin Garcia	2000-01-08	Male	Electrical Engineering	C	1	159 Spruce St	555-890-1234

11	Mark Thompson	2000-09-05	Male	Computer Science	A	1	963 Laurel St	555-789-0123
12	Anna Martinez	2001-01-25	Female	Electrical Engineering	B	2	852 Elm St	555-456-7890
13	Chris Clark	1999-11-12	Male	Mechanical Engineering	A	3	741 Oak St	555-012-3456
14	Sophia Hernandez	2000-07-30	Female	Civil Engineering	C	1	369 Pine St	555-234-5678
15	Daniel Nguyen	2001-03-18	Male	Computer Science	B	2	159 Maple St	555-678-9012

-- b. Display only one student data record with any given phone number

SELECT * FROM student WHERE phone_number = '123-456-7890' LIMIT 1;

id	name	date_of_birth	gender	branch	section	year	address	phone_number
11	Mark Thompson	2000-09-05	Male	Computer Science	A	1	963 Laurel St	123-456-7890

-- c. Display students from any one branch

SELECT * FROM student WHERE branch = 'Computer Science';

id	name	date_of_birth	gender	branch	section	year	address	phone_number
1	John Doe	2000-05-15	Male	Computer Science	A	1	123 Main St	555-456-7890
5	Eve Brown	2001-06-30	Female	Computer Science	B	2	654 Maple St	555-345-6789
9	Emily Taylor	1999-07-22	Female	Computer Science	A	3	852 Fir St	555-567-8901
11	Mark Thompson	2000-09-05	Male	Computer Science	A	1	963 Laurel St	123-456-7890
15	Daniel Nguyen	2001-03-18	Male	Computer Science	B	2	159 Maple St	555-678-9012

-- d. Display students from any specific branch and section

SELECT * FROM student WHERE branch = 'Mechanical Engineering' AND section = 'A';

id	name	date_of_birth	gender	branch	section	year	address	phone_number
3	Alice Johnson	1999-12-10	Female	Mechanical Engineering	A	3	789 Oak St	555-789-0123
13	Chris Clark	1999-11-12	Male	Mechanical Engineering	A	3	741 Oak St	555-012-3456

-- e. Display girl students from the table

SELECT * FROM student WHERE gender = 'Female';

id	name	date_of_birth	gender	branch	section	year	address	phone_number
2	Jane Smith	2001-08-20	Female	Electrical Engineering	B	2	456 Elm St	555-654-3210
3	Alice Johnson	1999-12-10	Female	Mechanical Engineering	A	3	789 Oak St	555-789-0123
5	Eve Brown	2001-06-30	Female	Computer Science	B	2	654 Maple St	555-345-6789
7	Sarah Miller	2000-02-18	Female	Mechanical Engineering	C	1	741 Cedar St	555-901-2345
9	Emily Taylor	1999-07-22	Female	Computer Science	A	3	852 Fir St	555-567-8901
12	Anna Martinez	2001-01-25						

-- 12. Revoke all permissions from 'admin'

REVOKE ALL PRIVILEGES ON college.* FROM 'admin'@'localhost';

-- 13. Revoke insert permission from 'principal'

REVOKE INSERT ON college.student FROM 'principal'@'localhost';

-- 14. Revoke update permission from 'faculty'

```
REVOKE UPDATE ON college.student FROM 'faculty'@'localhost';
```

-- 15. Revoke all permissions from 'student'

```
REVOKE ALL PRIVILEGES ON college.student FROM 'student'@'localhost';
```