

Who Is This Book For?

If you've never written VBA code before this book will show you how.

This book is for Access users and developers who:

- Are comfortable with all aspects of the interactive use of Access
- Are already able to design simple relational databases
- Want to learn Access VBA skills from first principles
- Want to learn how to develop professional-grade Access applications

Use of this book as courseware

Using this book as a self-study guide is the second best way to learn Access VBA. Being guided through the sessions by a professional instructor who is also a database and Access expert is, of course, faster, more fun and more productive!

We use this book as the official courseware for The Smart Method's VBA Access course. Smart Method courses are available for all Office applications (such as Access, Excel, Word, PowerPoint and Project) and have been taken by a varied cross-section of the world's leading companies with fantastic feedback from our students.

If you would like to use this book to teach your own courses you'll be delighted to find that we also publish an Instructor Edition of this book which includes PowerPoint slides and details of The Smart Method's recommended teaching techniques.

Learn Access 2003 VBA with The Smart Method

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FIRST EDITION

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How to Use This Book

Welcome to *Learn Access 2003 VBA With The Smart Method*. This book has been designed to enable students to master Access 2003 VBA by self-study. The book is equally useful as courseware in order to deliver courses using The *Smart Method* teaching system.

Smart Method publications are continually evolving as feedback from our courses is incorporated whenever we discover better ways of explaining and teaching information technology concepts.

Feedback

At The Smart Method we love feedback – both positive and negative. If you have any suggestions for improvements to future versions of this book or if you find content or typographical errors the author would always love to hear from you via Email to:

feedback@learnaccessvba.com

While a response cannot be guaranteed, future editions will always incorporate your feedback so that there are never any known errors at time of publication.

Downloading the sample files

Only one file is essential

In order to use this book it is only necessary to download the *Session 1* sample file from the Internet. The sample file is available from:

<http://www.learnaccessvba.com>

You do not have to download all of the files you will find there. The lesson and session files are provided only for disaster recovery. You'll build the entire application starting with the single *Session 1* file.

Type the above URL into your web browser and follow the full instructions available on this web page.

Session and lesson files

The best way to benefit from the course as a whole is to work through all sessions and lessons in sequence and build the sample application yourself starting with the Session 1 database that contains only data (no relationships, validations, reports, queries, forms or VBA code).

Sometimes you may need to use the book as a reference and only wish to complete a specific session or lesson. In this case you can download the relevant lesson or session file. You can also use these files if you corrupt your work-in-progress file mid-way through the course.

Problem resolution

There are a lot of incremental files available on the web—one for every lesson in this course. They have all been tested but if any problems are encountered either downloading or using the sample files please send an Email to:

feedback@learnaccessvba.com

And we'll do everything possible to quickly resolve the problem.

Typographical Conventions Used In This Guide

This guide consistently uses typographical conventions to differentiate parts of the text.

When you see this


Here's what it means

`Dim strCustomer as string`

Program code. (All code is printed using Courier New font, the same font used by the VBA Editor).

Re-makes of films are quite common, for example the classic film *Get Carter* was first made in 1971 with Michael Caine in the lead role.

Italics may sometimes be used for emphasis or distinction. They may be used for entities such as book titles, names of films and table names when such items would not be sufficiently distinct from the surrounding text without embellishment.

Select File  New from the main menu

Click on File from the main menu and then select New from the drop down menu list.

Press <Ctrl> + <Z>.

You should hold down the Ctrl key while pressing the Z key.



When a lesson tells you to click a toolbar button the relevant button will be shown either in the page margin or within the text itself.

note

You can declare variables anywhere in your code but it's good practice to do this at the beginning of the sub or function.

If you want to read through the book as quickly as possible you don't have to read notes.

Notes usually expand a little on the information given in the lesson text.

important

Do not click the Delete button at this point as to do so would erase the entire table.


Whenever something can easily go wrong, or when the subject text is particularly important, you will see the *Important* sidebar.

You should always read Important sidebars.

tip

Set up field validation, format and lookups before creating your forms

Tips add to the lesson text by showing you shortcuts or time-saving techniques relevant to the lesson.

**Session1**

The best way to benefit from the course as a whole is to work through all sessions and lessons in sequence and build the sample application yourself.

Sometimes you may need to use the book as a reference and only wish to complete a specific session or lesson. In this case note the file name shown in the folder icon at bottom left of each lesson page (*Session1* in the example shown) and download the relevant lesson or session file from: www.learnaccessvba.com.

Use of American English

Even though this is a British publication American English (rather than British English) spelling has been used throughout. This is because the Access help system and screen elements all use American English spelling making the use of British English confusing.

Examples of differences are the British English spelling: *Colour* and *Dialogue* as opposed to the American English spelling: *Color* and *Dialog*.

Putting the Smart Method to Work

Access version and service pack

This edition was written using *Microsoft Access 2003 Service Pack 2* running under the *Microsoft XP Service Pack 2* operating system. You can check your program version by selecting Help \sphericalangle About from the Access main menu. If you then click the *System Info...* button from the same dialog you can also confirm your operating system version.

If you are using an earlier operating system or program version this book will be equally relevant but you may notice small differences between some of the screen grabs in the book and those on your screen. There is also a small possibility that some code may not execute as described.

Sessions and lessons

The book is arranged into Sessions and Lessons. In a *Smart Method* course a Session would generally last for between half an hour and an hour and a half and would represent a continuous period of interactive instruction followed by a coffee break of ten or fifteen minutes.

When you use this book for self-instruction we'd recommend that you do the same. You'll learn better if you lock yourself away, switch off your telephone and complete the whole session without interruption. The memory process is associative and we've ensured that each lesson within each session is very closely coupled (contextually) with the others. By learning the whole session in one sitting you'll store all of that information in the same part of your memory and should find it easier to recall later.

The experience of being able to remember all of the words of a song as soon as somebody has got you "started" with the first line is an example of the memory's associative system of data storage.

We'd also highly recommend that you do take a break between sessions and spend it relaxing rather than catching up on your Emails. This gives your brain a little idle time to do some data sorting and storage!

First page of a session

1/ The first page begins with a quotation, often from an era before the age of the computer, that is particularly pertinent to the session material. As well as being fun, this helps us to remember that all of the real-world problems we solve with technology have been around for a long time.

3/ The session objectives *formally* state the precise skills that you will learn in the session.

At the end of the session you should re-visit the objectives and not progress to the next session until you can honestly agree that you have achieved them.

In a *Smart Method* course we never progress to the next session until all delegates agree that they are completely confident that they have achieved the previous session's objectives.

1

Session One: The Sample Database

As a general rule the more successful man in life is the one who has learned to lose.
Benjamin Franklin, *Franklin's Path* (1744-1800)

By the end of this book you will have completed a professional-grade course introduction. The first of these courses you could deliver to a general audience with confidence, or use as a professional presentation application.

You will write over five lines of code and construct every query, form, and report to construct the application and before we begin adding code, there's quite a lot of groundwork to do.

In order to ensure you're not overwhelmed a sample database definition is provided in the next session to help you to work with.

In this session you'll begin by examining the sample database and the tables and relationships within it. You may pick up one some very useful data to be broken up into tables as well as a thorough understanding of the data structure.

You'll then develop the basic bones of an application by building a simple program query that can be used to understand forms and reports done with a simple visual programming form and report to explore the next.

In the next session you will build upon the foundation by incorporating all of the advanced features needed to produce a polished application.

Session Objectives

By the end of this session you will be able to:

- Understand the sample database
- Understand table design rules
- Create a general purpose query to understand forms and reports
- Create a presentation using a report
- Optimize a form for keyboard input
- Create a simple report using a report

DOWNLOAD

www.learnaccessoba.com 15

2/ In the next few paragraphs we *informally* summarise why the session is important and the benefits that you will get from completing it.

This is important because without motivation adults do not learn. For adults, learning is a means to an end and not an end in itself.

The aim of the introduction is to motivate your retention of the skills that will be taught in the following session by allowing you to preview the relevance of the material that will be presented. This may subconsciously put your brain into "must remember this" mode—assuming, of course, that the introduction convinces you that the skills will be useful to you!

4/A file with the starting point for the session is always available for download from: www.learnaccessoba.com. The file name is stated here.

Every lesson is presented on two facing pages

Pray this day, on one side of one sheet of paper, explain how the Royal Navy is prepared to meet the coming conflict.

Winston Churchill, Letter to the Admiralty, Sep 1, 1939

Winston Churchill was well aware of the power of brevity. The discipline of condensing thoughts into one side of a single sheet of A4 paper resulted in efficient transfer of information.

A tenet of our teaching system is that every lesson is presented on *two* facing sheets of A4. We've had to double Churchill's rule as they didn't have to contend with screen grabs in 1939!

If we can't teach an essential concept in two pages of A4 we know that the subject matter needs to be broken into two smaller lessons.

Tips, important information and notes appear in sidebars.

Each step is numbered and begins with the thing you need to do in bold type. Sometimes this is all you need to read to accomplish the task.

Step notes sometimes provide precise instructions on how to progress if the one-line description is inadequate. Notes often also include interesting information about the current task.


If you are not working through the course sequentially, a file is available on our web site that contains the starting point for every lesson. The file name you need to download is stated in the file icon at bottom left of every lesson page.

Learn Access VBA 2003 with The Smart Method


Lesson 1-1: Understand the sample database

The sample database will manage a collection of films. The schema incorporates some of The Smart Method's preferred naming conventions and design rules.

- 1 Create a new folder for your application on the C:\ drive called C:\FilmLibrary.
- 2 Download the FilmLibrary-Session1.zip file from http://www.thsmartmethod.com/Access_VBA_Sample_Files save it to this location, unzip it and then re-name it FilmLibrary.mdb.
- 3 Open the FilmLibrary.mdb database.
- 4 Select Tools->Relationships from the main menu to view the schema.
The schema is displayed.



- 5 Understand the table relationships.
Note the relationships between the tables. It is often useful to read the relationships to a client from the schema to ensure that they are correct. For example:
"One film may have one and only one director but a director may direct many films." (A one to many relationship).
"One film may have many actors and one actor may perform in many films." (A many to many relationship).
- 6 Understand the relationship types.
Right-click on the relationship between the Film and Director tables and choose Edit Relationship... from the shortcut menu. The Edit Relationship dialogue is displayed.

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Learning by participation

Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand.

Confucius (551-479 BC)

Confucius would probably have agreed that the best way to teach IT skills is hands-on (actively) and not hands-off (passively). This is another of the principal tenets of our *Smart Method* teaching system. Research has backed up the assertion that you will learn more material, learn more quickly, and understand more of what you learn if you learn using active, rather than passive methods.

For this reason pure theory pages are kept to an absolute minimum with most theory woven into the hands-on sessions either within the text or in sidebars. This echoes our teaching method in Smart Method courses where snippets of pertinent theory are woven into the lessons themselves so that interest and attention is maintained by hands-on involvement but all necessary theory is still covered.

important

Amateur database designers often leave their databases open to corruption by not enforcing referential integrity between their tables.

The usual excuse for not enforcing referential integrity is that it will stop users entering incomplete records (for example users may wish to create a Film record when the Director name is not known).

The simple solution to this problem is to make sure that the default value of the foreign key within the parent table (the DirectorID field within the Film table) is always Null (Null means the absence of any value at all. It will then be possible to create Film records when the Director is not known).

Session One: The Sample Database

Edit Relationships

Table/Query:	Related Table/Query:
Director	Film
DirectorID	DirectorID

Enforce Referential Integrity

Cascade Update Related Fields

Cascade Delete Related Records

Relationship Type: One-To-Many

Note the *Enforce Referential Integrity* check box. This means that if a user attempts to delete a director who is attached to any films the delete will fail.

It is vitally important to enforce referential integrity for all relationships within your database. Access does not do this by default!

7 Understand when to use Cascade Delete.

Close the Edit Relationships dialogue. Right-click on the relationship between the Film and FilmActor tables and choose Edit Relationship... from the shortcut menu. The Edit Relationship dialogue is displayed.

Edit Relationships

Table/Query:	Related Table/Query:
Film	FilmActor
FilmID	FilmID

Enforce Referential Integrity

Cascade Update Related Fields

Cascade Delete Related Records

Relationship Type: One-To-Many

Note that the *Cascade Delete Related Records* check box is checked.

This is one of the rare examples when Cascade Delete Related Records makes sense because we would want to automatically delete the association between a film and it's actors in the event that the user wanted to delete a film record.

Screen grabs are provided in-line with the text when they can explain what you need to do more clearly than words alone.

note

You might wonder what would happen if you checked the *Cascade Update Related Fields* check box.

If you follow our design rules all primary keys will be meaningless (see tip sidebar and Appendix A: The Rules).

Amateur database designers (and even ones that have simply read the wrong books!) often create meaningful primary keys causing all sorts of problems.

Cascade Update Related Fields is simply a work around for one of the problems caused by breaking this design rule – the case when a meaningful primary key must be changed and propagated throughout the entire database.

In a properly designed database you'll never have to use this option.

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