Customer (CID, CName\*, Street\*, City\*, CState\*, ZIP\*)

**CK(s):** CID alone

**FD(s):** CID 🡪 CName

**Normal Form:** All key and NK attributes depend on CID and therefore the table is in BCNF form.

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Reservation (ResID, CID\*, RID\*, CheckInDate\*, CheckOutDate\*, [DaysIn]\*, [BillAmt]\*)  
CID references Customer.CID  
RID references Room.RoomNum

**CK(s):** ResID alone; ResID and CID together

**FD(s):** ResID 🡪 CID; CID 🡪 RID; ResID and CID 🡪 CheckInDate; ResID and CID 🡪 CheckOutDate; CheckInDate 🡪 DaysIn; CheckInDate 🡪 BillAmt

**Normal Form:** the table is currently in the 2NF state where no NKAs depend on a part of a CK

Reservation (ResID, CID\*, RID\*, CheckInDate\*, CheckOutDate\*)   
ResBill (CheckInDate, CheckOutDate, [DaysIn]\*, [BillAmt]\*)  
*CheckInDate references Reservation.CheckInDate  
CheckOutDate references Reservation.CheckOutDate*

**FD(s):** ResID and CID 🡪 CheckInDate; ResID and CID 🡪 CheckOutDate

**Normal Form:** the table is currently in the 3NF state where no NKAs depend on anything other than a CK

Reservation (ResID, CID\*, RID\*)   
 *CID references Customer.CID  
 RID references Room.RoomNum*  
ResDate (ResID, CheckInDate\*, CheckOutDate\*)  
 *ResID references Reservation.ResID*  
ResBill (CheckInDate, CheckOutDate, [DaysIn]\*, [BillAmt]\*)  
 *NOW CheckInDate references ResDate.CheckInDate  
 NOW CheckOutDate references ResDate.CheckOutDate*

**FD(s):** ResID 🡪 CID; CID 🡪 RID

**Normal Form:** the table is in BCNF form since ResID transitively determines RID and no other KA depend on each other.

**NOTE:** because the table ResBill only keeps track of derived attributes, it will be erased since it is essentially pointless. Additionally, a reservation is made on a day and therefore having a separate table is also pointless. Thus, through de-normalization, we’re back on Reservation table.  
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Room (RoomNum, RoomType\*, RoomPrice\*)

**CK(s):** RoomNum alone

**FD(s):** RoomType 🡪 RoomPrice

**Normal Form:** the table is currently in the 3rd normal form since RoomPrice does not depend on a CK

Room (RoomNum, RoomType\*)  
Room\_Type (Type, RoomPrice\*)  
 *Type references RoomType*

**NOTE:** since the already defined table Type references both RoomType and RoomPrice, the table Room\_Type will be erased and now table Room is in BCNF form.

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Type (TName, TPrice\*, [Popularity])

**CK(s):** TName alone

**FD(s):** TName 🡪 TPrice

**Normal Form:** table is already in BCNF form since all key and NK attributes depend only on TName

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**Logical Schema after Normalization:**

Customer (CID, CName\*, Street\*, City\*, CState\*, ZIP\*)

Reservation (ResID, CID\*, RID\*, CheckInDate\*, CheckOutDate\*, [DaysIn]\*, [BillAmt]\*)   
 *CID references Customer.CID  
 RID references Room.RoomNum*

Room (RoomNum, RoomType\*)

Type (TName, TPrice\*, [Popularity])