

Developer Guide

KA.Barcode for Java

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Content

1.	Compatibility & Requirements	1
1.1.	Development Environments	1
1.2.	Compatible Java Applications	1
1.3.	Compatible Operating Systems	1
1.4.	Test Environment	1
2.	Installation	2
3.	Generate Barcode in Java	3
3.1.	Generate Barcode in Java Class	3
3.2.	Generate Barcode in iReport through JRRenderable Implementation	7
3.3.	Generate Barcode in iReport through Servlet Web Application	14
4.	Barcode Advanced Settings	20
4.1.	1D / 2D Barcode Basic Properties	20
4.1.1.	Barcode Basic	20
4.1.2.	Barcode Size	20
4.1.3.	Barcode Text Style	22
4.2.	1D / Linear Barcode Special Properties	22
4.2.1.	ITF-14	22
4.2.2.	Identcode/Leitcode/Interleaved 2 of 5	22
4.2.3.	Code 39	23
4.2.4.	EAN-8 / EAN-13 / UPC-A / UPC-E / ISBN / ISSN	23
4.2.5.	Code 2 of 5	23

Content

4.2.6. Code 128 / EAN-128	23
4.3. 2D / Matrix Barcode Special Properties	24
4.3.1. Data Matrix	24
4.3.2. PDF417	25
4.3.3. QR Code	25
5. Barcode Generation Methods	27
5.1. Encode Barcode to Eclipse BIRT	27

1. Compatibility & Requirements

1.1. Development Environments

- Created in Java JDK 1.5.0_22
- Compatible with JDK 1.5.0_22 and later versions
- Support iReport 3.7.5

1.2. Compatible Java Applications

- Java class
- Tomcat
- Eclipse BIRT
- Java iReport
- Java Jasper Report

1.3. Compatible Operating Systems

- Windows 7
- Windows Server 2008
- Windows Vista
- Windows Server 2003
- Windows XP
- Windows Server 2000

1.4. Test Environment

- KA.Barcode for Java is tested in IntelliJ IDEA 5.0, iReport 3.7.5.

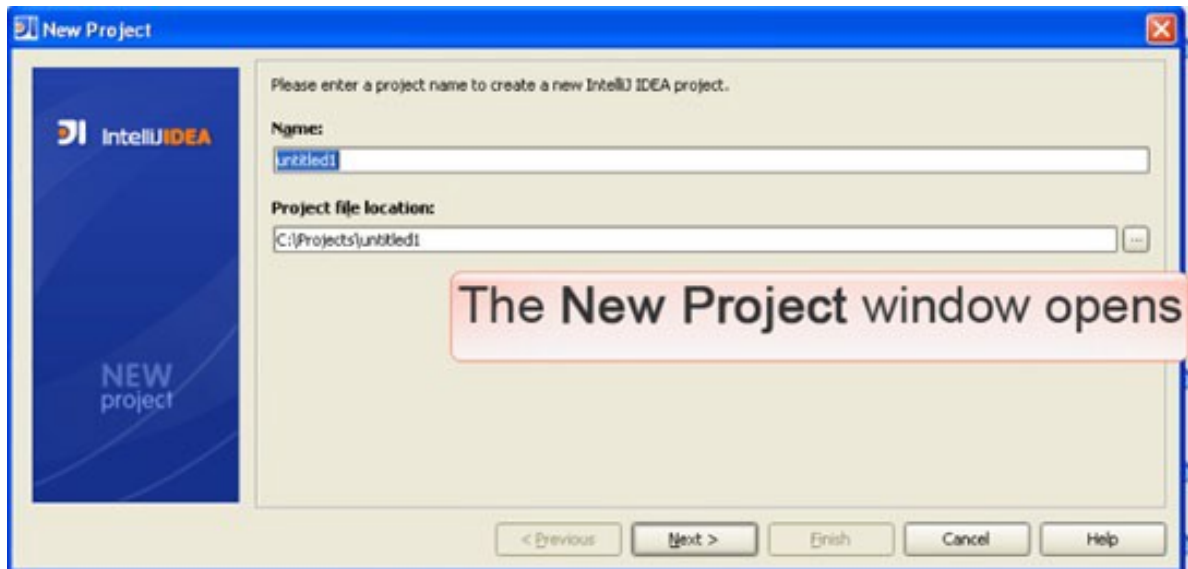
2. Installation

- Download “[KA.Barcode.for.Java.zip](#)” from [keepautomation.com](#) and unzip it.
- Copy “[com.keepautomation.barcode.jar](#)” file to your Java project library folder.
- Add “[com.keepautomation.barcode.jar](#)” to your project reference.

3. Generate Barcode in Java

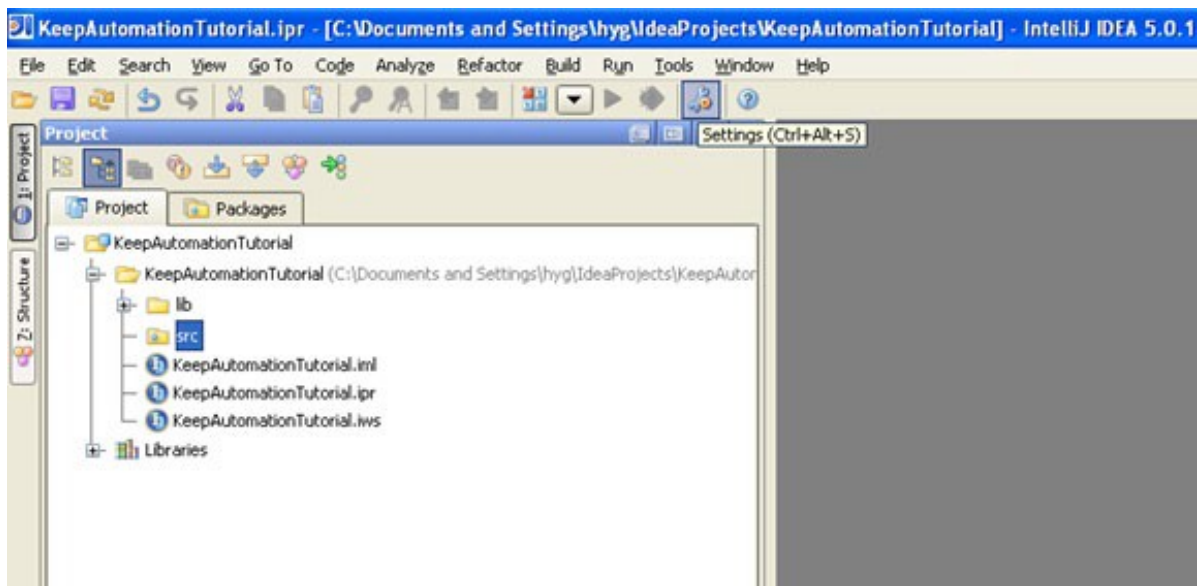
3.1. Generate Barcode in Java Class

- Activate IntelliJ IDEA and click “[Create New Project](#)”. Then a window called “[New Project](#)” pops up and next input the name of the project. You can input “[KeepAutomationTutorial](#)” as an example. After that, click “[Next](#)”.



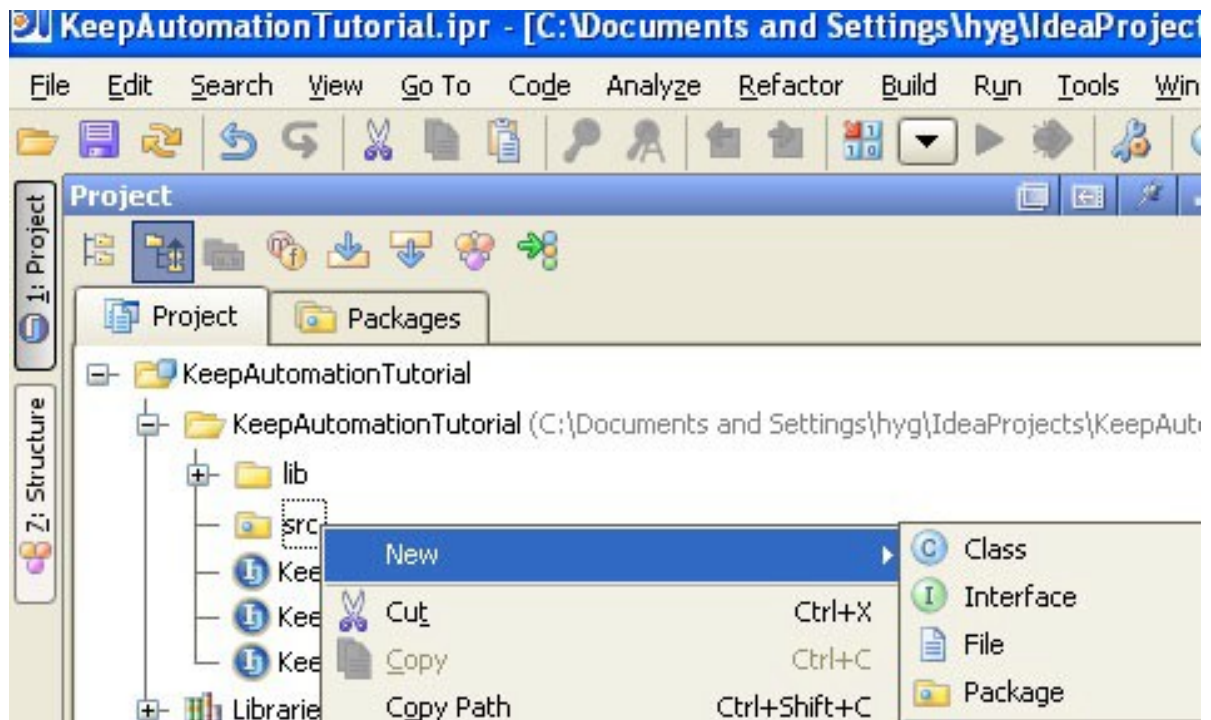
- Click “[Next](#)” after you make sure you select the project JDK in the pop-up window. Then click “[Next](#)” after you select “[Create single-module project](#)” in the pop-up window. Next, select “[Java Module](#)” and click “[Next](#)”. After that, click “[Next](#)” again.
- In the pop-up window, select “[Create source directory](#)” (the default input data is “src”) and click “[Next](#)”. Then, in the text box of “[Select compiler output path](#)”, make sure the content is “[C:\Projects\KeepAutomationTutorial\Classes](#)” and click “[Finish](#)”.
- Under “[Project](#)” pull-down menu, select “[KeepAutomationTutorial \(C:\Projects\KeepAutomationTutorial\)](#)” and right click it. Then click “[New](#)” - “[Directory](#)”.

- The “New Directory” window opens and input “lib” in the text box of “Enter new directory name”. Then click “OK” button. Now download Java barcode package from keepautomation.com and unzip it.
- Copy “com.keepautomation.barcode.jar” in the folder called “lib” (C:\Projects\KeepAutomationTutorial\lib) and then click “Settings (Ctrl+Alt+S)” button in the project.



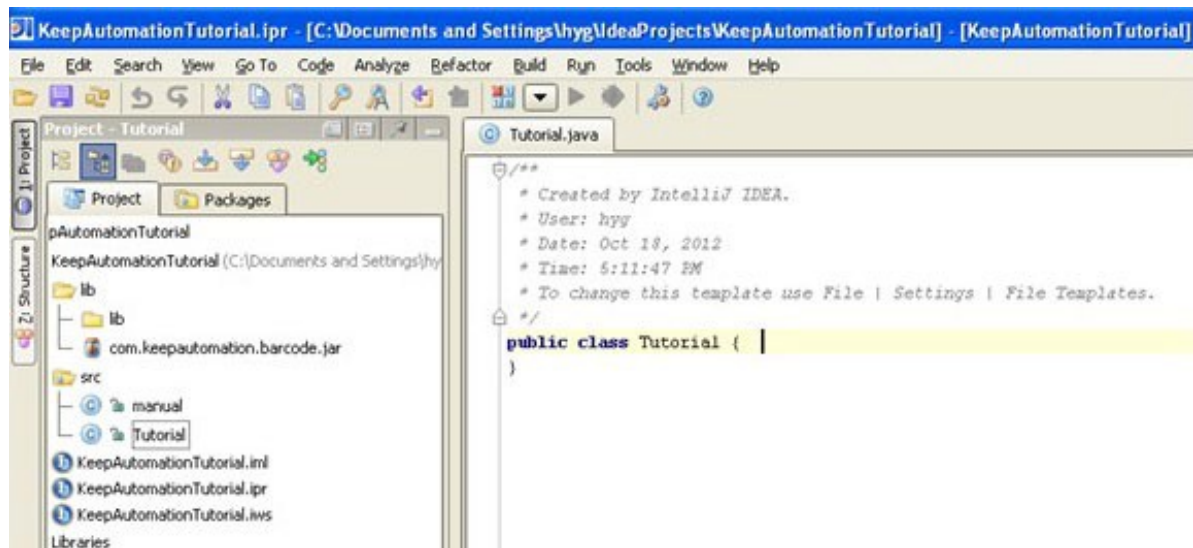
- Click “Modules” in the pop-up window called “Settings”. Now a window called “Modules” pops up. Click “Libraries (Classpath)” - “Add Jar/Directory...” and a window called “Select Path” opens.
- Click folders “C:\” - “Documents and Settings” - “hyg” - “IdeaProjects” - “KeepAutomationTutorial” - “lib” to select “com.keepautomation.barcode.jar” and then click “OK”. In the “Modules” pop-up window, click “Apply” - “OK”. And in the “Settings” pop-up window, click “Close”.

- Under “Project” pull-down menu, right click “src” - “New” - “Class”. Now a window called “New Class” shows up. Input “Tutorial” and click “OK”.

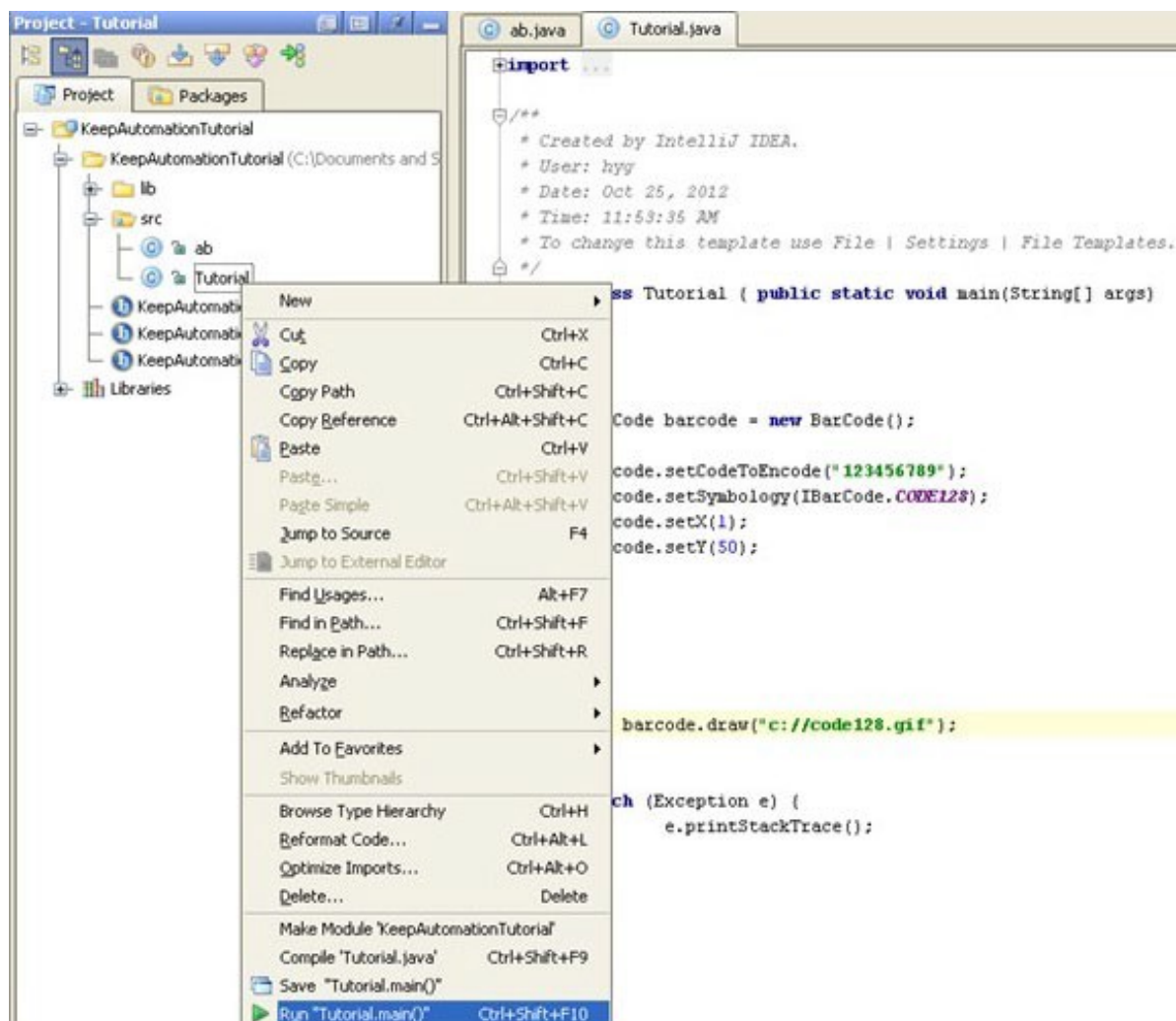


- Input the following Java code in the text box under “Tutorial java”:

```
public static void main(String[] args)
{
    BarCode barcode = new BarCode();
    barcode.setCodetoEncode("123456789");
    barcode.setSymbology(BarCode.CODE128);
    barcode.setX(1);
    barcode.setY(50);
    try
    {
        barcode.draw("c://code128.gif");
    }
    catch (Exception e)
    {
        e.printStackTrace();
    }
}
```

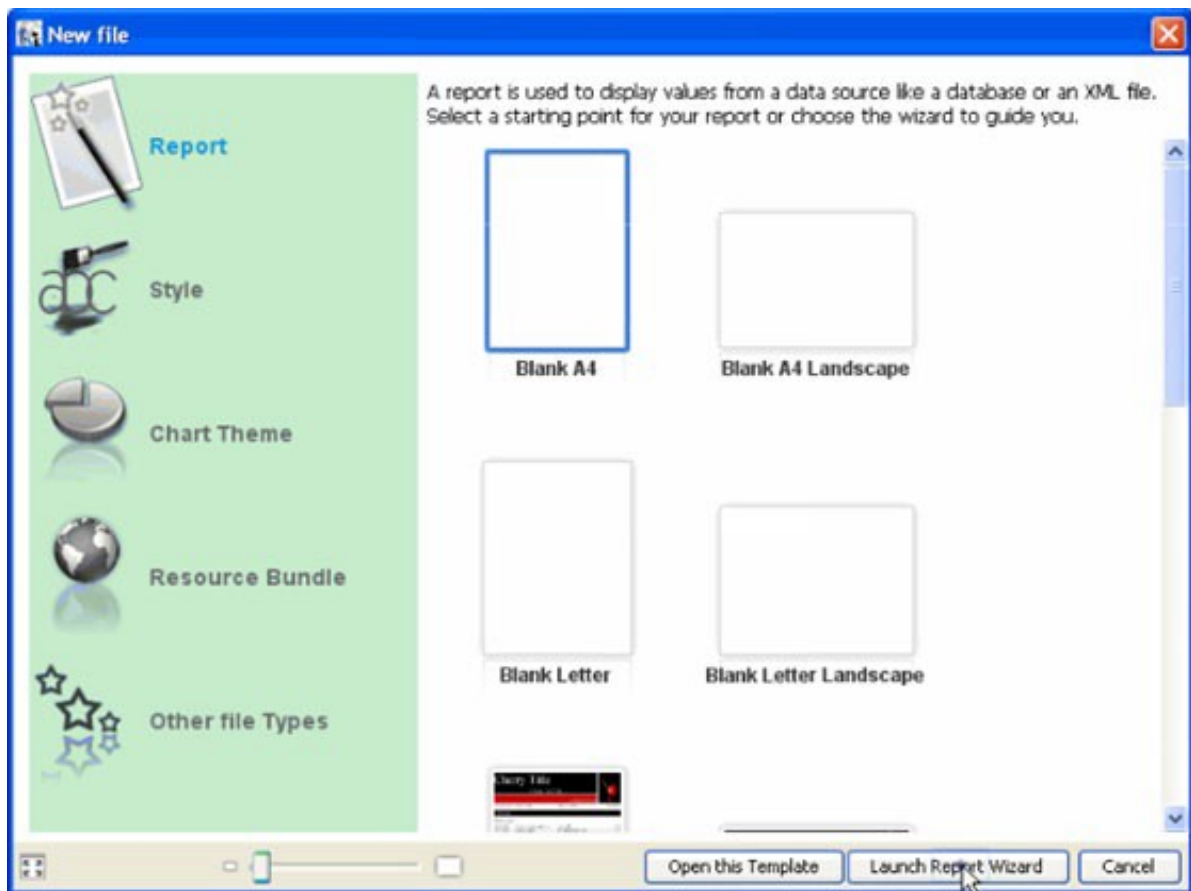
- After that, right click "Tutorial" under "src" in "Project" pull-down menu. Then select [Run "Tutorial.main()" Control+Shift+F10] and the "Compile Progress" window opens.



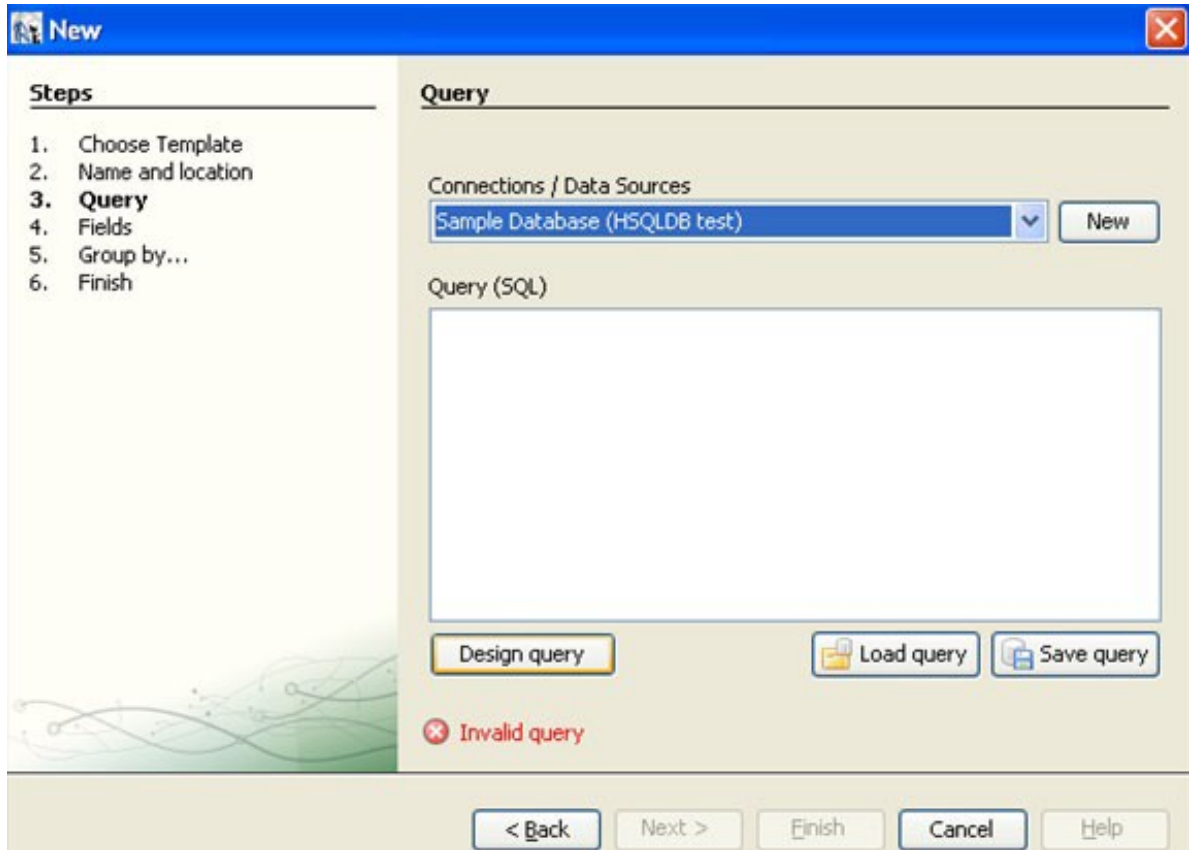
- Now double click the “[tutorial.jpg](#)” item and you can see the created barcode through this file path: c://code128.gif.

3.2. Generate Barcode in iReport through JRRenderable Implementation

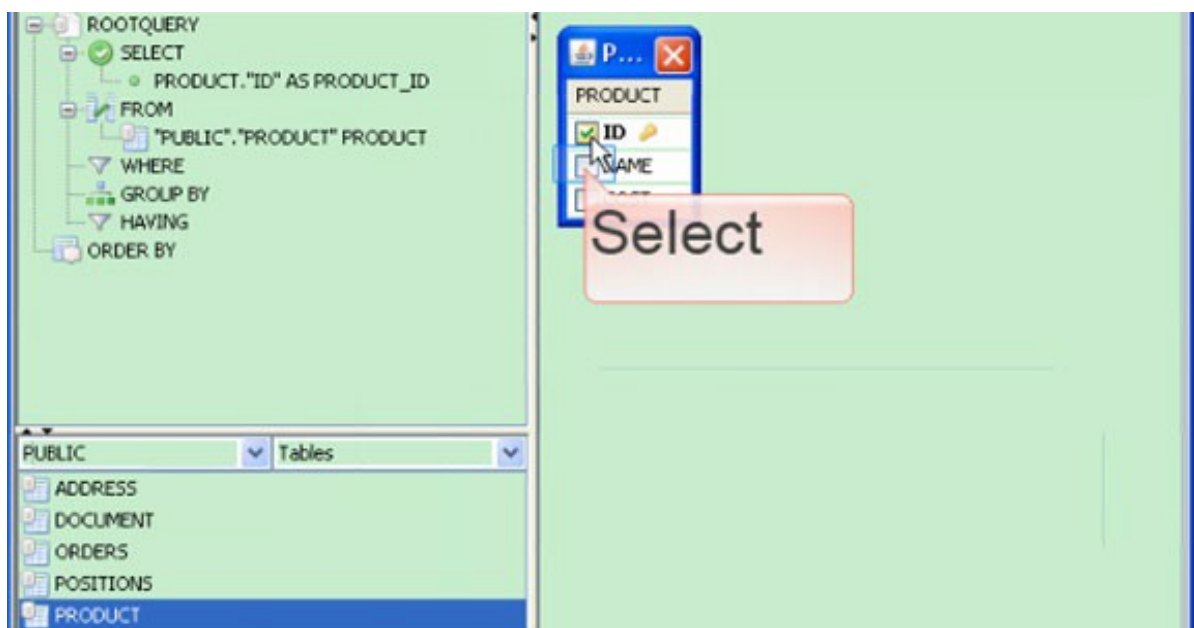
- To start with, open iReport on your computer. Click “[File](#)” menu item and select “[New...](#)”. Then a window called “[New file](#)” pops up. Select “Blank A4” and click “[Launch Report Wizard](#)”.



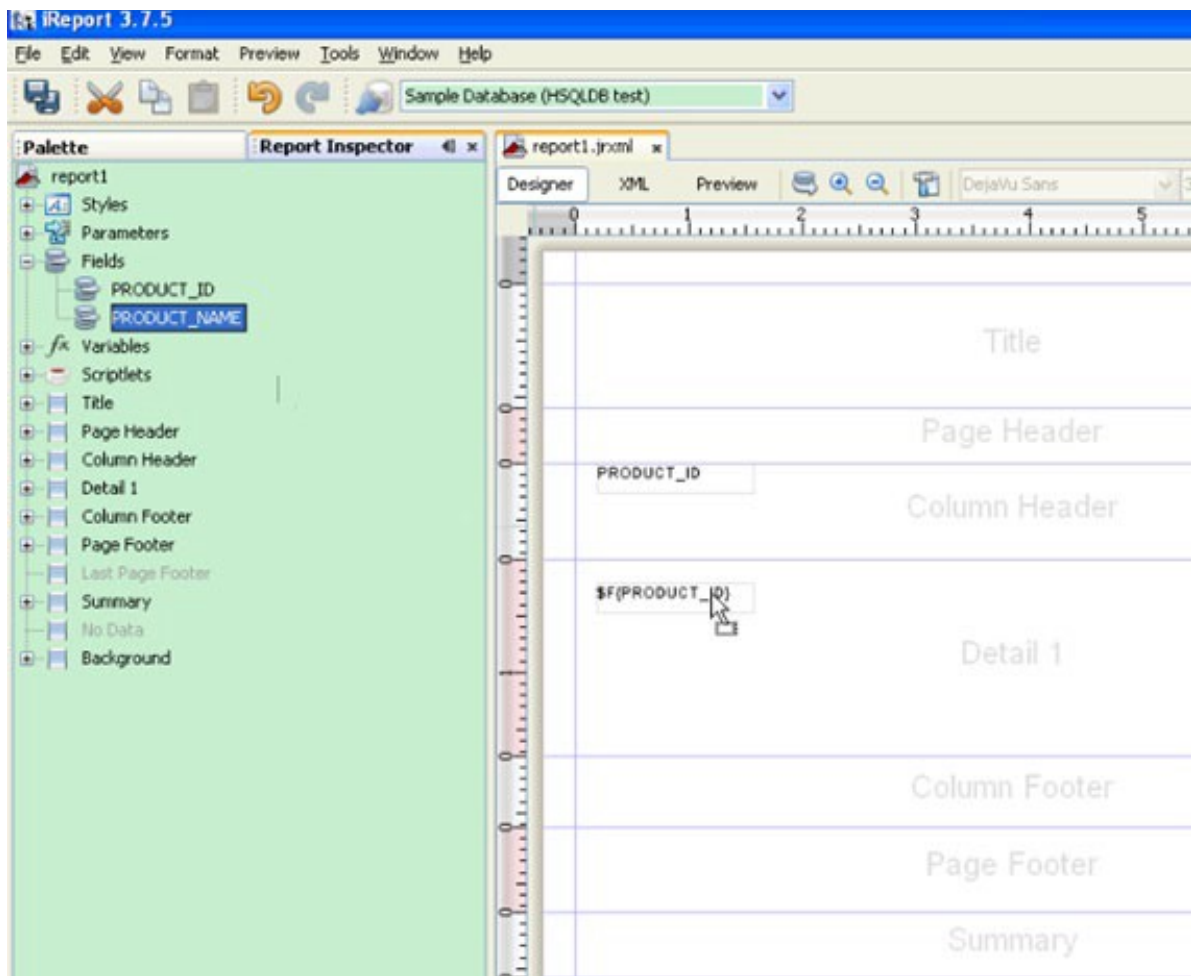
- Click “Next” in a pop-up window called “New”. Next, click “Design query” in the window.



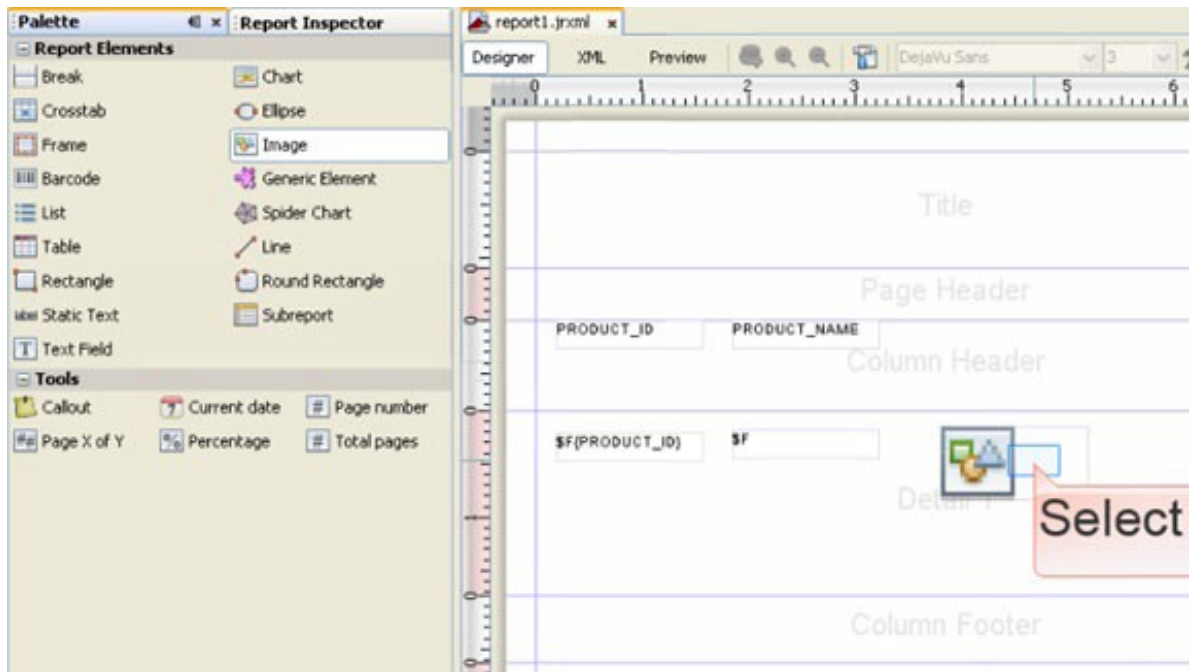
- Click the pull-down menu on the left of “Tables” in a new pop-up window and select “PUBLIC”, then double click “PRODUCT”. The “wait...” window opens. Click “OK” button after you select “ID” and “NAME” on the right part of the pop-up window.



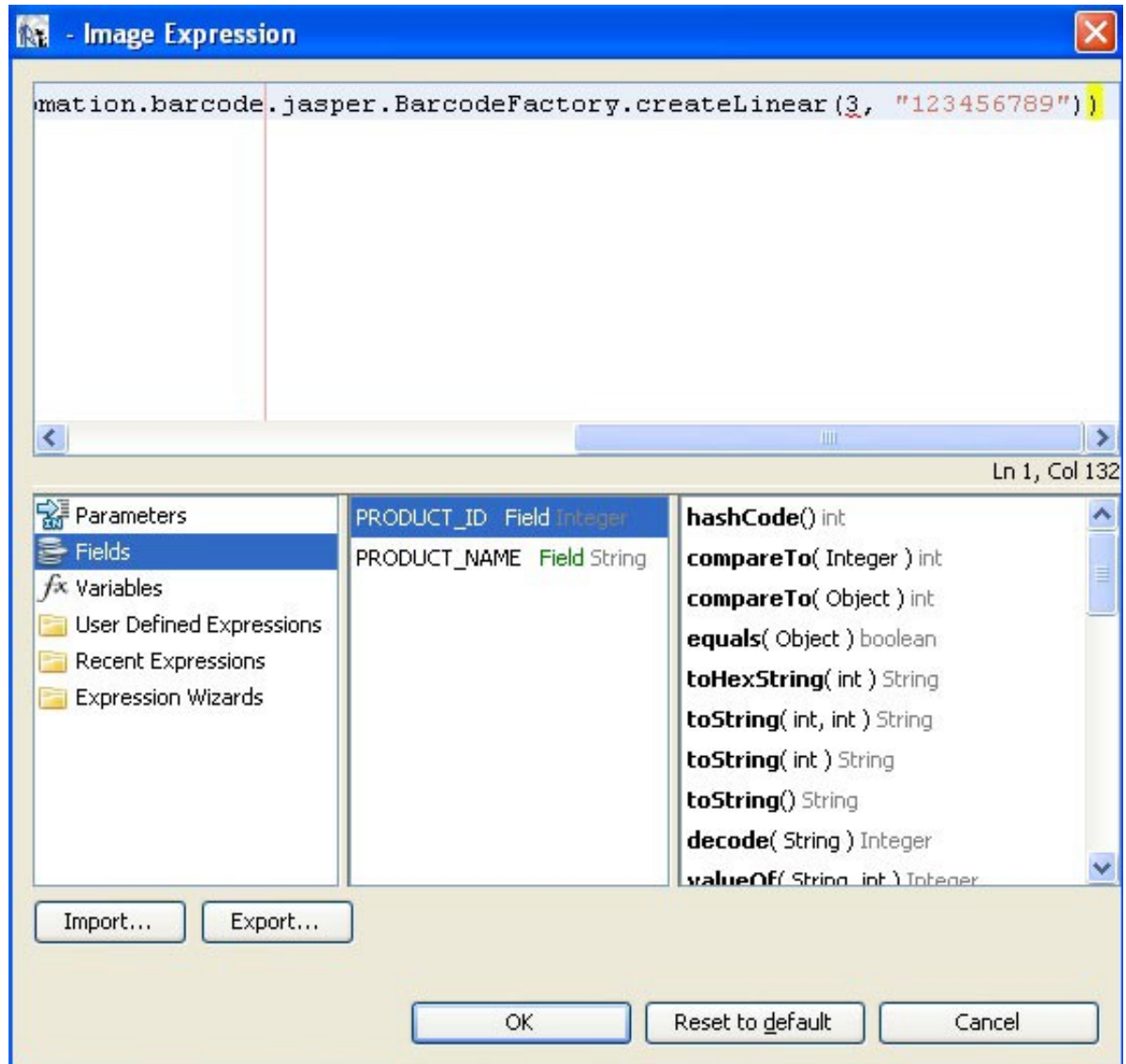
- Click “Next” in a new pop-up window. And then click “>” button twice to move “PRODUCT_ID” and “PRODUCT_NAME” to the right part of the pop-up window. After that, click “Next”. Now in a new pop-up window, click “Next” - “Finish”.
- In “Report Inspector” pull-down menu, click “Fields” and then drag and drop “PRODUCT_ID” and “PRODUCT_NAME” in “Detail 1” which is in the report editing area.



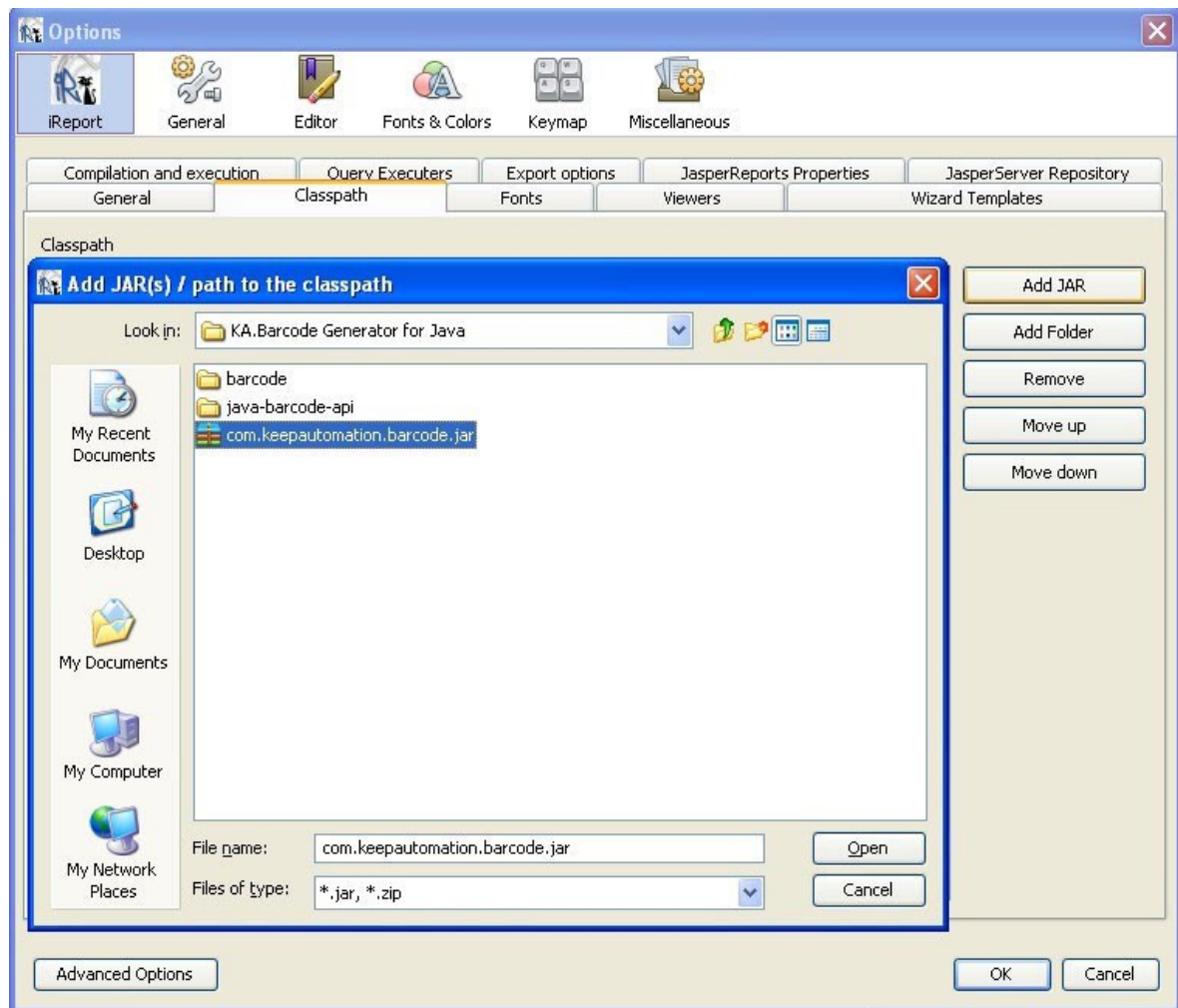
- Under "Window" menu item, click "Palette Ctrl+Shift+8" to open "Palette" panel and then drag and drop "Image" in "Detail 1". Now a window called "Select an image file..." opens. click "Cancel" in that window.
- Click the image in the report editing area and under "Window" menu item, click "Properties". Now you can see the "Properties" panel on the right.



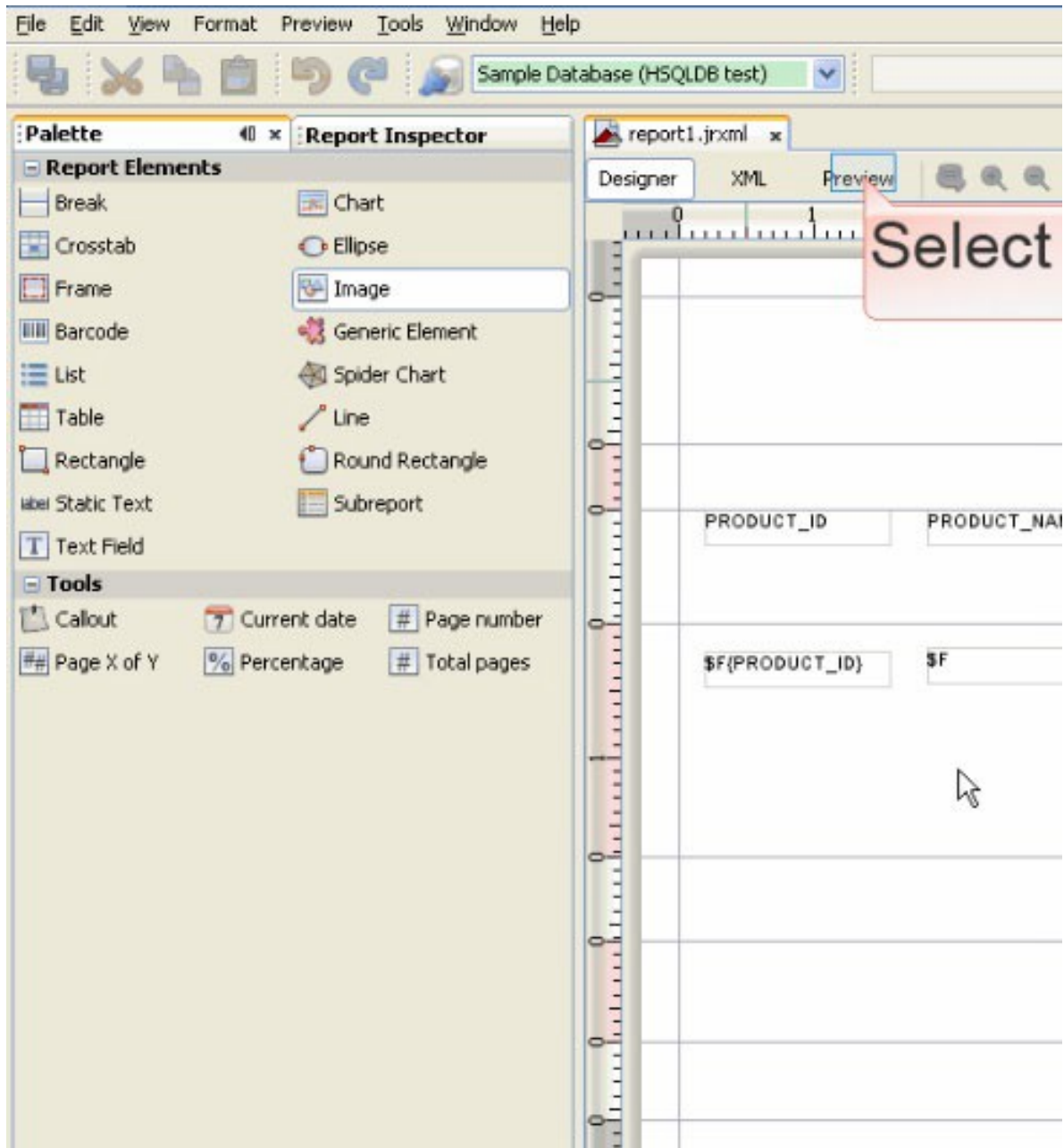
- In the “[Properties](#)” panel, click the “[Expression Class](#)” pull-down menu and select “[net.sf.jasperreports.engine.JRRender...](#)”. Then click “[Image Expression](#)” and the “[Image Expression](#)” window opens. Next, in the text box, input: `new com.keepautomation.barcode.jasper.BarcodeRenderer(com.keepautomation.barcode.jasper.BarcodeFactory.createLinear(3, "123456789"))`. Now, click “[OK](#)” button.



- Click “Tools” menu item and select “Options”. The “Options” window shows up. Under “iReport”, select “Classpath” and then click “Add JAR”. Now the “Add JAR(s)/ path to the classpath” window pops up. Next, find the location of “com. keepautomation.barcode.jar” and select it. After that, click “Open” button.

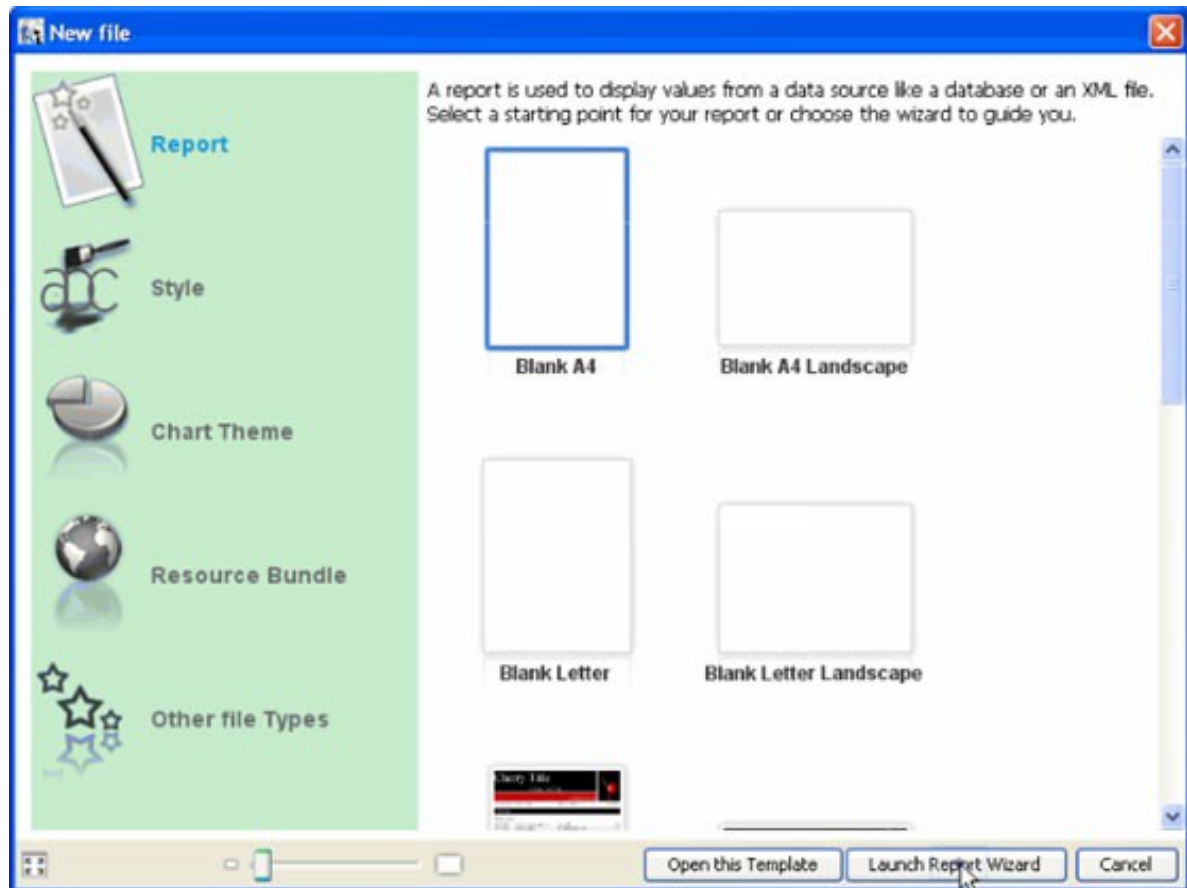


- Now click “OK” button in the “Options” pop-up window. Then click “Preview” in the report and the barcodes are generated successfully.

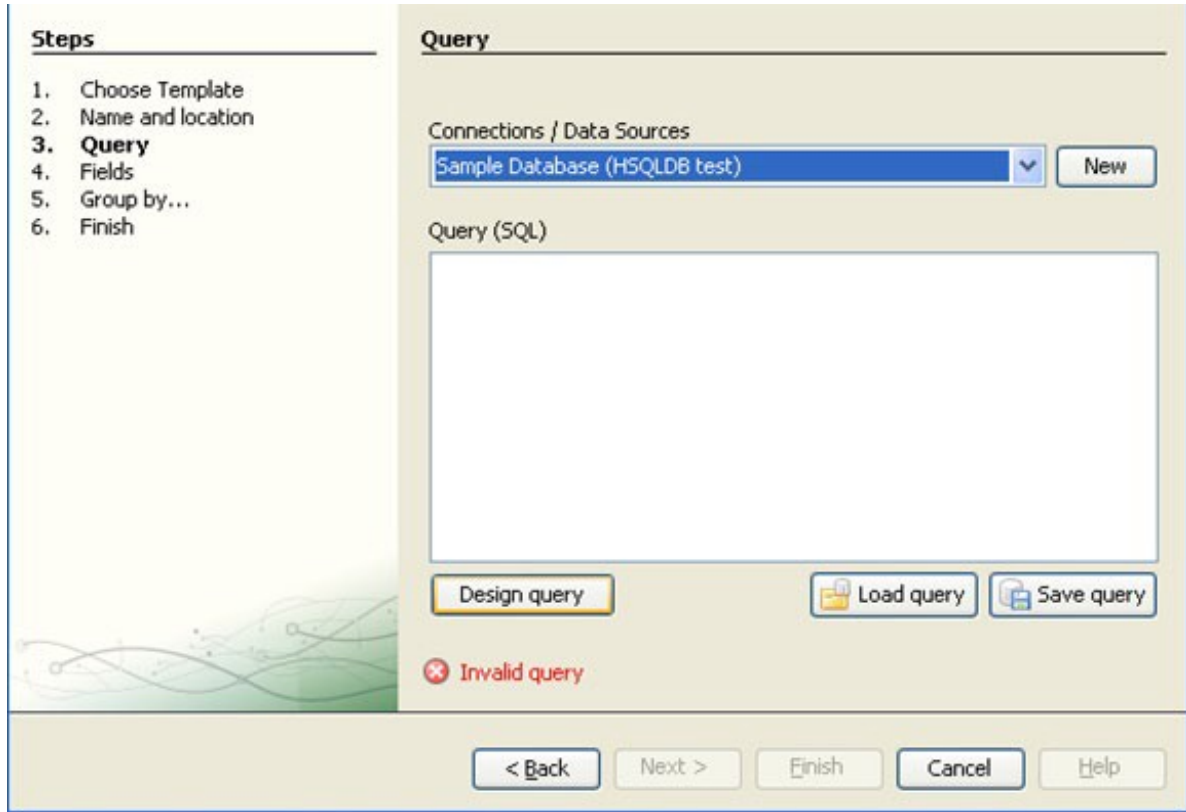


3.3. Generate Barcode in iReport through Servlet Web Application

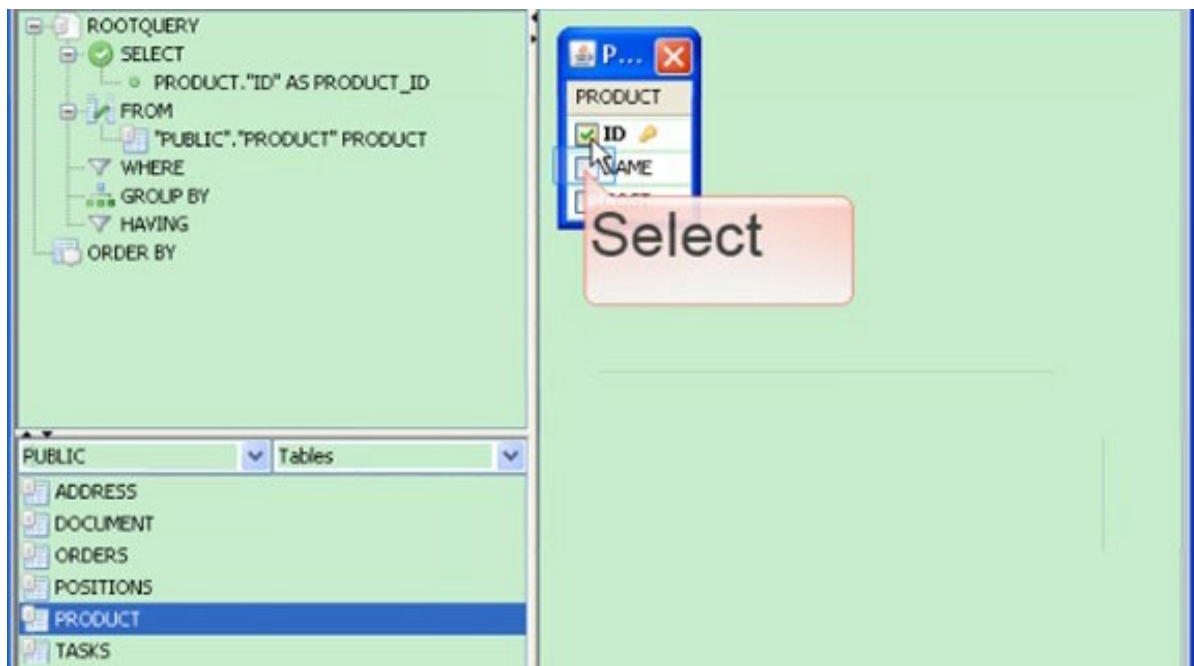
- Firstly, open iReport on your computer. Click “File” menu item and select “New...”. Then a window called “New file” pops up. Select “Blank A4” and click “Launch Report Wizard”.



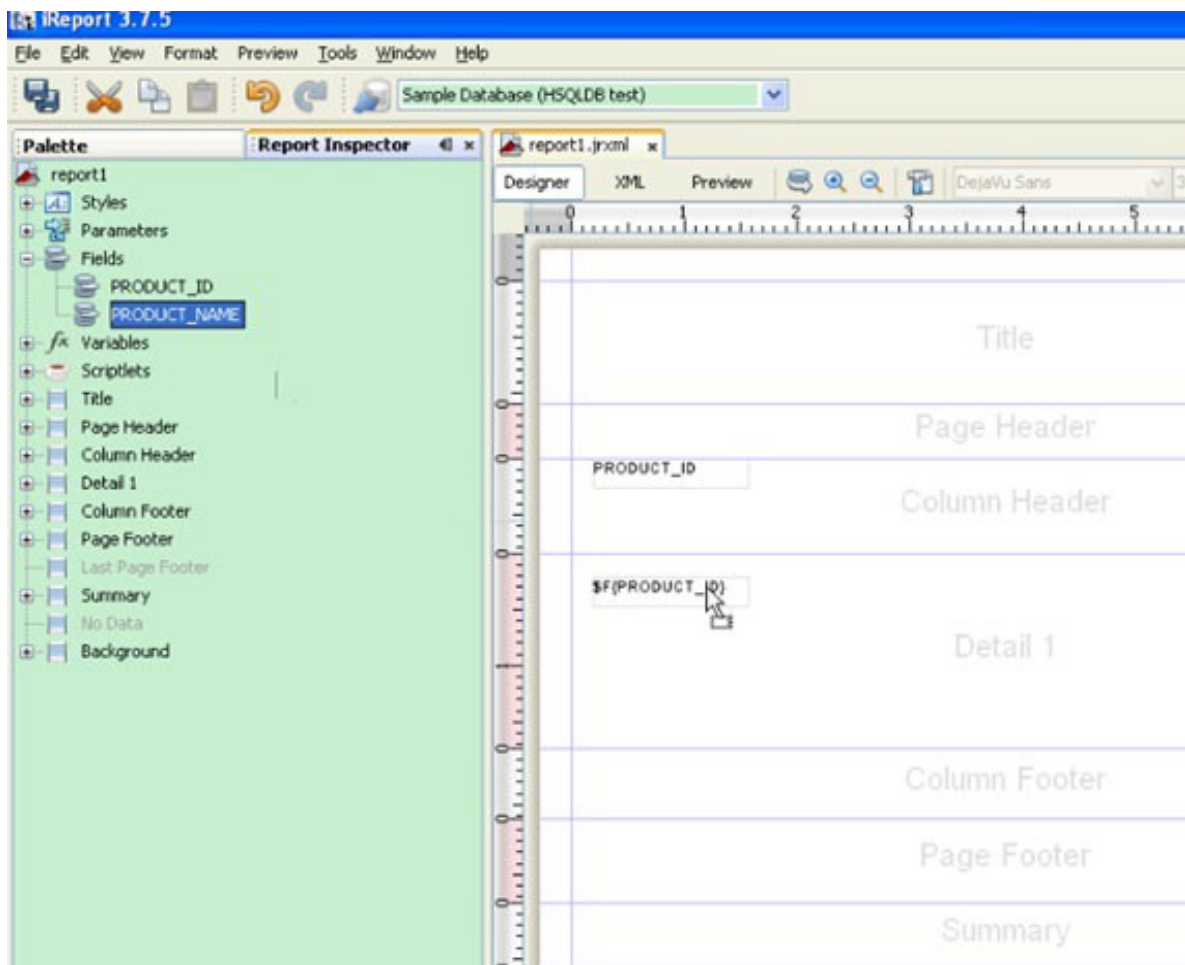
- Click “Next” in a pop-up window called “New”. Next, click “Design query” in the window.



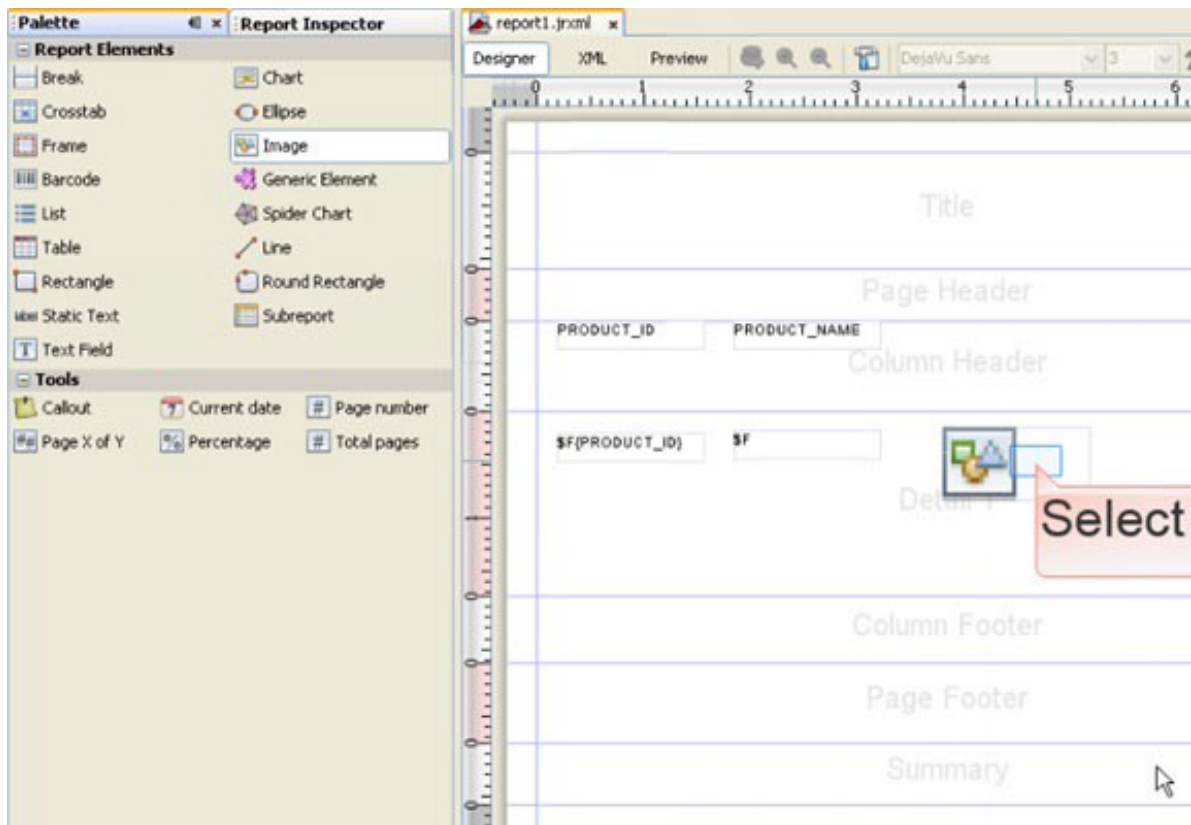
- Click the pull-down menu on the left of “Tables” in a new pop-up window and select “PUBLIC”, then double click “PRODUCT”. The “wait...” window opens. Click “OK” button after you select “ID” and “NAME” on the right part of the pop-up window.



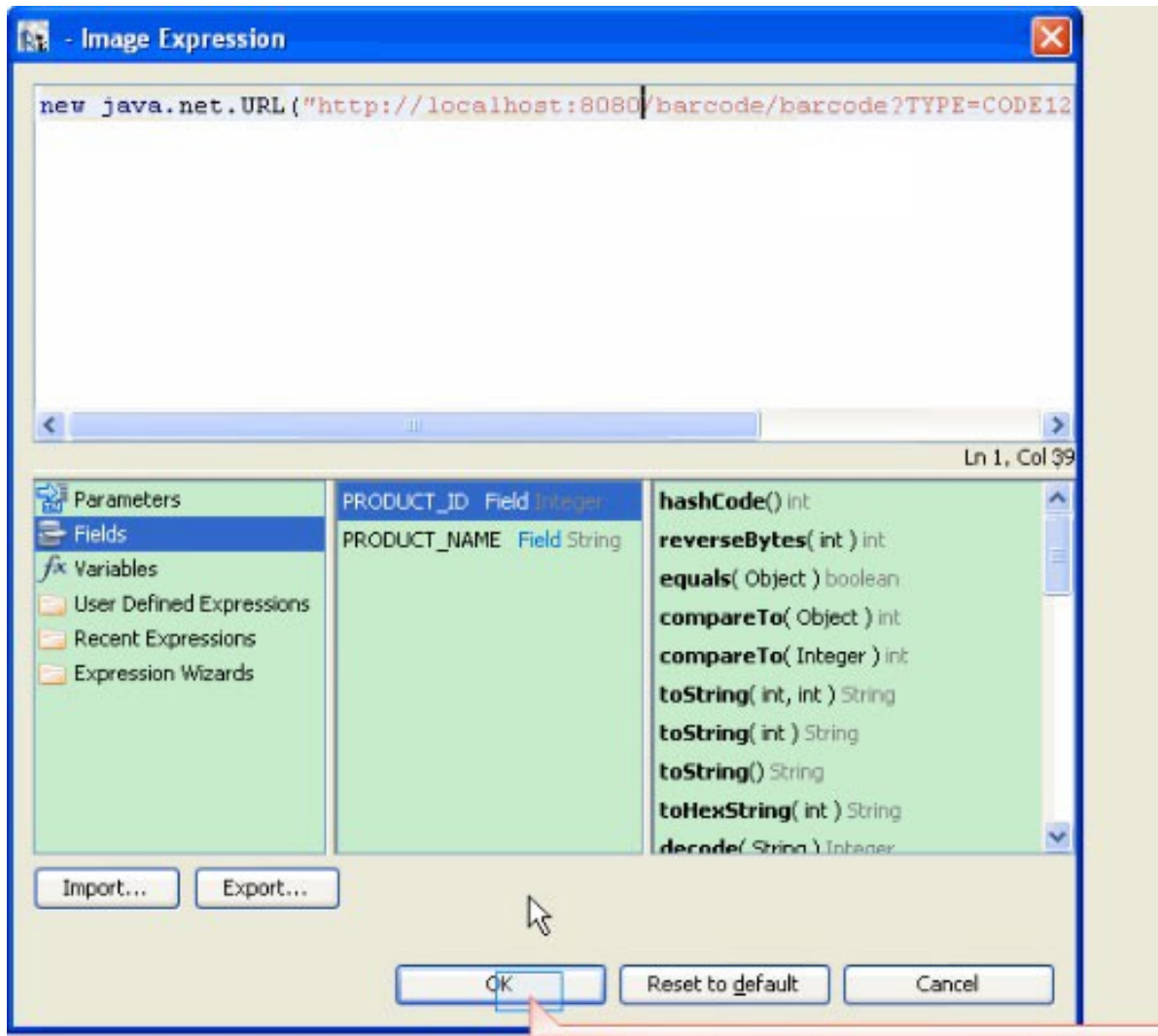
- Click “Next” in a new pop-up window. And then click “>” button twice to move “PRODUCT_ID” and “PRODUCT_NAME” to the right part of the pop-up window. After that, click “Next”. Now in a new pop-up window, click “Next” - “Finish”.
- In “Report Inspector” pull-down menu, click “Fields” and then drag and drop “PRODUCT_ID” and “PRODUCT_NAME” in “Detail 1” which is in the report editing area.



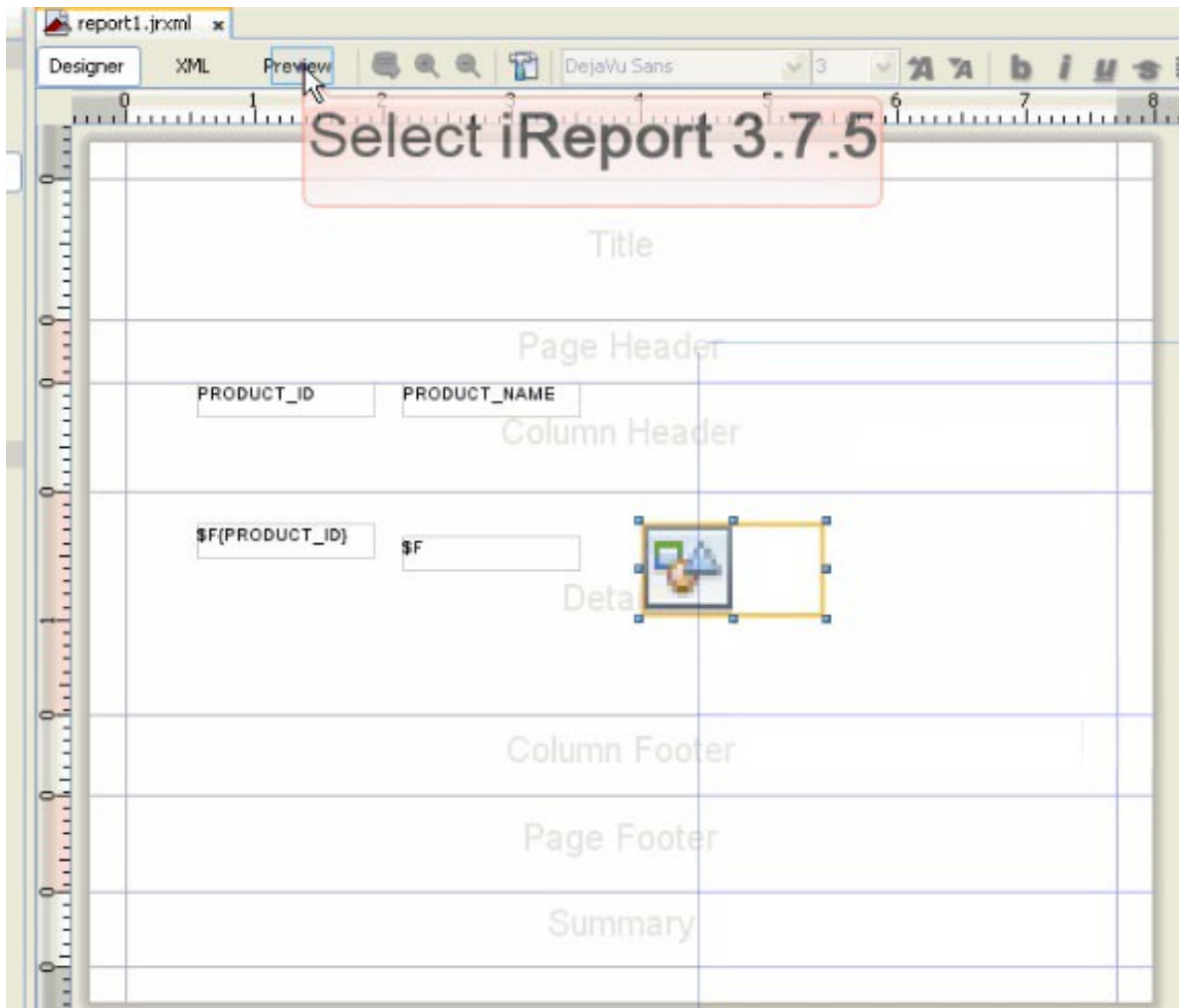
- Click “[Palette](#)” pull-down menu and drag and drop “[Image](#)” in “[Detail 1](#)”. Now a window called “[Select an image file....](#)” opens. Click “[Cancel](#)” in that window.
- Click the image in the report editing area and a panel called “[Properties](#)” pops up on the right.



- In the “Properties” panel, click the “Expression Class” pull-down menu and select “java.net.URL”. Then click “Image Expression” and the “Image Expression” window opens. Next, in the text box, input: `new java.net.URL("http://YourDomain:Port/barcode/barcode?TYPE=CODE128&DATA=" + ${PRODUCT_ID})`. Now, click “OK” button.



- Now click “[Preview](#)” button in the report and you can see the created barcodes. You can customize the generated barcodes through URL parameters.



4. Barcode Advanced Settings

4.1. 1D / 2D Barcode Basic Properties

Below is a table of linear and 2D barcodes basic properties supported by KA.Barcode for Java.

4.1.1. Barcode Basic

Class Attribute	Default Value
setSymbology	CODE128
Comment: Barcode symbology type.	
setCodeToEncode	"128"
Comment: Barcode value to encode.	
setChecksumEnabled	false
Comment: Set to true, adding barcode checksum digit.	

4.1.2. Barcode Size

Class Attribute	Default Value
setBarcodeUnit	IBarCode.UOM_PIXEL
Comment: Unit of measure for all size related settings. 0: pixel; 1: inch; 2: cm.	
setX	2
Comment: Barcode module width (narrow bar).	

Class Attribute	Default Value
setY	75
Comment: Linear barcode bar height/2D barcode module height.	
setLeftMargin	0
Comment: Barcode image left margin.	
setRightMargin	0
Comment: Barcode image right margin.	
setTopMargin	0
Comment: Barcode image top margin.	
setBottomMargin	0
Comment: Barcode image bottom margin.	
setDpi	72
Comment: Barcode image resolution in dpi.	
setOrientation	BarcodeSymbologyInner.ANGLE_0
Comment: Barcode rotation angle.	
setBarcodeWidth	0
Comment: Whole barcode width.	
setBarcodeHeight	0
Comment: Whole barcode height.	

4.1.3. Barcode Text Style

Class Attribute	Default Value
setDisplayText	true
Comment: Set to true, displaying barcode value text, otherwise do not display.	
setDisplayChecksum	false
Comment: Set to true, displaying barcode checksum digit, otherwise do not display.	
setTextFont	new Font("Arial", Font . PLAIN, 11)
Comment: Barcode text font style.	

4.2. 1D / Linear Barcode Special Properties

4.2.1. ITF-14

Class Attribute	Default Value
setBearerBar	BarcodeSymbologyInner.BEARERBAR_NONE
Comment: ITF-14 bearer bars. It is a multiple of X.	
setWideNarrowRatio	2.0f
Comment: ITF-14 wide bar width vs narrow bar width ratio.	

4.2.2. Identcode/Leitcode/Interleaved 2 of 5

Class Attribute	Default Value
setWideNarrowRatio	2.0f
Comment: Identcode, Leitcode, or Interleaved 2 of 5 wide bar width vs narrow bar width ratio.	

4.2.3. Code 39

Class Attribute	Default Value
setDisplayStartStop	true
Comment: Set to true, displaying Code 39 Start and Stop character (*).	
setWideNarrowRatio	2.0f
Comment: Code 39 wide bar width vs narrow bar width ratio.	

4.2.4. EAN-8 / EAN-13 / UPC-A / UPC-E / ISBN / ISSN

Class Attribute	Default Value
setSupplementCode	""
Comment: EAN, UPC, ISBN, or ISSN supplement barcode value to encode.	

4.2.5. Code 2 of 5

Class Attribute	Default Value
setWideNarrowRatio	2.0f
Comment: Code 2 of 5 wide bar width vs narrow bar width ratio.	

4.2.6. Code 128 / EAN-128

Class Attribute	Default Value
SetFnc1	FNC1_NONE
Comment: Set to true, specifying special characters in Code 128 / EAN 128 data.	

4.3. 2D / Matrix Barcode Special Properties

Class Attribute	Default Value
setGroupEnabled	false
Comment: Set to enable Data Matrix, PDF417, or QR Code group function.	
setGroupItemCount	0
Comment: Data Matrix, PDF417, or QR Code group count.	
setGroupItemId	0
Comment: Data Matrix, PDF417, or QR Code group item id.	
setGroupId	0
Comment: Data Matrix, PDF417, or QR Code group item.	

4.3.1. Data Matrix

Class Attribute	Default Value
setDataMatrixDataMode	DM_MODE_AUTO
Comment: Set Data Matrix data encoding mode.	
setDataMatrixFormatMode	0
Comment: Set Data Matrix format mode, including 24 square and 6 rectangle formats.	
setFnc1	FNC1_NONE
Comment: Apply to encode GS1 compatible Data Matrix.	

4.3.2. PDF417

Class Attribute	Default Value
setPdf417DataMode	PDF417_MODE_TEXT
Comment: Set PDF417 data encoding mode.	
setPdf417Ecl	PDF417_ECL_2
Comment: Set PDF417 error correction level, from L0 to L8.	
setPdf417RowCount	3
Comment: Set PDF417 row count, from 3 to 90.	
setPdf417ColumnCount	5
Comment: Set PDF417 column count, from 1 to 30.	
setPdf417Truncated	false
Comment: Apply to encode TruncatedPDF417.	
setPdf417XtoYRatio	0.333333f
Comment: PDF 417, bar width vs bar height ratio.	

4.3.3. QR Code

Class Attribute	Default Value
setFnc1	FNC1_NONE
Comment: Apply to encode GS1 compatible QR Code.	
setQrCodeDataMode	QR_MODE_AUTO
Comment: Set QR Code data encoding mode.	

Class Attribute	Default Value
setQrCodeEcl	QR_ECL_L
Comment: Set QR Code error correction level, including L, M, Q, H.	
setQrCodeVersion	1
Comment: Set QR Code version, from V1 to V40.	

5. Barcode Generation Methods

5.1. Encode Barcode to Eclipse BIRT

```
public draw (OutputStream)
public draw ()
public draw (String)
public void draw (Graphics 2D, Rectangle 2D)
public byte drawOutput AsBytes ()
```

Online Guide

http://www.keepautomation.com/guide/java_barcode_generator.html

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