

## CIA 3

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```
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```

### Creating a table initially

```
mysql> use lab2;
Database changed
mysql> CREATE TABLE employee_info (Emp_id INT(5), Emp_name VARCHAR(30), Phone_number VARCHAR(30), Salary INT(7));
Query OK, 0 rows affected, 2 warnings (0.07 sec)
```

```
mysql> INSERT INTO employee_info VALUES (1000, 'Krish', '9876543210, 8765432109', 954234), (1001, 'Sneha', '7654321098, 6543210987', 854234), (1002, 'Mahir', '5432109876, 4321098765', 346875), (1003, 'Panchi', '3210987654, 2109876543', 536646), (1004, 'Harshay', '1098765432, 468354865', 978645), (1005, 'Muskan', '9816545238, 4612986579', 453685);
Query OK, 6 rows affected (0.02 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM employee_info;
+-----+-----+-----+-----+
| Emp_id | Emp_name | Phone_number | Salary |
+-----+-----+-----+-----+
| 1000 | Krish | 9876543210, 8765432109 | 954234 |
| 1001 | Sneha | 7654321098, 6543210987 | 854234 |
| 1002 | Mahir | 5432109876, 4321098765 | 346875 |
| 1003 | Panchi | 3210987654, 2109876543 | 536646 |
| 1004 | Harshay | 1098765432, 468354865 | 978645 |
| 1005 | Muskan | 9816545238, 4612986579 | 453685 |
+-----+-----+-----+-----+
6 rows in set (0.07 sec)
```

### First Normal Form

We split the 'phone\_number' columns with string functions and create a new column instead of adding new rows to avoid duplicity in 'emp\_id'

```
mysql> CREATE TABLE employee_info_1nf AS SELECT emp_id, emp_name, LEFT(phone_number, 10) AS Phone_number1, RIGHT(phone_number, 10) AS Phone_number2, salary FROM employee_info;
Query OK, 6 rows affected (0.03 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM employee_info_1nf;
+-----+-----+-----+-----+-----+
| emp_id | emp_name | Phone_number1 | Phone_number2 | salary |
+-----+-----+-----+-----+-----+
| 1000 | Krish | 9876543210 | 8765432109 | 954234 |
| 1001 | Sneha | 7654321098 | 6543210987 | 854234 |
| 1002 | Mahir | 5432109876 | 4321098765 | 346875 |
| 1003 | Panchi | 3210987654 | 2109876543 | 536646 |
| 1004 | Harshay | 1098765432 | 468354865 | 978645 |
| 1005 | Muskan | 9816545238 | 4612986579 | 453685 |
+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

### Second Normal Form

We create a different table for storing employee's salary

```
mysql> ALTER TABLE employee_info_1nf ADD CONSTRAINT emp_id_pk PRIMARY KEY (Emp_id);
Query OK, 0 rows affected (0.09 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> DESCRIBE employee_info_1nf;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| emp_id | int | NO | PRI | NULL | |
| emp_name | varchar(30) | YES | | NULL | |
| Phone_number1 | varchar(10) | YES | | NULL | |
| Phone_number2 | varchar(10) | YES | | NULL | |
| salary | int | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.02 sec)
```

```
mysql> CREATE TABLE employee_info_2nf AS SELECT Emp_id, Salary FROM employee_info_1nf;
Query OK, 6 rows affected (0.02 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM employee_info_2nf;
+-----+-----+
| Emp_id | Salary |
+-----+-----+
| 1000 | 954234 |
| 1001 | 854234 |
| 1002 | 346875 |
| 1003 | 536646 |
| 1004 | 978645 |
| 1005 | 453685 |
+-----+-----+
6 rows in set (0.00 sec)
```

```
mysql> ALTER TABLE employee_info_2nf ADD CONSTRAINT emp_id_fk FOREIGN KEY (Emp_id) REFERENCES employee_info_1nf(Emp_id);
Query OK, 6 rows affected (0.06 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

```
mysql> DESCRIBE employee_info_2nf;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Emp_id | int | NO | MUL | NULL | |
| Salary | int | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

### Third Normal Form

We initially add 2 columns to the table, Address and Department. We then further split the table where the main table holds the address whereas the third table holds the employee id and department name.

```
mysql> ALTER TABLE employee_info_1nf ADD Department VARCHAR(20);
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE employee_info_1nf ADD ADDRESS VARCHAR(100);
Query OK, 0 rows affected (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> INSERT INTO employee_info_1nf (Emp_id, Department, ADDRESS) VALUES (1006, 'Management', 'Portofino Street'), (1007, 'IT', 'Thicket Street'), (1008, 'Management', 'Dasave'),
-> (1009, 'Accounts', 'Thicket Street'), (1010, 'IT', 'Club View'), (1011, 'Accounts', 'Hill View');
Query OK, 6 rows affected (0.02 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

```
mysql> UPDATE employee_info_1nf SET emp_name = 'Harry', Phone_number1 = 8465926379, Phone_number2 = 6483794105 WHERE emp_id = 1006;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET emp_name = 'Meghan', Phone_number1 = 7823598368, Phone_number2 = 4598375917 WHERE emp_id = 1007;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET emp_name = 'Elizabeth', Phone_number1 = 9834018492, Phone_number2 = 7893508359 WHERE emp_id = 1008;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET emp_name = 'Harrison', Phone_number1 = 9809726187, Phone_number2 = 8740917204 WHERE emp_id = 1009;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET emp_name = 'John', Phone_number1 = 8924038128, Phone_number2 = 7849873681 WHERE emp_id = 1010;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET emp_name = 'Marry', Phone_number1 = 8584873629, Phone_number2 = 9842380479 WHERE emp_id = 1011;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> UPDATE employee_info_1nf SET salary = 352895 WHERE emp_id = 1006;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET salary = 436843 WHERE emp_id = 1007;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET salary = 874984 WHERE emp_id = 1008;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET salary = 932578 WHERE emp_id = 1009;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET salary = 783578 WHERE emp_id = 1010;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET salary = 587324 WHERE emp_id = 1011;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> UPDATE employee_info_1nf SET Department = 'IT', ADDRESS = 'Waterfall Sreet' WHERE emp_id = 1000;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET Department = 'Accounts', ADDRESS = 'Portofino Street' WHERE emp_id = 1001;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET Department = 'IT', ADDRESS = 'Club View' WHERE emp_id = 1002;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET Department = 'Management', ADDRESS = 'Thicket Street' WHERE emp_id = 1003;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET Department = 'Management', ADDRESS = 'Dasave' WHERE emp_id = 1004;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE employee_info_1nf SET Department = 'Management', ADDRESS = 'Hill View' WHERE emp_id = 1005;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> SELECT * FROM employee_info_1nf;
+-----+-----+-----+-----+-----+-----+-----+
| emp_id | emp_name | Phone_number1 | Phone_number2 | salary | Department | ADDRESS |
+-----+-----+-----+-----+-----+-----+-----+
| 1000 | Krish | 9876543210 | 8765432109 | 954234 | IT | Waterfall Sreet |
| 1001 | Sneha | 7654321098 | 6543210987 | 854234 | Accounts | Portofino Street |
| 1002 | Mahir | 5432109876 | 4321098765 | 346875 | IT | Club View |
| 1003 | Panchi | 3210987654 | 2109876543 | 536646 | Management | Thicket Street |
| 1004 | Harshay | 1098765432 | 4683545865 | 978645 | Management | Dasave |
| 1005 | Muskan | 9816545238 | 4612986579 | 453685 | Management | Hill View |
| 1006 | Harry | 8465926379 | 6483794105 | 352895 | Management | Portofino Street |
| 1007 | Meghan | 7823598368 | 4598375917 | 436843 | IT | Thicket Street |
| 1008 | Elizabeth | 9834018492 | 7893508359 | 874984 | Management | Dasave |
| 1009 | Harrison | 9809726187 | 8740917204 | 932578 | Accounts | Thicket Street |
| 1010 | John | 8924038128 | 7849873681 | 783578 | IT | Club View |
| 1011 | Marry | 8584873629 | 9842380479 | 587324 | Accounts | Hill View |
+-----+-----+-----+-----+-----+-----+-----+
12 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE employee_info_3nf AS SELECT emp_id, emp_name, Phone_number1, Phone_number2, salary, ADDRESS FROM employee_info_1nf;
Query OK, 12 rows affected (0.04 sec)
Records: 12 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM employee_info_3nf;
```

emp_id	emp_name	Phone_number1	Phone_number2	salary	ADDRESS
1000	Krish	9876543210	8765432109	954234	Waterfall Sreet
1001	Sneha	7654321098	6543210987	854234	Portofino Street
1002	Mahir	5432109876	4321098765	346875	Club View
1003	Panchi	3210987654	2109876543	536646	Thicket Street
1004	Harshay	1098765432	4683545865	978645	Dasave
1005	Muskan	9816545238	4612986579	453685	Hill View
1006	Harry	8465926379	6483794105	352895	Portofino Street
1007	Meghan	7823598368	4598375917	436843	Thicket Street
1008	Elizabeth	9834018492	7893508359	874984	Dasave
1009	Harrison	9809726187	8740917204	932578	Thicket Street
1010	John	8924038128	7849873681	783578	Club View
1011	Marry	8584873629	9842380479	587324	Hill View

```
12 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE employee_info_dept AS SELECT emp_id, emp_name, Department FROM employee_info_1nf;
Query OK, 12 rows affected (0.03 sec)
Records: 12 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM employee_info_dept;
```

emp_id	emp_name	Department
1000	Krish	IT
1001	Sneha	Accounts
1002	Mahir	IT
1003	Panchi	Management
1004	Harshay	Management
1005	Muskan	Management
1006	Harry	Management
1007	Meghan	IT
1008	Elizabeth	Management
1009	Harrison	Accounts
1010	John	IT
1011	Marry	Accounts

```
12 rows in set (0.00 sec)
```

```
mysql> ALTER TABLE employee_info_dept ADD CONSTRAINT emp_id_3nf_fk FOREIGN KEY (emp_id) REFERENCES employee_info_1nf(emp_id);
Query OK, 12 rows affected (0.04 sec)
Records: 12 Duplicates: 0 Warnings: 0
```

```
mysql> DESCRIBE employee_info_dept;
```

Field	Type	Null	Key	Default	Extra
emp_id	int	NO	MUL	NULL	
emp_name	varchar(30)	YES		NULL	
Department	varchar(20)	YES		NULL	

```
3 rows in set (0.00 sec)
```