## Customer Table:

Since customer to location is a many one relationship, we require Location_Code attribute.

| Name | ID | Mobile | D.O.B | Gender | Location_Code |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

## Location Table:

| Code | Name |
|---|---|
| | |
| | |

## Sales Executive Table:

| ID | Name | Gender | Mobile No. | D.O.B |
|---|---|---|---|---|
| | | | | |

Sells at Table:

| Location_Code | Sales_Executive_ID |
|---|---|
| | |

Product Table:

| Code | Name | Price Per Unit | Product Category Code |
|---|---|---|---|
| | | | |

Buys Table:

| Product.Code | Customer.ID | Number of Units Purchased | Date of Purchase |
|---|---|---|---|
| | | | |

Product Category Table:

| Code | Name |
|---|---|
| | |

Is Sold In Table:

| Location.Code | Product.Code |
|---|---|
| | |

Sells Table:

| Product.ID | SalesExecutive.ID |
|---|---|
| | |

Markets and Sells To Table:

| SalesExecutive.ID | Customer.ID |
|---|---|
| | |

# NORMALIZATION

I will try to show probable cases where we might need normalization when we convert the logical code into an actual database.

Consider the Customer Table filled up as:

| Name | ID | Mobile | D.O.B | Gender | Location_Code |
|---|---|---|---|---|---|
| Vishnu | 12 | 8800813413, 7717756815 | 09/07/1999 | Male | BLR |
| Shreesh | 13 | 9029210929 | 12/09/1999 | Male | BLR |
| Snigdha | 14 | 9973278061 | 20/06/1997 | Female | BLR |

**The above table is not 1NF normalized.**

We can see the record corresponding to ID:12 contains 2 values beneath Mobile attribute.

We can normalize it by splitting the record.

| Name | ID | Mobile | D.O.B | Gender | Location_Code |
|---|---|---|---|---|---|
| Vishnu | 12 | 8800813413 | 09/07/1999 | Male | BLR |
| Vishnu | 12 | 7717756815 | 09/07/1999 | Male | BLR |
| Shreesh | 13 | 9029210929 | 12/09/1999 | Male | BLR |
| Snigdha | 14 | 9973278061 | 20/06/1997 | Female | BLR |

**NOW the table is normalized.**