

What is the 3NF? Explain with an example. You don't need to draw the tables or write the queries. Just mention the schema before and after the third normal form.

A table is in 3NF, it means

- 1) It is in 2NF
- 2) It should not have transitive dependency. I.e  $a \rightarrow b$  and  $b \rightarrow c$  and therefore  $a \rightarrow c$ . (it should not have this). In other words, a non-prime attribute should not be dependent on another non-prime attribute.

|            |      |       |         |
|------------|------|-------|---------|
| Student_id | City | State | pincode |
|------------|------|-------|---------|

Should be changed to schemas below because every time you change the pincode, you have to change the city and state.

|            |         |
|------------|---------|
| Student_id | Pincode |
|------------|---------|

|         |      |       |
|---------|------|-------|
| Pincode | city | state |
|---------|------|-------|

Now, it is in 3NF.