# EPS database

A close-up of a card

AI-generated content may be incorrect.

0NF

Customer(**CustomerNumber**, Name, Address, City, Province, PostalCode, HomePhone)

1NF

Customer(**CustomerNumber**, FirstName, LastName, Address, City, Province, PostalCode, HomePhone)

2NF

Customer(**CustomerNumber**, FirstName, LastName, Address, City, Province, PostalCode, HomePhone)

3NF

Customer(**CustomerNumber**, FirstName, LastName, Address, City, Province, PostalCode, HomePhone)

A receipt with numbers and letters

AI-generated content may be incorrect.

0NF

Order(**OrderNumber**, CustomerName, CustomerAddress, CustomerPhone, SubTotal, GST, Total, (ItemNumber, Description, Quantity, Price, Amount))

1NF

Order(**OrderNumber**, CustomerFirstName, CustomerLastName, CustomerAddress, CustomerCity, CustomerProvince, CustomerPostalCode, CustomerPhone, SubTotal, GST, Total)

OrderItem (**ItemNumber, *OrderNumber***, Description, Quantity, Price, Amount)

2NF

Order(**OrderNumber**, CustomerFirstName, CustomerLastName, CustomerAddress, CustomerCity, CustomerProvince, CustomerPostalCode, CustomerPhone, SubTotal, GST, Total)

OrderItem (***ItemNumber*, *OrderNumber***, Quantity, HistoricalPrice, Amount)

Item (**ItemNumber,** Description, CurrentPrice)

3NF

Order(**OrderNumber**, *CustomerNumber*, SubTotal, GST, Total)

OrderItem (***ItemNumber*, *OrderNumber***, Quantity, HistoricalPrice, Amount)

Item (**ItemNumber,** Description, CurrentPrice)

NOTE: in this new table, there is NO appropriate attribute and would make a satisfactory primary key. IF this happens, make what is called a “Technical key”. It has no data importance except to uniquely identify the row. Here, we will create a technical key called CustomerNumber.

(**CustomerNumber**, CustomerFirstName, CustomerLastName, CustomerAddress, CustomerCity, CustomerProvince, CustomerPostalCode, CustomerPhone)

A black background with white rectangles

AI-generated content may be incorrect.

***Customer Payments Against Orders***

A close-up of a receipt

AI-generated content may be incorrect.

0NF (initial table)

NOTE: remember you could wait until 3NF to name your tables. In example we will WAIT.

(**OrderNumber**, CustomerName, CustomerNumber, OrderDate, OrderTotal,(PaymentDate, PaymentAmount, PaymentNumber, BalanceOwning PaymentType, DepositBatchNumber))

1NF

(**OrderNumber**, CustomerFirstName, CustomerLastName, CustomerNumber, OrderDate, OrderTotal)

(***OrderNumber*, PaymentNumber,** PaymentDate, PaymentAmount, BalanceOwning, PaymentType, DepositBatchNumber)

2NF

(**OrderNumber**, CustomerFirstName, CustomerLastName, CustomerNumber, OrderDate, OrderTotal)

(***OrderNumber*, PaymentNumber,** PaymentDate, PaymentAmount, BalanceOwning, PaymentType, DepositBatchNumber)

3NF

Remember by the end of this normal form, you need to name your tables.

Order (**OrderNumber**, *CustomerNumber*, OrderDate, OrderTotal)

OrderPayment (***OrderNumber*, PaymentNumber,** PaymentDate, PaymentAmount, BalanceOwning, PaymentType, DepositBatchNumber)

Customer (**CustomerNumber**, CustomerFirstName, CustomerLastName)

**Inventory Control Sheet**

A close-up of a number

AI-generated content may be incorrect.

0NF (initial table)

(**ItemNumber**, ItemDescription, CurrentSalePrice, (OrderDate, SupplierNumber, PONumber, Quantity, Cost), QuantityOnHand, ReorderLevel)

1NF (atomization and removing repeating groups)

(**ItemNumber**, ItemDescription, CurrentSalePrice, QuantityOnHand, ReorderLevel)

(**PONumber**, ***ItemNumber***, OrderDate, SupplierNumber, Quantity, Cost)

2NF (partial dependencies)

(**ItemNumber**, ItemDescription, CurrentSalePrice, QuantityOnHand, ReorderLevel)

(***PONumber***, ***ItemNumber***, Quantity, Cost)

(**PONumber,** OrderDate, SupplierNumber)

3NF (Transitive dependencies)

Item (**ItemNumber**, ItemDescription, CurrentSalePrice, QuantityOnHand, ReorderLevel)

POItem (***PONumber***, ***ItemNumber***, Quantity, Cost)

PurchaseOrder (**PONumber,** OrderDate, SupplierNumber)

Purchase Order

A purchase order with numbers and numbers

AI-generated content may be incorrect.

0NF (initial table)

(**PurchaseOrderNumber**, SupplierNumber, SupplierName, SupplierAddress, SupplierCity, SupplierPhone, Date, (ItemNumber, SupplierItemNumber, SupplierDescription, Qty, Cost, Amount), Subtotal, GST, Total)

1NF

(**PurchaseOrderNumber**, SupplierNumber, SupplierName, SupplierAddress, SupplierCity, SupplierProvince, SupplierPostalCode, SupplierPhone, Date, Subtotal, GST, Total)

(***PurchaseOrderNumber***, **ItemNumber**, SupplierItemNumber, SupplierDescription, Qty, Cost, Amount)

2NF

(**PurchaseOrderNumber**, SupplierNumber, SupplierName, SupplierAddress, SupplierCity, SupplierProvince, SupplierPostalCode, SupplierPhone, Date, Subtotal, GST, Total)

(***PurchaseOrderNumber***, **ItemNumber**, SupplierItemNumber, SupplierDescription, Qty, Cost, Amount)

3NF

(**PurchaseOrderNumber**, *SupplierNumber*, Date, Subtotal, GST, Total)

(***PurchaseOrderNumber***, **ItemNumber**, SupplierItemNumber, SupplierDescription, Qty, Cost, Amount)

(**SupplierNumber**, SupplierName, SupplierAddress, SupplierCity, SupplierProvince, SupplierPostalCode, SupplierPhone)

**Merging Views into one set of tables**

The final step in Normalization, would be to take all the separate Views and creates a single set of tables that represent the database for the work.

Steps:

1. Take two views and compare the set of tables within the views.
2. If there is two tables with the same Primary Key, then these two table need to be combined into a single table
   1. Choose one of the tables as the final combined table
   2. In the second table, compare each attribute to the final combined table.
   3. IF the attribute does NOT exist in the combined table, place a copy of the attribute in the combined table.
   4. Repeat for each attribute in the second view table
3. Repeat step 2 for all views of your normalization process

Customer(**CustomerNumber**, FirstName, LastName, Address, City, Province, PostalCode, HomePhone)

Order(**OrderNumber**, *CustomerNumber*, SubTotal, GST, Total)

OrderItem (***ItemNumber*, *OrderNumber***, Quantity, HistoricalPrice, Amount)

Item (**ItemNumber,** Description, CurrentPrice)

(**CustomerNumber**, CustomerFirstName, CustomerLastName, CustomerAddress, CustomerCity, CustomerProvince, CustomerPostalCode, CustomerPhone)

Customer(**CustomerNumber**, FirstName, LastName, Address, City, Province, PostalCode, HomePhone)

Order(**OrderNumber**, *CustomerNumber*, SubTotal, GST, Total)

OrderItem (***ItemNumber*, *OrderNumber***, Quantity, HistoricalPrice, Amount)

Item (**ItemNumber,** Description, CurrentPrice)

Order (**OrderNumber**, *CustomerNumber*, OrderDate, OrderTotal)

OrderPayment (***OrderNumber*, PaymentNumber,** PaymentDate, PaymentAmount, BalanceOwning, PaymentType, DepositBatchNumber)

Customer (**CustomerNumber**, CustomerFirstName, CustomerLastName)

Customer(**CustomerNumber**, FirstName, LastName, Address, City, Province, PostalCode, HomePhone)

Order(**OrderNumber**, *CustomerNumber*, SubTotal, GST, Total, OrderDate)

OrderItem (***ItemNumber*, *OrderNumber***, Quantity, HistoricalPrice, Amount)

Item (**ItemNumber,** Description, CurrentPrice)

OrderPayment (***OrderNumber*, PaymentNumber,** PaymentDate, PaymentAmount, BalanceOwning, PaymentType, DepositBatchNumber)

Item (**ItemNumber**, ItemDescription, CurrentSalePrice, QuantityOnHand, ReorderLevel)

POItem (***PONumber***, ***ItemNumber***, Quantity, Cost)

PurchaseOrder (**PONumber,** OrderDate, SupplierNumber)

Customer(**CustomerNumber**, FirstName, LastName, Address, City, Province, PostalCode, HomePhone)

Order (**OrderNumber**, *CustomerNumber*, SubTotal, GST, Total, OrderDate)

OrderItem (***ItemNumber*, *OrderNumber***, Quantity, HistoricalPrice, Amount)

Item (**ItemNumber,** Description, CurrentPrice, QuantityOnHand, ReorderLevel)

OrderPayment (***OrderNumber*, PaymentNumber,** PaymentDate, PaymentAmount, BalanceOwning, PaymentType, DepositBatchNumber)

POItem (***PONumber***, ***ItemNumber***, Quantity, Cost)

PurchaseOrder (**PONumber,** OrderDate, SupplierNumber)

(**PurchaseOrderNumber**, *SupplierNumber*, Date, Subtotal, GST, Total)

(***PurchaseOrderNumber***, **ItemNumber**, SupplierItemNumber, SupplierDescription, Qty, Cost, Amount)

(**SupplierNumber**, SupplierName, SupplierAddress, SupplierCity, SupplierProvince, SupplierPostalCode, SupplierPhone)

Customer(**CustomerNumber**, FirstName, LastName, Address, City, Province, PostalCode, HomePhone)

Order (**OrderNumber**, *CustomerNumber*, SubTotal, GST, Total, OrderDate)

OrderItem (***ItemNumber*, *OrderNumber***, Quantity, HistoricalPrice, Amount)

Item (**ItemNumber,** Description, CurrentPrice, QuantityOnHand, ReorderLevel)

OrderPayment (***OrderNumber*, PaymentNumber,** PaymentDate, PaymentAmount, BalanceOwning, PaymentType, DepositBatchNumber)

POItem (***PONumber***, ***ItemNumber***, Quantity, Cost, SupplierItemNumber, SupplierDescription, Amount)

PurchaseOrder (**PONumber,** PODate, *SupplierNumber*, Subtotal, GST, Total)

Supplier (**SupplierNumber**, SupplierName, SupplierAddress, SupplierCity, SupplierProvince, SupplierPostalCode, SupplierPhone)