# DBMS - Assignment - 6

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)
i)

| Id | Name | Age | Location |
|----|------|-----|----------|
| 1 | Sachin | 22 | Delhi |
| 2 | Ram | 22 | Jamshedpur |
| 3 | Mike | 23 | Chennai |
| 4 | Sameer | 21 | Bengluru |
| 5 | Vijay | 22 | Mumbai |

| Id | Course |
|----|--------|
| 1 | OS |
| 1 | DBMS |
| 2 | DAA |
| 2 | DBMS |
| 3 | ML |
| 3 | OS |
| 4 | DAA |
| 4 | ML |
| 5 | ML |
| 5 | DBMS |

# Questions

**1)i)** The given table is not in 1NF since in the Course it has mult values, but as per 1NF rules one attribute column should contain only one value

**2)** Primary-key = "Id"

Candidate key = "Id"

Prime attributes = "Id"

Non-Prime attributs = "Name", "Age", "location", "course"

**3)** No transitive and partial dependency.

**1)ii)** The given table is already in 1NF, as all the 1NF rules are satisfied.

# Questions:

**2)** Primary key = "ID"

Candidate key = "ID" ; "Phone"

Prime attributs = "ID"

Non-Prime attributs = "Name", "State", "Country"

**3)** There is No transitive and partial dependence

2)
i)

| Emp-ID | Name | Age |
|--------|-------|-----|
| 101 | Asun | 26 |
| 102 | Bobby | 28 |
| 103 | Suresh | 32 |
| 104 | Sita | 24 |

| Emp-ID | Duty_Shift-ID | Duty_Shift |
|--------|---------------|------------|
| 101 | 1 | Morning |
| 102 | 2 | Afternoon |
| 103 | 3 | Night |
| 104 | 1 | Morning |

Answers:-

i) The table is not in 2NF because it is not dependent fully on primary keys. we divide them into 2 tables as Emp.ID, Name, Age and Emp-ID, Duty_Shift-ID, Duty-Shift

2) Primary key = " EMP-ID"

Candidate key = "Duty_Shift-ID", {"EMP-ID", "Duty_Shift-ID"}

Primary Attribute = "EMP-ID"

Non-prime Attribute = "Name", "Age", "Duty-Shift"


3) There is no transitive dependency

The partial dependency as follows

" Duty-Shift" ⟶ "Duty-Shift-ID"


2) ii)

| EMP-ID | Name |
|--------|------|
| 123 | Ajay |
| 321 | chary. |
| 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 | Automatic Tickets | 23 |
| 765 | Proj-11 | NLP | 16 |

# Answers

1) The given table is not in 2N.F because it is not fully dependent on primary key. The updated table as follows

EMP_ID $\longrightarrow$ Name

ProjedID, EMP - ID — Proj-Name , No, of hours

2) Primary Key = EMP - ID

Candidate Key = Project -ID, & Emp-ID, Project ID}

Prime Attributes = Project - ID, EMP - ID

Non-Prime Attributes = Name, proj-Name, No of hours

3) There is no transitive dependency

The partial depending as followas

Project - Name, No_of_hours $\longrightarrow$ Project-ID

Name $\longrightarrow$ Emp-ID

3)
i)

| Cust-ID | Cust_Name | Cust_Postcode |
|---|---|---|
| 25 | Dell | 560037 |
| 45 | Lenovo | 560046 |
| 89 | Acu | 210067 |
| 90 | Samsung | 450078 |

| Cust-Post Code | Cust_Address | Cust_loc |
|---|---|---|
| 560037 | White field | Bangalore |
| 560046 | Marathahalli | Bangalore |
| 210067 | Bandra | Mumbai |
| 450078 | Delhi central | Delhi |

Answers:

1) The given table is not in 3NF because it exists a transitive dependency

2)

Primary key = Cust-ID

candidate key = { Cust-ID, Cust-Postcode }

prime attribute = Cust-ID, Cost Post code

Non-prime attribute = Cost-Name, Cost-Address, cust-loc

3) The transitive dependency

{ Cost-ID } ⟶ { Cust-postcard }

{ Cost-Postcard } ⟶ { cust-address, cust-loc }

{ cost-ID } ⟶ { cost-address, cost-loc }

The partial dependency

Cost-address, cust-loc ⟶ cust-Post code

3)
(ii)

Primary key ↑

| Building | Contractor | Builder |
|----------|-----------|---------|
| B-2156 | Taylor | Prestige |
| B-5765 | Sandeep | Mirananddan |
| B-4567 | vishaka | Tata |

| Contractor | Fee |
|---|---|
| Taylor | 256789 |
| Sandeep | 3567356 |
| Vishaker | 4567990 |

Primary key

## Answers

1) The given table is not in 3NF as it continues transitive dependency

2) Primary key = Building

Candidate key = { Building, constructor}, { Building, Builder}

Prime attribute = Building, Constructor, Builder

Non-prime attribute = Fee

3) The transitive dependency

{ Building } ⟶ {constructor}

{ constructor} ⟶ { Fee}

The partial dependency

Fee ⟶ Contractor

Which is part of candidate key { Building, Constructor}