

## Normalization Exercise

### CPSC 408

Consider the following dataset: p5

| ordID | ordDate  | custID | custName | custState | prodID | prodDesc                 | prodPrice           | Qty     |
|-------|----------|--------|----------|-----------|--------|--------------------------|---------------------|---------|
| 1006  | 10/05/21 | 2      | Apex     | NC        | 7,5,4  | Table,<br>Desk,<br>Chair | 800,<br>325,<br>200 | 1, 1, 5 |
| 1007  | 10/06/21 | 3      | Acme     | GA        | 11,4   | Dresser,<br>Chair        | 500,200             | 4, 6    |

You are also provided a description of each attribute:

ordID = Order ID, ordDate = Order Date

CustID = Customer ID, custName = Customer Name, custState = customer State

prodID = Product ID, prodDesc = Product Description, prodPrice = Product Price,

' Qty = Quantity Purchased

1. Determine all Functional Dependencies.

custID -> custName, custState

ordID -> ordDate, custID\*

prodID -> prodDesc, prodPrice

ordID, prodID -> Qty

2. Normalize the table up to the 3<sup>rd</sup> Normalization Form.

| custID | custName | custState |
|--------|----------|-----------|
| 2      | Apex     | NC        |
| 3      | Acme     | GA        |

| <u>ordID</u> | ordDate | custID* |
|--------------|---------|---------|
| 1006         | 10/5/21 | 2       |
| 1007         | 10/6/21 | 3       |

| <u>prodID</u> | prodDesc | prodPrice |
|---------------|----------|-----------|
| 4             | Chair    | 200       |
| 5             | Desk     | 325       |
| 7             | Table    | 800       |
| 11            | Dresser  | 500       |

| <u>ordID</u> | <u>prodID</u> | Qty |
|--------------|---------------|-----|
| 1006         | 4             | 5   |
| 1006         | 5             | 1   |
| 1006         | 7             | 1   |
| 1007         | 4             | 6   |
| 1007         | 11            | 4   |

### 3. Suggest Names and Primary + Foreign Key information for final tables

**Table 1 – Customer Info Table, Primary Key – custID**

**Table 2 – Order Info Table, Primary Key – ordID, Foreign Key – CustID**

**Table 3 – Product Info Table, Primary Key – prodID**

**Table 4 – Quantity Info Table, Primary Keys – ordID and prodID**