DBMS Project - Blood Bank Management

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Project Deliverable 2

Initial Relational Schema

- Donor (DonorID, Age, Name, Gender, GroupOfCentres)
- Recipient (RecipientID, Age, Name, Gender)
- Centre (CentreID, Name, Address)
- Blood (BloodID, Quantity, BloodGroup, Price, DonationDate, RecievingDate)
- Hospital (Name, Address)

Normal Forms

1. **2NF** : All non-prime attributes are fully dependent on any primary key on R. That is, if X → A holds, then no proper subset Y of X exists, for which Y → A also holds true.

2. **3NF** : There exists no case in which a non-prime attribute is determined by another non-prime attribute.

Functional Dependencies

1. Donor (DonorID, Age, Name, Gender, GroupOfCentres)
   - DonorID → Age
   - DonorID → Name
   - DonorID → Gender
   - DonorID → GroupOfCentres

   This is in 3NF.

2. Recipient (RecipientID, Age, Name, Gender)
   - RecipientID → Age
   - RecipientID → Name
   - RecipientID → Gender

   This is in 3NF.

3. Centre (CentreID, Name, Address)
   - CentreID → Name
   - CentreID → Address

   This is in 3NF.

4. Blood (BloodID, Quantity, BloodGroup, Price, DonationDate, RecievingDate)
   - BloodID → Quantity, BloodGroup, Price, DonationDate, RecievingDate

   This is in 3NF.

5. Hospital (Name, Address)
   - Name → Address

   This is in 2NF, but not in 3NF. This is because Name is not a superkey.