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Lab 2

1) Not Null constraint

```
MySQL 8.0 Command Line Client                                          —    □    ×
mysql> create table college1 (
    -> college_id INT NOT NULL,
    -> college_code VARCHAR(20) NOT NULL,
    -> college_name varchar(50));
Query OK, 0 rows affected (0.01 sec)

mysql> desc college1;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| college_id   | int         | NO   |     | NULL    |       |
| college_code | varchar(20) | NO   |     | NULL    |       |
| college_name | varchar(50) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)
```

2) Unique Constraint

```
MySQL 8.0 Command Line Client                                          —    □    ×
mysql> create table college2 (
    -> college_id INT PRIMARY KEY,
    -> college_code VARCHAR(20) NOT NULL,
    -> college_name VARCHAR(50));
Query OK, 0 rows affected (0.01 sec)

mysql> desc college2;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| college_id   | int         | NO   | PRI | NULL    |       |
| college_code | varchar(20) | NO   |     | NULL    |       |
| college_name | varchar(50) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

3) FOREIGN KEY Constraint

```
MySQL 8.0 Command Line Client                                          —    □    ×
mysql> create table customer (
    -> id INT PRIMARY KEY,
    -> customer_name varchar(50) NOT NULL,
    -> customer_age int DEFAULT "20",
    -> customer_no int NOT NULL);
Query OK, 0 rows affected (0.01 sec)

mysql> desc table customer;
+----+-------------+----------+------------+------+---------------+------+---------+------+------+----------+-------+
| id | select_type | table    | partitions | type | possible_keys | key  | key_len | ref  | rows | filtered | Extra |
+----+-------------+----------+------------+------+---------------+------+---------+------+------+----------+-------+
|  1 | SIMPLE      | customer | NULL       | ALL  | NULL          | NULL | NULL    | NULL |    1 |   100.00 | NULL  |
+----+-------------+----------+------------+------+---------------+------+---------+------+------+----------+-------+
1 row in set, 1 warning (0.00 sec)

mysql> desc customer;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| id            | int         | NO   | PRI | NULL    |       |
| customer_name | varchar(50) | NO   |     | NULL    |       |
| customer_age  | int         | YES  |     | 20      |       |
| customer_no   | int         | NO   |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

Lab 2

MySQL 8.0 Command Line Client   —   □   ✕

```
mysql> create table Orders (
    -> order_id INT PRIMARY KEY,
    -> customer_id INT REFERENCES customer(id));
Query OK, 0 rows affected (0.01 sec)

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

mysql> desc Orders;
+-------------+------+------+-----+---------+-------+
| Field       | Type | Null | Key | Default | Extra |
+-------------+------+------+-----+---------+-------+
| order_id    | int  | NO   | PRI | NULL    |       |
| customer_id | int  | YES  |     | NULL    |       |
+-------------+------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

4) CHECK Constraint

MySQL 8.0 Command Line Client   —   □   ✕

```
mysql> create table orders1 (
    -> order_id INT PRIMARY KEY,
    -> amount int check(amount >= 100));
Query OK, 0 rows affected (0.01 sec)

mysql> insert into orders1 values(1, 1000000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into orders1 values(2, 23000000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into orders1 values(3, 2000000);
Query OK, 1 row affected (0.01 sec)

mysql> select * from orders1;
+----------+----------+
| order_id | amount   |
+----------+----------+
|        1 |  1000000 |
|        2 | 23000000 |
|        3 |  2000000 |
+----------+----------+
3 rows in set (0.00 sec)

mysql> desc orders1;
+----------+------+------+-----+---------+-------+
| Field    | Type | Null | Key | Default | Extra |
+----------+------+------+-----+---------+-------+
| order_id | int  | NO   | PRI | NULL    |       |
| amount   | int  | YES  |     | NULL    |       |
+----------+------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

Lab 2

5) DEFAULT Constraint

```
MySQL 8.0 Command Line Client                                            —    □    ×
mysql> create table college (
    -> college_id INT PRIMARY KEY,
    -> college_code VARCHAR(20),
    -> college_country VARCHAR(30) DEFAULT 'US');
Query OK, 0 rows affected (0.01 sec)

mysql> insert into college values (1001, 323307 , "UPES");
Query OK, 1 row affected (0.01 sec)
```

```
MySQL 8.0 Command Line Client                                            —    □    ×
mysql> insert into college values (1001, 323307 , "UPES");
Query OK, 1 row affected (0.01 sec)

mysql> insert into college (college_id, college_code) values (1001, 323307);
ERROR 1062 (23000): Duplicate entry '1001' for key 'college.PRIMARY'
mysql> insert into college (college_id, college_code) values (1002, 323306);
Query OK, 1 row affected (0.01 sec)

mysql> select * from college;
+------------+--------------+-----------------+
| college_id | college_code | college_country |
+------------+--------------+-----------------+
|       1001 | 323307       | UPES            |
|       1002 | 323306       | US              |
+------------+--------------+-----------------+
2 rows in set (0.00 sec)
```

6) CREATE INDEX Constraint

```
MySQL 8.0 Command Line Client                                            —    □    ×
mysql> create table colleges (
    -> college_id INT PRIMARY KEY,
    -> college_code varchar(20) NOT NULL,
    -> college_name varchar(50));
Query OK, 0 rows affected (0.01 sec)

mysql> create INDEX college_index
    -> on colleges(college_code);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc table colleges;
+----+-------------+----------+------------+------+---------------+------+---------+------+------+----------+-------+
| id | select_type | table    | partitions | type | possible_keys | key  | key_len | ref  | rows | filtered | Extra |
+----+-------------+----------+------------+------+---------------+------+---------+------+------+----------+-------+
|  1 | SIMPLE      | colleges | NULL       | ALL  | NULL          | NULL | NULL    | NULL |    1 |   100.00 | NULL  |
+----+-------------+----------+------------+------+---------------+------+---------+------+------+----------+-------+
1 row in set, 1 warning (0.00 sec)

mysql> desc colleges;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| college_id   | int         | NO   | PRI | NULL    |       |
| college_code | varchar(20) | NO   | MUL | NULL    |       |
| college_name | varchar(50) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```