



# Database Design Using Access

By Derek Peacock

# Table Design

Field Name	Data Type	Description
WineID	AutoNumber	A unique number used to identify a particular wine
WineName	Text	The name of the wine used on the wine label
Summary	Text	A summary of the main characteristics of each wine
Description	Memo	A full description with tasting notes by wine experts
Vineyard	Text	The name of the Vineyard producing the wine
Colour	Text	The colour of the wine, red, white or rose
IsSparkling	Yes/No	Whether the wine is sparkling or not
Vintage	Number	The year the grapes were harvested
ImageUrl	Text	The location of an image file
AlcoholContent	Number	The percentage of alcohol
Region	Text	The main region of the country where the grapes were grown e.g. Bordeaux
Area	Text	The area in the region where the grapes were grown e.g. Margaux
BottlePrice	Currency	The price to buy one 75cl bottle of the wine
Maturity	Number	How ready the wine is to drink, 1=ready, 2=ready but will improve, 3 = not ready, lay down
BBR_Rating	Number	How good the wine is rated out of 100 by the company
ParkersRating	Number	How good the wine is rated out of 100 by Robert Parker

# Data Validation

## Vintage

General		Lookup
Field Size	Integer	
Format		
Decimal Places	Auto	
Input Mask		
Caption		
Default Value		
Validation Rule	>=1900 And <=2013	
Validation Text	Please enter the year the wine was harvested as a four digit figure	
Required	Yes	
Indexed	No	
Smart Tags		
Text Align	General	

## Alcohol Content

General		Lookup
Field Size	Single	
Format		
Decimal Places	1	
Input Mask		
Caption		
Default Value		
Validation Rule	>=7 And <=16	
Validation Text	Please enter the alcohol content as a percentage e.g. 12.5	
Required	No	
Indexed	No	
Smart Tags		
Text Align	General	

## Colour (Lookup Wizard..)

General		Lookup
Display Control	Combo Box	
Row Source Type	Value List	
Row Source	"Red";"White";"Rose"	
Bound Column	1	
Column Count	1	
Column Heads	No	
Column Widths	2.54cm	
List Rows	16	
List Width	2.54cm	
Limit To List	Yes	
Allow Multiple Values	No	
Allow Value List Edits	Yes	
List Items Edit Form		
Show Only Row Source V	No	

# Test Data Plan

## Description of Item to Be Tested: WineName



WineName is going to store the name of the wine, which is a required field and must be start with at least 3 letters and must be no more than 30 characters long in total. This name is displayed on the wine label.

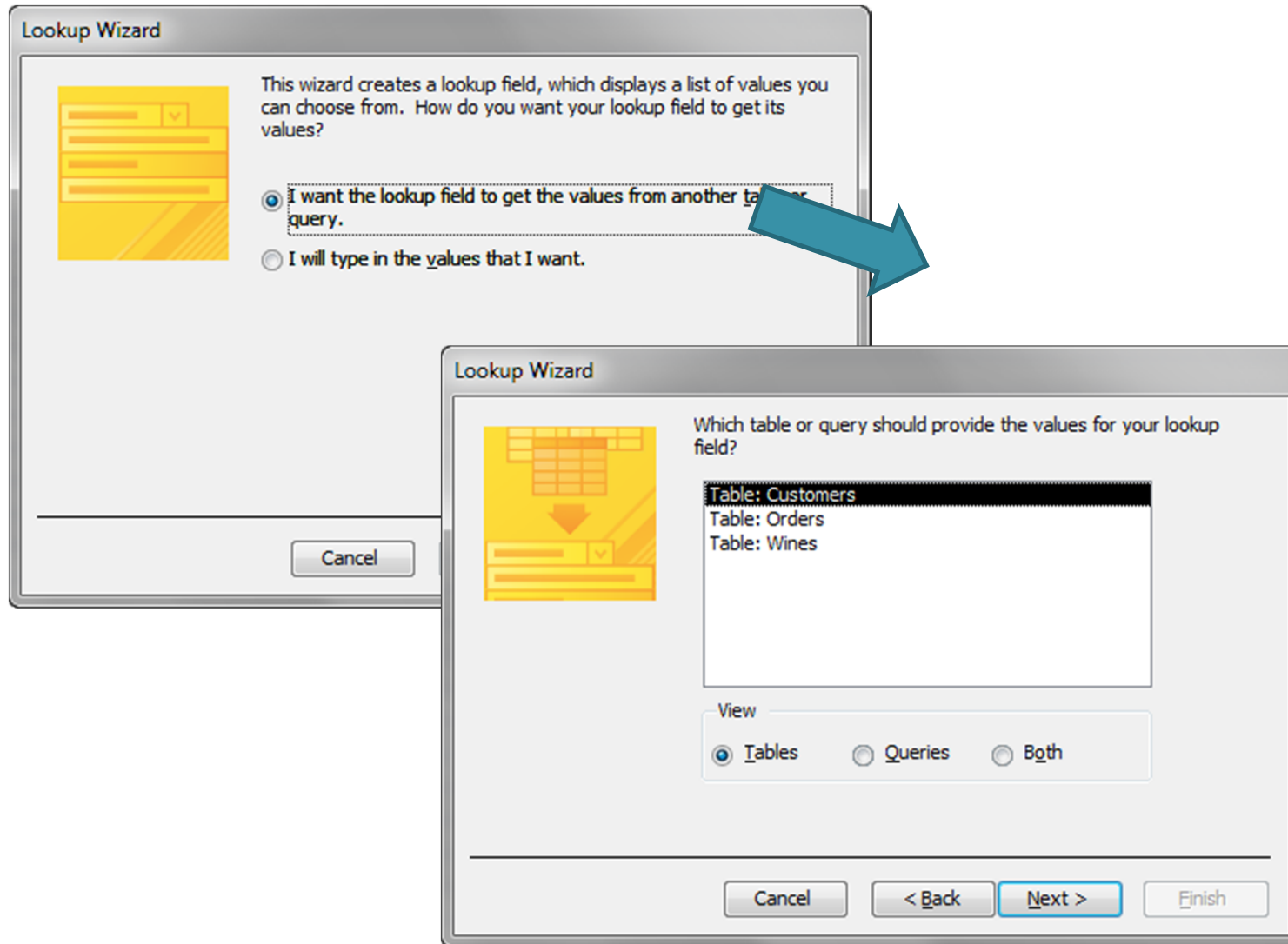
## Required Field Y

Test Type	Test Data	Expected Result	Actual Result
Extreme Min	No Chars	Display Error Message	Error Message
Min -1	2 Chars	Display Error Message	No Error Message, pattern added which required at least 3 letters followed by an optional 27 further chars
Min (Boundary)	3 Chars	Accepted	Accepted
Min +1	4 Chars	Accepted	Accepted
Max -1	29 Chars	Accepted	Accepted
Max (Boundary)	30 Chars	Accepted	Accepted
Max +1	31 Chars	Only 30 chars accepted	Only 30 chars accepted
Mid	60 Chars	Only 30 chars accepted	Only 30 chars accepted
Extreme Max	120 chars	Only 30 chars accepted	Only 30 chars accepted
Invalid data type	NA		
Other tests			

## Additional Notes / Instructions:

Although most names will only contain letters it is possible that someone could name a wine "Opus 1" or any other such name that contains digits or symbols

# Relationships



# Include Other Fields

The image shows two overlapping windows from a software application. The background window is titled 'Lookup Wizard' and contains the following text: 'Which fields of Customers contain the values you want included in your lookup field? The fields you select become columns in your lookup field.' Below this text is an icon of a table with arrows pointing to a form. The window is divided into two panes: 'Available Fields:' and 'Selected Fields:'. The 'Available Fields:' pane lists: Email, HouseNo, PostCode, PaymentCard, DebitorCredit, CardNumber, ExpiryMonth, and ExpiryYear. The 'Selected Fields:' pane lists: CustomerID and FullName. Between the panes are navigation buttons: a right arrow, a double right arrow, a left arrow, and a double left arrow. At the bottom are 'Cancel' and '< Back' buttons. A large blue arrow points from the 'Selected Fields:' pane towards the foreground window.

The foreground window is also titled 'Lookup Wizard' and contains the following text: 'What sort order do you want for the items in your list box? You can sort records by up to four fields, in either ascending or descending order.' Below this text are four rows of controls, each with a number, a text box, a dropdown arrow, and a button labeled 'Ascending':

1	FullName	▼	Ascending
2		▼	Ascending
3		▼	Ascending
4		▼	Ascending

At the bottom of the foreground window are four buttons: 'Cancel', '< Back', 'Next >', and 'Finish'.



# Hide the ID Field

Lookup Wizard

How wide would you like the columns in your lookup field?

To adjust the width of a column, drag its right edge to the width you want, or double-click the right edge of the column heading to get the best fit.

Hide key column (recommended)

FullName			
#Name?			

Cancel < Back

Lookup Wizard

What label would you like for your lookup field?

customerID

Do you want to enable data integrity between these tables?

Enable Data Integrity

Cascade Delete

Restrict Delete

Do you want to store multiple values for this lookup?

Allow Multiple Values

Those are all the answers the wizard needs to create your lookup field.

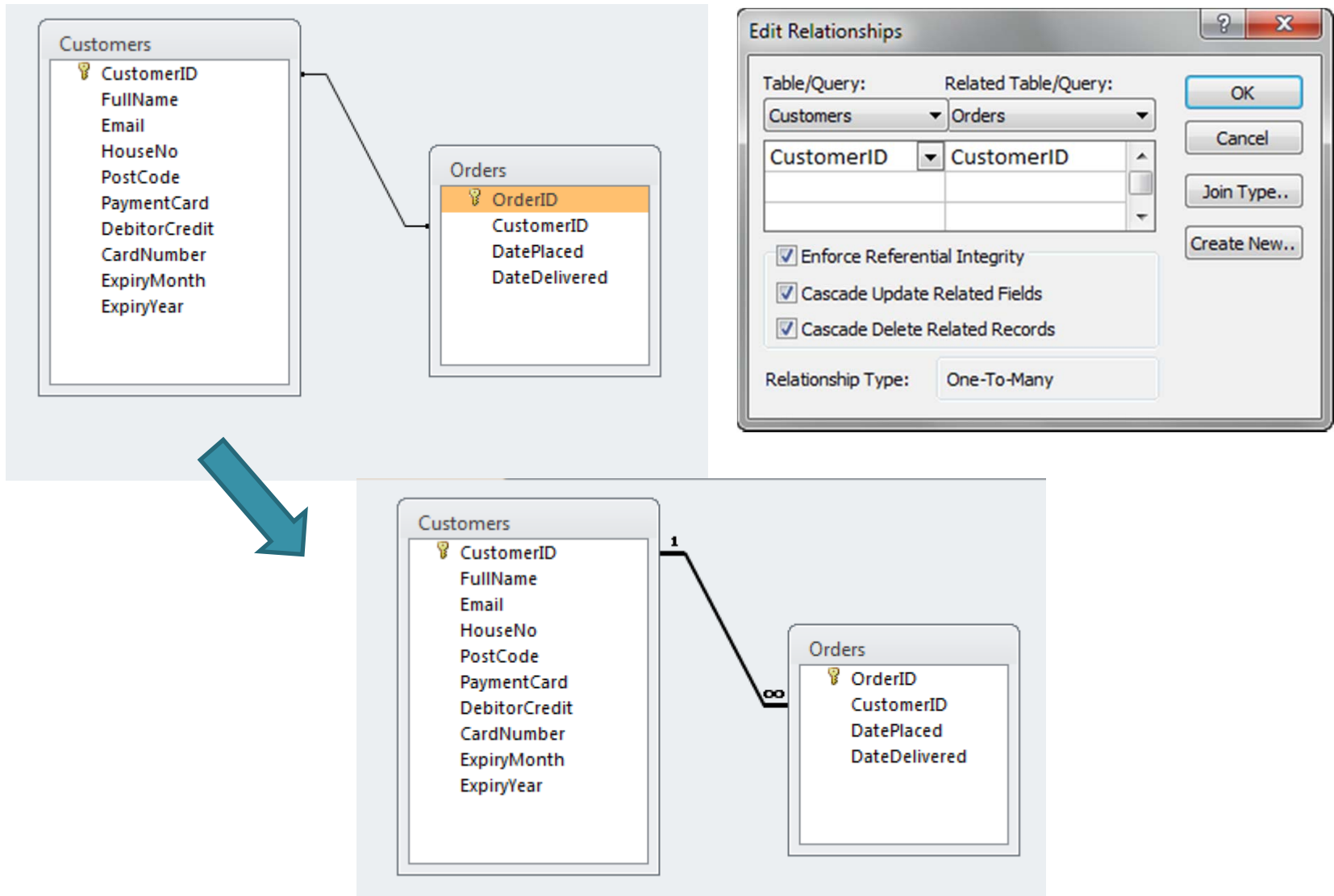
Cancel < Back Next > Finish

# Internal Queries

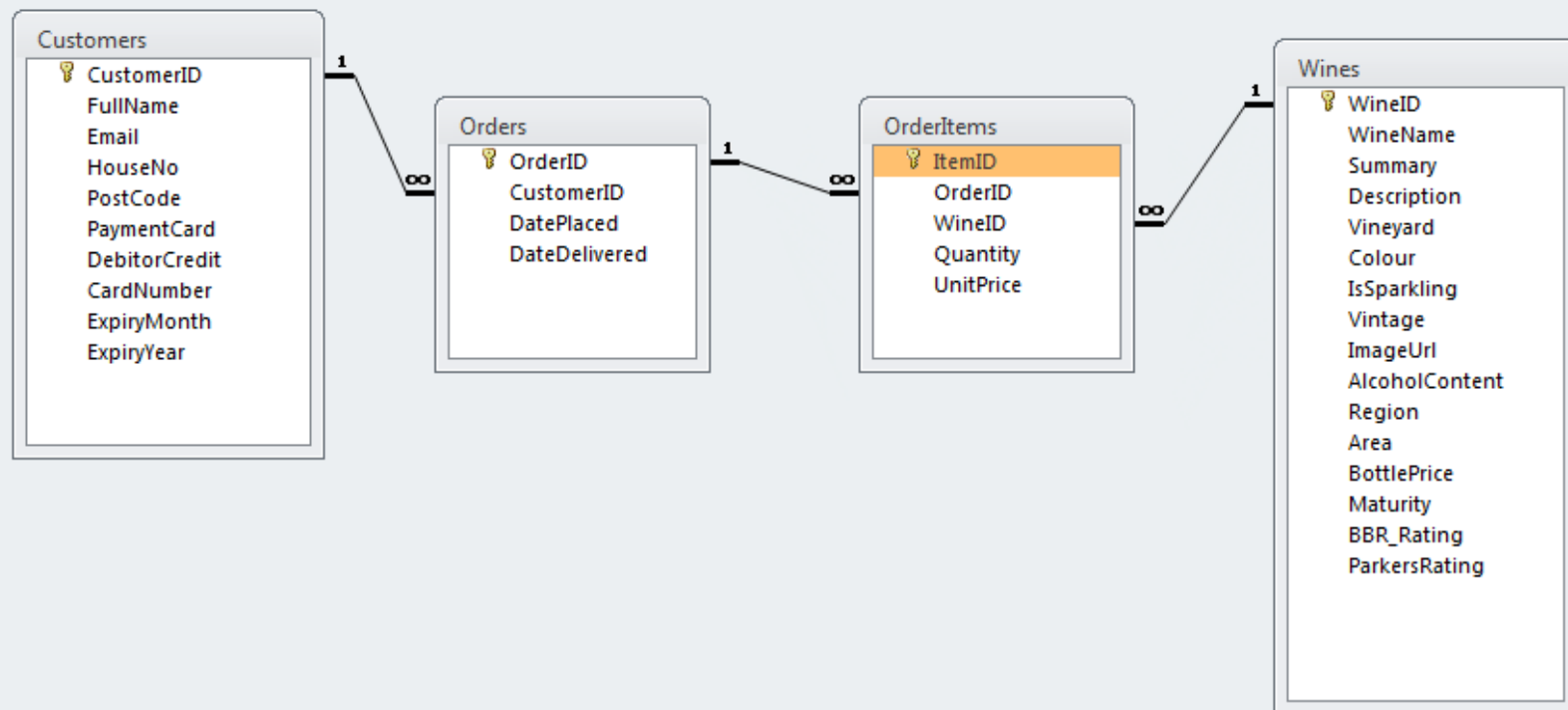
General	Lookup
Display Control	Combo Box
Row Source Type	Table/Query
Row Source	SELECT [Customers].[CustomerID], [Customers].[FullName] FROM Customers ORDER BY [FullName];
Bound Column	1
Column Count	2
Column Heads	No
Column Widths	0cm;2.54cm
List Rows	16
List Width	2.54cm
Limit To List	Yes
Allow Multiple Values	No
Allow Value List Edits	Yes
List Items Edit Form	
Show Only Row Source Values	No



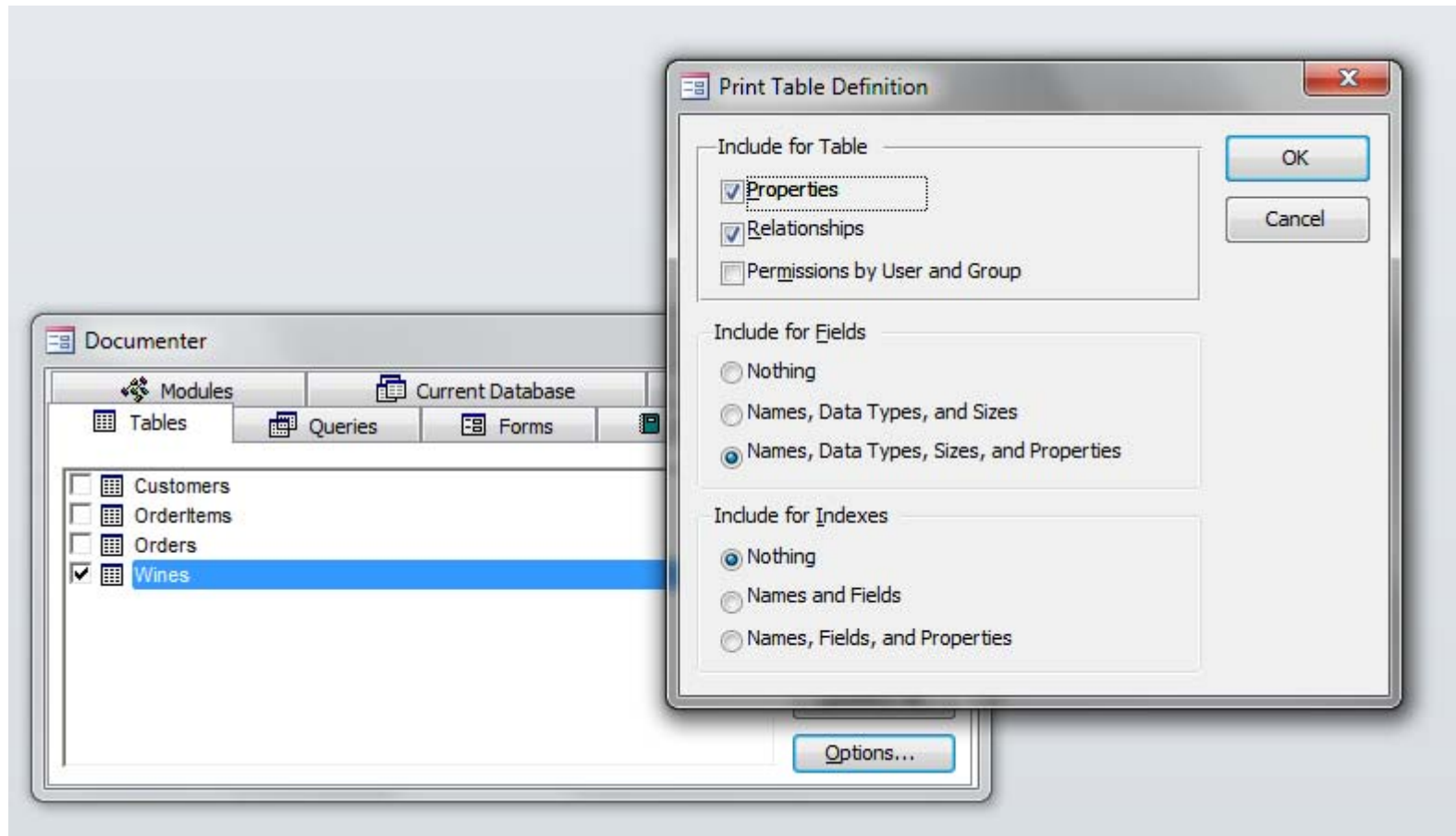
# Referential Integrity



# Order Items



# Database Documentation



# Field Documentation

Vintage

Integer

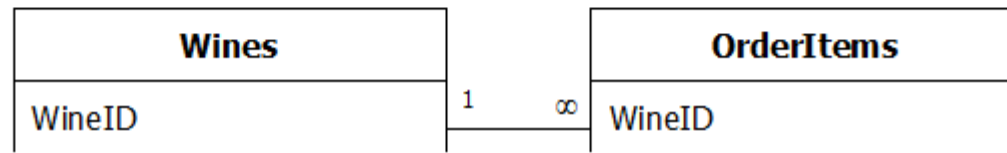
2

AggregateType:	-1
AllowZeroLength:	False
AppendOnly:	False
Attributes:	Fixed Size
CollatingOrder:	General
ColumnHidden:	False
ColumnOrder:	Default
ColumnWidth:	Default
CurrencyLCID:	0
DataUpdatable:	False
DecimalPlaces:	255
Description:	The year the grapes were harvested
DisplayControl:	Text Box
GUID:	{guid {234236F2-C7A3-407F-9CD5-B82A6E1A6C43}}
OrdinalPosition:	7
Required:	True
ResultType:	0
SourceField:	Vintage
SourceTable:	Wines
TextAlign:	0
ValidationRule:	>=1900 And <=2013
ValidationText:	Please enter the year the wine was harvested as a four digit figure

# Relationship Documentation

## Relationships

### WinesOrderItems



Attributes:

RelationshipType:

Enforced, Cascade Updates, Cascade Deletes

One-To-Many

# Minimal Test Data

Cu:	FullName	Email	House	PostCode	PaymentCar	Debit	CardNumber	Expi	Expiry	cli
+	1 Derek Peacock	derek@yahoo.	256	LE7 9SD	Barclaycard	<input checked="" type="checkbox"/>	1234567812345678	8	2015	
+	2 Veena Lakhani	veena@gmail.	12	LE8 8DF	Nationwide	<input type="checkbox"/>	8765432187654321	7	2016	
+	3 Gita Cooke	gita@yahoo.cc	20	WD5 0EL	Tesco	<input checked="" type="checkbox"/>	2345678923456789	3	2017	
*	(New)					<input type="checkbox"/>				

W	WineName	Producer	Colour	Vinta	Alcoh	Region	Area	BottlePri	Mat	Swee	BBR	Park	C
+	2 Petrus	Petrus	Red	1988	12.5	Bordeaux	Pomerol	£7,750.00	1	Dry	95	93	
+	3 Ch Latour	Chateaux Latour	Red	1982	12.5	Bordeaux	Pauillac	£2,250.00	1	Dry	100	100	
+	4 Ch Mouton-Ro	Chateaux Mouton-I	Red	2002	12.5	Bordeaux	Pauillac	£1,890.00	3	Dry	98	99	
*	(New)												

Orde	CustomerID	DatePlaced	DateDelive	C
+	1 Derek Peacock	17-Sep-13		
+	2 Derek Peacock	05-Sep-13	07-Sep-13	
+	3 Veena Lakhlan	06-Sep-13		

Item	Orde	WineID	Qua	UnitPrice	C
	1	1 Ch Latour	1	£2,250.00	
	2	1 Petrus	1	£7,750.00	
	3	2 Ch Latour	1	£2,250.00	
	4	3 Ch Mouton-Ro	1	£1,890.00	
*	(New)		1		

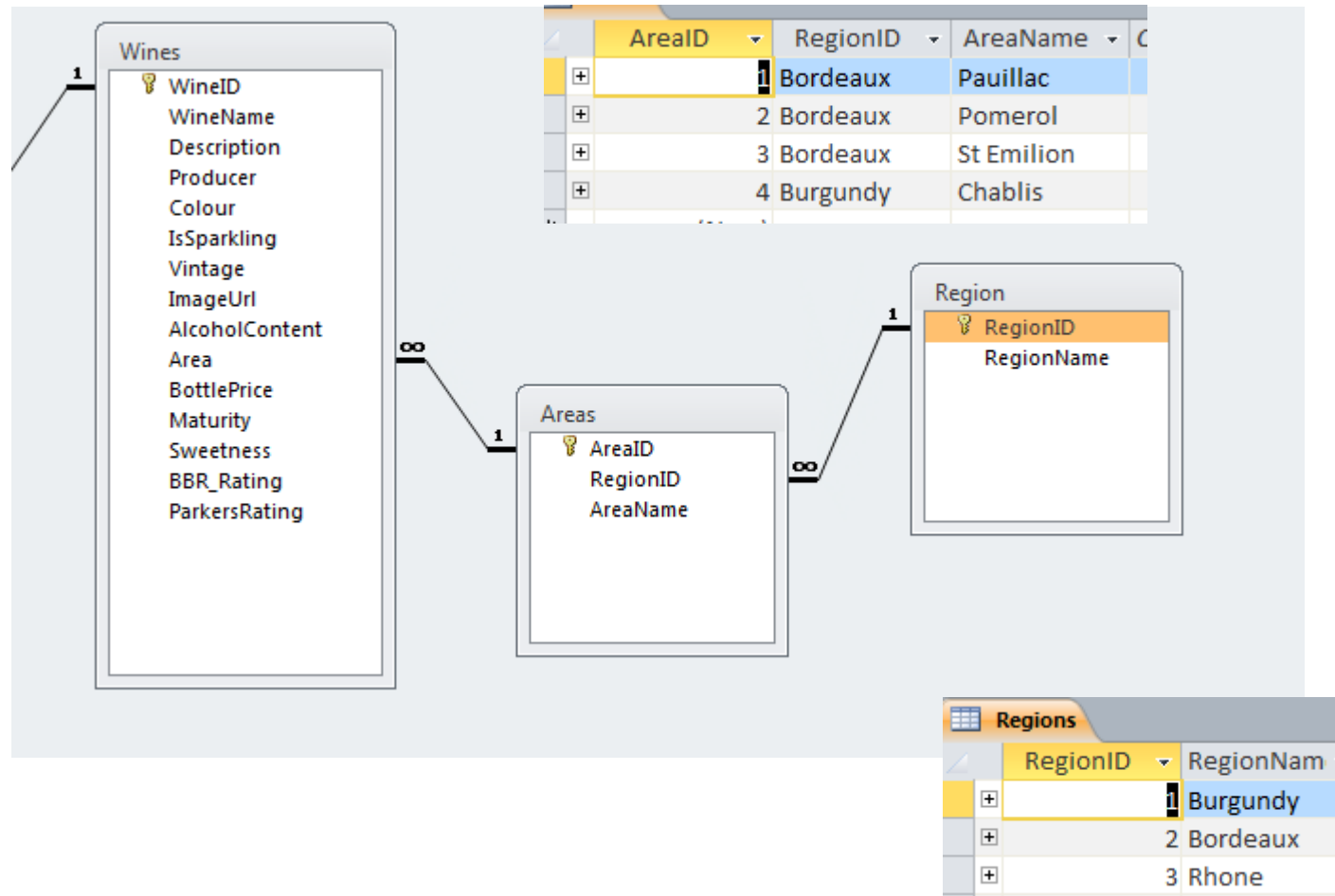




## Notes => Reflections

- Anything essential missing?
- Why limited to French wines?
- Is Region unnecessary duplication?
- Should Customer have more than one address/email/phone no/credit card?
- Therefore should customer be split?
- Should Wines be split into wine and vintage?

# Regions & Areas



# Further Normalisation

- **Wines**

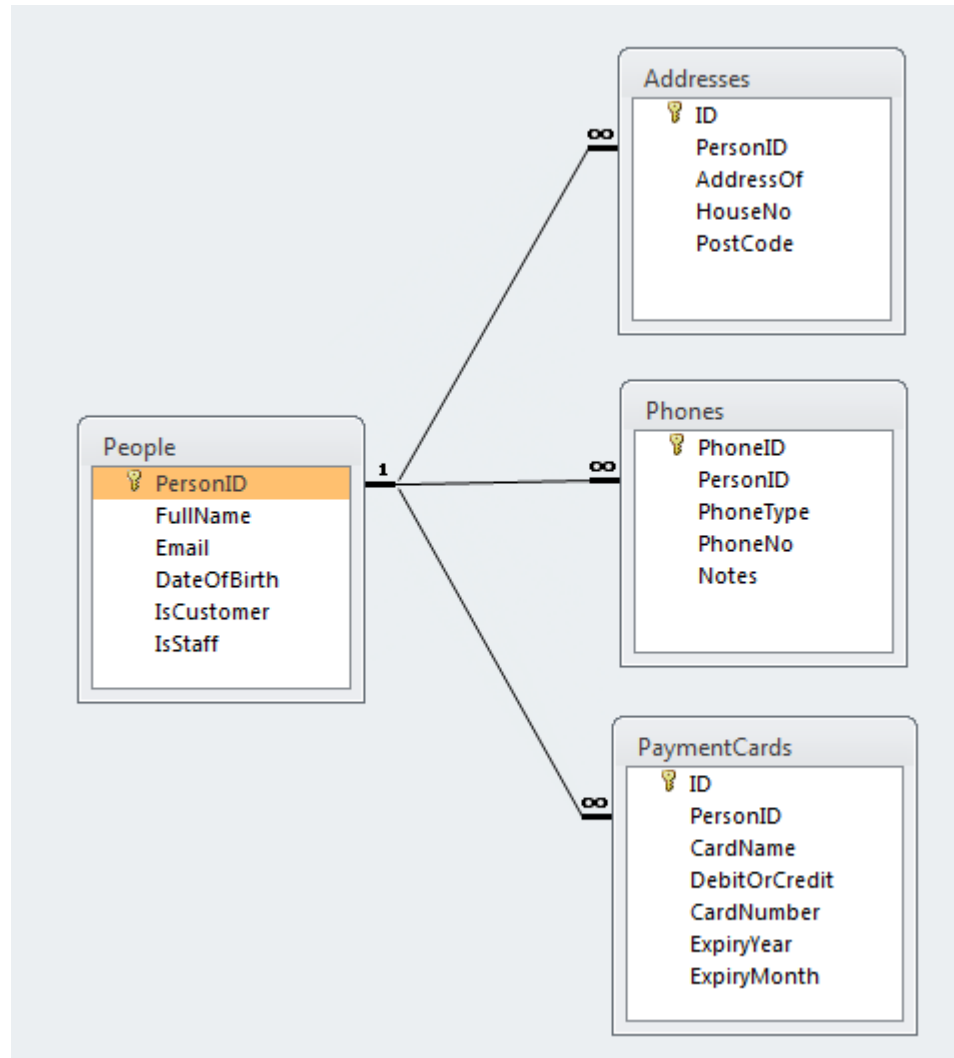
- Producer
- WineName
- Colour
- Sweetness
- IsSparkling
- Area

I:Many

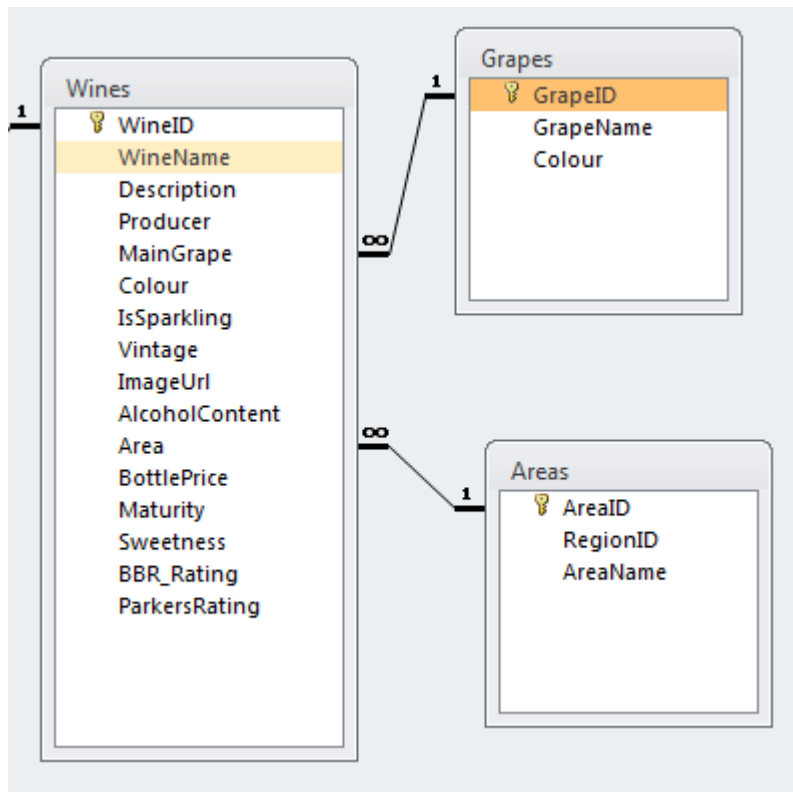
- **Vintage**

- WineID
- VintageYear
- Alcohol
- Description
- Maturity
- Rating
- Price

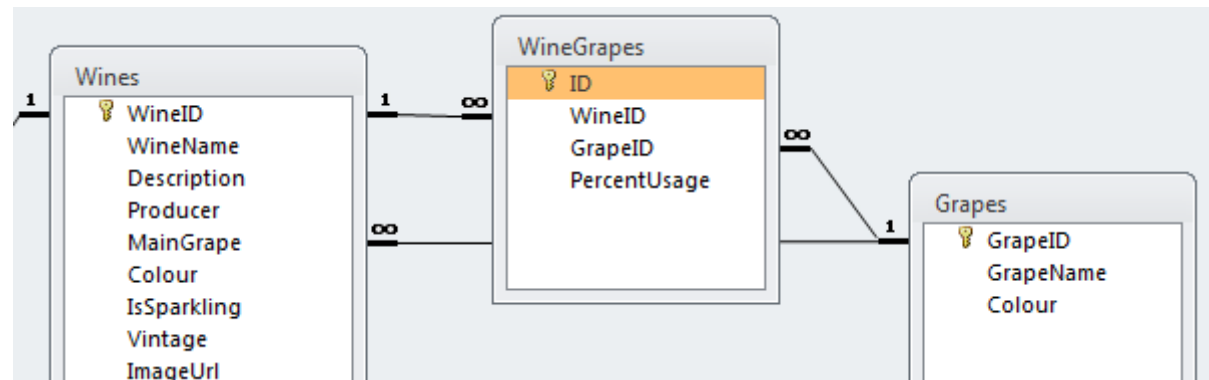
# More on Normalisation



# What About the Grape?



# Alternative Grapes



WineGrapes				
ID	WineID	GrapeID	Perce	
1	Petrus	Merlot	100	
2	Ch Latour	Cabinet Sauvignon	85	
3	Ch Latour	Merlot	15	