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**Practical 10: Constraints**

**Objective:**  Study & Implementation of different types of constraints.

1. **Constraints:** Constraints are used to specify rules for the data in the table.Commonly used constraint in SQL are:

NOT NULL

UNIQUE

PRIMARY KEY

FOREIGN KEY

CHECK

DEFAULT

CREATE INDEX

mysql> create table fg(id int PRIMARY KEY);

Query OK, 0 rows affected (0.64 sec)

mysql> desc fg;

+-------+------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------+------+------+-----+---------+-------+

| id | int | NO | PRI | NULL | |

+-------+------+------+-----+---------+-------+

1 row in set (0.06 sec)

mysql> CREATE TABLE ConstraintTable(

-> nn INT NOT NULL,

-> unq DATE UNIQUE,

-> pmkey int PRIMARY KEY,

-> fgkey int,

-> chk int CHECK (chk >100),

-> dft varchar(20) DEFAULT 'default',

-> FOREIGN KEY(fgkey) REFERENCES fg(Id)

-> );

Query OK, 0 rows affected (1.80 sec)

mysql> desc ConstraintTable;

+-------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------+-------------+------+-----+---------+-------+

| nn | int | NO | | NULL | |

| unq | date | YES | UNI | NULL | |

| pmkey | int | NO | PRI | NULL | |

| fgkey | int | YES | MUL | NULL | |

| chk | int | YES | | NULL | |

| dft | varchar(20) | YES | | default | |

+-------+-------------+------+-----+---------+-------+

6 rows in set (0.00 sec)

mysql> Create Index idx on ConstraintTable(unq ASC);

Query OK, 0 rows affected (0.41 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> Show Index from ConstraintTable;

+-----------------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| Table | Non\_unique | Key\_name | Seq\_in\_index | Column\_name | Collation | Cardinality | Sub\_part | Packed | Null | Index\_type | Comment | Index\_comment | Visible | Expression |

+-----------------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| constrainttable | 0 | PRIMARY | 1 | pmkey | A | 0 | NULL | NULL | | BTREE | | | YES | NULL |

| constrainttable | 0 | unq | 1 | unq | A | 0 | NULL | NULL | YES | BTREE | | | YES | NULL |

| constrainttable | 1 | fgkey | 1 | fgkey | A | 0 | NULL | NULL | YES | BTREE | | | YES | NULL |

| constrainttable | 1 | idx | 1 | unq | A | 0 | NULL | NULL | YES | BTREE | | | YES | NULL |

+-----------------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

4 rows in set (0.29 sec)

mysql>