* **Normalization** is the process to eliminate data redundancy and enhance data integrity in the table. Normalization also helps to organize the data in the database. It is a multi-step process that sets the data into tabular form and removes the duplicated data from the relational tables.

1NF

2NF

3NF

BCNF(BOYCE-CODD)

* **CODD’S 12 RULES:**

1. Information rule
2. Guaranteed access rule
3. Systematic treatment of Null values
4. Active online catalog
5. Comprehensive data sub-language Rule
6. View updating rule
7. High level insert, update and delete rule
8. Physical data independence
9. Logical Data Independence
10. Integrity Independence
11. Distribution independence
12. Non Subversion rule

**Queries Task:-**

create schema “priyanka\_sql”;

CREATE TABLE `stud\_sheet` (   `s\_rollno` int NOT NULL,   `stud\_name` varchar(45) NOT NULL,   `stud\_branch` varchar(20) NOT NULL,   `stud\_mentor` varchar(20) NOT NULL,   `u\_id` int DEFAULT NULL,   PRIMARY KEY (`s\_rollno`),   KEY `u\_id\_idx` (`u\_id`),   CONSTRAINT `u\_id` FOREIGN KEY (`u\_id`) REFERENCES `restaurant` (`R\_id`) );

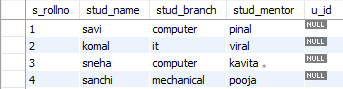
INSERT INTO `priyanka\_sql`.`stud\_sheet` (`s\_rollno`, `stud\_name`, `stud\_branch`, `stud\_mentor`) VALUES ('1', 'savi', 'computer', 'pinal');

INSERT INTO `priyanka\_sql`.`stud\_sheet` (`s\_rollno`, `stud\_name`, `stud\_branch`, `stud\_mentor`) VALUES ('2', 'komal',’it', 'viral');

INSERT INTO `priyanka\_sql`.`stud\_sheet` (`s\_rollno`, `stud\_name`, `stud\_branch`, `stud\_mentor`) VALUES ('3', 'sneha', 'computer', 'kavita');

INSERT INTO `priyanka\_sql`.`stud\_sheet` (`s\_rollno`, `stud\_name`, `stud\_branch`, `stud\_mentor`) VALUES ('4', 'sanchi', 'mechanical', 'pooja');

select \* from priyanka\_sql.stu\_sheet;



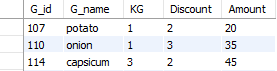
CREATE TABLE `grocery` (   `G\_id` int NOT NULL,   `G\_name` varchar(45) NOT NULL,   `KG` int DEFAULT NULL,   `Discount` decimal(3,0) DEFAULT NULL,   `Amount` decimal(10,0) DEFAULT NULL,   PRIMARY KEY (`G\_id`) ) ;

INSERT INTO `priyanka\_sql`.`grocery` (`G\_id`, `G\_name`, `KG`, `Discount`, `Amount`) VALUES ('107', 'potato', '1', '2', '20');

INSERT INTO `priyanka\_sql`.`grocery` (`G\_id`, `G\_name`, `KG`, `Discount`, `Amount`) VALUES ('110', 'onion', '1', '3', 35');

INSERT INTO `priyanka\_sql`.`grocery` (`G\_id`, `G\_name`, `KG`, `Discount`, `Amount`) VALUES ('114', 'capsicum', '3', '2', '45’);

select \* from priyanka\_sql.grocery;



CREATE TABLE `myntrahaul` (   `cust\_id` int NOT NULL,   `cust\_name` varchar(45) NOT NULL DEFAULT 'customer\_name',   `Clothing\_section` varchar(45) NOT NULL,   `amount` decimal(10,0) NOT NULL,   PRIMARY KEY (`cust\_id`));

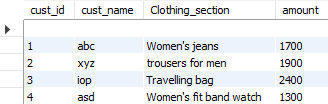
INSERT INTO `priyanka\_sql`.`myntrahaul` (`cust\_id`, `cust\_name`, `Clothing\_section`, `amount`) VALUES ('1', 'abc', 'women’s jeans’, '1700');

INSERT INTO `priyanka\_sql`.`myntrahaul` (`cust\_id`, `cust\_name`, `Clothing\_section`, `amount`) VALUES ('2', 'xyz', 'trousers for men’, '1900');

INSERT INTO `priyanka\_sql`.`myntrahaul` (`cust\_id`, `cust\_name`, `Clothing\_section`, `amount`) VALUES ('3', 'iop', 'travelling bag’, '2400');

INSERT INTO `priyanka\_sql`.`myntrahaul` (`cust\_id`, `cust\_name`, `Clothing\_section`, `amount`) VALUES ('4', 'asd', 'women’s fitband watch’, '1300');

select \* from priyanka\_sql.myntrahaul;



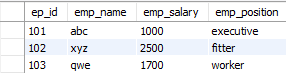
CREATE TABLE `employee` (   `ep\_id` int NOT NULL,   `emp\_name` varchar(25) NOT NULL,   `emp\_salary` decimal(10,0) NOT NULL,   `emp\_position` varchar(20) DEFAULT NULL,   PRIMARY KEY (`ep\_id`) );

INSERT INTO `priyanka\_sql`.`employee` (`ep\_id`, `emp\_name`, `emp\_salary`, `emp\_position`) VALUES ('101', 'abc', '1000', 'executive');

INSERT INTO `priyanka\_sql`.`employee` (`ep\_id`, `emp\_name`, `emp\_salary`, `emp\_position`) VALUES ('102', 'xyz', '2500', 'fitter');

INSERT INTO `priyanka\_sql`.`employee` (`ep\_id`, `emp\_name`, `emp\_salary`, `emp\_position`) VALUES ('103', 'qwe', '1700', 'worker’);

select \* from priyanka\_sql.employee;



CREATE TABLE `restaurant` (   `R\_id` int NOT NULL,   `Service` varchar(10) NOT NULL,   `Food\_name` varchar(45) NOT NULL,   `Food\_quantity` int NOT NULL,   `Amount` decimal(10,0) NOT NULL,   `u\_id` int NOT NULL,   PRIMARY KEY (`R\_id`,`u\_id`) );

INSERT INTO `priyanka\_sql`.`restaurant` (`R\_id`, `Service`, `Food\_name`, `Food\_quantity`, `Amount`, `u\_id`) VALUES ('601', 'takeaway', 'momos', '2', '60', '2');

INSERT INTO `priyanka\_sql`.`restaurant` (`R\_id`, `Service`, `Food\_name`, `Food\_quantity`, `Amount`, `u\_id`) VALUES ('602', 'dine-in', 'paneer tikka', '3', '330', '3');

INSERT INTO `priyanka\_sql`.`restaurant` (`R\_id`, `Service`, `Food\_name`, `Food\_quantity`, `Amount`, `u\_id`) VALUES ('625', 'takeaway', 'ice-cream', '6', '300', '5');

INSERT INTO `priyanka\_sql`.`restaurant` (`R\_id`, `Service`, `Food\_name`, `Food\_quantity`, `Amount`, `u\_id`) VALUES ('635', 'dine-in', ‘pav bhaji', '2', '60', '4');

select \* from priyanka\_sql.restaurant;



**Query to add primary key**

ALTER TABLE `priyanka\_sql`.`restaurant`

ADD PRIMARY KEY (`R\_id`);

**Query to add foreign key**

ALTER TABLE `priyanka\_sql`.`restaurant`

ADD FOREIGN KEY (‘u\_id’) REFERENCES stud\_sheet(‘u\_id’);

ALTER TABLE `priyanka\_sql`.`grocery`

ADD PRIMARY KEY (‘g\_id’,’G\_name);

**Query to change column name**

ALTER TABLE `priyanka\_sql`.`grocery`

CHANGE COLUMN `Amount` `G\_Amount` DECIMAL(10,0) NULL DEFAULT NULL ;

**Query to add index on a cloumn**

ALTER TABLE ` priyanka\_sql`.`grocery ` ADD INDEX `grocery\_index` (`g\_id`);

**Query to add unique constraints**

ALTER TABLE `priyanka\_sql`.`employee`

ADD UNIQUE INDEX `emp\_name\_UNIQUE` (`emp\_name` ASC) VISIBLE;

**Inert multiple records at a time along with duplicate values**

INSERT IGNORE INTO `priyanka\_sql`.`stu\_sheet` (stu\_branch, stu\_mentor) VALUES( 'it', 'vrunda');