

The Profiler User Guide

ToolBook II

INSTRUCTOR™



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Understanding the Profiler sample application

The Profiler sample application demonstrates the use of Automation (formerly known as OLE Automation) in ToolBook. By connecting with the programmable objects in Microsoft Word 97 from within ToolBook, the Profiler application automatically constructs a custom report in Word that lists information about the ToolBook file the user selects.

The script of the first page in Profiler sample application (page “Main”) contains all of the OpenScript source code that demonstrates Automation. A large number of comments in the script for this page fully describes the use of Automation from OpenScript.

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About Automation

Automation provides the ability to access and manipulate the features of another Windows application from outside of that application. Applications that support Automation are built on Microsoft's Component Object Model (COM), a technology that enables programs to interact with each other.

Automation occurs when a client application (such as ToolBook II Instructor 8) connects to a server application (such as Microsoft Word 97) by creating an instance of an object provided by the server application. For example, in Microsoft Word, you begin an Automation session by creating an instance of the "Word.Application" object. In ToolBook, this is accomplished by using the createAutoObject function in OpenScript:

```
wordObjApp = createAutoObject("Word.Application")
```

In the example above, if "Word.Application" describes an available Automation server then you can issue additional OpenScript statements to create derivative objects from the resulting Word object (wordObjApp), and call methods and set properties for those objects.

For more information about Automation, see "Recommended reading" at the end of this document.



Using Profiler.exe

To run the Profiler application, you must have Microsoft Word 97 SR-1 or later installed on your computer.



Note You can open the templates in Microsoft Word to preview or modify the templates before building a book profile. It is not necessary to close Microsoft Word before building a book profile.

➤ To create a report with the Profiler application:

- 1 If the Profiler application is not currently open, run Profiler.exe.
- 2 In the ToolBook II Book Profiler, click the Browse button under Book to Profile, and then choose Samples\chewbyte.tbk in your Instructor program directory.
- 3 Click the Browse button under Microsoft Word Template, and then choose one of the sample templates (.dot files) provided in the default directory.
- 4 Click the Browse button under Save Word document and specify a name for the report that the Profiler will generate.
- 5 Click the Build Profile button.

After the Profiler builds the report, Microsoft Word opens and displays the report.



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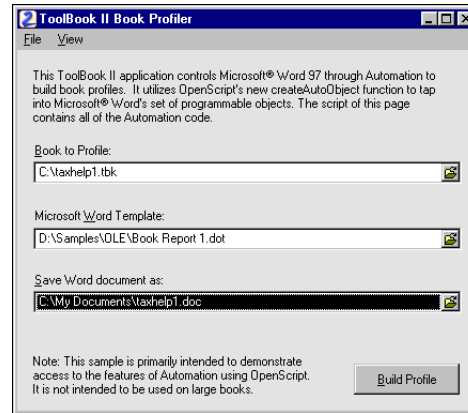


Figure 1 The Profiler application

Understanding how the Profiler application works

This section gives an overview of the OpenScript source code for page “Main” of the Profiler application. You may find it convenient to have a printed copy of the script while reading this section.

In the Profiler application, ToolBook attempts to create an instance of the “Word.Application” object after the user clicks the Build Profile button. This statement creates the “Word.Application” object:

```
vWordObjApplication = createAutoObject("Word.Application")
```



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Once the Application object is assigned to a variable, the script creates a new Word document from the selected template. This is done by calling the Add method on the Documents collection of the Application object.

```
vWordClnDocuments = extDocuments of vWordObjApplication  
vWordObjDocument = extAdd(vWordTemplate, 0) of vWordClnDocuments
```

The next step is to obtain a list of bookmarks in the Word document. The Profiler application uses bookmarks to determine the type and placement of the text to add to the Word document.

The bookmark names are then processed in two loops. The first loop handles bookmark names that begin with "tbProp_Book" or "tbUdf". When the application encounters a bookmark beginning with "tbProp_Book" such as "tbProp_Book_Name", it gathers the characters after the second underscore and uses this value to obtain the corresponding book property by this name. For example, the bookmark named "tbProp_Book_Name" translates to the Name property of the book being profiled. The Profiler application gets the name of the book and overwrites the bookmark's text in the Word document with the book's file name.

There are also bookmarks defined that begin with the characters "tbUdf". "Udf" stands for "user-defined function". When the application encounters a bookmark that begins with "tbUdf", it calls a special OpenScript function named getUdfData (which resides in the book script) and passes the remaining characters of the bookmark's name. ToolBook then calls _getUdfData() of the derived page, which returns the text to show in the Word document.



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The second loop in the script of page “Main” handles bookmarks with names beginning with “tbTable”. Processing for these types of bookmarks is essentially the same as “tbUdf” except that instead of sending a simple text string to the Word document, the Profiler application constructs and populates a Microsoft Word table from the requested information.

After the Profiler application processes all of the Word bookmarks found in the original document, it closes the instance of the Word Application object it opened to free system resources. Profiler then uses the shellExecute32 Windows API function to launch the Word document.

Expanding the Profiler application

You can add pages to the Profiler application and bookmarks to the provided Word templates to profile additional details about your ToolBook books. The Profiler application includes several Microsoft Word 97 templates, and you can open these templates in Word to add or remove bookmarks, change font styles, change the page layout, and make other desired changes. You can combine existing bookmarks into your own set of Word templates to create custom book profiles.

Each of the Word templates provided with the Profiler application contains at least one bookmark with a name that begins with “tbProp_Book”. When the Profiler application encounters these bookmarks, it obtains the value of a book property. The name of the book property is determined by the characters that follow the second underscore character in the bookmark name. For example, the application processes a bookmark named “tbProp_Book_INFO_Title” by obtaining the INFO_Title property of the book being profiled. With this design, you can obtain any book property by simply specifying the name of the property after “tbProp_Book_”.



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About “tbUdf” bookmarks

Bookmark names that begin with “tbUdf” are treated as user-defined functions by the Profiler application. The following example demonstrates how “tbUdf” bookmarks are processed. When Profiler.exe encounters a bookmark named “tbUdf_Book_CountAllQuestions”, it sends the string “Book_CountAllQuestions” to the getUdfData handler in the book script. The getUdfData handler uses this string as a page name and then calls a handler named _getUdfData of page “Book_CountAllQuestions”. The _getUdfData handler has special, bookmark-specific code to count all question objects in the book being profiled. The function returns a number (in this case, zero or greater) to the code processing the bookmark. Finally, this number replaces the text of the bookmark in the Word document.

► To create your own user-defined functions for building custom book profiles:

- 1** Open the Word template in which the return value of the user-defined function will be placed.
- 2** Type the name of the new bookmark to create. For example, if you intend to write OpenScript code that will return a count of all paintObjects in a book, you might name the bookmark “tbUdf_Book_CountAllPaintObjects”.
- 3** Highlight the text and choose Bookmark from the Insert menu in Word. Name the bookmark the same as the text you typed into the document.
- 4** Save the template.
- 5** Add a page to background “Udf” in Profiler.exe and name it the same as the bookmark created in step 2, for example, “Book_CountAllPaintObjects”.
- 6** Write code for a handler named _getUdfData. Examine the script of an existing “tbUdf” page for an example.

The results of your _getUdfData function will now appear in the Word template at the designated location.



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About “tbTable” bookmarks

The “tbTable” bookmarks work much like the “tbUdf” bookmarks with the added functionality of building a Word table from the results of an OpenScript handler.

While building the book profile, when the application encounters a bookmark with a name beginning with “tbTable”, it sends the characters after the first underscore in the bookmark name to a book handler named `getTableData`. This handler uses the parameter to formulate a page name, and then calls the `_getTableData` handler of the derived page. The `_getTableData` handler returns a tab-delimited list of values that translates to a Word table.

As an example, when the application encounters the “tbTable_Pages_PageDetails1” bookmark, it sends “Pages_PageDetails1” to the `getTableData` handler, which resides in the book script. This handler treats its parameter as a page name. It then calls a handler named `_getTableData` of page “Pages_PageDetails1” of background “Table”. The `_getTableData` handler in the script of page “Pages_PageDetails1” steps through the pages in the book being profiled and constructs a tab-delimited list of details about the pages. This list is returned to the `getTableData` handler, which passes it back to the controlling loop. From here, the application calls upon the necessary Word objects and methods to define and populate a template in the Word document.

Although it’s a bit more complicated than adding “tbUdf” bookmarks, you can add any number of “tbTable” bookmarks to expand the Profiler application in many ways.



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Recommended reading

Automation is a powerful and useful technology, but can be overwhelming due to the large number of objects, methods, collections, and properties found in the Automation Server application's object model. The Microsoft Word object model, in particular, is very large and takes a lot of experimentation to unravel.

The following books provide additional information about Automation:

Chappell, David. *Understanding ActiveX and OLE*.
Microsoft Press, 1996.

Roman, Steven. *Learning Word Programming*.
O'Reilly and Associates, 1998.

The following Web pages provide additional information about Automation:

<http://msdn.microsoft.com/library/>

[http://www.zdnet.com/pcmag/pctech/content/15/03/
iw1503.001.html](http://www.zdnet.com/pcmag/pctech/content/15/03/iw1503.001.html)



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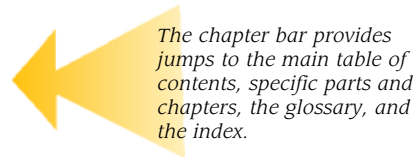
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How to use this online book

This online book is designed to help you access information quickly. Use the features described here to jump to the chapter, topic, or resource you need.

Along the left side of every page is the chapter bar, where you can click a chapter you want to look at and jump immediately to the first page of that chapter. At the lower right of each page are navigation buttons that move you to the next or previous page.

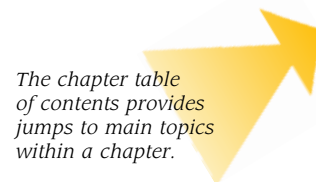
On the first page of each chapter is a list of the chapter's contents. Click a topic or its page number to jump directly to that topic.



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Navigating from the main table of contents **G.2**

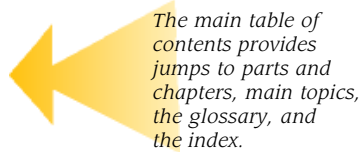
Using Adobe Acrobat Reader **G.3**



Navigation buttons take you to the next or previous page.



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Navigating from the main table of contents

In addition to the chapter bar and the chapter table of contents, you can navigate using the main table of contents, which lists all the chapters in the book and the main topics of each chapter. To quickly jump to the main table of contents, click Contents at the top of the chapter bar.

From the main table of contents, click a chapter title or chapter topic to jump immediately to that chapter or topic.



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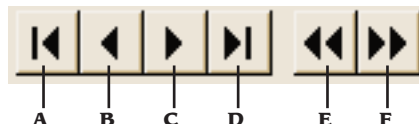
Using Adobe Acrobat Reader

Adobe® Acrobat® Reader is a software program that allows you to view this online guide. Acrobat Reader is installed on your computer during Setup. It comes with a Reader Online Guide, available from the Help menu, which explains how to use the program. The Acrobat toolbar provides some helpful features, described in the next section.

The Acrobat toolbar

In addition to the navigation features in this guide, you will find useful navigation tools on the Acrobat toolbar.

Navigation buttons



- A** First page
- B** Previous page
- C** Next page
- D** Last page
- E** Previous view
- F** Next view

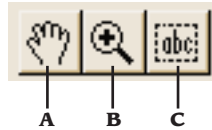
The First, Previous, Next, and Last buttons allow you to move quickly within the online book. Additionally, Acrobat allows you to move to the previous page visited and back again using the Previous view and Next view buttons. This type of navigation is convenient when jumping between chapters or nonsequentially within a chapter.



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Zoom and text tools



- A Hand tool
- B Zoom-in tool
- C Text selection tool

Acrobat also comes with tools you can use to zoom in and out of a page, and to move about a page. Use the Hand tool to move around the page by clicking and dragging. The Zoom-in tool magnifies the page with each click. Select the Zoom-in tool and hold down the CTRL key to show the Zoom-out tool.

Another useful tool is the Text selection tool. Use this feature to select a block of text. Then, copy the text to another program.

Here's a tip for those of you with tired eyes.

Grab the Zoom-in tool and select this paragraph (as shown). This will magnify the page to the specified area. Use the scroll bars or the Hand tool to move around as you read.



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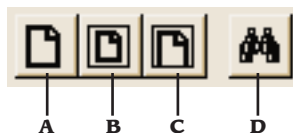
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Page-sizing tools



- A Zoom 100%
- B Fit page
- C Fit width
- D Find

Using the page-sizing tools, you can quickly change the size of the page you are viewing. This feature comes in handy when you want to restore the view of the whole page after using the Zoom-in tool. This guide is designed to be viewed at the Fit page size. At this size, you can see all of the navigation tools available to you.

The Find button opens the Find dialog box, where you can enter a word or phrase to search for.

Additional Acrobat features

Using features in Adobe Acrobat, you can do many other things, such as print the document, fill in forms, jump to a Web site, and open other files. For more information on these and other features, see the Reader Online Guide, available from the Help menu.

