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| EXPERIMENT 3: |
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|  | Normalization: The process of decomposing relations that contain anomalies (insertion,Updation,Deletion anomalies) to produce smaller well structured relations, to reduce data redundancy. |
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|  | Normal Form: A state of a relation that results from applying simple rules regarding functional dependencies to that relation. |
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|  | Functional Dependencies: A functional dependency is a constraint between two attributes or two sets of attributes. A functional dependency of B on A represented by an arrow A->B |
|  |  |
|  | Eg: Bus no->Bname, Type |
|  |  |
|  | The types of normal forms: |
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|  | 1st Normal Form: A relation in the 1st normal form if it contains no multi valued attributes. |
|  |  |
|  | 2nd Normal Form : A relation is in 2nd normal form if it is in 1st normal form and every non-key attribute is fully functionally dependent on the primary key. |
|  | Partial Dependency is functional dependencies in which one or more non-key attributes are functionally depends on part of the primary key. |
|  |  |
|  | 3rd Normal Form : A relation is in 3rd normal form if it is in 2nd normal form and no transitive dependency exists. |
|  | Transitive dependency in a relation is a functional dependency between two (or more) non-key attributes. |
|  |  |
|  | Boyce Codd Normal Form: A relation in a Boyce Codd normal form iff every determinant in the relation is a candidate key.it is strict version of 3NF,so also called 3.5NF |
|  |  |
|  | 4th Normal Form : When a relation is in BCNF there are no longer any anomalies that result from functional dependency.it comes from concept of Multivalued dependency. |
|  |  |
|  | Eg: 1st Normal Form: |
|  |  |
|  | PNR no Pname Age Gender Addr Phno |
|  | 457 Satish 28 M Plot No. 5 RK. Puram, Hyd 9008745625,9959678987 |
|  | 746 Sheela 25 F H.No:1-9-88,DilsukhNagar,Hyderabad 9000998683 |
|  |  |
|  | Multivalued attributes are normalized into single value attributes. |
|  |  |
|  | PNR no Pname Age Gender Addr Phno |
|  | 457 Satish 27 M Plot No. 5 RK. Puram, Hyderabad 9008745625 |
|  | 457 Satish 27 M Plot No. 5 RK. Puram, Hyderabad 9959678987 |
|  | 746 Sheela 25 F H.No:1-9-88,DilsukhNagar,Hyderabad 9000998683 |
|  |  |
|  |  |
|  |  |
|  |  |
|  | Eg: 2nd Normal Form: |
|  |  |
|  | PNR no Pname Age Gender Addr Phno |
|  | 457 Satish 27 MPlot No. 5 RK. Puram, Hyderabad 9008745625 |
|  | 457 Satish 27 M Plot No. 5 RK. Puram, Hyderabad 9008745625 |
|  | 746 Sheela 25 F H.No:1-9-88,DilsukhNagar,Hyderabad 9000998683 |
|  |  |
|  | PNR no is the only primary key .so the partial dependency is as follows: |
|  | PNR no -> Pname, Age, Gender |
|  | PNR no -> Addr, Phno |
|  |  |
|  | PNR no Pname Age Gender |
|  | 457 Satish 27M |
|  | 746 Sheela 25 F |
|  |  |
|  | PNR no Addr Phno |
|  | 457 Plot No. 5 RK. Puram, Hyderabad 9008745625 |
|  | 746 H.No:1-9-88,DilsukhNagar,Hyderabad 9000998683 |
|  |  |
|  | Eg: 3rd Normal Form: |
|  | Tno Journey Date Day Seatno Src Dest Deptime Gender Bus no |
|  | 2100 15/08/10 Sun 35 Hyd Delhi 10hrs M AP1000 |
|  | 2710 20/08/10 Mon28 B’lore Hyd 15hrs F AP2014 |
|  | 1020 22/08/10 Wed 38 Delhi B’lore 18hrs F AP2387 |
|  | 6100 10/08/10 Tue 20 Hyd Chennai 14hrs M AP09525 |
|  | 1478 25/08/10 Wed 15 Chennai Delhi 06hrs F AP29457 |
|  |  |
|  | Tno -> Journey Date |
|  | Journey Date -> Day |
|  | The Table is normalized as follows: |
|  | Tno Seatno Src Dest Deptime Gender Bus no |
|  | 2100 35 Hyd Delhi 10:00 M AP1000 |
|  | 2710 28 B’lore Hyd 15:00 F AP2014 |
|  | 1020 38 Delhi B’lore 18:00 F AP2387 |
|  | 6100 20 Hyd Chennai 14:00 M AP09525 |
|  | 1478 15 Chennai Delhi 06:00 F AP29457 |
|  | Journey Date Day |
|  | 15/08/10 Sun |
|  | 20/08/10 Mon |
|  | 22/08/10 Wed |
|  | 10/08/10 Tue |
|  | 25/08/10 Wed |