**The Sample Record in the database of the online mail:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Attribute Name | Sample Value | Sample Value | Sample Value |
| 1 | Customer\_ID | 111111 | 200128 | 111111 |
| 2 | Customer\_LName | Smith | Jones | Smith |
| 3 | Customer\_FName | John | Lucy | John |
| 4 | Customer\_Phone Number | 5703963876 | 5703971234 | 5703963876 |
| 5 | Customer\_Email | [Sj11111@huskies.bloomu.edu](mailto:Sj11111@huskies.bloomu.edu) | [jlucy@bloomu.edu](mailto:jlucy@bloomu.edu) | [Sj11111@huskies.bloomu.edu](mailto:Sj11111@huskies.bloomu.edu) |
| 6 | Customer\_Password | 123456sj | 123456jl | 123456sj |
| 7 | Customer\_Street | 245 third street | 485 Fourth street | 245 third street |
| 8 | Customer\_City | Bloomsburg | Bloomsburg | Bloomsburg |
| 9 | Customer\_State | PA | PA | PA |
| 10 | Customer\_Postcode | 17815 | 17815 | 17815 |
| 11 | Customer\_Country | The United State | The United State | The United State |
| 12 | Order\_Number | 201401111515 | 201401301515 | 201401111516 |
| 13 | Order\_Date | 2014.01.11 | 2014.01.30 | 2014.01.11 |
| 14 | Order\_Tax | 12.00 | 5.00 | 6.00 |
| 15 | Order\_TotalPrice | 733.99 | 209.18 | 233.99 |
| 16 | GoodsName | Apple IPhone 5S(16G) | Coach Park Signature Hobo | Apple ipod touch(16G) |
| 17 | GoodsQuantity | 1 | 1 | 1 |
| 18 | GoodsIntroduce | Unlocked and White | Black | Silver |
| 19 | GoodsWeight | 9.6 ounces | 1 pounds | 3 ounces |
| 20 | GoodsUnit | Singleton | Singleton | Singleton |
| 21 | GoodsUnitPrice | 718.00 | 197.99 | 224.00 |
| 22 | GoodsMarketPrice | 1199.00 | 358.00 | 229.00 |
| 23 | GoodsUrl | [www.XXX.com/XXX.gif](http://www.XXX.com/XXX.gif) | www.XXX.com/XX.gif | [www.XXX.com/XXXX.gif](http://www.XXX.com/XXXX.gif) |
| 24 | GoodsQuantityInStock | 50 | 200 | 150 |
| 25 | ClassOfGood | Mobile Phone | Handbag | Player |
| 26 | Company\_ID | 00001 | 00002 | 00003 |
| 27 | Company\_Name | Goldcoinstar | Beauty Connection | SUBHAPP |
| 28 | Company\_Telephone | 5703973110 | 5703973111 | 5703973112 |
| 29 | Company\_Email | [Goldecoinstar@gmail.com](mailto:Goldecoinstar@gmail.com) | [Beauty@gmail.com](mailto:Beauty@gmail.com) | [SUBHAPP@gmail.com](mailto:SUBHAPP@gmail.com) |
| 30 | Company\_Password | Goldcoinstar3110 | Beauty3111 | SUBHAPP3112 |
| 31 | Company\_Account | 3456789 | 4567891 | 5678912 |
| 32 | Company\_Street | 78 Arm Street | 435 blue Street | 1 Broadway Street |
| 33 | Company\_City | NewYork | NewYork | NewYork |
| 34 | Company\_State | NY | NY | NY |
| 35 | Company\_Postcode | 14975 | 14975 | 14975 |
| 36 | Company\_Country | The Uinted State | The United State | The Uinted State |
| 37 | Shiptype | Domestic Standard | Domestic Expedited | Domestic Expedited |
| 38 | ShipFee | 3.99 | 6.19 | 3.99 |
| 39 | PayType | Credit Card | Credit Card | Credit Card |
| 40 | PayAccount | 123456789 | 234567891 | 123456789 |
| 41 | CardCVV | 123 | 234 | 123 |
| 42 | PayDate | 2014.01.11 | 2014.01.31 | 2014.01.12 |
| 43 | PayState | Full\_Payment | Full\_Payment | Full\_Payment |

**The initial dependency diagram:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Customer\_ID** | **Cust\_LName** | **Cust\_FName** | **Cust\_Phone** | **Cust\_Email** | **Cust\_Password** | **Cust\_****street** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cust\_City** | **Cust\_State** | **Cust\_Postcode** | **Cust\_Country** | **Order\_number**  Transitive Dependencies | **Order\_Date** | **Order\_Tax** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Order\_Totle** | **Order\_Gs\_Quantity** | **Goods\_name** | **Goods\_Intro** | **Goods\_Weight** | **Goods\_Unit** |

Transitive Dependencies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Goods\_UnitPrice** | **Goods\_MarketPrice** | **Goods\_url** | **Goods\_QuInStock** | **Class\_Goods** | **Company\_ID** |

Transitive Dependencies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Company\_Name** | **Comp\_Tele** | **Comp\_Email** | **Comp\_Password** | **Comp\_Account** | **Comp\_Street** |

Transitive Dependencies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Comp\_City** | **Comp\_State** | **Comp\_Postcode** | **Comp\_Country** | **Shiptype** | **ShipFee** |

Transitive Dependencies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pay\_type** | **Pay\_Account** | **Pay\_CVV** | **Pay\_Date** | **Pay\_State** |

**Using the initial dependency drawn in the Form above, normalize the structure to meet the 3NF requirements to the greatest practical extent.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Customer\_ID** | **Cust\_LName** | **Cust\_FName** | **Cust\_Phone** | **Cust\_Email** | **Cust\_Password** | **Address\_Code** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Address\_Code** | **Street** | **City** | **State** | **Postcode** | **Country** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Order\_Num** | **Customer\_ID** | **Goods\_ID** | **Od\_Date** | **Od\_Goods\_**  **Quantity** | **Order\_Tax** | **Order\_TotalPrice** | **Ship\_number** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Order\_Num** | **Pay\_Code** | **Pay\_state** | **Pay\_Date** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pay\_Code** | **Pay\_type** | **Pay\_Account** | **Pay\_CVV** | **Customer\_ID** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Ship\_number** | **Goods\_ID** | **Shiptype** | **ShipFee** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Goods\_ID** | **Goods\_Name** | **Goods\_intro** | **Goods\_Weight** | **Goods\_Unit** | **Goods\_UnitPrice** | **Market\_price** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Goods\_Picture\_Url** | **Goods\_InStock** | **Class\_ID** | **Company\_ID** |

|  |  |
| --- | --- |
| **Class\_ID** | **Class\_Name** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Company\_ID** | **Comp\_Name** | **Comp\_Tele** | **Comp\_Email** | **Comp\_Password** | **Comp\_Account** |

|  |
| --- |
| **Address\_Code** |

Introduction**:**

A customer has an address to ship his goods. The customer can have several bank cards and select one card to pay for the goods.

A company could have many kinds of goods to sell in this online shop. The company needs to set the properties of goods.

A product could have many kinds of delivery, and charges of different delivery terms may be greatly different.

One order just has one kind of goods, and the company that sells the goods could view the detail of the order by using the good\_ID.

**CS\_457 DataBase Design**

**Project 2**

**Jixiang Lu**