Essential Visual Basic 5.0 *Fast*

Includes ActiveX Control Development

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John Cowell

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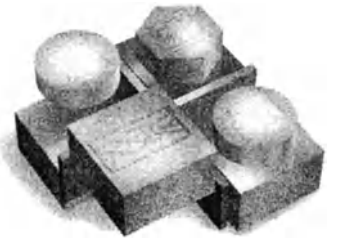

Includes ActiveX
Control Development

With 211 Figures

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Why Use Visual Basic 5?

Introduction

Visual Basic 5 is the latest version of the best selling development environment from Microsoft. Visual Basic 4 set the standard for developers using Windows 95 and is the most popular way of creating professional Windows applications. Version 5 offers all the facilities of version 4 as well as a range of exciting new features. If you are developing software for the PC either as a professional programmer, a student, or for fun you will be working in a Windows 95 environment and if you are developing Windows 95 software you need Visual Basic 5.

Visual Basic has virtually become the industry standard for developing professional Windows applications with the minimum of fuss. It has rightly gained a reputation as a heavy-weight development environment which provides everything that a professional software developer could want in an affordable, friendly system. Visual Basic is a complete development environment, allowing complex applications to be developed with the minimum of programming. Many applications use databases and version 5 is now even better for developing database applications. ActiveX has become increasingly important and Visual Basic is one of the first tools that allows you to develop ActiveX controls and documents with the same ease as other Visual Basic Windows 95 applications.

The environment is very intuitive to use and if you already have some programming experience you can expect to use Visual Basic confidently after a few weeks practice with proficiency after about 2 months. If you have used a previous version of Visual Basic it will take even less time to make the change. Most experienced programmers find they prefer the Visual Basic environment to using languages such as C++. Inexperienced programmers who meet Visual Basic as their first language find it a great

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development environment and are often horrified if they later have to switch to another language which lacks the features and ease of use of Visual Basic.

There are now large numbers of companies offering additional OCX or ActiveX controls for Visual Basic, making it even easier for you to write your application. The chances are that whatever you want to do in a Windows 95 environment Visual Basic 5 will let you do it.

If you are a Delphi or Visual C++ programmer you can create ActiveX controls in Visual Basic and use them in these environments.

Why change to version 5?

Visual Basic version 4 was one of the best selling development environments of all time with a massive user base of over 4 million and was a hard act to follow. It was not easy to come up with a new version of Visual Basic which was not simply different but objectively better. Microsoft carried out extensive surveys of what its customers wanted from a new version, the four most commonly requested changes were:

- Improved performance.
- Ability to create and use ActiveX components.
- Better database access features.
- Improved programmer productivity.

Version 5 of Visual Basic addresses all of these issues. If you are currently using an earlier version of Visual Basic, it is worthwhile making the change to the latest version, since the changes are not just cosmetic, there are many things you can do in version 5 that you cannot do in earlier versions. Version 5 has an improved user interface and offers a range of new features which give you greater functionality. Visual Basic 5 uses object oriented terminology in all the supporting manuals and has new features that allow you to design object oriented software. For this reason alone it is worth making the switch to version 5. If you want to produce ActiveX controls or are serious about database development and Internet integration you need to use version 5.

Is this book for you?

This book is a complete revision for version 5 of Visual Basic and even if you are an existing Visual Basic user who wants to convert to the latest version, you will find this book is very helpful in giving a concise review of the key aspects of Visual Basic with emphasis on the latest features.

This book assumes that you have no prior knowledge of Visual Basic and provides an introduction to the language. It is also suitable for those at an intermediate level who want to learn how to develop serious, professional applications. It is assumed that you have some experience of using Windows programs such as word processors, spreadsheets and databases.

It is helpful if you already have some programming experience, but all the essential elements of the Visual Basic language are covered. If you have used BASIC before, especially variants such as QuickBASIC or QBasic, you will be able to switch to Visual Basic without any problems.

Visual Basic is supplied with manuals which are better than average and the usual high standard of on-line help. These are fine if you have a good grasp of Visual Basic and need to look up a specific point. What the manuals and help are not very good at is providing is a readable, impartial guide to the language and environment. This book does not cover every minor detail of Visual Basic in the same way as the manuals, but it does give you a grasp of all the most important features of the language. There are many illustrations and examples. The best way to learn Visual Basic is to try out the examples for yourself.

How this book is organised

This book can be used as a tutorial which you start at the beginning and work through to the end. If you do this, you will know enough to develop major applications. All the key concepts of programming in an object oriented environment are explained. If you already have some programming experience you will find that you do not have to read all of the chapters in depth, for example those dealing with the Visual Basic language. Many people have used one of the variants of BASIC such as QuickBASIC, but it is still worthwhile scanning the sections which deal with programming since each flavour of BASIC has its own peculiarities. This book is organised into chapters covering specific topics so that you can easily find the material you want.

If you already have some experience of Visual Basic, you can just concentrate on the chapters which deal with features you are interested in, such as databases or ActiveX control development. One of the key differences between this and earlier versions of Visual Basic is that there is an increasing emphasis on the object oriented approach to designing software. You can ignore the object oriented aspects of Visual Basic to a large extent, but if you want to be in line with the latest trends for developing software with fewer bugs, you do need to know about object orientation. One of the major growth areas in the past few years has been the increasing popularity of the World Wide Web. HTML is a language used for producing Web pages which are displayed in a browser such as Microsoft Explorer. ActiveX documents can be created in Visual Basic which can be displayed in the virtual environment provided by the browser.

The earlier parts of this book cover the organisation of projects, while later chapters cover more advanced topics such as creating and using ActiveX controls. This book is not intended to be a definitive in-depth description of Visual Basic - if it did it would be about ten times as long and take twenty times as long to read. The philosophy of this book is to cover a broad range of most of the key features of Visual Basic. Most people find that at first they don't need to learn everything about the language to be able to develop useful programs. If, for example, your first Visual Basic program does not use grids, you do not need to read the chapter on the custom controls in order to start. The

best way to use this book is to read the chapters you need and to try the examples. One of the pleasures of Visual Basic is that it allows you to develop applications *fast* - you do not even need to read all of this book before you can start!

New features in version 5

This book is based on Version 5 - the latest version. Software developed using earlier revisions is compatible with this version. The main additional features that have been added are:

- Improved speed. One of the major problems with Visual Basic was that it was an interpreted language and applications ran slowly. This version offers a native compiler which offers a claimed improvement in performance of up to 20 times.
- There is improved speed of database access, up to 4 times is claimed. In particular asynchronous queries are supported.
- There are improved data access tools, including simplified database creation and queries.
- There is additional support for Windows NT, in particular multi-threading.
- Delivery and installation of applications via the Internet is supported.
- The Form Layout window allows you to specify where your form will appear on the screen when the application is run. This is useful if your form is not maximised when run and so does not occupy the entire screen.
- The **Decimal** data type has been introduced for increased accuracy.
- One of the most annoying features of any development environment where there are several windows open is that it is easy to lose windows. The menu bar has been changed so that you can display key windows, such as the toolbox and Properties window by clicking on an icon.
- The new Windows 97 style icons are used, which show the icon on a flat background rather than a pseudo button.
- There is a very noticeable change in the terminology used in Visual Basic 5, to support an object oriented design model. A button, for example, is referred to as an object, that is a member of the **CommandButton** class. While this does not indicate a change in the underlying philosophy of Visual Basic it does reflect the increasing use of object oriented design and implementation techniques.
- You can create ActiveX controls. These allow you to develop controls which can be used in other Visual Basic, Delphi or Visual C++ applications.
- An ActiveX Control Interface Wizard and a Property Pages Wizard have been added, to simplify the creation of ActiveX controls.
- The alignment controls for ensuring that objects on forms are correctly positioned have been greatly improved.
- You can now dock windows such as the toolbox rather than having them as independent windows.

- There is an on-line help facility available from the **Help** menu which connects to the Microsoft Web site.
- There are minor revisions to the programming language, including the introduction of enumerated types.
- There is an IntelliSense facility which offers you a list of alternative choices when typing code, for example when you type the name of an object, a list of all its properties is displayed.
- The Project Explorer is a new feature which allows you to find both code and objects in your project.

In addition, there are numerous changes to the user interfaces. The majority are improvements rather than just simply changes.

What computer do you need to run Visual Basic 5?

Computers are never fast enough and rarely have enough disk space or memory, so the faster and more powerful your computer the better. Microsoft suggest that an ideal development system for a professional Visual Basic programmer is:

- Intel Pentium P150.
- 64Mb of memory.
- 17" screen.
- 2Gb of disk space.

Realistically though, Visual Basic can be run with a more modest configuration and still provide reasonable performance. The minimum that you need so that the performance is adequate is:

- Intel 80486dx4 or better.
- 16MB or more of memory.
- 15" screen.
- 80 MB of disk space for a full installation.

Visual Basic runs satisfactorily with this configuration, but if you want to run other application at the same time there are improvements in speed if you have more than 16Mb of memory.

The Visual Basic 5 development environment requires you to have at least four or five windows open at the same time. Ideally you will need an SVGA screen, and even if you have excellent eyesight a monitor of 15 inches or more is a great help.

Versions of Visual Basic 5

Many people may still be using the Custom Control Edition (CCE) of Visual Basic 5 which is a surprisingly complete free version which may be downloaded from the Microsoft Web site. The only major omissions are that you cannot produce native

compiled code and there are no database facilities, but there is enough in this free edition to introduce you to all the major features of this version.

There are three versions of the commercial release of the software:

- Learning. This is aimed primarily at the student market and does not include the native compiler, so it cannot be used for producing commercial applications for distribution to customers.
- Professional. This is a full implementation of the software and will be the version most widely used.
- Enterprise. Includes additional database support and tools for team working.

Conventions

There are a few conventions used in this book which make it easier to read:

- All program examples are in *italics*.
- All reserved words such as **For**...**Next** are in **bold** and start with a capital.
- Menu options are shown in **bold** as, for example, **View** | **Code** which means the **Code** option from the **View** menu.
- All user created identifiers such as *MyFile* are in italics.