

Easy Way



Teach yourself...

Microsoft Access 2007

(Level 3)

- ☒ Easy to follow
- ☒ Step-by-step instructions
- ☒ Written in plain English

A Cheryl Price Publication

Easy Way - Microsoft Access 2007 (Level3)

This book is designed to teach relational database concepts in Microsoft Access 2007. It contains step-by-step exercises to guide you through the learning process of planning, designing and creating a relational database and developing queries and reports.

The process of consolidation and accumulation of learning is unique to the Cheryl Price books.

Retrievable exercise files are used with this book. These are available for free download from our web site at www.cherylprice.co.nz. Instructions for downloading are included on the next page.

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Author:

Cheryl Price

T.Dip.WP, T.Dip.T

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Cherylprice.co.nz Limited

PO Box 187
Matakana
Auckland 0948

Phone: (09) 422 7230
Mobile: 021 715566
Fax: (09) 422 7236

Web address:

www.cherylprice.co.nz

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Downloading Exercise Files

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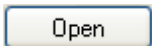




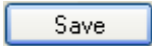
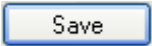
1	In your web browser, type: www.cherylprice.co.nz
2	Press Enter on the keyboard to display the Cheryl Price website.
3	Click on the Resources tab as shown at the right. 
4	Click on <u>Easy Way – Microsoft Access 2007</u>
5	Under the Exercise Files heading click on the underlined blue hyperlink, ie Access 2007, Level 3 <u>Free Download</u> The File Download dialog box will display.
6	If you have Winzip use the following instructions otherwise move to step 7.
	a Click on  .
	b Click on the  of the  button.
	c If My Documents folder is not displayed click on Set default unzip folder at the bottom of the list. Ensure My Documents is selected then click on Select Folder.
	d Click on the  of the  button and click on the My Documents folder. The files will be unzipped.
7	Click on  and ensure My Documents folder is displayed. Click on  .
8	Click on Open Folder which will display My Documents folder. Right click on the zipped exercise file and select Extract All. Click on Extract. A folder will be created containing the exercise files. You will need to double click on this folder to use the exercise files in this book.

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Exercise Files used in this book

(Instructions are at the front of this book for downloading retrievable files from our web site.)

Names of files
Blank Testing Form
Evaluation Report
Harrington Vet Clinic Client Database
Harrington Vet Information
Products
Rivers Bookshop
Swanson and Swanson Orders end of Section 3
Swanson and Swanson Orders end of Section 4
Swanson and Swanson Orders end of Section 5
Swanson and Swanson Orders end of Section 6

What is a Database?

Understanding Relational Databases

Learning Outcomes

At the end of this section you should be able to -

- ☐ Understand what a database is
- ☐ Identify the different types of databases
- ☐ Describe a relational database
- ☐ Describe the structure of a table in a database
- ☐ Break data into logical fields
- ☐ Assign appropriate field names and table names
- ☐ Describe and identify a primary key
- ☐ Identify and explain different relationship types in a relational database
- ☐ Identify and describe queries, forms and reports
- ☐ Start Microsoft Access 2007
- ☐ Using Access Help
- ☐ Customising the setup in Access 2007
- ☐ Explore a relational database

Sample Document

What is a Database?

A database is a collection of information which is organised so that its contents can be easily accessed, managed and updated. Databases are created and stored on a computer system and are used to search for and extract information as and when required.

Some examples of databases include:

- a list of employee details (employee ID, name, position, salary)
- a list of videos available for hire in a video store (title, actor's names, category)
- a list of CDs in a collection (name of CD, date of release, artist/band)
- a stock listing (product name, number in stock, supplier, type of product)
- a library catalogue (where all the books are categorised and then stored alphabetically within the category, making them easy to find)

Databases are designed to handle large amounts of data, and allow you to quickly control the way data is organised and displayed. They have significant advantages over paper storage systems in terms of the office space used and the ease of access to data.

Note In this section only small databases have been used, to enable you to instantly see correct results of queries, reports etc. Databases often contain hundreds of records that periodically need to be updated.

Different Types of Databases

There are two main types of databases that can be created - Flat File and Relational.

Flat File (Single Table)

All data is stored within one table/area. All data is accessed from this table/area.

CustomerCode	CompanyName	Phone	Fax	ContactName	Grouping
ABC	ABC Tree Company	444 3567	444 3568	John Marshall	Small Business
SIM	Simpson Corporation	345 9879	345 9880	Kim Shaw	Corporation

Relational (Multiple Tables)

Microsoft Access is a type of database management system known as 'relational'. This means that the components of information stored in tables are 'related'. The main benefit of a relational database over a flat file is that it eliminates duplication, which saves storage space and makes updating data faster and more accurate.

Duplication of data can occur when the same details need to be added to different parts of a database. For example, a company that has many customers will need to keep data on each customer and on each order that their customers make. If a customer's details (eg name, address) need to be added to each order, every time an order is made, this not only wastes time but there is a chance the data could be copied incorrectly – each time something has to be repeated increases the chance of error.

A relational database gets around this by keeping customer and order data separate but linked together, so the customer's details can be automatically linked to each order they make.

In another example, a company may keep details of their customers and also data on their contacts in each customer. Because each customer may have more than one contact person, these details are kept separate to avoid duplication.

Main Customer Table

CustomerCode	CompanyName	Phone	Fax	GroupingCode
ABC	ABC Tree Company	444 3567	444 3568	SB
SIM	Simpson Corporation	345 9879	345 9880	CORP

Customer Contact Table

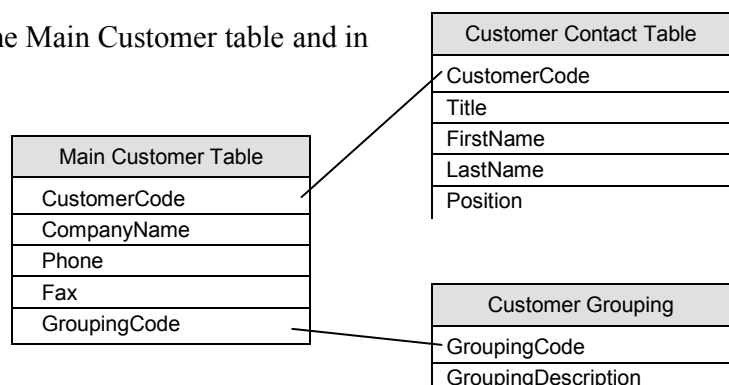
CustomerCode	Title	FirstName	LastName	Position
ABC	Mr	John	Marshall	Manager
SIM	Ms	Kim	Shaw	General Manager
ABC	Miss	Jane	Adams	Secretary
SIM	Mr	Robert	Miller	Director

Customer Grouping Table

GroupingCode	GroupingDescription
SB	Small Business
CORP	Corporation
IND	Individual

The following diagram shows the links from the Main Customer Table to the Customer Contact table and Customer Grouping table. To have a link between each table there needs to be a common element, as shown below.

- The same Customer Code is used in the Main Customer table and in the Customer Contact table.
- The same Grouping Code is used in the Main Customer Table and in the Customer Grouping table.



Creating relationships between tables allows data to be extracted in a number of ways. The names and phone numbers of all customers could be required for a promotional call. Data from the Main Customer table and the Customer Contacts table would be collected and displayed in a *query*.

Note A query is used to manipulate or present data stored in the database.

Main Customer Table

CustomerCode	CompanyName	Phone	Fax	GroupingCode
ABC	ABC Tree Company	444 3567	444 3568	SB
SIM	Simpson Corporation	345 9879	345 9880	CORP

Customer Contact Table

CustomerCode	Title	FirstName	LastName	Position
ABC	Mr	John	Marshall	Manager
SIM	Ms	Kim	Shaw	General Manager
ABC	Miss	Jane	Adams	Secretary
SIM	Mr	Robert	Miller	Director

Query

CustomerCode	Title	FirstName	LastName	Position	CompanyName	Phone
ABC	Mr	John	Marshall	Manager	ABC Tree Company	444 3567
SIM	Ms	Kim	Shaw	General Manager	Simpson Corporation	345 9879
ABC	Miss	Jane	Adams	Secretary	ABC Tree Company	444 3567
SIM	Mr	Robert	Miller	Director	Simpson Corporation	345 9879

Notice that relevant data from the Main Customer table (Company Name and Phone) has been matched to the relevant customer details of the Customer Contact table in the query.

Advantages of a Relational Database

The first advantage of a database system is that it reduces the need for duplication of data.

For example, a wholesaling company might supply and deliver a number of products to a company called Forrest Traders Ltd.

- In a non-database environment, each sales order record would need to contain the customer's name and delivery address.
- In a database environment, the static data (name and address) can be stored once and accessed as many times as required.

This has significant advantages if a customer changes his/her address. In the non-database environment, the address would need to be changed for every order within the system. In a database environment the address would only need to be changed once. This saves data entry time and reduces the possibility of errors.

Large amounts of data can be easily stored (reduced data duplication), extracted, manipulated and displayed. This becomes important if you have a large number of customers. In a manual card based environment, they would usually be held in alphabetic sequence. If you decided that you wanted to target a sales campaign based on the geographic location of those customers, it would be a tedious task to re-sort those cards. A database could achieve the same task more easily and in far less time than the card based system.

In this book you will design and create a relational database using Microsoft Access.

Relational Database Management Systems

A **Relational Database Management System (RDBMS)** is a program that allows you to create, maintain and modify a relational database. Microsoft Access is a Relational Database Management System (RDBMS).



What can be achieved with Microsoft Access

Microsoft Access can be used for a great variety of tables, including the following:

- Simple tasks such as maintaining telephone lists and directories.
- Creating and maintaining memberships of organisations such as sports clubs or professional associations.
- Controlling distribution sales.
- Stock control.
- Maintaining sales leads, customer feedback.
- Personnel records where both text based data and objects such as photographs are to be stored.

Activities that can be handled by Microsoft Access

- Creation of stand-alone or related tables.
- Creation of forms that allow the easy access of data into a table.
- Search and display of information in a variety of formats.
- Print reports and mailing lists in a variety of sizes and formats.
- Photographs, pictures and charts can be included as an integrated component of the database.

Structure of a Relational Database

Understanding the way a RDBMS stores data is the key to designing a relational database.

Tables

The most basic component of a database is the table. The table stores the data contained within the database. A table is made up of records and fields. Each record is stored in a row, while a field is stored in a column. An individual item of data is known as a value.

	CustID	CustomerName	StreetAddress	Suburb	City	PostCode	PhoneNumber	FaxNumber
	Adv1	Advanced Networking	260 Queen Street	Richmond	Nelson	7011	(03) 544 6600	(03) 544 6001
	Bhj1	BHJ Institute	50 Stanhope Road	Ellerslie	Auckland	1050	(09) 525 6820	(09) 525 6821
	Bus1	Business Systems Ltd	10 Heather Street	Parnell	Auckland	1010	(09) 373 4728	(09) 373 4729
	Bus2	Business Distributors Ltd	20 Kent Terrace	Mt Victoria	Wellington	6011	(04) 385 2477	(04) 385 2478
Record	Har1	Harris Corporation	221 Hinemoa Street	Birkenhead	Auckland	0622	(09) 419 9786	(09) 419 9787
	Pay1	Payment Solutions Ltd	29 Nugent Street	Grafton	Auckland	1021	(09) 379 7688	(09) 379 7689
	Ros1	Ross and Glover Ltd	42 Douglas Street	Ponsonby	Auckland	1011	(09) 360 3455	(09) 360 3456

Field

Value

Records

A record is a single row in a database table containing all of the information about a single item or subject, eg the company *Harris Corporation*. Records are divided into fields.

Fields

Fields store information that will be common to all of the records, eg *CustomerName*, *StreetAddress*, *Suburb*, etc. Field names identify each field.

Values

The values are stored where the row and columns intersect. Each single piece of data in the database is called a value, eg the street address of Harris Corporation.

Storing Data

A database table stores data concerning a single theme, eg customer information.

The data to be stored in the table is broken down into logical fields, as shown in the example below.

Manual System

Harris Corporation
221 Hinemoa Street Phone: (09) 419 9786
Birkenhead Fax: (09) 419 9787
Auckland 0622

Database System

CustID	CustomerName	StreetAddress	Suburb	City	PostCode	PhoneNumber	FaxNumber
Har1	Harris Corporation	221 Hinemoa Street	Birkenhead	Auckland	0622	(09) 419 9786	(09) 419 9787

Understanding how to break data into logical fields is essential in designing a database. By breaking up data into separate fields, data can then be grouped and manipulated into various forms to create information.

In the example above if you asked the question “what is the phone number of Harris Corporation?”, the answer in a database would be -

CustomerName	Phone
Harris Corporation	(09) 419 9786

A manual system would show all the data about the Harris Corporation, both significant and insignificant.

Harris Corporation
221 Hinemoa Street Phone: (09) 419 9786
Birkenhead Fax: (09) 419 9787
Auckland 0622

If the question was asked, “show me all companies in the Auckland area (their name and fax number)”, the data displayed in a database would be -

CustomerName	City	Fax
Harris Corporation	Auckland	(09) 419 9787
Business Systems Ltd	Auckland	(09) 373 4728
Ross and Glover Ltd	Auckland	(09) 360 3456
BHJ Institute	Auckland	(09) 525 6821
Payment Solutions Ltd	Auckland	(09) 379 7689

In most cases the field that was searched, in this case City, would not appear in the result as it is assumed that the same data (Auckland) will appear in the field and is not required to be displayed.

Note It is a good idea to break down addresses into multiple fields, eg street address, suburb, city, post code. This provides more flexibility when sorting or manipulating data.

Exercise 1

- The data to be placed into various databases is shown below. The data needs to be organised into a database table. Circle which pieces of information go into fields for each database.

Quality Fish Distributors Database Data

Pete's Fish and Chip Shop, 43 Ngarara Road, Waikanae, 5036, (04) 293 5350

The Hopper Fish Shop, 25 Hopper Street, Wellington, 5016, (04) 384 7388

Ralf's Fish N Chip Shop, 30 Wilsons Road, St Martins, Christchurch, 8011, (03) 348 8060

The Explorer Caravan Club Database Data

Mark Graeme, 17 Compton Street, Northcote, Auckland, 0620, mark.graeme@hotmail.com

Bruce Harris, 22 Grove Street, Nelson, 7010, bruce.harris@clear.net.nz

Glenda Smith, 97 Bassett Road, Remuera, Auckland, 1010, gsmith@xtra.co.nz

Chris Freeman, 80 Argyle Avenue, Palmerston North, 4410, chris1000@hotmail.com

John Ellis, 88 Fields Parade, Browns Bay, Auckland, 0630, ellis@clear.net.nz

Car Rental Database Data

XY3373, Ford Falcon, XR6, 2002, Auto, 23,000 Kms, Black, \$80 per day

RN288, Holden Commodore, VT SS, 2001, Auto, 58,000 Kms, Red, \$60 per day

ZT1220, Mazda 626 GLX, 2000, Auto, 69,000 Kms, Green, \$50 per day

Answers shown at the end of this section.

Assigning Field Names

Once you have broken down the data into manageable data components (fields), each field needs to be given a name. As you have already seen in a database table a field name is given to each data component.

	CustID	CustomerName	StreetAddress	Suburb	City	PostCode	PhoneNumber	FaxNumber
	Adv1	Advanced Networking	260 Queen Street	Richmond	Nelson	7011	(03) 544 6600	(03) 544 6001
	Bhj1	BHJ Institute	50 Stanhope Road	Ellerslie	Auckland	1050	(09) 525 6820	(09) 525 6821
	Bus1	Business Systems Ltd	10 Heather Street	Parnell	Auckland	1010	(09) 373 4728	(09) 373 4729
	Bus2	Business Distributors Ltd	20 Kent Terrace	Mt Victoria	Wellington	6011	(04) 385 2477	(04) 385 2478
	Har1	Harris Corporation	221 Hinemoa Street	Birkenhead	Auckland	0622	(09) 419 9786	(09) 419 9787
	Pay1	Payment Solutions Ltd	29 Nugent Street	Grafton	Auckland	1021	(09) 379 7688	(09) 379 7689
	Ros1	Ross and Glover Ltd	42 Douglas Street	Ponsonby	Auckland	1011	(09) 360 3455	(09) 360 3456

Field naming conventions (rules) have been used with no spaces in field names. Each field name should be unique to avoid confusion.

It is important to assign field names that clearly describe the data contained within the field. The name should not be long or over descriptive. Spaces should not be included within field names as this can cause problems when creating queries. Uppercase can be used to identify individual words within a field name, eg CustomerName. Underscores between words can also be used. Examples of appropriate and inappropriate field names are shown below.

Inappropriate Field Names

Customer's Name
Street Delivery Address
City Delivery Address
Phone Number
Paragraph describing product

Appropriate Field Names

CustomerName
DeliveryStreet
Delivery_City
PhoneNumber
Product_Description

Exercise 2

- Complete the following table inserting appropriate field names. The first example has been done for you.

Inappropriate Field Names	Appropriate Field Names
Quantity in Stock	QuantityInStock
Date of birth	
Date they joined the club	
Shipping Company Used	
Category of Product	
Email address	
Status of Membership	
Unit Price	
Credit Card Number	
Method of Payment	
Name of Publisher	
Serial Number	

Answers shown at the end of this section.

Table Names

Once you have broken down data and assigned field names the data is then entered into the tables.

	CustID	CustomerName	StreetAddress	Suburb	City	PostCode	PhoneNumber	FaxNumber
	Adv1	Advanced Networking	260 Queen Street	Richmond	Nelson	7011	(03) 544 6600	(03) 544 6001
	Bhj1	BHJ Institute	50 Stanhope Road	Ellerslie	Auckland	1050	(09) 525 6820	(09) 525 6821
	Bus1	Business Systems Ltd	10 Heather Street	Parnell	Auckland	1010	(09) 373 4728	(09) 373 4729
	Bus2	Business Distributors Ltd	20 Kent Terrace	Mt Victoria	Wellington	6011	(04) 385 2477	(04) 385 2478
	Har1	Harris Corporation	221 Hinemoa Street	Birkenhead	Auckland	0622	(09) 419 9786	(09) 419 9787
	Pay1	Payment Solutions Ltd	29 Nugent Street	Grafton	Auckland	1021	(09) 379 7688	(09) 379 7689
	Ros1	Ross and Glover Ltd	42 Douglas Street	Ponsonby	Auckland	1011	(09) 360 3455	(09) 360 3456

Each table is given a name. The name of each table should reflect the subject of the data contained within it.

It is good practice to follow naming conventions for database objects. In this book the name of each table will start with the characters **tbl**. This will allow tables to be easily distinguished from other database objects.

Exercise 3

- The following tables have been created for various databases. Give each table an appropriate name using the naming convention mentioned above (there may be more than one possible answer - give only one). The first table has been done for you.

Quality Fish Distributors Database Data

tblCustomers or
Table Name:tblClients.....

	ID	CompanyName	Street	Suburb	City	PostCode	PhoneNumber
	Hop1	The Hopper Fish Shop	25 Hopper Street		Wellington	5036	(04) 384 7388
	Pet1	Pete's Fish and Chip Shop	43 Ngarara Road		Waikanae	5016	(04) 293 5350
	Ral1	Ralf's Fish N Chip Shop	30 Wilsons Road	St Martins	Christchurch	8011	(03) 348 8060

The Explorer Caravan Club Database Data

Table Name:

	ID	FirstName	LastName	Street	Suburb	City	PostCode	EmailAddress
	1	Mark	Graeme	17 Compton Street	Northcote	Auckland	0620	mark.graeme@hotmail.com
	2	Bruce	Harris	22 Grove Street		Nelson	7010	bruce.harris@clear.net.nz
	3	Glenda	Smith	97 Bassett Road	Remuera	Auckland	1010	gsmith@xtra.co.nz
	4	Chris	Freeman	80 Argyle Avenue		Palmerston North	4410	chris1000@hotmail.com
	5	John	Ellis	88 Fields Parade	Browns Bay	Auckland	0630	ellis@clear.net.nz

Car Rental Database Data

Table Name:

	Registration	Make	Model	Type	Year	Transmission	Mileage	Colour	DayRate
	RN288	Holden	Commodore	VT SS	2001	Auto	58,000 Kms	Red	\$60.00
	XY3373	Ford	Falcon	XR6	2002	Auto	23,000 Kms	Black	\$80.00
	ZT1200	Mazda	626	GLX	2000	Auto	69,000 Kms	Green	\$50.00

Answers shown at the end of this section.

Primary Key

Each record in a table needs to be unique, ie there must be some way of differentiating each record from all the other data stored in the database.

This is done by the creation of a **primary key**. A primary key is a field (or fields) in a table which is the unique identifier for each record. Once the primary key has been set, Access ensures that each record remains unique by preventing any duplicates or null values (no data) being entered into the primary key field. Every table in an Access database should have a primary key.

You must take care when selecting which field to make the primary key. A name is not a good primary key as it may be duplicated in the table (eg, you may have more than one “John Brown” in your database). Frequently a code or ID number is used to uniquely identify each record.

Data within a table

Primary Key

	StudentID	Title	FirstName	LastName
	38459	Mr	Robert	Morris
	38483	Mr	Mark	Jones
	38499	Miss	Karen	Harper
▶	38779	Miss	Claire	Gibbs
*				

Structure of the table

	Field Name
🔑	StudentID
	Title
	FirstName
	LastName
	Street
	Suburb
	City
	PostCode
	PhoneNumber

Primary Key

Exercise 4

- Circle the fields in the following tables that would appear as a primary key. Remember the field must have unique data to represent each record.

Quality Fish Distributors Database Data

	ID	CompanyName	Street	Suburb	City	PostCode	PhoneNumber
	Hop1	The Hopper Fish Shop	25 Hopper Street		Wellington	5036	(04) 384 7388
	Pet1	Pete's Fish and Chip Shop	43 Ngarara Road		Waikanae	5016	(04) 293 5350
	Ral1	Ralf's Fish N Chip Shop	30 Wilsons Road	St Martins	Christchurch	8011	(03) 348 8060

The Explorer Caravan Club Database Data

	ID	FirstName	LastName	Street	Suburb	City	PostCode	EmailAddress
	1	Mark	Graeme	17 Compton Street	Northcote	Auckland	0620	mark.graeme@hotmail.com
	2	Bruce	Harris	22 Grove Street		Nelson	7010	bruce.harris@clear.net.nz
	3	Glenda	Smith	97 Bassett Road	Remuera	Auckland	1010	gsmith@xtra.co.nz
	4	Chris	Freeman	80 Argyle Avenue		Palmerston North	4410	chris1000@hotmail.com
	5	John	Ellis	88 Fields Parade	Browns Bay	Auckland	0630	ellis@clear.net.nz

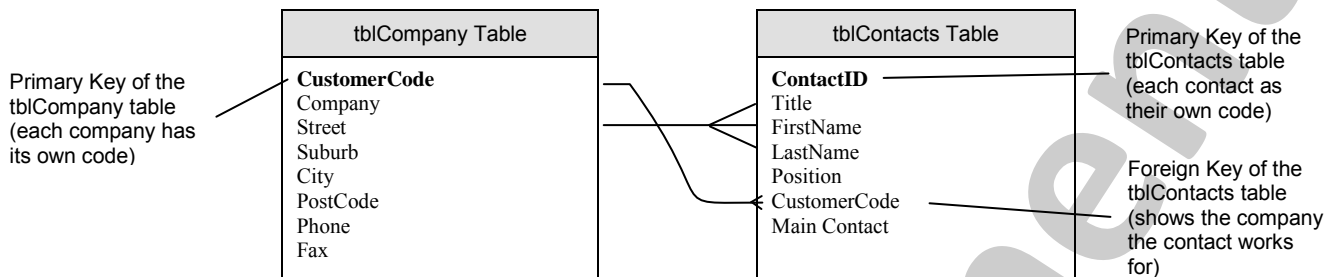
Car Rental Database Data

	Registration	Make	Model	Type	Year	Transmission	Mileage	Colour	DayRate
	RN288	Holden	Commodore	VT SS	2001	Auto	58,000 Kms	Red	\$60.00
	XY3373	Ford	Falcon	XR6	2002	Auto	23,000 Kms	Black	\$80.00
	ZT1200	Mazda	626	GLX	2000	Auto	69,000 Kms	Green	\$50.00

Answers shown at the end of this section.

Relationships

Relationships allow information from different tables to be linked together. Relationships are formed by linking the primary key in one table to the same field value in another table. When the primary key of one table is repeated in a second table, it is referred to as the foreign key.



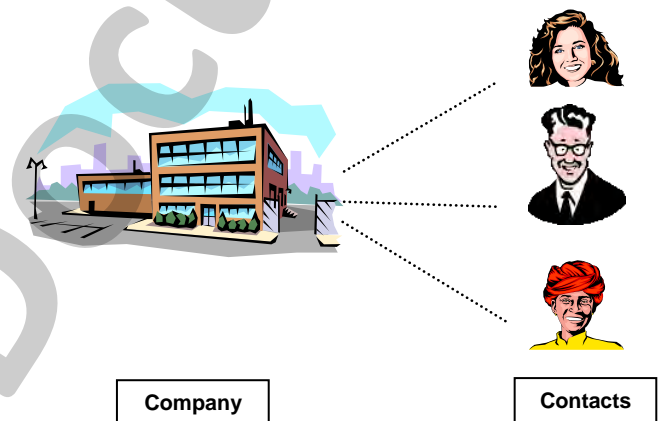
One-to-Many Relationship – each company may have more than one contact

There are three different types of relationships that can exist between tables. These are explained below.

One-to-Many Relationship

In a one-to-many relationship, one element in the first table will relate to many elements in the second table, but the reverse will not be true.

In the example above the relationship between the tblCompany and the tblContacts tables is a one-to-many relationship, because any one company may have several contacts. However each contact will relate back to only one company, as shown at the right (ie they cannot work for more than one company).



A one-to-many relationship is the most common type.

The one-to-many relationship is depicted by the use of a line ending with a crow's foot. The crow's foot is at the "many" end.

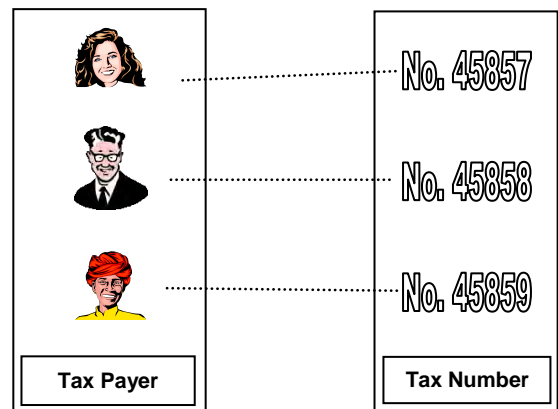


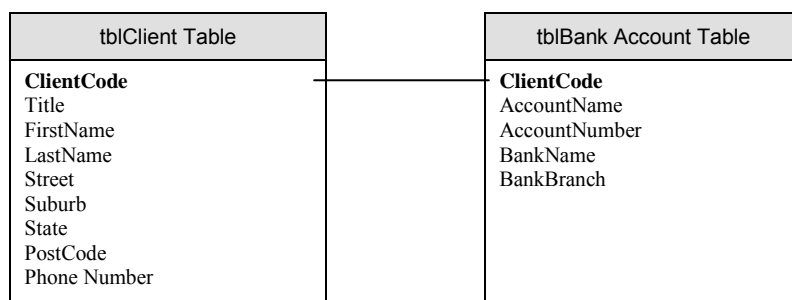
One-to-One Relationship

A one-to-one relationship occurs when each element of the first table relates to only one item in the second table.

The diagram at the right shows a one-to-one relationship between tax payers and their tax numbers. No two tax payers have the same tax number, nor does a tax number belong to more than one tax payer.

A one-to-one relationship is depicted with a single straight line between the tables, as shown on the next page.





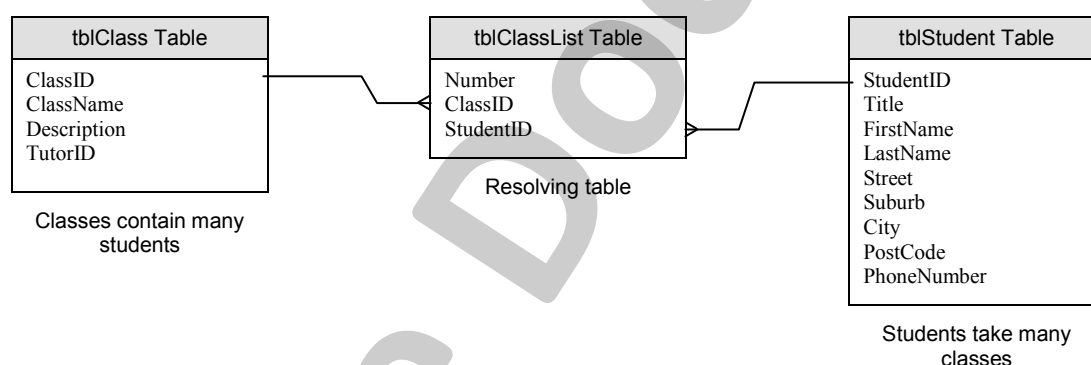
One-to-one Relationship

Many-to-Many Relationship

In a many-to-many relationship, a record in Table A can have many matching records in Table B, and vice versa.

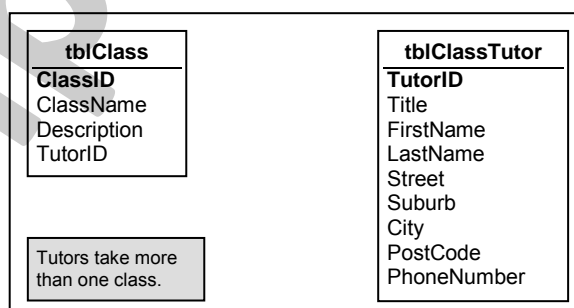
When creating a database with Access, you cannot have a many-to-many relationship. This situation can only be handled through the definition of a third table (called a “junction table” or “resolving table”) where the foreign keys from both Table A and B are stored.

Defining a linking table results in the transformation of a many-to-many relationship into *two* one-to-many relationships, where every record in Table A or B may have many matching records in the resolving table.



Exercise 5

The questions in this exercise relate to the tblClass and tblClassTutor tables shown below.



1 Which field is common to both tables?

.....

2 How many times would a tutor appear in the tblClassTutor table?

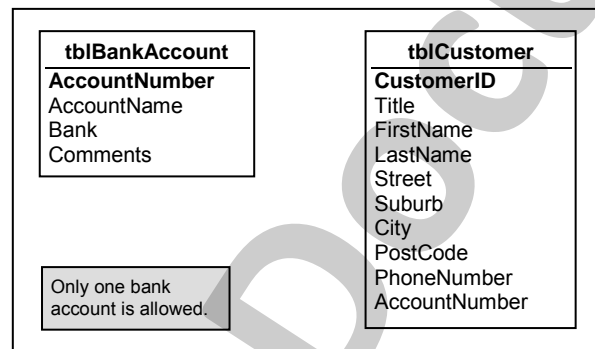
.....

- 3 How many times would a class appear in the tblClass table?
.....
- 4 How many times would a tutor appear in the tblClass table? (Hint: Read the note that is attached to the diagram.)
.....
- 5 What type of relationship will be used to connect these tables?
.....
- 6 Draw a line between the two common fields in both tables in the diagram above, showing the correct relationship type.

Answers shown at the end of this section.

Exercise 6

The questions in this exercise relate to the tblBankAccount and tblCustomer tables below.



- 1 Which field is common to both tables?
.....
- 2 How many times would a bank account appear in the tblBankAccount table?
.....
- 3 How many times would a customer appear in the tblCustomer table?
.....
- 4 How many times would a bank account appear in the tblCustomer table? (Hint: Read the note attached to the diagram.)
.....
- 5 What type of relationship will be used to connect these tables?
.....
- 6 Draw a line between the two common fields in both tables in the diagram above, showing the correct relationship type.

Answers shown at the end of this section.