

AN AUTOMATIC GENERATION OF BUSINESS LOGIC USING DND

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Abstract :Now a days the environment has changed and need revolution in perspective of development in system tools. Today each and every category of person is willing to work in Graphical User Interface (GUI) environment as working in GUI makes an interactive session and easy to understand the process of development. This approach helps to improve its readability, maintainability, innovativeness, transformation and refactoring. The recent integrated development environments (IDEs) provide various plugins and tools which works on Drag and Drop (DND) phenomenon such as BIRT (Business Intelligence Reporting Tools) and WindowBuilder. These tools and others which are present in current environment provide immense contribution to the system tool usability in very friendly manner to develop almost 90% application. But the existing systems are lacking in context of generic component for development.

In this paper we are streamlining an approach of development in an immensely innovative way via DND to make more generic tools with help of Business Logic (BL). This results bolster to the researchers, tool developers and system tool designers to rethink about future of development or design tools.

Keywords: Drag and Drop, Generic Business Logic, Source Code

1. INTRODUCTION

DND [1],[6] is a disciplined approach in computer graphical user interface environment. It allow users to select virtual object and move to other location or on different virtual object for creation (In terms form, label, button, textbox and more other items). Initially this approach was not effective but Mac OS used this for manipulating files (in terms of copying, moving data and many other functionality achieved by them).The functionality of drag and drop is improved today as comparison to past. This approach helps to work in enriched environment. In 1991 Microsoft given first third-generation event-driven

programming language and integrated development environment (IDE) for its Component Object Model (COM) which is Visual Basic.

2. REALTED WORK

2.1. Microsoft – Visual Basic

Visual Basic [2],[7],[8],[9] is result of evolution in BASIC (Beginner's All-purpose Symbolic Instruction Code). It enables the rapid application development (RAD) of graphical user interface (GUI) applications, also allow access to database using ActiveX Data Objects, creation of ActiveX controls and objects (also by others).Alan Cooper created the drag and drop design for the user interface of Visual Basic.

What Visual Basic allows to do?

A user or developer can create an application using various components form toolbox provided by the Visual Basic program itself. It helps user to realization of ideas in more practical and visual environment. By that time programmers have made the evolution in programming language to modern standards i.e. Windows API (Windows application programming interface). Result of enhancement programming language is given by programmers as solution to user in Visual Basic can also use the Windows API, which requires external function declarations. After certain changes it became Visual Basic 6.0. For example, if you are a college lecturer, you can create educational programs to teach business, economics, civil, automobile, electrical, history, computer, accountancy, financial management, mechanical, information system and more to make teaching more effective practical, interactive and interesting. If you are in business organization, you can also create business programs or plans such as inventory management system, enterprise resource planning (ERP), point-of-sale system, payroll system, financial program as well as accounting program to help manage your business, experimentation, market analysis and increase productivity.

Features of Visual Basic 6.0:

1. Drag and Drop Environment
2. Visualization of ideas.
3. Database Connectivity.
4. Faster Execution.

Boundaries or Limitations of Visual Basic:

1. Platform Dependent.
2. Absence of generic code.

2.2. Business Intelligence Reporting Tool (BIRT)

BIRT [3],[10],[11],[13] works in eclipse environment that provides reporting and business intelligence capabilities for end user and web applications. It is an independent nonprofit software. It provides wide range facilities in terms report making that allow developers to

easy design and integrate. With BIRT we can make rich range of reports of desired application.

- Lists
- Charts
- Crosstabs
- Letters & Documents
- Compound Reports

Components of BIRT are:

1. A visual reporting tool within the Eclipse IDE for creating BIRT Reports.
2. A runtime component for generating reports that can be deployed to any Java environment.

The BIRT provides a charting engine which is a combination report designer and report engine, it can be as standalone system.

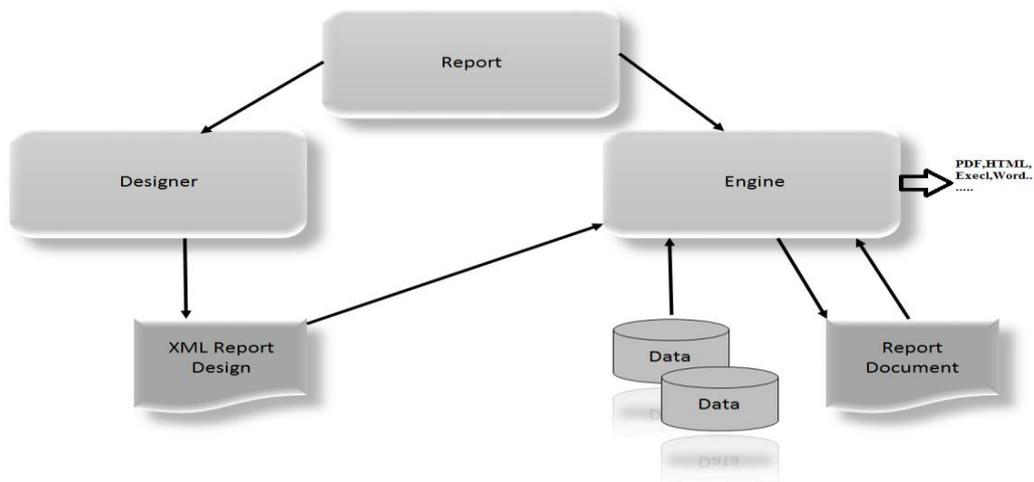


Fig.1 Block Diagram of BIRT

Features of BIRT:

1. Drag and Drop Environment
2. Quick Report Generation.
3. Report in various format.

Boundaries or Limitations of BIRT:

1. Platform Dependent.
2. Absence of automatic source code.
3. Not able to work on web based applications.

2.3. Oracle Financial Management Analytics

Oracle Financial Management Analytics [4],[12] is an innovative reporting tool for finance management which provides assembled dashboard and analytic reports for the financial process and financial results. When these attributes combines with the Oracle Hyperion Financial Close Suite result in an efficient approach which reduces implementation times and provides a minimal cost.

Assembled dashboard consist of:

- Executive View
- Financial Statements
- Sales Analysis
- Cost Analysis
- Process Management
- Close Manager
- Account Reconciliation Manager
- Oracle Hyperion Data Quality Management Enterprise Edition

Which works on real-time data, Oracle Financial Management Analytics removes the complexity of data staging and results in updated information for timely action. Standard Oracle EPM system security and access control are purchase (obtained by lever) in addition Oracle Financial Management Analytics is accessed using the same particular signature on as other EPM applications. This delivers a particular version of the truth for both data and Meta data in terms of hierarchies which are received by all users of the Oracle Hyperion Financial Close suite.

Features of Oracle Financial Management Analytics:

1. Drag and Drop Environment
2. Visualization of ideas.
3. Meta data hierarchies.
4. Faster Execution.
5. High Accuracy.

Boundaries or Limitations of Oracle Financial Management Analytics:

1. Absence of Generic Business Logic.
2. Platform Dependent.
3. Absence of generic code.

4. Reporting tool only.
5. Domain Specific.
6. Database connectivity is absent.

2.4. Microsoft Dynamics CRM (Customer Relationship Management)

Microsoft Dynamics CRM [5],[14],[15] is given by Microsoft, which is a customer relationship management software package. CRM mainly focuses on Sales, Marketing, and Service (help desk) sectors. Microsoft has been marketing Dynamics CRM as a flexible tool to encouraging their partners to use their own (.NET based) framework to customize it. Microsoft Dynamics CRM is a server-client application which is primarily an IIS (Internet Information Server)-based web application.

Features of Microsoft Dynamics CRM:

1. Drag and Drop Environment
2. Visualization of ideas.
3. Web based Application.

Boundaries or Limitations of Oracle Financial Management Analytics:

1. Absence of Generic Business Logic.
2. Platform dependent.

2.5. Existing Systems Architecture

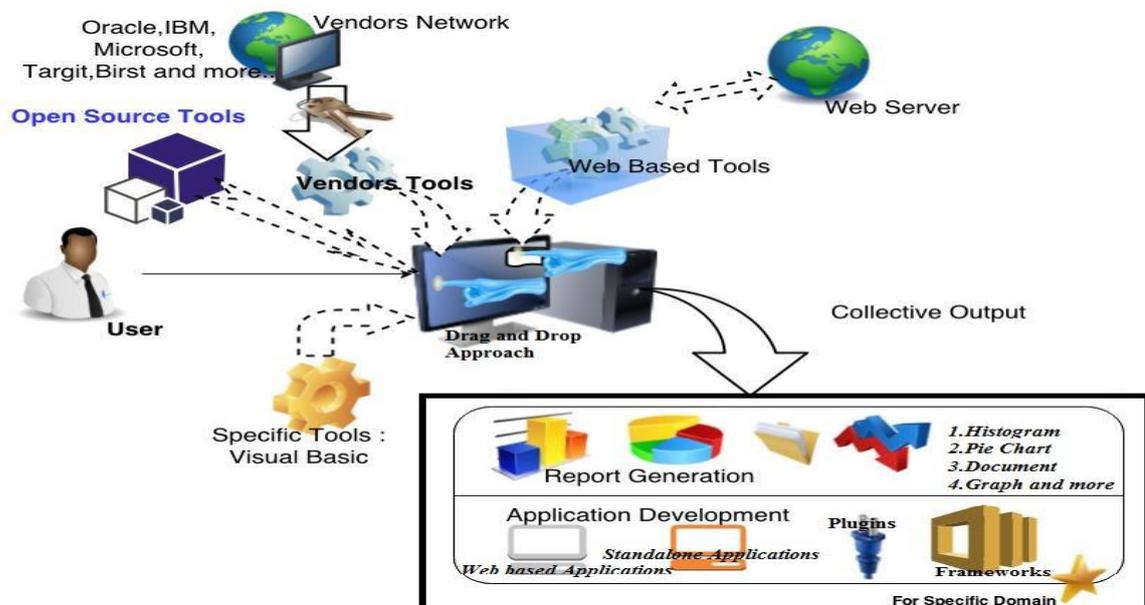


Fig.2 Existing Systems model [This diagram is pictorial representation of the visualization of various systems studied by authors. This architecture is build on draw.io, an online web portal for designing diagrams. The figure is copy right of ©Chandan Prasad and Sunil Rathod]

3. PROPOSED SYSTEM ARCHITECTURE

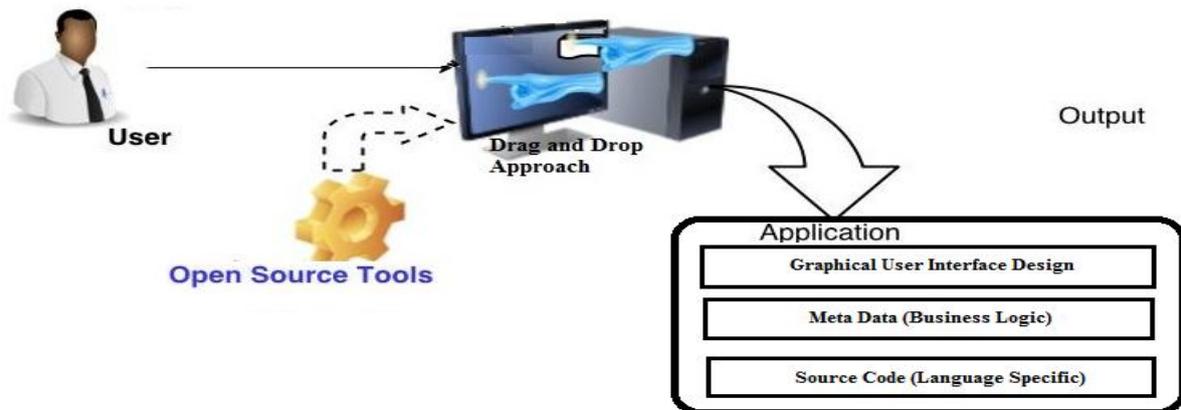


Fig.3 Proposed System model [The figure is copy right of ©Chandan Prasad and Sunil Rathod]

Proposed system is meant for building the standalone project having the capability of automatic code generation along with generic business logic by drag and drop approach and the approaches are as follows:

What is drag and drop approach ?

It is an approach in which elements are moved from panel to a frame layout.

What Automatic Source Code generation?

When the elements are dragged and dropped their source code is automatically generated in a predefined language.

What is Business Logic?

Business Logic is an approach which works of real-world business environment consisting of different rules that how data can be created, computed, visualized and manipulated.

What is Generic Business Logic?

In our approach of generic business logic the logic for any given application to be developed can be stored as Meta data (XML source) which once generated first time of development can be further used which helps for easy, speedy development on different platform.

4. TAXONOMY CHART

The taxonomy chart given below shows the comparison of various existing tools. The parameters used here to for comparison gives us clear idea wherein a concrete work can be done.

Services Paper Or OtherSource	Drag And Drop	Automatic Business Logic	Meta data	Database Connectivity	Automatic Source Code	Generic Business Logic
MS-Visual Basic(V.B)	✓	X	✓	✓	✓	X
Business Intelligence Reporting Tool(BIRT)	✓	✓	✓	X	X	X
Oracle Financial Management Analytics	✓	✓	✓	✓	X	X
Microsoft Dynamics CRM (Customer Relationship Management)	✓	✓	✓	✓	X	X
Drag-and-drop refactoring: Intuitive and efficient program transformation	✓	✓	✓	✓	X	X

5. CONCLUSION& FUTURE SCOPE

As we have seen that various existing tools do support DND and predefined business logic but not generic business logic. There is no generic business logic mechanism in existing systems. We presented an approach in terms of open source tool which carry a novel concept of business logic, generic code and Meta data generation with application. It reduces the time of development work up to 60 % as when developer drags and drops elements Meta data and business logic is automatically added by our tool.

The tool we develop can be used for implementation of project which is for standalone systems. The concept can be extended for web based applications as well.

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