normalization

what is normalization

NORMALIZATION IS THE PROCESS OF ORGANIZING INE DATA AMD THE ATTRIBURES OF A DATA BASE.IT PERFORMED TO REDUCE THE DATA REDUNDANCY IN A DATA BASE AND ENSURE THAT DATA IS STORED LOGICALLY.

TYPE OF NORMALIZATION

1. 1 NF
2. 2NF
3. 3NF
4. BCNF

* DIAGRAM

1NF

NORMALIZATION

BCNF

3NF

2NF

1. 1NF (FIRST NORMAL FORM)

IN 1NF RELATION EACH TABLE CELL SHOULD CONTAIN A SINGLE VALUE EACH RECORD LOOKS LIKE UNIQUE

|  |  |  |
| --- | --- | --- |
| EMP ID | EMPLOYEE NAME | DEPARTMENT |
| 01 | ROHAN | SALE,MARKETING |
| 02 | PAYAL | IT |
| 03 | RIU | FINANCE |

CONVERT IT INTO 1NF

|  |  |  |
| --- | --- | --- |
| EMP ID | EMPLOYEE | DEPARTMENT |
| 01 | ROHAN | SALE |
| 01 | ROHAN | MARKETING |
| 02 | PAYAL | IT |
| 03 | RIU | FINANCE |

1. 2NF(SECOND NORMAL FORM )

IN 2NF VEIATION MUST BE IN 1NF IN THE SECOND NORMAL FORM ALL NON KEY ATTRIBUTES ARE FULLY FUNCTIONALLY DEPENDANT ON THE PRIMARY KEY.

|  |  |  |
| --- | --- | --- |
| STUDENT ID | SPECIALIZATION | STUDEND AGE |
| 501 | PHYSICS | 22 |
| 501 | MATH | 22 |
| 502 | BIOLOGY | 24 |
|  |  |  |

CONVERT THIS TABLE

|  |  |
| --- | --- |
| STUDENT ID | AGE |
| 501 | 22 |
| 502 | 24 |
|  |  |

1. 3NF(THIRD NORMAL FORM

THE RELATION IN 3NF IF IT IS IN 2NF AND NO TRANSITION DEPENDANCY EXIST NON PRIME ATTRIBURE IS DEPENDANT ON THE PRIMARY KEY

|  |  |  |  |
| --- | --- | --- | --- |
| EMP ID | EMP NAME | EMP SALARY | EMP CITY |
| 301 | PRIYA | 2000 | PUNE |
| 301 | PRIYA | 5000 | NAGPUR |
| 302 | MONU | 8000 | NASHIK |
| 303 | SONU | 6000 | MUMBAI |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| EMP ID | EMP NAME | EMP SALARY |
| 301 | PRIYA | 2000 |
| 301 | PRIYA | 5000 |
| 302 | MONU | 8000 |
| 303 | SONU | 6000 |

WE CONVERTED THE TABLE INTO 3NF BY CONVERTING IT INTO TWO PARTS AND THEY DON’T HAVE TRANSITIVE DEPENDANCY

* ADVANTAGES OF NAMALIZATION

IMPROVED DATABASE PERFORMANCE

SIMPLIFIED DATABASE DESIGN

IMPROVED DATA INTEGRITY

REDUCED DATA REDUNDANCY

* DISADVANTAGES

LOSS OF DATA CONTEXT

PERFORMANCE OVERHEAD