# Unnormalized

SalesReceipts (SalesNumber, SaleDate, SalesPerson, CustomerName, CustomerAddress, CustomerCity, CustomerProvince, CustomerPC, ItemCode, ItemDescription, ItemUnitPrice, ItemQuantity, ItemTotal, Subtotal, GST, Total)

# 1NF

SalesReceipts (SalesNumber, SaleDate, SalesPerson, CustomerName, CustomerAddress, CustomerCity, CustomerProvince, CustomerPC, Subtotal, GST, Total)

SalesItems (ItemCode, SalesNumber, ItemDescription, ItemUnitPrice, ItemQuantity, ItemTotal)

# 2NF

SalesReceipts (SalesNumber, SaleDate, SalesPerson, CustomerName, CustomerAddress, CustomerCity, CustomerProvince, CustomerPC, Subtotal, GST, Total)

SalesItems (ItemCode, SalesNumber, ItemQuantity, ItemTotal)

Items (ItemCode, ItemDescription, ItemUnitPrice)

Assumptions: ItemCode is sufficiently unique enough to be a primary key.

# 3NF

Customers (CustomerId, CustomerName, CustomerAddress, CustomerCity, CustomerProvince, CustomerPC)

SalesReceipts (SalesNumber, SaleDate, SalesPerson, CustomerId, Subtotal, GST, Total)

SalesItems (ItemCode, SalesNumber, ItemQuantity, ItemTotal)

Items (ItemCode, ItemDescription, ItemUnitPrice)

# Data Dictionary

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| SalesReceipts |
| <<PK>> SalesNumber : number {SalesNumber >= 1 and SalesNumber <= 10000000}  SaleDate : date  SalesPerson : text {size = 50}  <<FK>> CustomerId : number {reference Customers}  Subtotal : decimal {Subtotal >= 0.00 and Subtotal <= 10000000.00}  GST : decimal {GST >= 0.00 and GST <= 100000000.00}  Total : decimal {Total >= 0.00 and Total <= 10000000.00} |

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| --- |
| SalesItems |
| <<PK, FK>> SalesNumber : number {reference = SalesReceipt, Order = 1}  <<PK, FK>> ItemCode : text {reference = Items, Order = 2}  Quantity : number {Quantity >= 1 and Quantity <= 100000}  ItemTotal : decimal {ItemTotal >= 0.00 and ItemTotal <= 1000000.00} |

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| Items |
| <<PK>> ItemCode : text {size = 6}  Description : text {Size = 50}  ItemUnitPrice : decimal { ItemUnitPrice >= 0.00 and ItemUnitPrice <= 1000000.00} |

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| Customers |
| <<PK>> CustomerId : number {CustomerId >= 1 and CustomerId <= 10000000}  CustomerName : text {size = 50}  CustomerAddress : text {size = 50}  CustomerCity : text {size = 50}  CustomerProvince : text {size = 50}  CustomerPC : text {size = 10} |

# Data Model

SalesReceipts

Customers

SalesItems

Items

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1

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