



Barcode Maker

Manual

Copyright © 2012
Wasp Barcode Technologies
1400 10th St.
Plano, TX 75074
All Rights Reserved

STATEMENTS IN THIS DOCUMENT REGARDING THIRD PARTY PRODUCTS OR SERVICES ARE BASED ON INFORMATION MADE AVAILABLE BY THIRD PARTIES. WASP BARCODE TECHNOLOGIES AND ITS AFFILIATES ARE NOT THE SOURCE OF SUCH INFORMATION. THE INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

Wasp Barcode Technologies, the Wasp logo and Wasp Barcode Maker are registered trademarks and/or trademarks of Wasp Barcode Technologies in the United States and other countries. Other parties' trademarks are the property of their respective owners.

Software activation system licensed under Patent No. 5,490,216

Terms, conditions, features, hours and contact information in this document are subject to change without notice. Wasp is committed to providing great products and exceptional customer service. Occasionally we may decide to update our selection and change our service offerings so please check www.waspbarcode.com for the latest information.

Wasp Barcode Maker Install Key
(Printed on shipped material)

Wasp Barcode Maker Registration Key
(Obtained from www.waspbarcode.com/register)

Table Of Contents

Introduction	1
Getting Started.....	4
Symbologies Supported in BarcodeMaker	8
Main Window	9
BarcodeMaker ActiveX Toolbar	12
Creating a Barcode Using the Main Window.....	16
Example: 3 of 9 Full ASCII Barcode	22
Moving Barcodes into Documents.....	23
Creating Barcodes in Microsoft® Word and Excel	25
Creating Barcodes in Microsoft® Access	37
Creating Barcodes in Crystal Reports	52
Creating a 1D Barcode	52
Creating a Data Matrix Barcode.....	56
Creating a PDF417 Barcode.....	59
Barcoding Numbers	63
Adding the Barcode to Your Report.....	64
Changing the Barcode Font and Resizing	65
Barcode Font Descriptions.....	67
OCR-A, OCR-B, and MICR Fonts.....	70
2D Barcode Creation	71
Barcode Symbologies.....	73
Common Barcode Symbologies	73
ASCII Table	80
File Menu Commands	81

Edit Menu Commands	82
Help Menu Commands	83
System Requirements	85
Technical Support.....	86
Index	87

Introduction

Wasp BarcodeMaker is a powerful barcode creation program that seamlessly allows you to create barcodes in Microsoft® Word, Excel, and Access as well as in Crystal Reports depending on the version you purchased.

The Professional version of Wasp BarcodeMaker allows you to:

1. Create barcodes directly in Microsoft Word or Access using the integrated ActiveX toolbar and share those files with other people.
2. Create barcodes in Excel using the integrated ActiveX toolbar, or the Fonts toolbar and share those files with other people.
3. Create barcodes in Crystal Reports.
4. Create a barcode directly in BarcodeMaker, save it as a .bcm file, and share the file with other people.
5. Print and scan barcodes created using BarcodeMaker.
6. Create 2D barcodes.

The Standard version of Wasp BarcodeMaker allows you to:

1. Create barcodes directly in Microsoft Word using the integrated ActiveX toolbar and share those files with other people.
2. Create barcodes in Excel using the integrated ActiveX toolbar, or the Fonts toolbar and share those files with other people
3. Create a barcode directly in BarcodeMaker, save it as a .bcm file, and share the file with other people.
4. Print and scan barcodes created using BarcodeMaker.

Ease of Use

BarcodeMaker is the next generation in fast, accurate barcode creation. It **frees you from having to know the technical specifications about a particular barcode symbology**, such as check digit calculation and START and STOP characters, all of which are translated automatically. It makes addition of Special and Nonprinting characters simple. As a result, the **user can be more productive**.

To create a barcode, the user simply selects a barcode symbology (the type of barcode) from a list, types a barcode value in a document, selects the value and clicks a button. The barcode appears in the document. A few simple mouse clicks allow the user to control barcode attributes, such as the barcode size, bar width, show caption, use and show check digit, and background and foreground colors. Special and Nonprintable ASCII Characters are easily added by clicking a button and selecting from a list. Any characters that do not apply to the type of barcode chosen become unavailable to make the user's job easier.

➡ After you select the barcode symbology, the program makes your job easy because any attributes that do not apply to that symbology will not be available to you on the toolbar or in the BarcodeMaker Main Window. For example, if the symbology does not support check digit, the check digit box will be unavailable.

➡ If you enter a barcode value that is not supported by a particular barcode symbology, BarcodeMaker will display a message letting you know that the barcode value is either illegal or incomplete. For example, the Interleaved 2 of 5 barcode symbology requires numbers. If you include a letter in the barcode value, you will receive a message telling you that there is an illegal character in your barcode. An incomplete barcode is one that does not include the required number of characters. For example, PostNet, which is used to barcode zip codes, requires 5, 9 or 11 digits. If the barcode you enter only has 4 digits, you will receive an incomplete character message.

Microsoft Excel

In Excel, BarcodeMaker allows you to create many barcodes very quickly. The program allows you to link a cell with a variable to a barcode. If the variable changes, the barcode will reflect the change. You have two options for creating barcodes in Excel. You can use the ActiveX toolbar, or create a font-based barcode using the Font toolbar. See the section **When to Use the BarcodeMaker ActiveX Toolbar vs. the BarcodeMaker Fonts Toolbar** for help deciding which method will best suit your needs.

Microsoft Word

In Word, BarcodeMaker allows you to create multiple barcodes in one file. The barcodes can be moved on the page and printed.

Microsoft Access

Available in the Professional Version Only

In Microsoft® Access, BarcodeMaker allows you to create a barcode on an Access form using data from an Access database. For example, if you have a database of book titles, and each book title has a different purchase price, using BarcodeMaker, you can easily create one barcode for the category - purchase price, and every book title record will show a barcode with the purchase price of that particular book displayed under the barcode.

Then, if you also want to barcode the publisher's name of each book on every record, you can create a barcode called publisher name, and every book title will show the publisher's name.

Crystal Reports

Available in the Professional Version Only

Barcodes can be created directly in Crystal Reports using BarcodeMaker or they can be created using BarcodeMaker and copied/pasted or dragged and dropped directly into a Crystal Reports document.

Symbologies Supported in Wasp BarcodeMaker

BarcodeMaker supports the following barcode symbologies.

- Codabar
- Code 128
- Code 3 of 9 Full ASCII
- Code 3 of 9 Standard
- Code 93
- EAN/JAN-8
- EAN/JAN-13
- Interleaved 2 of 5
- LOGMARS
- MSI/Plessey
- PostNet
- UPC-A
- UPC-E

2D Barcode Symbologies

Professional Version Only

- Data Matrix
- MaxiCode
- PDF417

Now you are ready to review the **Getting Started** section.

Getting Started

Creating barcodes using BarcodeMaker is quick and easy. You can become an expert in no time by familiarizing yourself with a few simple steps before you begin. This help file is divided into sections based on how you will be using the software (with Access, Word, Excel or stand-alone). Take a moment to read the section titled **Determining Which Help Topics to Use**, below, to help you determine which sections pertain to you. Reading **Important BarcodeMaker Program Features** will help you understand how the program functions to make your job easier.

What is a Barcode?

Barcodes are symbols that store information. They simplify the movement and sale of goods and the storage, movement, tracking and use of information. Barcodes consist of a series of scannable bars and spaces that can be printed on packages, cartons, bottles, and other commercial products. The bars and spaces in each symbol are grouped in such a way to represent a specific ASCII character or function. In addition to the scannable part of a barcode, many barcodes have readable numbers and letters that appear below and surrounding the bars. With products in the grocery store, for example, the barcode stores a number that is associated with a product. Through the stored number, the barcode can be set up to cross reference an electronic file with information such as the price and on-hand inventory counts.




There are many different types of barcodes. Each type has its own symbology, or set of rules. One very familiar barcode symbology is UPC-A (Universal Product Code-A). UPC-A is fixed length and is the most common UPC barcode for retail product labeling. It is seen in most grocery stores across the United States. The symbology encodes a 12-digit numeric only number. The first six digits are assigned from the GS1 US in Lawrenceville, New Jersey (formerly the Uniform Code Council or UCC), the next five digits are assigned by the manufacturer, and the final digit is a modulo 10 check digit. The nominal height for the UPC-A barcode is one inch. The reduced size is 80% of the nominal size.

Specifications, or rules, govern the way the bars and spaces are grouped and whether or not and how numbers are used for each barcode symbology. Various symbologies have been developed for particular industries. Some examples are shipping and receiving, manufacturing, retail, health care, transportation, document processing and tracking, and libraries.

Before you begin using the software, review the information below:

1. **Determining Which Help Topics to Use**
2. **Choosing a Barcode Symbology**
3. **BarcodeMaker Program Features**

 **Note:** The screen shots that appear in this help document were taken using Microsoft Windows XP® operating system and Microsoft® Office 2003 Pro software. Some of your screens may look slightly different depending on which version of Windows you are using.

Determining Which Help Topics to Use

Microsoft Word and Excel Users

If you will be working in Word or Excel, the fastest way to get started creating barcodes is to begin by reading the **BarcodeMaker Toolbar** section followed by **Creating Barcodes in Microsoft Word and Excel**.

If you are working in Excel but will not be linking barcodes to any cell in the file, use the **BarcodeMaker Main Window** to create a barcode and then move it into Excel.

In that case, read these topics: **Creating a Barcode Using the Main Window** and **Moving Barcodes Into Documents**.

Microsoft Access Users

If you are working with Access databases, read **Creating Barcodes in Microsoft Access**. There are two different ways to create barcodes in Access using variable data. In one method, you use the **BarcodeMaker Main Window** and then move the barcode into the database. In the other method, you work directly in the Access form. You may find that one method is more efficient than another.

Crystal Reports Users

If you are working in Crystal Reports, read **Creating Barcodes in Crystal Reports**.

Creating Barcodes with Special or Nonprintable Characters

If you know you will be creating barcodes with Special or Nonprintable ASCII Characters, it may be fastest to create them using the **BarcodeMaker Main Window** and then either save each one as a .bcm file or move each one (using drag and drop or copy and paste) into Word, Excel or Access. If you are working in Excel, the barcodes created using this method will not be linked to any cell. See **Barcode Symbolologies** for information on Special Characters associated with specific symbolologies and **ASCII Table** for definitions of the Special Characters available in BarcodeMaker.

Using the BarcodeMaker Main Window to Create Barcodes

Barcodes can be created one at a time in the **BarcodeMaker Main Window** and then either saved using a .bcm file extension or moved (using copy and paste or drag and drop) to a Word, Excel or Access document. Please refer to **Creating a Barcode Using the Main Window** or **Moving Barcodes Into Documents**

Commands and Controls

Information about using commands and controls in BarcodeMaker can be found in these topics:

[Main Window](#)

[BarcodeMaker Toolbar](#)

[File Menu Commands](#)

[Edit Menu Commands](#)

[Help Menu Commands](#)

• Choosing a Barcode Symbology

As a general rule, the business you are in and the need you have for a barcode will determine the type of barcode you would use. Some symbologies, such as UPC, are used for retail product labeling and are licensed to the user by a third party. Code 3 of 9 is the most popular of all the symbologies and is recommended for first-time users. Please refer to [Symbologies Supported in BarcodeMaker](#) for a list of symbologies supported in BarcodeMaker. Detailed information about barcode symbology standards can be found in [Barcode Symbologies](#).

BarcodeMaker Program Features

Below are features of the BarcodeMaker program that are important to understand.

Unavailable Options and Tools - After you select the barcode symbology, the program makes your job easy because any barcode attributes that do not apply to that symbology will not be available to you on the toolbar or in the **BarcodeMaker Main Window**. For example, if the symbology does not support check digit, the check digit box will be unavailable. This feature applies as well to **Special and Nonprintable Characters**, described below.

Special and Nonprintable Characters - BarcodeMaker makes it possible to add Special and Nonprintable Characters to the barcode value by simply clicking a button and selecting an ASCII Character from the list. Any Characters that do not apply to a symbology become unavailable.

Illegal and Incomplete Barcode Messages - If you enter a barcode value that is not supported by a particular barcode symbology, BarcodeMaker will display a message letting you know that the barcode value is either illegal or incomplete. For example, the Interleaved 2 of 5 barcode symbology requires numbers. If you include a letter in the barcode value, you will receive a message telling you that there is an illegal character in your barcode. An incomplete barcode is one that does not include the required number of characters. For example, PostNet, which

is used to barcode zip codes, requires 5, 9 or 11 digits. If the barcode you enter only has 4 digits, you will receive an incomplete character message.

Special and Nonprintable Characters: Certain barcode symbologies use Special or Nonprintable Characters. For example, Code 3 of 9 Full ASCII can be extended to an 128 character symbology (full ASCII) by combining one of the special characters (\$, /, %, +) with a letter (A-Z) to form the characters that are not present in the standard Code 3 of 9 symbology. In standard Code 3 of 9 a lowercase "a" cannot be represented. In Code 3 of 9 Full ASCII a lowercase "a" is represented as "+A". See **Barcode Symbologies** for more information about the use of Special and Nonprintable Characters in barcodes.

Check Digit - Check digit is a character included within a barcode symbol that is used to perform a mathematical check to ensure the accuracy of the scanned data. It checks that the barcode meets the specifications set for the barcode symbology. Not all barcode symbologies support check digit. If you select a symbology that does not support check digit, BarcodeMaker makes check digit unavailable to you on the toolbar or in the **Main Window**. See **Barcode Symbologies** for more information on barcode symbology specifications.

Bar Width - When you create barcodes, you have the option of choosing a range of widths for your barcode.

Foreground/Background Colors - When you create a barcode, you can choose a foreground color (the color of the barcode itself) and a background color (the color of the surface behind the barcode). Choose foreground and background colors that print with sufficient contrast to be scannable. Black barcodes on white backgrounds are commonly used because they scan easily. It may be useful to test a few of your barcodes by printing them out and scanning them.

Symbologies Supported in BarcodeMaker

The following barcode symbologies are supported in BarcodeMaker.

- Codabar
- Code 128
- Code 3 of 9 Full ASCII
- Code 3 of 9 Standard
- Code 93
- EAN/JAN-8
- EAN/JAN-13
- Interleaved 2 of 5
- LOGMARS
- MSI/Plessey
- PostNet
- UPC-A
- UPC-E

2D Barcode Symbologies

Available in the Professional Version Only

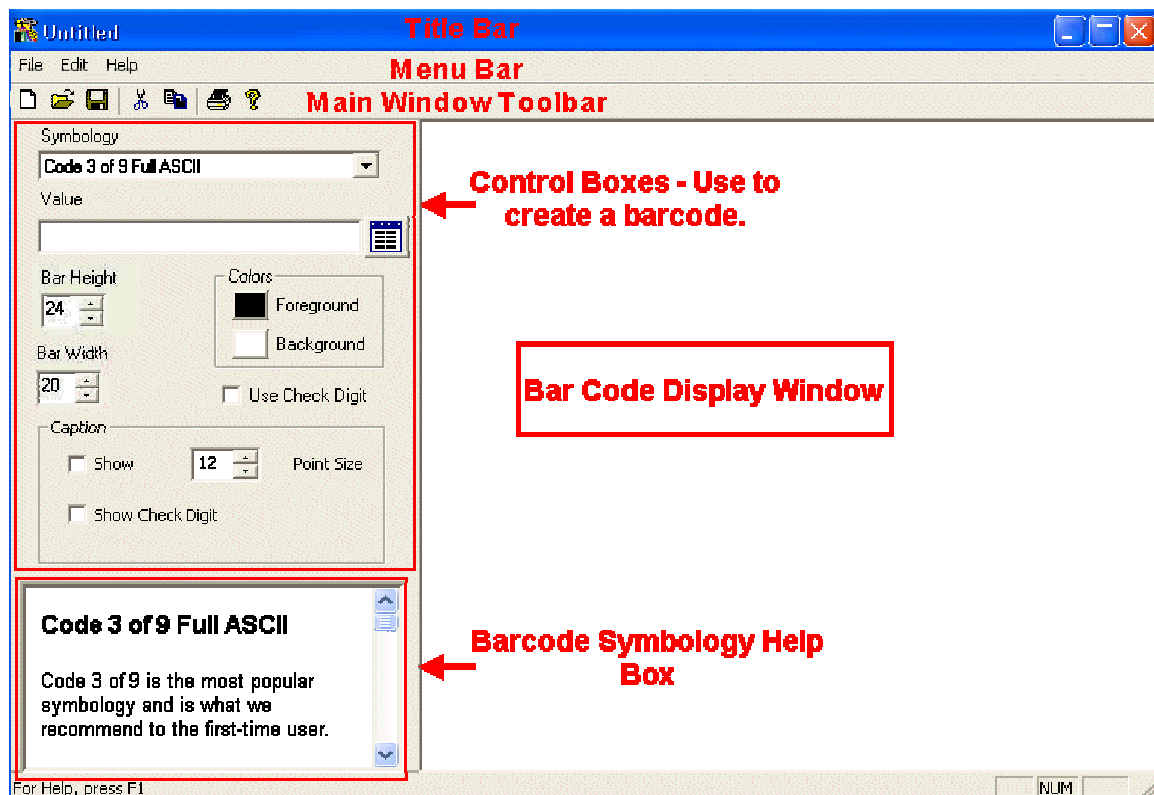
- Data Matrix
- MaxiCode
- PDF417

Main Window

This section gives an overview of BarcodeMaker's **Main Window**, which can be used to create barcodes. More specific instructions about using these features to create barcodes can be found in [Creating a Barcode Using the Main Window](#).

The **Main Window** can be used to create one new barcode at a time. The **Main Window** appears when you click the **BarcodeMaker** icon on your desktop.

The **Main Window** includes the following areas:



- **Title Bar** - The **Title Bar** identifies the BarcodeMaker program. It also identifies a filename or, if the file has not been named, it says, "Untitled". You can save a barcode created in the Main Window. The file will end with a .bcm extension.
- **Control Boxes**: These are used to create a barcode by selecting attributes, such as:

Symbology - In the Symbology box, click the arrow and select a barcode symbology from the list.

Value - Enter a barcode value in this box. This value will appear below the barcode as a caption if a caption is supported in the symbology and if you check the Show [Caption] box.

Character Input button - To input Special or Nonprintable Characters that are part of a barcode value, click this button and choose one of the available ASCII characters from the list. See **Barcode Symbologies** for information on Special Characters associated with specific symbologies and **ASCII Table** for definitions of the Special Characters available in BarcodeMaker.

Bar Height - Use the barcode point size arrows to select a barcode size from 1 to 100 or manually enter a size in the same range.

Foreground and Background Colors - Click the foreground or background buttons to change the default black and white colors.

Bar Width - Choose for a range of widths. Choose a low width for a narrow, more dense barcode that takes up less space when printed. Choose a greater width for wider barcodes. High Density=15, Medium Density=20, Low Density=36. This applies to the width and height of an individual bar inside the barcode. Settings lower than 15 correspond to very high densities that some scanners will not read.

Use Check Digit check box - Select this check box to activate check digit. Click it again to clear it.

Show Check Digit check box - To display the check digit in the caption, select the Show Check Digit check box. Hide check digit by clicking the box again to clear it.

Show check box - To display the barcode value below the barcode as a caption, select the Show check box. Hide the barcode value by clicking the check box again to clear it.

Point Size - To increase or decrease the caption size, click the Point Size arrows. The point size ranges from 1 to 100.

- **Barcode Symbology Help Box** - This box provides reference information about the symbology, such as whether the symbology requires numerals only. It changes each time you choose a different symbology in the Symbology area.
- **Barcode Display Window** - The barcode appears in the Barcode Display Window after you enter a barcode value.
- **Menu Bar** - The options on the Menu Bar control file management (such as opening, closing and printing) and editing activities and provide access to BarcodeMaker User Help. Listed below are menu items for BarcodeMaker. The Menu Bar has an associated toolbar, described below, which provides direct access to the most frequently used menu items.

File - General options for opening, closing, saving, and printing files and for exiting the BarcodeMaker program.

Edit - Includes options for cutting and copying barcodes from BarcodeMaker so they can be moved into documents.

Help - Provides Help Topics, which describe how to use BarcodeMaker, and an About BarcodeMaker item, with BarcodeMaker's version and copyright information.

- **Main Window Toolbar** - The **Main Window** toolbar provides direct access to the most common menu bar items: File, Edit, and Help. **[Click Here for more information on each option listed below.](#)** The options available on the Toolbar, along with their keyboard shortcuts, are listed below.

New (File/New - Ctrl+N)

Open (File/Open - Ctrl+O)

Save (File/Save - Ctrl+S)

Cut (Edit/Cut - Ctrl+X)

Copy (Edit/Copy -Ctrl+C)

Print (File/Print - Ctrl+P)

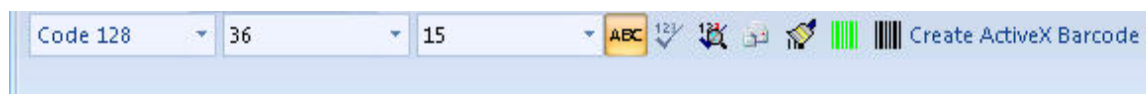
Help

BarcodeMaker ActiveX Toolbar

This section discusses the **BarcodeMaker ActiveX Toolbar**.


For more in-depth information about creating barcodes in **Microsoft Word**, **Excel**, or **Access (Professional Version Only)**, click one of the preceding links.

The toolbar is available at the top of the screen when you open Word, Excel, or Access (**Professional Version Only**). If the toolbar does not automatically appear, click the **Add-in** menu option at the top of the screen. The ActiveX toolbar allows you to create new barcodes. It also allows you to change the attributes of the barcodes already in a document. Below is an example of the ActiveX toolbar.



Using the Toolbar:


Note: The Toolbar does not allow you to: (1) increase the barcode caption size, (2) control background and foreground colors, or (3) input Special or Nonprintable Characters. In Word, Excel and Access, these three barcode attributes can be changed as follows:

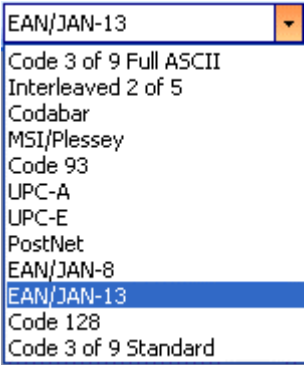
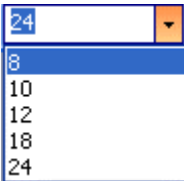
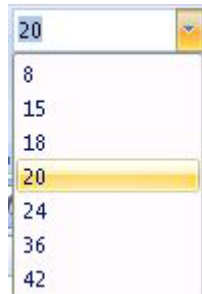



1. Select a barcode already created in a document.
2. Click the **Edit Barcode**  button. This opens the BarcodeMaker **Dialog Bar**. The Dialog Bar includes most of the same features as the **BarcodeMaker Main Window**. See [Main Window](#) for an overview of the features on the Dialog Bar. See [Creating a Barcode Using the Main Window](#) for specific instructions on using the features on the Dialog Bar.







Hiding the Toolbar: To hide the Wasp BarcodeMaker ActiveX toolbar, go to **View> Toolbars** and clear the **BarcodeMaker toolbar** checkbox.

Moving the Toolbar: If it is in your document, click it and use the move handle to drag and drop it to a different location. If it is in the toolbar area, scroll over it until you see the move handle and drag and drop it to a different location.

Toolbar Buttons and Boxes: Below is a description of the toolbar buttons and boxes and how to use them.

 About button	Allows you to see the BarcodeMaker version number and copyright notice.
Barcode Symbology, Bar Height, Bar Width Boxes	<p>To use these three boxes, click the associated arrow button next to the box and select from the list of choices.</p> <p>Symbology box - allows you to choose a symbology supported in BarcodeMaker.</p>

	<div data-bbox="461 191 763 554">  </div> <p>Barcode Height box - allows you to choose a size for the barcode itself from a range of 8 to 72 points. It does not control the size of the barcode value.</p> <div data-bbox="461 709 644 888">  </div> <p>Bar Width box - allows you to select the barcode width from a range of options. High Density=15, Medium Density=20, Low Density=36. This applies to the width and height of an individual bar inside the barcode. Settings lower than 15 correspond to very high densities that some scanners will not read.</p> <div data-bbox="461 1113 662 1404">  </div>
 New Barcode Button	<p>Allows you to create a new barcode in a document.</p>
Design Mode Toolbox	<p>Allows you to resize the box surrounding the barcode. This toolbox appears when you create a barcode in a document. Click it once to enter design mode. The sizing handles appear surrounding the barcode. Click it again to exit design mode, and the sizing handles disappear. (To move the Design Mode Toolbox itself, click it and use the move handle to drag and drop it.)</p> <div data-bbox="467 1738 581 1833">  </div>
 Show	<p>Allows you to toggle between showing and hiding the barcode value as a caption below the barcode. To activate this tool, click the button. It will</p>

Caption	appear highlighted in orange on the toolbar. Click the button again to deactivate it, and it will no longer be highlighted on the toolbar.
 Use Check Digit	Allows you to use check digit in a barcode. It does not control whether the check digit is visible in the caption. To activate this tool, click the button. It will appear highlighted in orange on the toolbar. Click the button again to deactivate it, and it will no longer be highlighted on the toolbar.
 Show Check Digit	Allows you to display the check digit in the barcode caption. To activate this tool, click the button. It will appear highlighted in orange on the toolbar. Click the button again to deactivate it, and it will no longer be highlighted on the toolbar.
 Link	<p>This button is used in conjunction with the Mail Merge feature found in Word, Excel and Access. If you are using Office XP or Office 2003 (not Office 2000) the Mail Merge option will be available under the Tools> Letters and Mailings menu in Word, Excel or Access. In Vista, Mail Merge is available under the Mailings menu.</p> <p>During the mail merge process, you will:</p> <ol style="list-style-type: none"> 1. Select the Data Source. 2. Create blank barcode, then stretch outline to accommodate barcode value. 3. Click on the Link icon in the toolbar. The screen will appear listing all available fields. 4. Select the field you want linked to the barcode. 5. Proceed with the mail merge process.
 Edit Barcode button	<p>Accesses the Dialog Bar of BarcodeMaker so that you can edit any attributes of a selected barcode. To use the Edit Barcode button, select a barcode in a document by clicking it. Then, click the Edit Barcode button. The Dialog Bar of BarcodeMaker will appear on the left. To leave the Main Window, click anywhere in the document.</p> <p> Note: You cannot change the caption point size or the foreground and background colors of a barcode using the toolbar. You must create a barcode, then select it and click the edit barcode button, which opens the Main Window, where you can change any attributes of the barcode.</p>
 Format Painter button	<p>Allows you to copy and paint the symbology and attributes of one barcode onto another barcode. It will have not change the barcode value. It will apply the symbology, bar height, bar width, show caption, use check digit, and show check digit of the copied barcode onto another barcode.</p> <p>To use this tool, select a barcode with a symbology and attributes that you want to copy to another barcode. Click the Format Painter button. Then, click the barcode you want to change.</p>

Note: A button that is not highlighted is different than a button that is not available. Unavailable buttons are not available because they do not meet the specifications of the

symbolology that is selected in the in the symbolology box. They appear to be gray and when you try to click them, nothing happens.

Creating a Barcode Using the Main Window

This section discusses how to create a barcode using the **BarcodeMaker Main Window**. The **Main Window**, can be used to create one new barcode at a time and to change barcodes that have already been created in documents. The **Main Window** appears when you click the BarcodeMaker icon on your desktop.

When working from within the **Main Window**, one barcode can be created at a time and then copied and pasted or dragged and dropped into a Word, Excel or Access document. (See [Moving Barcodes into Documents](#).) More than one barcode can be created when you work directly within a Word, Excel or Access document.

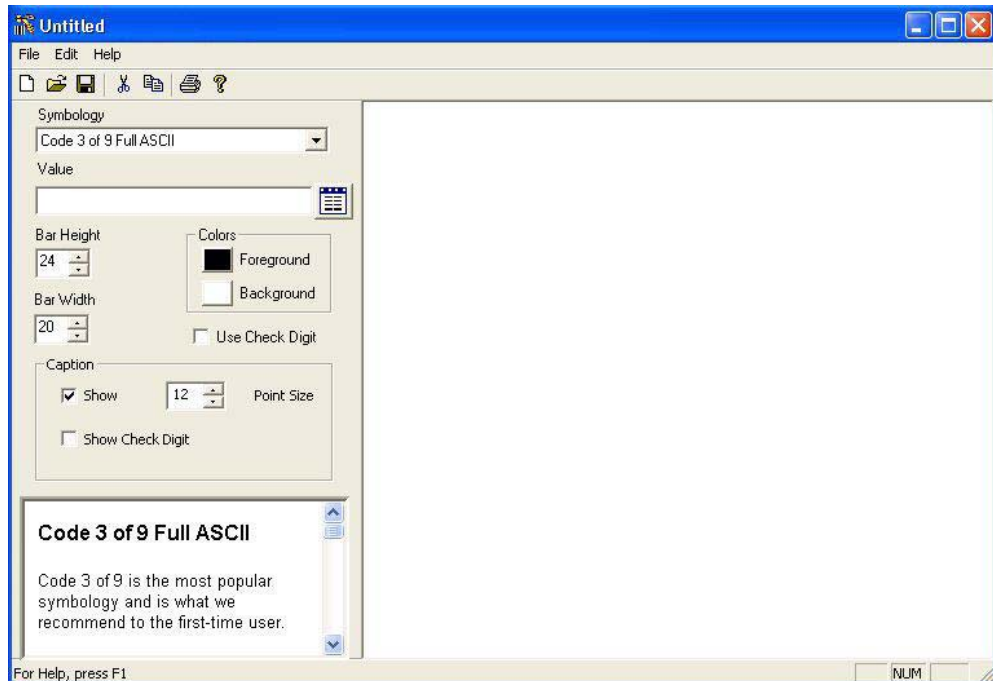
There are additional steps involved in using the **Main Window** to create barcodes in Access that are not covered here. They are covered in detail in [Working in the Main Window to Barcode Variable Data in Access](#). You may find that using the **Main Window** to create barcodes in Access is more efficient than working directly in Access. We recommend that you familiarize yourself with the **Main Window** of BarcodeMaker and then read [Creating Barcodes in Microsoft Access](#), where there are two different methods for creating barcodes in Access using variable data and decide if working in the **Main Window** is the most efficient method for you.

Click the link to see an [example of a 3 of 9 Full ASCII barcode](#) created using the **Main Window** of BarcodeMaker.

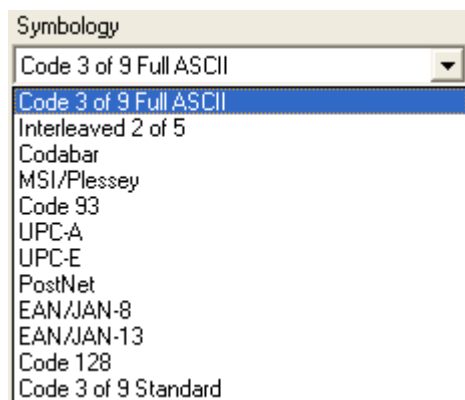
Creating a Barcode Using the Main Window

Listed below are steps to create a barcode using the **BarcodeMaker Main Window**. Once you select the symbology, only the barcode attributes that apply to that symbology will be available to you in the **Main Window**. Therefore, the steps below cover attributes that may not be available in certain symbologies.

1. Open BarcodeMaker by clicking the BarcodeMaker icon on your desktop. The **Main Window**, shown below, will appear.



2. Click the down arrow next to the Symbology box to view a list of available barcode symbologies.

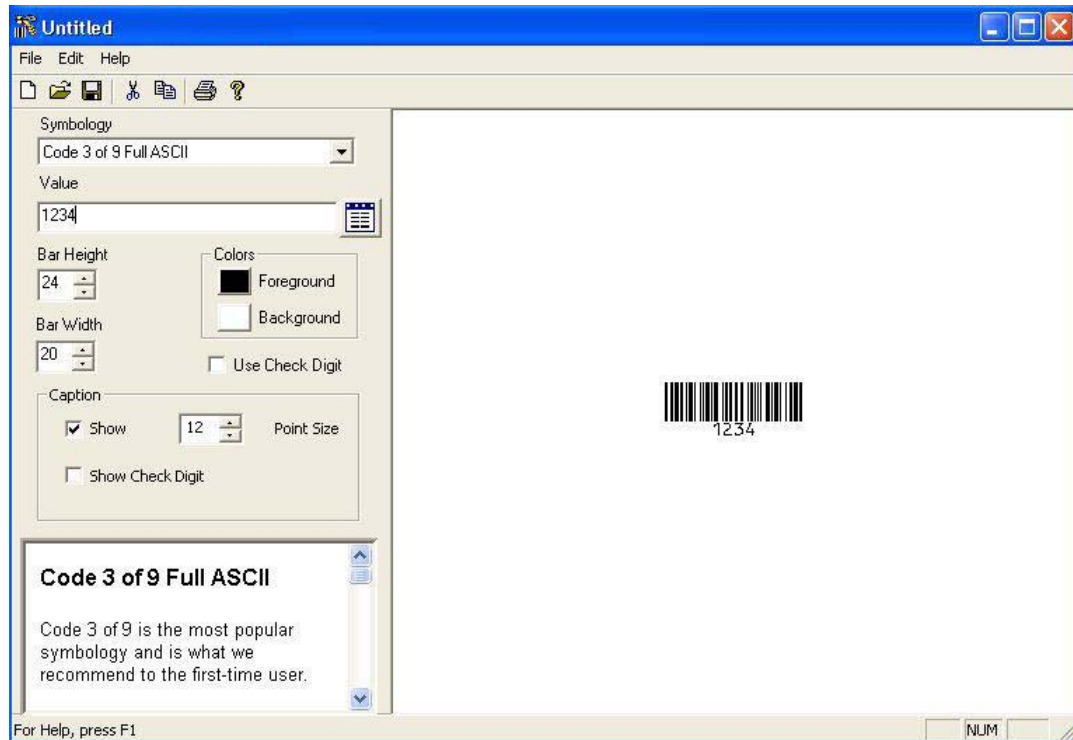


Select the barcode symbology you are interested in creating from the list. When you select a listing, the Help box in the bottom, left corner of the **Main Window** provides reference information about the selected symbology. For more information about which barcodes are supported in BarcodeMaker, see **Symbologies Supported in BarcodeMaker**. For information about barcode symbology specifications, see **Barcode Symbologies**.

➡ **Note:** After you select the barcode symbology, any attributes that do not apply to that symbology will not be available to you in the **Main Window**. For example, if

the symbology you chose does not support check digit, the check digit box will be unavailable.

3. Enter a barcode value in the **Value** box. The barcode will appear in the display window.



Character Input button - If the barcode value includes any special or nonprintable characters, click the **Character Input** button and choose an available ASCII character from the list.



Only those characters that apply to the chosen symbology will be available. See [Barcode Symbologies](#) for information on Special Characters associated with specific symbologies and [ASCII Table](#) for definitions of the Special Characters available in BarcodeMaker.



If you enter a barcode value that is not supported by a particular barcode symbology, BarcodeMaker will display a message letting you know that the barcode value is either illegal or incomplete.

4. Select the barcode attributes: **Bar Height**, **Bar Width**, and **Foreground and Background colors**. The barcode can be seen in the Barcode Display Window taking on the new attributes.

The **Bar Height** box, located below the **Value** box, controls the size of the barcode itself. It offers a range of 1 to 100 points. Use the up and down arrows shown in the image below to select a size, or manually enter a size in the same range.

If you delete the displayed size, the following alert box appears:

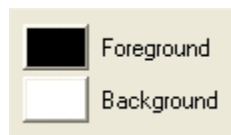


Click **OK** and enter the size in the height box. The barcode will appear in the designated size. To resize the barcode, click the arrows or manually enter a new size.

Bar Width - Click the up or down arrow to designate a width for the barcode. High Density=15, Medium Density=20, Low Density=36. This applies to the width and height of an individual bar inside the barcode. Settings lower than 15 correspond to very high densities that some scanners will not read.



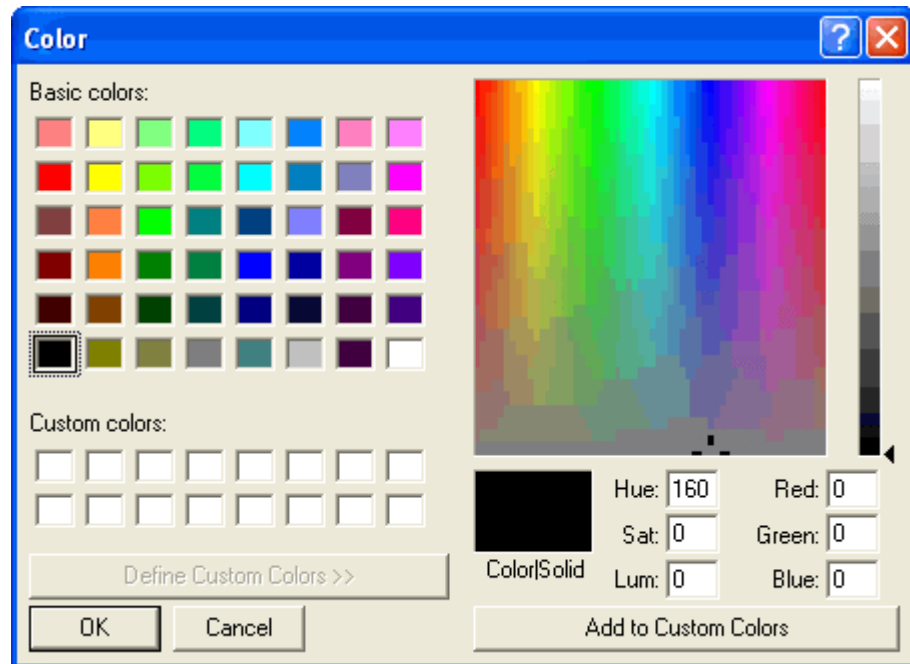
Foreground and Background - Click the foreground or background buttons to change the default black and white colors. The **Foreground** color chosen determines the color of the barcode. The **Background** color determines the color behind the barcode.



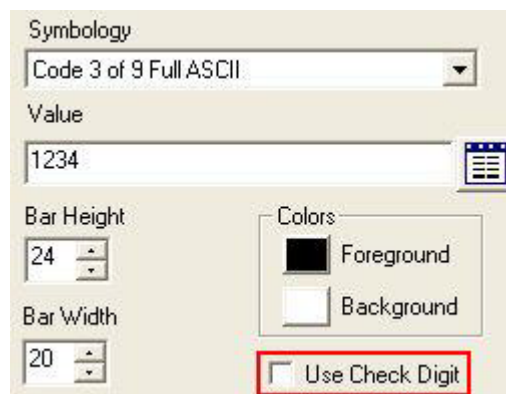
The following screen appears when you click the **Foreground** or **Background** buttons. Choose a color by clicking one of the colored squares and **OK**.

Populating the Custom Color Area

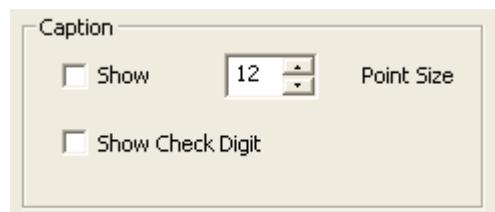
Up to 16 custom colors can be added to the custom color area. The same group of colors will be available to you when you are choosing Foreground or Background. To add colors to the Custom color area, click a blank box from the Custom colors area, then click a color and **Add to Custom Colors**.



5. Select the **Use Check Digit** check box to activate it. Click it again to clear it.



6. Use the **Caption** area to control the following barcode attributes:



Select the **Show** check box to display the barcode value as a caption below the barcode. Hide the caption by clicking the check box again to clear it.

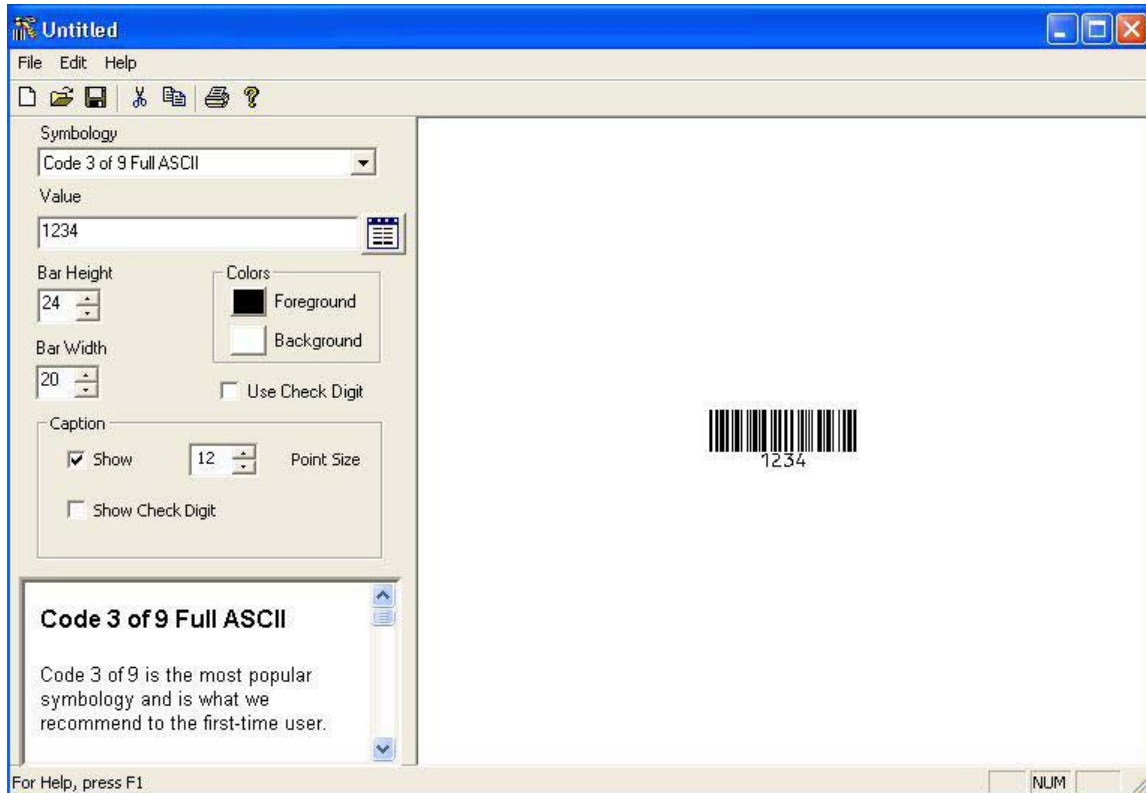
Select the **Show Check Digit** check box to display the check digit in the caption.
Hide check digit by clicking the check box again to clear it.

Choose a caption size: Click the **Point Size** box up or down arrows to size the barcode caption. The point size ranges from 1 to 100.

7. Save the file. If you are creating a new file, click **File>Save As** and enter a file name. BarcodeMaker files carry a *.bcm file name extension.
8. Move the new barcode into a Word, Excel or Access (*Professional version only*) document by using copy and paste or drag and drop. See **Moving Barcodes into Documents** for information about moving barcodes into a Word, Excel or Access (*Professional version only*) document.
9. Print the file. Click the **Print** button or **File>Print** on the Menu Bar.

Example: 3 of 9 Full ASCII Barcode

The screen shot below shows how a Code 3 of 9 Full ASCII barcode with a barcode value of 1234 would appear in BarcodeMaker. Because **Show Check Digit** was selected, the letter A, which is the check digit, appears at the end of the barcode caption. The check digit enhances data security.



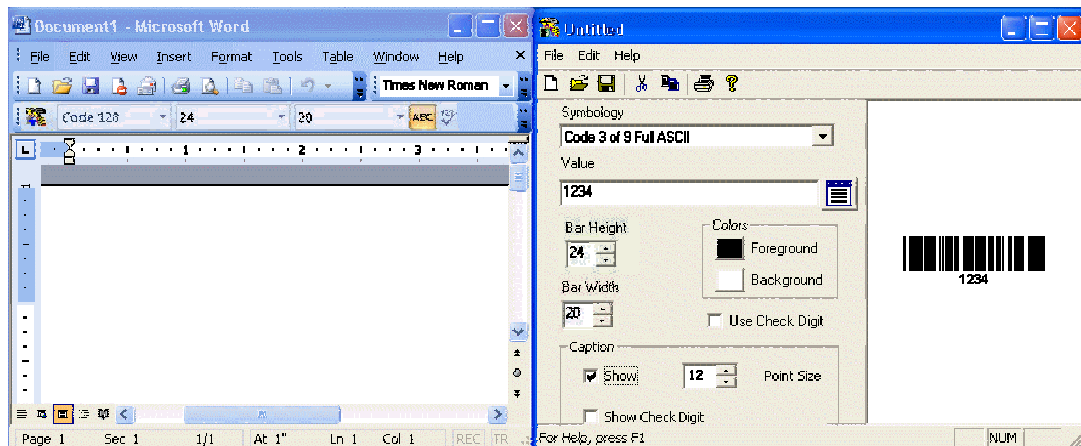
Moving Barcodes into Documents

A barcode can be copied and pasted or dragged and dropped from the **Main Window** of BarcodeMaker to a Microsoft® Word, Excel or Access document. This section covers how to move a barcode created in the **Main Window** of BarcodeMaker into a Microsoft Word or Excel document.

Moving Barcodes into Access is available in the Professional version only. For instructions on moving a barcode from the **Main Window** into Microsoft Access, see **Creating Barcodes in Microsoft Access**.



Moving Barcodes From the Main Window to Word or Excel

1. Open BarcodeMaker and your Word or Excel document and resize them so that both can be seen on the monitor, as shown below.



2. You can two options to move the barcode:

Copy and Paste - To copy and paste a barcode from BarcodeMaker into a Word or Excel file:

- a. From the BarcodeMaker **Main Window**, copy the barcode by selecting it with your cursor, then click **Edit, Copy** on the Main Menu (**Ctrl+C** on your keyboard) or the copy button .
- b. In the document, place your cursor where you want the barcode to be, then paste the barcode into the document by clicking **Edit, Paste** on the Main Menu (**Ctrl + V** on your keyboard), or the **Paste** button .

Drag and Drop - To drag and drop a barcode from BarcodeMaker into another document:

In BarcodeMaker, click the barcode with the mouse and, keeping the mouse button held down, drag the barcode out of BarcodeMaker, into the document and release the mouse.

Creating Barcodes in Microsoft® Word and Excel

This section provides step-by-step instructions for creating barcodes in Microsoft Word and Excel using the BarcodeMaker Toolbars. When you work directly in Word or Excel, BarcodeMaker allows you to create one or multiple barcodes in the same file using the **Wasp BarcodeMaker ActiveX Toolbar**.

In addition to the ActiveX Toolbar, Excel contains another toolbar that allows you to create barcodes using text barcode fonts. This toolbar, called the **Wasp BarcodeMaker Fonts** toolbar, allows you to can easily create 1000+ barcodes in Excel because these barcodes are lightweight and consume less resources.

This topic covers the following areas:

How to Create Barcodes in Word and Excel Using the Wasp BarcodeMaker ActiveX Toolbar

How to Create Barcodes in Excel Using the Wasp BarcodeMaker Fonts Toolbar

Additional Information for Excel Users

Examples of Barcodes that can be Created in Excel

When to Use the BarcodeMaker ActiveX Toolbar vs. the BarcodeMaker Fonts Toolbar

How To Send a Worksheet to a User that does not have BarcodeMaker Installed

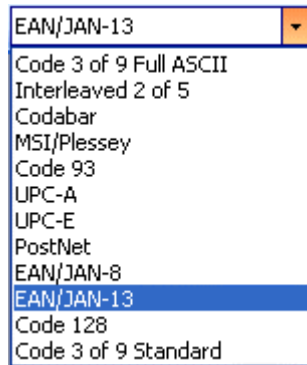
How to Create Barcodes in Word and Excel

1. Open a document. The BarcodeMaker toolbar appears in your document. If you are using Vista and the toolbar does not appear, click the **Add-in** option on the Word or Excel menu bar.



Note: When viewed from Excel, the BarcodeMaker Fonts toolbar may appear first. To access the ActiveX toolbar, click the **Switch to ActiveX** option on the Fonts toolbar.

2. Select a symbology from the symbology box. Notice that once you choose a symbology, some of the toolbar features become unavailable because they are not required by the specifications for the chosen symbology. This program feature makes choosing the symbology before you choose other barcode attributes an efficient way to work.

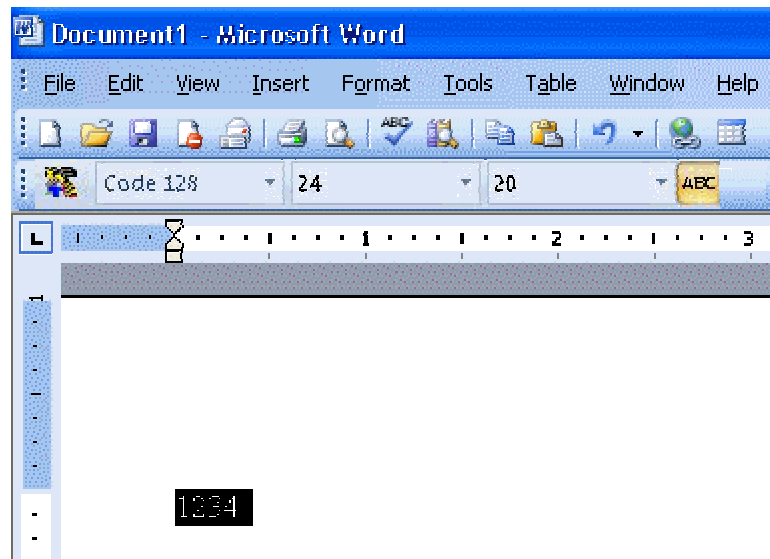


3. If you are working in Word, enter a barcode value directly into the document and select the value.

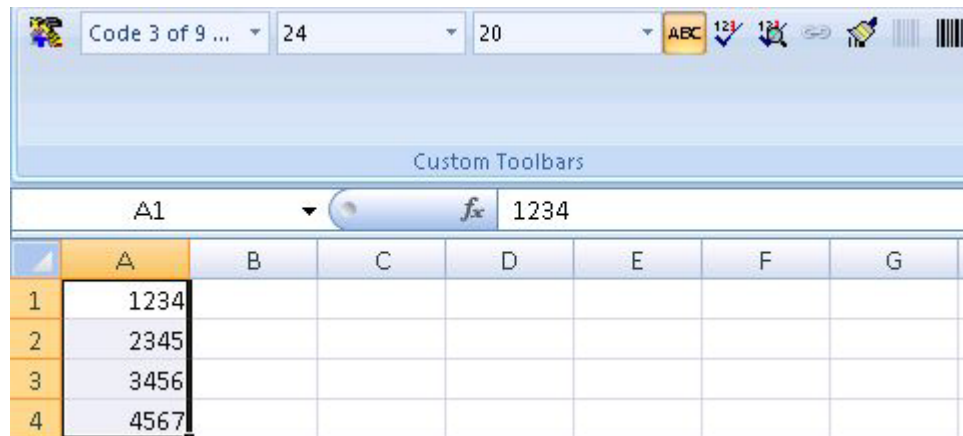
If you are working in Excel, you must select the cell, not the value in the cell. Do this by clicking once on a blank cell and then selecting the cell or cells with the values.

See the screen shots for Word and Excel below.

Example: Word

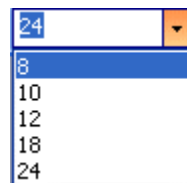


Example: Excel

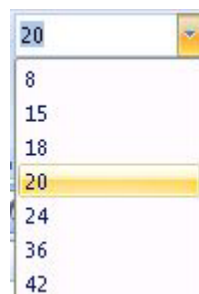


4. Choose the following attributes of the barcode from the buttons on the toolbar. See **BarcodeMaker Toolbar** for information on using each tool.

Bar Height



Bar Width: High Density=15, Medium Density=20, Low Density=36. This applies to the width and height of an individual bar inside the barcode. Settings lower than 15 correspond to very high densities that some scanners will not read.



 **Show Caption**


 **Use Check Digit**

 **Show Check Digit**



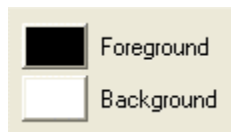
Link

5. Once you have created the barcode, you can: input **Special and Nonprintable Characters** into the barcode value, **resize the caption**, and change the **foreground and background colors** by following the procedures below.

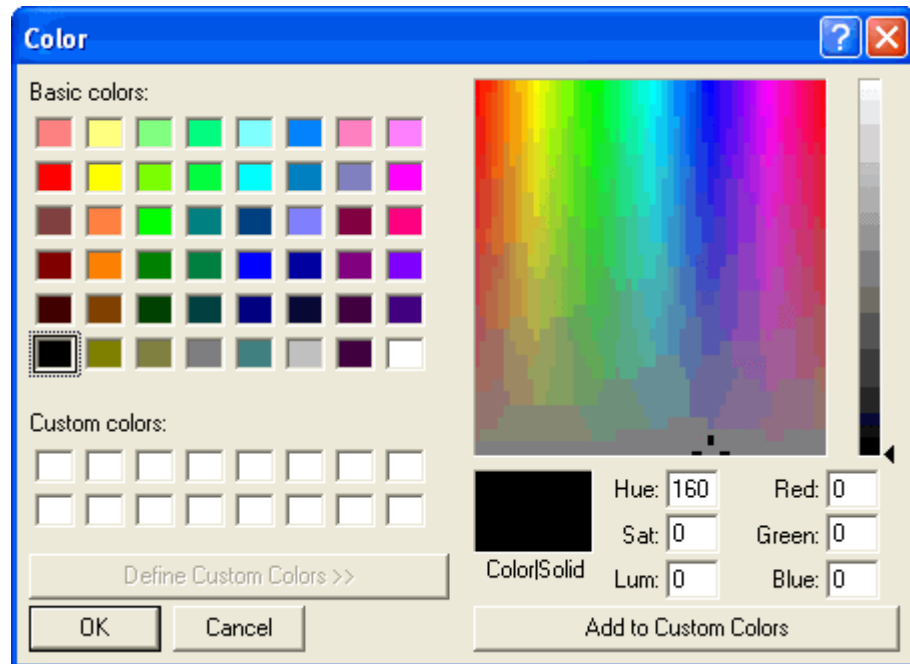
- a. Open the Dialog Bar by selecting the barcode and clicking the **Edit Barcode**  button. Alternatively, you can open the Dialog Bar by right clicking the bar code, and selecting **WaspBarcodeMaker Control Object** and then **Edit**. (Note: To leave the Dialog Bar, click anywhere in the document.)
- b. **Input Special or Nonprintable Characters:** In the Dialog Bar, click the **Character Input** button next to the Value box and choose an available ASCII character from the list. Only those characters that apply to the chosen symbology will be available.

When you select the special character from the list it will be added wherever the cursor is in your cell or text. Position the cursor before selecting the special character because some special characters do not have a representation that can be seen on the screen as text. After adding the special character you may get a very strange character or series of characters or nothing at all. Trying to manually edit these characters or change them may cause the special character to not convert to a barcode properly. The only way to confirm that the special character is converted to a barcode properly is to print and scan the barcode and test that the special character does what you intend it to do when the barcode is scanned.

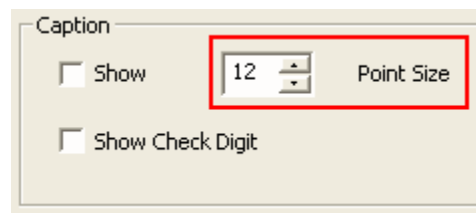
- c. **Foreground / Background colors** - Click the foreground or background buttons to change the default black and white colors. The Foreground color determines the color of the barcode. The Background color determines the color behind the barcode.



The following screen appears when you click the Foreground or Background buttons. Choose a color by clicking one of the colored squares and **OK**.



- d. **Caption Point Size:** Choose a caption size: Click the **Size** box up or down arrows to size the barcode caption. The point size ranges from 1 to 100.



6. Click the **New Barcode**  button.

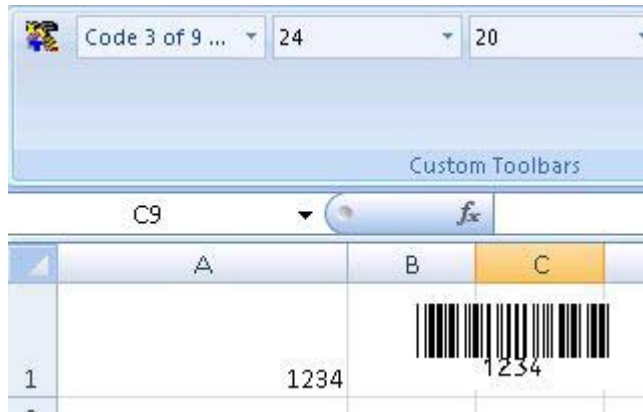
The barcode(s) appears in your document and the Design Mode toolbox appears on the page.

Scroll over the barcode with your mouse. Use the **move handle** to drag and drop the barcode.

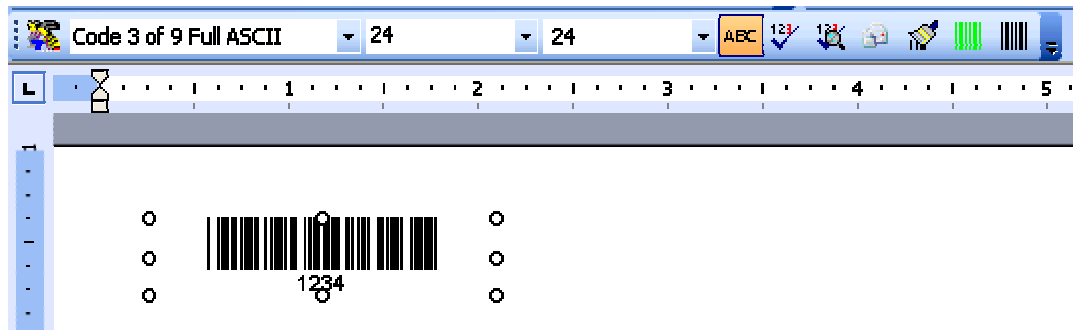


Example: Excel

In the example using Excel below, the barcode was moved to another cell. This revealed the underlying barcode value. The cell with the barcode (cell B1) is linked to the cell with the barcode value (cell A1).



Example: Word



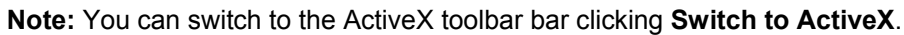
7. To edit an existing barcode, select the barcode, and click the **Edit Barcode** button. This accesses the BarcodeMaker **Dialog Bar**. To leave the Dialog Bar, click anywhere in the document.

Note: To edit the barcode, you should right-click on it and select **Edit**, or click the **Edit Barcode** button on the toolbar. **Do not double-click on the barcode**, or a Visual Basic window will appear, as is normal with ActiveX controls. If you do inadvertently open the Visual Basic window, simply close it to return to Excel and continue working.

8. To resize the barcode, select it. Use the sizing handles to increase or decrease the box surrounding the barcode.
9. Save the file. If you are creating a new file, click **File>Save As** and enter a file name.

-

1. Open a document. The BarcodeMaker toolbar appears in your document. If you do not see the toolbar, click the **Add-In** option on Excel's menu bar.



- | | |
|------------------------|---|
| EAN/JAN-13 | ▼ |
| Code 3 of 9 Full ASCII | |
| Interleaved 2 of 5 | |
| Codabar | |
| MSI/Plessey | |
| Code 93 | |
| UPC-A | |
| UPC-E | |
| PostNet | |
| EAN/JAN-8 | |
| EAN/JAN-13 | |
| Code 128 | |
| Code 3 of 9 Standard | |

- | A1 | | fx 1234 | | | | | |
|----|------|---------|---|---|---|---|---|
| | A | B | C | D | E | F | G |
| 1 | 1234 | | | | | | |
| 2 | 2345 | | | | | | |
| 3 | 3456 | | | | | | |
| 4 | 4567 | | | | | | |

4. Click the **Create Font Barcode** button from the toolbar.

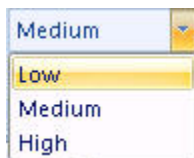


5. Choose the following attributes of the barcode from the buttons on the toolbar.

Bar Height: Select a size for the barcode itself from a range of 8 to 72 points. This does not control the size of the barcode value.



Bar Width: Choose **High** Density, **Medium** Density or **Low** Density. This setting applies to the width and height of an individual bar inside the barcode.



Enable/Disable Check Digit Calculation - This option allows you to use check digit in a barcode. It does not control whether the check digit is visible in the caption. To activate this tool, click the button. It will appear highlighted in orange on the toolbar. Click the button again to deactivate it, and it will no longer be highlighted on the toolbar.



Show/Hide Caption - Click this option to show or hide the caption that goes with the barcode.



Format Painter - To quickly transfer one barcodes attributes to another (or to many), highlight the barcode whose formatting you want to copy, then click on the barcode(s) you want to "paint" with that formatting. The attributes (width, height, etc.) will be copied to the selected barcodes. This does not change the value of your barcode.



Undo Barcode - Highlight a barcode, then click this option to revert the barcode to text (or it's original value).

Additional Information for Excel Users

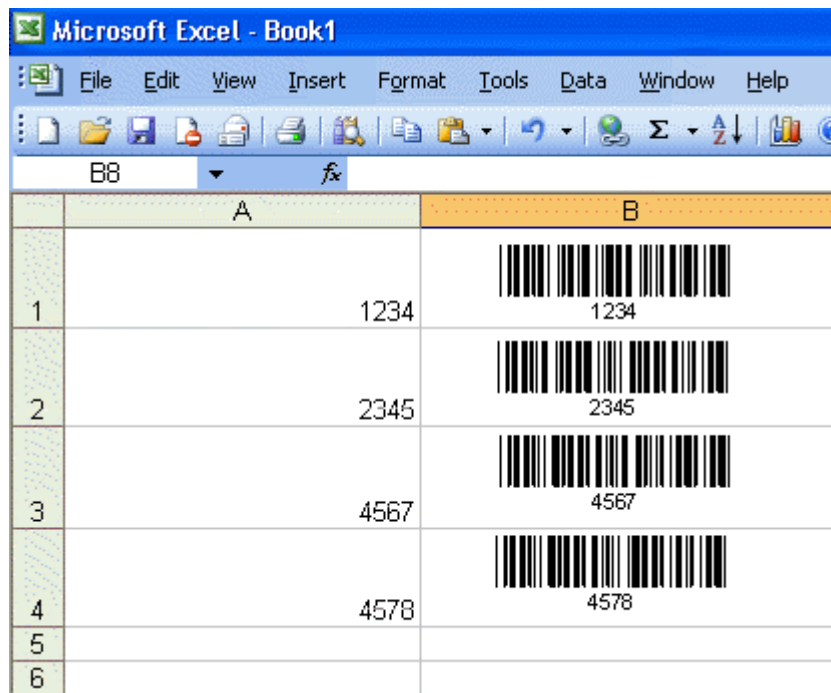
Examples of Barcodes That Can Be Created in Excel

In Excel, BarcodeMaker allows you to create many barcodes very quickly, as long as they are all using the same symbology and attributes. The program also allows you to link a cell with a variable to a barcode. If the variable changes, the barcode will reflect the change. If you want to create a barcode in Excel that is not linked to any other cell, use the **Main Window** of BarcodeMaker to create the barcode and then move it into the Excel spreadsheet. See [Creating a Barcode Using the Main Window](#) and [Moving Barcodes Into Documents](#).

Creating Multiple Barcodes Quickly

If you want to create multiple barcodes quickly using values already entered into multiple cells, follow the steps in this topic. (The barcodes can be moved to another location. The cell with the value will be linked to the cell with the barcode.)

In the example below, barcode values were entered in cells A1 to A4 and all the cells were selected. Next, the **New Barcode** button was clicked and barcodes appeared covering the values in cells A1 to A4. Each barcode was moved to the B column. If the value of any barcode in column A changes, its linked barcode in column B will reflect the change.



Note for Windows 2003 Users/Excel 2000: When creating an EAN/JAN13 barcode with 17 or more digits in Excel, the system may try to convert your number to scientific notation. To prevent this, you should type the digits as below:

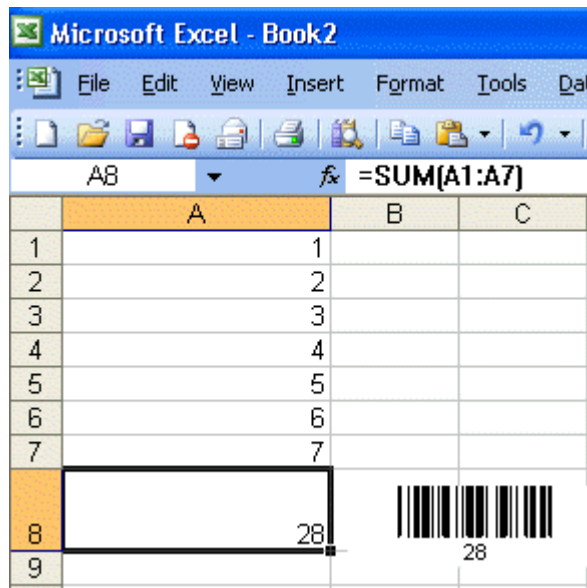
'1234567890123456789....

Putting the ' before the digits prevents Excel from formatting the number in scientific notation.

Creating a Barcode that is Linked to a Cell with a Variable

BarcodeMaker allows you to link a cell with a variable to a barcode. If the value in that cell changes, the barcode will reflect the change. The barcode can be moved. The cell with the barcode will be linked to the cell with the value.

In the example below, a barcode has been created by selecting cell B8 (which is the sum of cells B3 through B7) and clicking the **New Barcode** button. After the barcode was created, it was moved to a different cell. If any of the numbers in B3 through B7 change, the value in cell B8 and the barcode will change to reflect the new sum total.



When to Use the ActiveX Barcode Control Feature vs. Using Text Barcode Fonts

You should use the **ActiveX barcode control** for creating barcodes with the Wasp BarcodeMaker ActiveX toolbar when:

1. You want to send the Excel spreadsheet to another user who does not have BarcodeMaker installed.
2. You want to create a barcode that can be placed anywhere on the Excel sheet (i.e. not bound to a cell).
3. Your Excel spreadsheet will contain less than 200 barcodes (number chosen for optimal performance).
4. You want to link the value of a cell to a barcode, so that when the value changes the barcode also changes.
5. You want to control the Bar Width property and fine tune the density of the generated barcode to be different than "High", "Medium", "Low".
6. You need 2D symbologies. The 2D symbologies are only available through the ActiveX barcode control. 2D symbologies are available in the Professional version.

Use **text barcode fonts** by creating barcodes with the Wasp BarcodeMaker Fonts toolbar when:

1. You want to create more than 1000+ barcode in the Excel spreadsheet.
2. You do not need portability (sending to another user who does not have BarcodeMaker installed) and printing will be done on machines that have BarcodeMaker installed.

3. You will be exporting the Excel spreadsheet to PDF format. In this case, our TTF (True Type Fonts) are recommended since we use embeddable fonts.
4. You want to use OCR fonts for Optical Character Recognition Applications.
5. You want to use MICR font to print checks. Please be aware that the Wasp MICR must be picked from the Excel font list to use the MICR fonts.

How To Send a Worksheet to a User that does not have BarcodeMaker Installed

Note: These instructions apply only to text/font barcodes created using the Wasp BarcodeMaker Fonts toolbar, not the ActiveX toolbar.

1. In the worksheet you want to send, select the barcodes. With the barcodes selected right-click, then select **Copy** or press **CTRL-C** to copy selection.
2. Right-click and select **Paste Special** on the selection. A menu will appear providing options on how to paste.
3. Select **Values** from the menu. The system will paste the translated value in the selected cells. This means the original formula that was in the cell(s) is cleared and replaced by the translated values.
4. Save the document. The user you are sending it to must have the barcode font installed to properly view the barcodes.

Note: Barcodes based on translated values (when BarcodeMaker's formula is not in the cell) cannot be changed.(i.e. symbology, resolution etc). This means the user you send the spreadsheet to will not be able to edit the barcodes.

Creating Barcodes in Microsoft® Access

This option is available in the Professional version only.

BarcodeMaker allows you to barcode variable data (also referred to as Control Source Data in this section) in an Access database. It allows you to create several variable data barcodes in the same database.

Note: Access needs to be in design mode for barcodes to print on Forms/Reports.

Sharing a MSAccess Database with Barcodes Across the Network

1. BarcodeMaker must be installed on each machine that accesses the database shared on the network (MDB)
2. In BarcodeMaker, navigate to the **Settings** screen (*Main Window>Help>About BarcodeMaker>Settings*), and uncheck the **Load the BarcodeMaker add-in everytime Microsoft Access starts** option. This disables the BarcodeMaker toolbar from loading each time MSAccess is opened, which can cause conflicts with sharing the database.

These steps need to be performed on every PC on which the MDB file will be shared across the network.

After these two steps are performed, you can open the network-shared MDB simultaneously with no errors. Any design changes to the MDB (adding an extra barcode on a form, changing the form layout or changing a report in someway) can only be done by one user at a time. Two users cannot make changes simultaneously.

In the example used below, the Book Collection database contains book titles. Each book title has a different purchase price. Using BarcodeMaker, you can easily create one barcode for the Control Source Data, in this case the PurchasePrice (shown in Image 1 below), and every book title record will show a barcode with the purchase price of that particular book displayed under the barcode (shown in Image 2 below). You can add more than one variable data barcode to the same Access database. For example, you could also barcode the publisher name, and each book title would also show a barcode that displays the book's publisher.

Image 1

This screenshot shows an Access form in Design View. The form contains several text boxes and a dropdown menu. A barcode control is placed over the 'Purchase Price' field. The form is divided into two columns. The left column contains fields for Title, Topic, Publisher Name, Cover Type, and Notes. The right column contains fields for Copyright Year, Date Purchased, Pages, and Purchase Price. The barcode is a standard 1D barcode with the text 'Purchase Price' centered below it.

Image 2

This screenshot shows the same Access form in Design View, but now it is populated with data. The 'Title' field contains 'Techniques of Tai Chi', 'Topic' is 'Health', 'Publisher Name' is 'Mind and Body Publishing', 'Cover Type' is 'Hard', and 'Notes' contains 'Uses illustrations and step by step instructions to teach Tai Chi.' The 'Date Purchased' field shows '10/27/1993' and 'Pages' shows '236'. The 'Purchase Price' field displays '\$25.95'. The barcode is still positioned over the 'Purchase Price' field, and the text '\$25.95' is visible below the barcode.

You can even add a barcode with information that is not contained in the Access database. See **Creating a Static Barcode that Appears in Every Record.**

Barcodes can be created directly in Microsoft Access using the Main Window or they can be created using BarcodeMaker and copied and pasted or dragged and dropped into an Access database. You may find one method works more efficiently than the other. Full instructions for both methods are provided in this section as well as Quick Start instructions for working directly in Access.

Note: You must work in **Forms>Design View** in Access to create, edit and move barcodes.

This section explains:

Quick Start: Working Directly in Access to Barcode Variable Data

Working in the Main Window to Barcode Variable Data in Access

Working Directly in Access to Barcode Variable Data


Creating a Static Barcode that Appears in Every Record

Quick Start: Working Directly in Access to Barcode Variable Data

The instructions in this section are a condensed version of Working Directly in Access to Barcode Variable Data.

1. **Insert a blank barcode box in an Access database:**
 - a. Open the database in Form, Design view.
 - b. Click **Insert>ActiveX Control** on the Menu.
 - c. Select **WaspBarcodeMaker Control** and click **OK**. A blank barcode box appears in the Access database.

Or: Toolbar Method: To do the same thing using the toolbar:

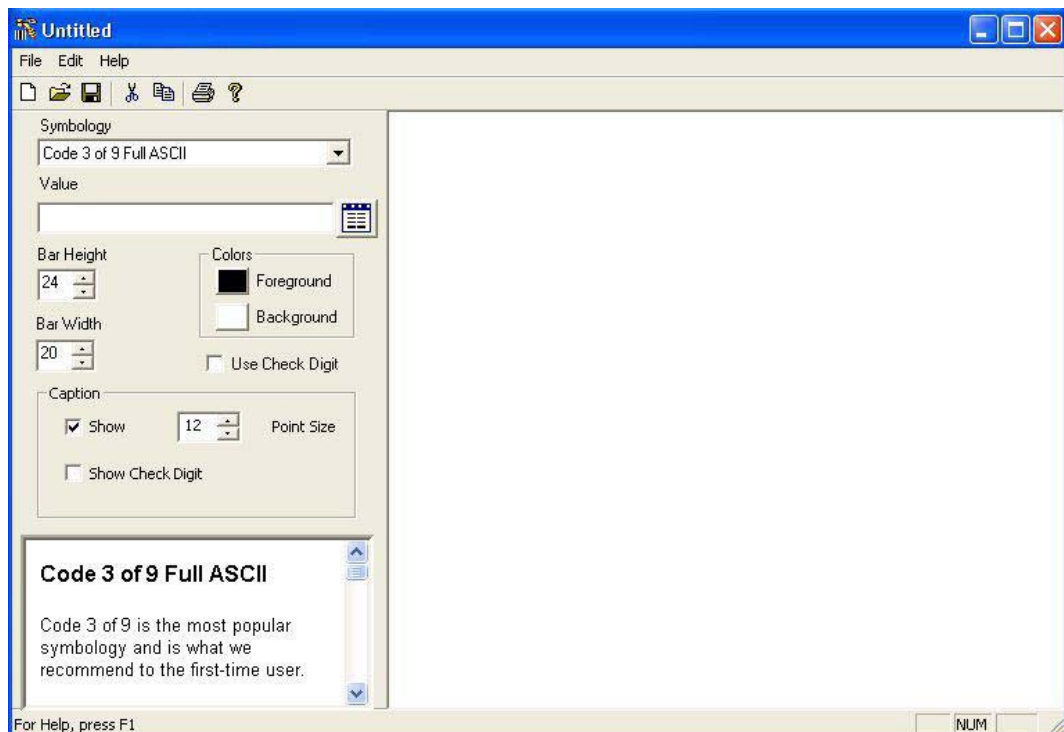
- a. Open the database in Form, Design view.
 - b. Click anywhere in the form.
 - c. Click the **New Barcode**  button on the toolbar. A blank barcode box appears.
- d. **To identify variable data you want to barcode:**
 - a. Right click the blank barcode box.
 - b. Select **Properties**. The ActiveX Control form appears.
 - c. Select the **Data** tab, and click the **Control Source arrow**.
 - d. From the list, select the Control Source Data you want to barcode (in the example, PurchasePrice was chosen).
 - e. Keep the ActiveX Control form open during the next step.
3. **To open the BarcodeMaker Dialog Bar:**
 - a. Right click the blank barcode box.
 - b. Select **WaspBarcodeMaker Control Object>Edit** from the menu. The BarcodeMaker Dialog Bar appears.
 - c. In it, select a symbology, such as Code 128, that takes alpha and numeric characters.
 - d. In the **Value** box, enter Control Source Data from the Access database (such as PurchasePrice) exactly as it is spelled and spaced in the database.

- e. Click **Show** to display the caption.
- f. Choose any other barcode attributes applicable to your task.
- g. Click anywhere in the Access database. The barcode appears and the Dialog Bar disappears.
- h. Move and resize barcode by clicking it and using the move and resizing handles.

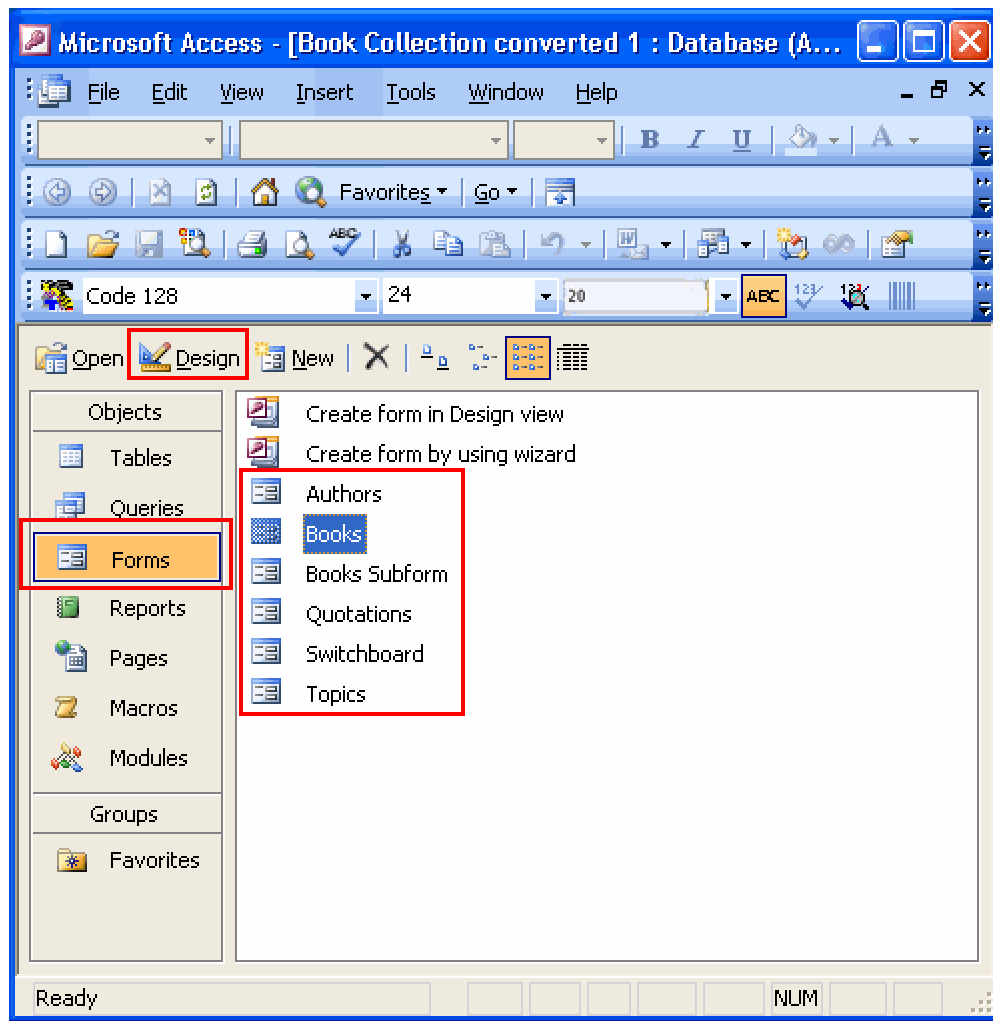
Working in the Main Window to Barcode Variable Data in Access

You can use the BarcodeMaker **Main Window** to create a barcode using variable data from an Access database and then move it into your Access database by following these steps. If you decide to use this method to create barcodes in Access, familiarize yourself with using the BarcodeMaker **Main Window** by reading [Main Window](#).

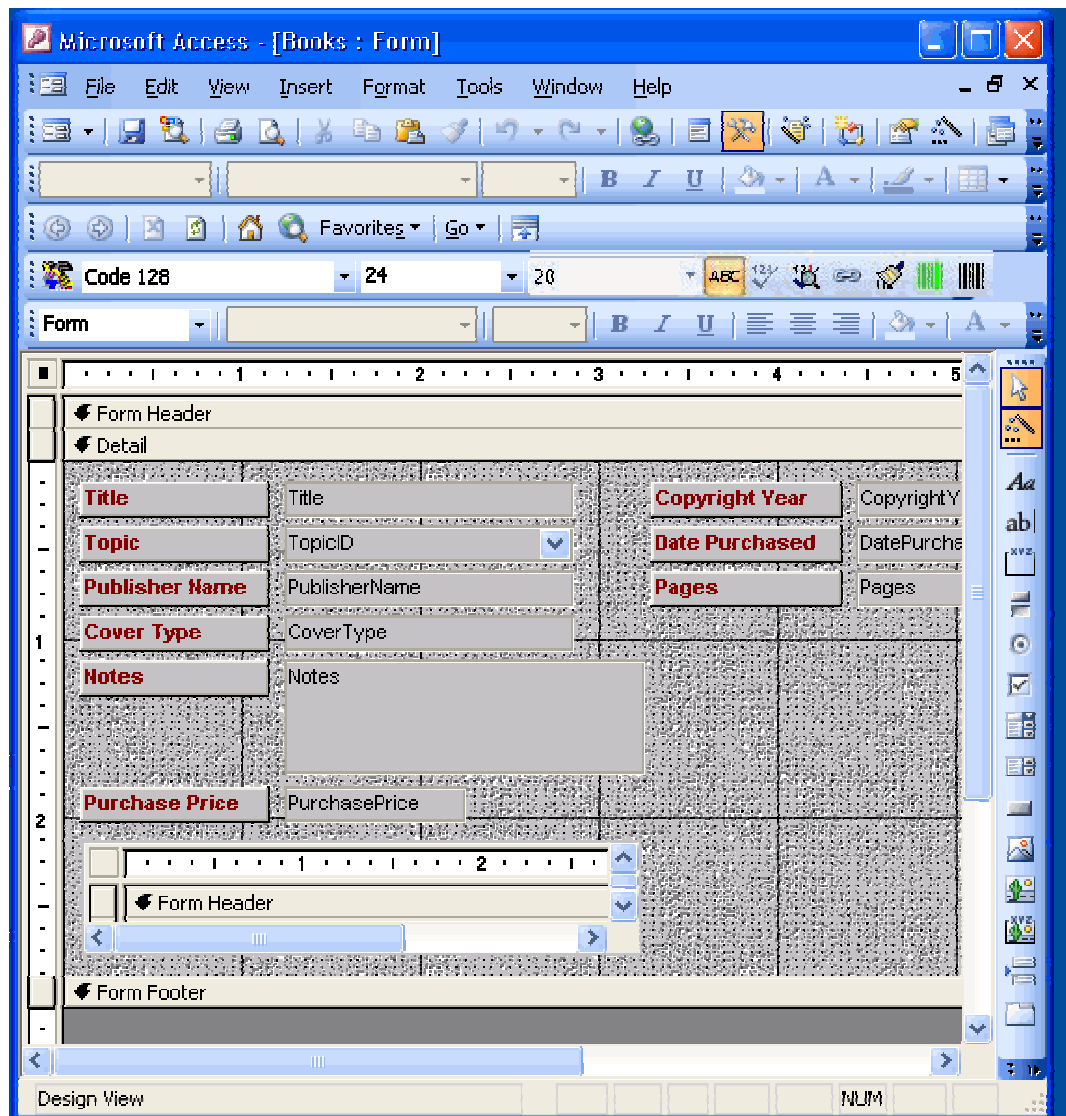
1. Open the BarcodeMaker **Main Window** using the icon on your desktop.



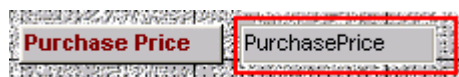
2. Open Microsoft Access and the database. Select **Forms** on the left pane, select a form in the right pane then click the **Design** button.



A screen similar to the one below appears.

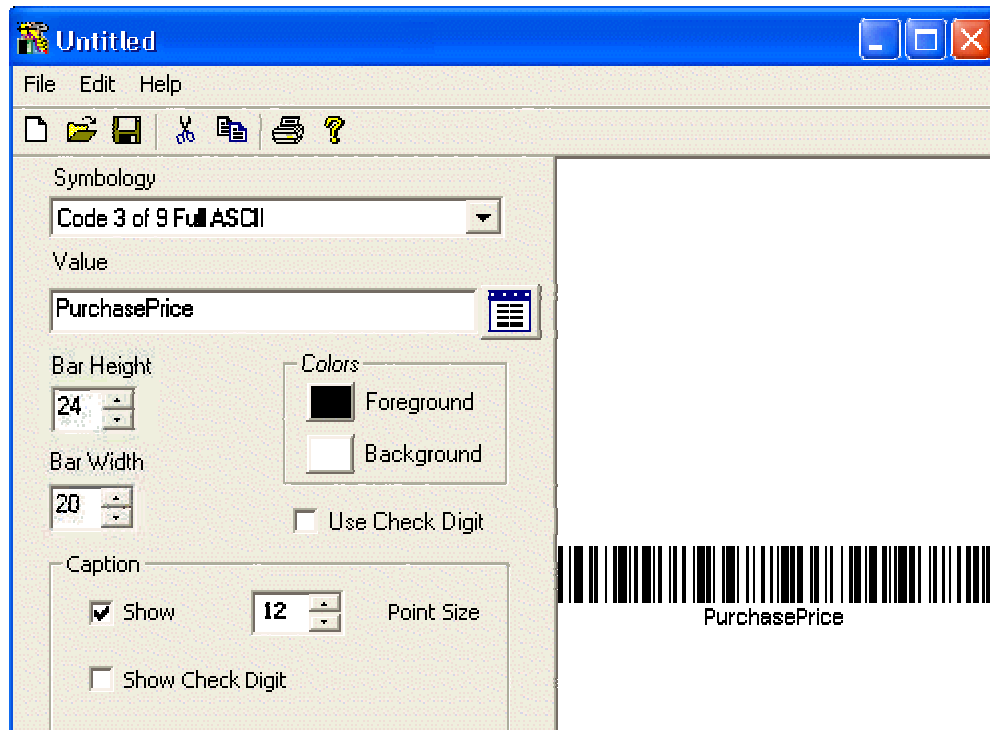


3. Resize the **Main Window** and the database form to fit side by side on the monitor.
4. To barcode Control Source Data (also known as a text box) from the Access Form, make a note of the exact spelling and spacing of the Control Source Data. (See the example outlined in red below.)



5. In the BarcodeMaker **Main Window**, select a symbology from the **Symbology** box that supports the barcode value you are using. In the example, we chose Code 128 because it supports both alpha and numeric characters.
6. Type the Control Source Data into the **Value** box **exactly** as it appears in the Access form.


- Click **Show** in the **Caption** area if you want to show barcode value below the barcode.
The barcode will appear in the **Barcode Display** area.




Select any other available attributes in the **Main Window** that apply to what you are trying to achieve: Bar Width/Height, Foreground and Background Colors, Caption Point Size, Use Check Digit, Show Check Digit. For more information about these attributes, see [Main Window](#) and/or [Creating a Barcode Using the Main Window](#).

- Move the barcode from the **Main Window** to the Access database by either copy/paste or drag/drop, as described below.

Copy and Paste

In the BarcodeMaker **Main Window**, copy the barcode by selecting it with the cursor, then click **Edit>Copy** on the Main Menu (**Ctrl+C** on your keyboard) or click the copy button .

In the document, place your cursor where you want the barcode to be, then paste the barcode into the Word document by clicking **Edit > Paste** on the Main Menu (**Ctrl + V** on the keyboard), or the **Paste** button .

Drag and Drop

In the BarcodeMaker **Main Window**, click the barcode with the mouse and, keeping the left mouse button held down, drag the barcode out of BarcodeMaker and into the document.

10. Resize and move the barcode in the Access database.

Use the move handle to reposition the barcode so that it does not hide other data.



Use the sizing handles to increase or decrease the barcode box.



11. In Access, link the barcode to the Control Source Data.

Right click the barcode.

Select **Properties**.

The ActiveX Control form appears.

Click the **Data** tab.

Click the **Control Source** arrow and from the list, select the **Control Source Data** you barcoded (PurchasePrice, for this example).

The data, PurchasePrice, is now barcoded in the **Design View**. (See [Screen Shot 1](#) above.)

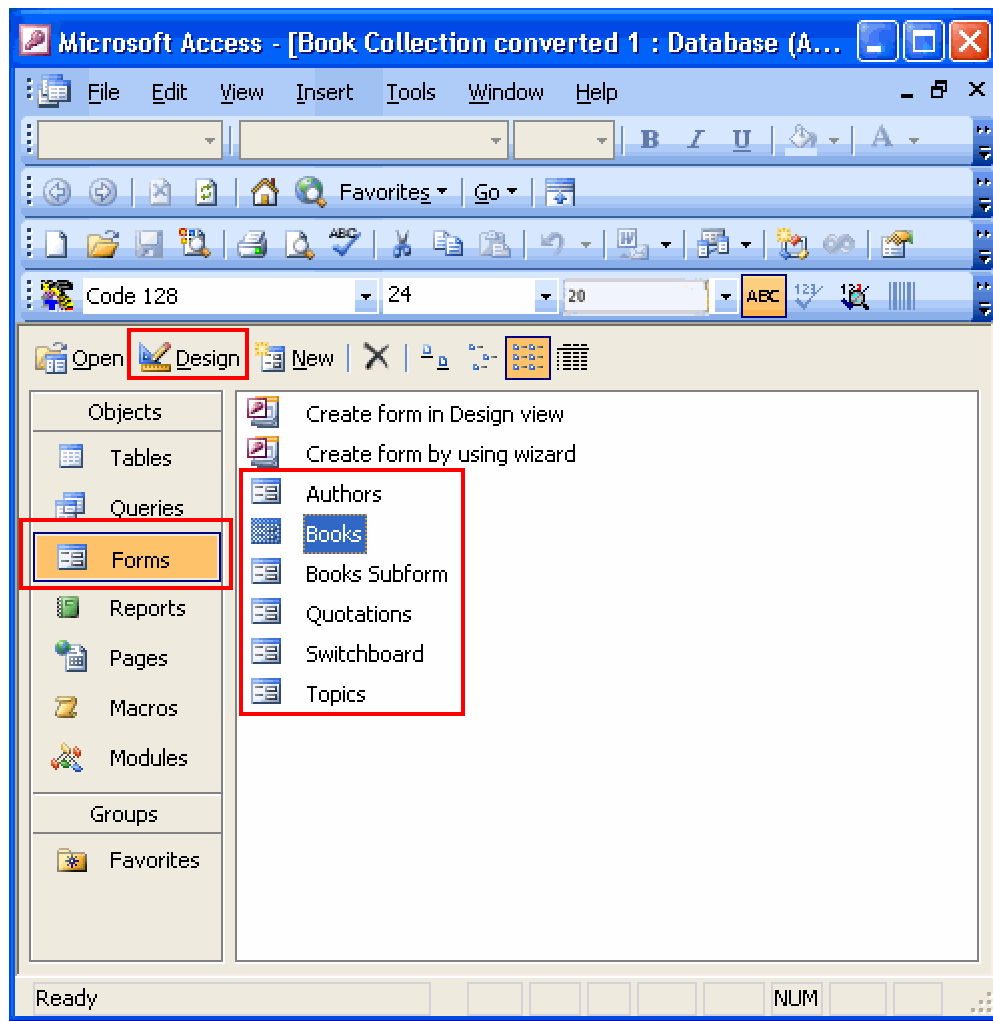
12. To view individual records, click **View>Form View on the Menu Bar**. Use the Record arrows at the bottom of the screen to view each record. You will see that the barcode changes for each record. (See [Screen Shot 2](#) above.)

13. Save the database by clicking **File>Save** on the Access Menu Bar.

Working Directly In Access to Barcode Variable Data

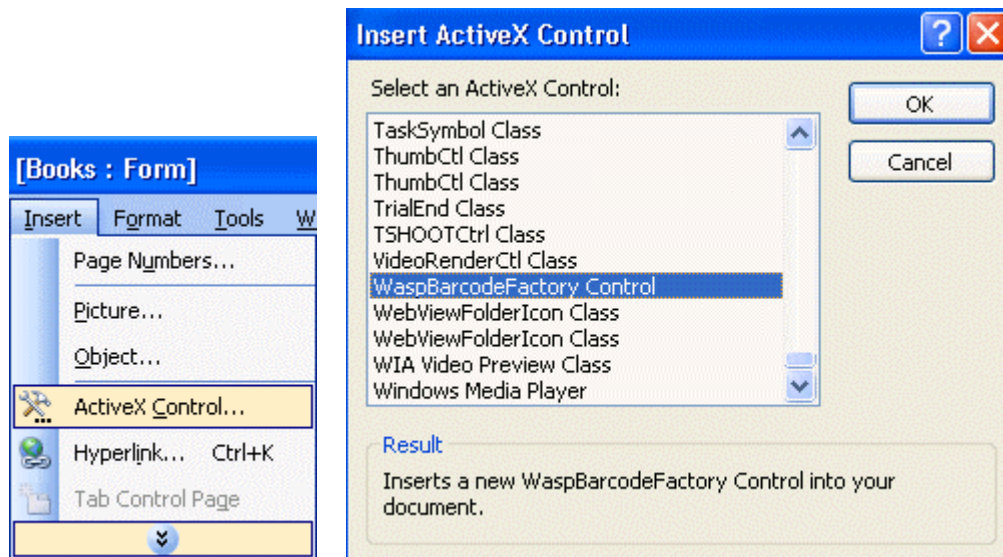
The instructions below discuss working directly in Access to create a barcode using variable data (also referred to as Control Source data in this section). Where applicable, instructions for using the toolbar to accomplish the same task are included.

1. Open Microsoft Access and the database. The BarcodeMaker toolbar will appear at the top of the screen. Select **Forms** on the left pane, and select a form in the right pane, and click **Design View**.

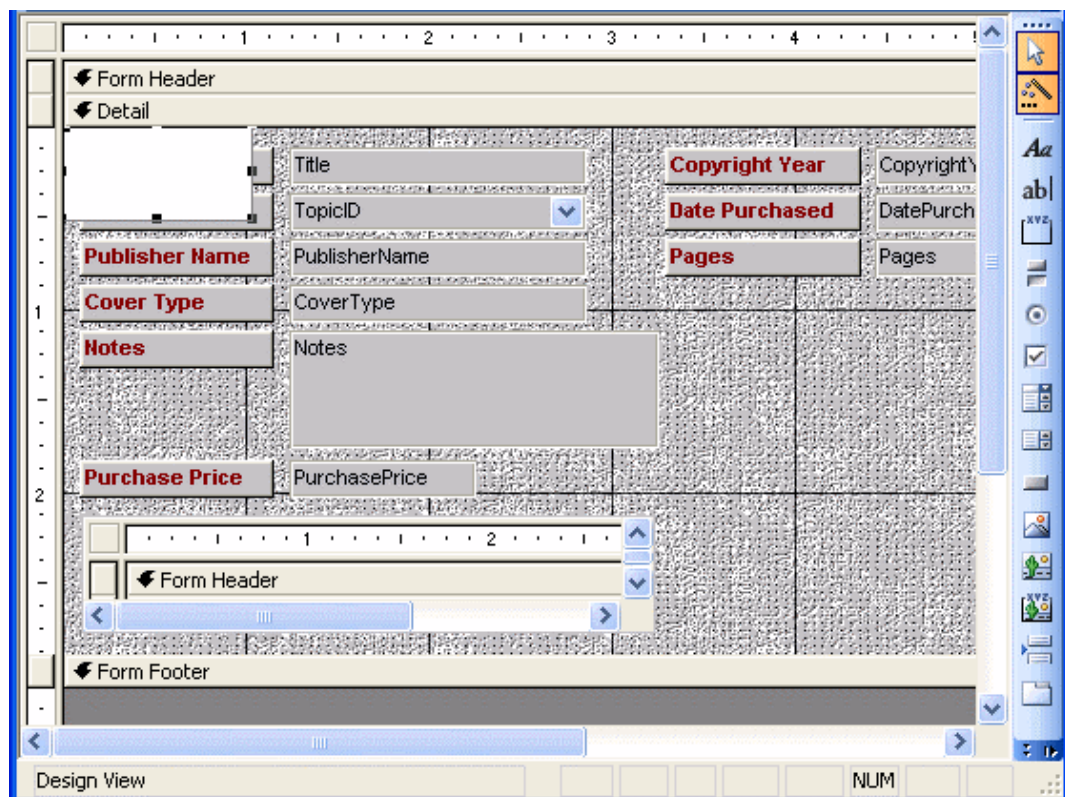


2. To create a barcode in the form: On the Menu Bar, select **Insert>ActiveX Control**. In the Insert ActiveX Control form, scroll down and select **WaspBarcodeMaker Control** and select **OK**.


Toolbar Method: On the Toolbar, click the **New Barcode**  button and click the form to insert a blank barcode box.



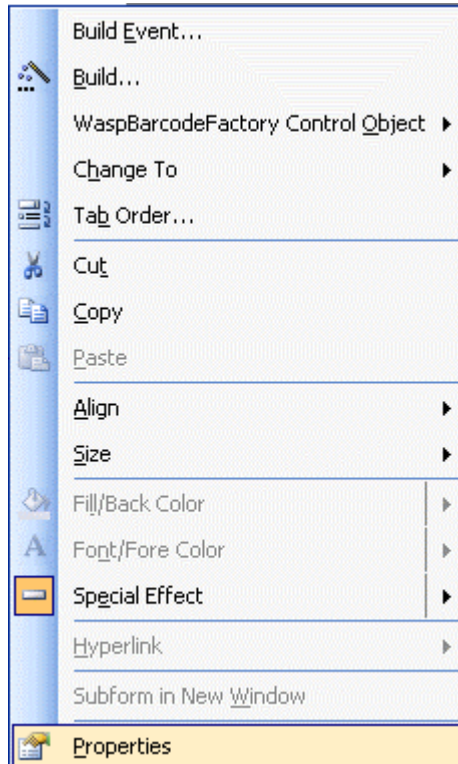
A blank barcode box appears in the form. Your screen will be similar to the one shown below after you have completed the steps above.



3. Next, in the database, link the variable, or Control Source Data that you want to use to create a barcode (in the example used, the PurchasePrice) to the blank barcode box.

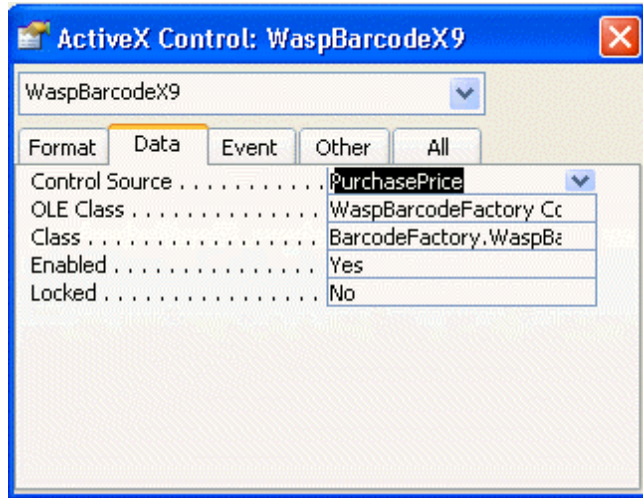
 Note: Skip this step if you are creating a static barcode, which is a barcode that does not change on each record.

4. Right click the blank barcode box. Select **Properties**.

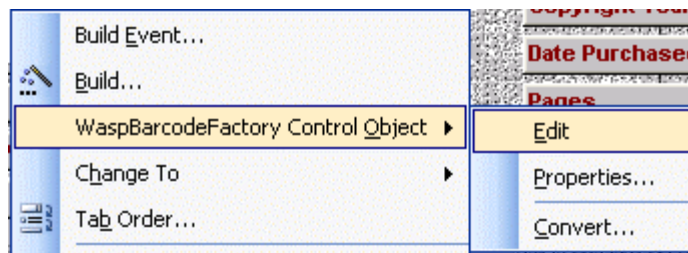


The ActiveX Control form appears.

5. Click the **Data** tab. In the **Control Source** row, select the arrow and from the list that appears, select the Control Source Data you want to barcode. Keep the ActiveX Control form open during the next step.

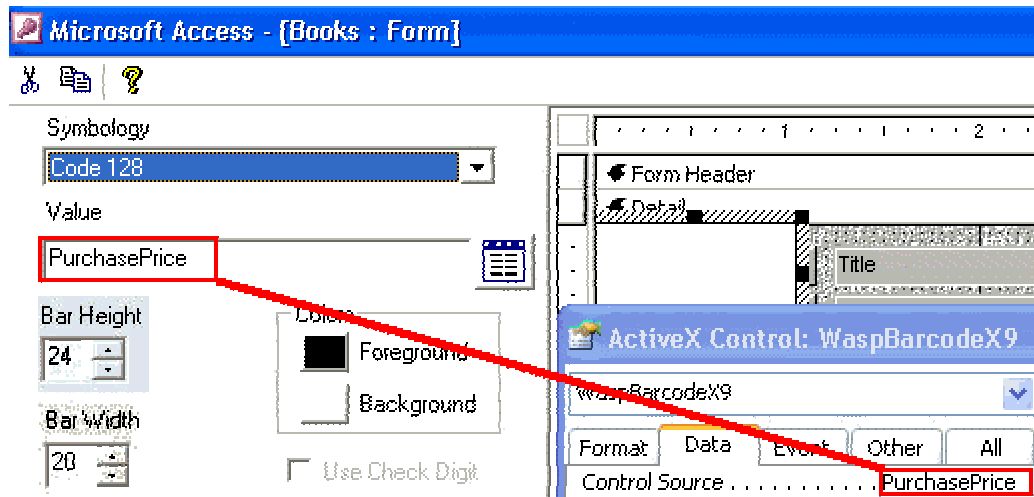


6. With the ActiveX Control form shown above still open, right click the blank barcode box. From the list that appears, select **WaspBarcodeX Control Object>Edit**.



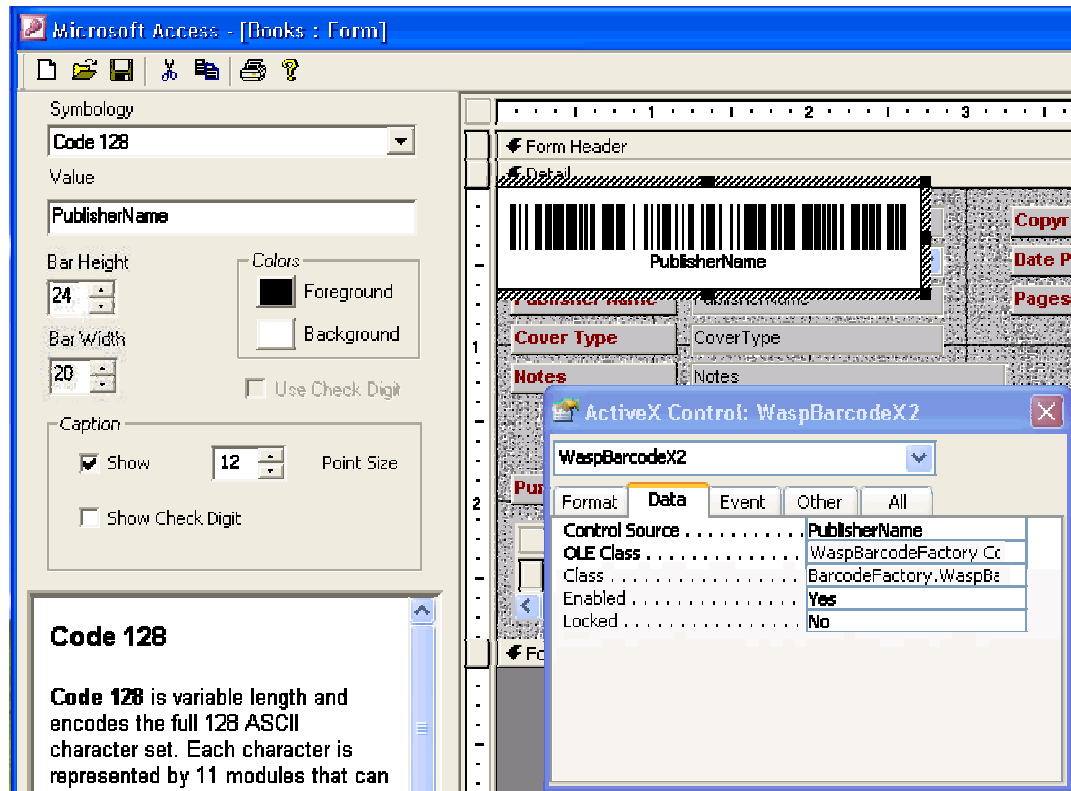
The BarcodeMaker Dialog Bar appears on the left side of the screen.

7. Select a symbology from the **Symbology** box that supports the barcode value you are using. In the example, we chose Code 128 because it supports both alpha and numeric characters.
8. In the **Value** box, type the name of the Control Source data exactly as it appears in the ActiveX Control form, using the same spacing and same spelling. The barcode will appear in the Access database as you type.



9. Click the **Show** check box in the **Caption** area to display the data as a caption below the barcode. For more information on the options available in the Dialog Bar, see [Main Window](#) for an overview or [Creating a Barcode Using the Main Window](#) for detailed information on using each option.
10. Select any other available attributes in the Dialog Bar that apply to what you are trying to achieve: Special or Nonprintable Characters, Bar Height, Foreground and Background Colors, Caption Point Size, Use Check Digit, Show Check Digit. For more information about these attributes, see [Main Window](#) and/or [Creating a Barcode Using the Main Window](#).
11. Resize the barcode: Click the barcode and use the resizing handles to expand the barcode box so that the barcode and caption show.

Your screen will look similar to the one below after you have completed the steps above.



12. To leave the BarcodeMaker **Dialog Bar**, click anywhere in the Access database.
13. To move the barcode, click the barcode. The move handles are available so that you can reposition it to a location where it will not obscure other data.

The Control Source Data PurchasePrice, is now barcoded in the Design View, as shown in **Screen Shot 1** above.

14. To view individual records, click **View>Form View** on the Menu Bar. (See **Screen Shot 2** above.) Use the Record arrows at the bottom of the screen to view each record. You will see that the barcode changes for each record.
15. Save the database by clicking **File>Save** on the Access Menu Bar.

Creating a Static Barcode that Appears in Every Record


To create a static barcode that appears in every record (one that does not change on every record), follow the steps above in **Creating a Barcode from Variable Data in Access**. However, skip step 3, in which you link the Control Source Data to the blank barcode box.

In the example, below, a barcode was created from the company name, Book Warehouse.

Code 128 24 High AEC 123

Title Planning Your Career
Topic Business
Publisher Name Jean-Paul Deloria
Cover Type Hard
Notes Step by step guide to planning your career.
Purchase Price \$22.95
Copyright Year
Date Purchased 12/23/1994
Pages 395

Author
 Fuller, Andrew
 *


 Book Warehouse

Creating Barcodes in Crystal Reports

This option is available in the Professional version only.

Barcodes can be created directly in Crystal Reports using BarcodeMaker or they can be created using BarcodeMaker and copied/pasted or dragged and dropped directly into a Crystal Reports document; see **Moving Barcodes into Documents**. The Wasp CrystalReports Addin is a set of two DLLs. These DLLs appear in the Additional Functions tree (menu) listed as "u2lwasp.dll".

The following topics are discussed in this section:

Creating a 1D Barcode

Creating a Data Matrix Barcode

Creating a PD417 Barcode

Barcoding Numbers

Adding the Barcode to Your Report

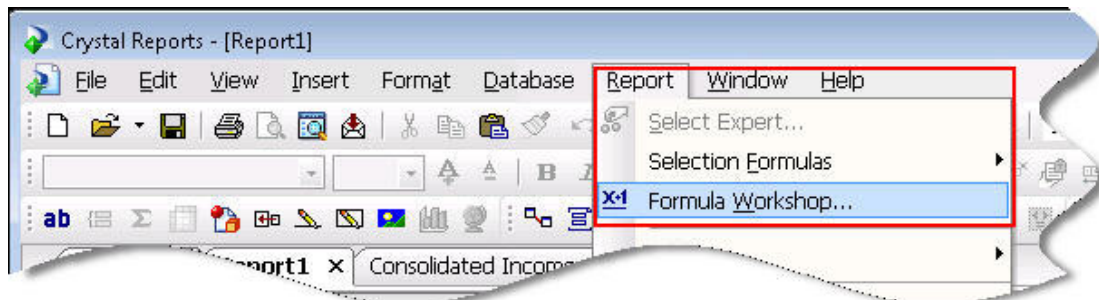
Changing the Barcode Font and Resizing

Barcode Font Descriptions

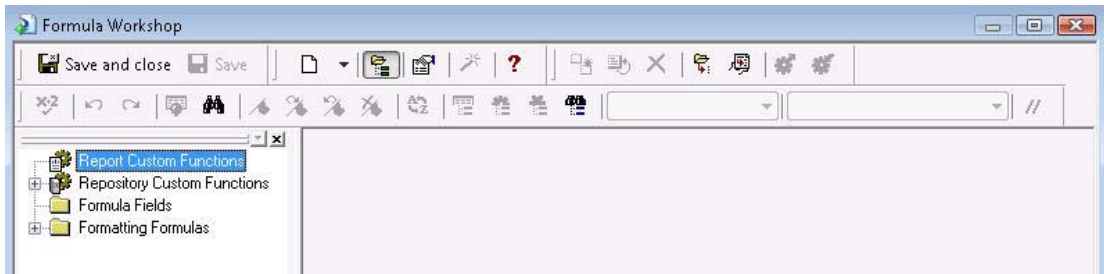
OCR-A, OCR-B and Microfonts

Creating a 1D Barcode

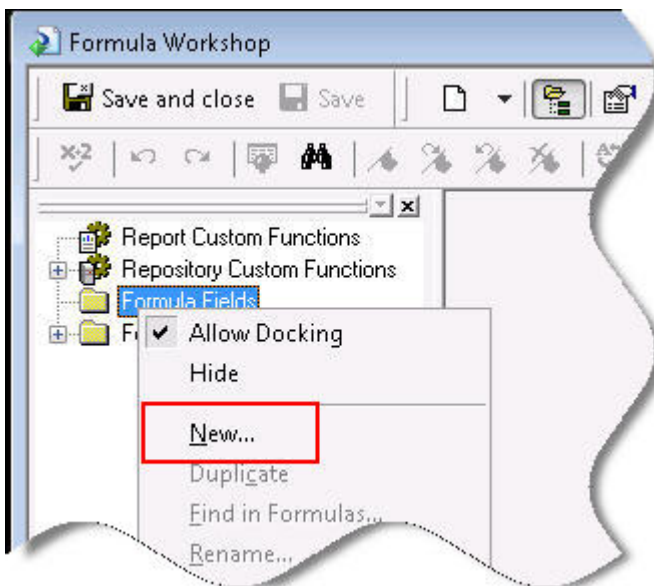
1. Create your report in Crystal Reports. If you want to practice creating a barcode, you can open an example report to work with. In this example, we will use the **Order Packing List** found under **Sample reports > General**.
2. With the report open in Crystal Reports, click **Report>Formula Workshop**



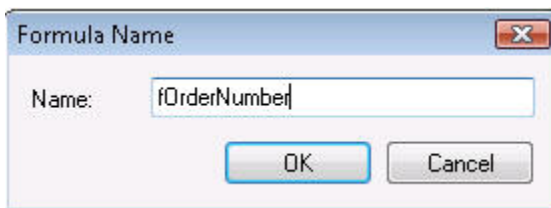
The **Formula Workshop>Formula Editor** will appear:



3. Right-click on **Formula Fields** and select **New**.

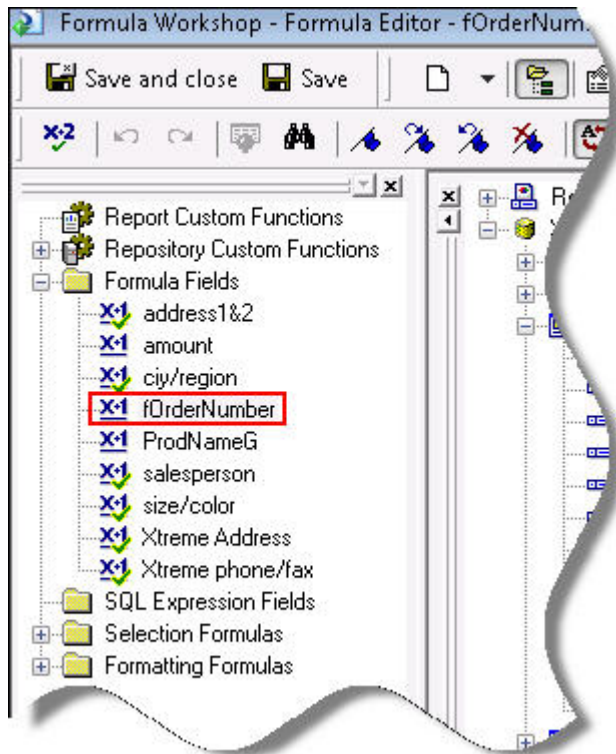


The **Formula Name** field will appear.

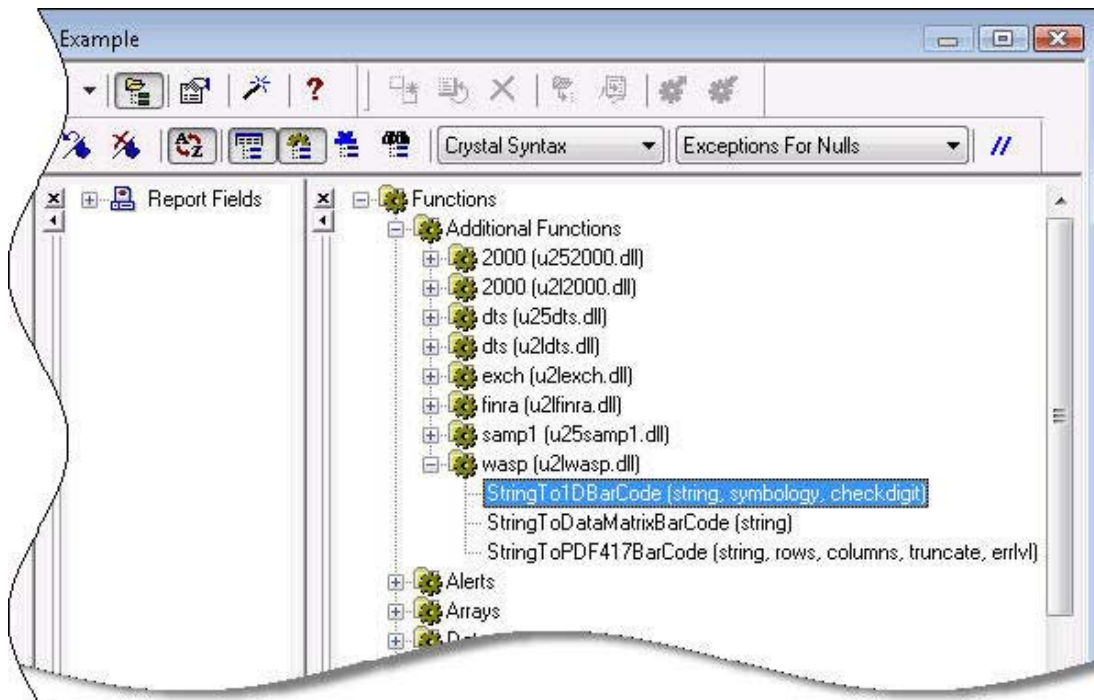


4. Enter a name for this formula, then click **OK**. You can name this formula anything you want, but it is a good idea to name it something easily identifiable, such as the type of data you are barcoding. In this example we will be barcoding the Order Number, so we have named the formula fOrderNumber (formula - order number).

When you click **OK**, the formula is added to the **Formula Fields** tree.

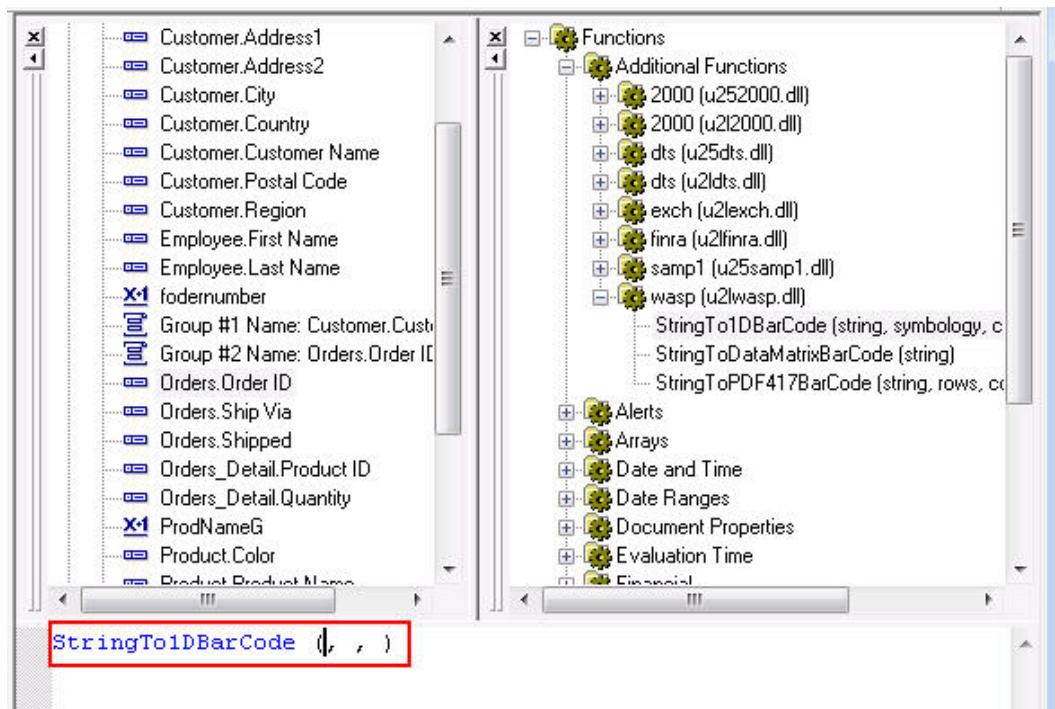


5. Now, with your new formula highlighted, select **Functions>Additional Functions>Wasp**. You will see the available dlls listed here.



6. Double click on **StringTo1DBarcode (string, symbology, checkdigit)**. This creates a standard 1D barcode.

7. Now you can enter in your values for your selection in the window at the bottom of the screen.



Enter information as follows:

- **String** - enter the value you want to bar code. You can do this by typing in a static string (for a barcode that will contain the same data each time it appears) or click on a item in your Fields list (for a barcode that pulls data from a table). For this example, we want to bar code the value stored in the "Order ID" field. With the cursor positioned after the first parenthesis and before the first comma, double click "Orders.Order ID" in the **Fields** list.

Important Note: If the value you want to barcode is a number, as in the Order Number example above, Crystal Reports will try to format it as it "thinks" it should appear. For example, if you are barcoding the order number 2430, Crystal will try to format it as 2,430.00. To prevent this from happening, you need to convert the number to a string. For instructions on how to convert the value to a string, please see the **Barcoding Numbers** section in this topic.

- **Symbology** - The second parameter of the "StringToBarcode" function is a number that represents the desired barcode symbology. Each symbology is assigned a unique number. Enter the number that corresponds to the desired symbology, then, when the report is created, Crystal Reports will translate that number to the correct barcode symbology. The symbology numbers are listed below:

- 1 = Code 3 of 9 Full ASCII
- 2 = Interleaved 2 of 5
- 3 = Codabar
- 4 = MSI Plessey

5 = Code 93
6 = Universal Product Code A (UPC-A)
7 = Universal Product Code E (UPC-E)
8 = U.S. Postal code (PostNet)
9 = EAN/JAN 8 digits
10 = EAN/JAN 13 digits
11 = Code 128
12 = Code 3 of 9 Standard
16 = LOGMARS

For example, if you want to create a PostNet bar code to print on envelopes, the second parameter of the "StringToBarcode" function is 8. If you want to create a Code 3 of 9 Full ASCII bar code, the second parameter is 1.

In this example, we are creating a Code 3 of 9 Standard barcode. Therefore, type in the number 12 for the second parameter.

Your string will look similar to the following:

StringTo1DBarcode (Order.Order ID), 12,)

- **Check Digit** - The third and final parameter of the "StringToBarcode" function can be either "True" or "False" depending on whether or not a check digit is desired. In this example, we will set the final parameter to True.

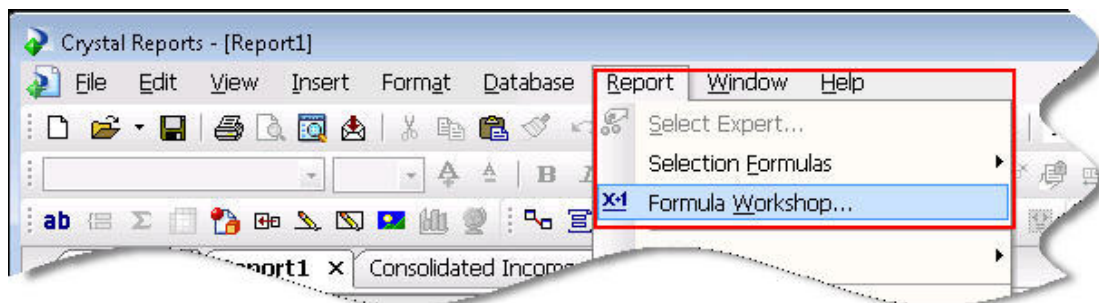
Your string will look similar to the following:

StringTo1DBarcode (Order.Order ID), 12, True)

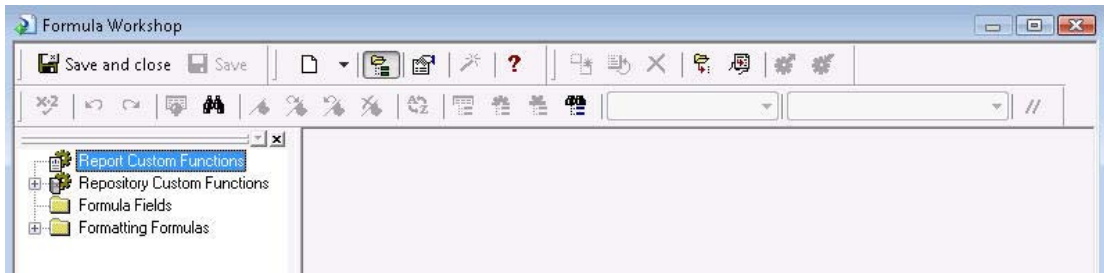
7. When you are finished entering in the parameters, click **Save and Close**. The **Formula Editor** closes. Now you can **Add the Barcode to Your Report**.

Creating a Data Matrix Barcode

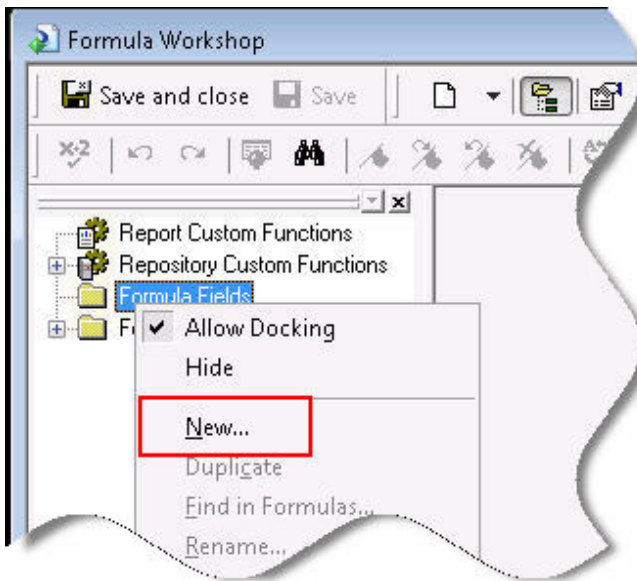
1. Create your report in Crystal Reports. If you want to practice creating a barcode, you can open an example report to work with. In this example, we will use the **Order Packing List** found under **Sample** reports > **General**.
2. With the report open in Crystal Reports, click **Report>Formula Workshop**



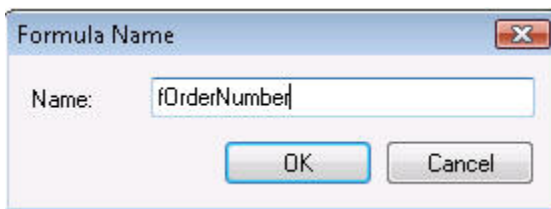
The **Formula Workshop>Formula Editor** will appear:



3. Right-click on **Formula Fields** and select **New**.

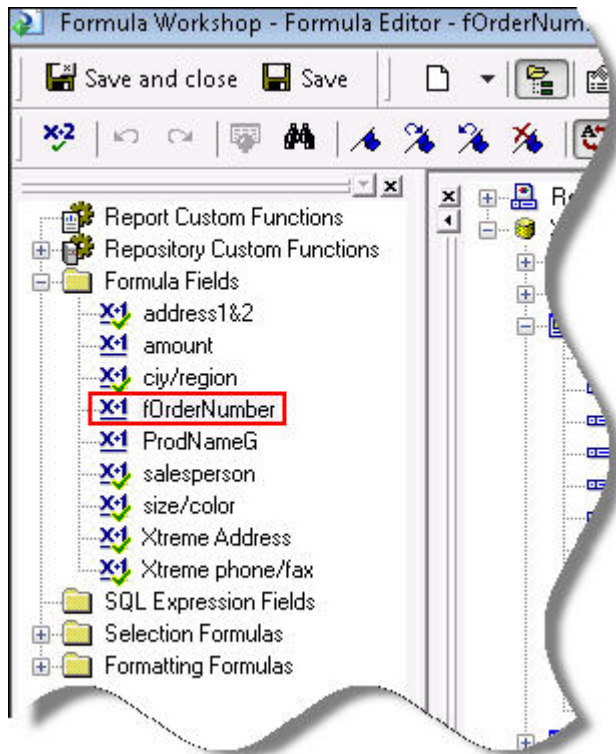


The **Formula Name** field will appear.

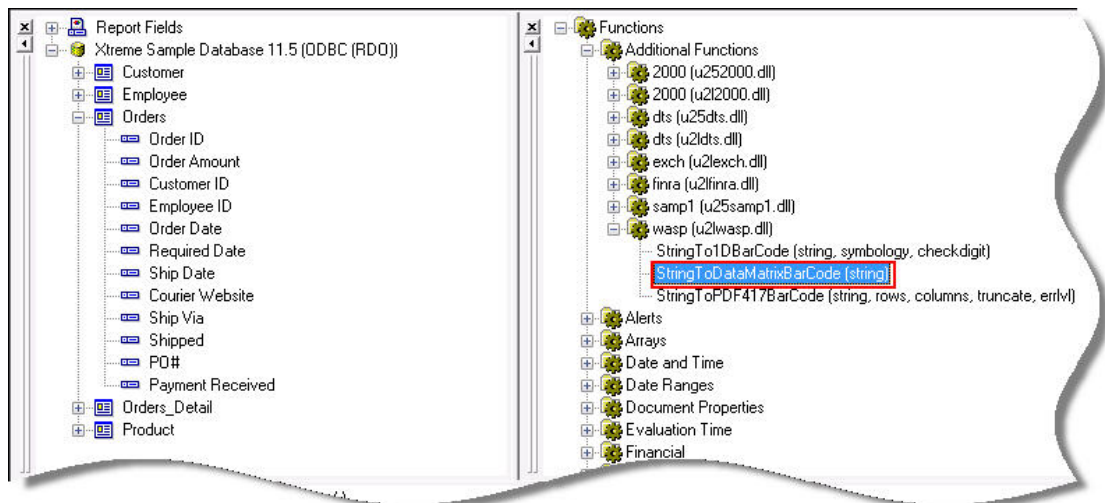


4. Enter a name for this formula, then click **OK**. You can name this formula anything you want, but it is a good idea to name it something easily identifiable, such as the type of data you are barcoding. In this example we will be barcoding the Order Number, so we have named the formula fOrderNumber (formula - order number).

When you click **OK**, the formula is added to the **Formula Fields** tree.



5. Now, with your new formula highlighted, select **Functions>Additional Functions>Wasp**. You will see the available dlls listed here.



6. Double-click on **StringToDataMatrixBarCode(string)**.
7. Now you can enter in your values for your selection in the window at the bottom of the screen.



8. Enter information as follows:

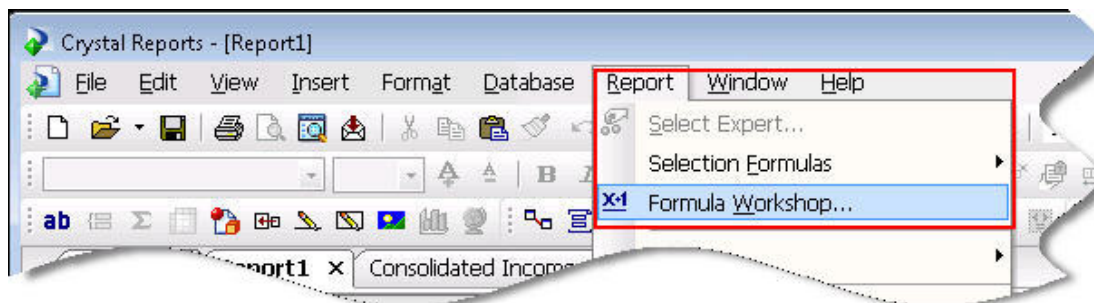
- **String** - Enter the value that you want to barcode in the parentheses. You can do this by typing in a static string (for a barcode that will contain the same data each time it appears) or click on a item in your **Fields** list (for a barcode that pulls data from a table). For this example, we want to barcode the value stored in the "Order ID" field. With the cursor positioned after the first parenthesis and before the first comma, double click "Orders.Order ID" in the **Fields** list.

Important Note: If the value you want to barcode is a number, as in the Order Number example above, Crystal Reports will try to format it as it "thinks" it should appear. For example, if you are barcoding the order number 2430, Crystal will try to format it as 2,430.00. To prevent this from happening, you need to convert the number to a string. For instructions on how to convert the value to a string, please see the **Barcoding Numbers** section in this topic.

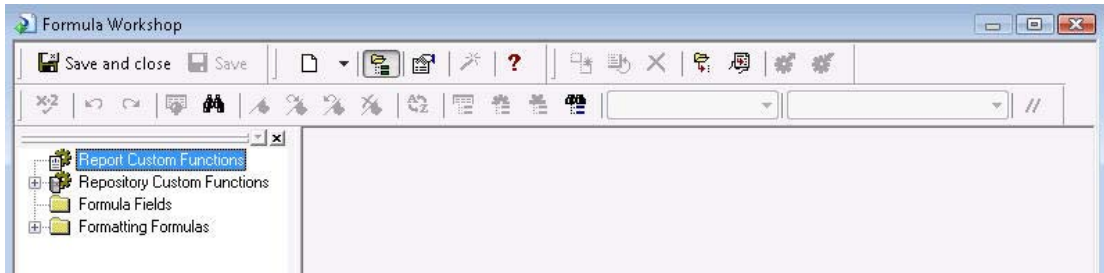
9. When you are finished entering in the parameters, click **Save and Close**. The **Formula Editor** closes. Now you can **Add the Barcode to Your Report**.

Creating a PDF417 Barcode

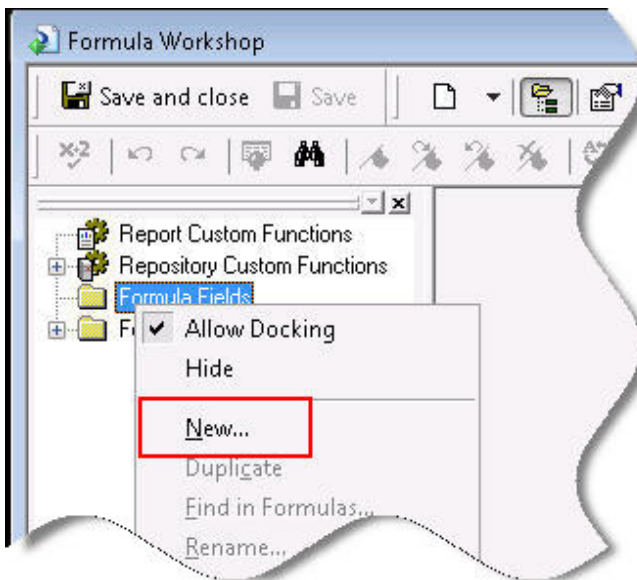
1. Create your report in Crystal Reports. If you want to practice creating a barcode, you can open an example report to work with. In this example, we will use the **Order Packing List** found under **Sample reports > General**.
2. With the report open in Crystal Reports, click **Report>Formula Workshop**



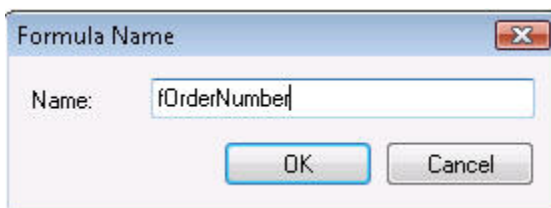
The **Formula Workshop>Formula Editor** will appear:



3. Right-click on **Formula Fields** and select **New**.

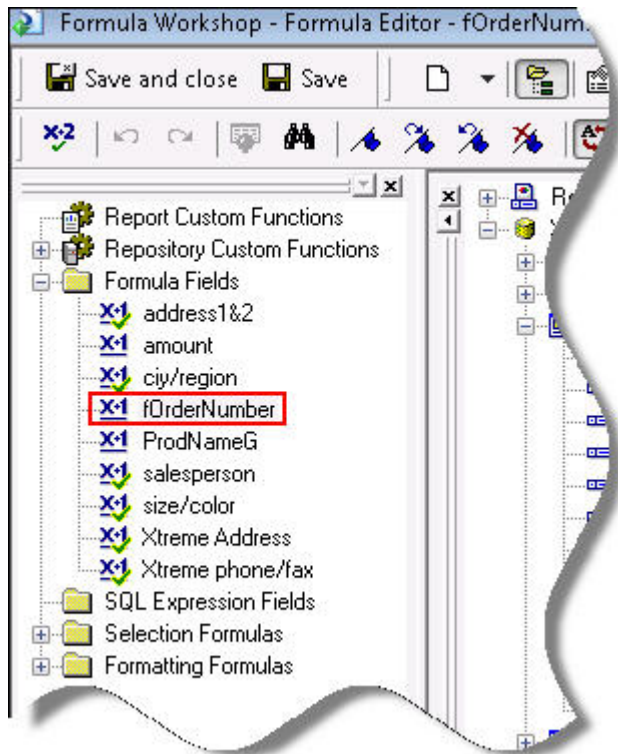


The **Formula Name** field will appear.

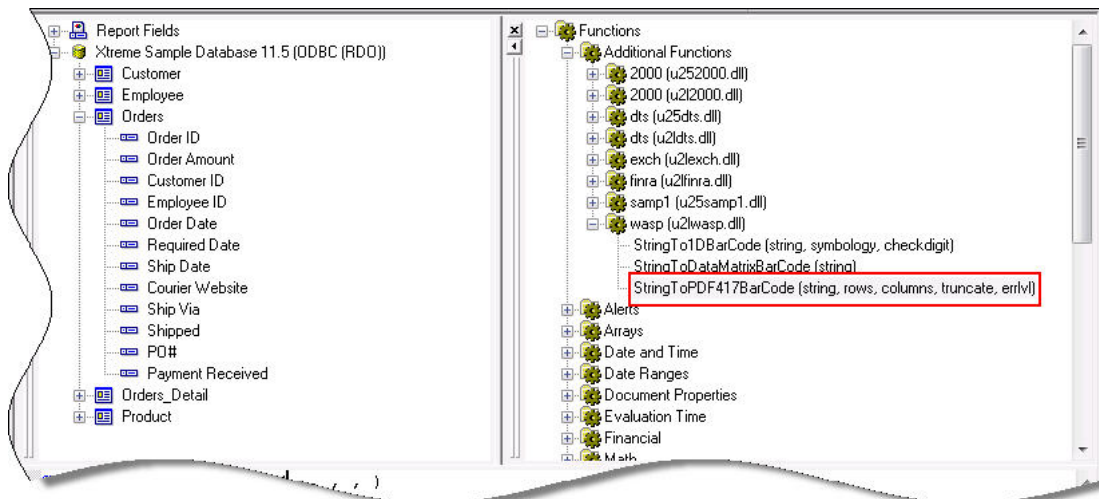


4. Enter a name for this formula, then click **OK**. You can name this formula anything you want, but it is a good idea to name it something easily identifiable, such as the type of data you are barcoding. In this example we will be barcoding the Order Number, so we have named the formula fOrderNumber (formula - order number).

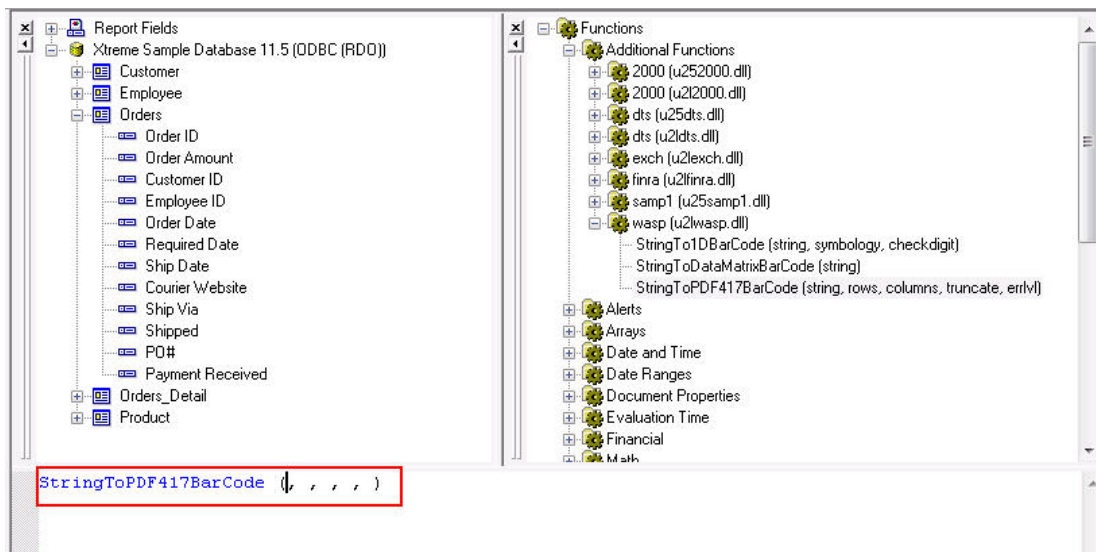
When you click **OK**, the formula is added to the **Formula Fields** tree.



5. Now, with your new formula highlighted, select **Functions>Additional Functions>Wasp**. You will see the available dlls listed here.



6. Double-click on **StringToPDF417Code(string, rows, columns, truncate, errlvl)**.
7. Now you can enter in your values for your selection in the window at the bottom of the screen.



8. Enter information as follows:

- **String** - Enter the value that you want to barcode in the parentheses. You can do this by typing in a static string (for a barcode that will contain the same data each time it appears) or click on a item in your **Fields** list (for a barcode that pulls data from a table). For this example, we want to bar code the value stored in the "Order ID" field. With the cursor positioned after the first parenthesis and before the first comma, double click "Orders.Order ID" in the **Fields** list.

Important Note: If the value you want to barcode is a number, as in the Order Number example above, Crystal Reports will try to format it as it "thinks" it should appear. For example, if you are barcoding the order number 2430, Crystal will try to format it as 2,430.00. To prevent this from happening, you need to convert the number to a string. For instructions on how to convert the value to a string, please see the [Barcoding Numbers](#) section in this topic.

- **Rows** - This represents the number of data rows in the PDF417 symbol. The settings for 'rows' are
 - 0** - Calculate the number of rows for the given the number columns, or
 - 3 to 90** - specify number of data rows.
- **Columns** - The settings for 'columns' are -
 - 0** - best fit columns and rows for a 1 to 3 column to row ratio, or
 - 1 to 30** - specify number of data columns.
- **Truncate** - The settings for 'truncate' are -
 - TRUE** - omit the right indicators and stop pattern from the PDF417 symbol.
 - FALSE** - include the right indicators and stop pattern.
- **Errlvl** - The settings for 'errlvl' are -
 - 1** - Calculate the recommended error correction level from the number of data codewords in the PDF417 symbol as per the following table:

Number of Data Code Words	Error Correction Level
1 - 40	2
41 - 160	3
161 - 320	4
321 - 863	5

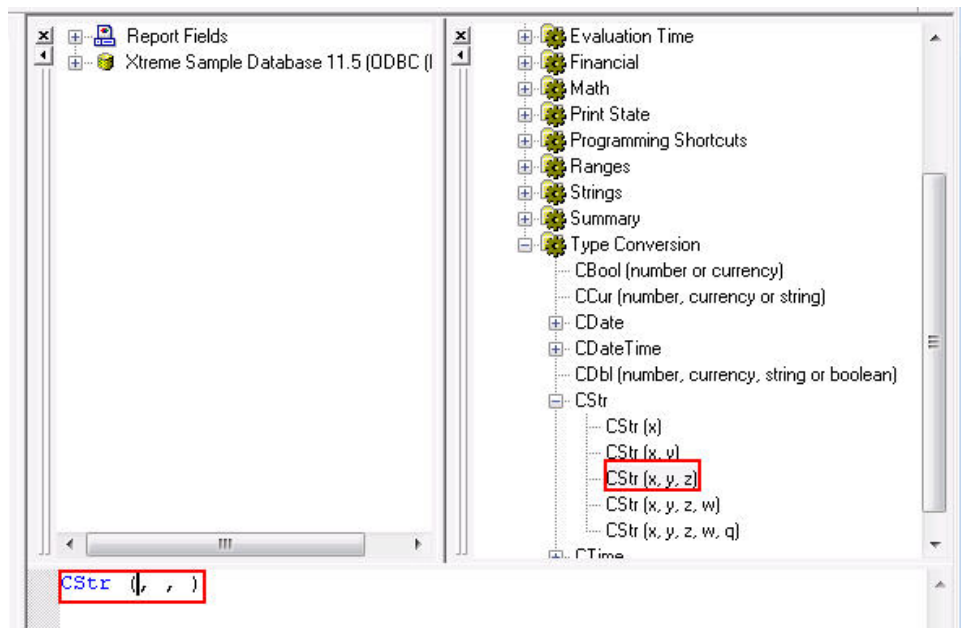
0 to 8 - Specify the error correction level where level 0 provides only error detection, and level 8 provides the maximum error detection and correction capacity.

- When you are finished entering in the parameters, click **Save and Close**. The **Formula Editor** closes. Now you can **Add the Barcode to Your Report**.

Barcoding Numbers

If the value you want to barcode is a number, as in the Order Number example above, Crystal Reports will try to format it as it "thinks" it should appear. For example, if you are barcoding the order number 2430, Crystal will try to format it as 2,430.00. To prevent this from happening, you need to convert the number to a string. To do this, follow the steps below:

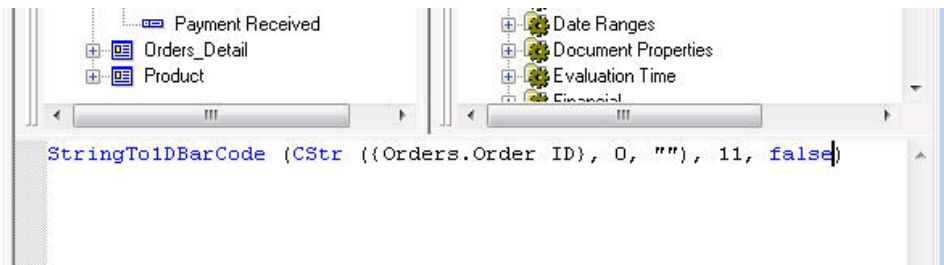
- After you name your formula, in the **Formula Editor**, go to **Functions > Type Conversion > CStr**.
- Double-click on **CStr(x,y,z)**. CStr(,,,) will appear in the editing window:



3. Now you can enter how you want the string to be formatted. With your cursor before the first comma, navigate to the database field you want to turn into a barcode and double click it. In this example, we are barcoding the Order ID field.
4. In the y spot, enter a zero. This tells the CStr function to show 0 decimal places.
5. In the z spot, enter two double quotes. This tells the CStr function not to use a separator between thousands. Now your formula will look something like this:

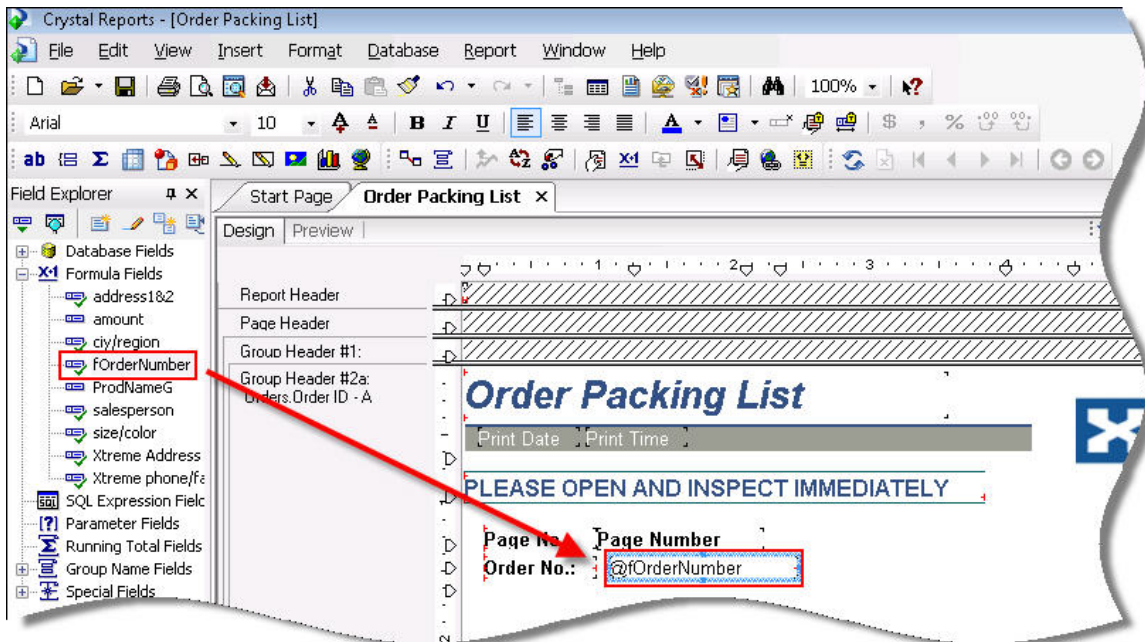
CStr {{Orders.Order ID}, 0, ""},}

6. Save and close the function and add the formula to your report (see the [**Adding the Barcode to Your Report**](#) section for information on how to do this).
7. Preview the report to make sure the number is formatted correctly (no decimal point or thousand separator). For example, the number should be 123456, not 123,456.00.
8. Now you can edit the formula to add the barcode function. Right-click on the formula and select **Edit**. The Formula Editor will reappear.
9. Double-click on **StringTo1DBarcode(,,)** under **Additional Functions > Wasp**.
10. In the first space (before the first comma, place the entire CStr function you just created and fill in the other variables as needed. The StringTo1DBarcode should be the only line in your function. The function will look something like this:



Adding the Barcode to Your Report

With the report open in **Design** mode, click in the **Field Explorer** and drag it to where you want it in your report.



Now you need to change the barcode to the correct font and resize it.

Changing the Barcode Font and Resizing

Now that you have inserted the barcode formula into your report, you need to change the font to the appropriate barcode font. For each symbology, there is at least one barcode font. Most barcode symbologies have 6 different fonts: a font for the symbology with a caption and without in low, medium, and high resolutions. In this example, we are creating a code 128 barcode at high resolution. To change to the appropriate font:

1. Click on the formula that was just inserted.
2. Change the font to the applicable font for the barcode you created. In this example, we have created a Code 3 of 9 barcode, so we will select **Wasp 39 EHC** (Wasp 39 embedded, high density with caption). A full list of supported barcode fonts is found in the **Barcode Font Descriptions** section of this topic.

Order Packing List

4/21/2008 2:28:23PM



PLEASE OPEN AND INSPECT IMMEDIATELY

Page No.: 1

Order No.:



2 9 3 6

Ship From: Xtreme Mountain Bikes, Inc.
2001 Meridian Way
Vancouver, BC

Ship to: BE
45
Lo

6. It is a good idea to print your report at this point and make sure the barcode scans properly.

Barcode Font Descriptions

The Wasp Bar Code Add-in for Crystal Reports supports all the popular barcode symbologies and provides a high, medium, and low density (resolution) fontset for each symbology.

A Hint About Barcode Resolution: The resolution of a font determines its relative density. The lower the resolution, the less dense the bar code. The Wasp Bar Code Add-in for Crystal Reports provides three resolution font sets for each symbology: high, medium, and low. The resolutions provide "coarse" sizing adjustments while the font point size provides "fine" sizing adjustments.

For example, changing a bar code font from "WASP 39 MC" (medium resolution) to "WASP 39 LC" (low resolution) widens the bar code (makes it less dense), but the bar code maintains the same height.

The following Wasp Fonts are supported:

Note: Most of these fonts are embedded so will appear with as EH or EHC, etc. in the Crystal Reports fonts list.

Code 3 of 9

- WASP 39 H High Density
- WASP 39 HC High Density with Caption
- WASP 39 M Medium Density

- WASP 39 MC Medium Density with Caption
- WASP 39 - L Low Density
- WASP 39LC Low Density with Caption

LOGMARS

- WASP LOGMARS H High Density
- WASP LOGMARS HC High Density with Caption
- WASP LOGMARS M Medium Density
- WASP LOGMARS MC Medium Density with Caption
- WASP LOGMARS L Low Density
- WASP LOGMARS LC Low Density with Caption

Universal Product Code (UPC-A and UPC-E)

- WASP UPC EAN JAN Nominal height
- WASP UPC MC Half Height
- WASP UPC LC Quarter Height

European Article Numbering/Japanese Article Numbering (EAN/JAN)

- WASP UPC EAN JAN Nominal
- WASP UPC MC Half Height
- WASP UPC LC Quarter Height

Interleaved 2 of 5

- WASP I2of5 H High Density
- WASP I2of5 HC High Density with Caption
- WASP I2of5 M Medium Density
- WASP I2of5 MC Medium Density with Caption
- WASP I2of5 L Low Density
- WASP I2of5 LC Low Density with Caption

Code 128

- WASP 128 H High Density
- WASP 128 M Medium Density
- WASP 128 L Low Density

Note: We recommend that you do not use the Wasp Code 128 Fonts with caption. To create a Code 128 bar code with a caption, you will need to create your own caption using a text field.

Codabar

- WASP CODABAR H High Density
- WASP CODABAR HC High Density with Caption
- WASP CODABAR M Medium Density
- WASP CODABAR MC Medium Density with Caption
- WASP CODABAR L Low Density

- WASP CODABAR LC Low Density with Caption

Code 93

- WASP 93 H High Density
- WASP 93 HC High Density with Caption
- WASP 93 M Medium Density
- WASP 93 MC Medium Density with Caption
- WASP 93 L Low Density
- WASP 93 LC Low Density with Caption

MSI Plessey

- WASP MSI H High Density
- WASP MSI HC High Density with Caption
- WASP MSI M Medium Density
- WASP MSI MC Medium Density with Caption
- WASP MSI L Low Density
- WASP MSI LC Low Density with Caption

PostNet

- WASP POSTNET

OCR-A

- WASP OCR A OCR-A

OCR-B

- WASP OCR-B OCR-B

MICR

- WASP MICR MICR

PDF417

- w417l.ttf PDF417 Low Density
- w417m.ttf PDF417 Medium Density
- w417h.ttf PDF417 High Density

Data Matrix

- wdatamatrix.ttf DataMatrix
-

OCR-A, OCR-B, and MICR Fonts

OCR-A and OCR-B

OCR-A and OCR-B are human readable fonts and are used in Optical Character Recognition applications such as remittance processing, point of sale, library circulation/accounting, billing, etc. An OCR reader is required to optically decode the character string. When using OCR-A or OCR-B, we recommend selecting the font size to be 12 points.

Note: Most printers do not print at the exact same point size nor do all OCR readers interpret the same way. Therefore, another point size (e.g. 11 pt or 11.5 pt) may be selected for your particular environment.

MICR (Magnetic Ink Character Recognition)

MICR is commonly used to print checking account information at the bottom of bank checks.

Magnetic ink toner (which is commonly available) is required to print the checks. An OCR or MICR reader is required to optically/magnetically decode the character string. When using MICR, we recommend selecting the font size to be 11 points.

Note: Most printers do not print at the exact same point size nor do all OCR readers interpret the same way. Therefore, another point size (e.g. 10 pt, 10.5 pt, or 11.5 pt) may be selected for your particular environment.

2D Barcode Creation

This option is available in the Professional version only.

The steps for creating a 2D barcode are the same as the ones described in **Creating a Barcode Using the Main Window** or in Creating Barcodes in **Microsoft Word and Excel**, **Microsoft Access**, or **Crystal Reports**. When you create a barcode using BarcodeMaker, any attributes that do not apply to that symbology will not be available to you on the BarcodeMaker toolbar or in the Main Window of BarcodeMaker. For example, if the symbology you chose does not support check digit, the check digit box will be unavailable.

The barcode attributes that are available when you choose Data Matrix, MaxiCode or PDF417 are a slightly different than those of other barcode symbologies. This topic lists the barcode attributes available to you after you have selected one of the following symbologies, **Data Matrix**, **MaxiCode** or **PDF417**, and after you have entered a barcode value. Detailed information about the specifications of 2D Barcodes is available in the **2D Barcode** section of the **Barcode Symbologies** topic.

Data Matrix - Choose the Bar Height and Foreground and Background colors.

MaxiCode - Choose the **Mode (2, 3, 4, or 5)**, input the **Postal Code**, **Country Code**, and **Class of Service**.

PDF417 - Choose the **Bar Height**, **Foreground and Background** colors, and **Density**. In the **PDF417 Settings** area, choose the number of:

Rows (ranging from 3 to 90)

Columns (ranging from 0 to 9)

Error Level (ranging from 0 to 8)

Barcode Symbolologies

Barcodes are symbols consisting of a series of bars and spaces which can be applied to packages, cartons, bottles, and other commercial products. The bars and spaces in each symbol are grouped in such a way to represent a specific ASCII character or function. The interpretation of these groups is based on a particular set of rules called symbolologies. Various symbolologies have been developed for particular applications. Some examples are shipping and receiving, manufacturing, retail, health care, transportation, document processing and tracking, and libraries.

Listed below are the most common Barcode Symbolologies including a partial specification for each symbology. In general, Code 3 of 9 is the most popular of all the symbolologies and is what we recommend if you are a first-time user.

Barcode Widths

The resolution of a barcode is dependent on the narrowest element of a barcode (X dimension), and can vary from high density (nominally less than 0.009 in./0.23 mm), medium density (between 0.009 in./0.23 mm and 0.020 in./0.50 mm), and low density (greater than 0.020 in./0.50 mm).

Check Digit

Check digit is a character included within a barcode symbol which is used to perform a mathematical check to ensure the accuracy of the scanned data. It checks that the barcode meets the specifications set for the barcode symbology. Not all symbolologies support check digit.

Common Barcode Symbolologies

Code 3 of 9

Code 3 of 9 Standard is variable length and is the most frequently used symbology in industrial barcode systems today. The principal feature is to encode messages using the full alphanumeric character set. Three of the nine elements (bars) are wide and six elements are narrow. The Code 3 of 9 barcode uses four special characters "\$", "/", "+", "%" which can be paired with alphanumeric characters to extend to the full ASCII character set. Listed below are the options for the Code 3 of 9 symbology.

Code 3 of 9 Full ASCII - Standard Code 3 of 9 contains only 43 characters (0-9, A-Z, \$, /, %, +). Code 3 of 9 Full ASCII can be extended to a 128 character symbology (full ASCII) by combining one of the special characters (\$, /, %, +) with a letter (A-Z) to form the characters that are not present in the standard Code 3 of 9 symbology. For example, in standard Code 3 of 9 a lowercase "a" cannot be represented. In Code 3 of 9 Full ASCII a lowercase "a" is represented as "+A".

Check Digit - A modulo 43 check character can be used to enhance data security for Code 3 of 9 symbols. The last digit of the symbol is assumed to be the check digit, and it is compared to a calculated check digit to verify the symbol.

Universal Product Code (UPC)

UPC-A (Universal Product Code-A) is fixed length and is the most common UPC barcode for retail product labeling. It is seen in most grocery stores across the United States. The symbology encodes a 11, 13 or 16 digit numeric only number. The first six digits are assigned by the GS1 US in Lawrenceville, New Jersey (formerly the Uniform Code Council or UCC), the next five digits are assigned by the manufacturer, and the final digit is a modulo 10 check digit. The nominal height for the UPC-A barcode is one inch. The reduced size is 80% of the nominal size.

UPC-E (Universal Product Code-E) is a fixed length, compressed, six digit code used for marking small packages including magazines and paperback books. UPC-E symbols are UPC-A symbols that have been zero suppressed (i.e., consecutive zeros are not included in the symbol). The printed value of the UPC-E code is a twelve digit code. The nominal height for the UPC-E barcode is one inch. The reduced size is 80% of the nominal size.

European Article Numbering/Japanese Article Numbering (EAN/JAN)

EAN/JAN-13 is fixed length and is similar to the UPC-A symbology, but encodes a 13th digit. The 12th and 13th digit define the country code. The code 00-04 and 06-09 are assigned to the United States. The nominal height for the EAN/JAN-13 barcode is one inch. The reduced size is 80% of the nominal size.

EAN/JAN-8 is fixed length and is similar to the UPC-E code, but includes two more digits for the country code. The nominal height for the EAN/JAN-8 barcode is one inch. The reduced size is 80% of the nominal size.

Interleaved 2 of 5

Interleaved 2 of 5 is a variable length, even numbered, numeric barcode symbology. It is typically used in industrial and master carton labeling. The symbology uses bars to represent the first character and the interleaved (white) spaces to represent the second character. Each character has two wide elements and three narrow elements. Listed below are the options for the Interleaved 2 of 5 symbology.

Check Digit - A modulo 10 check character can be used to enhance data security for Interleaved 2 of 5 symbols. When this option is selected, the last digit of the symbol is assumed to be the check digit, and it is compared to a calculated check digit to verify the symbol.

Code 128

Code 128 is variable length and encodes the full 128 ASCII character set. Each character is represented by 11 modules that can be one of four bar widths. Code 128 is the most easily read code with the highest message integrity due to several separate message check routines.

Of all the common linear symbologies, Code 128 is the most flexible. It supports both alpha and numeric characters easily, has the highest number of characters per inch, and is variable length. Code 128 is usually one of the best choices when implementing a new symbology.

UCC/EAN-128 - Inserts a unique, reserved start code, Function Code 1 (F1) for application assignments by the UCC (now the GS1 US) and EAN. The initial digits are interpreted as Application Identifiers (AIs).

Special Characters - Use the following keyboard characters in the input string to insert the Special Characters: F1 (Alt+0185), F2 (Alt+0178), F3 (Alt+0179), and F4 (Alt+0188). For instructions about inserting **Special Characters** into a barcode, click the preceding link.

Codabar

Codabar is a variable length symbology capable of encoding 16 characters within any length message. Codabar can encode six special alphanumeric characters, capital letters A through D, and all numeric characters. Codabar symbology for any new applications today should not be considered except under unusual circumstances. Listed below are the options for the Codabar symbology.

Check Digit - A modulo 16 check character can be used to enhance data security for Codabar symbols. When this option is selected, the last digit of the symbol is assumed to be the check digit, and it is compared to a calculated check digit to verify the symbol.

Special Characters - Use the following keyboard characters in the input string to insert the Special Characters: A (Alt+065), B (Alt+066), C (Alt+067), and D (Alt+068). For instructions about inserting **Special Characters** into a barcode, click the preceding link.

Code 93

Code 93 encodes the full 128 ASCII character set using 9 modules arranged into 3 bars with adjacent spaces. Two of the characters are check characters. Code 93 is similar to Code 3 of 9 but encodes more characters per inch. Code 93 encodes the full 128 ASCII character set and is encoded similarly to the Full ASCII Code 3 of 9. Listed below are the options for the Code 93 symbology.

MSI Plessey

MSI Plessey is a variable length numeric symbology. Each character consists of four bars with intervening spaces for each encoded digit, one or two symbol check digits, and a reverse start code. MSI Plessey is primarily used in marking retail shelves.

Second Check Digit - A modulo 10 check digit calculation is always performed on the data string. A second modulo 10 check digit is optional and is used to perform a check on the entire string including the first check digit.

PostNet

Postal Numeric Encoding Technique is used to encode zip code information on letter mail. PostNet utilizes redundant information within a compact barcode format to provide error detection capability and a significant degree of error correction capability.

LOGMARS

LOGMARS (Logistics Applications of Automated Marking and Reading Symbols) is a special application of Code 39 used by the U.S. Department of Defense and is governed by Military Standard MIL-STD-1189B. The Modulus 43 check digit, optional with Code 39, is defined and recommended in the specification.

Check Digit - A modulo 43 check character can be used to enhance data security for LOGMARS symbols. The last digit of the symbol is assumed to be the check digit, and it is compared to a calculated check digit to verify the symbol.

2D Barcode Symbolologies

2D Barcodes are available in the Professional Version only.

Two dimensional (2D) barcode symbolologies break from the traditional linear barcode symbolologies such as Code39 and UPC where most applications only need to encode between ten and twenty characters of information. In contrast, 2D symbolologies are able to encode up to several thousand characters of machine readable data. In effect, a portable database or portable data file can travel with the product and drive the decision making. 2D bar coding provides the freedom of movement for a database file allowing it to travel with a person or package, item, form, document, card or label. 2D bar coding provides a powerful communications capability without the need to access an external database. Furthermore, you can add 2D symbols to the documents and labels you are already printing.

By employing 2D symbols, more detailed information can be encoded and multiple linear barcode symbols can be reduced to a single symbol. When implemented properly, 2D symbolologies can make industrial and commercial procedures faster, less costly, and more reliable by providing immediate access to the portable data file for that container. As an example, the manifest, bill of lading, and material safety data sheet could all be encoded into one 2D symbol. 2D symbols are much more resistant to damage than traditional linear symbols. By building error correction formulas into the 2D symbol, a significant portion of the surface area can be damaged and the information will still be intact. For example, some 2D symbols can lose up to a third of its surface and still be decoded.

The most common 2D symbols employed today are **PDF417** and **Data Matrix**. The intellectual property rights (patents) for each of these codes are in the public domain eliminating the form of payment of royalties for use of this technology. 2D codes are currently represented in **matrix symbolologies** or **stacked-bar (multi-row)**.

Matrix Codes are 2D symbolologies that are similar in appearance to checkerboards with each square representing a bit and must be read by a camera or CCD reader. **Data Matrix** and **MaxiCode** are examples of a Matrix code.

Data Matrix is a **2D, matrix symbology** with a variable length and is capable of encoding all 128 ASCII characters and a number of different character sets. Each Data Matrix symbol consists of a perimeter quiet zone, border with two solid edges and two dashed edges and cells inside the border that are dark or light. The border's two solid lines with data cells are used for symbol identification, orientation and cell location. Data Matrix can accommodate up to 500 MB per square inch with a data capacity of 1 to 2335 characters. Data Matrix has a high degree of redundancy and resists printing defects.

MaxiCode is a fixed-size **2D matrix symbology** having 866 hexagonal elements arranged in 33 rows around a central finder pattern. Predominately used by United Parcel Service to sort mail at high speed, MaxiCode is well suited to being read quickly and often in any direction. The size of a MaxiCode symbol is 1.1 inch by 1.05 inch. A single MaxiCode symbol can encode up to 93 characters of data and uses five different code sets to encode all 256 ASCII characters. MaxiCode uses three unique properties when encoding the data: Class of Service, Country Code and Mode.

Stacked-barcodes are a **2D** symbology and look like a set of linear barcodes stacked on top of each other. **PDF417** is the best example of a stacked-bar symbol and is the most common of all 2D symbols today. Stacked-bar symbologies can be read by laser scanners, cameras, or CCDs.

PDF417 is a **2D stacked-bar symbol** that can encode full ASCII, numeric or binary data and uses sophisticated error correction algorithms to keep intact the Portable Data File (PDF). PDF417 is variable length and consists of 4 bars and 4 spaces in a 17 module structure. Each PDF417 symbol consists of 3 to 90 stacked rows surrounded by a quiet zone on all four sides. Each row consists of a leading quiet zone, start pattern, left row indicator character, one to thirty data characters, right row indicator character, stop pattern, and trailing quiet zone. PDF417 can accommodate up to 340 characters per square inch with a maximum data capacity of 1850 text characters.

2D Barcode Symbolologies

Overview: 2D Barcode Symbolologies

Two dimensional (2D) barcode symbolologies break from the traditional linear barcode symbolologies such as Code39 and UPC where most applications only need to encode between ten and twenty characters of information. In contrast, 2D symbolologies are able to encode up to several thousand characters of machine readable data. In effect, a portable database or portable data file can travel with the product and drive the decision making. 2D bar coding provides the freedom of movement for a database file allowing it to travel with a person or package, item, form, document, card or label. 2D bar coding provides a powerful communications capability without the need to access an external database. Furthermore, you can add 2D symbols to the documents and labels you are already printing.

By employing 2D symbols, more detailed information can be encoded and multiple linear barcode symbols can be reduced to a single symbol. When implemented properly, 2D symbolologies can make industrial and commercial procedures faster, less costly, and more reliable by providing immediate access to the portable data file for that container. As an example, the manifest, bill of lading, and material safety data sheet could all be encoded into one 2D symbol. 2D symbols are much more resistant to damage than traditional linear symbols. By building error correction formulas into the 2D symbol, a significant portion of the surface area can be damaged and the information will still be intact. For example, some 2D symbols can lose up to a third of its surface and still be decoded.

The most common 2D symbols employed today are **PDF417** and **Data Matrix**. The intellectual property rights (patents) for each of these codes are in the public domain eliminating the form of payment of royalties for use of this technology. 2D codes are currently represented in **matrix symbolologies** or **stacked-bar (multi-row)**.

Matrix Codes are 2D symbolologies that are similar in appearance to checkerboards with each square representing a bit and must be read by a camera or CCD reader. **Data Matrix** and **MaxiCode** are examples of a Matrix code.

Data Matrix is a **2D, matrix symbology** with a variable length and is capable of encoding all 128 ASCII characters and a number of different character sets. Each Data Matrix symbol consists of a perimeter quiet zone, border with two solid edges and two dashed edges and cells inside the border that are dark or light. The border's two solid lines with data cells are used for symbol identification, orientation and cell location. Data Matrix can accommodate up to 500 MB per square inch with a data capacity of 1 to 2335 characters. Data Matrix has a high degree of redundancy and resists printing defects.

MaxiCode is a fixed-size **2D matrix symbology** having 866 hexagonal elements arranged in 33 rows around a central finder pattern.- Predominately used by United Parcel Service to sort mail at high speed, MaxiCode is well suited to being read quickly and often in any direction. The size of a MaxiCode symbol is 1.1 inch by 1.05 inch. A single MaxiCode symbol can encode up to 93 characters of data and uses five different code sets to encode all 256 ASCII characters. MaxiCode uses three unique properties when encoding the data: Class of Service, Country Code and Mode.

Stacked-barcodes are a **2D symbology** and look like a set of linear barcodes stacked on top of each other. **PDF417** is the best example of a stacked-bar symbol and is the most

common of all 2D symbols today. Stacked-bar symbologies can be read by laser scanners, cameras, or CCDs.

PDF417 is a **2D stacked-bar symbol** that can encode full ASCII, numeric or binary data and uses sophisticated error correction algorithms to keep intact the Portable Data File (PDF). PDF417 is variable length and consists of 4 bars and 4 spaces in a 17 module structure. Each PDF417 symbol consists of 3 to 90 stacked rows surrounded by a quiet zone on all four sides. Each row consists of a leading quiet zone, start pattern, left row indicator character, one to thirty data characters, right row indicator character, stop pattern, and trailing quiet zone. PDF417 can accommodate up to 340 characters per square inch with a maximum data capacity of 1850 text characters.

ASCII Table

A limited number of the code set for the American Standard Code for Information Interchange (ASCII) is listed below along with their definitions. These Special and Nonprintable Characters are available with some symbologies when you click the Character Input button on the Main Window of BarcodeMaker or when you access the Dialog Box.

Information about the use of Special Characters with specific symbologies can be found in the **Barcode Symbologies**.

ASCII Value	ASCII Character	Description
0	NUL	null
1	SOH	start of heading
2	STX	start of text
3	ETX	end of text
4	EOT	end of transmission
5	ENQ	enquiry
6	ACK	acknowledge
7	BEL	bell
8	BS	backspace
9	TAB	horizontal tab
10	LF	NL line feed, new line
11	VT	vertical tab
12	FF	NP form feed, new page
13	CR	carriage return
14	SO	shift out
15	SI	shift in
16	DLE	data link escape
17	DC1	device control 1
18	DC2	device control 2
19	DC3	device control 3
20	DC4	device control 4
21	NAK	negative acknowledge
22	SYN	synchronous idle
23	ETB	end of trans. block
24	CAN	cancel
25	EM	end of medium
26	SUB	substitute
27	ESC	escape
28	FS	file separator
29	GS	group separator
30	RS	record separator
31	US	unit separator
32	Space	Space
127	DEL	delete

File Menu Commands

The **BarcodeMaker File** menu offers the following commands:

New	Creates a new document.
Open	Opens an existing document in a new window. You can open multiple documents at once. Use the Window menu to switch among multiple open documents.
Save	Saves an opened document with the file name it currently has to its current directory. To name a new document, change the name of an existing document or change the storage location to another directory, use the Save As menu item. All BarcodeMaker files end with the following file extension: .bcm
Save As	Use this command to save and name the active document. BarcodeMaker displays the Save As dialog box so you can name your document. To save a document with its existing name and directory, use the Save command. All BarcodeMaker files end with the following file extension: .bcm
Print	Prints a document. This command presents a Print dialog box, where you may specify the range of pages to be printed, the number of copies, the destination printer, and other printer setup options.
Print Preview	Displays the document on the screen as it would appear in print. When you choose this command, a print preview window appears in which one or two pages will be displayed in their printed format. The print preview toolbar offers you options to view either one or two pages at a time; move back and forth through the document; zoom in and out of pages; and initiate a print job.
Print Setup	Use this command to select a printer and a printer connection.
Recent Files	This area of the File Menu shows recently used files. It makes file retrieval quick. Click a file to open it.
Exit	Use this command to end your BarcodeMaker session. Barcode prompts you to ask whether you want to save an untitled document.

Edit Menu Commands

The **BarcodeMaker Edit** menu offers the following commands:

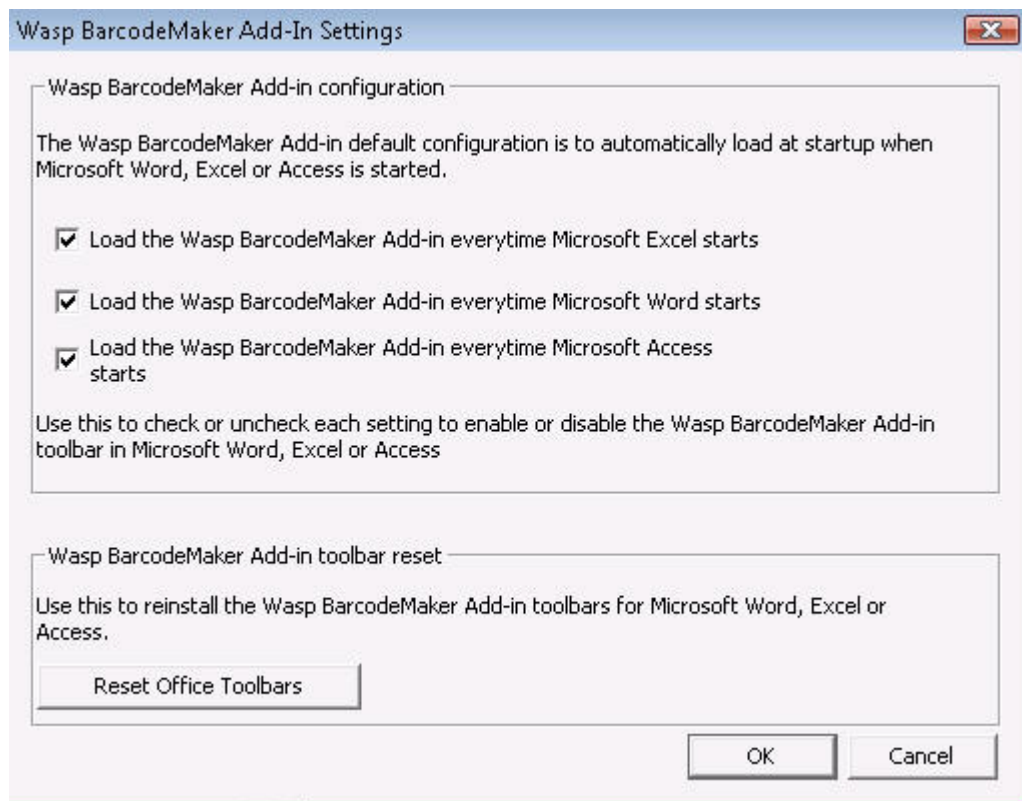
- | | |
|------|--|
| Cut | Removes the currently selected data from the document and puts it on the clipboard. This command is unavailable if there is no data currently selected. Cutting data to the clipboard replaces the contents previously stored there. |
| Copy | Copies selected data onto the clipboard. This command is unavailable if there is no data currently selected. Copying data to the clipboard replaces the contents previously stored there. |

Help Menu Commands

The **BarcodeMaker Help** menu offers the following commands, which provide assistance with this application:

Help Topics Offers an index to topics describing how to use BarcodeMaker. Use this command to display the opening screen of help. From the opening screen, you can jump to step-by-step instructions for using BarcodeMaker.

Settings Click this button to display the **Barcode Add-in Settings Screen**. This screen allows you to control when the BarcodeMaker toolbar opens in Word, Excel and Access (Professional version only). Below is an example of this screen:



Uncheck any of the Load checkboxes to disable the BarcodeMaker toolbar for that application. When the option is unchecked, the BarcodeMaker toolbar will not appear in the selected application until you reselect this checkbox. You may want to disable these checkboxes (uncheck) if you want to share your Access database across the network by placing your MDB Access database in a network share folder. When the database is in a share folder, Access runs in Shared mode, which can cause conflicts with the BarcodeMaker add-in toolbar (the add-in opens Access in exclusive mode, meaning the database cannot be shared across the network).

Select the *Reset Office Toolbars* button to reinstall the toolbar for all of the applications. This should be done if you want to re-install after uninstalling the toolbar.

About
BarcodeMake
r

Displays the BarcodeMaker version number and copyright notice.

System Requirements

Listed below are the system requirements for using BarcodeMaker.

Computer/Processor	Pentium II 600 MHz or better
Memory	512 MB of RAM
Hard Disk	10MB
Drive	CD-ROM
Mouse	Required
Keyboard	Required
Operating Systems	Windows 2000 SP4, XP SP2, 2003 Server (32 bit only) and Vista (32 bit)
Office Versions	Office 2000, Office XP, Office 2003, Office 2007

Technical Support



[Wasp Technical Support, Knowledge Base and Downloads](#)

This link will lead you to the online support center, where you can contact us.



[Wasp Barcode Online Store](#)

This link will lead you to the online store.

Index

1	ASCII Character.....	73, 79
11 Modules	ASCII Table.....	80
12 Digit.....	B	
12 Digits.....	Bar Coding Variable Data	37
128 ASCII Character Set	bar height.....	16
128 Characters	bar width	16
13th Digit.....	Barcode Creating Main Window	16
2	Barcode Densities.....	73
256 ASCII Characters.....	Barcode Display Window	9
2D Barcode Creation	Barcode Fonts.....	52
2D Barcode Symbolologies	Barcode in Access	37
9	Barcode New Button	12
9 Modules	Barcode Point Size	12
A	Barcode Symbolologies	73
About BarcodeMaker	Barcode Symbology Help Box	9
Access	Barcode Types.....	8
Access Creating Barcodes In	Barcode Variable in Excel.....	25
Access Moving Barcodes	Barcode Zip Codes	73
Access Using Main Window to Create Barcodes	BarcodeMaker Control.....	37
Active X Control	BarcodeMaker Main View	9
Active X Control Form	BarcodeMaker Main Window	9, 16
ActiveX Control	BarcodeMaker System Requirements	85
Alphanumeric.....	BarcodeMaker Toolbar	12
Append	Barcodes - creating in Crystal Reports	52

Barcodes Choosing a Type	4	Common	78
Barcodes What Are They?	4	Common Barcode Symbologies	73
Barcoding Numbers in Crystal Reports	52	Compact Barcode	78
Binary Data	78	Compatible With.....	1, 4
C		Contact Us	86
Cameras	78, 79	Control Boxes - Main Window	9
Capabilities	1, 4	Copy.....	82
Caption Point Size	12	Copy and Paste	23
Caption Show Button	12	Country Code.....	78, 79
CCDs	78, 79	Create New Barcode Toolbar	12
Check Digit	73, 78	Creating a Barcode Using the Main Window	16
Check Digit Example	22	Creating Barcodes Access	37
Check Digit Show	12	Creating Barcodes in Microsoft Access....	37
Check Digit Use Button	12	Creating Barcodes in Microsoft Word and Excel.....	25
Checkerboards	79	Crystal Reports - Creating Barcodes In	52
Choose Symbology	12	Customer Service	86
Choosing a barcode	4	Cut	82
Class of Service.....	79	D	
Codabar	8, 73	Data Matrix.....	8, 71, 73, 78, 79
Code 128	8, 73, 78	Data Security	73
Code 3 of 9	73	Database.....	1
Code 3 of 9 Full ASCII.....	8, 73	Density	73
Code 3 of 9 Standard	8, 73	Density Box.....	12
Code 39	73, 78	Design Mode Toolbox	
Code 93	8, 73, 78	move.....	12

Design Mode Toolbox.....	12
Drag and Drop	23
E	
EAN/JAN.....	73, 78
EAN/JAN-13	8, 73, 78
EAN/JAN-8	8, 73, 78
Easy to Read	78
Edit Barcode Button.....	12
Editing	
Icons.....	12
Editing.....	12
Efficiency	78
Error Correction	78, 79
Error Detection.....	78
Error Level	71
European Article Numbering	73, 78
Example 3 of 9 Full ASCII Barcode	22
Example Barcode in Main Window.....	22
Example Check Digit	22
Excel	1
Excel Barcode Creation In.....	25
Excel Barcode Linked to Cell with Variable	25
Excel Barcodes Linked to Cell.....	25
Excel Multiple Barcode Creation	25
Excel Quick Barcode Creation.....	25

Excel Unlinked Barcode.....	25
Excel Variable Barcode	25
F	
File Menu	9, 81
File Menu Item	9, 81
Fixed Length	78
Fixed Size	78, 79
Flexible.....	78
Fonts	52
Format Painter Button.....	12
Forms Design View.....	37
Freedom of Movement.....	78
Full ASCII.....	8
G	
Grocery	78
GS1 US.....	73, 78
H	
Help Menu Item.....	9
Help Symbology Box	9
Help Topics	83
How to Create Barcodes in Access	37
How to Create Barcodes in Word and Excel	25
I	
Icons	12
Industries	73

Integrates With.....	1	Microsoft Access.....	37
Interleaved 2 of 5.....	8, 73	Microsoft Word Barcode Creation In.....	25
Introduction	1	Military Standard	73, 78
J		Minimum System Requirements.....	85
Japanese Article Numbering	73, 78	Mode	71, 79
K		Modulo	73, 78
Keyboard Shortcuts	9	Move Barcode.....	25
L		Move Design Mode Toolbox	12
Laser Scanners.....	78, 79	Moving Barcodes Access	37
Letters.....	78	Moving Barcodes into Word, Excel Documents	23
Logistics Applications of Automated Marking and Reading Symbols.....	73, 78	MSI/Plessey	8, 73, 78
LOGMARS.....	8, 73, 78	Multiple Linear Barcode Symbols	78
M		N	
Mail	78, 79	New Barcode Button	12
Mail Merge	12	Numbers - Barcoding in Crystal Reports ..	52
Main View	9	Numeric.....	78
Main Window	9	O	
Main Window - Creating a barcode in	16	OCR-A Font	52
Main Window Example Barcode.....	22	OCR-B Font	52
Main Window Toolbar	9	Operating System	85
Main Window Use - Access.....	37	Overview	
Matrix Codes.....	73, 78, 79	2D Barcode Symbolologies.....	78
MaxiCode.....	8, 71, 73, 78, 79	Overview	4
Menu Bar	9, 82, 83	P	
Micro Fonts	52	PDF	79

PDF417.....	8, 71, 73, 78, 79
Point Size of Barcodes - Toolbar.....	12
Postal Code	71
Postal Numeric Encoding Technique ..	73, 78
PostNet.....	8, 73, 78
Print	81
Print Preview.....	81
Print Setup	81
Processor.....	85
Q	
Quick Barcode Creation Excel.....	25
Quick Start Access	37
R	
Recent Files.....	81
Redundant Information	78
Reference Guide.....	73
Resize Barcode	25
Retail.....	78
Reverse Start Code	78
S	
Sample Barcode	22
Save.....	81
Save As	81
Second Check Digit	73, 78
Security.....	73

Settings Screen.....	83
Show Caption Button	12
Show Check Digit.....	9
Special Characters.....	73, 78
Stacked-barcodes	73, 78, 79
Standard	8
START	1
STOP	1
StringTo1DBarcode	52
StringToDataMatrixBarCode.....	52
StringToPDF417BarCode.....	52
Support	86
Supported Barcodes	8
Supported Symbologies.....	8
Symbologies	1, 8
Symbologies Supported.....	1, 8
Symbology Box.....	9, 12
Symbology Box - Toolbar	12
System Requirements	85
T	
Technical Support.....	86
Title Bar.....	9
Toolbar.....	12
Traditional Names.....	73
Types Barcodes Supported	8

Types Choosing Barcodes	4	Use Check Digit Button.....	12
Types of Barcodes.....	73	Using Access to Create Barcodes	37
U		Using Main Window Create Barcodes	16
U.S. Department of Defense	78	Using This Help File.....	4
UCC/EAN-128	73, 78	V	
Uniform Code Council	73	Variable Length.....	78, 79
Universal Product Code.....	73, 78	W	
Universal Product Code-A.....	73, 78	Wasp Barcode Online Store	86
Universal Product Code-E	73, 78	Wasp BarcodeMaker	1
Unlinked Barcode Excel	25	Welcome	1
UPC	78	Word	1
UPC bar	78	Working Directly in Access	37
UPC-A.....	8, 73, 78	Working Directly in Excel and Word	25
UPC-E.....	8, 73, 78	Z	
UPS	78, 79	Zip Code	73, 78