Name: Xiangyu Li USCID: 4711115778 USC email: lixiangy@usc.edu A.Step 1 Supplier, Product, ImportDate -> Quantity Supplier, Product, ImportDate -> Cost Product -> DeptCode Product -> UnitOfMeasure A.Step 2 This doesn't satisfy any normal forms(1NF, 2NF, 3NF), because there are several repeating groups(Supplier and Product) in it which are not atomic. In 1NF, there should not be multivalued attributes or composite attributes, so this doesn't satisfy any one of normal forms. A.Step 3 Supplier(Supplier ID, Supplier_name) Product(<u>Product_ID</u>, Product_name, DeptCode, UnitOfMeasure) Buy(Supplier ID, Product ID, ImportDate, Quantity, Cost) B.Step 1 Dept -> DeptName ProductCode -> Dept ProductCode -> UnitofMeasure ProductCode, Date -> ListPrice ProductCode, Date -> Quantity B.Step 2 This satisfies the 1NF, but not 2NF, 3NF. Because there are not repeating groups in table, however partial dependence is in it.

B.Step 3

Department(<u>Dept</u>, DeptName)

Sell(<u>ProductCode</u>, <u>Date</u>, ListPrice, Quantity)

Product(<u>ProductCode</u>, Dept, UnitofMeasure)

C.Step 1 ReceiptID -> CustID ReceiptID -> DateandTime ReceiptID, ProductCode -> ActualPrice ReceiptID, ProductCode -> Quantity CustID -> CustName CustID -> MembershipStatus MembershipStatus -> Discount C.Step 2 This satisfies the 1NF, but not 2NF, 3NF. Because there are not repeating groups in table, however partial dependence is in it. C.Step 3 Customer(CustID, CustName, MembershipStatus) Membership(MembershipStatus, Discount) ReceiptMade(<u>ReceiptID</u>, CustId, DateandTime)

ReceiptItem(ReceiptID, ProductCode, Quantity, ActualPrice)