



MarkMagic

Barcode Labels, RFID Tags, and Electronic Forms Software for IBM System i
Intermediate Concepts – Spooled File Field Selection

192.168.4.112 - Mocha W32 TN5250

File Edit View Settings Help

Open Close Copy Paste Print About Dup Clear Erase Attn Sysreq Help Hex

File: QSYSPRT Number: 00000 Job: QPADEV0013/KWH/331351 3

*...+...1...+...2...+...3...+...4...+...5...+...6...+...7...+

1
2 Windows for Less 21250
3 167 Orchard Street
4 New York
5 NY 11001-0099 3/26/2010
6
7
8
9
10 2/14/2007 1234
11 3/10/2007 2534
12 3/12/2007 2534
13 3/22/2007 2537
14 3/28/2007 2539
15 5/01/2007 2539
16 5/15/2007 2900
17 5/20/2007 2901
18 6/30/2007 2955
19 7/01/2007 2965

F3=Exit F5=Refre
F12=Cancel F17=Top

Spooled File Viewer

Field Name: CUSTNAME Length: 25 Spool Line: 2 Page Number: 3 Total Pages: 5

= Desc: Customer Name Spool Column: 11

Windows for Less 21250
167 Orchard Street
New York
NY 11001-0099 3/26/2010

2/14/2007	12345	Invoice	823.15	823.15
3/10/2007	25345	Invoice	1,080.00	1,903.15
3/12/2007	25347	Adjustment	25.10	1,878.05
3/22/2007	25377	Invoice	2,125.47	4,003.52
3/28/2007	25397	Invoice	490.98	4,494.50
5/01/2007	25399	Invoice	500.15	4,994.65
5/15/2007	29000	Invoice	20.00	5,014.65
5/20/2007	29011	Adjustment	5.10	5,009.55
6/30/2007	29555	Invoice	3,000.17	8,009.72
7/01/2007	29655	Invoice	680.88	8,690.60

Spooled File: QSYSPRT Number: 1 User: KWH Map All

Job Name: QPADEV0013 Job Number: 331351 Change Spooled File

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Welcome

Welcome to Part 2B of the MarkMagic and JMagic combined tutorials. This tutorial will introduce variable text and barcode fields that use information retrieved from a spooled file. As with the first tutorial, the steps are again split up and in different colors so you can focus only on the MarkMagic or JMagic steps separately.

Before we begin we are assuming:

1. You have completed the “Basic Concepts” tutorial and understand what was introduced. (You will be making use of the format that you created and also utilize many commands and methods that were introduced.)
2. You have a Hewlett Packard PCL compatible Laser Printer available at your location that is configured for printing on the System i server. (If not, you can use our PDF option to produce your output.)

In this tutorial, you will learn:

1. How to copy a format and why you would want to copy a format.
2. How to delete a field.
3. How to add a text field that is mapped to spooled file data.
4. How to copy the text field to easily map more lines in a spooled file.
5. How to add data fields that are mapped to spooled file data.
6. What a *LINK field is.
7. How to add text and barcodes that are linked to the data fields.
8. How to print with data from your spooled file.

Copying a Format

In this tutorial, you *could* make changes to your existing **HPPCL5/LEARNXXX** format, but you do not want to lose your original work. (It will be used again in future tutorials.) Therefore, it’s best to make a copy of your original format and use the new copy during this tutorial.

MarkMagic

Start MarkMagic and make sure you are at the main menu. Press “F” for Format and then “C” for Copy. The Copy a format dialogue box will appear. You need to specify the source format device and name in the first two fields. *From device* will be **HPPCL5** and *From format* will be **LEARNXXX**. (Replacing XXX with your initials.) Now you must specify the new format device and name. Since this will still be an HPPCL5 format, *To device* will be HPPCL5. Now, specify a new name for the copied format. It cannot be the same name as your original. For this tutorial, you will add a “2” at the end. Type **LEARNXXX3** for *To format*. Leave *To User Library* as ***USRLIB** (keep the copy within the same user library) and press ENTER.

Version . . . : 7.2 MarkMagic Mod lvl . . . : 100317

F

Format Print Utilities

C

New

Open

Copy

Rename

Edit

Delete

Generate.

eXit

F12=Cancel

User library . . . : MRKMAGDTA

Copy a format

From Device . .	HPPCL5	Name, F4 for list
From Format . .	LEARNXXX	Name, F4 for list
To Device . . .	HPPCL5	Name, F4 for list
To Format . . .	LEARNXXX3	Name
To User Library	*USRLIB	Name, F4 for list

F3=Exit F4=Prompt F5=Refresh F12=Cancel

Enterprise Edition

F3=Exit F4=Prompt F9=Cmd line F10=List View

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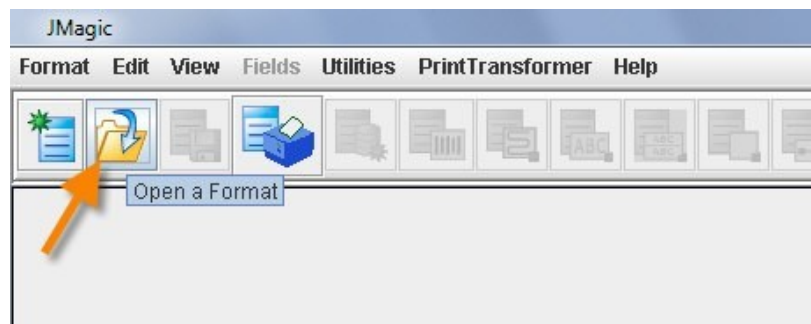
You should eventually see a message stating that the copy completed successfully.



When you start making changes, open your new LEARNXXX3 format instead of your original LEARNXXX format.

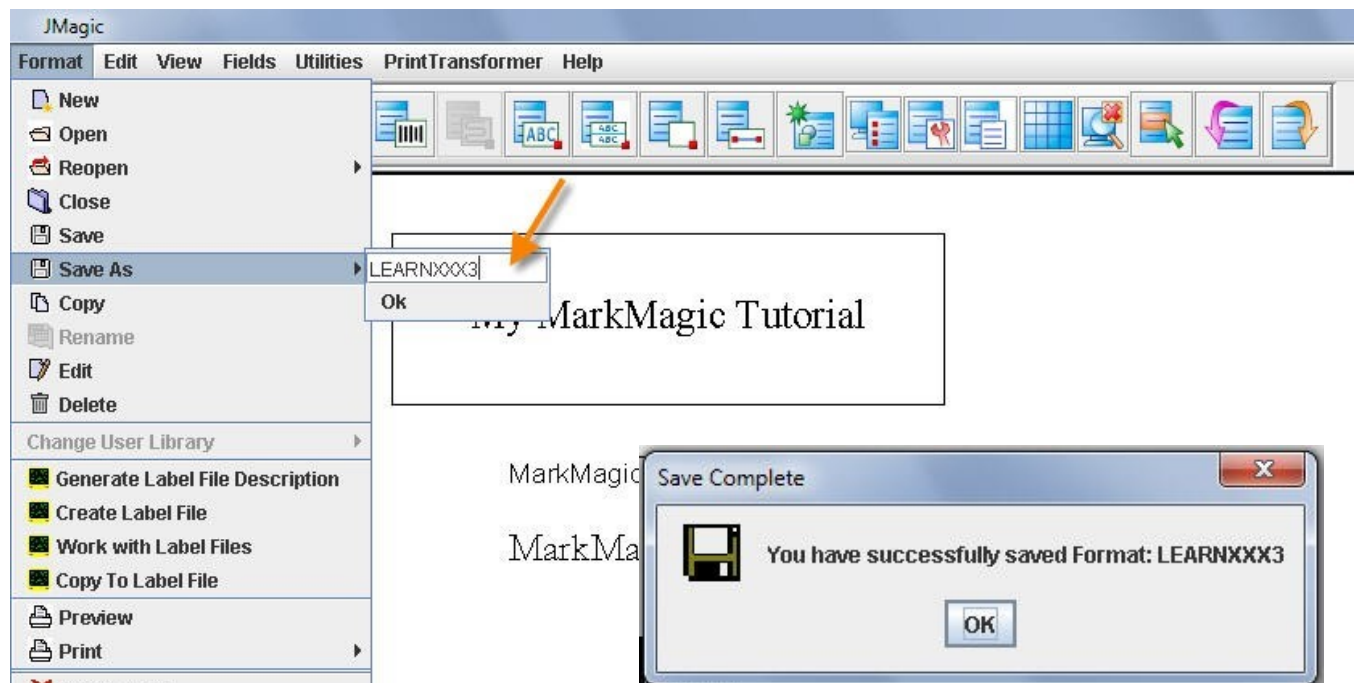
JMagic

Start JMagic and open the format that we made in the first tutorial by going to *Format* and then *Open*. Or you can simply click the *Open Format* button.

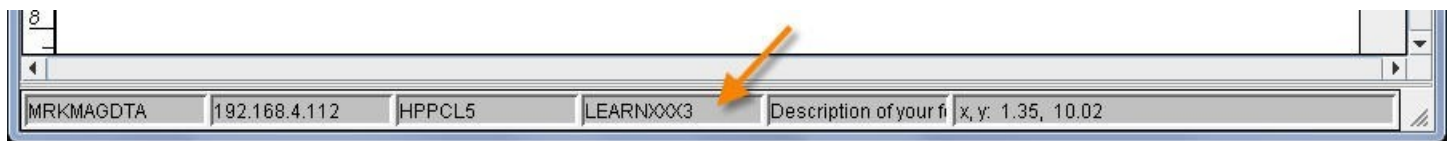


On the *Choose a Format* window, click **HPPCL5** and then choose your existing **LEARNXXX** format to open

it. We will use the new “Save As” feature in JMagic to save your original format with a new name. This will result in a new version of the format that we can modify in this tutorial leaving the original intact. With your original format open, click *Format* and then *Save As*. Type **LEARNXXX3** as the new name and click Ok.



You will get a message stating the save was complete. You will also notice that the format name has changed in the information bar at the bottom of the format. Any changes you make from here will be made on your new **LEARNXXX3** format.

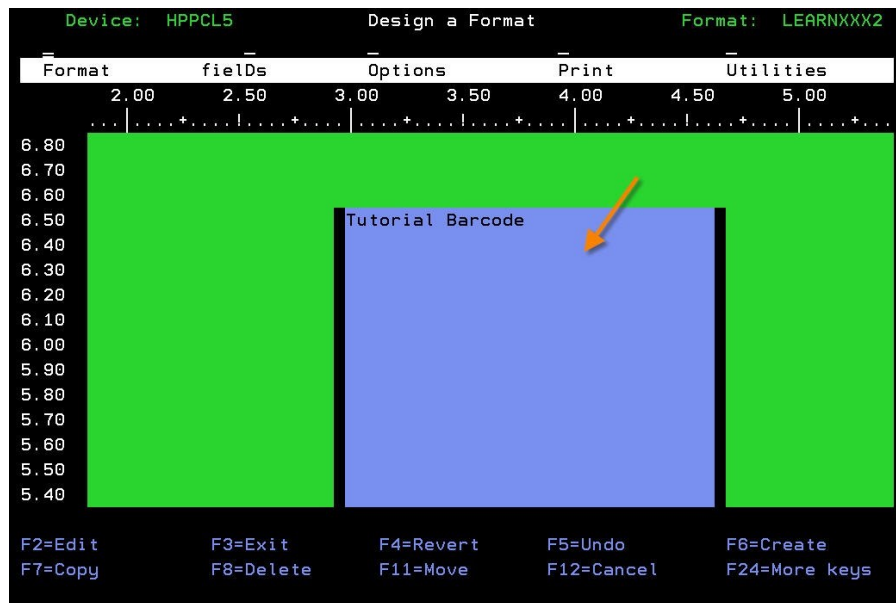


Deleting a Field

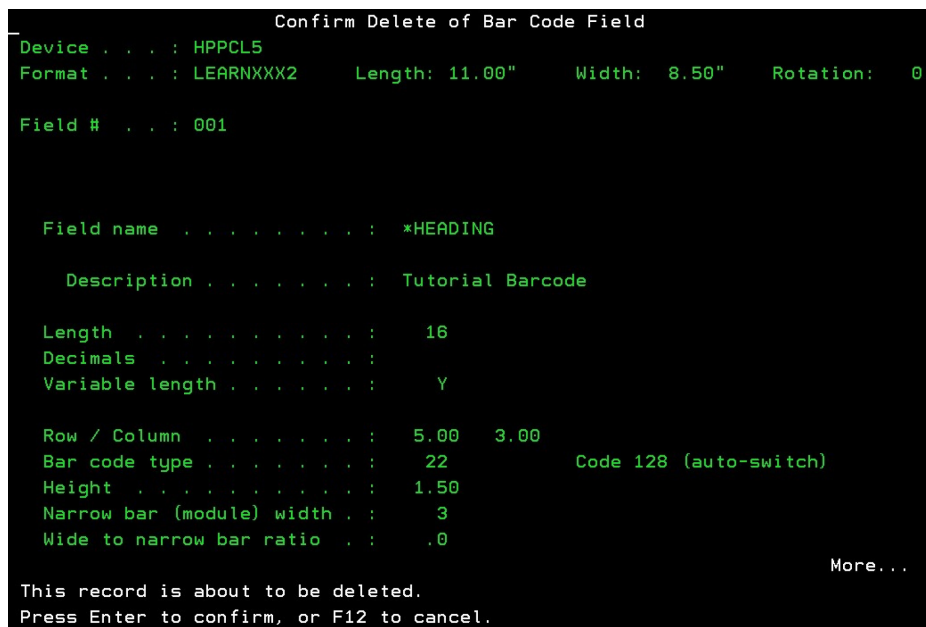
You will be using the space between the two lines on your format to add new variable text and barcode fields. There is a large barcode in the way though, so you are going to delete it to make way for your new fields.

MarkMagic

Start MarkMagic and open your newly copied **HPPCL5/LEARNXXX3** format. Press the *PageUp* and/or *PageDown* keys to scroll the format up and down. Locate the barcode on your format. (Remember, to view left or right, you can Press **F19** or **F20**.)



Place your cursor anywhere inside of the box that represents the barcode and press F8. You will be told that the field is about to be deleted. Press ENTER to conform and delete the field.

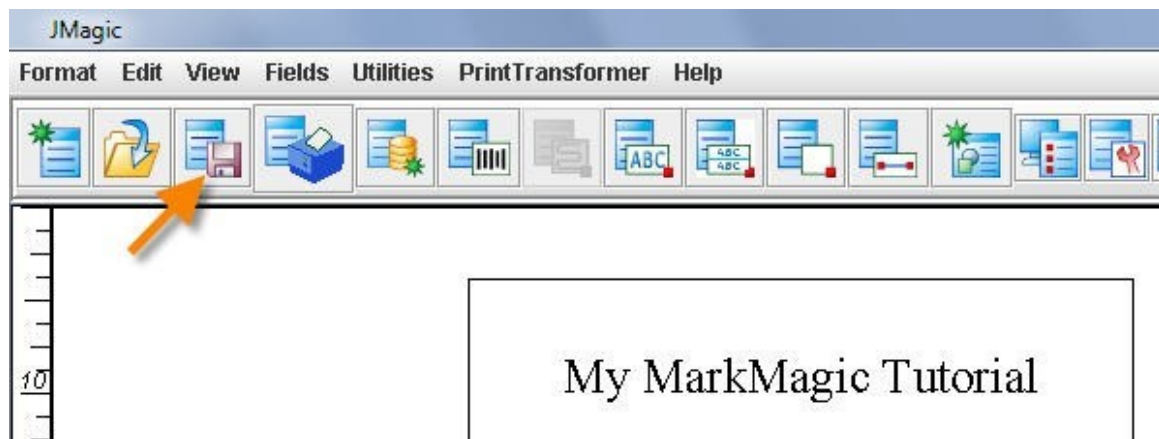


JMagic

Using your mouse, click on the barcode field to select it. You should see the red selection handles in the corners of the barcode field. To delete the field, simply press the Delete key on your keyboard. You will be asked to confirm the deletion. Click **Yes** to accept. The barcode field is removed from the canvas.



NOTE: When editing in MarkMagic (green screen), changes are saved immediately when deleting/editing fields, but in JMagic they are not. You must click the Save icon at the top for the changes to be saved back to your System i.



Adding New Fields

You will be designing the format seen on the following page. All of the fields that you see in between the horizontal lines contain variable data retrieved from a spooled file. You will be using a spooled file that contains five pages of a sample statement. Once again, the steps are numbered so you can skip ahead to the explanations if you wish.

NOTE: Once in the MarkMagic design screen, you may not be able to view your entire format on the screen. You can scroll the format up and down with the PageUp and PageDown keys. You can scroll the format left and right using F19 (Shift+F7) and F20 (Shift+F8).

NOTE: When adding fields, MarkMagic provides coordinate, length and height values, etc. based off where you had your cursor on the screen at the time. You

will override these values in most of the steps in this tutorial to ensure that lines, text fields, etc are placed exactly where you want.

JMagic takes it one step further and provides a “WYSIWYG” (What you see is what you get.) view. This lets you see what the format will look like before you print it.

IMPORTANT: The example spooled file is not shipped with MarkMagic, you must create it. Doing so is very simple. At the MarkMagic main menu, press F9 for a command line. Type: **CALL STATEMENTS** and press ENTER. You will not receive any confirmation. A two page spooled file will be placed in an output queue called **MMEXQ** located in library **MMEXAMPLES**. The name of the spooled file will be **QSYSPRT** with user data **STATEMENTS**. Also note that, depending on which version of MarkMagic you are running, the spool file contents (customer names, number of detail lines and pages) might be different than what you see here in the screenshots.

My MarkMagic Tutorial

MarkMagic tutorial line one.

MarkMagic tutorial line two.

No Pane No Gain

2/14/2007	12345	Invoice	823.15	823.15
3/10/2007	25345	Invoice	1,080.00	1,903.15

1



Made by: Your Name

#1 – Variable Text Fields: Non-linked

There are two basic ways to print variable information retrieved from a spooled file. This section describes how to pass data directly to a MarkMagic text field. In the following sections, we will go over how to use a MarkMagic Data field combined with a *LINK field to print the information.

MarkMagic

Place your cursor on the green design screen in the general area where the first letter of *Windows For Less* would be. Press **F6** and add a text field. Previously, you left the *Field Name* *HEADING, but now you must prompt (**F4**) this field. You will be shown the *List Field Options* window.

```

List Fields Options

Field type . . . . . 3  1=Database fields
                        2=Format fields
                        3=Spooled File

Database file . . . _   Name, F4 for list
Library . . . . *USRLIB   Name, *USRLIB, *LIBL,
                        F4 for list

F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel
```

This is the window you use to tell MarkMagic the type and location of the file you want to retrieve information from. Type **3** for *Spooled File*. Press ENTER to accept. The *Display Spooled Files* screen is shown. Press ENTER to see your spooled files.

```

Display Spooled Files

Type choices, press Enter.

Select files for:
  User . . . . . *CURRENT__ Name, *CURRENT, *ALL
  Print device . . . . . *ALL__ Name, *ALL, *OUTQ
  Form type . . . . . *ALL__ Form type, *ALL, *STD
  User data . . . . . *ALL__ User data, *ALL

F3=Exit    F5=Refresh    F12=Cancel

```

You will be shown a list of spooled files created under your user name. Find QSYSPRT with STATEMENTS and the “user data”. Place a 1 next to it, meaning you want to use that file. Press ENTER and the spooled files specific information is displayed.

```

Select a Spooled File

Type option, press Enter.
  1=Select    3=Copy to PC file    5=Display    8=Attributes

Opt File      User      Device      Usr-data      Pages
=  QSYSPRT    KWH      MMEXQ      STATEMENT      5

F3=Exit    F5=Refresh    F11=View    F12=Cancel
Bottom

```



```

Select a Spooled File

Type choices, press Enter.

Spooled file . . . . . QSYSPRT      Name
Job name . . . . . QPADEV0013      Name, *
User . . . . . KWH                  Name
Number . . . . . 331351             000000-999999
Spooled file number . . . . . 000001 1-999999, *ONLY, *LAST

F3=Exit    F5=Refresh    F12=Cancel

```

Write this information down or save it on your PC as a text file. You will need this information later when you print. After saving this information, press ENTER. You will be brought to the MarkMagic spooled file viewer. As noted earlier, the data you may see on the first “page” of the sample spool file might be different than shown in the screenshots. All steps can still be followed exactly as described in the tutorial, though.

```

File: QSYSPRT      Number: 00000      Job: QPADEV0011/KWH/332934      1
*...+...1...+...2...+...3...+...4...+...5...+...6...+...7...
1
2      No Pane No Gain      10050
3      34-22-36 Jackla Lane
4      Los Angeles
5      CA 54532-1540      4/14/2010
6
7
8
9      2/14/2007      12345      Invoice      823.15      823.15
10     3/10/2007      25345      Invoice      1,080.00      1,903.15
11
12
13
14
15
16
17
18
19
F3=Exit    F5=Refresh    F6=New splf    F7=Next page    F8=Prev    More...
F12=Cancel  F17=Top      F18=Bottom    F19=Left      F20=Right
Select field by moving the cursor to begining of data & press Enter.

```

This is where you will select the field to map. The company name is designed to always appear starting at Row 2 / Column 11. The name never extends past Column 35 on any spool file page. Place your cursor on the W and press ENTER. Move your cursor over to Column 35 and press ENTER again. You will see your mapped field highlighted.

```

File: QSYSPRT      Number: 00000      Job: QPADEV0011/KWH/332934      1
*...+...1...+...2...+...3...+...4...+...5...+...6...+...7...
1
2      No Pane No Gain      10050
3      34-22-36 Jackla Lane
4      Los Angeles
5      CA      54532-1540      4/14/2010
6
7
8
9      2/14/2007      12345      Invoice      823.15      823.15
10     3/10/2007      25345      Invoice      1,080.00      1,903.15
11
12
13
14
15
16
17
18
19
F3=Exit      F5=Refresh      F6=New splf      F7=Next page      F8=Prev      More...
F12=Cancel      F17=Top      F18=Bottom      F19=Left      F20=Right
Data was successfully selected, press Enter to continue or F5 to refresh.

```

The idea with this “mapping” method is any data that appears in that area of your spooled file, on any page, will be retrieved by MarkMagic. Press ENTER and you will be brought back to the *Work With Text Field* screen. MarkMagic automatically gives the field a unique name. You can change this name to anything you want, though. Set the field name to **CUSTNAME** and description to **Customer Name**. The important part is that there are positive values entered for *Spool line/column* if you Page down twice.

```

Work with Text Field
Device . . . . : HPPCL5
Format . . . . : LEARNXXX3      Length: 11.00"      Width: 8.50"      Rotation: 0
Field # . . . . : 015
Name . . . . . : @SPLTXT015      Description: Windows for Less
Type choices, press Enter.
Prompt . . . . . N      Y/y=Yes, K/k=Key, N=No
Keyed file . . . . .      Name, F4 for list
Library . . . . . *LIBL      Name, *LIBL, *USRLIB
Prompt program . . . . . *NONE      Name, *NONE
Library . . . . . *LIBL      Name, *LIBL, *USRLIB
Spool Line / Column . . . . . 2 11      1 - 255 / 1 - 378
Bottom
F3=Exit      F4=Prompt      F5=Refresh      F12=Cancel

```

Page back up and change the *Row / Column* to **7.00** and **1.00** respectively. Also change *Points* to **20**. Press ENTER twice to create your first spooled file text field. Next, you will create the group of detail lines that appear below the company name on the sample format above.

Place your cursor in the general location of the beginning of the first detail line and add a new text field. Prompt the name and make sure **3** (spooled file) is still selected. Press ENTER and you will notice that MarkMagic takes you right to the spooled file viewer. (Remembers the spool file that you used before.)

Place your cursor on the first character of the first detail line and press ENTER. Move all the way to the last character on the line and press ENTER again.


```

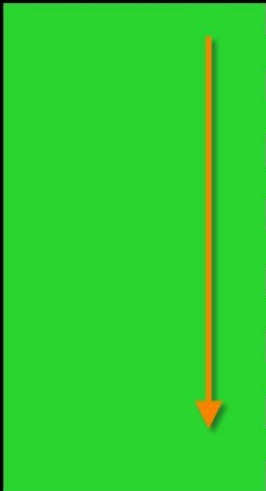
Copy a Field

Number of copies . . . . . 9      1 - 99
Vertical offset   . . . . . 20-
Horizontal offset . . . . . 0
Spool line offset . . . . . 1      1 - 10
Spool column offset . . . . 0      1 - 10

F5=Refresh      F12=Cancel

```

You want to make **9** copies of the line (for a combined total of 10 detail lines). *Vertical offset* will be set to **20-**. This value represents hundredths of an inch and is negative so this means “down .2 inches”. You do not want to offset the field horizontally, so set that to **0**. The **1** for *Spool line offset* means MarkMagic will map one *row* lower in the spooled file for each new copied field. You do not want a Spool column offset so set that to **0**. (The start position of the data in the spooled file does not move horizontally from row to row.) Press ENTER and your 9 copies will be made. All 10 detail lines in the spooled file are now mapped.

Device: HPPCL5		Design a Format		Format: LEARNXXX3		
Format		fields	Options	Print	Utilities	
0.50		1.00	1.50	2.00	2.50 3.00 3.50	
.....+.....!.....+.....	+.....!.....+.....	+.....!.....+.....		
6.10						
6.00						
5.90						=DETAIL03
5.80						=DETAIL04
5.70						=DETAIL05
5.60						=DETAIL06
5.50						=DETAIL07
5.40						=DETAIL08
5.30						=DETAIL09
5.20						
5.10						
5.00						
4.90						
4.80						
4.70						
F2=Edit F3=Exit F4=Revert F5=Undo F6=Create						
F7=Copy F8=Delete F11=Move F12=Cancel F24=More keys						

JMagic

Click the *Create a Text Field* button at the top and then click on your form in the general location where the “W” in *Windows For Less* would be. You will be presented with the familiar *Create a New Text Field* window. Previously, you created constant text fields by leaving the *Field Name* as ***HEADING**. Now you must press the *Browse* button.

The screenshot shows the 'Create A New Text Field' dialog box. The 'Properties' tab is selected. The 'Field Name' dropdown is set to '*HEADING'. An orange arrow points to the 'Browse...' button next to it. The 'Field #' is set to 5. The 'Description' field is empty. The 'Positioning Properties' section shows 'Row' at 6.94" and 'Column' at 1.43". The 'Attributes' section shows 'Length' at 1, 'Decimals' at 0, and 'Variable Length' set to 'Yes'. The 'Font' section shows 'Font' as '20 Times' and 'Point' as 12. The 'Format' section at the top shows 'Name' as 'LEARNXXX3', 'Length' as 11.0", 'Width' as 8.5", 'Description' as 'Description of your format', and 'Rotation' as 0°.

The *Select a Field* window will be shown. This is the window you use to tell JMagic the type and location of the file you want to retrieve information from. Click on the *Spooled File* tab and then click on *Browse*.

Select a Field

Format Database Field **Spooled File**

Spooled File **Browse...** User *CURRENT

Name Number

Job Name Job Number

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OK Cancel Help

You will be shown a list of spooled files under your user name. Find QSYSPRT with STATEMENT in the “user data”. Click on it and then click OK.

Select A Spooled File

Name	Number	Job User	Job Name	Job Number	Date	User Data
QSYSPRT	1 KWH	QPADEV0011	332092	20100406	STATEMENT	

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OK Cancel Help

You will be brought back to the *Select a Field* screen. The spooled file information is now entered into the fields for you. Write this information down or save it on your PC as a text file. You will need this information later when you print. After saving this information, click OK. You will be brought to the JMagic spooled file viewer.

Spooled File Viewer

Field Name Length Spool Line Page Number Total Pages

= Desc: Spool Column

No Pane No Gain				10050
34-22-36 Jackla Lane				
Los Angeles				
CA 54532-1540				4/06/2010
2/14/2007	12345	Invoice	823.15	823.15
3/10/2007	25345	Invoice	1,080.00	1,903.15

Spooled File Number User

Job Name Job Number

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This is where you will select the area of the spool file line to map over. The company name will always start at the same spot. The name never extends more than 25 characters. Click and hold your mouse on the *W* and drag to the right, highlighting the entire name and a few extra spaces.

Spooled File Viewer

Field Name @SPLTXT005 Length 27 Spool Line 2 Page Number 1 Total Pages 5

= Desc: No Pane No Gain Spool Column 11

No Pane No Gain 10050
 34-22-36 Jackla Lane
 Los Angeles
 CA 54532-1540 4/06/2010

2/14/2007	12345	Invoice	823.15	823.15
3/10/2007	25345	Invoice	1,080.00	1,903.15

Spooled File QSYSPRT Number 1 User KWH Map All

Job Name QPADEV0011 Job Number 332092 Change Spooled File

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Any data that appears in that area of your spooled file, on any page, will be processed by MarkMagic. Click OK and you will be brought back to the *Create a New Text Field* screen.

JMagic automatically generates a unique field name. You can change the name to anything you want, though Set the *Field name* to **CUSTNAME** and *Description* to **Customer Name**. The important part is that there are positive values entered for *Spool line/column* check on the *Display* tab.

The screenshot shows the 'Create A New Text Field' dialog box with the 'Device' tab selected. The 'Format' tab is also visible, showing fields for Name (LEARNXXX3), Description (Description of your format), Length (11.0\"), Width (8.5\"), and Rotation (A 0°). The 'Properties' tab is active, showing fields for Name (HPPCL5), Description (.5 & Compatible), Length (11.0\"), Width (8.5\"), and Rotation (A 0°). The 'Field Increment' section has 'Increment Type' set to 'Ascending' and 'Increment Value' set to 0. The 'Spooled Data Position' section has 'Spool Line' set to 2 and 'Spool Column' set to 11, with orange arrows pointing to these fields. The 'Field Prompting' section has 'Key File' set to an empty field, 'Browse...' button, 'Library' set to *LIBL, 'Prompt' set to ^Y Yes, and 'Prompt Program' set to *NONE. The 'Fields Linking to this Field' section shows 0 Field(s). The bottom of the dialog has 'OK', 'Cancel', and 'Help' buttons.

Go back to the *Properties* tab and change the *Row* to **7.0** and the *Column* to **1.0** to position the name in the proper location on the canvas. Change the *Points* to **20**. Click OK to create your new spooled file text field. Next, you will create the group of detail lines that appear below the company name on the sample format above.

Add a new text field just below the company name you just made. Click *Browse* and make sure you are still on the *Spooled File* tab. JMagic remembers the file details, so click OK to open the spooled file viewer again. Click on the first character of the first detail line and drag your mouse all the way to the last character and let go. Also notice the orange highlighted area at the top. JMagic will let you know what has already been mapped. Orange means it is a mapped *text* field.

Spooled File Viewer

Field Name: @SPLTXT006 Length: 68 Spool Line: 9 Page Number: 1 Total Pages: 5

= Desc: 2/14/2007 12345 Invoice Spool Column: 4

No Pane No Gain 10050

34-22-36 Jackla Lane

Los Angeles

CA 54532-1540 4/06/2010

2/14/2007	12345	Invoice	823.15	823.15
3/10/2007	25345	Invoice	1,080.00	1,903.15

Spooled File: QSYSPT Number: 1 User: KWH Map All

Job Name: QPADEV0011 Job Number: 332092 Change Spooled File

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Click OK and you will be brought back to the *Create a Text Field* window. Change the “@SPLTXT” name to **DETAIL** and also change the *Description* to **Detail Line**. Next, change the *Row* to **6.5** and the *Column* to **1.0**. Also, in the pull-down menu for *Font* choose **27 Courier**. Click OK to add your first detail line.

Edit A Text Field

Device Name: HPPCL5 Description: .5 & Compatible

Format Name: LEARN00X3 Length: 11.0" Width: 8.5" Description: Description of your format Rotation: A 0°

Properties Font Display

Name and Description

Field Name: DETAIL Field #: 6

Description: Detail line

Positioning Properties

Row: 6.5" Column: 1.0"

Attributes

Length: 68

Decimals:

Variable Length: ☒ Yes ☐ No

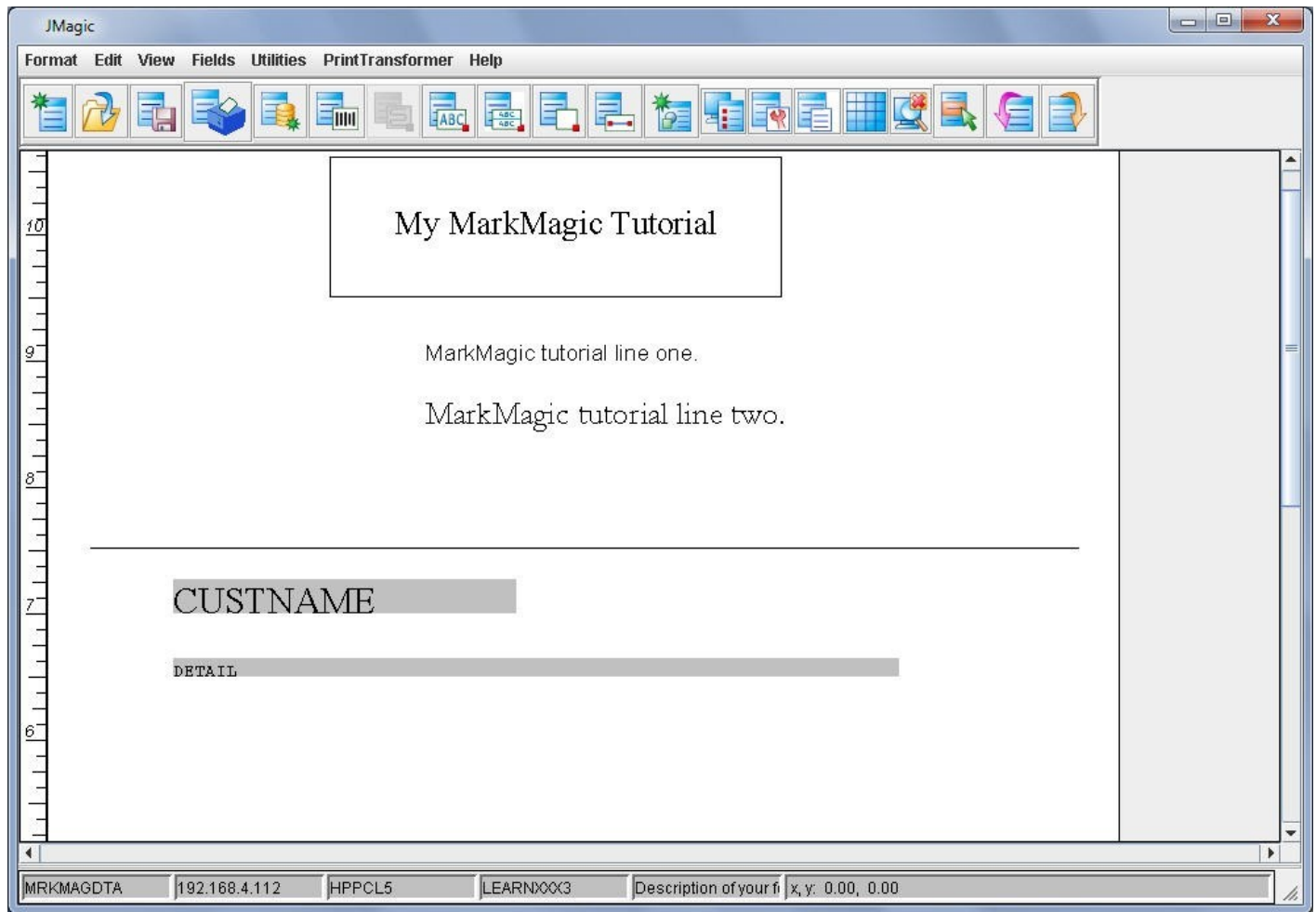
Font

Font: 27 Courier Point: 12

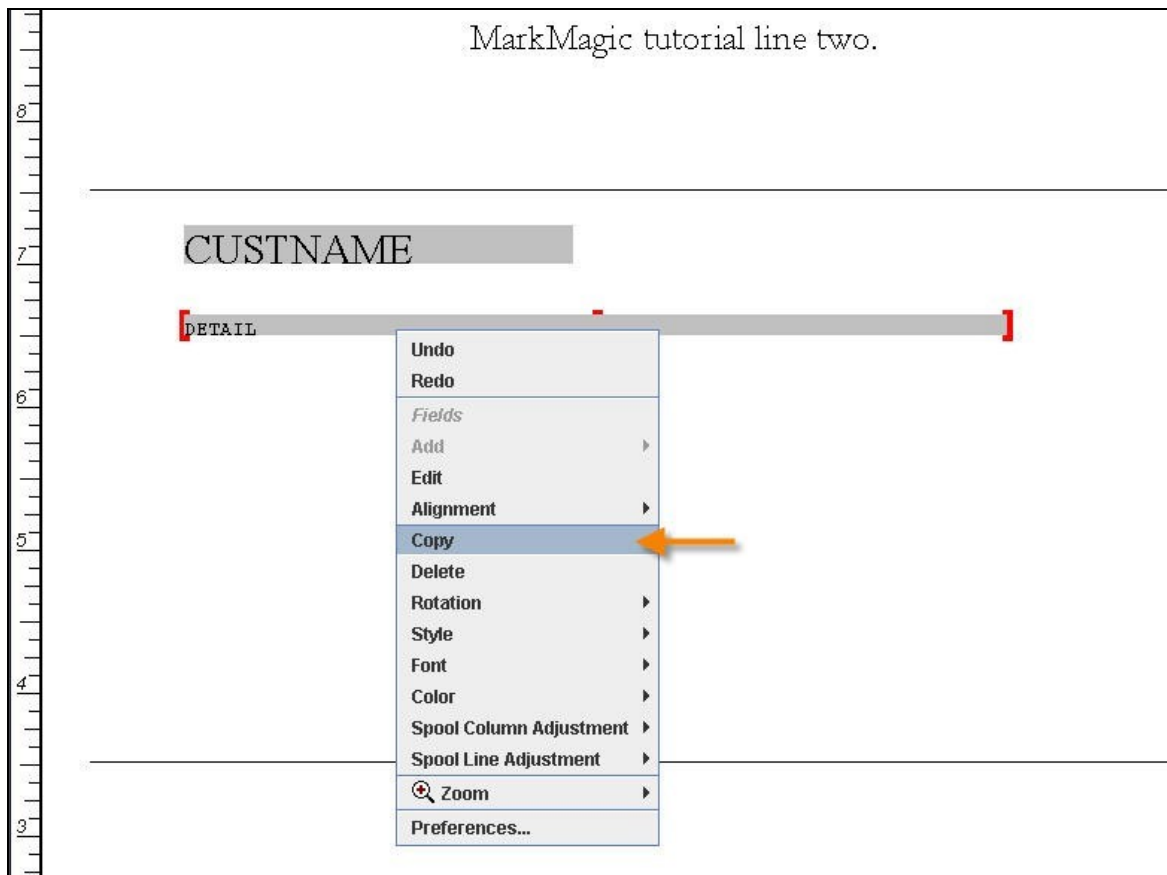
Usage

Usage: 00 NONE

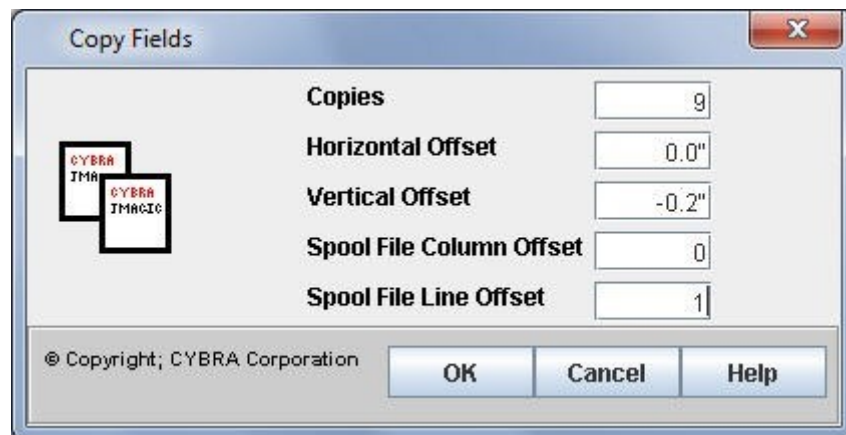
© Copyright; CYBRA Corporation; 2009; All Rights Reserved OK Cancel Help



Since there are never more than 10 details lines in the example spool file, you will want to make 9 more of these detail lines, each mapping the next line down in the spooled file. Sure, you could create a whole new text field from scratch for each new detail line and manually place them at different row positions. That would take too much time. You can avoid all of this by using the *Copy* function. JMagic can copy one field multiple times offsetting each field a specific amount. Each new field will inherit the settings of the original field (font, point size, style, etc.) Click on the detail line that you just made so it has the red selection boxes surrounding it. Next, right-click on the field and click *Copy*.



Your cursor will turn into a “+” symbol indicating that JMAGIC wants you to click on the format where you want the copy to be placed. Click just below the selected detail text field. The *Copy Fields* dialogue box is shown.



Since there is never more than 10 detail lines in the spool file, you should make **9** copies of the line (for a total of 10 lines). You do not want to offset each new field horizontally, so set that to **0**. *Vertical offset* will be set to **-.2**". This value is negative so this means “down .2 inches”. You do not want JMAGIC to change the column value for the spooled file mapping, so set *Spool column offset* to **0**. (The spooled file data always starts on the same column for each row of data.) The **1** for *Spool line offset* means JMAGIC will map one *row* lower in the

spooled file for each copied field. Press ENTER and your 9 copies will be made. All detail lines in the spooled file are now mapped.

The screenshot displays a spooled file layout. At the top, there are two lines of text: "MarkMagic tutorial line one." and "MarkMagic tutorial line two." Below these is a horizontal line. Underneath the line is a header section with the label "CUSTNAME" followed by a grey rectangular field. Below the header is a detail section consisting of a list of labels: "DETAIL", "DETAIL001", "DETAIL002", "DETAIL003", "DETAIL004", "DETAIL005", "DETAIL006", "DETAIL007", "DETAIL008", and "DETAIL009". Each label is followed by a grey rectangular field. A vertical ruler on the left side of the page indicates line numbers from 4 to 9.

Click the save icon at the top left to save your work.

#2 - Variable Text Fields: **LINK Barcode Field*

In many design scenarios, you would want to display the same bit of information more than once on a format and in more than one fashion (i.e.: a barcode with human readable text below it.). Using the method explained in Step #1, you would have to create two fields each with a different field name, but you would have map the same area of your spooled file twice. Obviously, this creates unnecessary extra work.

MarkMagic **LINK* fields extend MarkMagic formatting options by adding the capability to define a variable field *once*, and have that same data appear in multiple fields on a format, each edited and formatted differently if need be. You can link a text field to another text field for example, but the preferred method is to use *Data* fields.

A MarkMagic Data field is a placeholder — a temporary “bucket” to put information for further processing. A

Data field is a *non-printing* field that can have any of these MarkMagic special field names: *HEADING, *DATE, or *TIME, or an OS/400 database fieldname. Just like a Text field or a Bar code field, a MarkMagic Data field can contain constant or variable data.

A *LINK field can be composed of portions of different fields and can merge information from multiple bar code, data, or text fields. *LINK fields enable printing of one bar code or text field from multiple sources of data. To see a good example of this, please reference #2 – *Variable Text Fields: *LINK Fields* in the “*Variable Data Retrieved From a Database*” tutorial.

This tutorial will show you how to create a simple linked barcode and text field.

MarkMagic

You are going to add your Data field first. You can add it just like any other field. Since they are non-printing it doesn't matter where you add them, so place your cursor somewhere on the design area and press **F6** and then **D** for data. You will be presented with the *Work With Data Field* screen.

```
Work with Data Field
Device . . . . : HPPCL5
Format . . . . : LEARNXXX2   Length: 11.00"   Width: 8.50"   Rotation: 0
Field # . . . . : 007

Type choices, press Enter.

Field name . . . . . *HEADING   Name, *HEADING, *DATE, *TIME,
                                   F4 for list of fields
Description . . . . . _____

Length . . . . . _____   1 - 3000
Decimals . . . . . _____   0 - 9

Increment type . . . . . I       I=Incr, D=Decr, *=Seq reference
Increment value . . . . . _____   0 - 999

F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   More...
```

Since it is non-printing, you'll notice that there are no coordinate values or fonts to choose. You just need to tell MarkMagic that this is going to be a variable data field. Do this just like you did with the variable text field. Prompt the *Field name* and **3** should still be selected. Press ENTER and MarkMagic will take you directly to the spooled file viewer. You are going to map the number in the top right-hand corner. Place your cursor on the first position of the number and press ENTER. Move to the last number and press ENTER again. You will see the complete number highlighted. Notice, also, that MarkMagic displays the fields that are already mapped.

File: QSYSPRT Number: 00000 Job: QPADEV0011/KWH/332934 1

*...+...1...+...2...+...3...+...4...+...5...+...6...+...7...

1
2 No Pane No Gain 10050
3 34-22-36 Jackla Lane
4 Los Angeles
5 CA 54532-1540 4/14/2010
6
7
8

9	2/14/2007	12345	Invoice	823.15	823.15
10	3/10/2007	25345	Invoice	1,080.00	1,903.15
11					
12					
13					
14					
15					
16					
17					
18					
19					

F3=Exit F5=Refresh F6=New splf F7=Next page F8=Prev More...
F12=Cancel F17=Top F18=Bottom F19=Left F20=Right
Data was successfully selected, press Enter to continue or F5 to refresh.

Press ENTER to accept the selection. You will be brought back to the *Work With Data Field* screen. MarkMagic, again, gives the variable spool file field a new name. Change the *Field name* to **CUST#** and changed the *Description* to **Customer Number**. Press ENTER twice to accept your new data field. You should now see a +DATA in the top left hand corner. This flag lets you know that your format contains data fields.

Device: HPPCL5

Format	fields
+Data	0.50 1.00
11.00	
10.90	
10.80	
10.70	
10.60	

Place your cursor just below the last detail line you made earlier with the copy command. Add a new **Standard** barcode field. The key here is to make the field name ***LINK**. Doing this will unlock the *Work with *LINK Source Fields* screen. You must *Page Down* 3 times to get to it.

```

Work with *LINK Source Fields

Device . . . : HPPCL5
Format . . . : LEARNXXX2      Length: 11.00"      Width:  8.50"      Rotation:  0

Link field . : Text  010      Description . . :

Type option, press Enter.
  2=Change      4=Delete      5=Display

Opt  Order  Type  Fld Name      Description      Start Length

F3=Exit      F5=Refresh      F6=Add      F10=View 2      F12=Cancel
There are no links for this field. Press F6 to add a source field.
Bottom

```

Press F6 to add a source field. You will be presented with a list of fields that have already been added to your format. The data field you just made should be listed at the top. Place your cursor on the Data field and press ENTER. You will be brought to the *Add a Source Field* screen.

```

Work with *LINK Source Fields

Device . . . : HPPCL5
Format . . . :
Link field . :
Type option, 2=Change

Opt  Order  T  Type  Fld Name      Description      Length
-----
  → Data  001  CUST#      Customer Number      5  v
    Text  001  *HEADING    My MarkMagic Tutorial      22
    Text  002  *HEADING    MarkMagic tutorial line one. 28
    Text  003  *HEADING    MarkMagic tutorial line two. 28
    Text  004  *HEADING    Made by: Your Name      18
    Text  005  CUSTNAME    Customer Name      25  v
    Text  006  DETAIL      Detail Line      68  v
    Text  007  DETAIL01     Detail Line      68  v
                                More...

F3=Exit      F4=Prompt      F12=Cancel      F21=Select range

F3=Exit      F
There are no

```

At this screen, you decide whether you want to link the *whole* source field or link to just a segment of it,

(substring). You would like to encode the entire number, so set the *Start position* to **1** and *Length* to **5**. (These values should already be present; MarkMagic always starts by linking the whole field.) Press ENTER twice to accept your settings. You will see your new source field added to the list.

```

                                Add a Source Field

Device . . . : HPPCL5
Format . . . : LEARNXXX3      Length: 11.00"      Width:  8.50"      Rotation:  0

Link field . : BarCd 001      Description . . :

Link to:
  Field type / number . . . : Data 001
  Field name . . . . . : CUST#
  Description . . . . . : Customer Number
  Length . . . . . : 5

Type choices, press Enter.

Start position . . . . . = 1 Number
Length . . . . . = 5 Number
Variable length . . . . . N Y=Yes, N=No
Edit code . . . . . _ F4 for list
Check digit . . . . . 0 F4 for list

F3=Exit      F4=Prompt      F5=Refresh      F12=Cancel
  
```

```

                                Work with *LINK Source Fields

Device . . . : HPPCL5
Format . . . : LEARNXXX3      Length: 11.00"      Width:  8.50"      Rotation:  0

Link field . : BarCd 001      Description . . : Customer Number

Type option, press Enter.
  2=Change      4=Delete      5=Display

Opt  Order  Type  Fld  Name      Description      Start Length
=    10     Data  001  CUST#     Customer Number      1      5

F3=Exit      F5=Refresh      F6=Add      F10=View 2      F12=Cancel

                                Bottom
  
```

Page back up (do not use F12 or you will lose your link) three times to the *Work With Barcode* screen again and set the *Row / Column* to **4.0** and **3.00**. Also, set the *Barcode type* to **22**, *Height* to **.50** and *Narrow bar width* to **3**. Press ENTER twice to create your new barcode.

```

Work with Bar Code Field

Device . . . . : HPPCL5
Format . . . . : LEARNXXX3      Length: 11.00"      Width: 8.50"      Rotation: 0

Field # . . . . : 001

Type choices, press Enter.

Field name . . . . . *LINK_____ Name, *HEADING, *LINK, *CALC,
                               *SEQ, F4 for list of fields

Description . . . . . _____

Length . . . . . 5           1 - 50
Decimals . . . . .          0 - 9
Variable length . . . . . Y   Y=Yes, N=No

Row / Column . . . . . 4.00  3.00 .01 - 11.00 / .01 - 8.50
Bar code type . . . . . 22     F4 for list
Height . . . . . .50         .10 - 2.00
Narrow bar (module) width . . 3      1 - 30
Wide to narrow bar ratio . . .    2.0 - 4.0

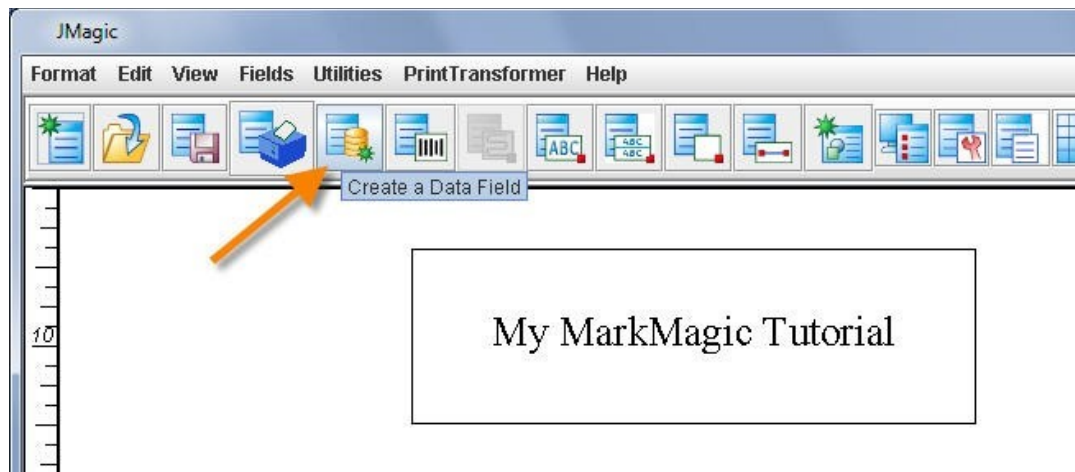
More...

F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel

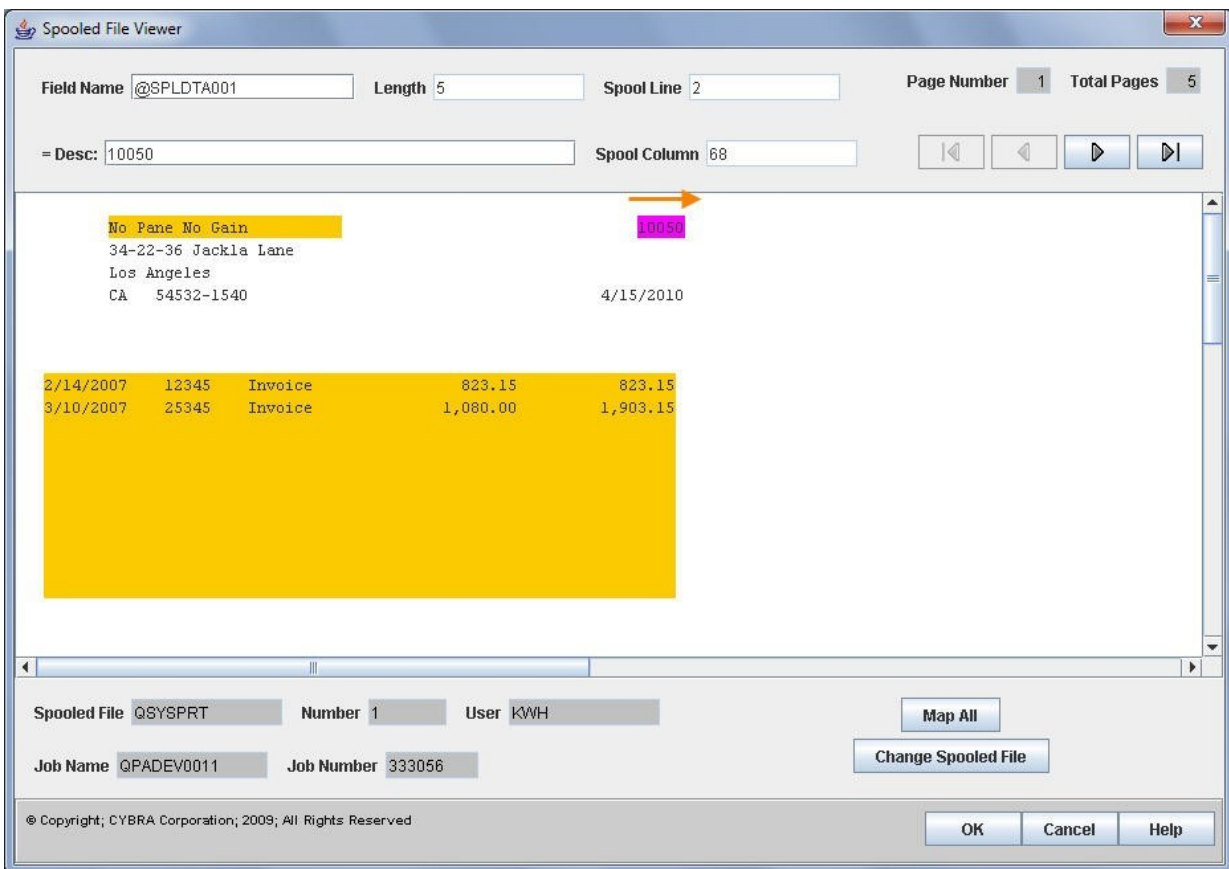
```

JMagic

You are going to add your Data field first. Click the *Create a Data Field* button at the top. The *Create a New Data Field* window appears. Click *Browse* next to the *Field name*. JMagic will remember the spooled file information, so go ahead and hit OK. The *Spooled File Viewer* will be shown.



Click and drag your mouse to highlight the number in the top right-hand area of the spooled file. Notice that JMagic shows you which fields are already mapped. Once the number is highlighted, click OK.



You will be brought back to the *Create a Data Field* window. to create your data field. JMagic gives the new Data field an “@SPL” name. Change the *Field name* to **CUST#** and changed the *Description* to **Customer Number**. Press OK create your new data field.

Create A New Data Field

Device

Name: HPPCL5
Description: .5 & Compatible

Format

Name: LEARNXXX3
Description: Description of your format
Length: 11.0" Width: 8.5"
Rotation: A 0°

Properties | **Settings**

Name and Description

Field Name: CUST# Browse... Field #: 1
Description: Customer Number

Attributes

Length: 5 Decimals:

Field Increment

Increment Type: ☒ Ascending ☐ Descending ☐ Sequence Reference
Increment Value: 0

Usage

Usage: 00 NONE

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OK Cancel Help

Next, click the Add a Barcode button at the top and create a new barcode just below the last detail line that you made earlier. Make sure to choose **22 Code 128 (auto switch)** as the barcode type.

Choose Barcode Type

123456789012

22 Code 128 (auto-switch) ▼

16 JAN-13
17 JAN-13 + 2
18 JAN-13 + 5
19 Code 39
21 Code 93
22 Code 128 (auto-switch)
24 Interleaved 2 of 5
25 Codabar (NW7)

Pull the Field Name menu down and select ***LINK**. (We are going to link this barcode to the Data field we just created.) The Link Fields tab will then become available. Click it to reveal the linking interface. The list on the

left displays all of the available fields already added to your format. Scroll down to the new Data field you just created “CUST#” and then click Insert to add the field to the Linked to Fields list on the right.

Device Name: HPPCL5 Description: .5 & Compatible

Format Name: LEARNXXX3 Length: 11.0" Width: 8.5" Description: Description of your format Rotation: A 0°

Properties Display Settings **Link Fields**

Current Field

Link Field	Type	Field #	Length	Field Name	Description
		1	1	*LINK	

Link Properties

Options: ☒ OFF ☐ Sort ☐ Search

Source Fields: 16 Field(s)

- Text 6 DETAIL Detail Line
- Text 7 DETAIL01 Detail Line
- Text 8 DETAIL02 Detail Line
- Text 9 DETAIL03 Detail Line
- Text 10 DETAIL04 Detail Line
- Text 11 DETAIL05 Detail Line
- Text 12 DETAIL06 Detail Line
- Text 13 DETAIL07 Detail Line
- Text 14 DETAIL08 Detail Line
- Text 15 DETAIL09 Detail Line
- Data 1 CUST# Customer Number

Linked To Fields: 1 Field(s)

- Data CUST# Customer Number

Link To Field

Type: Text Field #: 5

Name: CUSTNAME

Description: Customer Name

Length: 25 Decimals:

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OK Cancel Help

Click back to the *Properties* tab so we can force the barcode to a position that we want. Set the *Row* to **4.0**, set *Column* to **3.0**. Since we already chose **22 Code 128 (auto-switch)** for *Bar code type*, it will already be chosen for us at the bottom.

Edit A Bar Code Field

Device
 Name: HPPCL5
 Description: .5 & Compatible

Format
 Name: LEARNXXX3
 Length: 11.0" Width: 8.5"
 Description: Description of your format
 Rotation: A 0°

Properties | **Display** | **Settings** | **Link Fields**

Name and Description
 Field Name: *LINK Field #: 1
 Description:

Positioning Properties
 Row: 4.0" Column: 3.0"

Attributes
 Length: 5
 Decimals:
 Variable Length: ☒ Yes ☐ No


Bar Code Type
 Bar code Type: 22 Code 128 (auto-switch)

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There are two more settings to change and they can be found on the *Display* tab. Set the *Height* to **.5** and *Narrow Bar Width* to **3**. Click OK to create your linked barcode field.

Edit A Bar Code Field

Device		Format		Length	Width
Name	HPPCL5	Name	LEARNXXX3	11.0"	8.5"
Description	.5 & Compatible	Description	Description of your format		

Rotation  0°


Properties **Display** **Settings** **Link Fields**

Appearance


Human Readable 00 No human readable characters ▼


Alignment L Left ▼

Rotation

Rotation  0° 90° 180° 270°

Attributes

Height 0.5" 

Narrow Bar Width 3 

Wide to Narrow Bar Ratio ▼


Number of Columns 0

Number of Mils 10

Spooled Data Position

JMagic


Format Edit View Fields Utilities PrintTransformer Help



8
7
6
5
4
3

CUSTNAME

DETAIL
DETAIL01
DETAIL02
DETAIL03
DETAIL04
DETAIL05
DETAIL06
DETAIL07
DETAIL08
DETAIL09



MRKMAGDTA 192.168.4.112 HPPCL5 LEARNXXX3 Description of your f x, y: 0.00, 0.00

#3 – Variable Text Field: *LINK Field

The last field to be added to the format is a text field placed directly below the barcode. The text will contain the same information that is encoded in the barcode. You will create a text field that is linked to the *same* Data field that the barcode is linked to. This highlights the benefits of using Data fields and the *LINK feature. You only need to map the data once in the spool file and you can print it as many times as you like via *LINK.

MarkMagic

Add a new text field just below the barcode you just made. This text field will be a link field, so name it *LINK. Page down 3 times to the *Work With *LINK Source Fields* screen. Press **F6** and select the same data field that you selected for the barcode.

```

                                Work with *LINK Source Fields

Device . . . : HPPCL5
Format . . . : LEARNXXX3      Length: 11.00"      Width:  8.50"      Rotation:   0

Link field . : Text   016      Description . . : Customer Number

Type option, press Enter.
   2=Change      4=Delete      5=Display

Opt  Order  Type  Fld  Name      Description      Start Length
=    10     Data  001  CUST#      Customer Number      1      5

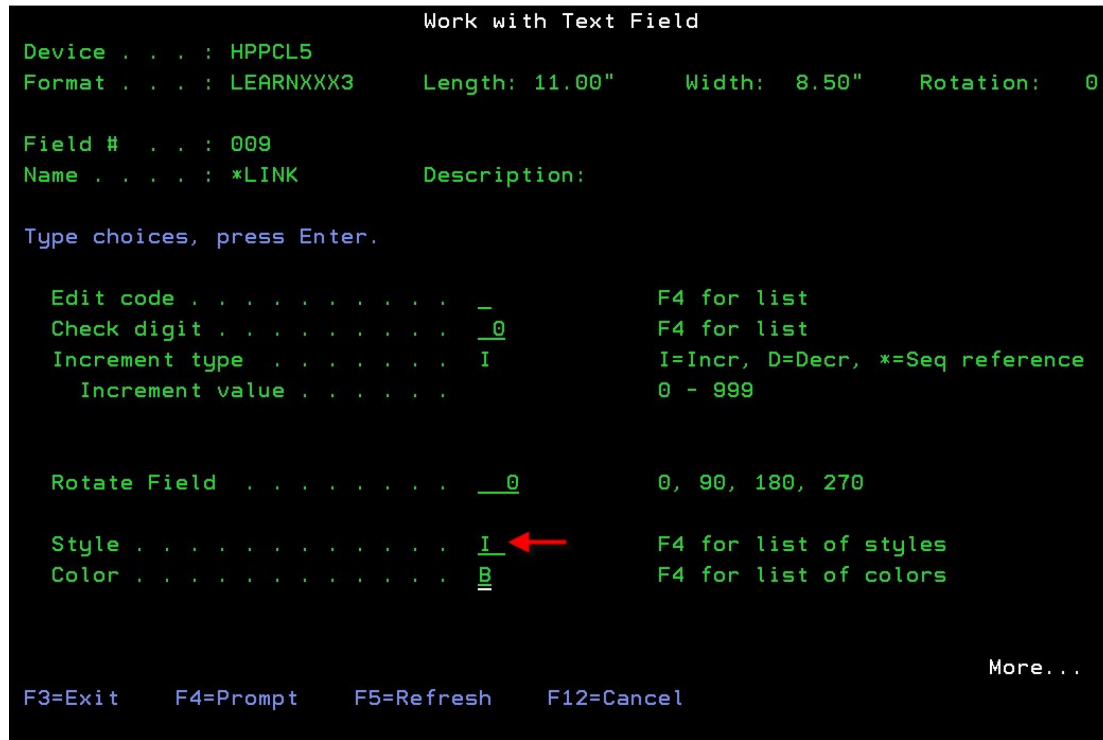
F3=Exit      F5=Refresh      F6=Add      F10=View 2      F12=Cancel

Bottom
```

Page up to the first screen and change the *Row / Column* to 3.70 and 3.00 respectively. Prompt the *Font* field and choose **36 Arial**. Also, set the *Points* to 20.



Page down once and change the *Style* to **I Italic**. Press ENTER twice to create your last field on the format.



JMagic

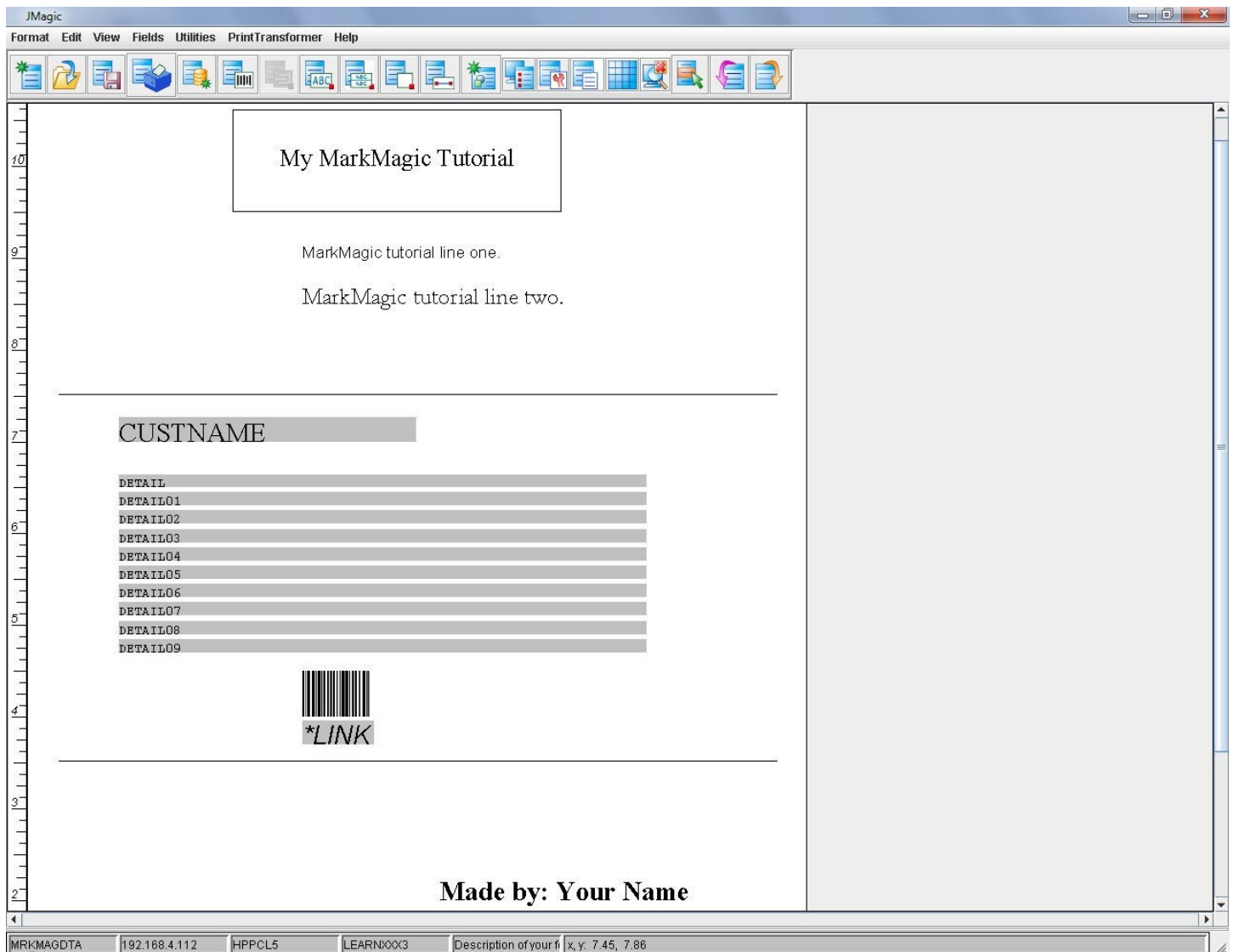
Add a new text field just below the barcode you made. The familiar *Create a New Text Field* window is shown. To tell JMagic that this text field will be a linked field, select ***LINK** from the pull down menu next to *Field name*. The *Link Fields* tab becomes available. Click it to reveal the linking interface. Find the same data field that you used earlier and Insert it to the *Linked to Fields* list on the right.

The **Link Properties** dialog box is shown. On the left, under **Options**, the **OFF** radio button is selected. The **Source Fields: 16 Field(s)** list contains: Text 9 DETAIL03 Detail Line, Text 10 DETAIL04 Detail Line, Text 11 DETAIL05 Detail Line, Text 12 DETAIL06 Detail Line, Text 13 DETAIL07 Detail Line, Text 14 DETAIL08 Detail Line, Text 15 DETAIL09 Detail Line, and Data 1 CUST# Customer Number. An orange arrow points to the **Insert** button. Another orange arrow points to the **Data 1 CUST# Customer Number** entry in the Source Fields list. The **Linked To Fields: 1 Field(s)** list contains: Data CUST# Customer Number. Buttons for **Remove**, **Move Up**, **Move Down**, and **Details** are also present.

Click back to the *Properties* tab and set the *Row* to 3.7 and the *Column* to 3.0. For *Font* choose **36 Arial** from the pull down menu. Change the *Points* to **20**. There is one last formatting change and it is available on the *Font* tab. In the pull down menu for *Style* select **I Italic**. Click OK to create your text field.

The **Font Properties** dialog box is shown with the **Font** tab selected. The **Color** is set to **B Black** and **Alignment** is **L Left**. The **Style** dropdown menu is open, showing options: **N Normal**, **U Underline**, **I Italic** (highlighted with an orange arrow), **B Bold**, **IU Italic Underline**, **C Condensed**, **CI Condensed Italic**, and **IB Italic Bold**. The **Character Gap (Dots)** is set to **0**. The **Rotation** section shows **180°** and **270°** options. The **Field** dropdown is empty. The **Edit Code** dropdown is set to **No edit code**.

Your finished format should look something like this:



Printing With Live Spooled File Data

If you have already completed the *Variable Data from a Database* tutorial, you'll know that there is one extra step that must be taken before printing. That step being the creation of a label file. When printing with spooled file data, however, a label file is not needed. All you need are the attributes of a spooled file held anywhere on the system that corresponds to the format you have designed.

MarkMagic

At the MarkMagic main menu, type **P** for *Print* and then **L** for *Label file*. The *Print a Label File* command is shown. Remember those spooled file attributes that you saved earlier in the tutorial? You will need them here.

```

Select a Spooled File

Type choices, press Enter.

Spooled file . . . . . QSYSPRT      Name
Job name . . . . . QPADEV000F      Name, *
User . . . . . KWH                  Name
Number . . . . . 348504             000000-999999
Spooled file number . . . . . 000002 1-999999, *ONLY, *LAST

F3=Exit      F5=Refresh      F12=Cancel

```

To tell the PRTLBLF command that you want to print using spooled file data, type ***SPOOLFILE** for *Label file*. If you press ENTER, previously hidden options will now be available to you. These parameters are circled in the screenshot. They are: *Spooled file*, *Job name*, *User*, *Number* and *Spooled file number*. Type in your spooled file's attributes in these fields. Make sure you have **LEARNXXX3** as the *Format name* and **HPPCL5** as *Printer type*. If your printer is set up as an OS400 device, then you will want to type that name into the *Printer device* field. If you use a remote output queue, you will want to press **F10** for *Additional Parameters* and PageDown to *Spooled output queue* and type your queue's information there.

Print a Label File (PRTLBLF)

Type choices, press Enter.

Label file	> <u>*SPOOLFILE</u>	Name, *NONE, *DTAQ...
Library	> <u>*LIBL</u>	Name, *LIBL
Label file member	> <u>*FIRST</u>	Name, *FIRST
Spooled file	> <u>QSYSPRT</u>	Name
Job name	> <u>QPADEV000F</u>	Name, *
User	> <u>KWH</u>	Name
Number	> <u>348504</u>	000000-999999
Spooled file number	> <u>2</u>	1-999999, *ONLY, *LAST
Format name	> <u>LEARNXXX3</u>	Name, *FILE, F4 for list
Printer device		Name, F4 for list
Form type	> <u>*STD</u>	Character value, *STD
Spooled printer output	> <u>*YES</u>	*YES, *NO
Spooled file name	> <u>*FMT</u>	Character value, *PRTF, *FMT
Quantity	> <u>*DEFAULT</u>	1-9999, *DEFAULT
Printer type	> <u>HPPCL5</u>	Name, F4 for printer list

More...

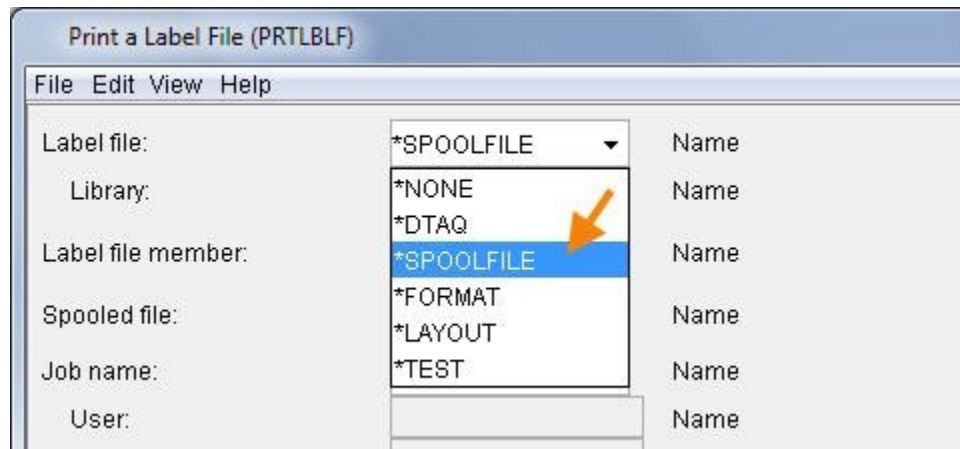
F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel
F13=How to use this display F24=More keys

Press ENTER to print your format with the spooled file data. MarkMagic will output one page for every page in the source spool file. The example spool file has 5 pages, so you will get five pages of MarkMagic output.

JMagic

At the top, click *Format*, *Print*, and then *Print label file*. The *Print a Label File* command window is displayed. Remember those spooled file attributes that you saved earlier in the tutorial? You will need them here.

To print using spooled file data, the first thing to do is select ***SPOOLFILE** from the list for *Label file*. Once you do this, previously hidden option become available.



These parameters are circled in the following screenshot. They are: *Spooled file*, *Job name*, *User*, *Number* and *Spooled file number*. Type in your spooled file's attributes in these fields. Make sure you have **LEARNXXX3** as the *Format name* and **HPCL5** as *Printer type*. If your printer is set up as an OS400 device, then you will want to type that name into the *Printer device* field. If you use a remote output queue, you will want may need to press the *Advanced* button on the bottom left and scroll down to *Spooled output queue* and type your queue's information there.

Print a Label File (PRTLBLF)

File Edit View Help

Label file:	*SPOOLFILE	Name
Library:	*LIBL	Name
Label file member:	*FIRST	Name
Spooled file:	QSYSPRT	Name
Job name:	QPADEV000F	Name
User:	KWH	Name
Number:	348504	000000-999999
Spooled file number:	2	1-999999
Format name:	LEARNXXX3	Name
Printer device:		Name
Form type:	*STD	Character value
Spooled printer output:	<input checked="" type="radio"/> *YES <input type="radio"/> *NO	
Spooled file name:	*FMT	Character value
Quantity:	*DEFAULT	1-9999
Printer type:	HPPCL5	Name, F4 for printer list

Advanced Parameters

Spooled output queue:	QUEUENAME	Name
Library:	LIBRARY	Name
User library name:	MRKMAGDTA	Name

Advanced OK Cancel Help ?

Press OK to print your format with the spooled file data. MarkMagic will output one page for every page in the source spool file. The example spool file has 5 pages, so you will get five pages of MarkMagic output.

Congratulations! If all went well, you should have five nice looking pages with spool file data! Let's review what was covered in this Intermediate Concepts "Spoolfile" tutorial:

1. How to copy a format and why you would want to copy a format.
2. How to delete a field.
3. How to add a text field that is mapped to spooled file data.
4. How to copy the text field to easily map more lines in a spooled file.
5. How to add data fields that are mapped to spooled file data.
6. What a *LINK field is.
7. How to add text and barcodes that are linked to the data fields.
8. How to print with data from your spooled file.

This tutorial only covered methods of printing information from a spooled file. If you are looking for a tutorial that covers printing data retrieved from a database file, please read the Intermediate Concepts “Database” tutorial.