

Constraints:

Q.1) Basic constraints: Create a table student where

- Stud_id is compulsory
- Name should not be null
- Email can not be null
- Collegename can not be null
- Apply default pin to colgAddress

Output:

```
mysql> create database College;
Query OK, 1 row affected (0.04 sec)

mysql> use College;
Database changed
```

```
mysql> create table Student
-> (
-> Stud_id int primary key,
-> name varchar(50) not null,
-> email varchar(50) not null,
-> CollegeName varchar(50) not null,
-> CollegeAddress varchar(50) not null DEFAULT '410206'
-> );
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> desc Studnet;
ERROR 1146 (42S02): Table 'college.studnet' doesn't exist
mysql> desc Student;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| Stud_id | int | NO | PRI | NULL | 
| name | varchar(50) | NO | | NULL | 
| email | varchar(50) | NO | | NULL | 
| CollegeName | varchar(50) | NO | | NULL | 
| CollegeAddress | varchar(50) | NO | | 410206 | 
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> alter table Student modify column CollegeAddress int DEFAULT 410206;
Query OK, 0 rows affected (0.11 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> insert into Student values(101,"Harshit","kadamharshit07@gmail.com","SCOE",410205);
Query OK, 1 row affected (0.04 sec)
```

```
mysql> insert into Student values(101,"Harsh","kadamharsh07@gmail.com","DY",410215);
ERROR 1062 (23000): Duplicate entry '101' for key 'student.PRIMARY'
mysql>
```

```
mysql> insert into Student values(102,null,"kadamharsh07@gmail.com","DY",410215);
ERROR 1048 (23000): Column 'name' cannot be null
mysql> insert into Student values(103,"Yash",null,"DY",410215);
ERROR 1048 (23000): Column 'email' cannot be null
mysql> insert into Student values(103,"Yash","abc@gmail.com",null,410285);
ERROR 1048 (23000): Column 'CollegeName' cannot be null
mysql>
```

```
mysql> insert into Student values(103,"Yash","abc@gmail.com","abc",DEFAULT);
Query OK, 1 row affected (0.04 sec)
```

```
mysql> select * from Student;
+-----+-----+-----+-----+-----+
| Stud_id | name      | email           | CollegeName | CollegeAddress |
+-----+-----+-----+-----+-----+
|    101 | Harshit   | kadamharshit07@gmail.com | SCOE        |        410205 |
|    102 | Harsh     | kadamharsh07@gmail.com  | DY          |        410215 |
|    103 | Yash      | abc@gmail.com       | abc         |        410206 |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> insert into Student values (105,"Hitesh","hitesh@gmail.com","VJTI",410938);
Query OK, 1 row affected (0.04 sec)
```

```
mysql> select * from Student;
+-----+-----+-----+-----+-----+
| Stud_id | name      | email           | CollegeName | CollegeAddress |
+-----+-----+-----+-----+-----+
|    101 | Harshit   | kadamharshit07@gmail.com | SCOE        |        410205 |
|    102 | Harsh     | kadamharsh07@gmail.com  | DY          |        410215 |
|    103 | Yash      | abc@gmail.com       | abc         |        410206 |
|    104 | Sahil     | sahil@gmail.com     | AC          |        410206 |
|    105 | Hitesh    | hitesh@gmail.com    | VJTI        |        410938 |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

Q.2) Create table Departments where:

Dept_id is the primary key and Dept_name should be unique

Insert Minimum 5 values to show constraint

OUTPUT:

```
mysql> create table department
-> (
->   Dept_id int primary key,
->   Dept_name varchar(50) unique not null
-> );
Query OK, 0 rows affected (0.07 sec)

mysql> desc department;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| Dept_id | int | NO | PRI | NULL |      |
| Dept_name | varchar(50) | NO | UNI | NULL |      |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> insert into department values (1001,"HR");
Query OK, 1 row affected (0.04 sec)

mysql> insert into department values (1002,"HR");
ERROR 1062 (23000): Duplicate entry 'HR' for key 'department.Dept_name'
mysql> insert into department values (1002,"Analyst");
Query OK, 1 row affected (0.01 sec)

mysql> insert into department values (1002,"Developer");
ERROR 1062 (23000): Duplicate entry '1002' for key 'department.PRIMARY'
mysql>
```

Start

```
mysql> select * from department;
+-----+-----+
| Dept_id | Dept_name |
+-----+-----+
| 1004 | Admin |
| 1002 | Analyst |
| 1003 | Developer |
| 1001 | HR |
| 1005 | Sales |
+-----+-----+
5 rows in set (0.00 sec)
```

Q.3) Create Users Table where Username must be unique and password can not be NULL

Insert Minimum 5 values to show constraint

OUTPUT:

```
mysql> create table users
-> (
-> username varchar(50) primary key,
-> password varchar(50) not null
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> desc users;
+-----+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| username | varchar(50) | NO   | PRI  | NULL    |       |
| password | varchar(50) | NO   |       | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> insert into users values ("US1001","ASDF");
Query OK, 1 row affected (0.04 sec)

mysql> insert into users values ("US1001",null);
ERROR 1048 (23000): Column 'password' cannot be null
mysql> insert into users values ("US1002","QWER1234");
Query OK, 1 row affected (0.04 sec)

mysql> insert into users values ("US1002","ZXCV");
ERROR 1062 (23000): Duplicate entry 'US1002' for key 'users.PRIMARY'
```

```
mysql> insert into users values ("US1004","tyui1684")
Query OK, 1 row affected (0.04 sec)

mysql> insert into users values ("US1005","tyui1784")
Query OK, 1 row affected (0.04 sec)

mysql> select * from users;
+-----+-----+
| username | password |
+-----+-----+
| US1001   | ASDF      |
| US1002   | QWER1234  |
| US1003   | ZXCV      |
| US1004   | tyui1684  |
| US1005   | tyui1784  |
+-----+-----+
5 rows in set (0.00 sec)
```

Q.4) Create a table Products where

- Price must be greater than 0
- Quantity must be atleast 1

Insert Minimum 5 values to show constraint

OUTPUT:

```
mysql> create table product
-> (
-> p_id int primary key,
-> qty int not null check(qty>=1),
-> price int not null check(price>=0)
-> );
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> desc product;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| p_id | int  | NO   | PRI | NULL    |       |
| qty  | int  | NO   |     | NULL    |       |
| price | int  | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> insert into product values (1001,3,1000);
Query OK, 1 row affected (0.04 sec)

mysql> insert into product values (1001,0,1000);
ERROR 3819 (HY000): Check constraint 'product_chk_1' is violated.
mysql>
```

```
mysql> insert into product values (1001,3,1000);
Query OK, 1 row affected (0.04 sec)

mysql> insert into product values (1001,0,1000);
ERROR 3819 (HY000): Check constraint 'product_chk_1' is violated.
mysql> insert into product values (1002,2,0);
Query OK, 1 row affected (0.04 sec)
```

```
mysql> insert into product values (1002,8,0);
ERROR 3819 (HY000): Check constraint 'product_chk_3' is violated.
mysql>
```

```
mysql> insert into product values (1002,8,0);
ERROR 3819 (HY000): Check constraint 'product_chk_3' is violated.
mysql> insert into product values (1002,8,7899);
Query OK, 1 row affected (0.01 sec)

mysql> select * from product;
+----+----+----+
| p_id | qty | price |
+----+----+----+
| 1001 | 3  | 1000 |
| 1002 | 8  | 7899 |
| 1003 | 5  | 4000 |
| 1004 | 5  | 5000 |
| 1005 | 8  | 6000 |
+----+----+----+
5 rows in set (0.00 sec)
```