DSCI 504: SQL

Maryville University
Spring
Professor Bean
Student A
17 Jan. 2022

OVERVIEW

Goal: To properly apply the degrees of normalization.

Intended Outcome: To have multiple tables in at least 3NF – with the application of ACIDity, primary keys, foreign keys in a visual manner.

PROPOSED NORMALIZATION

TransDate ProductID ProdCatName ProdManufacturer ProductName ProductDescription CompID CompHBar CompBrake CompWheels CompFork CompShock CompShifter CompCass CompDerail CompDropper CompCrank CompChainRing Product Price ProductCat CtryOfOrig WarehouseID WarehouseName CusID CusLastName CusFirstName CusAddNum CusAddress CusCity CusState CusZip CusPhone CusJoinDate CusApprecCd CusApprecNum TotOrdQty TotOrdValue OrdID OrdTaxLoc OrdTaxRate OrdSubTot OrderTotal OrderShipAddCd OrdShipDate OrdTrackNum RACIssued RacID TotRetItemCnt TotRetAmt

The above are grouped attributes by color for the proposed normalization.

1ST NORMAL FORM

Products	Customers	Components	Orders	Returns	Warehouses
ProductID	CusID	CompID	TransDate	RACIssued	WarehouseID
ProductCat	CusLastName	CompHBar	TotOrdQty	RacID	WarehouseName
ProdCatName	CusFirstName	CompBrake	TotOrdValue	TotRetItemCntTot	
ProdManufacturer	CusAddNum	CompWheels	OrdID	RetAmt	
ProductName	CusAddress	CompFork	OrdTaxLoc		
ProductDescription	CusCity	CompShock	OrdTaxRate		
	CusState	CompShifter	OrdSubTot		
	CusZip	CompCass	OrderTotal		
	CusPhone	CompDerail	OrderShipAddCd		
	CusJoinDate	CompDropper	OrdShipDate		
	CusApprecCd	CompCrank	OrdTrackNum		
	CusApprecNum	CompChainRing			

2ND NORMAL FORM
Primary Keys are highlighted

Products	Customers	Components	Orders	Returns	Warehouses
==ProductID== ProductCat ProdCatName ProdManufacturer ProductName ProductDescription	==CusID== CusLastName CusFirstName CusAddNum CusAddress CusCity CusState CusZip CusPhone CusJoinDate CusApprecCd CusApprecNum	==CompID== CompHBar CompBrake CompWheels CompFork CompShock CompShifter CompCass CompDerail CompDropper CompCrank CompChainRing	TransDate TotOrdQty TotOrdValue ==OrdID== OrdTaxLoc OrdTaxRate OrdSubTot OrderTotal OrderShipAddCd OrdShipDate OrdTrackNum	RACIssued ==RacID== TotRetItemCntTot RetAmt	==WarehouseID== WarehouseName

3RD NORMAL FORM

Foreign Keys in black font

Products

ProductID
ProductCat
ProdCatName
ProdManufacturer
ProductName
ProductDescription

Components_id

Customers

CusID
CusLastName
CusFirstName
CusAddNum
CusAddress
CusCity
CusState
CusZip
CusPhone
CusJoinDate
CusApprecCd
CusApprecNum

Components

CompID
CompHBar
CompBrake
CompWheels
CompFork
CompShock
CompShifter
CompCass
CompDerail
CompDropper
CompCrank
CompChainRing

Orders

TotOrdQty
TotOrdValue
OrdID
OrdTaxLoc
OrdTaxRate
OrdSubTot
OrderTotal
OrderShipAddCd
OrdShipDate
OrdTrackNum

FKs
Warehouse_id
Returns_id
Customers_id
Products_id

Returns

RACIssued
RacID
TotRetItemCntTot
RetAmt

FKs
Customers_id
warehouse_id

Warehouses

WarehouseID
WarehouseName

PROPOSED RELATIONSHIPS

Customers

CusID
CusLastName
CusFirstName
CusAddNum
CusAddress
CusCity
CusState
CusZip
CusPhone
CusJoinDate
CusApprecCd
CusApprecNum

Orders

TotOrdQty
TotOrdValue
OrdID
OrdTaxLoc
OrdTaxRate
OrdSubTot
OrderTotal
OrderShipAddCd
OrdShipDate
OrdTrackNum

FKs
Returns_id
Customers_id
Products_id
Warehouse_id

Products

ProductID
ProductCat
ProdCatName
ProdManufacturer
ProductName
ProductDescription

FKs
Components_id

Components

CompID
CompHBar
CompBrake
CompWheels
CompFork
CompShock
CompShifter
CompCass
CompDerail
CompDropper
CompCrank
CompChainRing

Returns

RACIssued
RacID
TotRetItemCntTotRetAmt

FKs
warehouse_id
Customers_id

Warehouses

WarehouseID
WarehouseName