Normalization

Summary:

1NF

In 1NF, we removed the outermost repeating group and any repeating groups it may have and created a new relation to contain it. We added to this relation a copy of the primary key of the relation immediately containing it. We named the new entity and identified the primary key of the new entity until there were no repeating groups.

2NF

In 2NF, we removed the offending attributes and placed them in a new relation. We added to this relation a copy of the attributes which are determining these offending attributes. We named the new entity and then renamed the original entity.

3NF

In 3NF, we removed the offending attributes that are transitively dependent on non-key attributes, and placed them in a new relation. We als0 added to this relation a copy of the attributes which are identifying of these offending attributes. We named the new entity and renamed the original one.

Our Normalised Relations are as follows:

Form 1

CustomerTransaction (CustomerName, CustID, Address, City, Mobile#, CNIC, Tracking/Parcel#, Description, QTY, ReceipientName, RecAddress, City, Status, Date)

- As all the customer details depend on the customer so we have added Sender as an entity to cater customer details:

CustomerTransaction(1NF):

SendId→SendName,SendPh#,SendAddress,City, CNIC

Sender(SendID, SendName, Address, City, Mobile#,CNIC)

- As all the parcel information is dependent on the parcel so we have added Parcel as an entity to cater the parcel information.

ParcelID→Description,QTY

Parcel(Parcel#,Description,QTY)

- As all the invoice details are dependent on the invoice so we have an entity of invoice to fulfill the needs of invoice.

Invoice#→RecipientName,RecAddress,Date

Invoice(Invoice#, ReceipientName,RecAddress,Date)

- All the tracking invoice is dependant on the tracking so for that we have added Tracking as an entity.

Tracking#→Status

Tracking(Tracking#,Status)

Form 2

TrackingParcel (TrackingNumber, Agent Reference Number,Origin,Destination,BookingDate,Shipper,Consignee,Date/Time,Status,Location,Current Status,Delivered On,Signed By)

- TracID→BookingDate,Date/Time,status

TrackingHistory(TracID, BookingDate,Date/Time,status)

- TrackID→CurrStatus,CurrLocation,Date

TrackingHistory(TracID,CurrStatus, CurrLocation, Date)

- EmpID→EmpName

Employee(EmpID,EmpName)   // employee acting as agentref#

- SendID→SendName

Sender(Shipper)

- Invoice#→Branch#,Consignee,Date

Invoice(Consignee,Branch#,Date)

Form 3

Branch Funds Collection(Year,Branch Number,Branch Name,ManagerName)

- Branch#→BranchName
  PostOffice(Branch#,Branch name)

- EmpID→EmoName,EmpMgrID
  Employee(EmpMgrID)