JAVA DATA WIZARD

PROJECT REPORT P-431

Submitted in partial fulfillment of the requirements
for the award of the degree of

MSc(Applied Sciences - Computer Technology)
Of
Bharathiar University
Done at
R K M SOFTWARE
Chennai.

By
Karthikaikumaran. T.
Reg. No. 9837Q0023

Guided by

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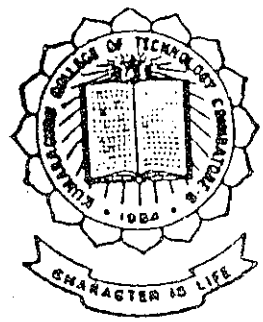
Mr. S. ANDREWS, M.Sc.,PGDPM.

External Guide
Mr.A.GANESH,MCA



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Kumaraguru College of Technology
COIMBATORE.

APRIL 2000

Certificate

This is to certify that this project work entitled

"Java Data Wizard"

Submitted to

KUMARAGURU COLLEGE OF TECHNOLOGY
(Affiliated to Bharathiar University)

in partial fulfillment of the requirements for the award of Degree of
M.Sc(Applied Sciences – Computer Technology)
is record of original work done by

Mr.T.Karthikaikumaran
(Reg.No.* 9837Q0023*)

during his period of study in the Department of Computer Science and Engineering, Kumaraguru College of Technology, Coimbatore-641006, under my supervision and guidance and this project work has not formed the basis for the award of any Degree/Associateship/Fellowship or similar title to any candidate of any University.

Professor and Head 28/4/2000

Staff-in-Charge

Submitted for University Examination held on 28/4/2000

Internal Examiner

External Examiner

RKM SOFTWARE
A division of RKM Resource Exchange Ltd.

APPROVAL

of the project for M.Sc.,(Engg) by

T Karthikaikumaran

This is to certify that Mr. T Karthikaikumaran has completed the project titled **JAVA DATA WIZARD** with RKM software, Adyar, Chennai in partial fulfillment of the requirements for the degree of ***M.Sc., (Applied Sciences – Computer Technology).***

The Project was completed during the period **January 2000 to April 2000**. His work was found satisfactory in all regards and we recommend that appropriate credit be given to his work.

The Project report has been received by us and has been found to be satisfactory regarding the content and is ready to be submitted to the University.

We wish him success in all his future endeavors.

for **RKM SOFTWARE**
A Division of **RKM RESOURCE EXCHANGE LIMITED**

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Declaration

I here by declare that the project work entitled,

"Java Data Wizard"
at
R.K.M SOFTWARE LIMITED,
CHENNAI.

Submitted in partial fulfillment of the requirements for the award of Degree of
M.Sc(Applied Sciences – Computer Technology)
is a report of original work done by me during the period of study in

KUMARAGURU COLLEGE OF TECHNOLOGY,
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Mr.S.ANDREWS, M.Sc.

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Date : 28-4-2000
Place : Coimbatore

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Karthikaikumaran. T

SYNOPSIS

The JDBC wizard provides the general user interface requirements for the design and implementation of user interfaces for DB. This guides a collection of the design choices made by the DB Tools and Utilities Group and reflects the lessons learned over the course of development for the new user interface.

Data wizards create and manage data-driven applications that rely on live connections to databases. The Query Designer enables us to use visual tools to build SQL statements that retrieve data or modify the contents of tables. The Database Designer graphically represents tables to create and modify the database. All this can be done during the application program has been connected to the underlying database. Thus, one can design, query and populate our database from within the design environment that can be used to build the application.

With Data wizard Tools, one can:

1. Connect to and explore any ODBC - complaint database.
2. Design, execute and save complex queries.
3. Add, Delete and update data from the database tables.

CONTENTS

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION: -

DATA WIZARD Tool is a GUI featured interfacing tool. I t is made up of three components.

DATA WIZARD COMPONENTS:

Data View

Database Designer

Query Designer

This tool provides a complete, tightly integrated database-development and administrative tools for developers. This specific functionality available in each component depends on the database server we are using to connect to the tool.

Data View:

The Data View component provides a visual interface in which one can view:

- Live connections to the databases in each project
- Objects available in each database, organized into folders, including:
    - Tables
    - Views

Database Designer:

The Database Designer provides a graphical environment in which one can:

- Create and modify the structure of Microsoft Access.
- Create, modify, or delete database objects such as tables, relationships, indexes, a constraints.
- Experiment with the design of our database without affecting the database until one choos to save the new design.
- Carry out complex DDL operations using a simple interface. For example, one can change column's data type by selecting a different data type from a drop-down list.

Query Designer:

- The Query Designer provides two ways for users to construct and execute queries agai any ODBC-compliant database.
- Use an SQL pane to type ANSI-SQL statements -- or let the Query Designer generate t SQL for users--for Select, Insert, Update, and Delete queries.
- Browse and edit live views of data in the database tables.

1.2 ORGANIZATION PROFILE

Introduction About RKM Software :

RKM SOFTWARE being a leading business solution / Information Technology Solution provider, has proven track record of Providing extensive IT solution which includes Supply Chain Management, Customer Relation Management to Large and medium sized organizations including Fortune 500 companies. The Company offers a broad range of IT services starting from Process mapping, Business/Decision Support solutions, Data Integration / Warehousing through Latest technology in connectivity. Apart from the above services, RKM maintains its edge in providing emerging technology solutions, Network consulting services, e-commerce / e-business solutions.

RKM in Networking Technology:

RKM SOFTWARE Network consulting services help you architect implements, and manages robust and secure technical infrastructures.

Audit and Assessment Capabilities :

RKM SOFTWARE helps maximize your IT investment by auditing existing network infrastructures. Our team will analyze infrastructure viability relative to current and planned application investments. RKM SOFTWARE network team provides many services including: RKM SOFTWARE Team is having the expertise to efficiently design and implement your IT infrastructure improvements. This eliminates the need to increase your network staff during new implementations.

Simply rely on our experts for:

* Network engineering

* Collaborative computing

* Document management

* Enterprise management frameworks

* Internet /intranet engineering and architecture

* Messaging systems

* Multimedia distribution

* NOS/OS engineering and architecture

Our Track Record & RKM's customers:

1.Amara Raja Batteries

Being understood the capabilities, strength, and the wide Implementation a Support network, Amara Raja Batteries - a collaborative company of the world's leadi Industrial Battery makers Johnson Controls has commissioned with RKM Software in th Process Mapping and for giving an integrated Customer Relation Management Solution whi covers a wide network across the country.

2.Philips India Ltd., - Lighting Division. (Fortune 500 Company)

Being a privileged Software vendor for PHILIPS India LTD, - Lighting Division, providing the Supply Chain Management Solution, has implemented its Business solution their wide network of their Dealers & Distributors, the count of Implementation done so far h crossed 200 in the last six months and yet got to integrate further their Dealers which cour extend upto 1300.

3.Citibank – NA

CITIBANK is by all standards the most aggressive bank in India and also a w leader. RKM has supplied a complete solution for their clearing division and CITIBANK placed on record its appreciation of RKM's quality Madraently selected in the navigator.

4.Prestigious Club Of Madras

RKM has supplied the software for this prestigious club of Madras and has retained for the past four years as of date. RKM has been awarded the contract for developi complete window-based web enabled application in replacement for the earlier DOS versior

1.3 HARDWARE ENVIRONMENT

PROCESSOR	:	PENTIUM Family
CLOCK SPEED	:	200 MHZ
CACHE MEMORY	:	512 KB
RAM CAPACITY	:	32 MB
FLOPPY DISK DRIVE	:	1.44 MB
HARD DISK CAPACITY	:	1.2 GB
KEYBOARD	:	104 KEYS
MOUSE	:	2 BUTTON MOUSE
MONITOR	:	SVGA COLOR MONITOR
VGA CARD	:	10. 2 MB VRAM

1.4 Software Environment

Back End

- Oracle 8 Enterprise Edition Release 8.0.4.00 - Production
- SQL Server
- MS Access version 2.0,7.0

Front End

Java 2 release from Sun Microsystems. Specification follows

- Jdk 1.2 software from Sun Microsystems.
- Win 32 release for Windows 95,98 and NT on Intel Hardware
- JDBC 2.0 API

Documentation

- MS_WORD 2000

1.5 SOFTWARE FEATURES

About Java:

Java is the current need. As the Internet is becoming more and more popular there has to be a language to create program for the Internet which should not be machine restricted. Java is machine independent by its birth and it has revolutionized the programming concept. Java is named for its

- Simple and Powerful
- Object Oriented
- Robust
- Distributed and Interpreted
- Secure
- Interpreted and high performance
- Portable and High Performance
- Multithreaded
- Platform Independent

Simple and Powerful

Java is a simple language. But what exactly do we mean by simple? One design goal was to create a language that a programmer could learn quickly, so the number of language constructs has been kept small. Another design goal was to make the language look familiar to a majority of programmers for ease of migration. The most

important simplification, however, is Java does not use pointers. But this automatically handles the referencing and dereferencing of objects. Java also eliminates the operator overloading and multiple inheritance features of c++.

Object Oriented

Java is an Object Oriented programming language. In an object-oriented system, a class is a collection of data and methods that operate on the data. The data and methods describe the state and behaviour of an object. Java comes with an extensive set of classes, arranged in packages, that we can use in our programs. Most things in Java are objects, the simple numeric, character and Boolean types are the only exceptions.

Robust

Java is intended for writing programs that must be reliable in a variety of ways. Java puts a lot of emphasis on early checking for possible problems, later dynamic checking and eliminating situations and error prone. In fact, many hard-to-track-down bugs that often turn up in hard-to reproduce run-time situations are simply impossible to create in Java.

Distributed

Java is designed to support application on networks; it is a distributed language. Java supports various levels of network connectivity through classes in the

java.net package. Java also supports reliable stream network connections with the socket class, so you can create distributed clients and servers.

Java even makes common gateway interface (CGI) scripting easier and an elegant mechanism called SERVLETS makes Java extremely efficient. The remote method invocation (RMI) mechanism enables communication between distributed objects.

Secure

Java is intended to be used in the networked/distributed environments. Toward that end, a lot of emphasis has been placed on security. Java enables the construction of virus-free , tamper-free system.

Interpreted and High Performance

The Java interpreter can execute Java byte codes directly on any machine in which the interpreter has been ported. Since linking is a more incremented and light weight process , the development process can be much more rapid and explanatory. The byte code can be translated on the fly into machine code for particular CPU the application is running on.

Portable and High Performance

Unlike C and C++ there are no implementation dependent aspects of specification. The sizes of the primitive data types are specified as is the behaviour of arithmetic on them.

The libraries that are a part of the system define portable interfaces.

Multithreaded

The benefits of multithreading are better interactive reponsiveness and real time behaviour.

A multithreaded program contains two or more parts that can run concurrently. Each part of such a program is called a thread, and each thread defines a separate path of execution. Thus, multithreading is a specialized form of multitasking.

Components:

Java has several in-built components.

Javac : Compiler for Java programs that could generate byte codes.(.Class files)

Java : Interpreter to read and execute Java byte codes.(. Class files)

Javap : To disassemble and debug the Java byte codes.

Javadoc : Document generator.

Javah : To write and link native codes with Java programs.

Java programs have the extension '.Java'. These '.Java' files are compiled

Bytecode is a highly optimized set of instructions designed to be executed by the Java tun-time system, which is called the Java Virtual Machine.

Java stores all the library classes in a Zip file called ' CLASSES.ZIP' . During execution the byte codes from the '.class' files are interpreted and linked with the ' CLASSES.ZIP ' file by the JAVA interpreter and executed providing the corresponding output.

ADVANTAGES:

Java and Internet

Java is basically a Internet programming language. There are various built - in tools available in Java for Internet programming because Java expands the universe of objects that can move about freely in cyberspace. In a network , two very broad categories of objects that can transmit between the server and your personal computer. Passive and dynamic, active programs. Java supports two of them by including the features of Applet and Servlet.

Networking

Java is supposed to become the premier tool for connecting computers over the Internet. If we are used to programming network connections in C or C++, Java supports the Internet's TCP/IP protocol both by extending the already established stream I/O interface and adding the features required to build I/O objects across the

stream-based I/O across the network. UDP supports a simpler, hence faster point-to-point, datagram-oriented model.

JDBC API

Java 1.2 has the JDBC API to connect to the databases and work with them. It has so many classes and interfaces to connect with the databases. It helps to fetch the data from the database and view through the database. It helps more in navigate through the database and get all the items and data, tables description and it also includes the security privileges also.

Some of the methods are:

getConnection(Driver, Username, Password)

executeQuery(sql);

InetAddress

Java supports Internet naming through the Internet addressed, when reduced to their lowest level, are comprised of a 32-bit host identifier and a 32 bit port selector on that host. Inet Address has three methods that can be used to create instances of InetAddress.

getLocalHost ()

getByName ()

getAllByName ()

Sockets

The java.net package strongly differentiates between sockets and Serversockets.

The primary difference between the two is that a serversocket will wait around for a client to connect to it. Whereas an ordinary socket will treat the unavailability of something to connect as an error condition.

The creation of socket object also establishes the connection between Internet addresses. There aren't methods or constructors that explicitly expose the details of establishing the client connection with a normal socket.

Two constructors

ServerSocket (int port)

ServerSocket (int port, int count)

URL Connection

A URL connection is referred as Universal Resource Locater. The object that we use to either examines the properties of the remote resource referenced or to obtain its contents.

2.0 SYSTEM ANALYSIS

2.1 EXISTING SYSTEM AND LIMITATIONS

At present the java application program contains no backend tool. It is now using Oracle or MS-ACCESS as the back-end for the storage purpose. For this purpose, there exist the need for buying the software (Oracle or MS-ACCESS) separately. It occupies more memory space and it is very costly.

The drawback in storing the data in different database is not possible. It is not possible to run this application program in some other environment if we store the data in the specified software. At present there is no specific connectivity driver for java to connect to the database.

2.2 FEASIBILITY STUDY

During the feasibility study it was found that in present there is no GUI featured tool to connect to the databases using the JDBC API.

1. Since the present system it is difficult to connect to the database and make transaction with the databases.
2. There is a need to build a well interfacing tool for the java users to connect to the databases.
3. JDBC API provides Interfaces and classes to connect to the databases, but that is not user interfacing one.

2.3 PROPOSED SYSTEM AND ADVANTAGES

Data wizards create and manage data-driven applications that rely on live connections to databases. The Query Designer enables us to use visual tools to build SQL statements that retrieve data or modify the contents of tables. The Database Designer graphically represents tables to create and modify the database. All this can be done while we are connected to the underlying database. Thus, we can design, query and populate our database from within the design environment that we use to build our application.

ADVANTAGES:

1) It is very cheap.
2) It is portable.
3) It is platform independent.
4) This is specifically meant for java users.
5) This is GUI featured and user interfacing tool.

2.4 DATA FLOW DIAGRAM DESCRIPTION

Although system flow charts have been and still are widely used in computerized information management systems, they are not the ideal design tool for structured system analysis and design. The flow of the system may not be obvious to the receiver. To overcome limitations of system flowcharts, several design techniques for representing systems have come into use. One is the data flow diagram (DFD), which comes closest to the system flowchart.

Data flow diagram description for the Data Wizard tool includes:

1. The flow of information from the user to the system and with that the connection is established with the database.
2. The flow of information from the java application to the database to perform transactions.
3. The flow of information from the database to the application as results.

3.0 SYSTEM DESIGN

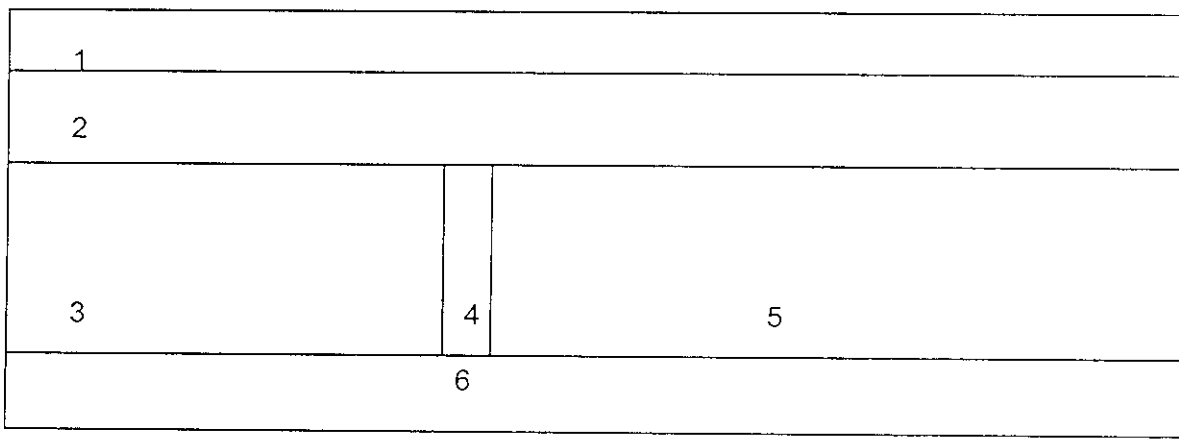
3.1 TECHNICAL DESIGN SPECIFICATION :-

Main Window Design:

This section will describe the design and usage of main windows within JDBC applications.

Main windows are divided into six components:

1. Menu Bar.
2. Tool Bar.
3. Navigator.
4. Splitter.
5. Browser/Editor.
6. Status Bar.



1. Menu Bar:

The menu bar provides the user with the means to access the application's features and functions.

2. Tool Bar:

The tool bar provides short cut to the most commonly used menu options.

3. Navigator:

The navigator provides the user with a means of navigating the application's data model.

4. Splitter:

The splitter separates the navigator and browser /editor panel and allows them to be resize relative to one another.

5. Browser/Editor:

The browser and the editor provide a view of the item that is currently selected in th navigator.

6. Status Bar:

The status bar provides the user with immediate textual feedback on the current status of th application.

MENUBAR DESIGN:

File	Edit	Utility	Tools	Help
Open	Cut	Add Table	Application	About
New	Copy	Delete Table	Specific tools	Help Topics
Exit	Paste	Next Record		
		Previous Record		
		First Record		
		Last Record		

File Menu:

The Open Menu option presents the list of all objects to the user so that the user can view th existing databases and he can choose any of them and work with them.

The New Menu option presents the user with a list of all objects so that the user can crea table based on the current context within the application.

The Exit Menu option closes all the application windows.

Open Database command

In most cases, one should create an .mdb file and attach tables from other da source types. However, it is necessary and useful to open a database directly to perform DI (Data Definition Language) operations and to experiment with performance.

If you choose ODBC, a dialog box is displayed that lists the parameters needed open an ODBC data source. If the source select does not exist, it can be created from th dialog using the Register command.

New Database command

Creates a Table for the database type selected from the menu.

Edit Menu:

The Cut, Copy, and Paste menu options are used in editing and also make use to create synonym table.

Utility Menu:

Add Table for adding table in the new database. Next Record for moving to next reco previous Record for moving to previous record, First record for moving to First record and l record Next record for moving to first record for a particular table.

Tools Menu:

The application specific options section is where you place options to load other tools. example you might have an option to bring up a data modeling tool or a wizard for so common JDBC task.

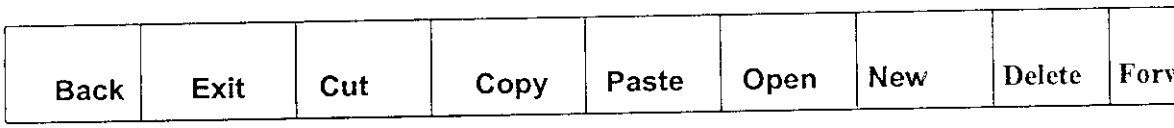
Help Menu:

The Help Topics menu option displays an index for all available on-line help files.

The About menu option displays an about box for the application.

TOOLBAR:

The main window's tool bar consists of a number of standard buttons as shown in the follo diagram:



Exit

The Exit menu option closes the application. The user should be prompted to save any unsa work before exiting if necessary.

Back and Forward

The back and forward buttons are used to traverse the navigator panel's hist queue when the application is in edit mode. Refer to the section on the navigator panel fo complete description of how the navigator is used to traverse an application's data model.

The back button moves back one item in the direction of the first item in navigator panel's history queue.

The forward button moves forward one item in the direction of the last item in navigator panel's history queue.

New

The new button is context sensitive and will create table and items that may be based on current context. The new and edit buttons must be grouped together with no spacer betw them.

Cut, Copy and Paste

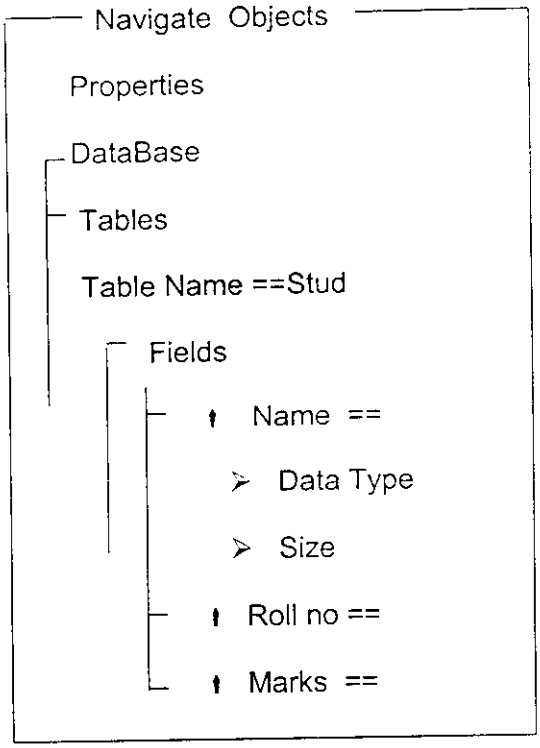
The cut, copy and paste buttons must be grouped together with no spacer between them.

Delete

The delete button deletes the currently selected item in the navigator panel.

NAVIGATOR PANEL DESIGN

The navigator panels consist of an outline view at the top and a path field at the bottom.



Outline

The outline portion of the navigator panel displays the application's data model. Each item node in the outline has a corresponding 16*16 pixel graphic to help the user discriminate th one from another based on type.

Path

The path field at the bottom of the navigator panel displays the full path in dot notation for item currently selected in the outline view at the top.

Navigator panel usage

The left-hand on each application's main window is referred to as the navigator panel. navigator panel is used to visualize and navigate the data model administered by application.

3.2 INPUT DESIGN

The input to the Data Wizard tool contains the connection details of the databases and table design. So input screens have been designed according to these details. Each one has separate frame windows.

The input for database connection is the DSN, database name or username and password. The data source name and database name are used to connect to the MS-Access database. Oracle and SQL server needs the data source name, username and password to connect to the database. A clear menu separation is available to differentiate them.

For the Open menu option we will get the File Chooser to select the file from a list and connect to the particular database. The Navigator bar contains the entire database and the tables description to view and modifying it.

There are tool bar buttons available to make the selection more easy and fast. These screens are mouse oriented because it gives a free hand movement. These screens are resizable according to the users convenience.

INPUT SCREENS

Screen to get Database details

This screen is succeeded with the menu item separation. This is a dialog box window to get the Data Source Name and the Database details to connect the database. This is common for both the database open and new menu option. This screen ends with the connection to the database.

Screen for Query window

This screen contains a text box to enter our queries and the bottom of the screen contains two buttons to execute the query and clear the box. The query results come within that text box. This screen is resizable and scrollable.

3.3 DATA BASE DESIGN

Database is deigned to store all necessary information. Different types of information are stored in the database. Here there are three different databases used to create the tables. Oracle, SQL Server and MS-Access can connect with the tool by providing specific identity.

Screen for Table creation

The database designer module does the Database design. It consists a Table creation window. After connection established to the database a Table creation window will show which expects the identity of the database, the DSN table name, and the fields. The field types are listed in a drop down list, so we can easily select the fields from it. We can add the in a drop down list to view and make any addition or selection. The Build Button to build the table. Remove field button will remove the field from the list.

The main outputs are in the text format. There are some other Labels to show the result of the particular operation.

3.4 OUTPUT DESIGN

The output is the very important because the accuracy and standard is essential to the users. The output designs are the tables' records and the query results. It should give to the user very clear results.

Screen for output results

The SQL window shows the results of the entered query. It will show the results in table format. The Query results are given to the user either in the text box or using some labels providing the necessary information such as the creation of tables and data. The addition of tables is shown in the properties window so that we can easily know the processing of the system.

4.0 SYSTEM IMPLEMENTATION

4.1 CODING

SOFTWARE USED

The Data Wizard tool is developed in the Java 2.0 programming language. The features used in the system are:

- Java 1.2
- Swing Components
- JDBC 1.2 API

All the above programming features are used to develop the tool. A small description about these features:

JAVA 1.2

Exception Handling:

A Java exception is an object that describes an exceptional (that is, error) condition that has occurred in a piece of code. When an exceptional condition arises, an object representing that exception is created and thrown in the method that caused the error. That method may choose to handle the exception itself, or pass it on. Either way, at some point, the exception is caught and processed. Exceptions can be generated by the Java run-time system, or they can be manually generated by our code.

Java exception handling is managed via five keywords: try, catch, throw, throws and finally.

Event Handling

The event handling is the core of java programming. Events are passed to our programs in variety of ways, with the specific methods depending upon the actual event generated method. Events are supported by the java.awt.event package.

Events are of two types; it may handle by the system or by the user. A source is an object that generates an event. Sources may generate more than one type of event.

A listener is an object that is notified when an event occurs. There are several types of listener here used MouseMotionListener, ActionListener and WindowListener.

SWING:-

WHAT IS SWING?

Swing is a major component of the JFC (JAVA FOUNDATION CLASSES), which is the result of a large collaborative effort between Sun, Netscape, IBM, and other companies. Swing provides a large number of useful GUI controls that originated with Netscape's Internet Foundations classes (IFC).

The swing components go far beyond the IFC, to the point where there is no visible resemblance between Swing components and those of the IFC, Swing also provides the capability to quickly and easily change the look and feel of the single component or group of components. This capability Known as Pluggable look and feel, is a hallmark feature of Swing.

SWING PACKAGE OVERVIEW

Swing is a large API consisting of nine packages and numerous classes and interfaces. Most of the swing components are contained in the **javax.swing** package, which also provides classes and interfaces that support and manage the GUI components. The **javax.swing.border** package provides a number of interesting borders that can be used with swing components. These borders help to tailor the look and feel of component sets.

The **javax.swing.event** package defines the events and event listeners used by Swing components. It is a good idea to look over the list of events and event listeners to get a feel for the types of user interactions supported by Swing.

The **javax.swing.table package** classes and interfaces that support the feature rich and flexible Jtable object. You use these classes and interfaces to tailor a table's display features.

The javax.swing.button package supports the high effective look and feel buttons in which we can define different icons that are displayed for the component when it is disabled, pressed, of selected.

The **javax.swing.text** packages classes and interfaces that support the text components. These classes and interfaces control the caret, highlighting, formatting and other aspects of text that is entered and edited within text components.

The **javax.swing.tree** packages classes and interfaces those supports to create a hierarchical view of data. The JTree class consists some constructors:

JTree (HashTable ht)

JTree (Object obj[ ])

JTree (TreeNode tn)

The **javax.swing.tab classes** and interfaces helps to appear a group of folders in a file cabinet. When a user selects a folder, its contents become visible. Only one of the folders may be selected at a time.

SWING WINDOWS

Just as AWT provides a window class hierarchy, so does swing. Swing window classes are extensions of the AWT window class hierarchy. The JWindow class extends the AWT window class. The JFrame class extends the AWT frame class and JDialog class extends the AWT dialog class.

The JWindow, JFrame and JDialog classes differ from their AWT counterparts in that they use a separate content pane for adding and laying out GUI components. This content pane is a container object that is accessed via the getContentPane method. The content pane is part of a JRootPane object that other panes used for overlaying components and intercepting mouse and keyboard events.

SWING MENUS

Swing menus, like Swing windows, are analogous to their AWT counterparts.

classes are used in the same manner as the awt MenuBar, Menu, MenuItem and ChechBoxMenuItem classes but with one very important difference. The Swing menu classes are all subclasses of the JComponent class, and therefore of the component class. This means that Swing menus, unlike their AWT counterparts, are first-class components and can be used with any container classes. The JPopupMenu class is analogous to the AWT PopupMenu class.

Another nice feature provided by swing menus is the capability to use icon images in menus. An image can be added to a menu item via its constructor.

3.3 About JDBC:-

Introduction:

For the application to communicate with the database it needs the following information.

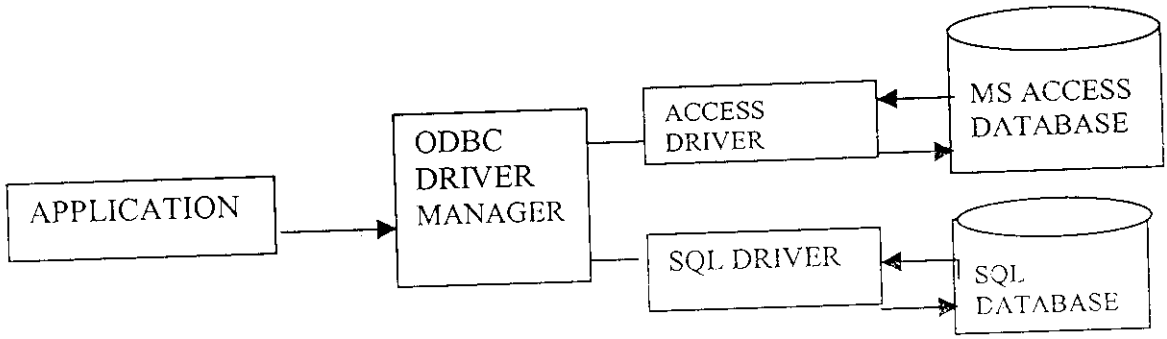
1) The RDBMS / DBMS product using which the database is created.

2) The location of the database.

3) The name of the database.

To communicate with the database, Microsoft's Open Database Connectivity (ODBC) is needed.

The following figure illustrates this process:



JDBC API:

Java Database Connectivity (JDBC) provides the database programming API for Java programs. Since the ODBC is written in the C language and makes use of pointers and other constructs that Java does not support, the Java program can't directly communicate with an ODBC driver.

JavaSoft created the JDBC/ODBC bridge driver that translates the JDBC API to the ODBC API. It is used with ODBC drivers.

There are several categories of JDBC driver available. They are

- JDBC-ODBC bridge + ODBC driver.
- Native API partly java driver.
- JDBC - NET pure java driver.
- Native protocol pure java driver.

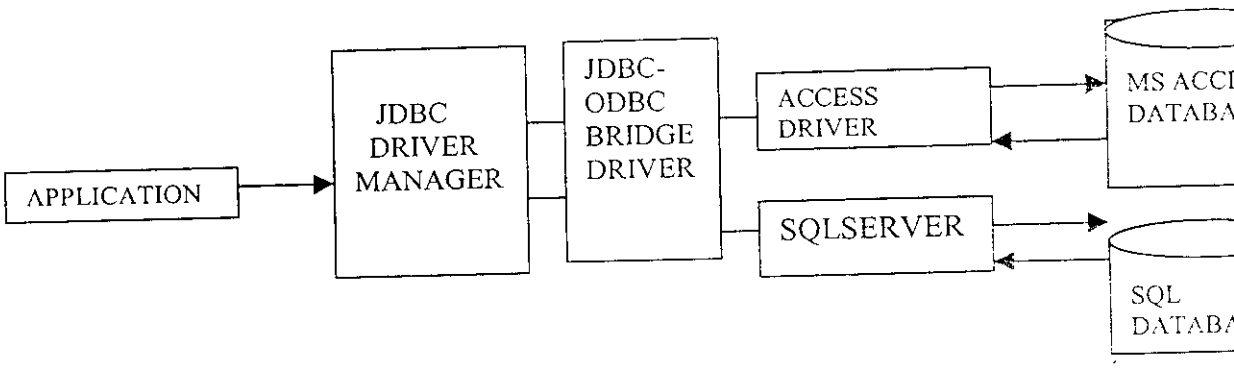
JDBC-DRIVER MANAGER:

The JDBC driver manager is a backbone of JDBC architecture. The function of the JDBC driver manager to connect the java application to appropriate driver specified in the java program.

JDBC-ODBC BRIDGE:

As a part of JDBC, Sun Micro Systems provides a driver to access ODBC data sources from JDBC. This driver is called the JDBC-ODBC Bridge. JDBC-ODBC Bridge is implemented as the JdbcOdbc.class and a native library is used to access the ODBC driver. In the windows platform, Native library is JDBCODBC.DLL.

The following figure illustrates the JDBC-ODBC driver manager:



The JDBC methods and classes are included in java.sql.* package. This contains so many classes and interfaces. When a database connection is established using the getConnection() method of DriverManager, the getConnection() method returns an object that implements the Connection interface.

A number of methods are defined by the Connection interface.

close()

getMetaData()

createStatement()

prepareStatment()

prepareCall()

This close() method closes the database connection.

The getMetaData() method of the DataBaseMetaData interface used to obtain detailed information about the structure and capabilities of a database.

The prepareStatement() method is used to compile the SQL string. Its objects are percompiled statements that are more efficiently executed.

The prepareCall() method creates an SQL CallableStatement using an SQL string.

4.2. TESTING

System testing in the style of implementation, which is aimed at ensuring that the system work at all levels and is effective before live operation starts. The System test in implementation should be a definite confirmation that all are correct and an opportunity to show the users that the system works.

This Data Wizard tool has been tested under various circumstances with different kinds of data. This tool is checked with giving different types of SQL queries and the results are verified. Also the system is checked with two more databases (Oracle and MS-Access). This tool can easily connect and work with those databases. This tool works with different databases with different data source names.

This system module is tested unit by unit and it is integrated as a whole system and that system works properly. The integrity of the system is checked and it provides high reliability and it will warnings and it will work with the exceptions and handle them properly. This system requires some attachments for the future enhancement.

5.0 CONCLUSION

This Interfacing tool connects to ODBC complaint Databases through the JDBC-ODBC bridge. Through this tool we can create tables and view the table structure without affecting the database tables.

We can make DDL operations and DML operations through the SQL Query Window and for help we can use the properties window. We can navigate through the properties window. Also we can edit the SQL window Queries and get different types of results.

This tool is a GUI featured and the user can easily work with this one and this is any type of database users.

6.0 FUTURE ENHANCEMENT:

This Data Wizard tool is for standalone system this will enhance into networking databases. So that a number of users can connect and work with the databases at the same time and it will also include the security privileges.

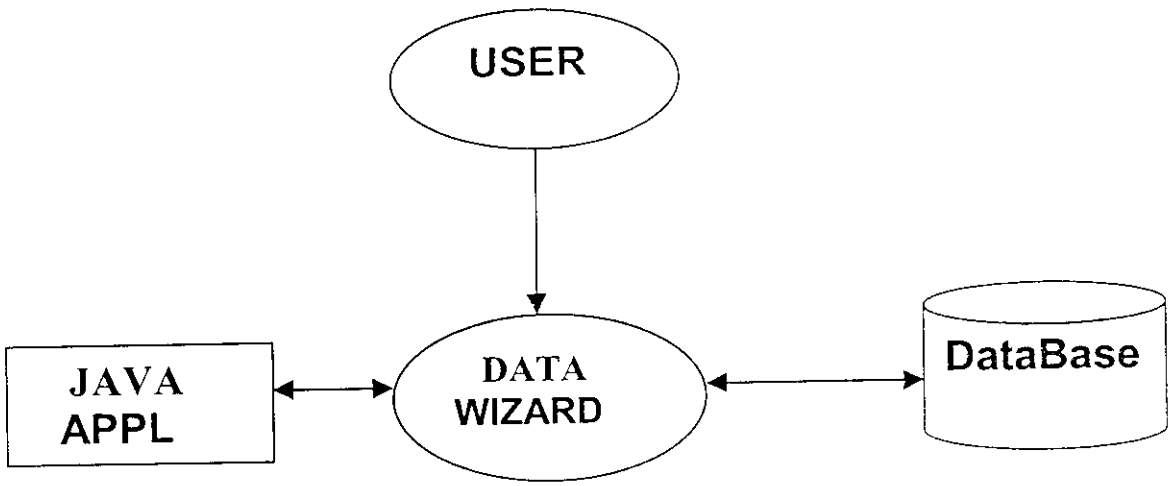
This can be used to any databases to connect and process any type of data such as images. In future it can be enhanced into remote database connectivity. We can use any tables anywhere in the net.

In future we don't go for ODBC connectivity driver, instead of that we will get JDBC connectivity driver and we can connect it with any databases

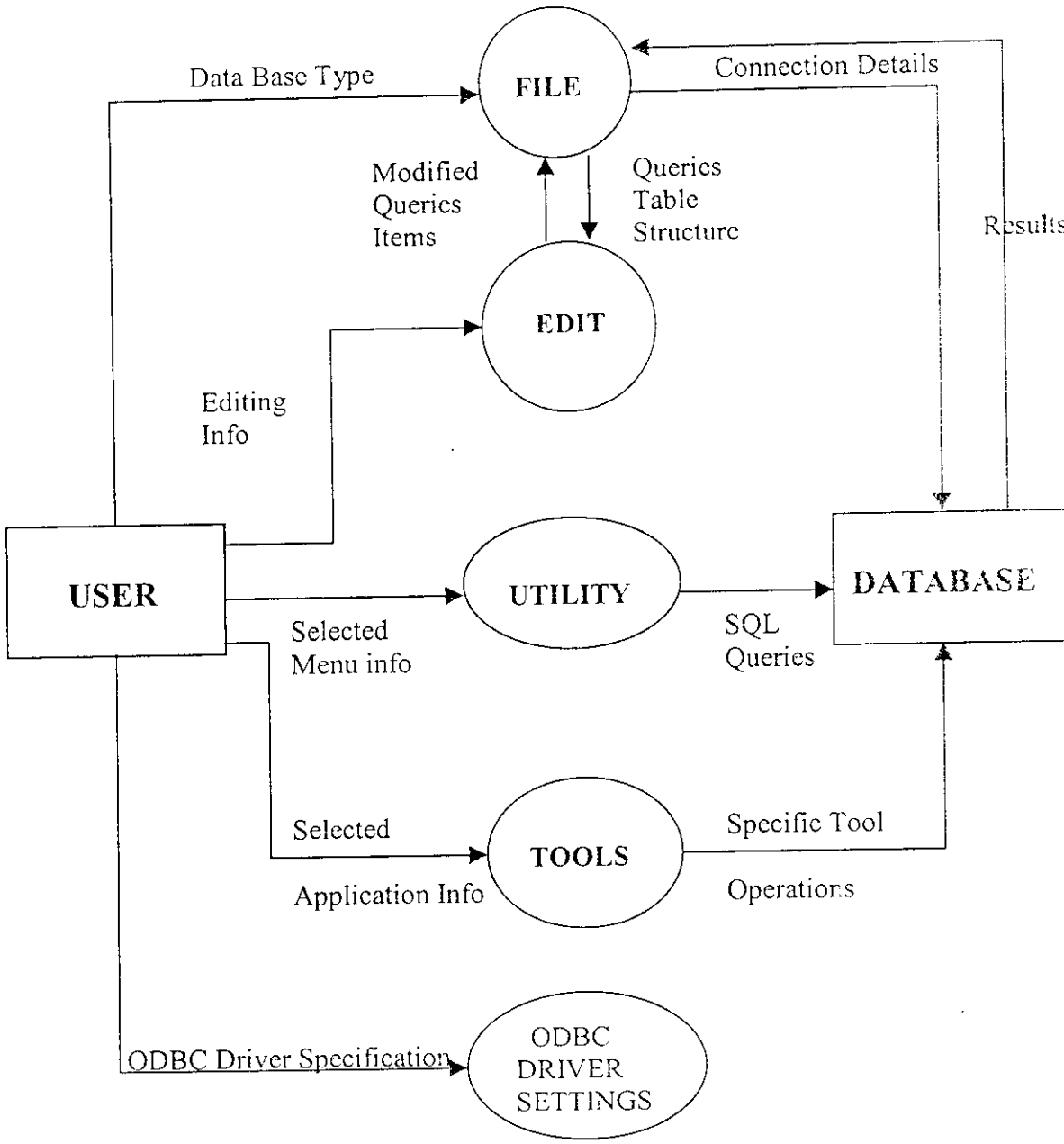
7.0 APPENDIXES

I DATA FLOW DIAGRAM:

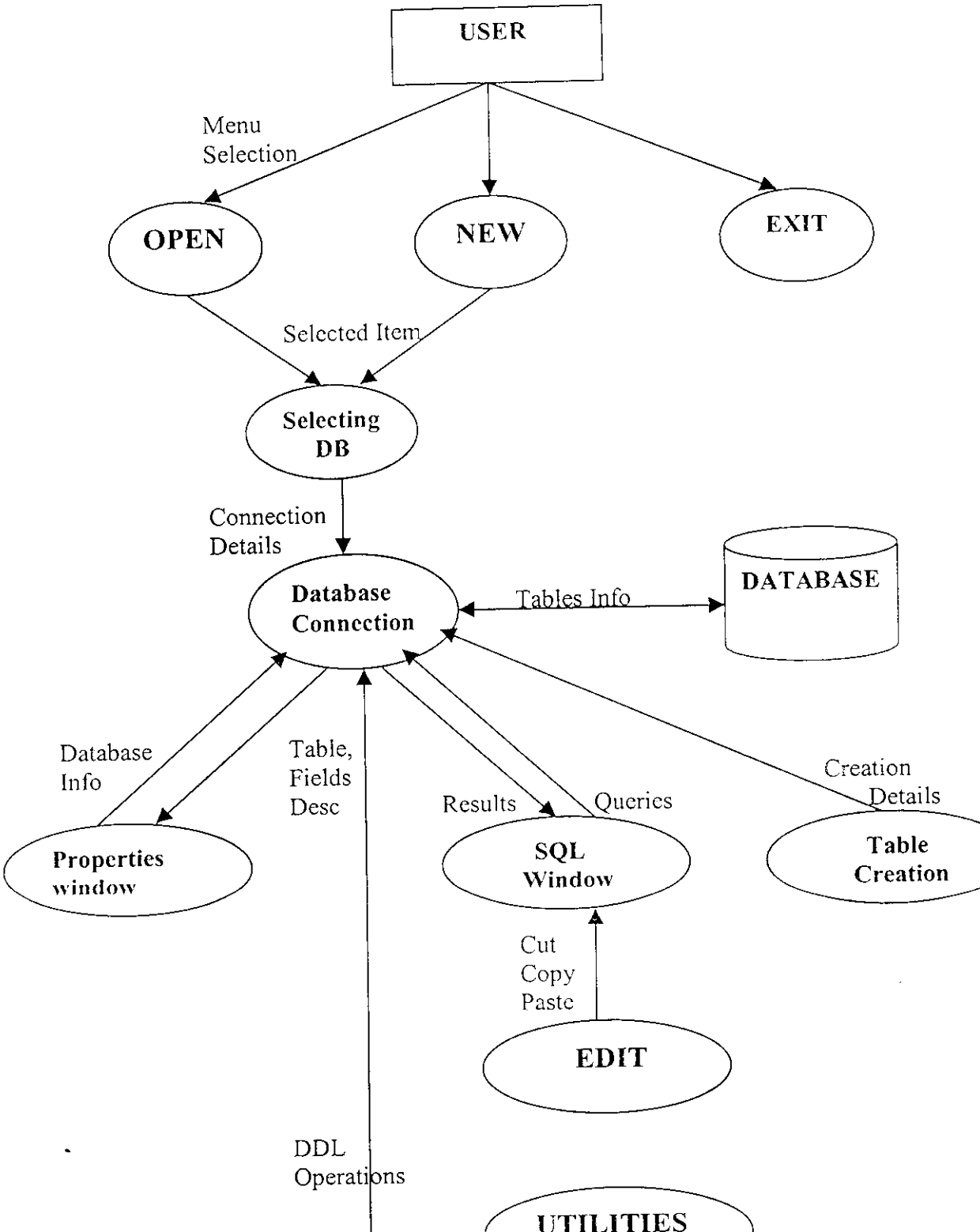
Level I:

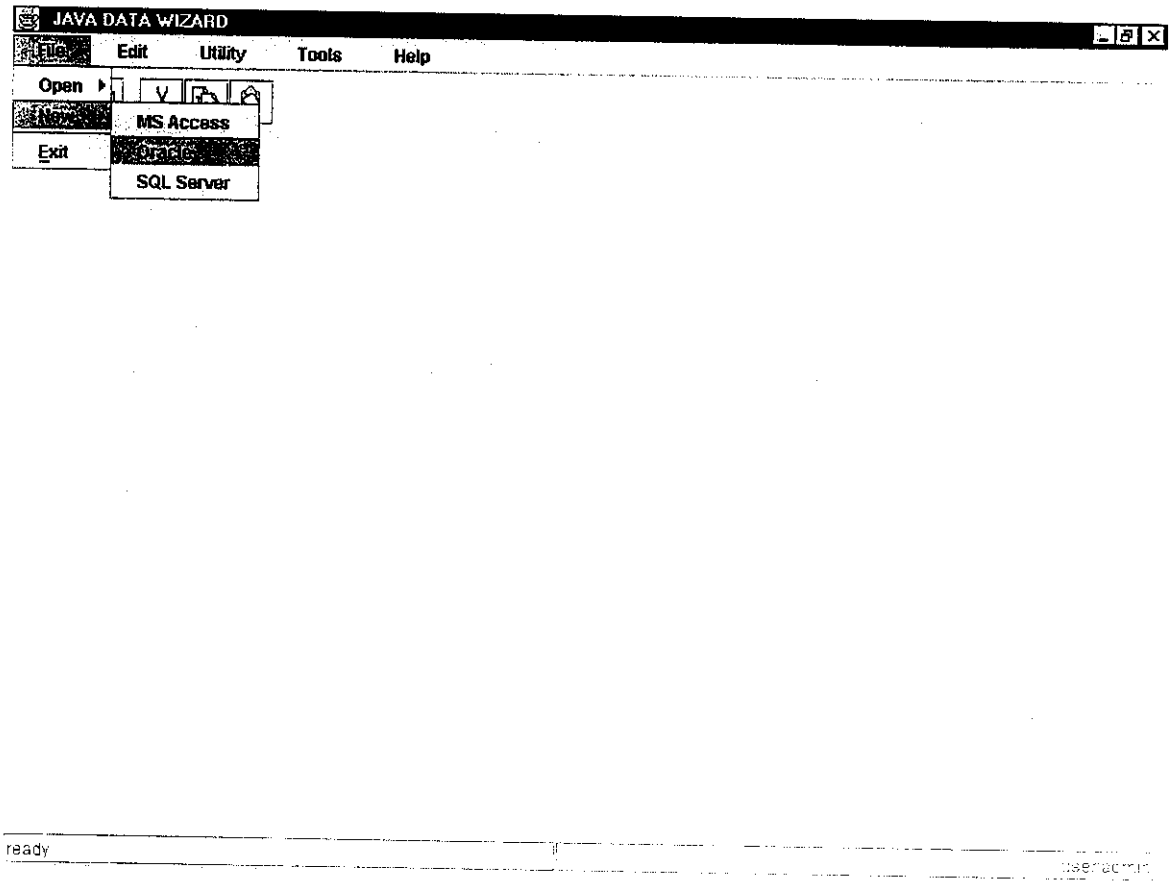


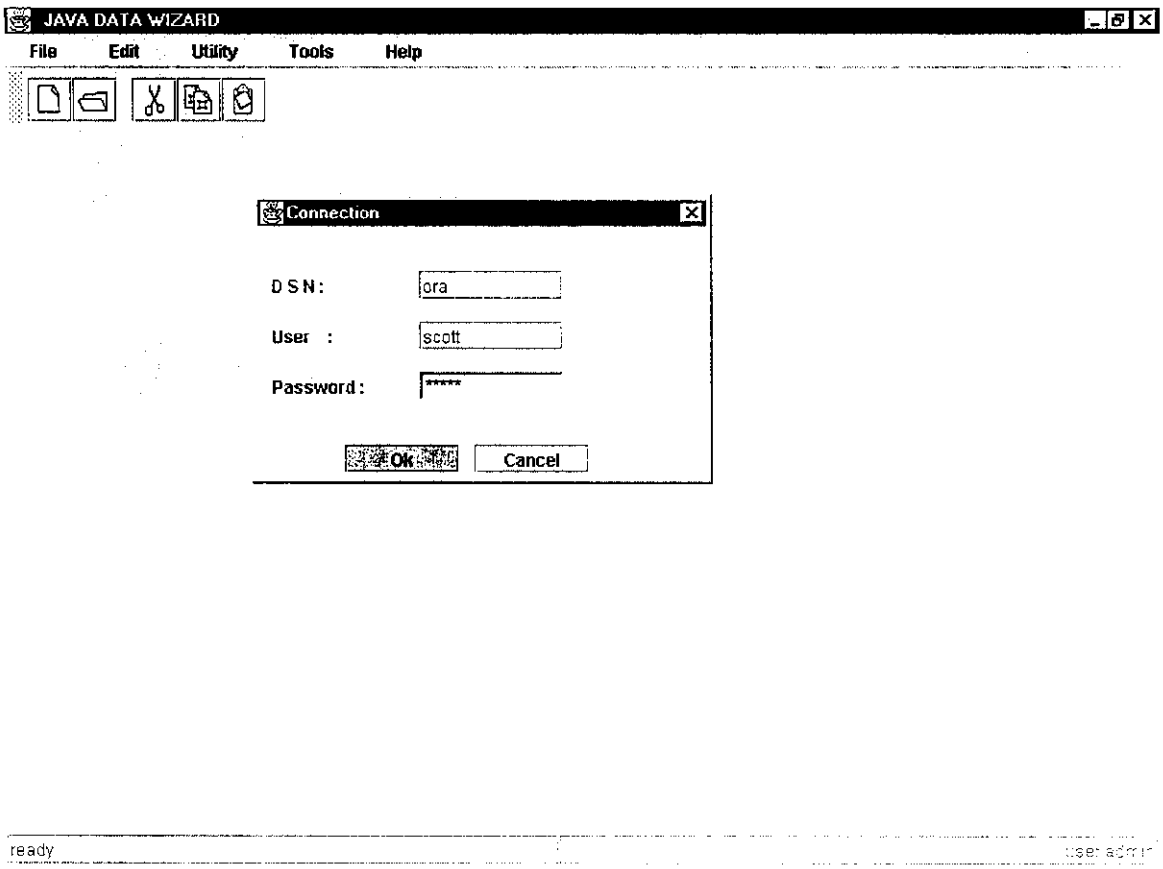
Level II:

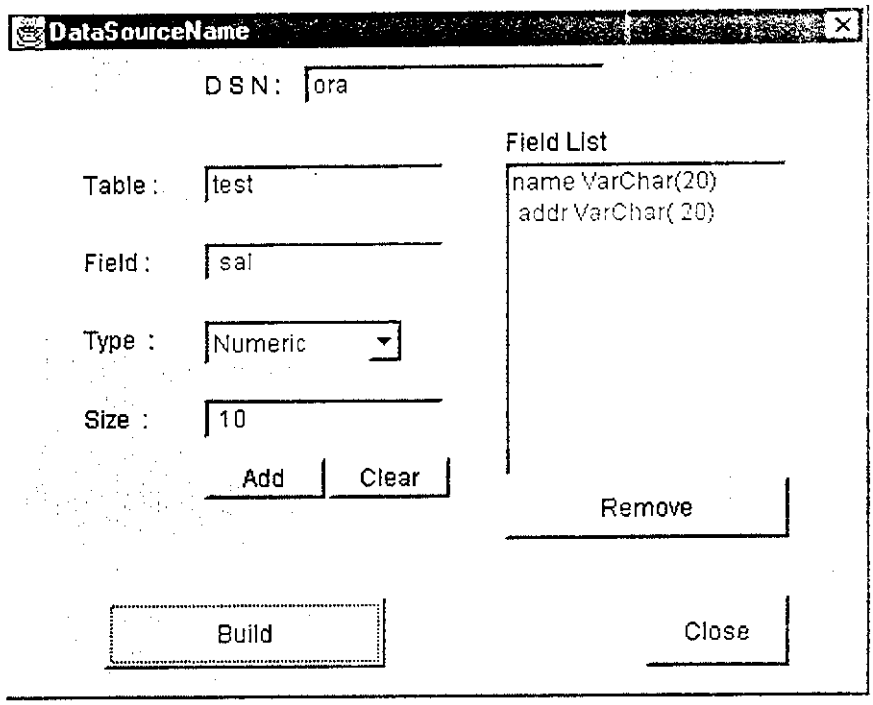

Data Base Type
FILE
Connection Details
Modified
Queries
Items
Queries
Table
Structure
Results
EDIT
Editing
Info
USER
UTILITY
DATABASE
Selected
Menu info
SQL
Queries
Selected
Application Info
TOOLS
Specific Tool
Operations
ODBC Driver Specification
ODBC
DRIVER
SETTINGS

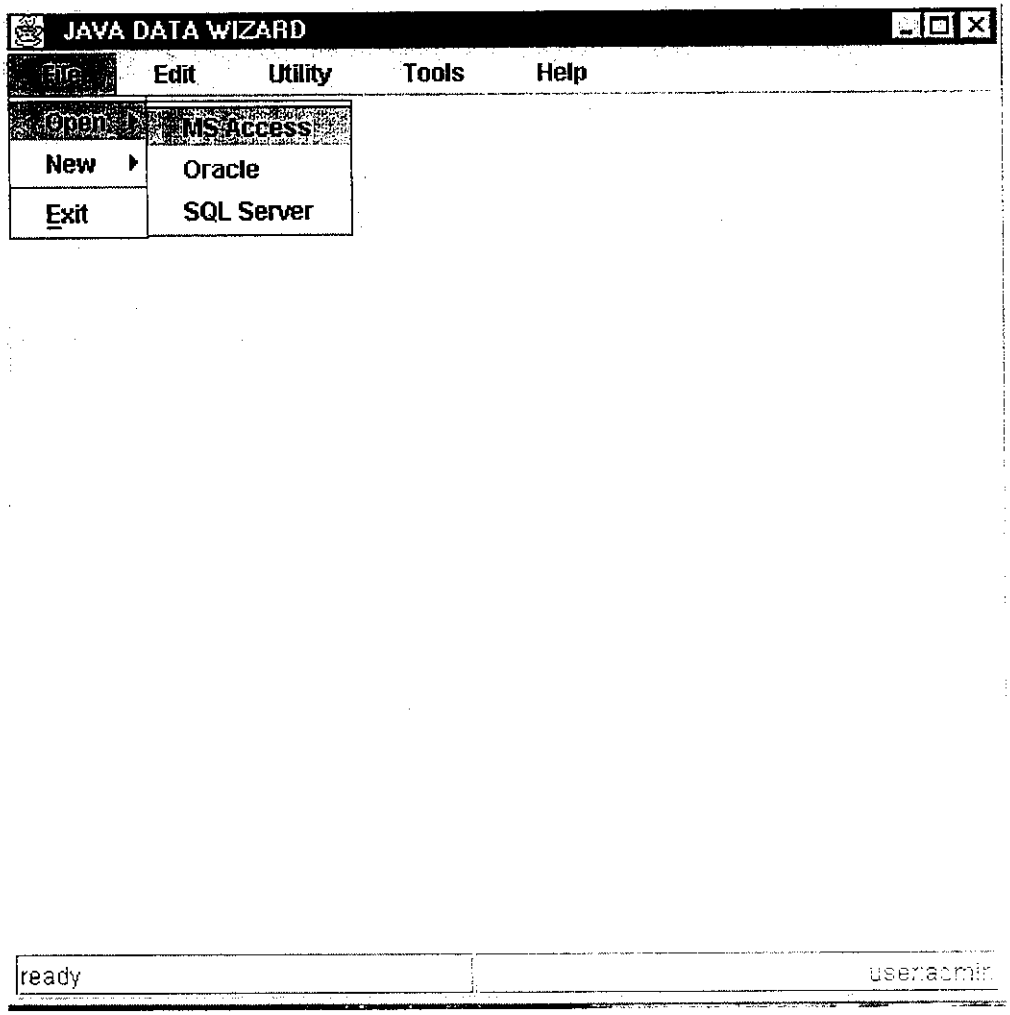
Level III:

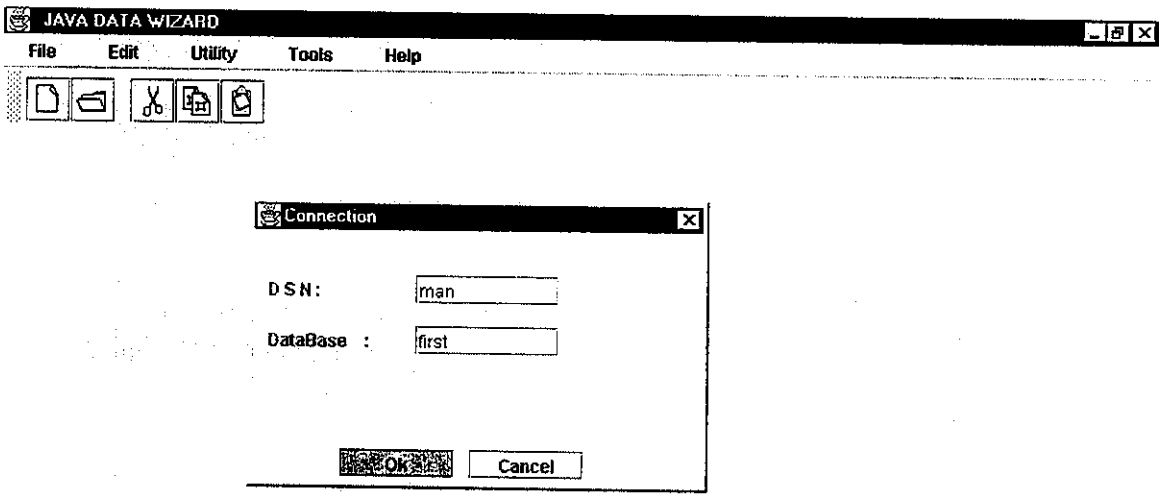

USER
Menu Selection
OPEN
NEW
EXIT
Selected Item
Selecting DB
Connection Details
Database Connection
Tables Info
DATABASE
Database Info
Table, Fields Desc
Results
Queries
Creation Details
Properties window
SQL Window
Table Creation
Cut
Copy
Paste
EDIT
DDL Operations
UTILITIES


JAVA DATA WIZARD
File
Edit
Utility
Tools
Help
Open
New
Exit
MS Access
Oracle
SQL Server
ready

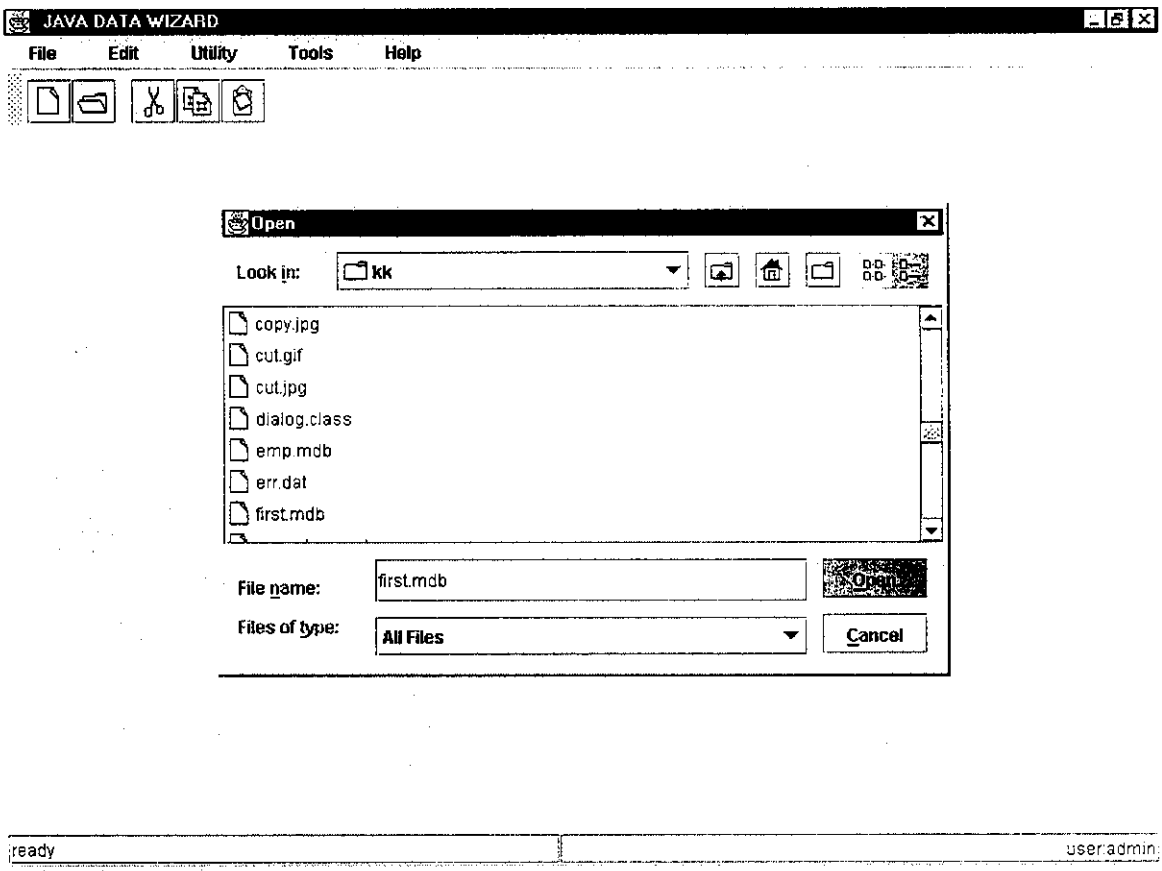

JAVA DATA WIZARD
File
Edit
Utility
Tools
Help
Connection
DSN:
ora
User :
scott
Password:
*****
Ok
Cancel
ready

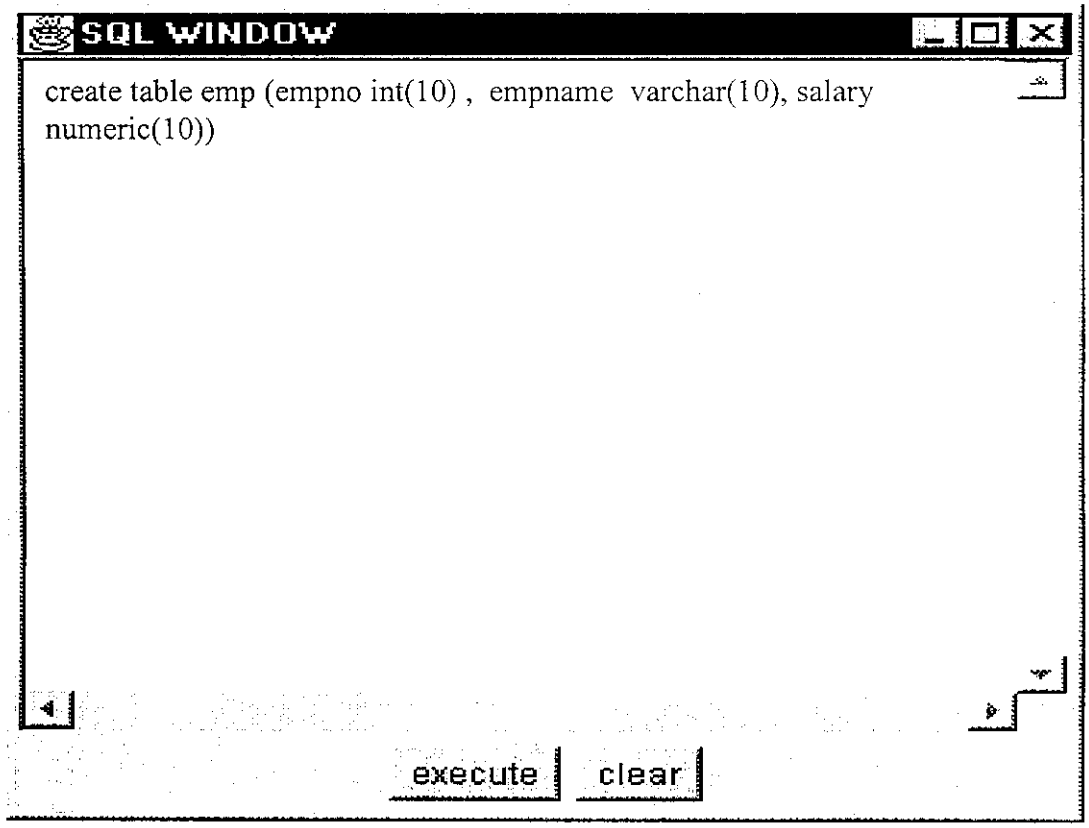

DataSourceName
DSN:
ora
Field List
Table :
test
name VarChar(20)
addr VarChar(20)
Field :
sal
Type :
Numeric
Size :
10
Add
Clear
Remove
Build
Close

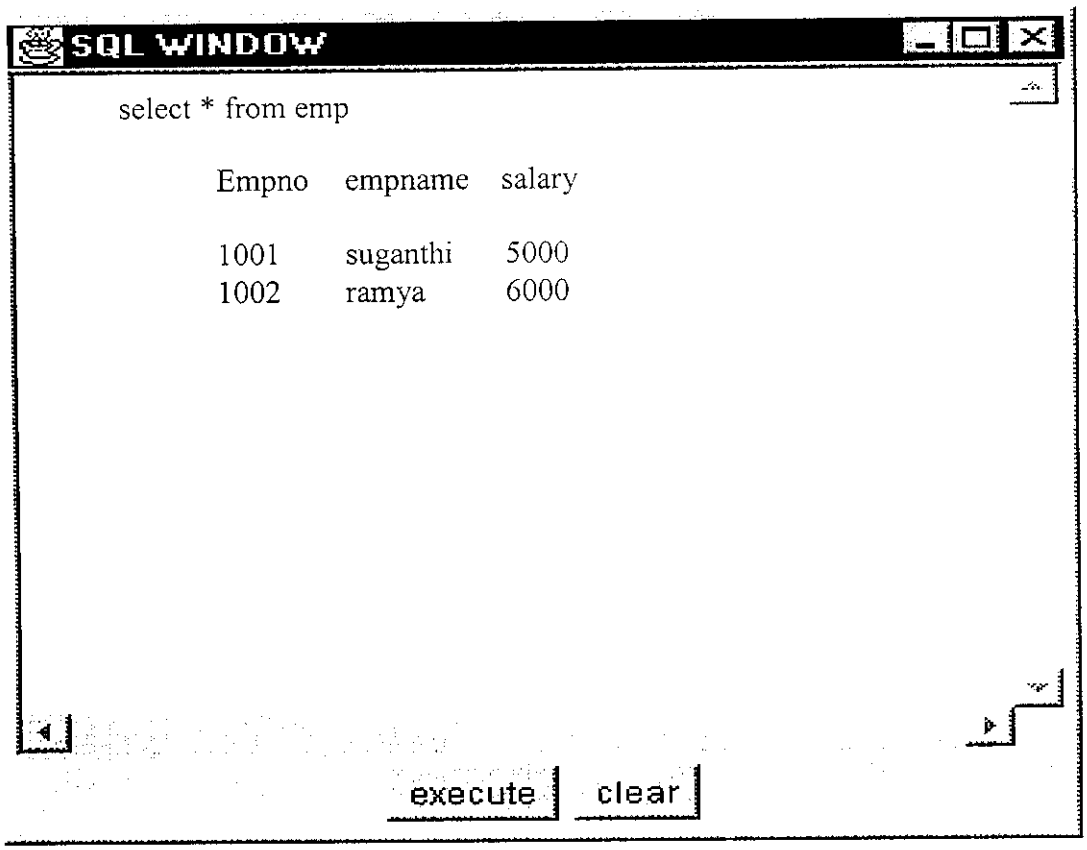

JAVA DATA WIZARD
File
Edit
Utility
Tools
Help
Open
New
Exit
MS Access
Oracle
SQL Server
ready
user:admin


JAVA DATA WIZARD
File
Edit
Utility
Tools
Help
Connection
DSN:
man
DataBase :
first
Ok
Cancel

ready


JAVA DATA WIZARD
File
Edit
Utility
Tools
Help
Open
Look in:
kk
copy.jpg
cut.gif
cut.jpg
dialog.class
emp.mdb
err.dat
first.mdb
File name:
first.mdb
Open
Files of type:
All Files
Cancel
ready
user:admin


SQL WINDOW
create table emp (empno int(10) , empname varchar(10), salary numeric(10))
execute
clear


SQL WINDOW
select * from emp
Empno empname salary
1001 suganthi 5000
1002 ramya 6000
execute
clear

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