Database

I was given a dataset for Bike Sales from 2005 and I had to put it into a database.

The dataset contained the following headings: "Order Number", "Title", "First Name", "Last Name", "Address Line 1", "Town", "County", "Post Code", "Order Date", "Make", "Model", "Price", "Card Type", "Card Number", "Expiry Date"

I organized these into the following:

- "Order Number","Title","First Name","Last Name","Address Line 1","Town","County","Post Code","Order Date","Card Type","Card Number","Expiry Date"
- "Make","Model","Price"
- "Order Number","Title","First Name","Last Name""Make","Model"

And another containing all of the fields to be used as a reference to who purchased what. This is also used for the relationships as there are duplicate values

Here is how I have set up my tables:

Bikes:

Primary	Name	Туре	Validation	Field Size
YES	Make	Text	N/A	50
YES	Model	Text	N/A	50
	Price	Currency	Validation	N/A
			<u>Rule:</u> >99 And	
			<1500 (Above	
			£99 and below	
			£1500)	
			Validation Text:	
			Please check,	
			(Min £99 Max	
			£1500)	

Customer:

Primary	Name	Туре	Validation	Field Size
YES	Order	Number	Input Mask: 90000 (4 or 5	5
	Number		digit number)	
	Title	Text	Validation Rule: "Mr" Or	4
			"Mrs" Or "Miss" Or "Ms"	
			Or "Dr"	
			Validation Text: You must	
			select either Mr, Mrs, Miss,	
			Ms or Dr	

First Name	Text		20
Last Name	Text		20
Address	Text		50
Line 1			
Town	Text		20
County	Text		25
Post Code	Text	Input Mask: >LL09\ 0LL	12
Order Date	Date/Time	Validation Rule: <date() Validation Text: Invalid Date!</date() 	N/A
Card Type	Text	Validation rule: "Vista" Or "Mister Card" Or "Socket" Or "Francard" Or "Armenian Express" <u>Validation Text:</u> We only support following cards: Vista; Mister Card; Socket; Francard and Armenian Express	50
Card Number	Number	<u>Input Mask:</u> 0000/0000/0000/9999/9999 <u>Validation Text:</u> Get the card number right!	Long Integer
Expiry Date	Date/Time	Validation Rule: >=#31/01/2006# (Newer than 31/01/2006) Validation Text: has expired, please use a different card	N/A

The orders bikes table has the same properties as mentioned in the table above

Some of the field sizes have been reduced to save space, I have shortened the field size, if someone's name is more than 20 characters long, it should still be possible to identify them.

To link the tables together, we use primary keys. These are the primary keys:

- Customer Table: Order Number
- Orders Bikes: Order Number
- Bikes table: Make AND Model

The reason there is 2 primary keys on Bikes Table is that it is impossible to get a unique value on that table using only one key.

Here are my tables as shown in design view:

F		Bikes : Table (Local)		
H		Field Name	Data Type	
Ц	₽₽	Make	Text	
	8	Model	Text	
t		Price	Currency	
		s_GUID	AutoNumber	
-				
e				
-				

	Field Name	Data Type
ଞ⊳or	rder Number	Number
Tit	tle	Text
Fit	rst Name	Text
La	ist Name	Text
Ac	ddress Line 1	Text
To	own	Text
	ounty	Text
Po	ost Code	Text
01	rder Date	Date/Time
Ca	ard Type	Text
Ca	ard Number	Number
E×	(piry Date	Date/Time
s_	GUID	AutoNumber

	Orders_bikes : Table (Local)	
	Field Name	Data Type	
8₽	Order Number	Text	
	Title	Text	
	First Name	Text	
	Last Name	Text	
	Make	Text	
	Model	Text	
	s_GUID	AutoNumber	

I linked these tables together to minimise the risk of deleting data that is linked to other tables:

Orders_bi	
Order Number Title First Name Last Name Make Model s_GUID	
]	
	Title First Name Last Name Make Model

Then I had to import the data. This data was provided in a CSV (Comma Separated variables) text file. A CVS file looks something like this:

"Order Number", "Title", "First Name", "Last Name", "Address Line
1", "Town", "County", "Post Code", "Order Date", "Make", "Model", "Price", "Card
Type", "Card Number", "Expiry Date"
5407, "Mr", "Oliver", "Orwell", "20 Radford Street", "Trowmoor", "Yorkshire", "TR4
5MG", 1/1/2005 00:00:00, "Giant", "Terrago
Disc", £389.98, "VISTA", "328903146907", 31/5/2007 00:00:00
5408, "Ms", "Nicola", "Fountain", "66 Burnside Ave", "Lugeby", "Derbyshire", "LU5
9JW", 1/1/2005 00:00:00, "Giant", "XTC
2", £799.00, "Socket", "914632896117", 31/12/2010 00:00:00
5409, "Mr", "Morgan", "Eggleton", "29 Mychett Street", "Colby", "Hampshire", "CO9
5XQ", 1/1/2005 00:00:00, "Tifosi", "CK5A
04", £878.98, "Socket", "372143398639", 31/8/2006 00:00:00
5410, "Ms", "Nicole", "Upjohn", "22 Moor Street", "Nailsham", "Suffolk", "NA1
3IM", 1/1/2005 00:00:00, "Giant", "Terrago FS2
MTB", £299.99, "VISTA", "566466531889", 31/3/2008 00:00:00

That was the first 4 entries, as you can see, it is not the easiest to read, but thanks to Access being able to understand the CSV system, it is possible to make it more readable

	Order Number	Title	First Name	Last Name	Address Line 1	Town	County	Post Code	Order Date	Make
►	5407	Mr	Oliver	Orwell	20 Radford Stre	Trowmoor	Yorkshire	TR4 5MG	01/01/2005	Giant
	5408	Ms	Nicola	Fountain	66 Burnside Av	Lugeby	Derbyshire	LU5 9JW	01/01/2005	Giant
	5409	Mr	Morgan	Eggleton	29 Mychett Stre	Colby	Hampshire	CO9 5XQ	01/01/2005	Tifosi
	5410	Ms	Nicole	Upjohn	22 Moor Street	Nailsham	Suffolk	NA1 3IM	01/01/2005	Giant

That is part of the first four again, this time in a neat and tidy table.

These were then transferred to the tables I set up using queries

* Ord Title First	e Sales er Nunbes Name							
	Order Number 🛛 🗠 Bike Sales	Title Bike Sales	First Name Bike Sales	Last Name Bike Sales	Address Line 1 Bike Sales	Town Bike Sales	County Bike Sales	Post Cod Bike Sales
Sort:	bito balos	bild balds	Dire Dales	bird Sales	Dire Sales	bite Sales	bird Sdies	bild bild.
Criteria:	Order Number	Title	First Name	Last Name	Address Line 1	Town	County	Post Cod
or:								
	<							

This then, was used to get the data into my tables:

	File Edit View Insert Format			Adobe PDF	(🗇 🚈 -) 🔞					
	Order Number Title	First Name	Last Name	Address Line 1	Town	County	Post Code	Order Date	Card Type	Car
+	5407 Mr	Oliver	Orwell	20 Radford Stre	Trowmoor	Yorkshire	TR4 5MG	01/01/2005		
+	5408 Ms	Nicola	Fountain	66 Burnside Av	Lugeby	Derbyshire	LU5 9JW	01/01/2005	Socket	
+	5409 Mr	Morgan	Eggleton	29 Mychett Stre		Hampshire	CO9 5XQ	01/01/2005		
+	5410 Ms	Nicole	Upjohn	22 Moor Street		Suffolk	NA1 3IM	01/01/2005	VISTA	
+	5411 Mr	Leo	Isaac	18 Newport Ave		Norfolk	BAO 6PG	01/01/2005		
+	5412 Mr	Jack	Everett	17 Raven Rd	Griston	Oxfordshire	GR0 5MX	01/01/2005		
+	5413 Ms	Jesica	Kennedy	44 Knowle Banl	Brimcastle	Dorset	BR0 4VV	01/01/2005		
+	5414 Ms	Francesca	Rawling	27 Barry Rd	Crowbridge	Suffolk	CR1 9EY	01/01/2005		
+	5415 Mrs	Collette	Barkham	62 Ravenstone		Bedfordshire	MIB 1XD	02/01/2005		
+	5416 Mr	Paul	Impey	41 Bliss Rd	Kings Manor	Northumberland			Mister Card	
+	5417 Ms	Deborah	Oldfield	49 Westwood F	Willesden Moor	Dorset	WI8 ORP	02/01/2005	VISTA	
+	5418 Mr	Roy	Adamson	2 Cromwell Par		Durham	KI1 1UF	02/01/2005		
+	5419 Mr	lain	Unstead	23 Strathclyde	Corben	Cambridgeshire		02/01/2005		
+	5420 Ms	Tracy	Patterson	30 Lawnswood		Durham	CO4 9ZI	02/01/2005		
+	5421 Mrs	Marjorie	Galbraith	27 Avondale Ba		Northumberlanc		02/01/2005		
+	5422 Mrs	Rosalind	Seycombe	71 Westwood S	Hammerton	Norfolk	HA2 4HW		Mister Card	
+	5423 Miss	Mary	Diver	77 Gower Close		Leicestershire	CO1 7JZ		Armenian E>	
+	5424 Miss	Katherine	Kendal	91 Oates Park		Somerset	TR5 OBR	02/01/2005		
+	5425 Mr	Harold	Wells	9 Ruskin Ave	Trowmoor	Devon	TR3 9HH	02/01/2005		
+	5426 Mr	Roy	Hamilton	98 Bliss Grove	Brimcastle	Middlesex	BR8 5CR	02/01/2005		
+	5427 Ms	Isabel	Sealy	89 Hollybrook A		Northumberland			Armenian E>	
+	5428 Mr	Larry	Orme	93 Denby Stree		Dorset	RO5 5GD	03/01/2005		
+	5429 Mr	Fred	Murray	87 Westwood A		Northamptonsh		03/01/2005		
+	5430 Mrs	Rebecca	Southwood	65 Rosehim Clo		Worcestershire		03/01/2005		
+	5431 Mr	Leo	Lockett	42 Alexandra C		Somerset	CA8 9AL		Mister Card	
+	5432 Mr	Steven	Shaw	90 Combe Dell	Marchester	Derbyshire	MA5 OSH	03/01/2005		
+	5433 Mr	Hector	Ohara	6 Lambs Park		Leicestershire	CU5 9HW	03/01/2005		
+	5434 Ms	Isabella	Yarnold	28 Queens Ban		Durham	HE3 3CJ	03/01/2005		
+	5435 Mr	Peter	Rickson	17 Corbett Clos		Dorset	BI1 2RK	03/01/2005		
+	5436 Ms	Zara	Thomas	78 Oates Rd	Marchester	Bedfordshire	MA9 9U0	03/01/2005		
+	5437 Miss	Isabel	Irons	70 Hurst Ave	Milton Redbridg		MI8 3LS		Mister Card	
+	5438 Ms	Elouise	Hall	83 Coronation S		Oxfordshire	HO6 8LX	04/01/2005		
or		* of 5133	<	1				20112000		1
	sheet View	0. 0100							NUM	

The next thing I did was to set up validation checks, this will help prevent human error when adding data later on:

The first thing I added was a range check on the price:

	Bikes : Table (Local)		
	Field Name	Data Type		
P	Make	Text		
8	Model	Text		
Ď	Price	Currency		
Ľ.				
⊢				
			Field Properties	
	General Lookup			
F	Format	Currency		
1	Decimal Places	Auto		
1	input Mask			
	Caption			
1	Default Value	0		
١N	alidation Rule	>99 And <1500		
1	/alidation Text	Please check, (Min £99	Max £1500)	
	Required	No		
]	Indexed	No		
2	5mart Tags			

The ">99 and <1500" means that the end user can not add a value that is either below £99 or above £1500

For the "title" section (eg where you put Mr or Mrs etc.) life has been made simpler for the end user as this has been set up to be a drop down box, and will allow them to just click the one that's applicable. A validation rule has also been set up in case the user decides to type the title in manually.

General Lookup	
Display Control	Combo Box
Row Source Type	Value List
Row Source	"Mr";"Mrs";"Miss";"Ms";"Dr"
Bound Column	1
Column Count	1
Column Heads	No
Column Widths	
List Rows	8
List Width	Auto
Limit To List	No

The same thing was done with the "card type" option

On some entries, it was possible to set up an input mask, that allow real time checking on the data that is being entered, the typing will stop if the wrong data is being attempted to be entered into it.

General Lookup	
Field Size	12
Format Input Mask	>LL09\ 0LL
Caption	
Default Value Validation Rule	
Validation Text	
Required Allow Zero Length	No Yes
Indexed	Yes (Duplicates OK)
Unicode Compression IME Mode	Yes No Control
IME Sentence Mode	None
Smart Tags	

Here is the code explained:

- > Everything is typed in uppercase
- L A letter is REQUIRED
- 0 A number is REQUIRED
- 9 A number is OPTIONAL

Here are some more codes that I have not used:

- ? An OPTIONAL letter
- # A number or a space
- A A letter or number is REQUIRED
- a A letter or number is OPTIONAL
- C Any character or space is OPTIONAL
- < Everything is typed in lowercase

Some data is optional, but some can NOT be done without (e.g. card numbers) to stop the entry being added without the vital information, this is very easy to achieve, all that you have to do is enable the "required" flag

General	Lookup	
Field Size		Long Integer
Format		
Decimal Pl	aces	Auto
Input Mas	k	0000/0000/0000/9999/9999
Caption		
Default Va	alue	0
Validation	Rule	
Validation	Text	Get the card number right!
Required		Yes 💌
Indexed		No
Smart Tag	ļs	

	Make	Model	Price	s_(GUID	
+	Ridgeback	Rapide Speed 2	£199.99	DCC2	FA10F3}	
+	Ridgeback	Rapide Velocity	£299.99	'E9776	E19B62}	
+	Ridgeback	Switch Cyclone	£269.98	35DEA4	4B25EB}	
+	Ridgeback	Switch Tempes	£329.99	5370102	2B344C}	
+	Saracen	Awol MTB Extri	£308.99	5815D0	DD498E}	
+	Saracen	DirtTrax MTB XI	£380.00	:352949	48DCD}	
+	Saracen	Nzyme MTB XC	£285.00	8A93E	DB2639}	
+	Saracen	Rufftrax MTB X0	£190.00	IC11F0	6F3454}	
+	Saracen	Traverse MTB X	£237.49	D60477	114	
+	Saracen	Vice MTB XC (f	£213.98	.57759	MICTOSO	ft Office Access 🛛 🛛 🐱
+	Tifosi	CK5A 04	£878.98	36260E	-	
+	8		20	JDA6B		Please check, (Min £99 Max £1500)
			£0.00	(Auto		

I did various tests on the database to make sure it worked, here is what happens

This message appeared when I put in a value lower than £99, I also got the same message when I put something in minus number.

Microsof	ft Office Access	3
♪	The field 'Customer.Title' cannot contain a Null value because the Required property for this field is set to True. Enter a value in this field.	

If there is nothing typed into the Title value, then this message will appear

10000	1911		Steven	VIIICE	J/ Raven	stone	μDυ
10536	Mr		Day	Wohh	19 Wooth	rook	Pe
10537	Ms	Micro	soft Office Acce	ess	Ð	🖌 Ro	l Kir
10538	Mr					D	Ma
10539	Ms		You must seler	ct either Mr, Mrs	. Miss. Ms or Dr	ł	Sa
0	Mrss		2		,		
0			ОК	Help			

If the wrong value into the Title section, you will be greeted with this message

Webb	19 Westbrook (I Petersham Cumbria PE2_8NX 31/12/2005	Mister Card
Deyne	Microsoft Office Access	Socket
Laude		Mister Card
Smith	We only support following cards: Vista; Mister Card; Socket; Francard and Armenian Express	VISTA
		Visa
-		

Same if your card is not supported

ger 🗆	ралк	Kings Manor	Criesnire	KIS 90	an I	517	12/2005	VISTA	
rbett	Dark	Dortholo	Glacostarchira	PO1 7	71 Q	317	12/2005	Mictor Cord	
ose	Micro	soft Office Acc	ess						\mathbf{X}
ven									
estt	- (i	The value voi	u entered isn't appr	opriate fo	or the input	mask 'SH	095011's	pecified for this fiel	d
gno	1		a cheorea isrre appr	opriaco i	or cho inpoc		.07,022.3		J.
ngh				к	Help				
lon									
				ET				Vista	

If you are unable to type something into the box, leave it unfinished and a box will appear telling us what the syntax should be!

./ *	0 0	
Microso	it Office Access	×
(i)	The value you entered isn't appropriate for the input mask '90000' specified for th	is field.

This is the query to find a particular order:

E V Bik	es e	Image: Second system Orders_bi * Order Number Title First Name	× ⊡ • ¥ *	jΣ All ▼ ≌	* <u>*</u> * [] 23 - 0	Ŧ
Field:	Order Number	Make	Model	Price		
Table:	Orders_bikes	Bikes	Bikes	Bikes		
Sort:						
Show:			✓	Image: A start of the start		
Criteria:						
or:						
	<					

To make it easier, I made a form, lets say we wanted to find order number 10213:

Order Numb	
Make	Saracen
Model	DirtTrax MTB XC
Price	£380.00

This gives a nice finishing touch to the database.