

# How-To: Create Charts and Subreports with Jaspersoft Studio

## Overview

JasperReports supports a large number of built-in charts created using the popular open source library JFreeChart. Chart types include Pie, Bar, Stacked Bar, Line, Area, Bubble, Gantt, Thermometer and Meter. In this tutorial we will learn how to add a multi-series chart to a report. This tutorial uses the same example explained in [Designing a Report with Jaspersoft Studio](#). We suggest you complete that tutorial before beginning this one.

The goal is to have the same report described in the tutorial [Designing a Report with Jaspersoft Studio](#), with a bar chart showing the number of shipments for every city.

## Placing the Graph

The report created in the earlier tutorial is composed of multiple bands, each with different print times. For example, the detail band is printed for every record read from the data source, the page header and footer are printed at the start and at the end of every page and so on. For this tutorial we will use the Summary band that is printed at the end of the report. Note that in this report the Summary band is not visible from the designer because its height is set to 0. It is, however, visible from the outline view, so select it from there and change its height in the property tab to 400 pixels, as shown in the following image:

The screenshot shows the Jaspersoft Studio interface. The main report preview displays a report titled "Coffee Title" with a subtitle "Coffee SubTitle" and a table with columns: ORDERID, SHIPNAME, SHIPADDRESS, SHIPCITY, SHIPREGION. Below the table is a "Column Footer" section. A large, empty "Summary" band is visible in the center of the report, outlined in red. The Outline view on the left shows the report structure, with the "Summary" band selected and highlighted in red. The Properties panel on the right shows the "Band: Summary" properties, with the "Height" property set to "400 px" and highlighted in red. Three red callout boxes provide instructions: "1. Select the Summary band" points to the Outline view, "2. Change its Height to 400 pixels" points to the Height property, and "3. The new band will appear in the Designer" points to the Summary band in the report preview.

ORDERID	SHIPNAME	SHIPADDRESS	SHIPCITY	SHIPREGION
\$(ORDERID)	\$(SHIPNAME)	\$(SHIPADDRESS)	\$(SHIPCITY)	\$(SHIPREGION)

Summary

1. Select the Summary band

2. Change its Height to 400 pixels

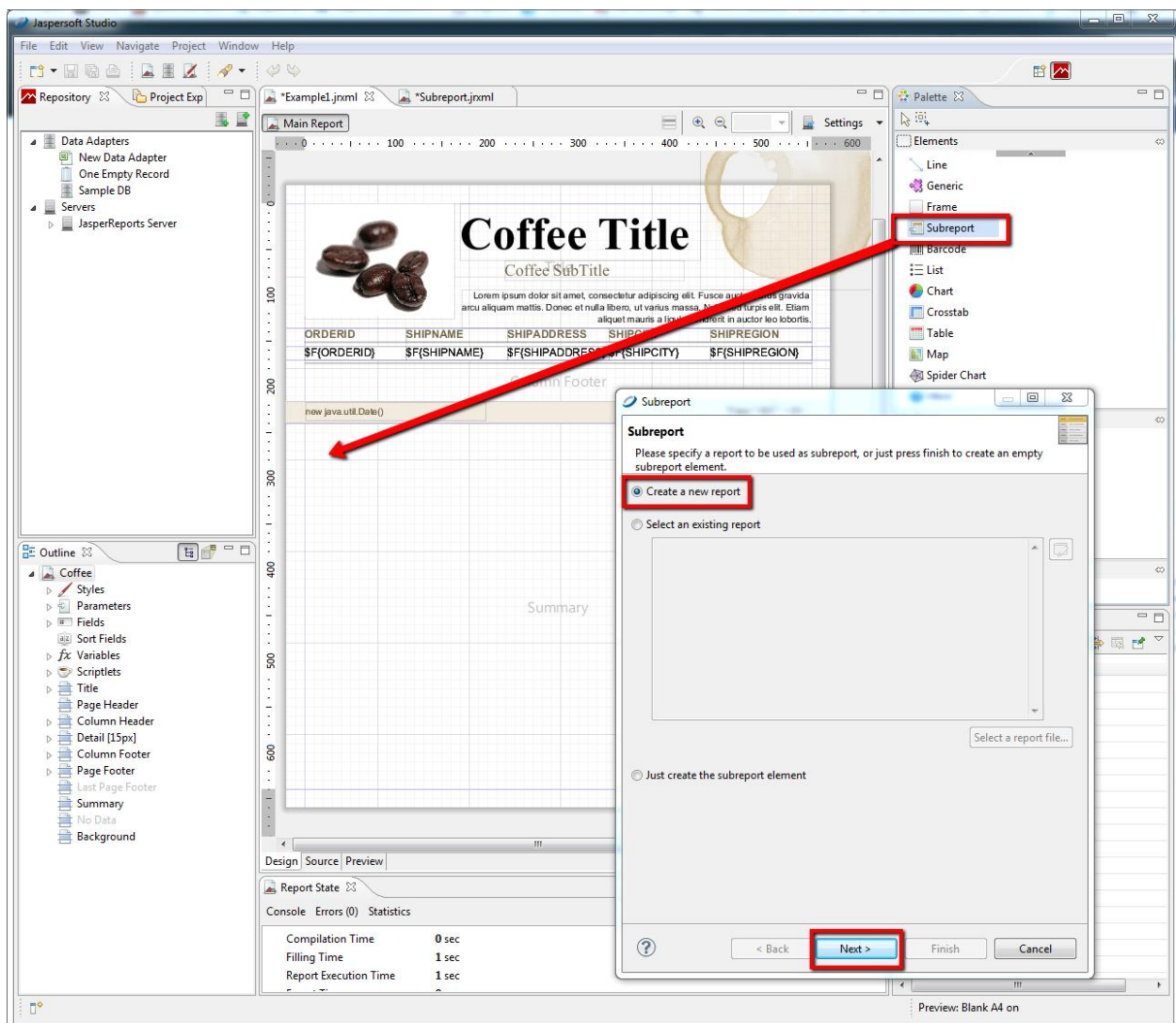
3. The new band will appear in the Designer

# The Subreport

A subreport is an element that includes a report inside another report. The idea in this tutorial is to have a subreport containing just the graph, and a main report that includes the subreport in the summary section.

For the purposes of this tutorial, we want to use two reports because in the main report we need a list of records without any aggregation so we had used the query "select \* from orders" and from all the fields read we had selected the order id, the shipment name, shipment address, shipment city, shipment region. But for the graph in the subreport we don't need a list of records, just a group of them. In other words, we need the records grouped by the shipment city. For this reason we need two queries, one that returns all the records (for the main report) and one for the group (for the subreport). Because a report can have only one main query, we need to use another report for the additional query. Note that there are other ways to use more than a query on the report, but for now we choose this one to introduce the concept of subreport.

Now drag the subreport element from the palette into the summary section and a wizard will appear:

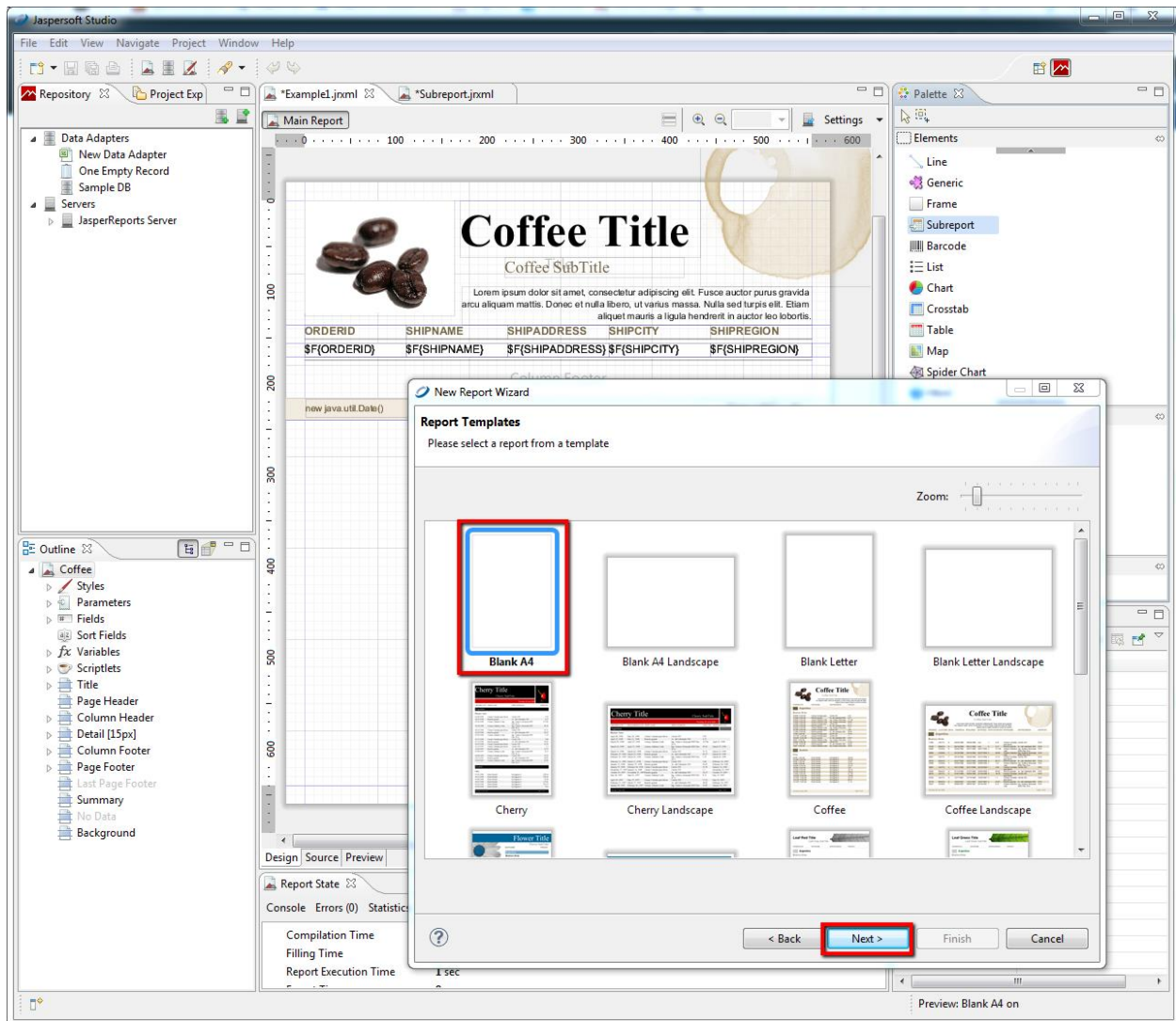


In the first step of the wizard we have three choices:

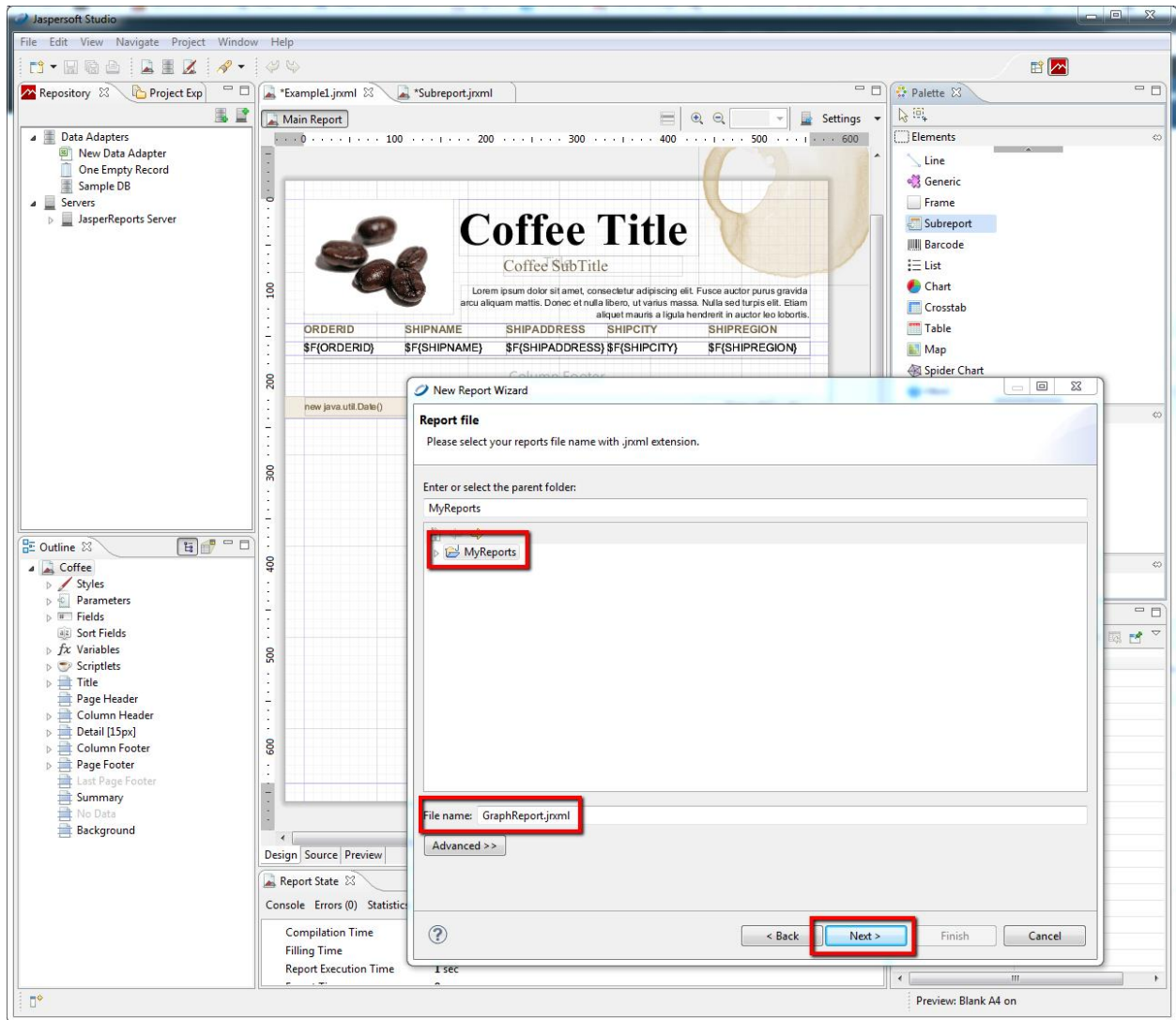
1. Create a new report as subreport.

2. Use an existing report as subreport.
3. Put an empty report as a subreport, as a placeholder.

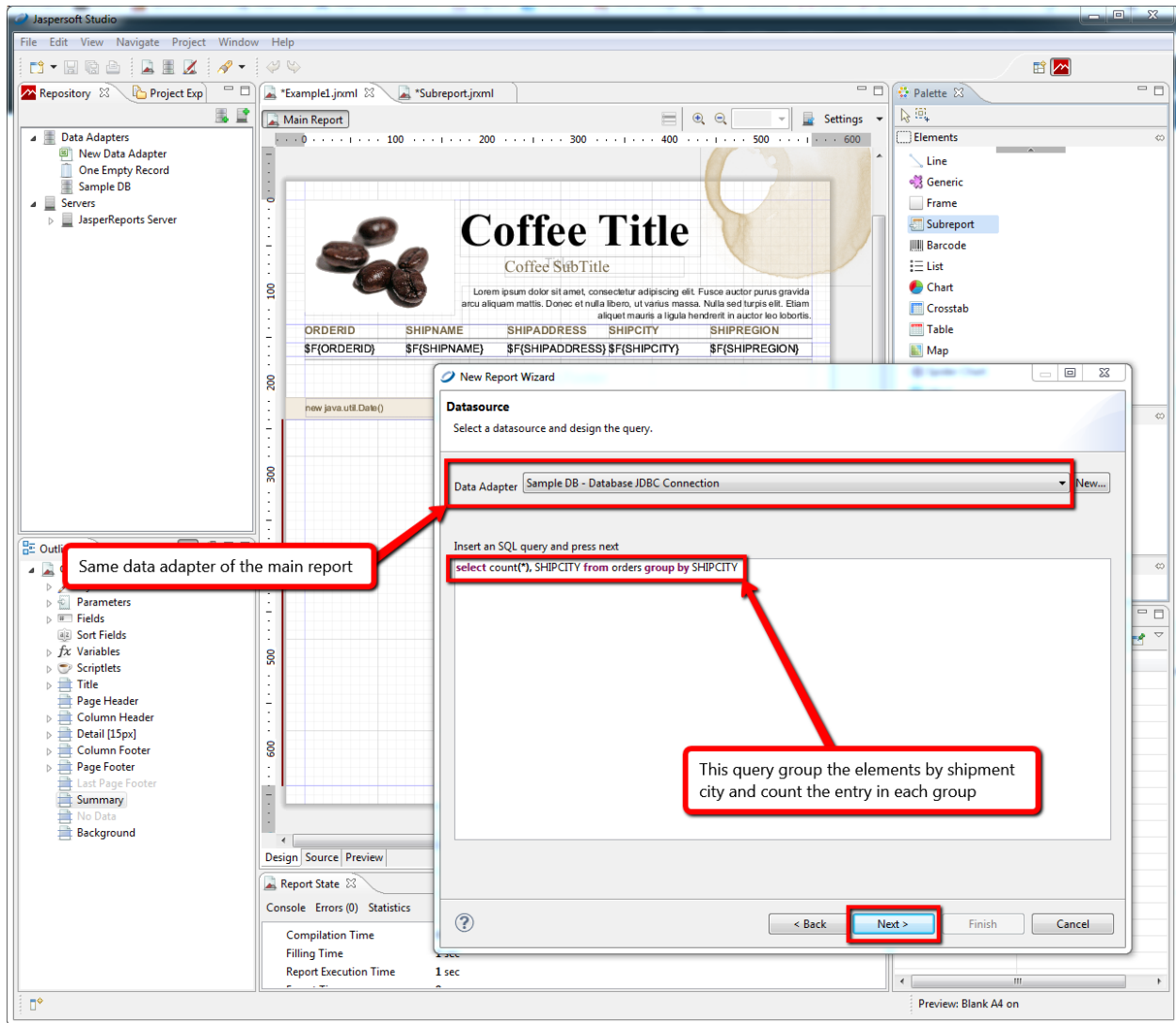
Since we are doing this from scratch select the first option, **Create a new report**, and click **Next**.



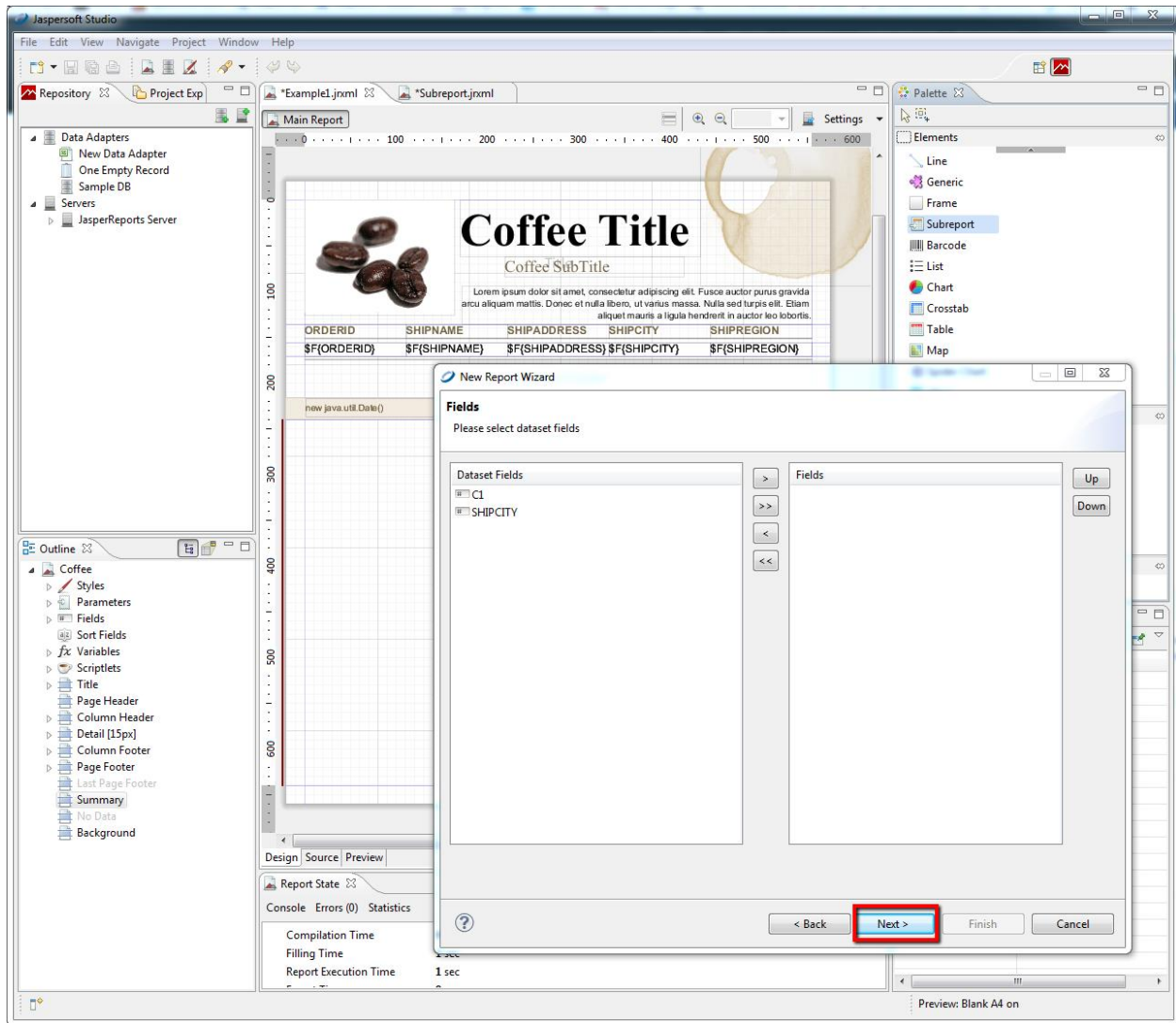
Now we will see a wizard almost identical to the one seen when we created the first report. This time, since we need only a blank paper with a graph select **BlankA4** and hit **Next**.



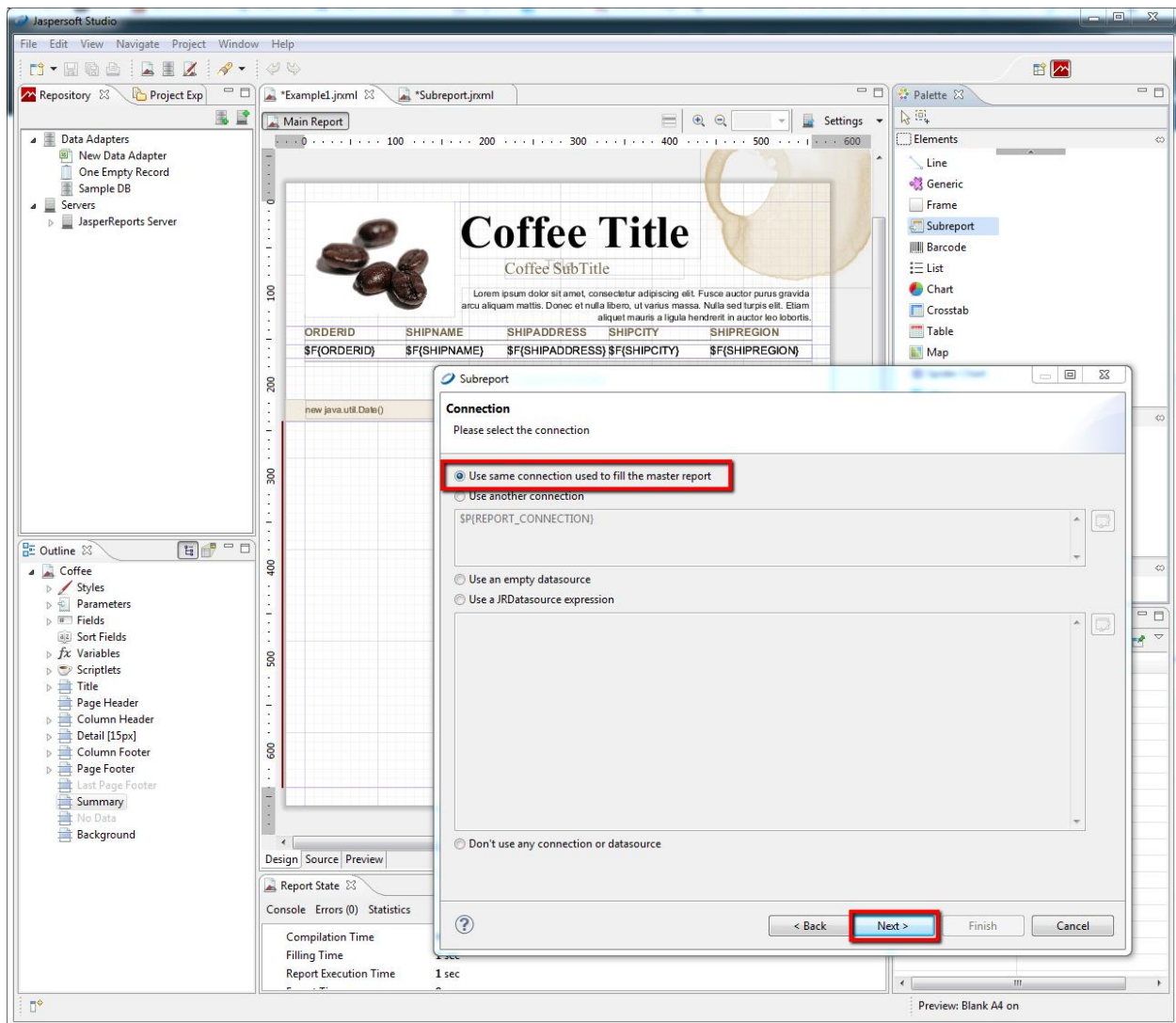
Now we need to choose the location and the filename of the new report, put it in the standard location **MyReports** and as name use "**GraphReport**" and click **Next**.



Now we have to select the data adapter. Since we need to use the same data source for both reports, select the same data adapter as used in the main report. We must also provide the query to retrieve the fields, so enter the query that returns the records grouped by the shipment city. Every record read from the database with this query contains two fields: the number of elements for a city and the name of the city. After that we can click **Next**.

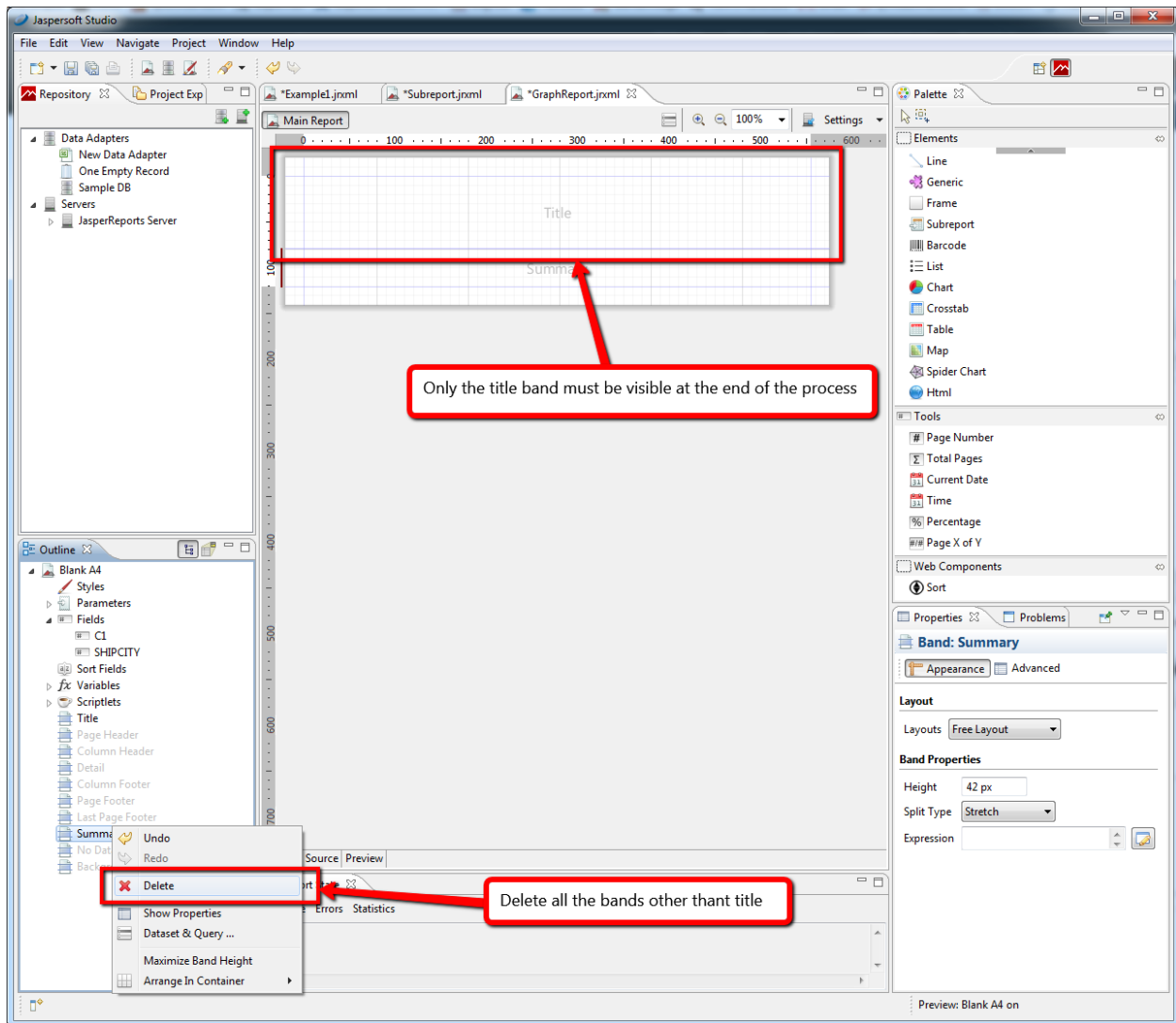


At this point we can see the fields included by the second query. Click the **add all** button or double-click on each field until they are in the right list. After that click **Next**. The following step in the wizard is to create groups into the report, but this is unnecessary for our goal. Click **Next** again.



Now we have to select the connection to the database. Since we are using the same database as in the main report we can select the first option and click **Next**. In the following step in the wizard, we could create some parameters that can be passed from the main report to the subreport, but we don't need them so click the button **Finish**.

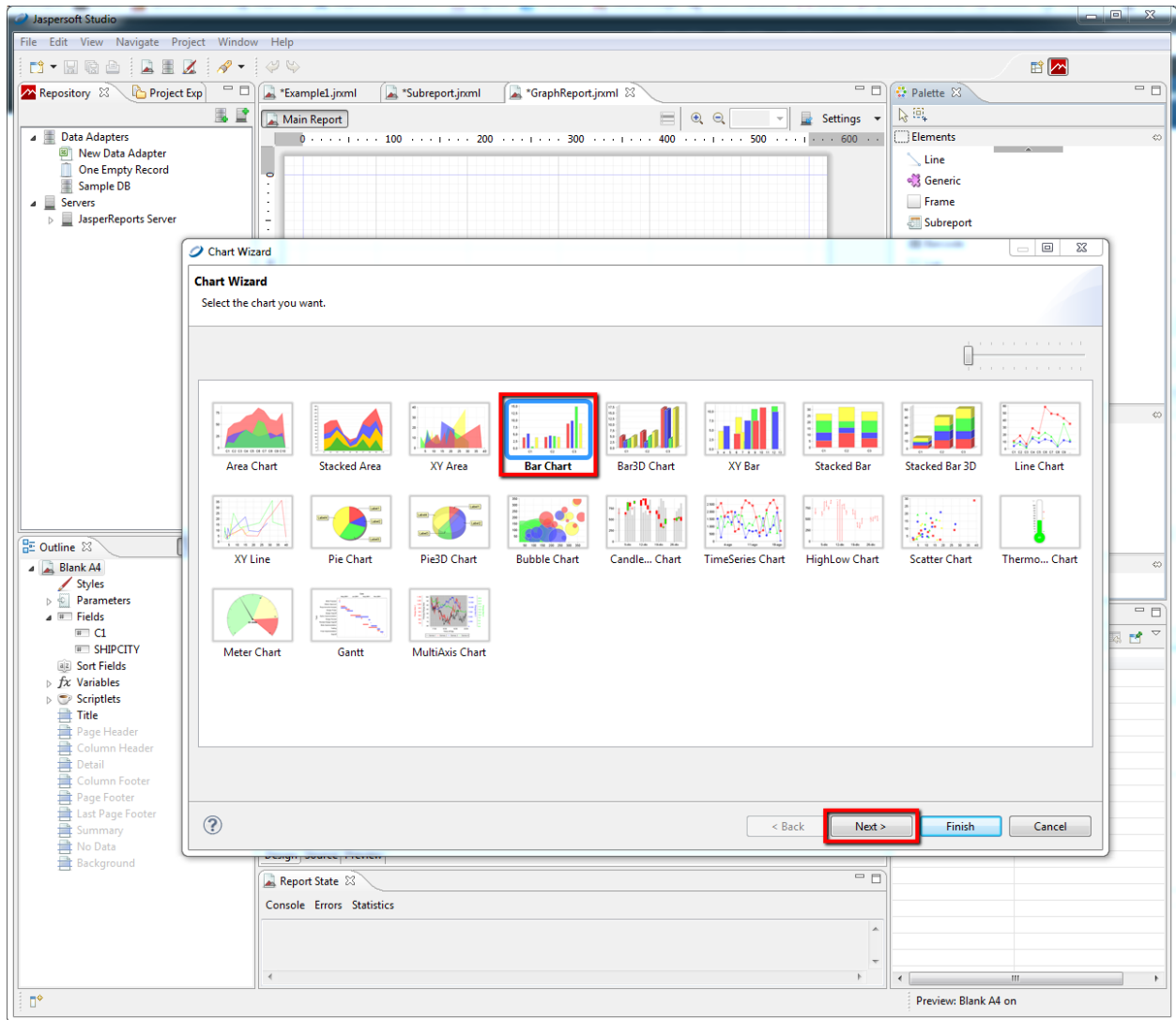
Now we have a new report with all his bands, but we need only one of them. In fact, we need only a band for the graph, and the band must be printed only once, so the detail band is excluded. We can choose the Title or Summary band. If we decide to choose Title, we need to remove the other bands because otherwise they will take up space unnecessarily. So for each band except Title right-click on its element in the outline view and choose **Delete**. The name of a deleted band appears in light gray text in the outline view, so at the end of the process the only band with a black name must be Title.



## The Chart

Now we can place the chart. Drag its element from the palette into the Title band to open the wizard, select the bar chart and click **Next**.





In the next step you can configure the series of the chart, as shown in the following image:

We want a different series for every city

Click this button to add new series

Value: \$F{C1}

The value of every bar is the number of shipment for the city the bar represent.

Label: \$F{SHIPCITY}

The labels are the names of the city

Category: ""

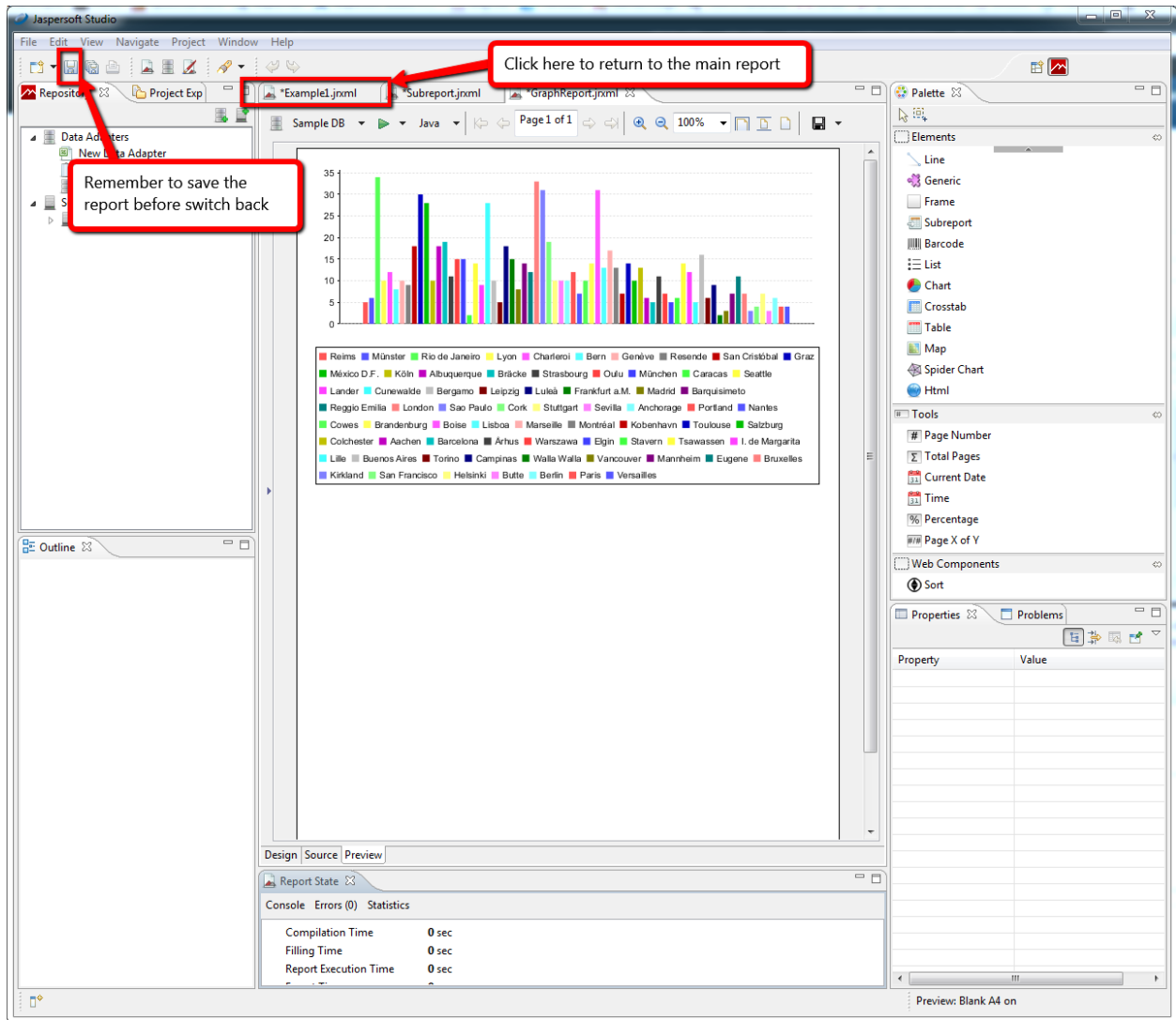
For the example we don't need a category, so here you can insert a void string

Finish

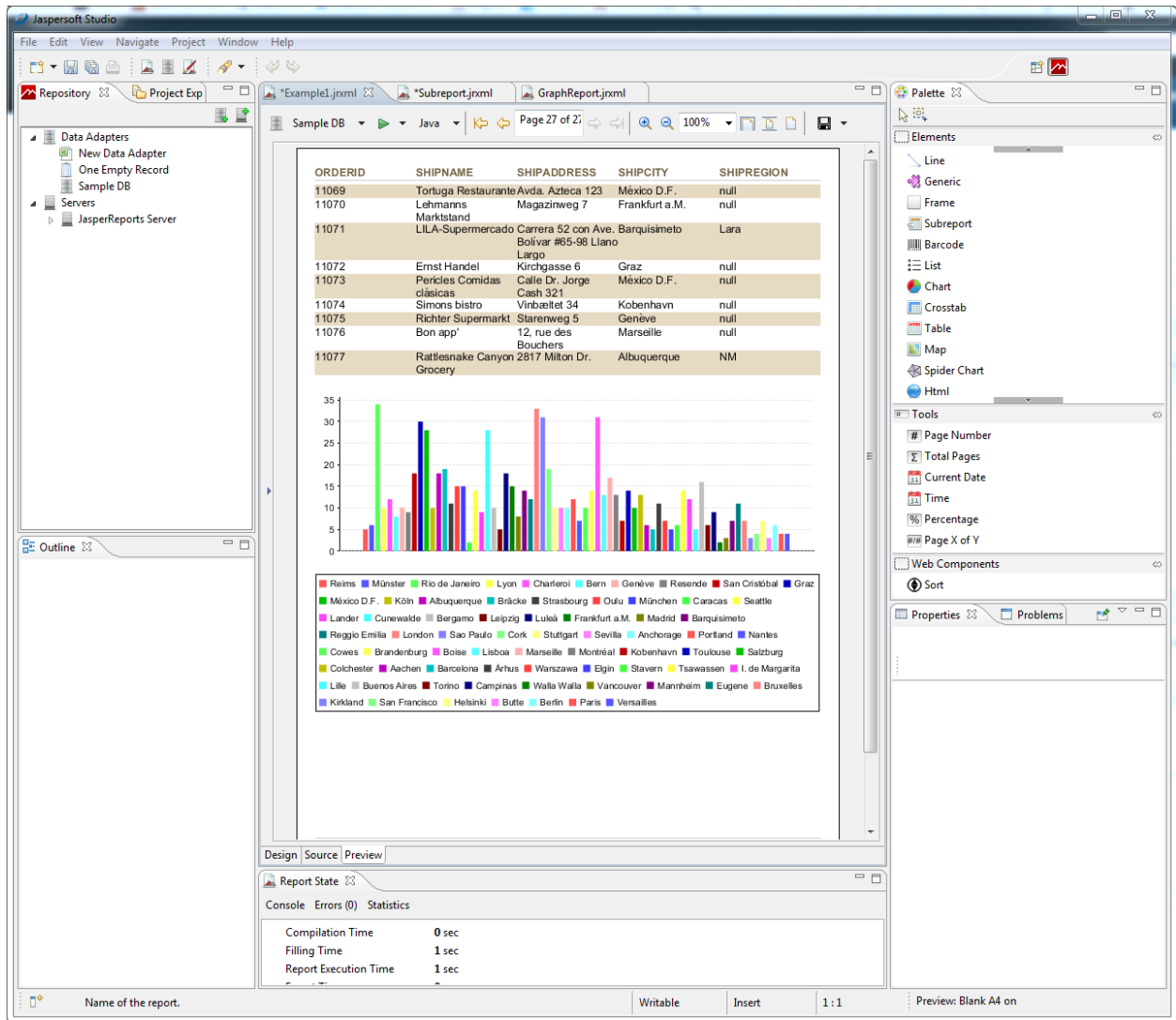
Report State

Console	Errors (0)	Statistics
Compilation Time	0 sec	
Filling Time	0 sec	
Report Execution Time	0 sec	

Then click **Finish** to create the chart. Since we need space, resize the Title band with an height of 350 pixels. Right-click on the chart, select **Size to Container** and then **Fill Both**. The chart will take all the space in the band. Now we can switch to the Preview tab and if it is all correct, save this subreport and switch to the main report as shown in the following image:



Now the only thing to do is to resize the subreport element to fill the Summary band, and compile the report. On the last page you will get a result like this:



Courtesy: <https://community.jaspersoft.com/wiki/creating-charts-and-subreports-jaspersoft-studio>

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