

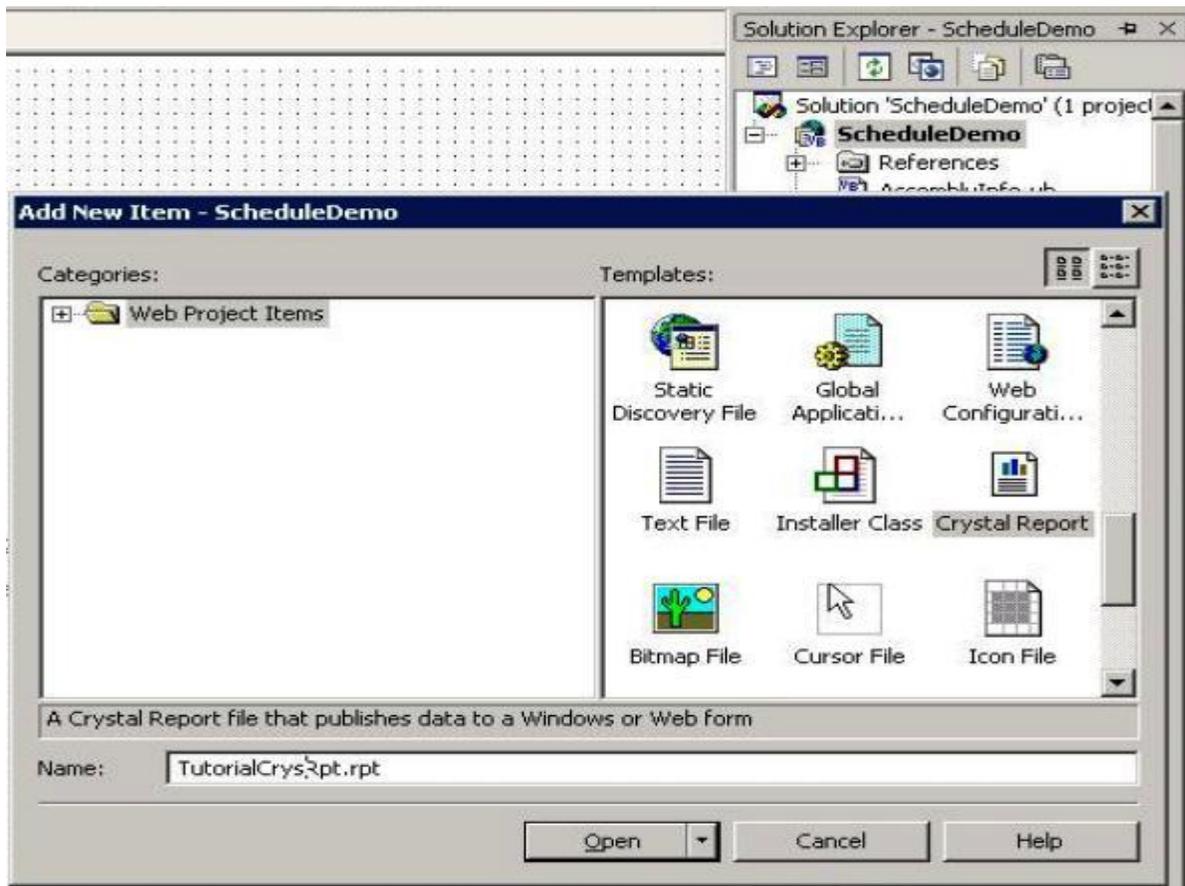
# CRYSTAL REPORTS IN VISUAL STUDIO.NET 2003

By Srunokshi Kaniyur Prema Neelakantan

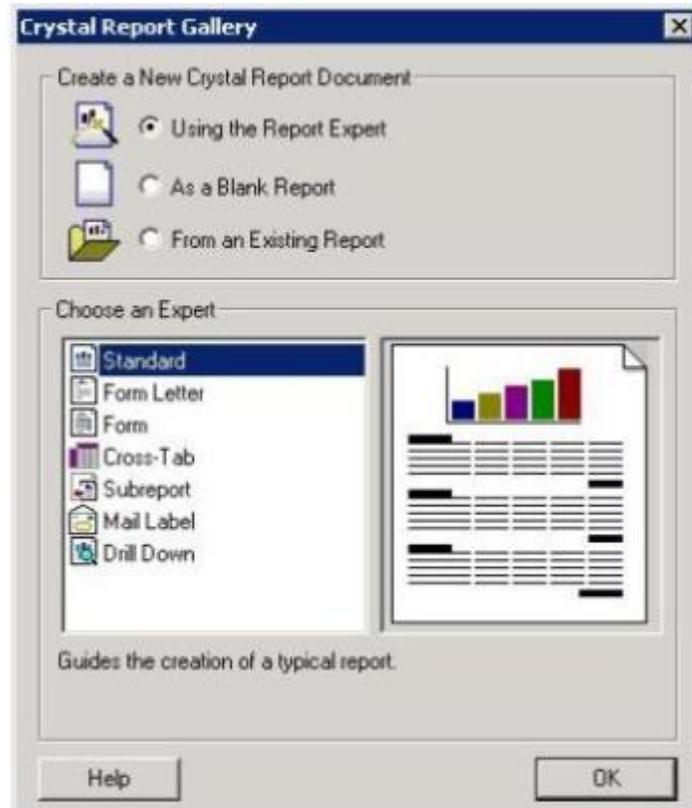
This tutorial gives an introduction to creating Crystal reports in Visual Studio.Net 2003 and few of the features available in Crystal reports that can be used in customizing and displaying data. The first part of the tutorial deals with creating a simple report template or layout with basic functionalities using Crystal report tool in Visual Studio and the second part deals with integrating the report into an ASP.NET application.

## Part 1 - Creating the crystal report

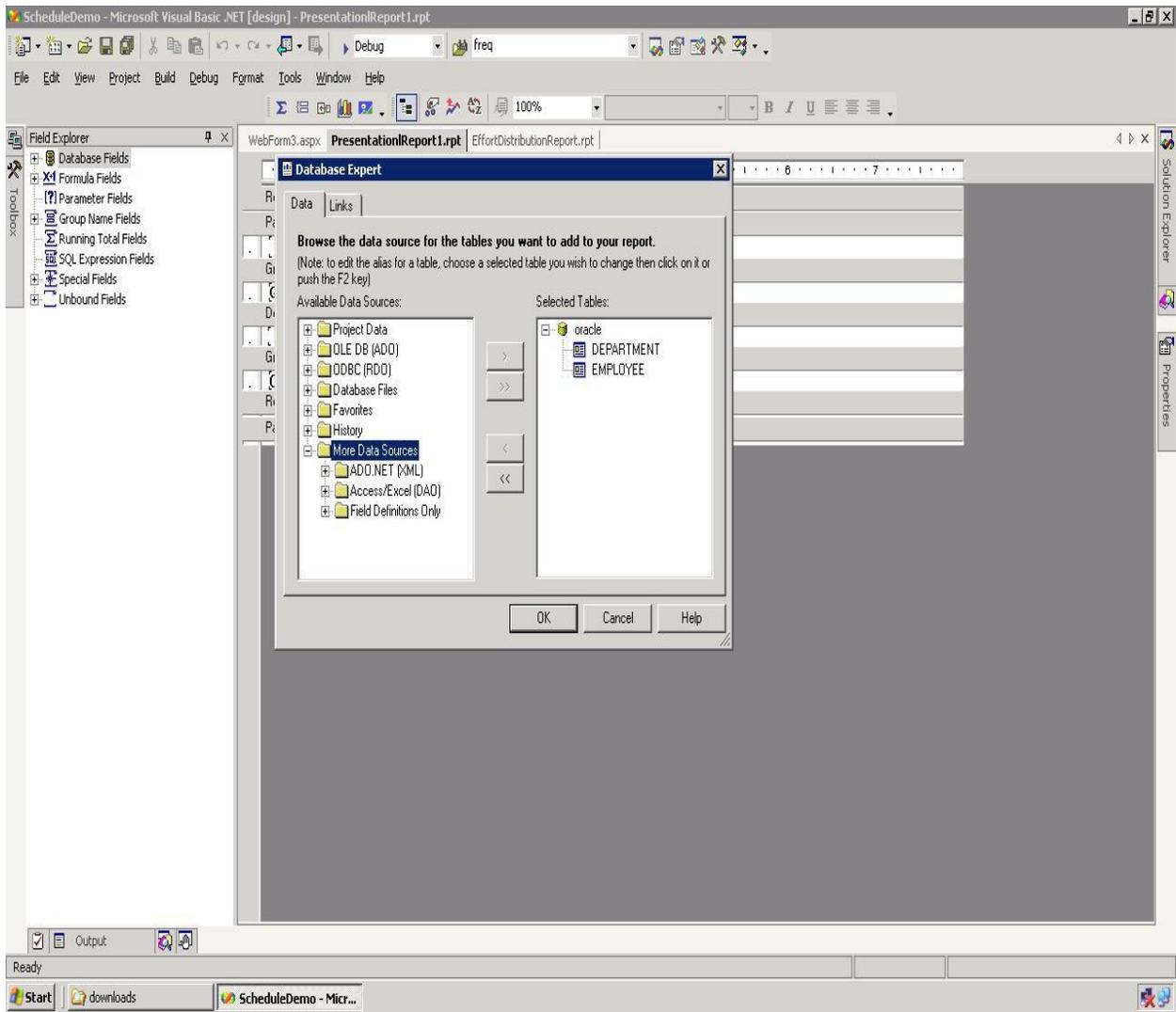
- Create a new ASP.NET web project inside a .NET solution. To add the crystal report item right click on the project and do the following (Add New Item -> select Crystal Report -> Change the report name but without changing the extension .rpt).



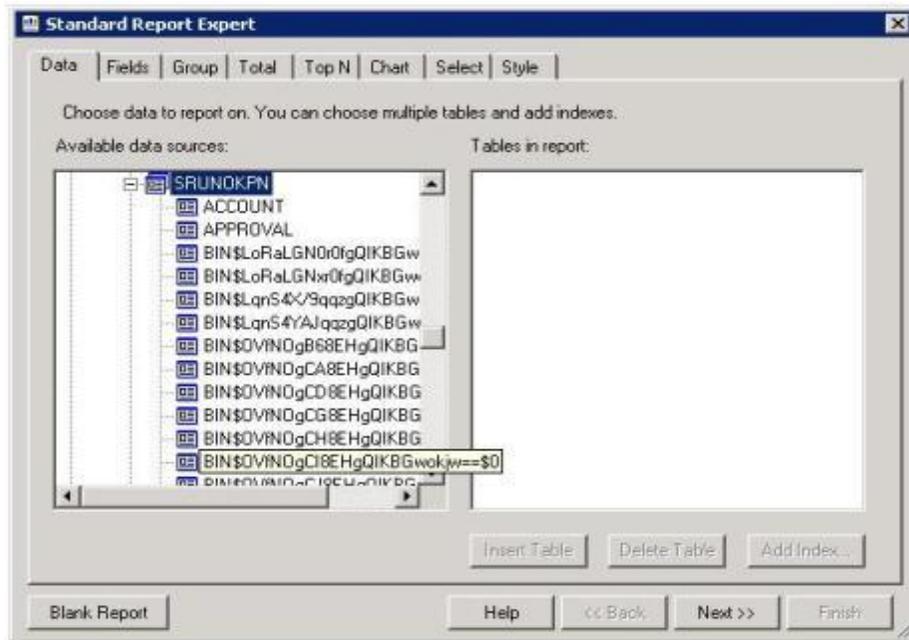
- The next step is to create the report and add tables to it. The crystal report gallery allows you to choose from a wide variety of pre defined report options such as standard, cross tab, forms, sub reports, drill down reports. This example uses the standard report format. The screenshot for choosing the report type is shown below.



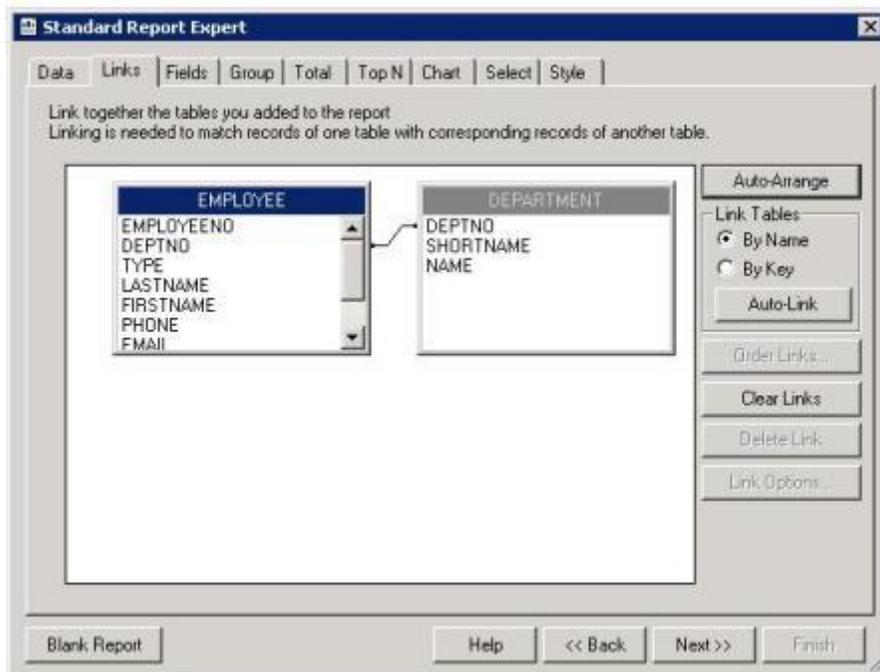
- After choosing the report type the next step is to select a data source for the report. A wide range of data sources such as OLE DB, ODBC, ADO.NET, XML etc. are available. Based on the application and requirement the data source can be selected. The example uses the oracle database in the following way (Select OLE DB connections->choose OLE DB provider for Oracle->Provide the following details service: oracle; username: your username; password: corresponding password).



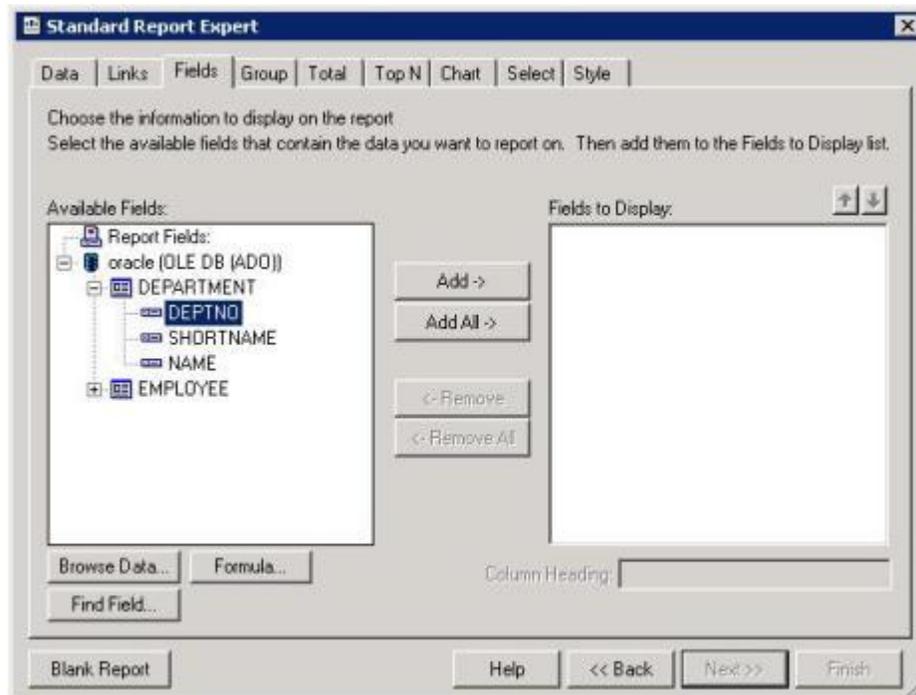
- Once the data source is selected we can select the Tables from the schema (for e.g. here we select the tables from the schema srunokpn). The Tables are selected depending on the fields that must be displayed on the report. The table listing can be found by expanding the selected data source from the available data sources. One or more tables can be chosen to provide data for the report. The screenshot that shows how to select the table for a report is shown below.



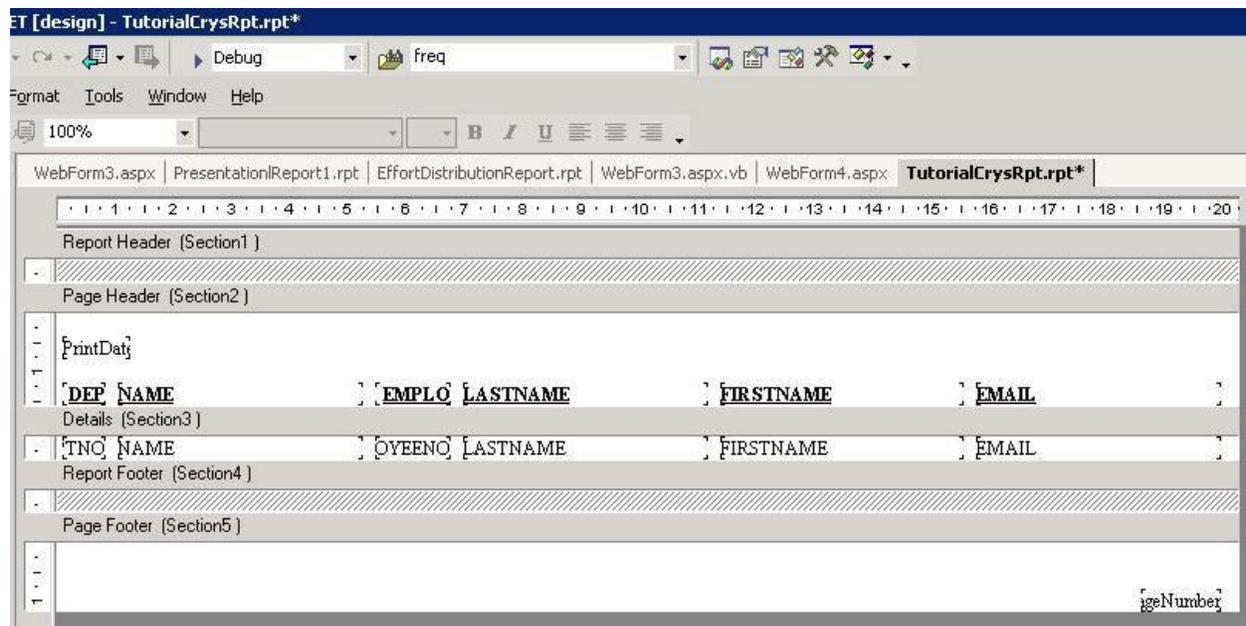
The relationships between the tables from the perspective of the report can be done on the links tab of the standard report dialog. Linking is needed to match the records of one table with the corresponding records of the other or in other words reinforces the join constraint. The linking options of the tables are shown in an Entity Relationship diagram manner. The screenshot of the linking of the tables used in the report is shown below.



- From the database tables, select the fields and drag those fields and drop those fields in the detail column of the report.



- The report layout can be adjusted by moving the fields anywhere in the header and details band. The following is the screenshot of how it looks after dropping fields in the report.

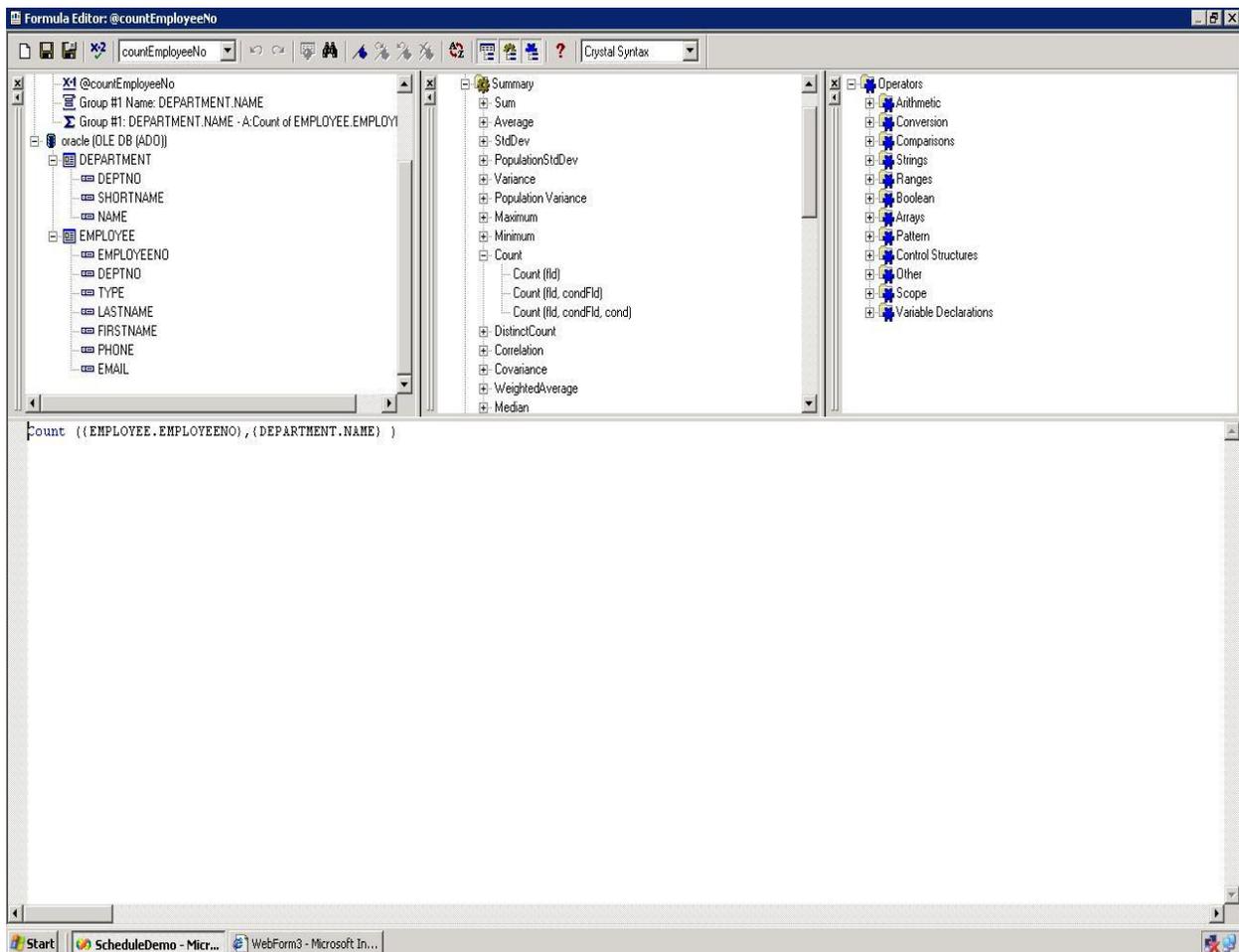


- The data to be displayed on the report can be sorted and grouped by specific fields that are available on the report. The grouping is mainly done to categorize records in more meaningful manner. In this example the grouping is done based on the department name. The screen shot below shows how to specify the field for grouping data. For selecting group field use the ‘Insert Group’ and select the field by which the data needs to be grouped. (Note: If the heading for the field should be repeated under every group drag and drop the field title below the group name).



The records can be sorted to be arranged in a meaningful manner like either in ascending or descending order. This can be done using ‘Sort expert’.

- The other useful feature available in crystal report is the formula editor. The ‘formula editor’ is used to perform simple arithmetic calculations and for writing custom functions. In this example we will add a simple formula to the report that calculates the total number of employees in each department. This is the screenshot of how to use a formula editor to add formulas to the report.

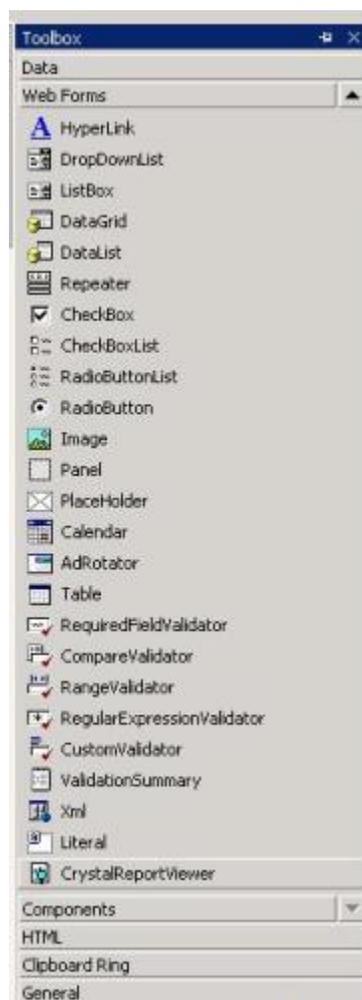


So far we have seen how to create a simple report using crystal report tool available in Visual Studio .NET. As you can clearly see the use of crystal report makes reporting so much easier than writing custom code to develop a similar report. In the next part we will see how to integrate the crystal report into an ASP .NET web application.

## Part 2 - Integrating crystal report into ASP.net application

This part of the tutorial deals with the code required for integrating the crystal report that we created in Part 1 into an ASP.net application.

- Create a new web form in the same .NET project in which the crystal report file was created. Drag and drop the crystal report viewer and a button from the tools library into the web form. The crystal report viewer is available under Web Forms control (if needed change the ID and text).



- Include the following import statement, declaration in the aspx.vb page.

```
Imports CrystalDecisions.Shared
Imports CrystalDecisions.CrystalReports.Engine
Imports CrystalDecisions.ReportSource
Imports System.IO
```

The following declarations also needs to be done,

```
Private crtableLogoninfos As New TableLogOnInfos
Private crtableLogoninfo As New TableLogOnInfo
Private crConnectionInfo As New ConnectionInfo
Private CrTables As Tables
Private CrTable As Table
```

- Then write the following code for the 'on button click event'.

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Button1.Click

    Try
        // this part of the code is written to set up the connection

        crConnectionInfo.ServerName = "ORACLE"
        crConnectionInfo.DatabaseName = ""
        crConnectionInfo.UserID = "userid"
        crConnectionInfo.Password = "password"
        CrTables = crReportDocument.Database.Tables
        For Each CrTable In CrTables
            crtableLogoninfo = CrTable.LogOnInfo
            crtableLogoninfo.ConnectionInfo = crConnectionInfo
            CrTable.ApplyLogOnInfo(crtableLogoninfo)

        Next

        CrystalReportViewer1.DisplayGroupTree = False
        CrystalReportViewer1.ReportSource = crReportDocument

    Catch ex As Exception
        Labell1.Text = ex.Message
    End Try
End Sub
```

- Save and set the aspx as the 'startup page' for the web application or ASP.net project. Build (ctrl + shift + b) and run (F5) the project. The following will be the final output screenshot.

1 of 1 100% powered by crystal

**Cardiac Cath Lab**

<u>EMPLOYEE</u>	<u>FIRSTNAME</u>	<u>EMAIL</u>
103	Lucy	Lucy@acme-hospital.
100	Mark	Karen@acme-hospital
101	Missy	Missy@acme-hospital
104	Pam	Pam@acme-hospital.c
126	Srunokshi	srunokpn@ksu.edu
102	Tara	Tara@acme-hospital.c

**Count of Employees/Department :** 6

**Emergency Room**

<u>EMPLOYEE</u>	<u>FIRSTNAME</u>	<u>EMAIL</u>
108	Chris	Chris@acme-hospital.
105	Heidi	Heidi@acme-hospital.
106	Mark	Mark@acme-hospital.
107	Mitch	Mitch@acme-hospital

**Count of Employees/Department :** 4

**Maternity**

<u>EMPLOYEE</u>	<u>FIRSTNAME</u>	<u>EMAIL</u>
123	Alice	Alice@acme-hospital.
124	Bernice	Bernice@acme-hospit
122	Mario	Mario@acme-hospital
125	Rita	Rita@acme-hospital.c

**Count of Employees/Department :** 4

**Medical-Surgical**

<u>EMPLOYEE</u>	<u>FIRSTNAME</u>	<u>EMAIL</u>
117	Jayne	Jayne@acme-hospital.
116	John	John@acme-hospital.
115	Julia	Julia@acme-hospital.c
114	Sarah	Sarah@acme-hospital.

**Count of Employees/Department :** 4

**Oncology**

As you can see from this tutorial how simple it is to create reports using crystal report tool available in Visual Studio .NET and integrate it with an ASP.NET application. One of the most obvious benefits of using the above approach is that it decouples the reporting and application development inside an application. Apart from it the use of Crystal Report makes report a whole lot easier that writing custom code to design and develop report.