

## DBMS Assignment - 6.

- 1) —?
- a) The table is not in 1nf because the attribute courses contains more than value, for eg: 10 - 1 courses  
→ b.s., DBMS? so as it is not in 1nf it can't be in 2nf & 3nf.

Converted table.

ID	Name	Age	Location	Courses
1	Sachin	22	Delhi	OS
3	Sachin	22	Delhi	DBMS
2	Ram	22	Jamshedpur	DBMS
2	Ram	22	Jamshedpur	DBMS
3	Mike	23	Chennai	ML
3	Mike	23	Chennai	OS
4	Sameer	21	Bangalore	DBMS
4	Sameer	21	Bangalore	ML
5	Vijay	22	Mumbai	ML
5	Vijay	22	Mumbai	DBMS

→ The above table is in 1nf.

→ Prime attributes → ID, Name

→ Non-Prime → Age, Location, Courses

→ FD → ID → Age, Location, Courses

\* The 2nd table provided in the question is already in a 1nf so need to convert.

## Table 1.2.

Primary - ID.

Candidate - ID, Name, Phone, State

Prime - ID, Name, Phone, State

Non Prime - Country.

Ans 2) The table 2.1 is not in 2<sup>nd</sup> normal form. Because it is not fully functionally independent as :-

⊗ Emp-ID → Name, Age

Emp-ID, ⊗ Duty shift-ID → Duty-shift.

Primary keys → Emp-ID

Candidate keys → Emp-ID

prime attributes → Emp-ID, Duty shift-ID

Non prime → Age, Name, Duty-shift.

Converted table :-

Table 1. (Emp-ID)

Emp-ID	Name	Age
101	Arun	26
102	Bobby	28
103	Syresh	32
104	Sita	24

Table - 2. (Duty shift-ID)

Emp-ID	Duty shift-ID	Duty-shift
101	1	Morning
102	2	Afternoon
103	3	Night
104	1	Morning



Table 2.2 is not in 2NF because it is not fully functionally independent as?

emp ID  $\rightarrow$  Name

emp - ID  $\rightarrow$  Project - ID  $\rightarrow$  project name, no of hours

Primary Key  $\rightarrow$  Emp-ID.

candidate key  $\rightarrow$  emp ID, project - ID

prime attributes  $\rightarrow$  emp-ID, project-ID

Non-prime  $\rightarrow$  Name, project-name, no of hours.

Converted Table  $\rightarrow$

Emp - ID	Name
123	Ajay
321	Chauhan
546	Rajesh
765	Abhishek

Emp - ID	Project - ID	Proj - Name	No of hours
123	Proj - 21	speech system	10
321	Proj - 45	HR system	15
546	Proj - 24	Automate Tickets	23
765	Proj - 11	NCP	16

Ans 3)

Table 3.1

Primary - Cust-ID

Candidate - Cust-ID, Cust-Name, Cust-Postcode, Cust-address

Prime - Cust-ID, Cust-Name, Cust-Postcode, Cust-address

Non-Prime - Cust-loc.

Table 3.2

Primary → Building

Candidate → Building, Contractor, Builder, Fee

Prime → Building, Contractor, Builder, Fee

Non-Prime → -

3NF would be

Primary key.

Building	Contractor	Builder
B-2156	Taylor	Bustige
B-8765	Sandeep	Shranandani
B-4567	Vishaka	Tata

1903CS080

Primary key	
Contractor	Fee
Taylor	256789.1
Sandeep	3567356
Vishaka	4567990

b) There exist transitive dependency  
so it is not in 3NF

Contractor  $\rightarrow$  Fee.

There should be no transitive  
dependency in 3NF. There should  
be like,

Building  $\rightarrow$  Primary key  
Contractor, Builder, Fee  $\rightarrow$  Non-Prime

transitive dependency on  
Building ID  
so not in 3NF.