Programming Connection with External Tool (Crystal Report)

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ABSTRACT

Much of the programming done today requires data access. With large amounts of data being maintained in databases, access mechanisms that allow manipulation of this data are vital. Visual Basic is a popular programming package because of its user-friendly interface and data access features. Two popular data access mechanisms are data bound controls with data access objects, and remote data controls with remote data objects.

The main difference between these methods are that data bound controls are usually used to connect to desktop databases, and remote data objects are used to connect to client/server data (for client database manipulation of a remote database).

Crystal Reports has been part of Visual Studio since 1993, and is now the standard for reporting in Visual Studio 2005. It ships with every copy of Visual Studio 2005 and is integrated directly into the development environment.

Crystal Reports for Visual Studio 2005 brings the ability to create interactive, presentation-quality content to the Windows environment. With Crystal Reports for Visual Studio 2005, you can create complex and professional reports in a GUI-based program. Then you can connect your report to almost any database source, as well as to proxy data, such as a result set (for example, an ADO.NET DataSet). With the wizards included in the GUI designer, you can easily set formatting, grouping, charting, and other criteria.

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reports. So my research is that if we required enter the data or modify the data on the visual basic form then we can print

Keywords: - Visual Basic 6.0 Programming, Database, Visual Basic Programming Control and Crystal Reports.

INTRODUCTION

Crystal Reports has been part of Visual Studio since 1993, and is now the standard for reporting in Visual Studio 2005. It ships with every copy of Visual Studio 2005 and is integrated directly into the development environment.

Crystal Reports for Visual Studio 2005 brings the ability to create interactive, presentation-quality content to the Windows environment. With Crystal Reports for Visual Studio 2005, you can create complex and professional reports in a GUI-based program. Then you can connect your report to almost any database source, as well as to proxy data, such as a result set (for example, an ADO.NET DataSet). With the wizards included in the GUI designer, you can easily set formatting, grouping, charting, and other criteria.

You can host your report in either a Web or Windows application, with one of the Crystal Reports for Visual Studio 2005 viewer controls. Report presentation in both Windows and HTML 3.2 or 4.0 clients is highly interactive and provides you with

these data using the crystal report also. This research is completely based on coding.

features such as chart drill down, report navigation, and text search.

Crystal Reports for Visual Studio 2005 ships with an extensive SDK. You can use the SDK to interact with the report programmatically at runtime, by use of one of four possible object models:

- CrystalReportViewer, the simplest object model.
- ReportDocument, the more extensive object model.
- Object models available through upgrade:
- ReportClientDocument, the most extensive object model.
- InfoObject, a powerful object model for scheduling and configuring reports within the Crystal Reports Server or BusinessObjects Enterprise framework.

Your reports can be related to your Visual Studio 2005 project in many ways:

- Embed your reports directly into the project.
- Access them externally, from a file directory.
- Access them as a Report Web Service from a remote server.
- Connect to them as Crystal Services.
- With an upgrade to Crystal Reports Server you can access them through the RAS Server.
- With an upgrade to BusinessObjects Enterprise, you can access them through the

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Page server or the RAS server contained within the BusinessObjects Enterprise framework.

- You can access them through a legacy enterprise solution, such as Crystal Enterprise or an unmanaged RAS server.

An Example

Here is an example of how reports might operate within a Visual Basic 6.0 project:

Crystal Reports is used to design a report that enables users to drill down on a chart and filter information, in accordance with their needs. That report has been included in an ASP.NET project, and then displayed in a Web Form with a CrystalReportViewer control that is bound to that report. The report can be interacted with by use of the ReportDocument object model.
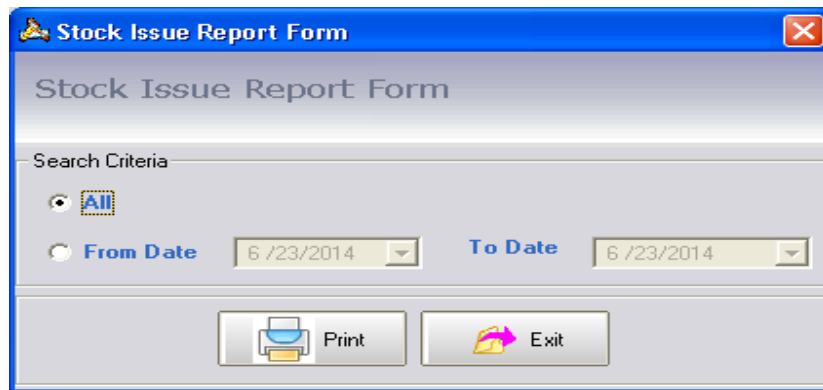

Fig 1.1: - Visual Basic Form of Stock Issue

Fig 1.2: - Crystal Report of Stock Issue

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These figures 1.1 and 1.2 show that how visual basic programming connects with crystal report. The visual basic form stock issue report form shows that we can generate the external tool crystal report which show all categories wise and date wise stock issue data.

PROBLEM FORMULATION

Before developing research we keep following things in mind so that we can develop powerful and quality research.

PROBLEM STATEMENT

Problem statement was to design a module:

- Which will be user friendly?
- Which will restrict the user from accessing other user's data?
- Which will help the user in viewing his data and privileges?
- Which will help the administrator to handle all changes?
- In which further additions can be made without changing its design drastically.
- Which would restrict the server traffic?

    Another problem was that the data should be accessed from the server and accordingly changes should be made on the data in the server only. The main problem comes with create the reports, because when we enter the data on the form, but we required the print the data in programming language then we print

the command in visual basic, but vb support the data reports only. Many formulas and queries which does not support the data reports. So we required the crystal report which consist the formulas and queries also. When the situation is that when we connect the programming language with database then we use the external tools on run time and if we require the data printout which support the data reports and connect with database then using Excel Sheets and other sheets are helpless at that time.

FUNCTIONS TO BE PROVIDED

The various features that the proposed system will possess will be:

- The system will be user friendly and completely menu-driven so that users shall have no problem in using all the options provided.
- The system will be efficient and fast in response by careful programming.
- The system will be customized according to the needs of the organization.
- It will provide overall security to database both from user as well as administrator side.

According to the situation of the problem, a solution is provided to use a Visual Basic programming and External tool that is Crystal Reports which has been connect with database according to requirement of the user.

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Unlike the databases of MS Access, SQL Server database and the Oracle database if we connect the Crystal Reports with database then we access the data from the database in the Crystal Report tool, because in programming language this tool fully support the database and Crystal Reports, but required some procedures and coding with ODBC. But this technique or research helps us to connect the database and access the data Printout from the database on the crystal reports. And second solution is that any database which is Access, SQL Server and Oracle database has been used with this tool.

Also, users do not require any addition software or tools for it to connect it accurately in order to provide authentication. This technique is helpful for connect with database programming system and it used the different queries and formulas which is useful for many business purpose and useful for many organizations.

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RESEARCH METHODOLOGY

6.1 What is Algorithm in Computer Science?

Algorithm is a process of problem-solving in step by step to get result. Algorithm is very importance for programmers to do computer programming because it figures out the programming process. Algorithm is a part of problem-solving techniques. After the problem has been raise, we have to analyze the problem first then the inputs and outputs are defined. After that we start to design the algorithm that is a process to transform inputs into outputs.
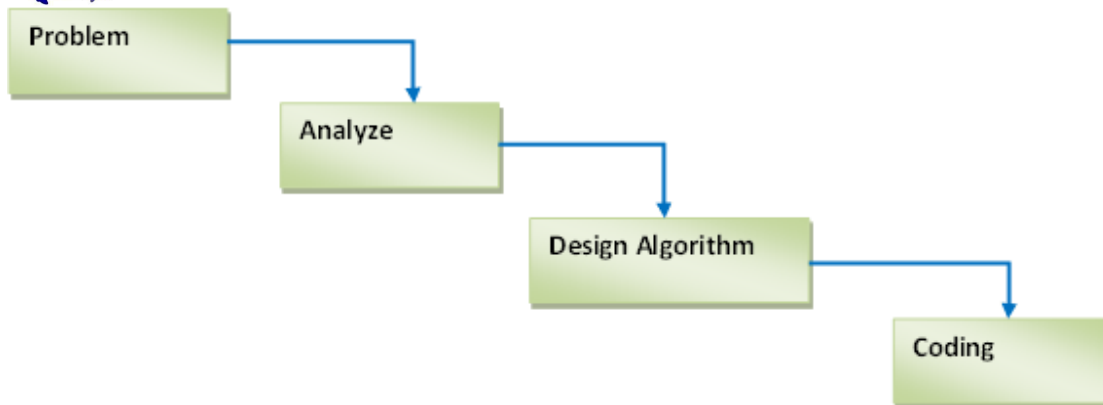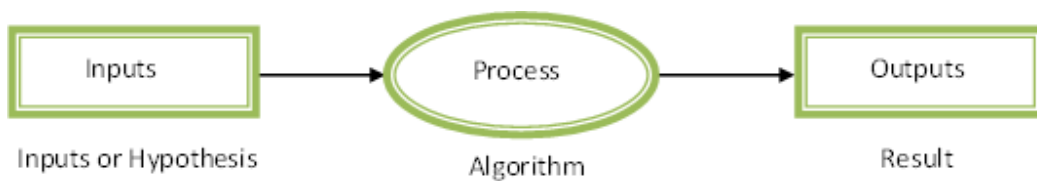
FIGURE4. Problem – Solving Technique

FIGURE5. Flow – Chart of a Problem

Problem: - First of all the main question arises that what is the problem? The problem is that we can enter the information or data in visual basic form but these forms do not create the directly print report of the data. If we want to enter the data or information on the visual basic form and generate the printout of this data. Then visual basic support only the data reports which is unable to do the calculations of formulas and queries in the reports. We are unable to do this. So in this problem we waste a lot of time cost for support the database or programming and increase the

coding efforts. Finally we are unable to do with generate the print out which is necessary for organizational need and other business purpose.

Analyze: - I analyze this problem which is serious and it should have easy solution. Then I have made an algorithm which is necessary to solve this problem. With the help of this algorithm and database model diagram in my research I am able to access the data or also able to generate the data with the crystal reports which is external tools of programming and support with

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database and give the results better than data reports and other reports.

Design Algorithm: - The steps of this algorithm used in my research are as follow: -

1. Firstly I have made a database which is Inventory Control System.mdb in MS Access. This database has several tables which are necessary for my research project.
2. My research project front-end is Visual Basic 6.0 and back-end is MS Access and platform used in this research is Window XP and reporting tool is Crystal Report.
3. Then I have made the Stock Issue Report form which is used in visual basic programming language and make a connection provider with ADO control which is used in VB components.
4. I connect this form with database and database table through the connection provider OLEDB.

5. This form consist the option buttons 'All' and 'Datewise' which is used to access the data from the database table and we can generate the crystal report for all stock and Datewise stock. Two buttons which are Print and Exit.
6. Finally I am able to connect Programming Visual Basic with database table and Crystal Report for generating the printout of the data with the help of ODBC connection. This algorithm is used to reduce the time cost and another coding procedure.

Coding: - The following code used behind the stock issue form and Print button is as follows: -
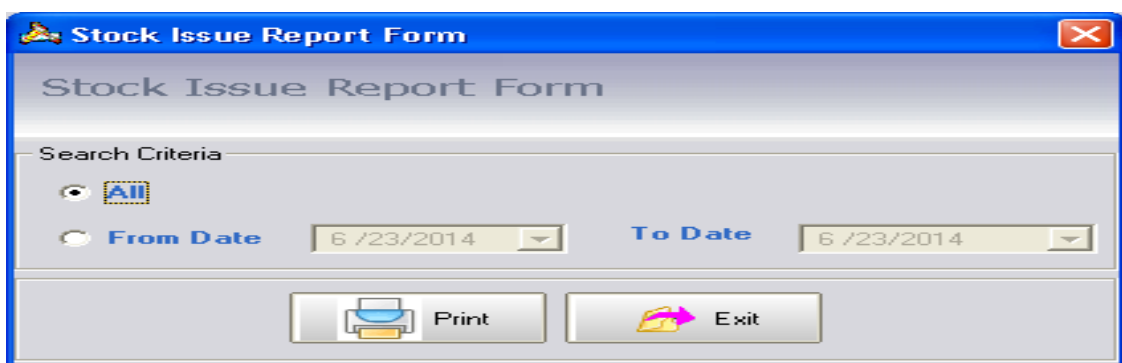

FIGURE6. Visual Basic Form of Stock Issue

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FIGURE7. Crystal Report of Stock Issue

Make a module and function which has code: -

```
Sub Main1 ( )

    If  Mycon.State   =
adStateOpen           Then
Mycon.Close


    Mycon.ConnectionStr
ing                    =
"Provider=Microsoft.J
et.OLEDB.4.0;  Data
Source="              &
frmDatabase.txtPath.
Text  &  ";  Persist
Security Info=false"

    Mycon.Open

    DataPath
frmDatabase.txtPath.Text

    End Sub
```

EXPERIMENTAL RESULTS

6.1 VISUAL BASIC FORM WITH EXTERNAL TOOL CRYSTAL REPORT

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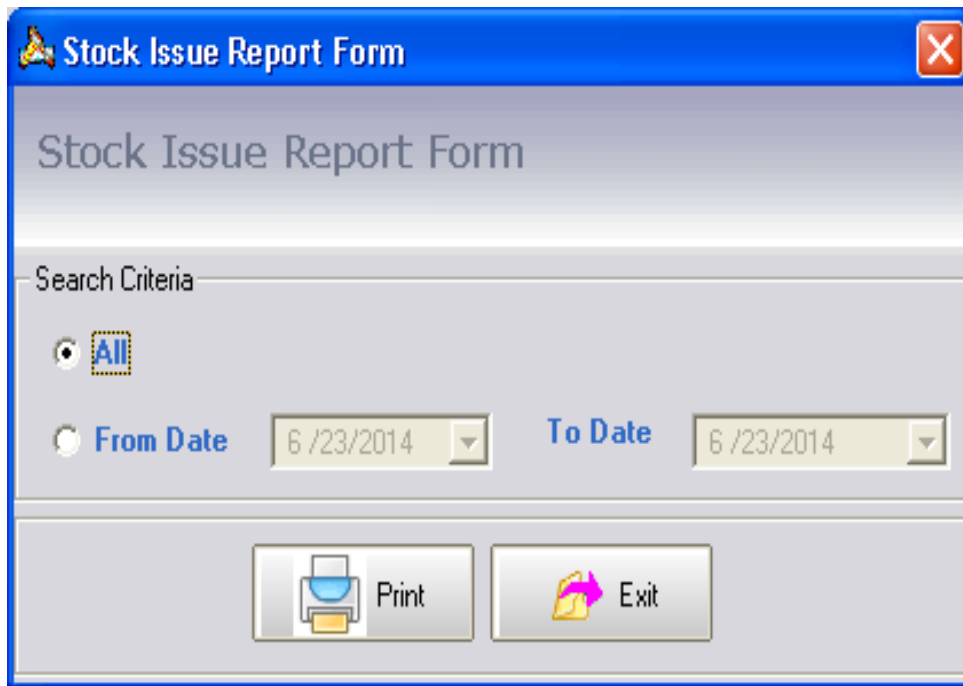Programming Connection with External Tool (Crystal Report) **Gurjit Singh**
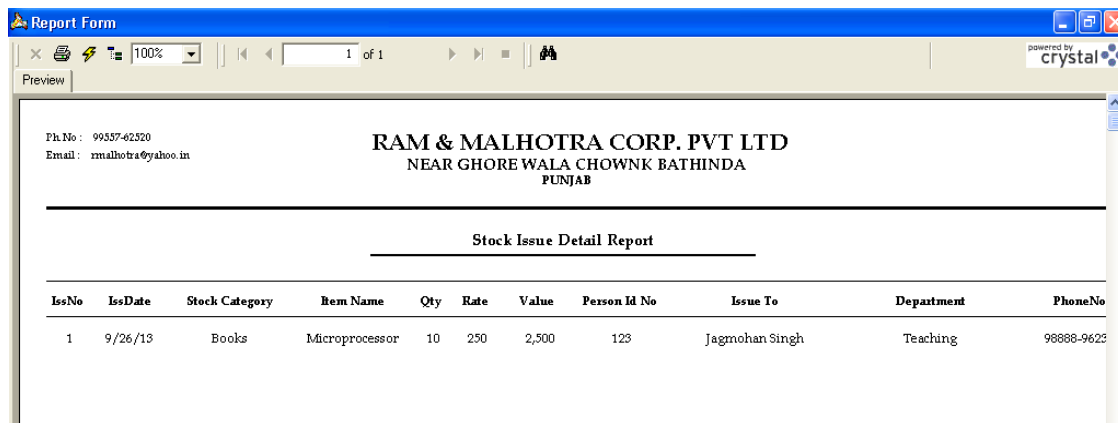
FIGURE 10.My Experimental Research Form

This first figure visual basic form show the option of 'All' and 'Datewise' stock issue data and the second figure crystal report show the print data of stock issue, which is connect with database table on run time window.

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CONCLUSION AND FUTURE WORK

Technology that grows with your Business

Universal Integration with Applications and Portals

Successful businesses grow and so should their technology. Crystal Reports XI is an enterprise

Reporting solution that easily integrates with existing systems, applications, and infrastructure. For application developers, Crystal Reports includes extensive SDKs for easily integrating report

viewing, printing, and exporting into Java, .NET, and COM applications. Additional interactive

application programming interfaces (APIs) are available in Crystal Reports Server for end-user

report modification and creation at runtime. New cross-platform APIs makes it even more efficient to use Crystal Reports across multiple application projects. Custom user function libraries have also been enhanced so you can incorporate your own Java or .NET code into Crystal Reports.

Upgrading your Java or .NET application to use Crystal Reports Server is straightforward because these technologies are built using a common underlying object model. Crystal Reports also supports leading web application servers and platforms. You can take advantage of Crystal Reports as your single reporting standard to address any

deployment requirements and to increase the longevity of your applications. With Crystal Reports, you can write your application in Java, .NET, or COM and deploy on Windows, LINUX, and UNIX.

You can even call reports stored from a single Crystal Reports Server deployment from within

Multiple applications that were created using Java, .NET, or COM. There is no longer any need

to maintain redundant report repositories for individual applications.

Scale with Ease for Increased Application Longevity

Reporting is often the foundation for future business intelligence projects. Crystal Reports is an

Integral part of the unified BI product suite from Business Objects. Based on the same underlying infrastructure (BusinessObjects Enterprise), Crystal Reports makes for a seamless extension of your existing deployments to BI. Should your needs evolve to require query, analysis, dashboards, scorecards, OLAP, or data integration capabilities; you can easily migrate your system from Crystal Reports to BusinessObjects Enterprise. Or, if you simply need to scale your Crystal Reports Server deployment across multiple servers for mission-critical, fault-tolerant reporting, you can migrate to BusinessObjects Enterprise with minimal code changes.

Crystal Reports is already integrated as the reporting standard in leading Java and .NET IDEs for

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report integration that can be accomplished without the need to leave a familiar environment.

You can upgrade the reporting components included in Borland JBuilder, Borland C#Builder, Microsoft Visual Studio .NET, BEA WebLogic Workshop, and IBM Rationale WebSphere to

Crystal Reports XI for greater ease of integration.

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