



# User's Guide

Using Open Report Engine  
GRS 3.00



## Objectives

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After this instruction, you will be able to:

- Identify the purpose and features of Genero Report Writer (GRW)
- Describe the architecture and its components
- List the steps for creating a report
- Locate and experiment with the Reports demo applications
- Find appropriate documentation and help



## What is Genero Report Writer?

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- Streams data from Java JVM for "print-as-you-go" processing
  - No temporary files or tables required  
(less memory, more speed)
- Gathering of data separate from layout
- Based on XML standards
- Report layout defined in a separate document using Report Designer
- Multiple layouts can be designed for a single data stream



## Features

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- Enterprise Reports
- Scalability
- Streaming architecture
- Drag-and-drop GUI report design
- Dynamic layout
- Maintainability



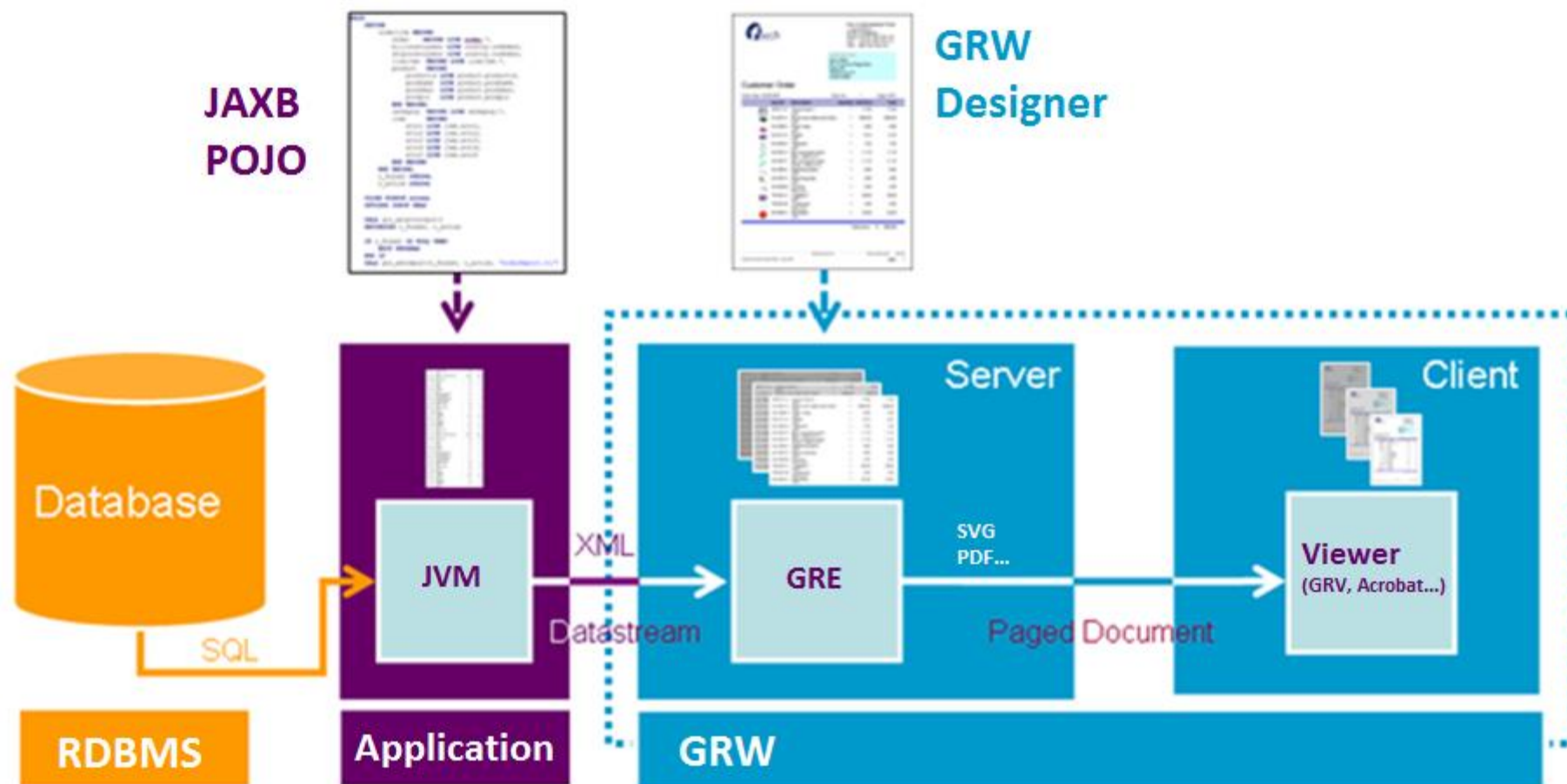
## Architecture

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- XML Standards
  - DataStream is XML
  - Report Design file (.4rp) is XML
  - SVG output (.svg) is XML
- Gathering of data is separate from layout
- Same data can be used to print many different reports in different formats
- End to end streaming, print as you go
  - Note: Internals of certain formats (PDF) do not support end to end streaming

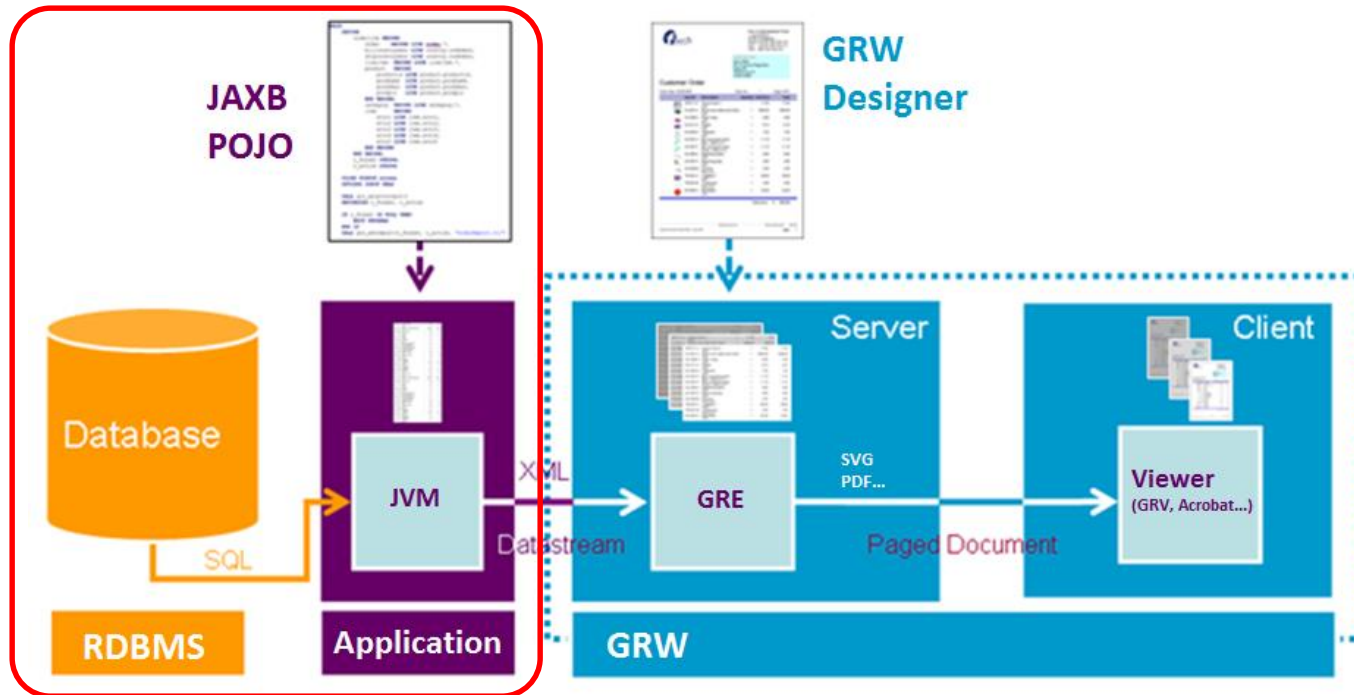


## Architecture





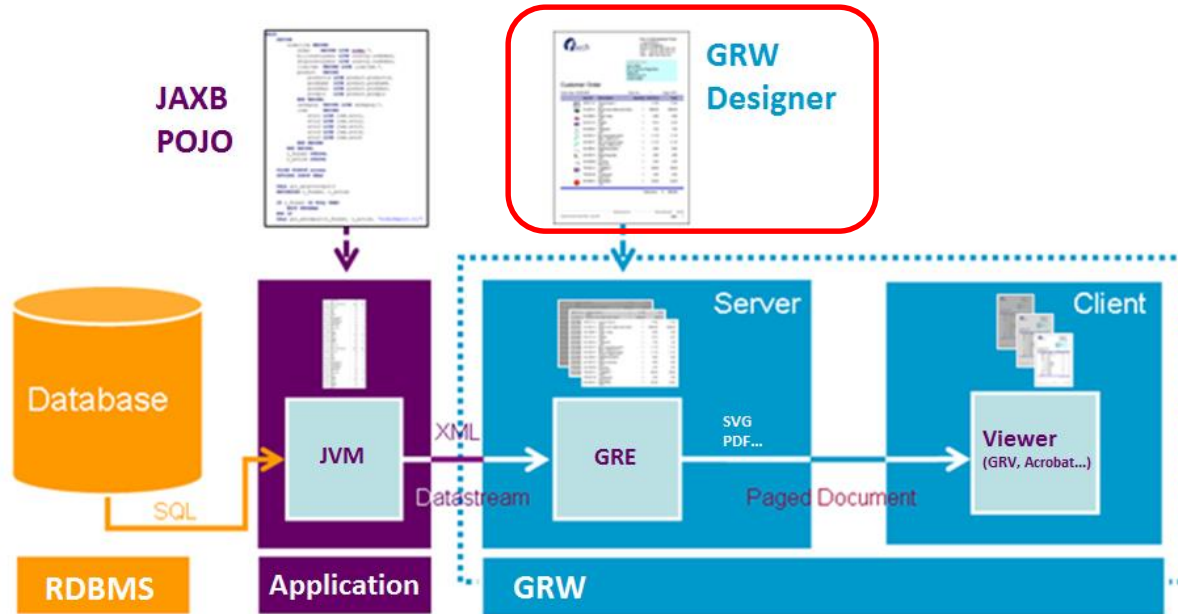
## Architecture



- Annotated Java POJO classes to produce XML DataStream
  - Uses JAXB to produce XML data stream



## Architecture

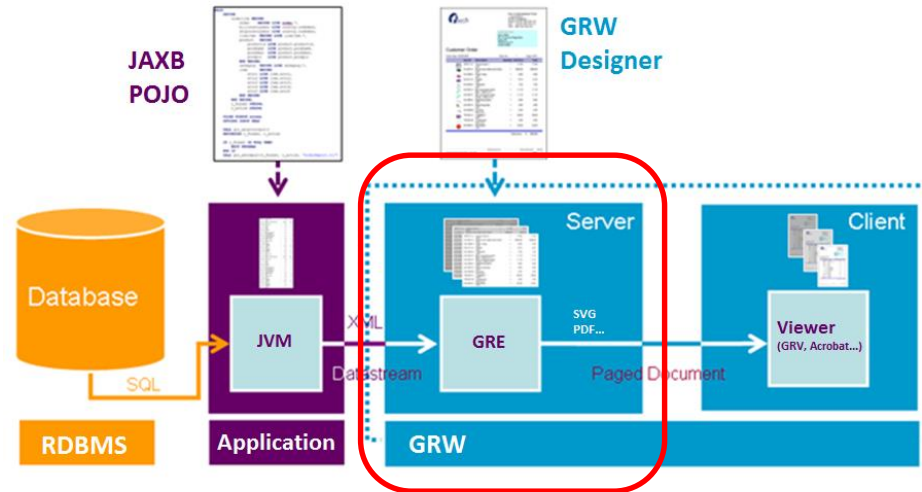


- Genero Report Designer (GRD) design a report
  - Near WYSIWYG editor to design the appearance of a report





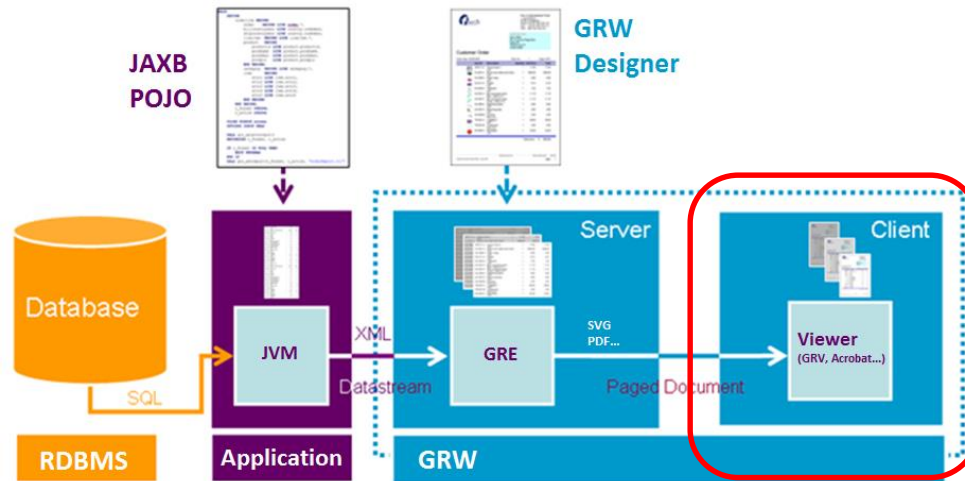
## Architecture



- Genero Report Engine uses these two inputs to produce a formatted report
  - XML DataStream + Report Design = Formatted Output
  - The Layouter does the Layouting
- Calculates where to position objects, and how to render them
  - GRE typically runs on a server, similar to application or database server

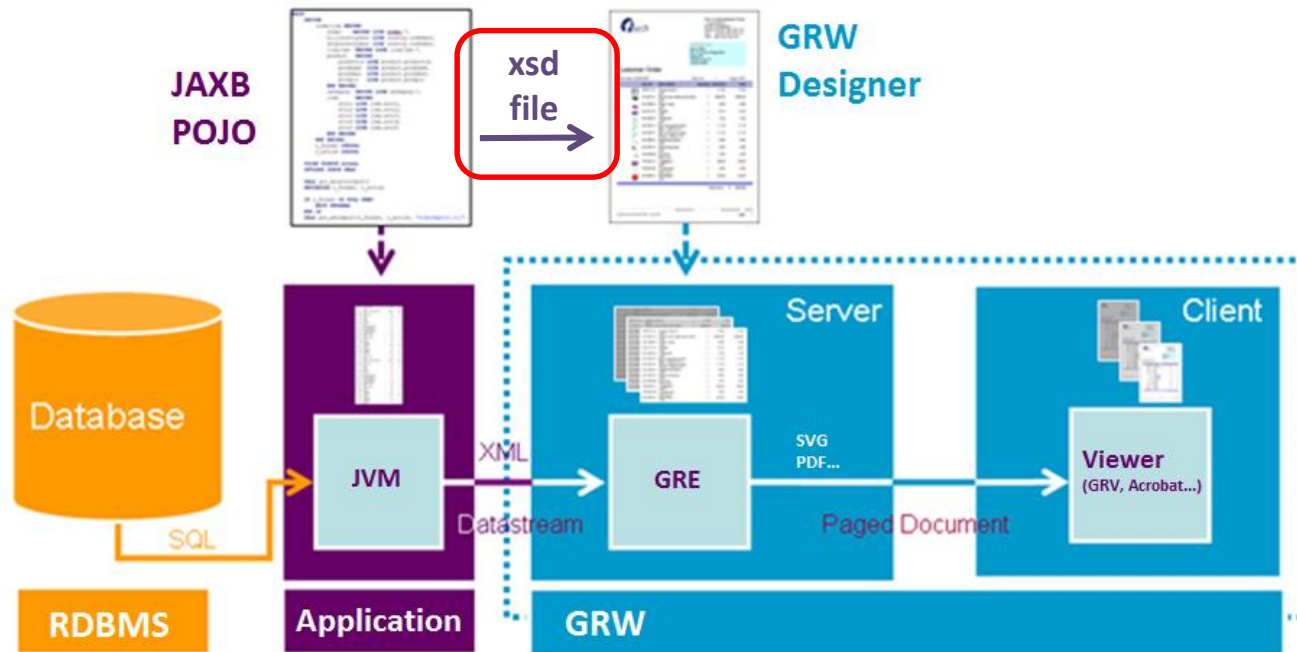


## Architecture



- Viewing occurs on end-users client
  - Genero Report Viewer or Web Viewer to view SVG reports
  - PDF viewer for PDF reports
  - Any image viewer for Image reports.
  - Any browser for HTML reports
  - MS-Excel for XLS/XLSX reports
  - MS-Word/Open Office for RTF/OORTF reports

# Architecture



- Report Data Definition (XSD file)
  - When designing reports, need to inform the report designer about what information will be available in the report



## File Extensions

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- java
  - Java source file
- xsd
  - Definition of data and structure of REPORT statements in .java source. Used by Genero Report Designer in design of reports
- xml
  - DataStream produced by the Java application.
  - Allows you to repeatedly test reports without selecting data from the database multiple times
- 4rp
  - Design of a report
- svg, pdf, Image (jpg, png, bmp and others), xls, xlsx, html, rtf, oortf, Printer
  - Different output formats of a report



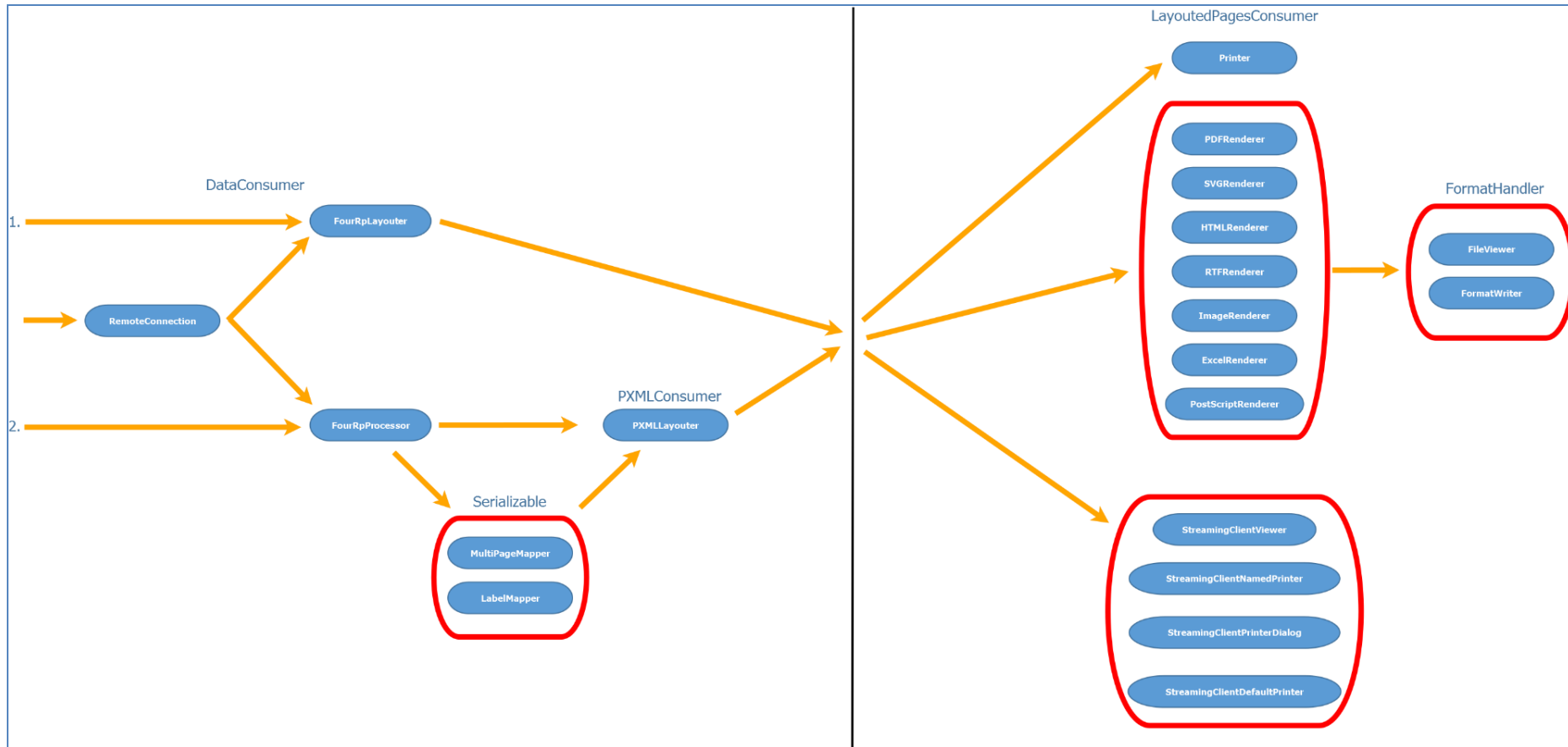
## Report Process

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- Determine report requirements
- Organize the project workspace
- Create the Java report application
  - Written from hand in Java
  - Can use BAM to generate a data source
- Generate the .xsd file
  - Use JAXB's 'schemagen'
  - Provides the Data View for a report
- Design report document using Genero Report Designer
- Run the report application
- View the report in any viewer (depending on the output format)



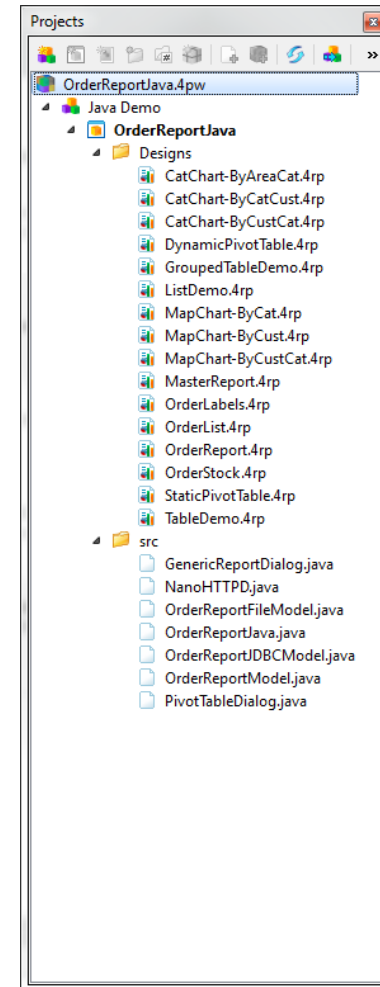
## Processing pipe





## Reports Demo

- OrderReportJava.4pw
- Project contains:
  - Java application files (.java sources)
  - Report definition documents
    - Order Report - a customer order
    - Order Labels - pages of mailing labels for customers
    - Order Stock - stock information including a bar code
    - List Demo/Order List- reports in list format
    - Table demo - report as a table
    - A variety of Map Charts and Category Charts
    - Static and dynamic Pivot Table





## Understanding the sample

- In \$SAMPLESDIR

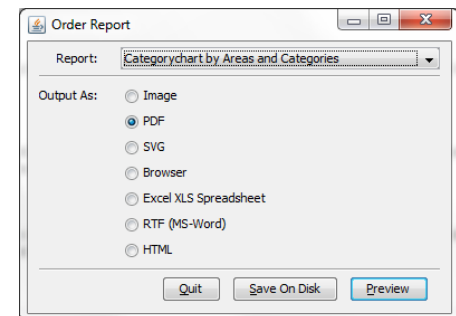
(Windows: C:\Users\rw\Documents\My Genero Report Studio Files\samples\Reports\OrderReportJava)

- Open OrderReportJava.4pw
- 1 Java Swing Application: OrderReportJava
  - Demonstrates most of the available Genero Report Writer features

- OrderReport.java

- Main Java source defining a Swing dialog
- Allow users to select different designs and output options
- `private static boolean runFromFile = false`
  - Runs report from a .unl file, set to false if you want to run from database
- `void createAndShowUI()`
  - Shows a Swing user interface
  - Allows user to select report to produce
  - Output format e.g. Image, PDF, SVG
  - Action (e.g. preview, save) chosen in menu
  - Options selected used in lines

```
If("XLS".equals(output)) renderer=new ExcelRenderer();  
report.runFromJAXBObject(data);  
If("Preview".equals(action) && Desktop.isDesktopSupported())  
    Desktop.getDesktop().open(new File(outputFileName));
```







## Understanding the sample

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- NanoHTTPD.java
  - Handles HTTP requests for the Web Report Viewer
- OrderReportModel.java
  - Abstract class describing the report data model
- OrderReportJDBCModel.java & OrderReportFileModel.java
  - Implementation of the report model using JDBC (MySQL officestore)
  - Implementation of the report model using a file
- GenericReportDialog.java
  - Swing dialog that allows users to select fields for the generic report
- PivotTableDialog.java
  - Swing dialog that allows users to select measures and dimensions for the dynamic pivot table example



## Understanding the sample

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- We will learn the meaning of these key lines later today ...
  - `LayoutedPagesConsumer` renderer;
  - `report=new FourRpProcessor(fourRpfilepath, layout);`
  - `data=new OrderReportJDBCModel(controlBlock)`
  - `report.runFromJAXBObject(data);`
  - `data = new OrderReportJDBCModel(controlBlock);`



## Understanding the sample

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- Reports include (1)
  - OrderReport.4rp
    - Illustrates use of the section property, note the different page header/footer on each page..
  - OrdersLabels.4rp
    - Illustrate the labels functionality enabling you to print multiple labels on a single page
  - OrderList.4rp
    - An example of a simple list produced from the List Template.
  - OrderStock.4rp
    - Illustrates barcodes
    - Can be used to illustrate attachment and positioning rules
    - How to design a report onto pre-printed paper using a background image



## Understanding the sample

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- Reports include (2)
  - TableDemo.4rp
    - An example showing a simple usage of TABLE
  - GroupedTableDemo.4rp
    - TABLE with several header and body rows
  - ListDemo.4rp
    - Has two examples of RTL expressions. The changing color of the font and the hands-up/hands-down image are both RTL expressions to change the color and orientation at run-time based on the field value.



## Understanding the sample

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- Reports include (3)
  - CatChart-By\*.4rp
    - An example showing a “Category” Chart (grouped by two fields). More than one example to show how different charts can be produced from the same data.
  - MapChart-By\*.4rp
    - An example showing a “Map” Chart (grouped by one field). More than one example to show how different charts can be produced from the same data.
  - StaticPivotTable.4rp
    - A table of customer data, grouped by customers and orders.
  - DynamicPivotTable.4rp
    - Generates a table of user-selected measures, grouped by user-selected dimensions



# Online Help Documentation

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- Accessing online help
  - Help button in toolbar
  - F1 key
  - Start >> All Programs >> Genero Report Studio >> Genero Report Studio Help



Questions?

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