Account Create

Insert(email, firstname, lastname, password) into Customer

Insert(email, street, city, state, zip, “Home” as type) into CustomerAddress

Insert(email, street, city, state, zip, “Business” as type) into CustomerAddress

Insert(email, street, city, state, zip, “Billing” as type) into CustomerAddress

Account Details – Account Info

Home\_Address 🡨 Π(email, Street as HomeStreet, City as HomeCity, State as HomeState, Zip as HomeZip)(σ(type = “Home”) from Address)

Business\_Address 🡨 Π(email, Street as BusinessStreet, City as BusinessCity, State as BusinessState, Zip as BusinessZip)(σ(type= “Business”) from Address)

Billing\_Address 🡨 Π(email, Street as BillingStreet, City as BillingCity, State as BillingState, Zip as BillingZip)(σ(type=”Billing”) from Address)

σ (email = “someEmail”)(((Π(email, firstname, lastname)Customer) [X](email) Home\_Address) [X](email) Business\_Address) [X](email) Billing\_Address))

Account Details – Order Info – Assumes that we are adding a derived totalprice field

Π(OrderID, PurchaseDate, TotalPrice, Status)( σ (email = “someEmail”)(Customer [X](OrderID) Order))

Admin – Each region is queried separately but can be combined in SQL then Grouped and ordered on one table

(σ (Name = “Region\_Name”)Region) [X](Region.name) (Country [X] (country.name) (Coffee [X](WarehouseID) (Warehouse)))

Insert(SKU, Name, Country, Weight, Expiration, WarehouseID, Price) into Coffee

Admin\_cur\_orders – Assumes that we are adding a derived totalprice field

Π(OrderID, email, purchase date, total price)( σ (Status = “Current”)(Order [X](OrderID) Customer))

Π(OrderID, email, purchase date, total price)( σ (Status = “Pending”)(Order [X](OrderID) Customer))

σ (OrderID, email, purchase date, total price)(Π(OrderID, email, purchase date, total price)( σ (Status = “Pending”)(Order [X](OrderID) Customer))) *This RA statement can be done with any combination of the attributes in the initial select statement, I didn’t list all possible combinations for sanity’s sake.*

Order Details – Assumes that we are adding a derived totalprice field

Π(Purchase Date, Total Price, Status)( σ (OrderID = ‘336452’) Order)

Π(SKU, Coffee.Name, Coffee.Nation, OrderItem.weight, Coffee.Expiration, (OrderItem.Weight multiplied by Coffee.Price) as Price)( σ (OrderID = ‘366452’) (OrderItem [X](SKU) Coffee))

Generic –

Address

Update Address set Street for tuples with email = “email” and type = “type” to “SomethingNew”

Update Address set City for tuples with email = “email” and type = “type” to “SomethingNew”

Update Address set State for tuples with email = “email” and type = “type” to “SomethingNew”

Update Address set Zip for tuples with email = “email” and type = “type” to “SomethingNew”

Insert(email, Street, City, State, Zip, Type) into Address

Delete from Address where email = “email”

Customer

Update Customer set Fname for tuples with email = “email” to “SomethingNew”

Update Customer set Lname for tuples with email = “email” to “SomethingNew”

Update Customer set Password for tuples with email = “email” to “SomethingNew”

Insert(email, Fname, Lname, Password) into Customer

Delete from Customer where email = “email”

Order

Update Order set Purchase\_Date for tuples with OrderID = “OrderID” to “SomethingNew”

Update Order set Status for tuples with OrderID = “OrderID” to “SomethingNew”

Insert(OrderID, PurchaseDate, Status, Email) into Order

Delete from Order where OrderID = “OrderID”

OrderItem

Update Order\_Item set Weight for tuples with OrderID = “OrderID” and SKU = “SKU” to “SomethingNew”

Insert(SKU, OrderID, Weight, Price) into OrderItem

Delete from OrderItem where SKU = “SKU”

Coffee

Update Coffee set Name for tuples with SKU = “SKU” to “SomethingNew”

Update Coffee set ExpDate for tuples with SKU = “SKU” to “SomethingNew”

Update Coffee set Weight for tuples with SKU = “SKU” to “SomethingNew”

Update Coffee set Price for tuples with SKU = “SKU” to “SomethingNew”

Update Coffee set StoredIn for tuples with SKU = “SKU” to “SomethingNew”

Update Coffee set ImportedFrom for tuples with SKU = “SKU” to “SomethingNew”

Insert(SKU, Name, ExpDate, Weight, Price, ImportedFrom, StoredIn) into Coffee

Delete from Coffee where SKU = “SKU” *This delete has potential data integrity issues.*

Warehouse

Update Warehouse set Address for tuples with ID = “ID” to “SomethingNew”

Insert(ID, Address) into Warehouse

Delete from Warehouse where ID = “ID” *This delete has potential data integrity issues.*

Country

Update Country set LocatedIn for tuples with Name = “Name” to “SomethingNew”

Insert(Name, LocatedIn) into Country

Delete from Country where Name = “Name” *This delete has potential data integrity issues.*

Region

Insert(Name) into Region

Delete from Region where Name = “Name” *This delete has potential data integrity issues.*