

# XLr8Reporter



**Subroutine**

---

A **U2logic** PUBLICATION

© 2016, U2logic, Inc.

## **XLr8 Report Subroutine Users Guide**

Doug Averch

Version 1.0

Updated May 24, 2016

Printed in the United States of America

U2logic, 13963 Powhaton Road, Brighton, CO 80603

All rights reserved. This product and its documentation are protected by copyright and are distributed with licensed copies of the respective software system. This document and the confidential information contained within it may in no part be distributed, reproduced, stored in or introduced into a retrieval system, or transmitted in any form or means without the express written permission of U2logic, Inc.

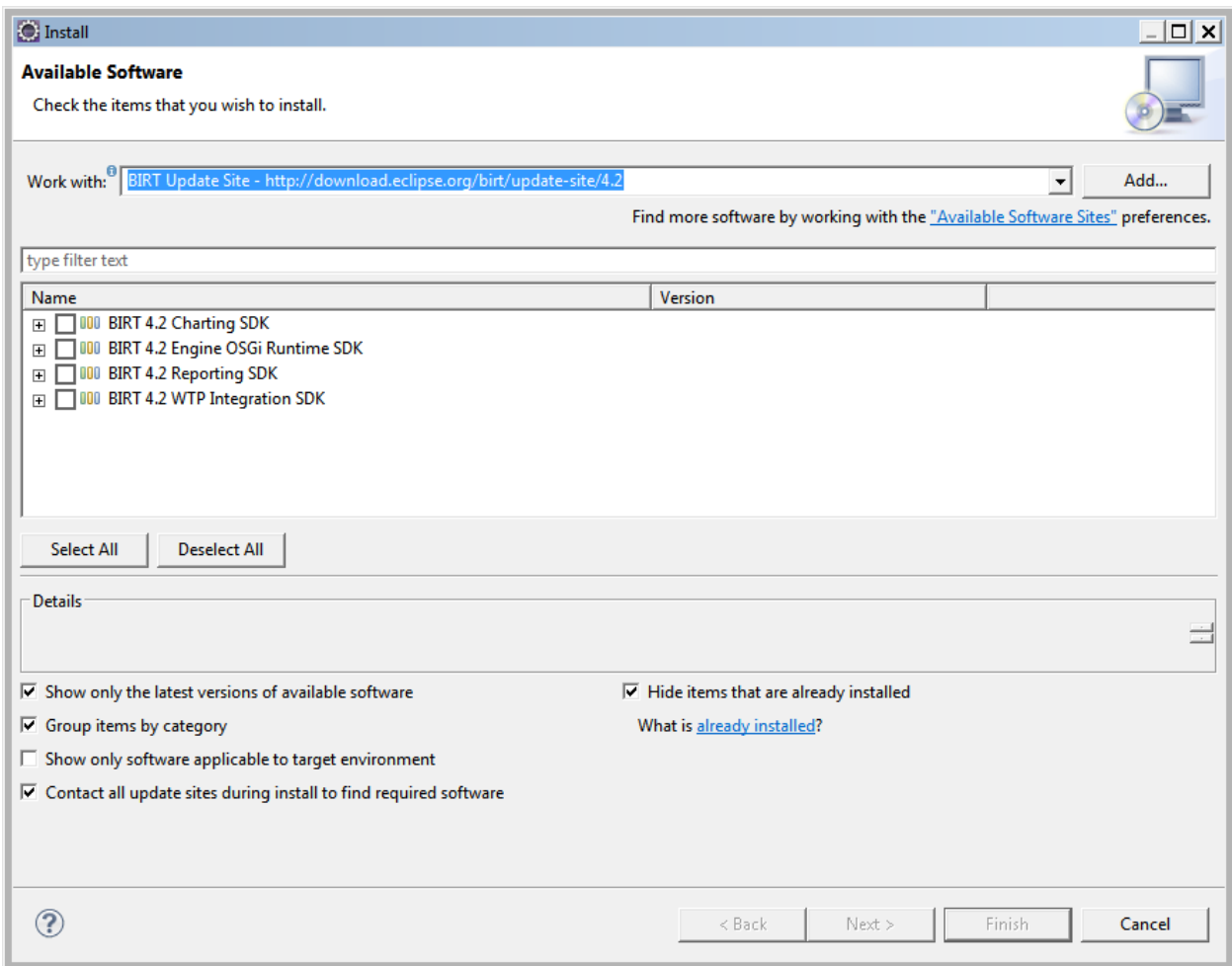
U2logic is not responsible for errors or omissions in this guide. U2logic reserves the right to change the information described herein at any time without notification.

# I. Business Information Report Tool (BIRT)

Business Information Reporting Tool (BIRT) is an open source software project that provides the BIRT technology platform to create data visualizations and reports that can be embedded into rich client and web applications, especially those based on Java and Java EE. BIRT is a top-level software project within the Eclipse Foundation, an independent not-for-profit consortium of software industry vendors and an open source community.

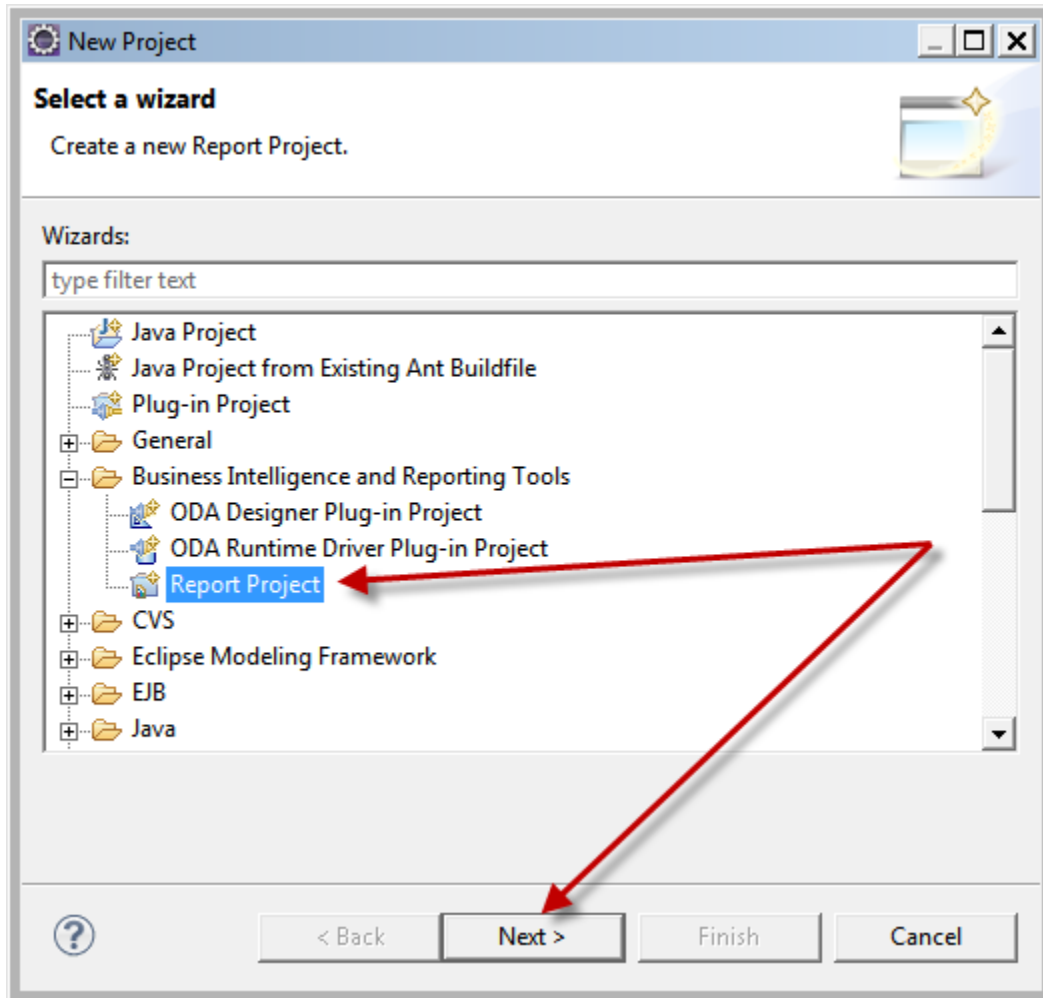
U2logic has created the ODA Data Source element represents a type of Open Data Access (ODA) connection. It is described by an extension ID and optional set of driver-specific connection properties. An ODA driver may support one or more ODA data source extensions. In this case we are supporting Universe and UniData natively.

Install new software: BIRT Update Site - <http://download.eclipse.org/birt/downloads/build.php>



## II. Create a BIRT Project

In Eclipse menus File->New->Project:



New Report Project

### Report Project

Create a new report project.

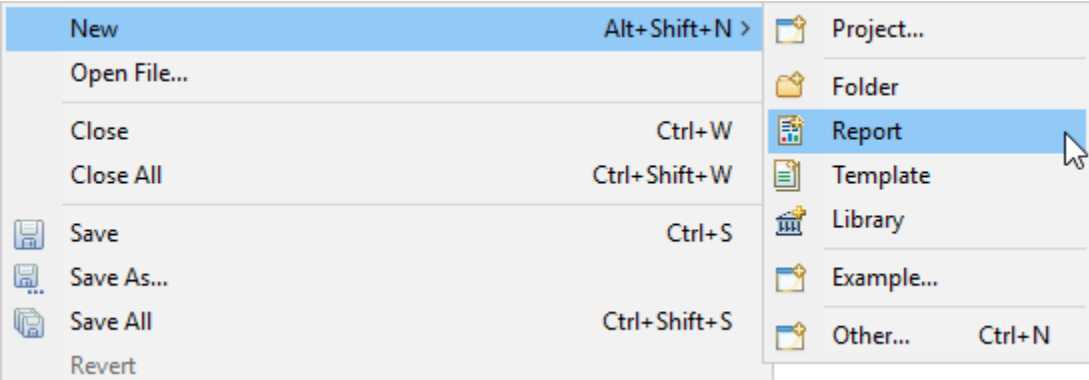
Project name:

Use default location

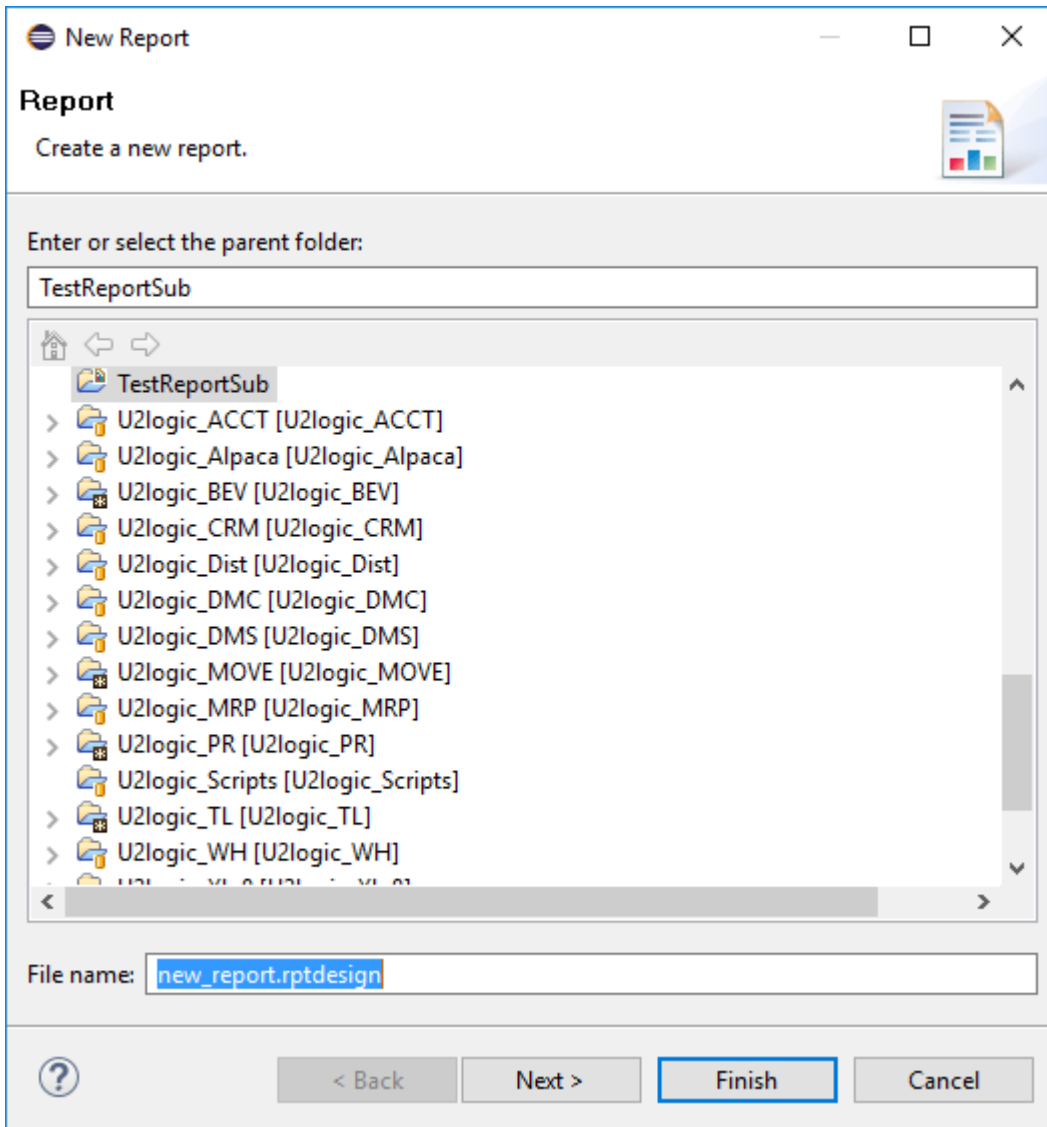
Location:

Choose file system:

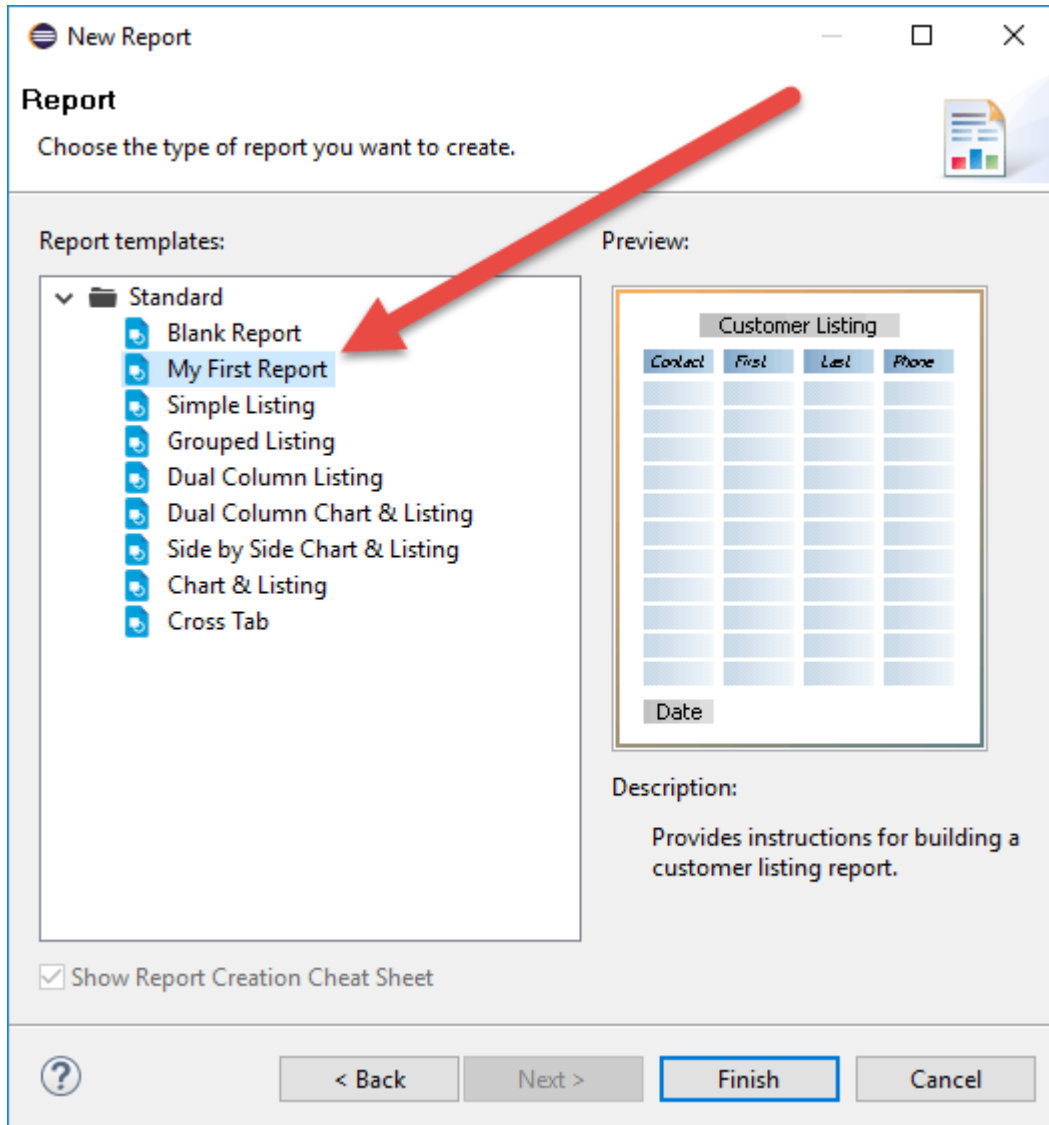
Right Click on the TestReportSub project to get this menu:



You can change the name of the report design and press Next Button:



Now pick the report type and press the Finish button.





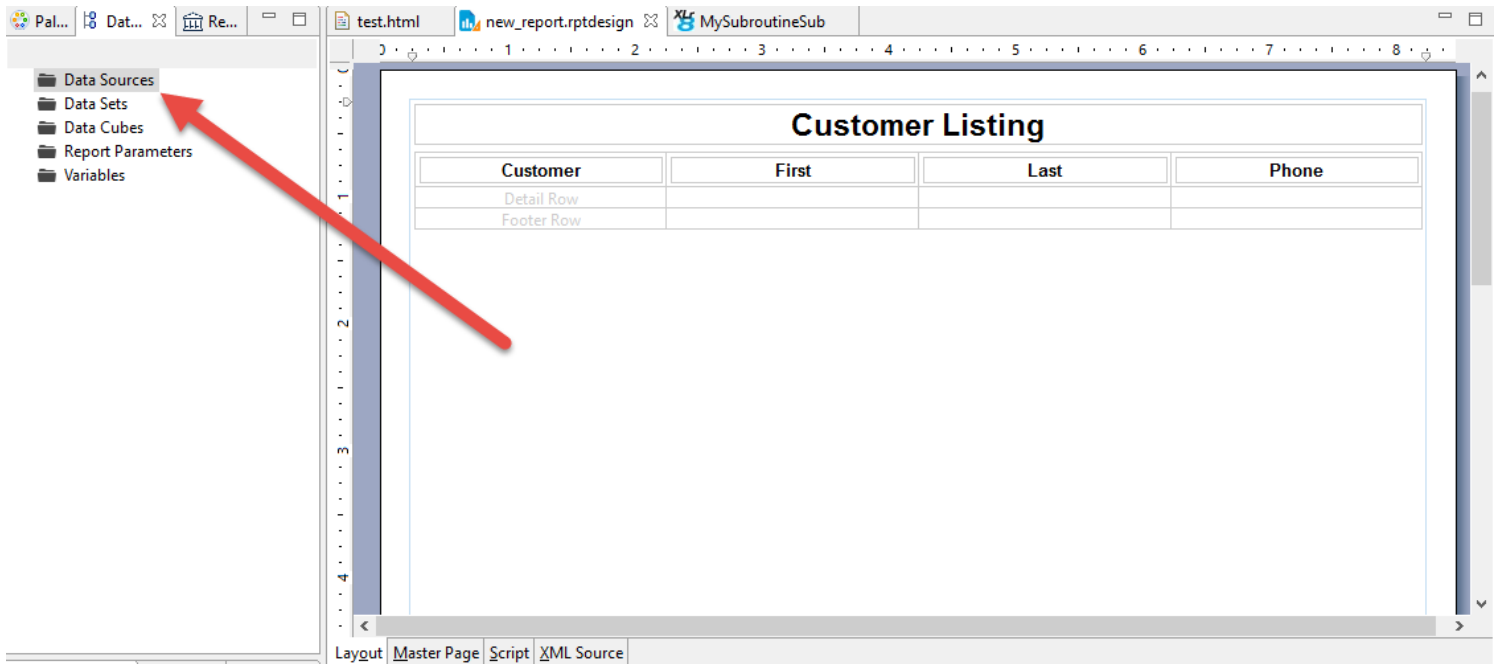
### III. Create a UniBasic Subroutine

Create a basic subroutine program. All BIRT data is passed using JSON, so you will have to write your own UniBasic subroutine for parsing and for passing data back to BIRT.

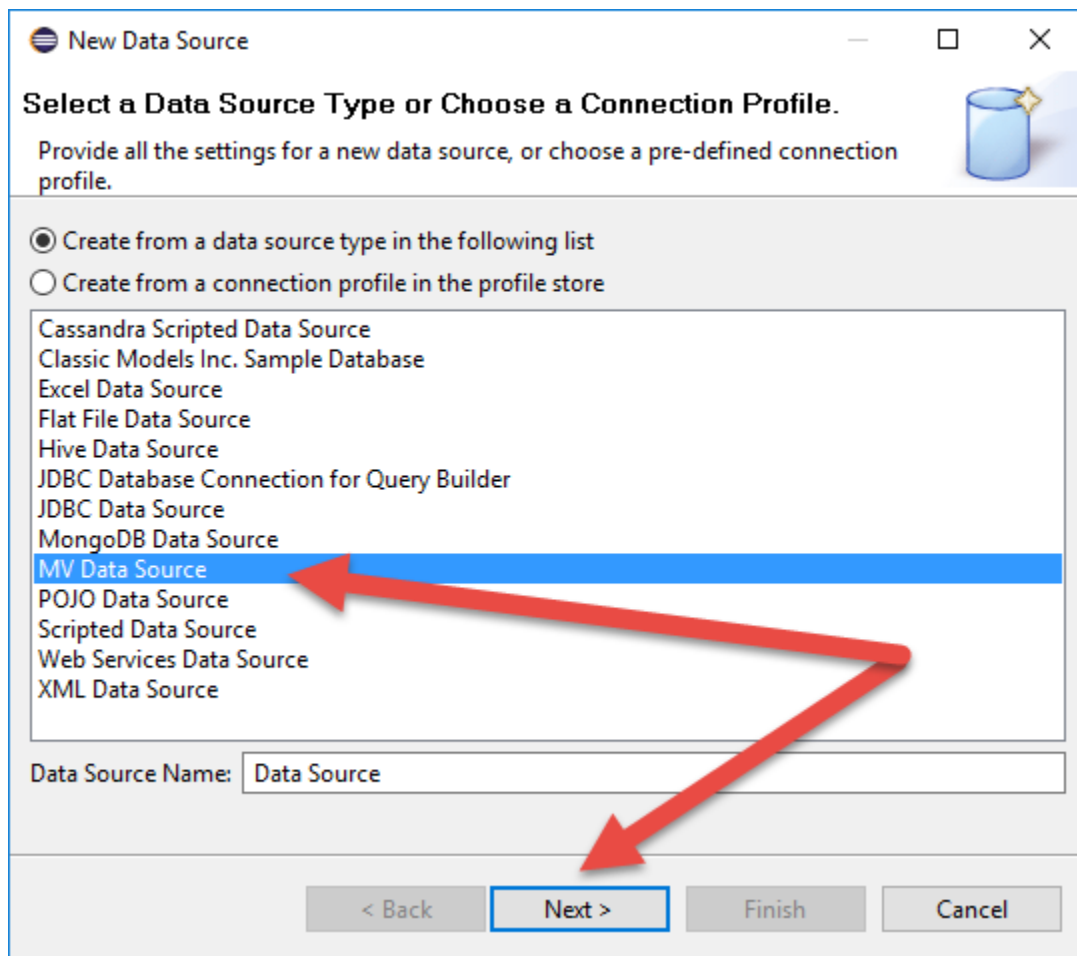
```
MySubroutineSub  *new_report.rptdesign
1      SUBROUTINE MySubroutineSub (PARAM1, PARAM2, PARAM3, PARAM4, RETURN.ID, METHOD)
2      * © 2016, U2logic, Inc. All Right Reserved.
3      *****
4      PGM.NAME = "MySubroutineSub"
5      $INCLUDE XLr8Includes XLr8Param5.EQUATE
6      $INCLUDE XLr8Includes XLr8Company.EQUATE
7      $INCLUDE LOCAL.XLr8Includes CRM.CUSTOMERS.EQUATE
8      CALL XLR8OpenFilesSub(0, 'CRM.CUSTOMERS', CRM.CUSTOMERS, PARAM5, RETURN.ID, PGM.NAME) ; IF RETURN.ID THEN RETURN
9      CALL XLR8OpenFilesSub(0, 'XLr8Company', XLR8Company, PARAM5, RETURN.ID, PGM.NAME) ; IF RETURN.ID THEN RETURN
10     CALL XLR8PropertySub (PARAM1, '', 'XLr8Company', COMPANY.NO, PARAM5, 'getPropertyJSON')
11     CALL XLR8PropertySub (PARAM1, '', 'Method', BIRT.METHOD, PARAM5, 'getPropertyJSON')
12     READ XCO.ITEM FROM XLR8Company, COMPANY.NO ELSE XCO.ITEM = ""
13     ARRAY = "" ; CNT = 0
14     BEGIN CASE
15         CASE BIRT.METHOD = 'CreateReport' ; SAMPLED = @FALSE ; GOSUB CREATE.REPORT
16         CASE BIRT.METHOD = 'getMetaData' ; SAMPLED = @TRUE ; GOSUB CREATE.REPORT
17         CASE 1 ; SAMPLED = @FALSE ; GOSUB CREATE.REPORT
18     END CASE
19     RETURN
20 CREATE.REPORT:*
21     LINE = 'SELECT CRM.CUSTOMERS WITH COMPANY = ":COMPANY.NO:" BY CUS.NAME'
22     IF SAMPLED THEN LINE := ' SAMPLE 20'
23     EXECUTE LINE CAPTURING OUTPUT
24     LOOP WHILE READNEXT CUS.ID
25         READ CUS.ITEM FROM CRM.CUSTOMERS, CUS.ID ELSE CONTINUE
26         CNT += 1
27         ARRAY<1, CNT> = CUS.ID
28         ARRAY<2, CNT> = CUS.ITEM<CUS.ADD.CITY.AMC>
29         ARRAY<3, CNT> = OCONV(CUS.ITEM<CUS.YTD.SALES.AMC>, 'MD2')
30     REPEAT
31     GOSUB JSON.FORMAT
32     RETURN
33 JSON.FORMAT:*
34     FILTER = \Company: \ : COMPANY.NO
35     JSON.FIELD = "Filter" ; JSON.DATA = FILTER
36     JSON.FIELD := @FM:"ProgramHeading" ; JSON.DATA := @FM:"Customer Listing"
37     JSON.FIELD := @FM:"Copyright" ; JSON.DATA := @FM:CHAR(169):"2016, U2logic, Inc. All Rights Reserved."
38     JSON.FIELD := @FM:"RecordCount" ; JSON.DATA := @FM:CNT:\ record(s) listed.\
39     PARAM5.TEMP = PARAM5
40     CALL XLR8PropertySub (JSON.FIELD, JSON.DATA, '', '', PARAM5.TEMP, "setPropertyJSON")
41     JSON = \{"REPORT_INFO":\:PARAM5.TEMP:\, "DATA":\
42     JSON.FIELD = \CustomerNo\ ; JSON.DATA = ARRAY<1>
43     JSON.FIELD := @FM:\City\ ; JSON.DATA := @FM:ARRAY<2>
44     JSON.FIELD := @FM:\YTDSales\ ; JSON.DATA := @FM:ARRAY<3>
45     PARAM5.TEMP = PARAM5
46     CALL XLR8PropertySub (JSON.FIELD, JSON.DATA, '', 'JSONARRAY', PARAM5.TEMP, "setPropertyJSON")
47     JSON := PARAM5.TEMP:\}\
48     RETURN.ID = JSON
49     RETURN
50 END
```

## IV. Finish your BIRT Project

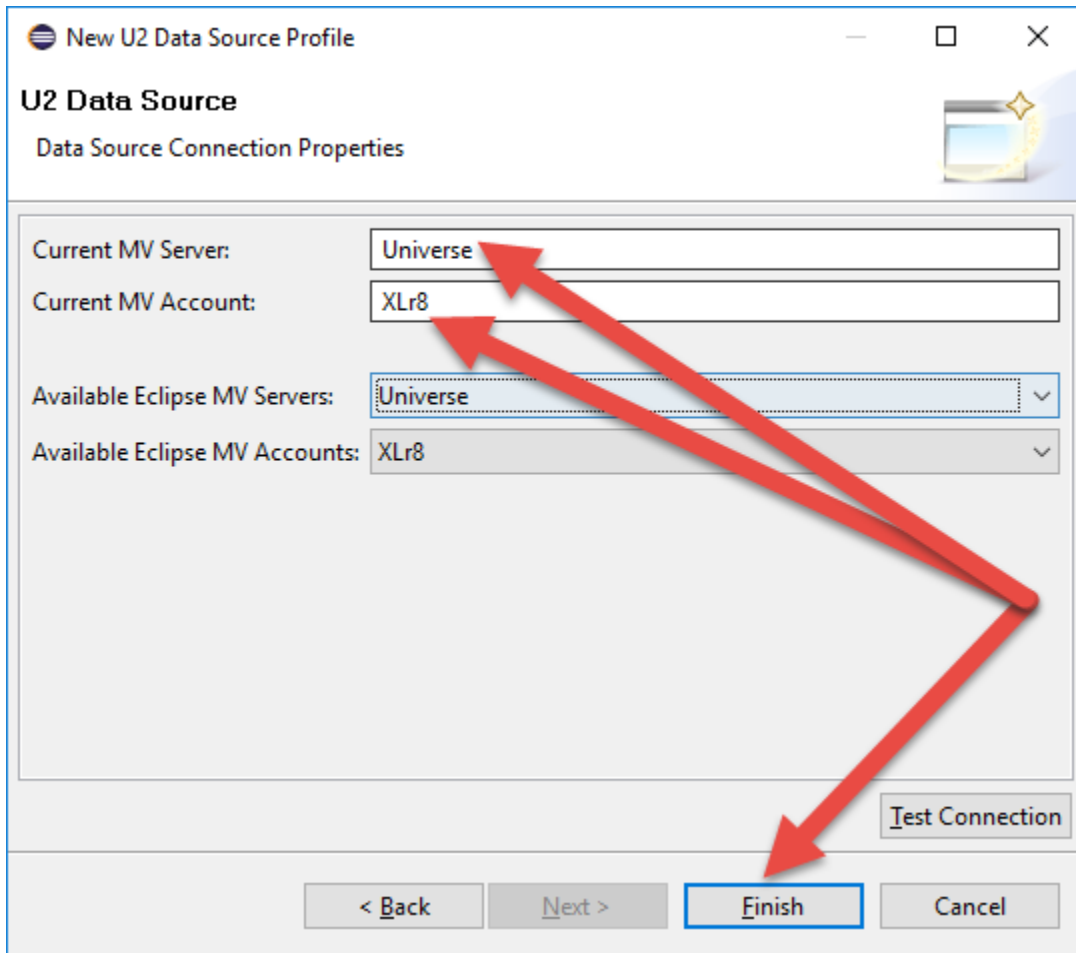
Click back to BIRT new\_report.rptdesign tab and right click on the “Data Sources” and create a new data source:



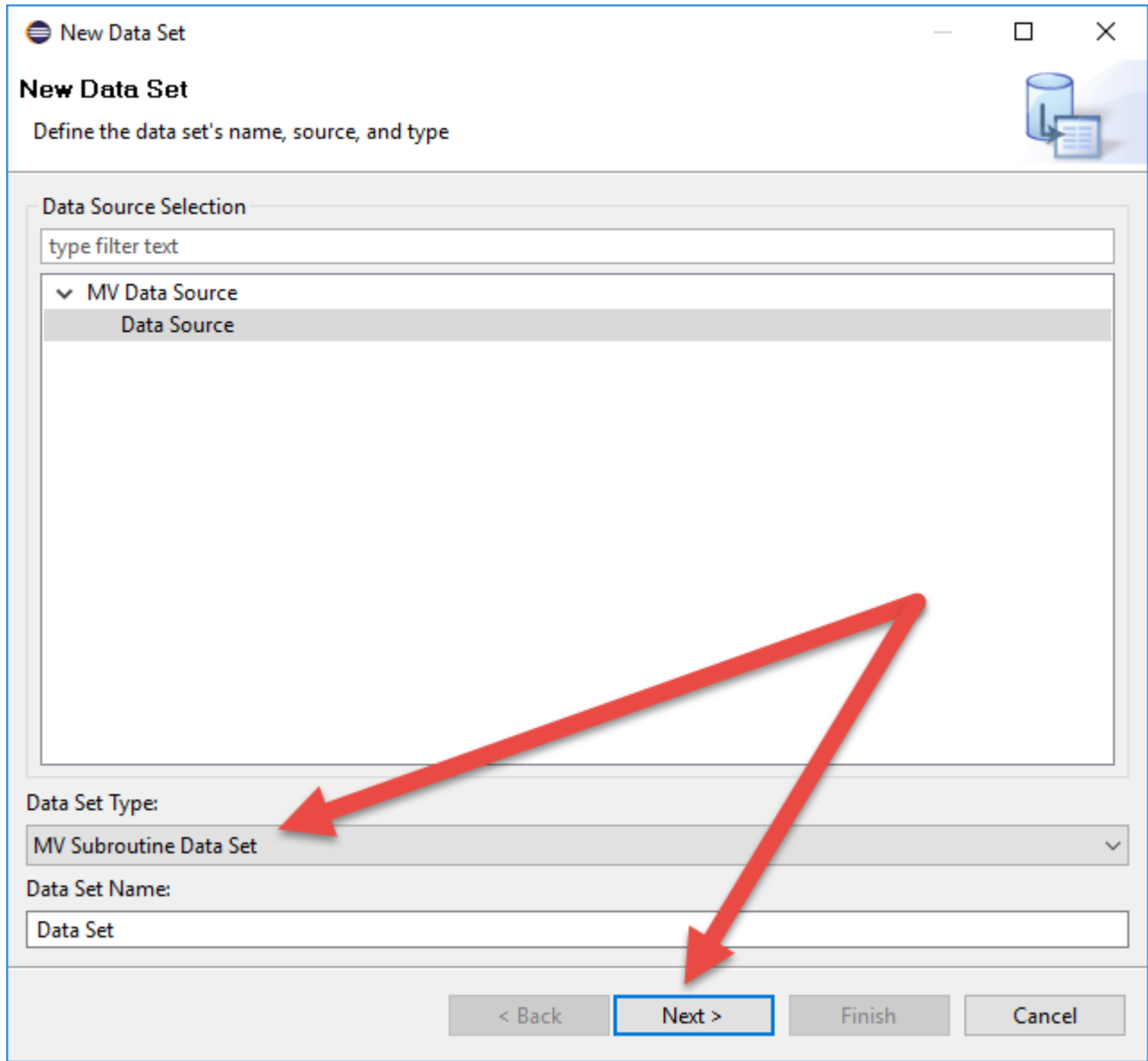
This wizard comes up and you must pick MV Data Source press the Next button:



Your U2 Data Source wizard comes up and asks for you to pick a MV Server and MV Account. These should be setup in your Servers project that you used to create and edit your UniBasic Code.



Now right click on your Data Set and pick the new Data Set option to get this wizard:



Enter the subroutine name and press the next button. If you have not cataloged the subroutine you will not get the next button.

U2 Query Data Set

### Enter Subroutine

Query Text:

Subroutine Name MySubroutineSub

Name	Positi...	Value	In/Out
PARAM1	1		IN
PARAM2	2		IN
PARAM3	3		IN
PARAM4	4		IN
PARAM5	5		BOTH
PARAM6	6		IN

Add Remove

< Back Next > Finish Cancel

Pick all of the columns you would like for this data set and press the Finish button.

**U2 Query Data Set**

**Columns**  
Select columns to include in report

Four empty text input fields

Include	Column	Position	Conversion
<input checked="" type="checkbox"/>	Copyright		N/A
<input checked="" type="checkbox"/>	Filter		N/A
<input checked="" type="checkbox"/>	Address1		N/A
<input checked="" type="checkbox"/>	ProgramHeading		N/A
<input checked="" type="checkbox"/>	CustomerNo		N/A
<input checked="" type="checkbox"/>	RecordCount		N/A
<input checked="" type="checkbox"/>	YTDSales		N/A

Buttons: Select all, Clear all, < Back, Next >, Finish, Cancel

Click in PARAM1 Value to see the three dot button which you press next.

**Edit Data Set - Data Set**

**Enter Subroutine and arguments.**

Query Text:  
MySubroutineSub [{"inOut": "IN", "parameterName": "PARAM1", "position": 1, "parameterValue": ""}, {"inC

Subroutine Name MySubroutineSub

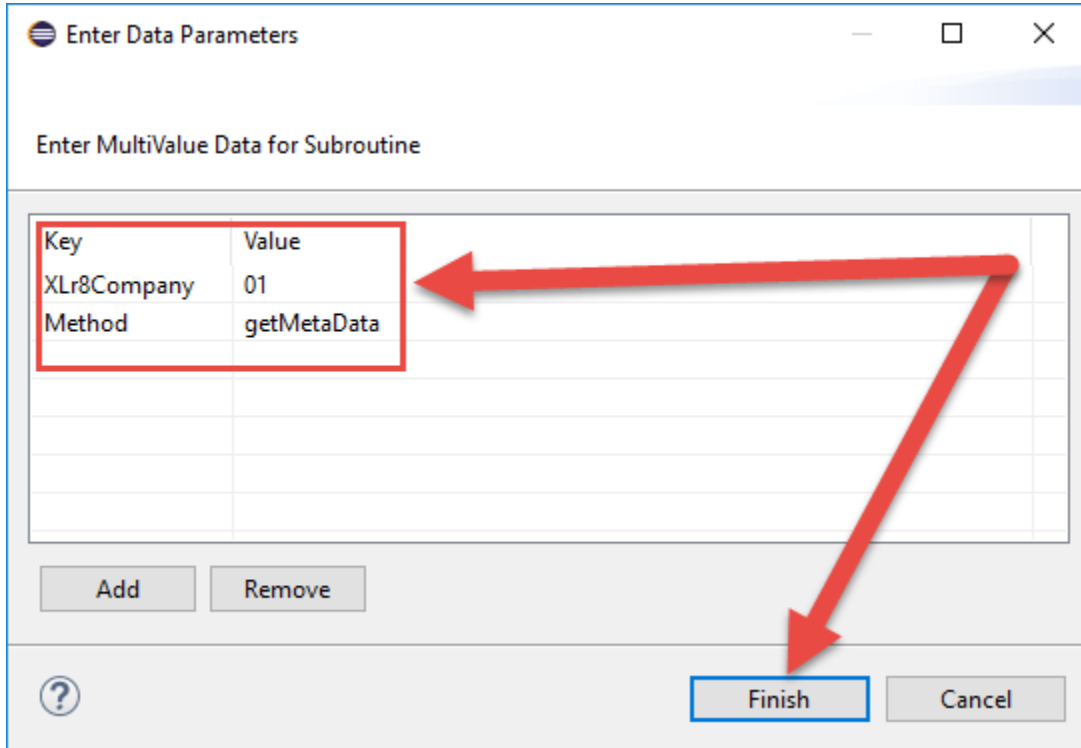
Name	Positi...	Valu	In/Out
PARAM1	1		...
PARAM2	2		IN
PARAM3	3		IN
PARAM4	4		IN
PARAM5	5		BOTH
PARAM6	6		IN

Add Remove

OK Cancel



This parameter wizard is how you tell your UniBasic program what to run. Add or subtract additional parameters as necessary and press finish when you are done.



Press the Preview Results menu to see that your subroutine works:

**Edit Data Set - Data Set**

**Preview Results**

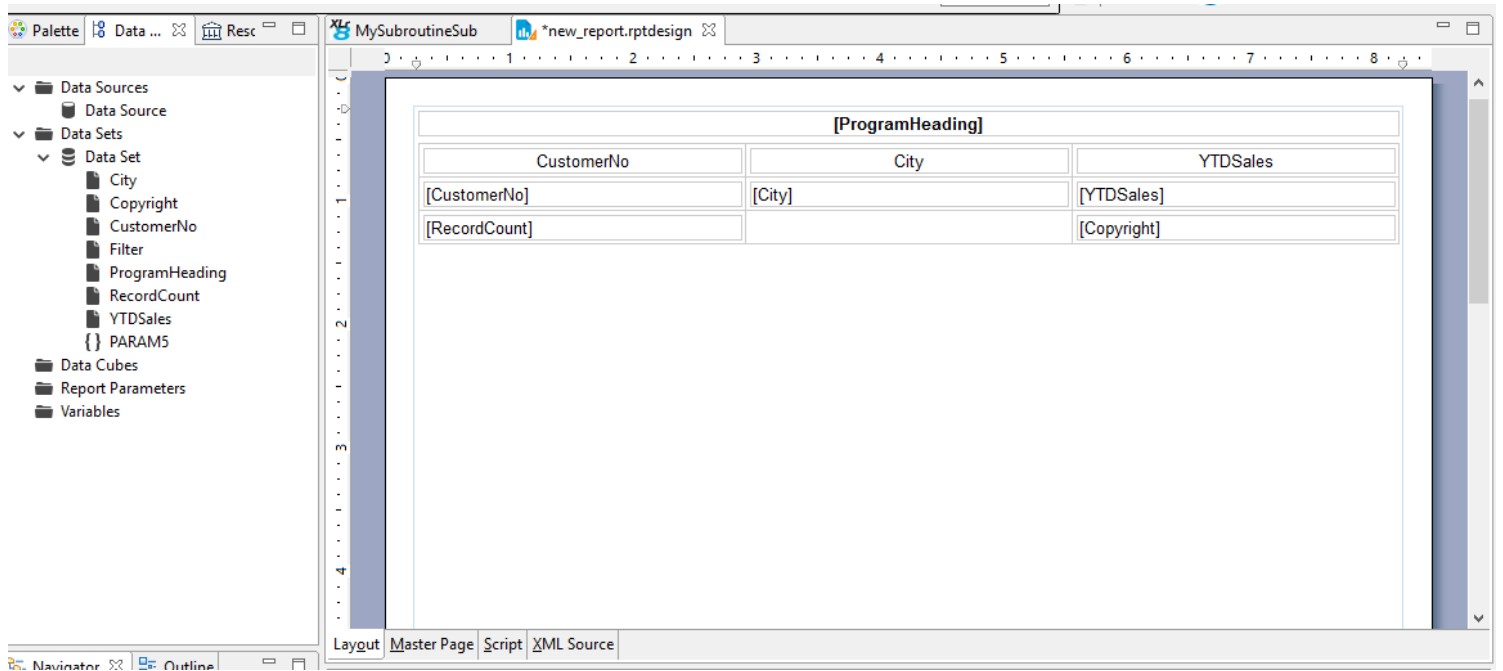
Data Source  
> Enter Subroutine  
Output Columns  
Computed Columns  
Parameters  
Filters  
Property Binding  
Settings  
**Preview Results**

CustomerNo	YTDSales	Copyright	Filter	Progra
001004	3.00	©2016, U2logic, In...	Company: 01	Custor
001005	569.35	©2016, U2logic, In...	Company: 01	Custor
001005	190949.75	©2016, U2logic, In...	Company: 01	Custor
001021	132.67	©2016, U2logic, In...	Company: 01	Custor
001023	70.00	©2016, U2logic, In...	Company: 01	Custor
001027	70.00	©2016, U2logic, In...	Company: 01	Custor
001028	70.00	©2016, U2logic, In...	Company: 01	Custor
001025	70.00	©2016, U2logic, In...	Company: 01	Custor
001026	74.13	©2016, U2logic, In...	Company: 01	Custor
001032	70.00	©2016, U2logic, In...	Company: 01	Custor
001010	46.45	©2016, U2logic, In...	Company: 01	Custor
001003	6361.50	©2016, U2logic, In...	Company: 01	Custor
001022	70.00	©2016, U2logic, In...	Company: 01	Custor

Total 20 record(s) shown.

OK Cancel

Remove all of the prior data and drag and drop your Data Set fields on this form:



Right click on the Report Parameters to get this wizard. The name must be called SubroutineArgs. Paste in your parameters from the data set like below:

**Edit Parameter**  
Define the properties of the report parameter.

Name:

Prompt text:

Data type:

Display type:

Display As:

Help text:

Format as:

Preview with format:

List Limit:  values

Is Required  Do not echo input  
 Hidden  Allow Duplicate Values

Selection list values  
 Static  Dynamic

Default value:

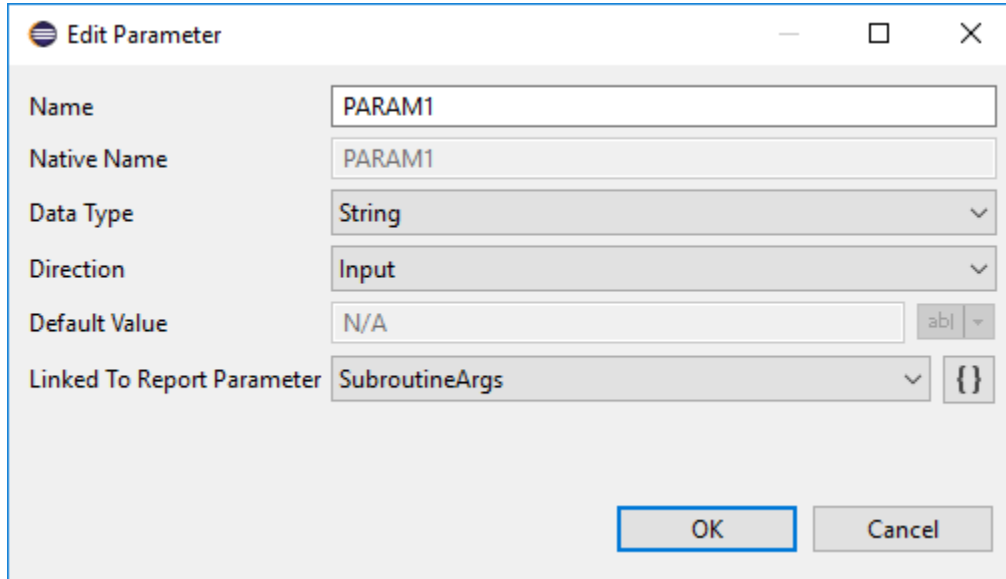
Click back on the Data Set so that we can link the Report Parameters to this data set:

The screenshot shows the 'Edit Data Set - Data Set' dialog box. On the left is a sidebar with a tree view containing: Data Source, Enter Subroutine, Output Columns, Computed Columns, Parameters (selected), Filters, Property Binding, Settings, and Preview Results. The main area is titled 'Parameters' and contains a table with the following data:

	Name	Native Name	Data Type	Direction	Default Value	Linked to Report
1	COLUMNS	COLUMNS	String	Input	Copyright,Pro...	None
2	PARAM1	PARAM1	String	Input	{"XLr8Compa...	None
3	PARAM2	PARAM2	String	Input	""	None
4	PARAM3	PARAM3	String	Input	""	None
5	PARAM4	PARAM4	String	Input	""	None
6	PARAM5	PARAM5	String	Input/Output	""	None
7	PARAM6	PARAM6	String	Input	""	None

On the right side of the table are buttons: New..., Edit..., Remove, Up, and Down. At the bottom right are OK and Cancel buttons. A red arrow points from the 'Parameters' tab in the sidebar to the 'PARAM1' row in the table. Another red arrow points from the 'PARAM1' row to the 'Edit...' button.

Make your PARAM1 file look like this so that your UniBasic subroutine can know what parameters it needs to run:

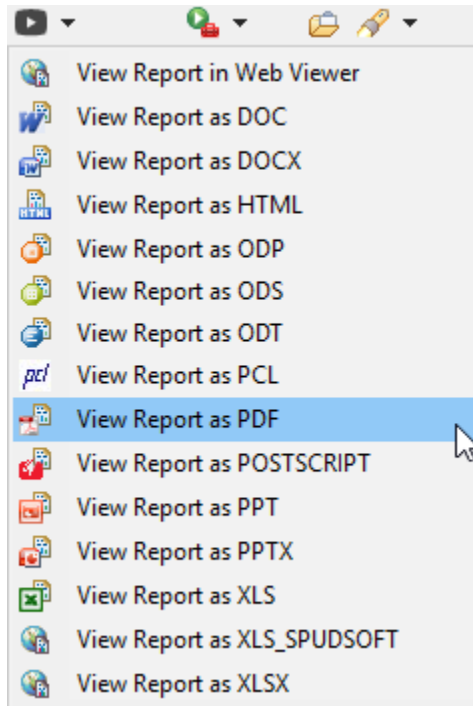


The image shows a dialog box titled "Edit Parameter" with the following fields and values:

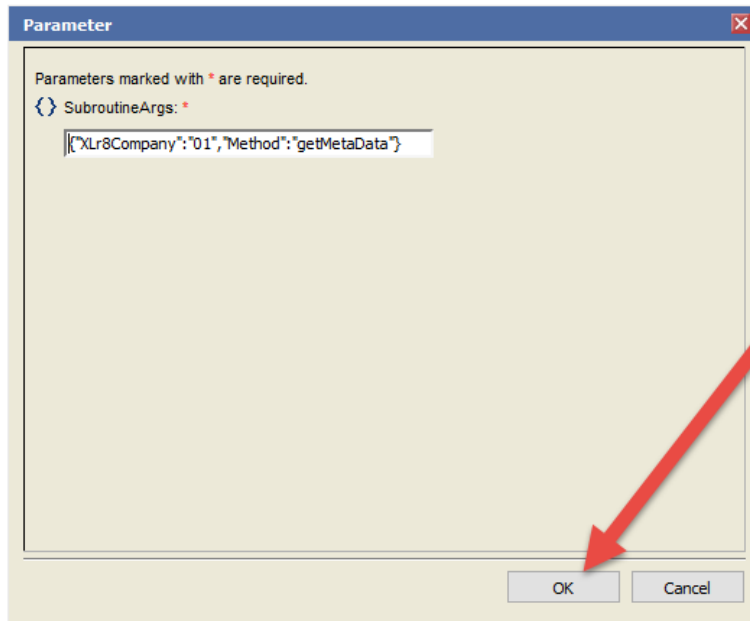
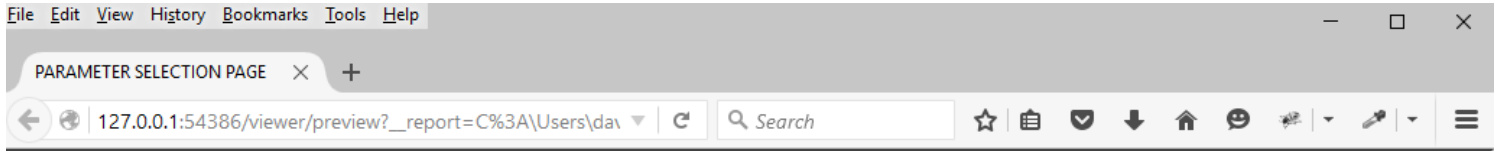
Name	PARAM1
Native Name	PARAM1
Data Type	String
Direction	Input
Default Value	N/A
Linked To Report Parameter	SubroutineArgs

At the bottom of the dialog are "OK" and "Cancel" buttons.

After you have save the prior wizard you can run this report in this case in PDF format:

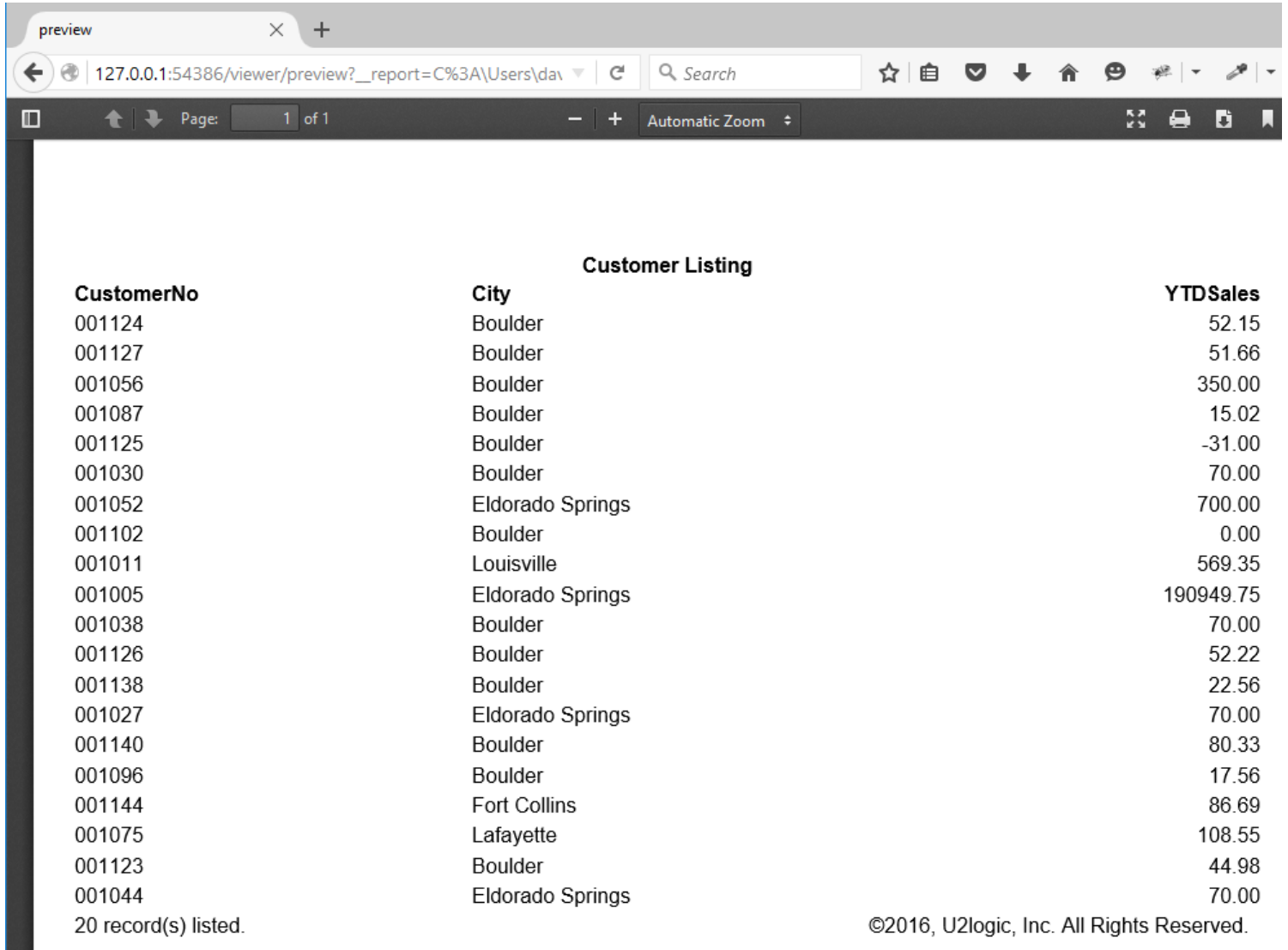


Your default browser will be opened by Eclipse and the parameter wizard will show.  
Press OK to run this report.





After a little bit for formatting in BIRT the report looks like this. Of course, you can add aggregations and many other formatting that BIRT supports.



Customer Listing		
CustomerNo	City	YTDSales
001124	Boulder	52.15
001127	Boulder	51.66
001056	Boulder	350.00
001087	Boulder	15.02
001125	Boulder	-31.00
001030	Boulder	70.00
001052	Eldorado Springs	700.00
001102	Boulder	0.00
001011	Louisville	569.35
001005	Eldorado Springs	190949.75
001038	Boulder	70.00
001126	Boulder	52.22
001138	Boulder	22.56
001027	Eldorado Springs	70.00
001140	Boulder	80.33
001096	Boulder	17.56
001144	Fort Collins	86.69
001075	Lafayette	108.55
001123	Boulder	44.98
001044	Eldorado Springs	70.00

20 record(s) listed.

©2016, U2logic, Inc. All Rights Reserved.