Perform normalization on 1NF,2NF,3NF.

1.1NF

Example: Students who borrow different books from library.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Address | Books Name | Gender |
| Ananya | Bangalore | Life is what you make it, Laws of attraction | Female |
| Anagha | Mangalore | DBMS Concepts | Female |

The above table has multiple values in a single cell that should be removed for normalization , After normalization it looks like below table.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Address | Books Name | Gender |
| Ananya | Bangalore | Life is what you make it | Female |
| Ananya | Bangalore | Laws of attraction | Female |
| Anagha | Mangalore | DBMS Concepts | Female |

2.2NF

Example:

|  |  |  |  |
| --- | --- | --- | --- |
| EMP\_ID | EMP\_NAME | GENDER | SALARY |
| 1 | GITA | FEMALE | 20000 |
| 2 | RAM | MALE | 30000 |

Changing the name from the Second column will affect the gender column of the table . To remove this dependency we need to divide table into sub tables .

Employee:

|  |  |  |
| --- | --- | --- |
| EMP\_ID | EMP\_NAME | SALARY |
| 1 | GITA | 20000 |
| 2 | RAM | 30000 |

Gender:

|  |  |
| --- | --- |
| EMP\_ID | GENDER |
| 1 | FEMALE |
| 2 | MALE |

3. 3NF:

Example:

|  |  |  |  |
| --- | --- | --- | --- |
| EMP\_NAME | EMP\_ID | LOCATION | DEPT\_ID |
| JOHN | 5 | DELHI | 22 |
| JIMMY | 6 | MUMBAI | 45 |

In the above table, The department the employee’s name using the EMP\_ID and DEPT\_ID, which shows that there is a transitive functional dependency in the table. To remove this dependency , this table can be divided into ,

|  |  |
| --- | --- |
| EMP\_NAME | EMP\_ID |
| JOHN | 22 |
| JIMMY | 45 |

|  |  |  |
| --- | --- | --- |
| EMP\_ID | LOCATION | DEPT\_ID |
| 5 | DELHI | 22 |
| 6 | MUMBAI | 45 |