ADHOC QUERY

For

Allsec Technosoft Ltd.,

P-1125

Project Report

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

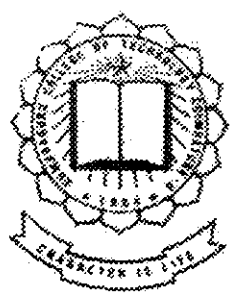
M.Sc. Applied Science (Software Engineering)
Bharathiar University,
Coimbatore.

Submitted By

G.ALAGUSAKTHI
Reg. No. 9937S0072

Guided By

Mr. V.G. Prasath, (External Guide)
Mr. P. Gopalakrishnan MCA., (Internal Guide)



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
KUMARAGURU COLLEGE OF TECHNOLOGY
COIMBATORE – 641 006

CERTIFICATE

This is to certify that this project work entitled

"Adhoc Query"

Submitted to

KUMARAGURU COLLEGE OF TECHNOLOGY

In partial fulfillment of the requirements for the award of the degree

Of

M.Sc. APPLIED SCIENCE (Software Engineering)

The record work done by

G.ALAGUSAKTHI
Reg. No. 9937S0072

During his period of study in the Department of Computer Science and Engineering, Kumaraguru College of Technology, Coimbatore – 641 006, under my supervision and guidance and this project work has not formed the basis for the award of any guidance and this project work has not formed the basis for the award of any degree/ Diploma/ Associate ship/ Followed or similar title to any candidate of any university.

Professor and Head

Staff-in-charge

Submitted for University Examinations held on 29-3-2004

Internal Examiner

External Examiner 29/3/04

DECLARATION

I hereby declare that the project work entitled

ADHOC QUERY

Done at

Allsec Technosoft Ltd.,

and submitted to

Kumaraguru College of Technology

In partial fulfillment of the requirements for the award of the degree

M.Sc. APPLIED SCIENCE (Software Engineering)

Is a report of work done by me during my period of study in Kumaraguru College of Technology, Coimbatore – 641 006

Under the supervision of

Mr. K.R. Baskaran B.E., M.S.,
Assistant Professor, Dept of Computer science & Engineering.
Kumaraguru College of Technology, Coimbatore.

Place : Coimbatore
Date : 29-3-2004

Signature of the Candidate
(G.Alagusakthi)

Staff-in-charge

Mr. K.R. Baskaran B.E., M.S.,
Assistant Professor, Dept of Computer Science & Engineering,
Kumaraguru College of Technology, Coimbatore.

LSEC TEC

28 February 2004

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. G. Alagu Sakthi** (9937S0072) has completed his industrial Project work **Ad-Hoc Query** as a part of his M.Sc (Software Engineering) curriculum from Bharathiyar University in our Organisation from 03-Dec-2003 to 28-Feb-2004. During his association with the Organisation he was found to be sincere and hard working.

Prasath.V.G
Asst. Mgr Technical.
Allsec Technosoft Ltd.

ACKNOWLEDGEMENT

I express my deep sense of gratitude to **Dr. K.K. Padmanaban, B.Sc (Engg), M.Tech, Ph.D,** Principal, **Kumaraguru College of Technology**, Coimbatore, for giving me the opportunity to carry out this project.

I express my sincere gratitude to **Dr. S. Thangasamy B.E. (Hons), Ph.D** Prof and Head of the Department of Computer Science Engineering, Kumaraguru College of Technology, Bharathiar University , for the immense concern shown during the course of the project.

I express my most profound gratitude to my project guide **Mr. K.R. Baskaran** B.E, M.S., Assistant Professor, Department of Computer Science & Engineering and **Mr. P. Gopalakrishnan** MCA, Lecturer, Department of Computer Science & Engineering, Kumaraguru college of Technology, for their valuable comments and suggestions given to me, right from the beginning of the project.

This project work is done in Allsec Technosoft, Chennai in partial fulfillment of the award for the degree of Master of Science in Applied Science – Software Engineering of Bharathiar University, Coimbatore. It is a matter of privilege and honor for me to place on record **Mr. V.G. Prasath**, Asst., Manager – Technical, Allsec Technosoft Ltd. and for his unstinted co-operation and encouragement at levels to undergo this project work.

I deem it a great pleasure to place on record my deep sense of gratitude and indebtedness to Bharathiar University, for providing me this excellent opportunity to work on this project.

I also thank our beloved parents for their moral and financial support without whom the project wouldn't have been completed. We also express our sincere gratitude and thanks to all our intimate friends, well-wishers and family members whose good wishes are responsible for crossing an important milestone in my life.

Above all, I thank the Almighty for the completion of this endeavor.

Synopsis

AD-HOC Query is an intra organizational application, which is developed to generate the query as per the user requirements. The End User can make their work easy, as the product can generate the query depending on his requirements. This involves additional features such as Query Debugger, Data Transmission Services (DTS), Backups & Recovery and providing Access Rights.

Query Wizard is a step by step wizard which guides the user to build the query. The user is allowed to choose the type of database with the necessary login id and password. Depending on the login the tables of the database are made available to the user for making the query. The wizard is enriched with proper clauses, sub-queries and joins. Finally, the query formed can be stored for future use.

Query Debugger is a user-friendly interface that allows a user to create a SQL statement with user having less knowledge about the syntax of the SQL command or statement. This interface provides property list boxes like Visual Basic where the needed one's are selected. The created SQL statement is compiled and can be saved for future use.

DTS allows migration of data between databases, text files and spreadsheets. The tables from Oracle can be imported to Oracle, SQL Server and vice versa. Automatic conversion of datatypes is done during migration of tables between two different databases. Similarly the tables in the database can be exported to text files. The data exported to the text files can be also imported to the database. The text files that are imported to the databases have a predefined format. During data migration the datatypes used by databases are also specified. The data can be migrated between the database and excel sheets.

AD-HOC Query includes another vital function i.e. taking backups. Here the user can select the tables that are needed for future use and can send the information from the table to files. These files can be also recovered whenever needed by specifying the file path. Administrator can grant rights to other users. The access rights include select, insert, update and delete. These rights can be also revoked.

The product also facilitates the Help Desk System, which guides the user for using this product. The Help System is built using HTML pages with appropriate links and these are viewed using the Form Browser. The application uses Visual Basic as its front end, Oracle and SQL Server as its backend.

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1.0. Introduction

1.1. About the Organization:

Allsec Technosoft Ltd. is a part of the Allsec group and is a global IT solutions provider offering professional services in **Application Software Development, Business Solutions Consultancy, Enterprise-to-Web Solutions.**

Allsec Technosoft has been in existence for the past 6 years offering a combination of software products and bespoke software applications across different vertical industries. The uniqueness about our offerings is the combination of domain experts in various fields, backed up by qualified technical personnel in different platforms. We firmly believe in offering end to end solutions for our customers. Adding value functionally and technically to our end customers is our ultimate objective. We are a process driven company and follow **CMM Level 3 standards**. Great emphasis is placed on timely delivery of quality software applications at cost effective rates.

1.2. About the Project:

AD-HOC Query is an intra organizational application, which is developed to generate the query as per the user requirements. The End User can make their work easy, as the product can generate the query depending on his requirements. This involves additional features such as Query Debugger, Data Transmission Services (DTS), Backups & Recovery and providing Access Rights.

Query Wizard is a step by step wizard which guides the user to build the query. The user is allowed to choose the type of database with the necessary login id and password. The wizard is enriched with proper clauses, sub-queries and joins. Finally, the query formed can be stored for future use.

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DTS allows migration of data between databases, text files and spreadsheets. The tables from Oracle can be imported to Oracle, SQL Server and vice versa. Similarly the tables in the database can be exported to text files. The data exported to the text files can be also imported to the database. The text files that are imported to the databases have a predefined format. During data migration the datatypes used by databases are also specified. The data can be migrated between the database and excel sheets.

AD-HOC Query includes another vital function i.e. taking backups. Here the user can select the tables that are needed for future use and can send the information from the table to files. These files can be also recovered whenever needed by specifying the file path. Administrator can grant rights to other users. The access rights include select, insert, update and delete. These rights can be also revoked.

The product also facilitates the Help Desk System, which guides the user for using this product. The Help System is built using HTML pages with appropriate links and these are viewed using the Form Browser. The application uses Visual Basic as its front end, Oracle and SQL Server as its backend.

2.0. Background

2.1. System Requirements

2.1.1. Software Profile:

VISUAL BASIC 6.0:

Visual Basic is a powerful programming system for developing sophisticated graphical applications for Microsoft windows environment. Its productivity has been enhanced by addition of a complete set of tools to simplify rapid application development.

Visual Basic 6.0 introduces us to the new world of active technology, a unique way to harness the Internet. Visual Basic offers many silent features to aid in the development of full-featured applications including.

- Data access functionality allows creation of front-end applications the can work on most of the popular databases systems.

- Active TM technology allows usage of the functionality provided by other applications, such as Microsoft Word, Microsoft Excel, and other Windows applications and their possible development on the web.

- Applications developed using Visual Basic provides a true EXE file that uses a runtime Dynamic-Link Library (DLL) which can be freely distributed.

- Calling powerful API functions available in Visual Basic optimizes application performance.

ACCESSING DATABASES:

Visual Basic provides a set of tools created and use structured database systems to manage application data. These tools are Microsoft Jet Database Engine, the Data Control and the Data Access Objects (DAO) programming interface. Visual Basic provides Jet Database, version 3.5 for 32-bit programming. The Data Control and Data Access Objects are the interfaces used to connect to the Jet Database Engine.

ADO (ActiveX Data Objects):

ActiveX Data Objects also called as universal data objects .VB 6.0 supports wide range of ADO. Since Objects are ActiveX based, they work across different platforms and programming languages unlike data control works strictly in the VB environment. The most importance of ADO is its capability tom access many kinds of data .Not limited to just relational and non-relational database

MS SQL Server:

Client/Server Architecture:

Microsoft SQL Server is designed to work effectively in a number of environments:

- As a two-tier or multitier client/server database system
- As a desktop database system

Client/Server Database Systems:

- Client/server systems are constructed so that the database can reside on a central computer, known as a server, and are shared among several users. Users access the server through a client or server application.

- In a two-tier client/server system, users run an application on their local computer, known as a client that connects over a network to the server running SQL Server. The client application runs both business logic and the code to display output to the user, and is also known as a thick client.

In a multitier client/server system, the client application logic is run in two locations:

- The thin client is run on the user's local computer and is focused on displaying results to the user.
- The business logic is located in server applications running on a server. Thin clients request functions from the server application, which is itself a multithreaded application capable of working with many concurrent users. The server application is the one that opens connections to the database server and can be running on the same server as the database, or it can connect across the network to a separate server operating as a database server.

- This is a typical scenario for an Internet application. For example, a server application can run on a Microsoft Internet Information Services (IIS) and service thousands of thin clients running on the Internet or an intranet. The server application uses a pool of connections to communicate with a copy of SQL Server. SQL Server can be installed on the same computer as IIS, or it can be installed on a separate server in the network.

Having data stored and managed in a central location offers several advantages:

- Each data item is stored in a central location where all users can work with it.

- Separate copies of the item are not stored on each client, which eliminates problems with users having to ensure they are all working with the same information.
- Business and security rules can be defined one time on the server and enforced equally among all users.
- This can be done in a database through the use of constraints, stored procedures, and triggers. It can also be done in a server application.
- A relational database server optimizes network traffic by returning only the data an application needs.

ORACLE:

Oracle is an Object Relational Database Management System (ORDBMS). It offers capabilities of both relational and object-oriented database systems. In general, objects can be defined as reusable software codes, which are location independent and perform a specific task on any application environment with little or no change to the code.

Oracle products are based on Client/Server Technology. This concept involves segregating the processing of an application between two systems. The Client or front end database application also interacts with the database by requesting and receiving information from the database server.

Oracle uses the Internet File System, which is a Java based application, which enables the database to become an Internet development platform. The data stored in the database can be used for building HTML web pages. Oracle also provides support for building Java application by offering a new version of Jdeveloper. Corba 2.0 complaint Object Request Broker (ORB) that provides users with ability to call in and out of the object sever using Corba's IIOP, which is also integrated with Oracle.

2.1.2. Hardware Requirements:

Minimum Requirement:

- 128 MB RAM
- Processor P-II
- 20 GB HDD

3.0. System Description

3.1. System Study and Analysis

3.1.1. Purpose:

The purpose of this document is to understand the modules in ADHOC Query. The modules included in the product have been listed along with a detailed description of functions involved in each module.

3.1.2. Scope:

The scope of this project is to provide a user-friendly interface for creating query, migrating data, to provide rights, writing SQL statement and overall to make the work easy for the user.

3.2. Modules:

Modules	Sub-modules
Query Generator	➢ Query Wizard ➢ Query Debugger
DTS	➢ Databases ➢ Text Formats ➢ Spreadsheets
Helpdesk	➢ Query Help ➢ DTS Help
Security	➢ Backups ➢ Access Rights

3.2.1. Definitions, Acronyms and Abbreviations:

DTS	Data Transformation Services
Admin	Administrator

3.2.2. References:

- ✓ VB 6.0 – **Black Book** & www.microsoft.com
- ✓ Software Engineering – A practitioner's Approach
  By Roger Pressman
- ✓ Oracle 9i , by **Nancy Greenberg**
- ✓ SQL Server Books - **Online Help**
- ✓ SQL Server books, by **Fernando G. Guerrero**

3.2.3. Overview:

- **Query Wizard**

Query Wizard is a step by step wizard which guides the user to build the query. The user is allowed to choose the type of database with the necessary login id and password. Depending on the login the tables of the database are made available to the user for making the query. The wizard is enriched with proper clauses, sub-queries and joins. Finally, the query formed can be stored for future use.

- **Query Debugger**

Query Debugger is a user-friendly interface that allows a user to create a SQL statement with user having less knowledge about the syntax of the SQL command or statement. This interface provides property list boxes like Visual Basic where the needed one's are selected. The created SQL statement is compiled and can be saved for future use.

- **DTS**

DTS allows migration of data between databases, text files and spreadsheets. The tables from Oracle can be imported to Oracle, SQL Server and vice versa. Automatic conversion of datatypes is done during migration of tables between two different databases. Similarly the tables in the database can be exported to text files. The data exported to the text files can be also imported to the database. The text files that are imported to the databases have a predefined format. During data migration the datatypes used by databases are also specified. The data can be migrated between the database and excel sheets.

- **Backups and Recovery**

AD-HOC Query includes another vital function i.e. taking backups. Here the user can select the tables that are needed for future use and can send the information from the table to files. These files can be also recovered whenever needed by specifying the file path.

- **Access Rights**

Administrator can grant rights to other users. The access rights include select, insert, update and delete. These rights can be also revoked.

- **Help Desk**

The product also facilitates the Help Desk System, which guides the user for using this product. The Help System is built using HTML pages with appropriate links and these are viewed using the Form Browser.

3.2.4. General Description:

Products Perspective

- Dynamic Query Generation.
- Automatic datatype conversion during data migration.
- User-friendly interface for writing SQL statements.
- Help provides a comprehensive report for using the product.

Products Functions

- Query Wizard
  - Oracle
  - MS SQL
- Query Debugger
  - Oracle
  - MS SQL
- DTS
  - Database
    - ✓ Oracle to Oracle
    - ✓ Oracle to SQL
    - ✓ SQL to SQL
    - ✓ SQL to Oracle
  - File
    - ✓ Oracle to File
    - ✓ File to Oracle
    - ✓ SQL to File
    - ✓ File to SQL
  - Spreadsheets
    - ✓ Oracle to Excel
    - ✓ Excel to Oracle
    - ✓ SQL to Excel
    - ✓ Excel to SQL

- Access Rights
  - Oracle Access Rights
  - SQL Server Access Rights
- Backups and Recovery
  - Oracle Backups and Recovery
  - SQL Server Backups and Recovery
- Help Desk
  - Query Help
  - DTS Help

User Characteristics

The user should be able to operate a computer under the Windows operating system.

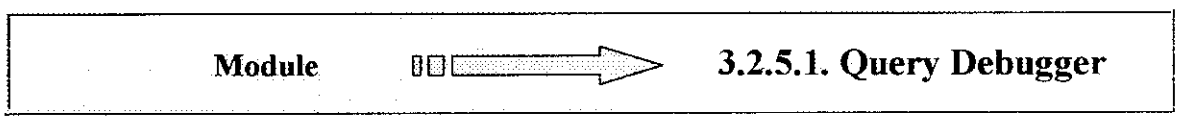
General Constraints

Some of the constraints when using the application can be listed below

✓ The Application can be used with minimum 96 MB RAM.

✓ The Application uses SQL server and Oracle as database.

3.2.5. Overview of Modules:



Module Functions

Functions List

The following are the functions provided by this module

- Oracle Query Debugger
- SQL Sever Query Debugger

Oracle Query Debugger

Functional Requirements

This function is used to collect SQL statement, keywords and etc. This is used to build the SQL statement easily for the user.

Description

The function is described as a step by step procedure given below: -

1. The user selects the type of provider, corresponding user id and password. Here the OLE DB provider for Oracle is selected.
2. The user provides the keyword like create, alter, update etc. The property list is displayed depending upon the user's keyword. For example, if the user had typed create then the property list consists of table, view, sequence etc.
3. Now, the user can select the keyword from the list for his SQL statement. Again for example, if the user has selected table, then the system asks for the table name followed by the field names, its datatype and size.
4. The user now can set the constraints for the table like primary key, not null, foreign key, etc. Finally the SQL statement is built and user can compile it with the compile option stated in Query Debugger.
5. The user can save the SQL statement using the save option. The SQL statement is saved in a file with .txt extension and also be retrieved whenever needed by the user using the open option.

Inputs

The following are the inputs of this function: -

- ✓ Provider, Login Id, Password.
- ✓ Keywords, Property List Data.
- ✓ Save filename, path.

Outputs

The SQL statement is generated as per the user requirements.

Process Validations

- ✓ Login validations
- ✓ Checking Properties data.

SQL Server Query Debugger

Functional Requirements

This function is used to collect SQL statement, keywords and etc. This is used to build the SQL statement easily for the user.

Description

The function is described as a step by step procedure given below: -

1. The user selects the type of provider, corresponding user id and password. Here the OLE DB provider for SQL Server is selected.

2. The user provides the keyword like create, alter, update etc. The property list is displayed depending upon the user's keyword. For example, if the user had typed create then the property list consists of table, view, sequence etc.
3. Now, the user can select the keyword from the list for his SQL statement. Again for example, if the user has selected table, then the system asks for the table name followed by the field names, its datatype and size.
4. The user now can set the constraints for the table like primary key, not null, foreign key, etc. Finally the SQL statement is built and user can compile it with the compile option stated in Query Debugger.
5. The user can save the SQL statement using the save option. The SQL statement is saved in a file with .txt extension and also is retrieved whenever needed by the user using the open option.

Inputs

The following are the inputs of this function: -

- ✓ Provider, Login Id, Password.
- ✓ Keywords, Property List Data.
- ✓ Save filename, path.

Outputs

The SQL statement is generated as per the user requirements.

Process Validations

- ✓ Login validations
- ✓ Checking Properties data.

Module	3.2.5.2 Backups & Recovery

Module Functions

Functions List

The following are the functions provided by this module

- Oracle Backups & Recovery
- SQL Backups & Recovery

Oracle Backups & Recovery

Functional Requirements

This function is used to collect Table Information, Backup details. This is used to take backups and recover them whenever needed.

Description

The function is described as a step by step procedure given below: -

1. The user selects the type of provider, corresponding user id and password. Here the OLE DB provider for Oracle is selected.
2. The user selects table for the backup. If recovery, then the user is allowed to locate the backup file.
3. In Backup, the system asks for the location of the backup file. In Recovery, the system asks for the destination table, database and other details.

Inputs

The following are the inputs of this function: -

- ✓ Provider, Login Id, Password.
- ✓ Table names.
- ✓ Save filename, path.

Outputs

The backup is taken for the selected tables and also recovered from the file when needed.

Process Validations

- ✓ Login validations.
- ✓ Checking restoring file.

SQL Server Backups & Recovery

Functional Requirements

This function is used to collect Table Information, Backup details. This is used to take backups and recover them whenever needed.

Description

The function is described as a step by step procedure given below: -

1. The user selects the type of provider, corresponding user id and password. Here the OLE DB provider for SQL Server is selected.

2. The user selects table for the backup. If recovery, then the user is allowed to locate the backup file.
3. In Backup, the system asks for the location of the backup file. In Recovery, system asks for the destination table, database and other details.

Inputs

The following are the inputs of this function: -

- ✓ Provider, Login Id, Password.
- ✓ Table names.
- ✓ Save filename, path.

Outputs

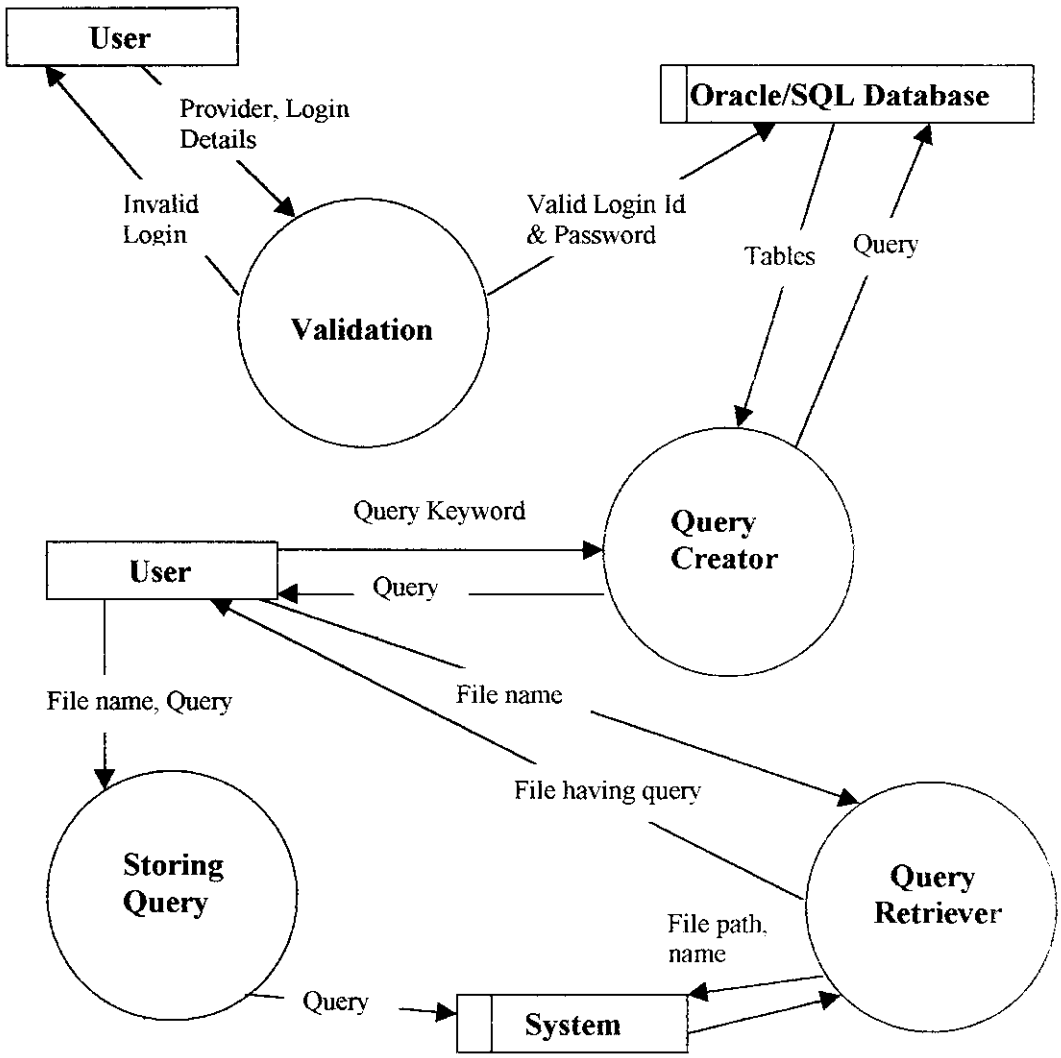
The backup is taken for the selected tables and also recovered from the file when needed.

Process Validations

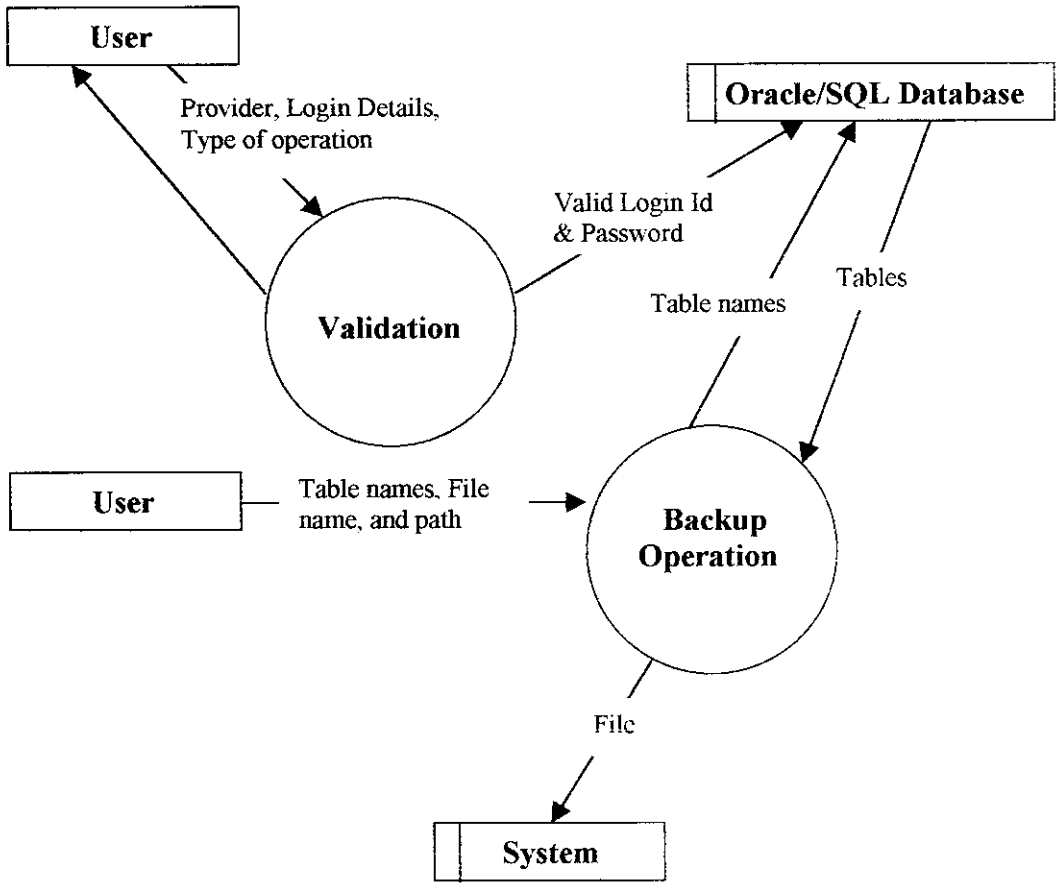
- ✓ Login validations.
- ✓ Checking restoring file.

4.0. Data Flow Diagram

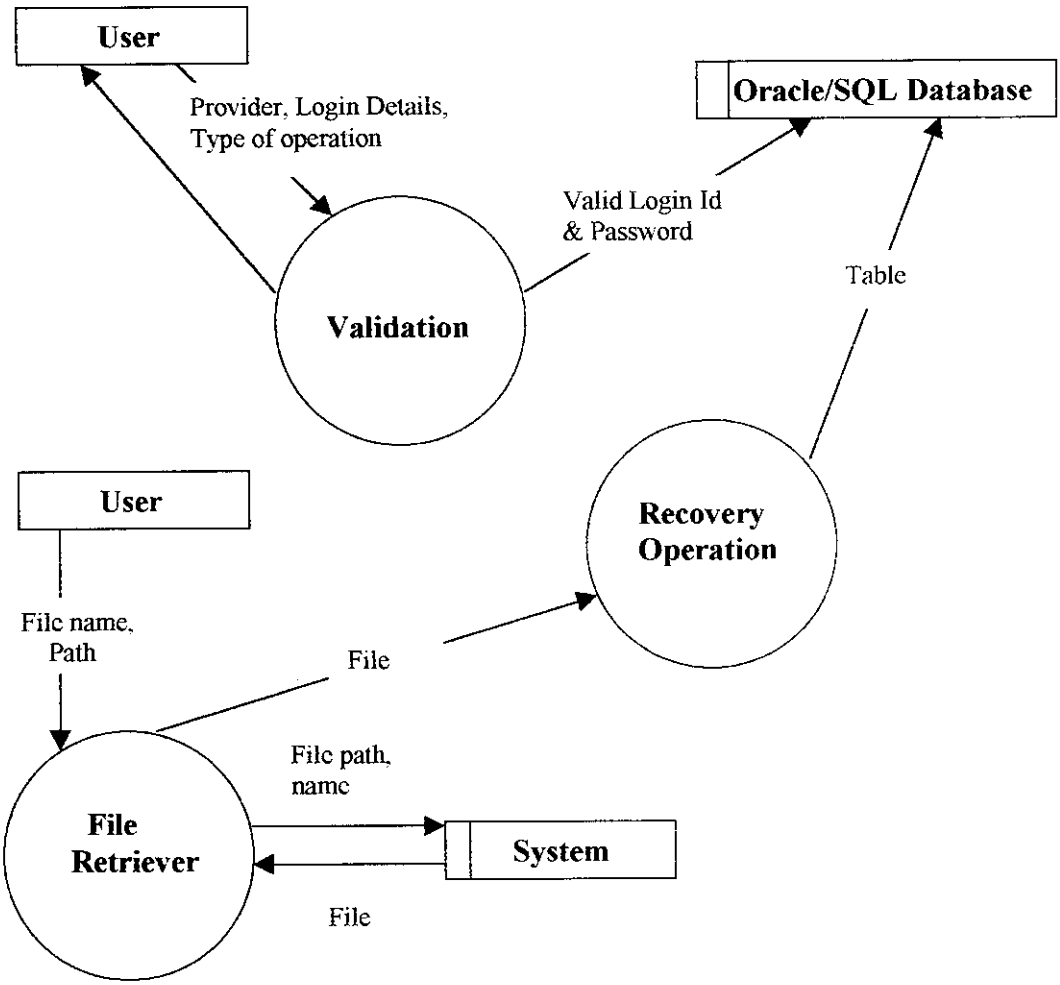
4.1. Query Debugger:



4.2. Backups:

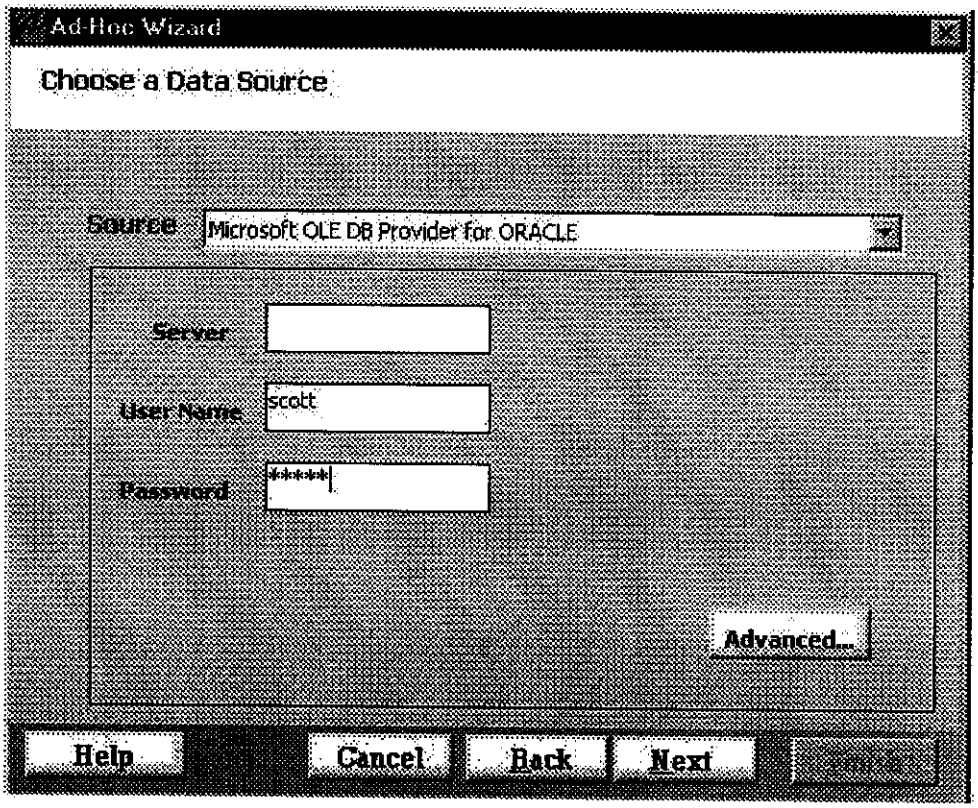

User
Provider, Login Details, Type of operation
Oracle/SQL Database
Valid Login Id & Password
Validation
Table names
Tables
User
Table names, File name, and path
Backup Operation
File
System

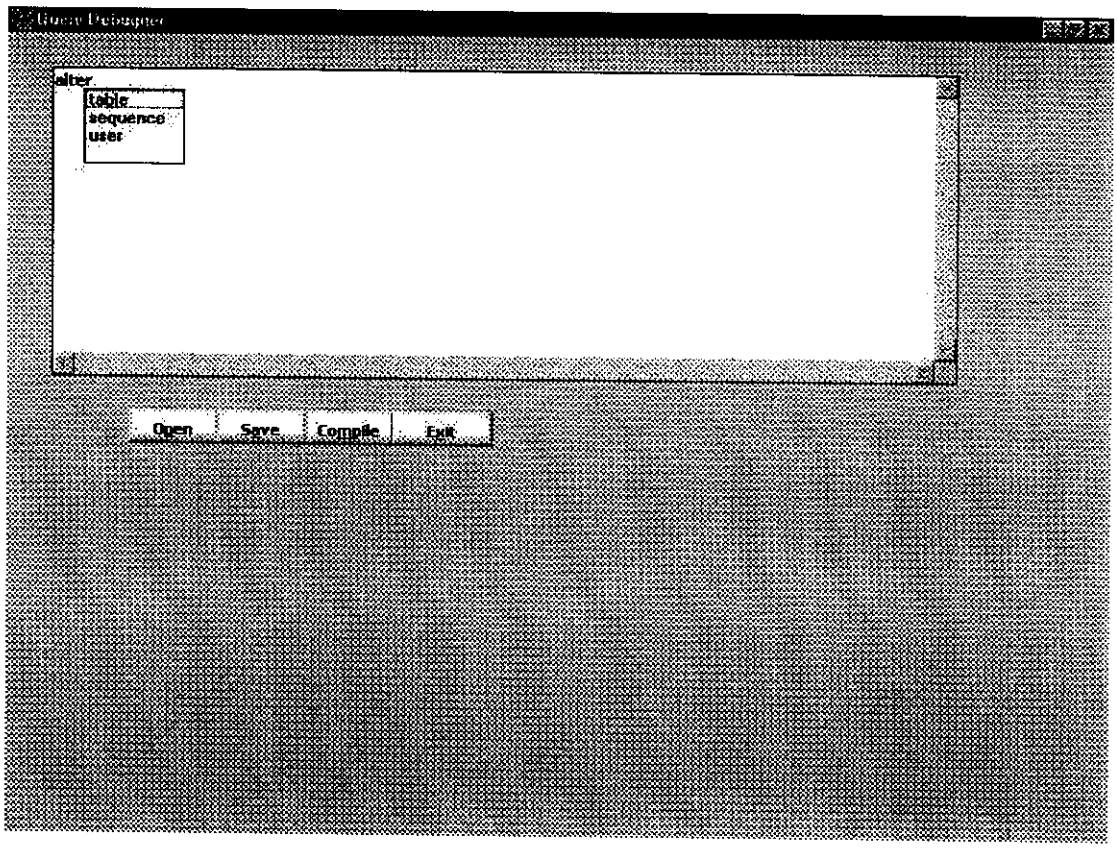
4.3. Recovery:

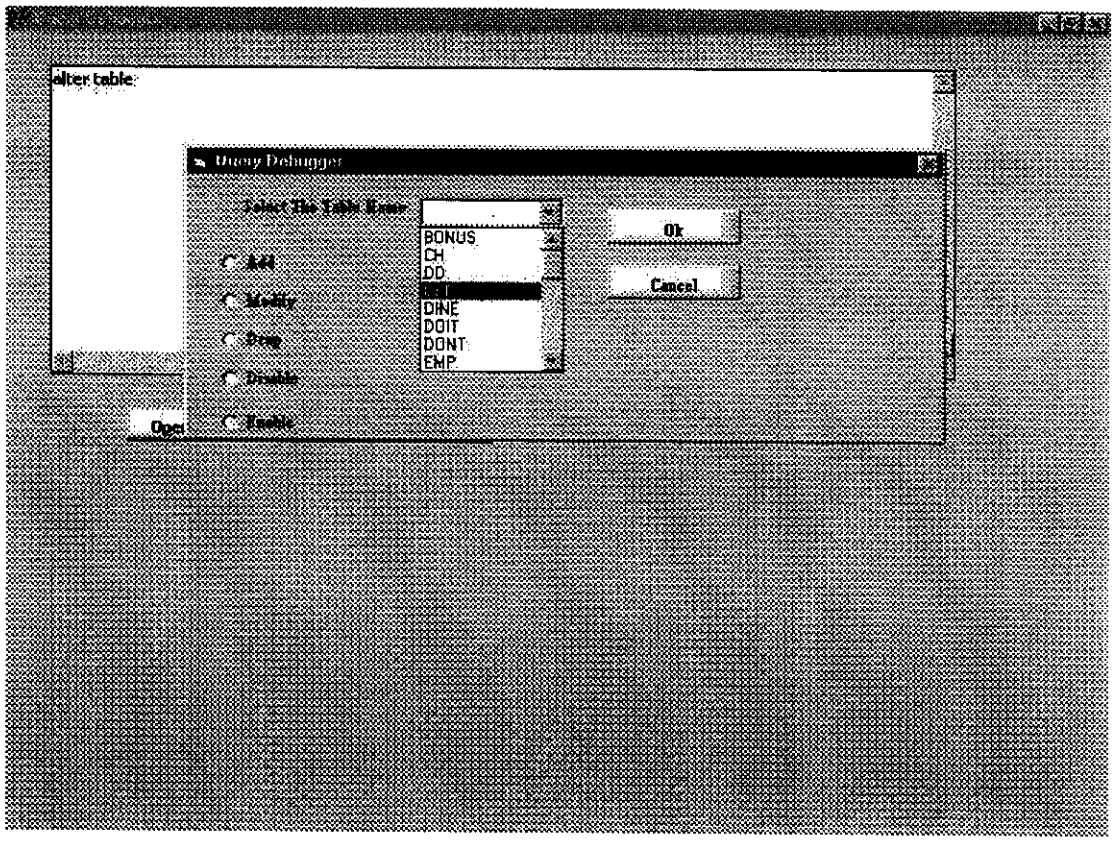

User
Provider, Login Details,
Type of operation
Oracle/SQL Database
Valid Login Id
& Password
Table
Validation
User
Recovery
Operation
File name,
Path
File
File path,
name
File
Retriever
System
File

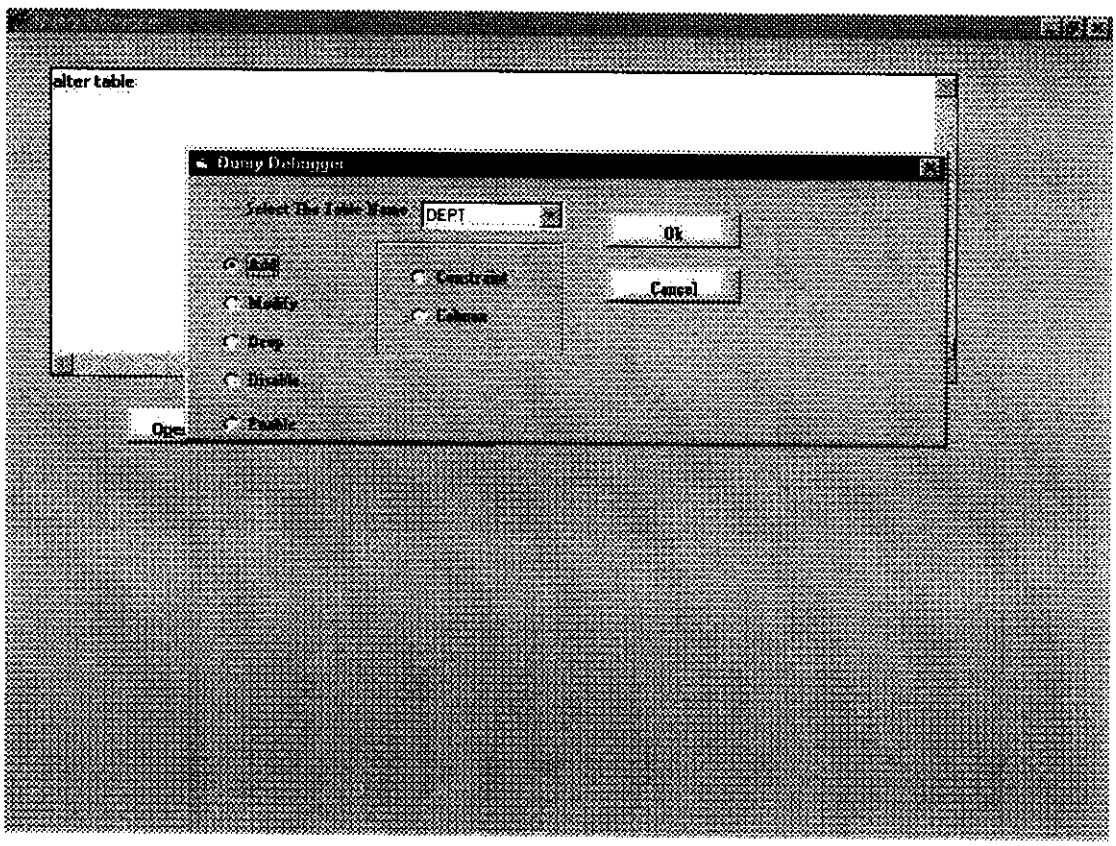
5.0. Sample Forms

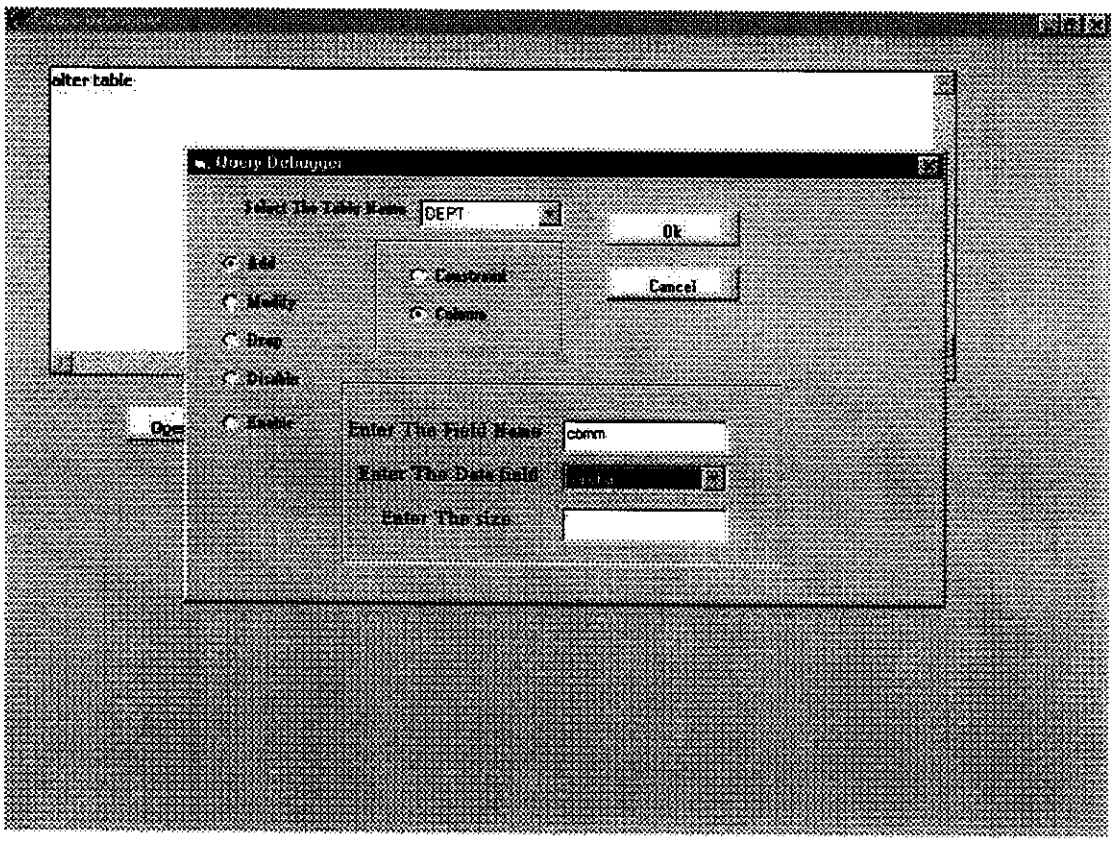
5.1. Query Debugger:

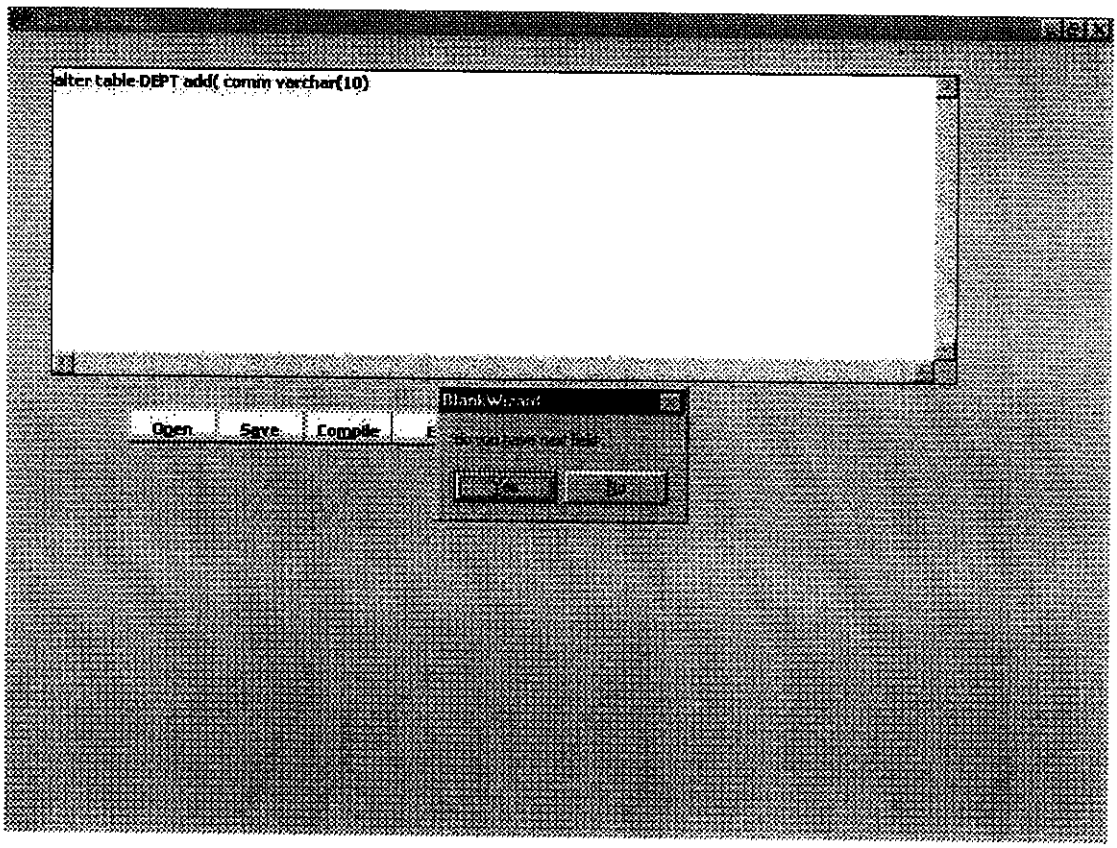


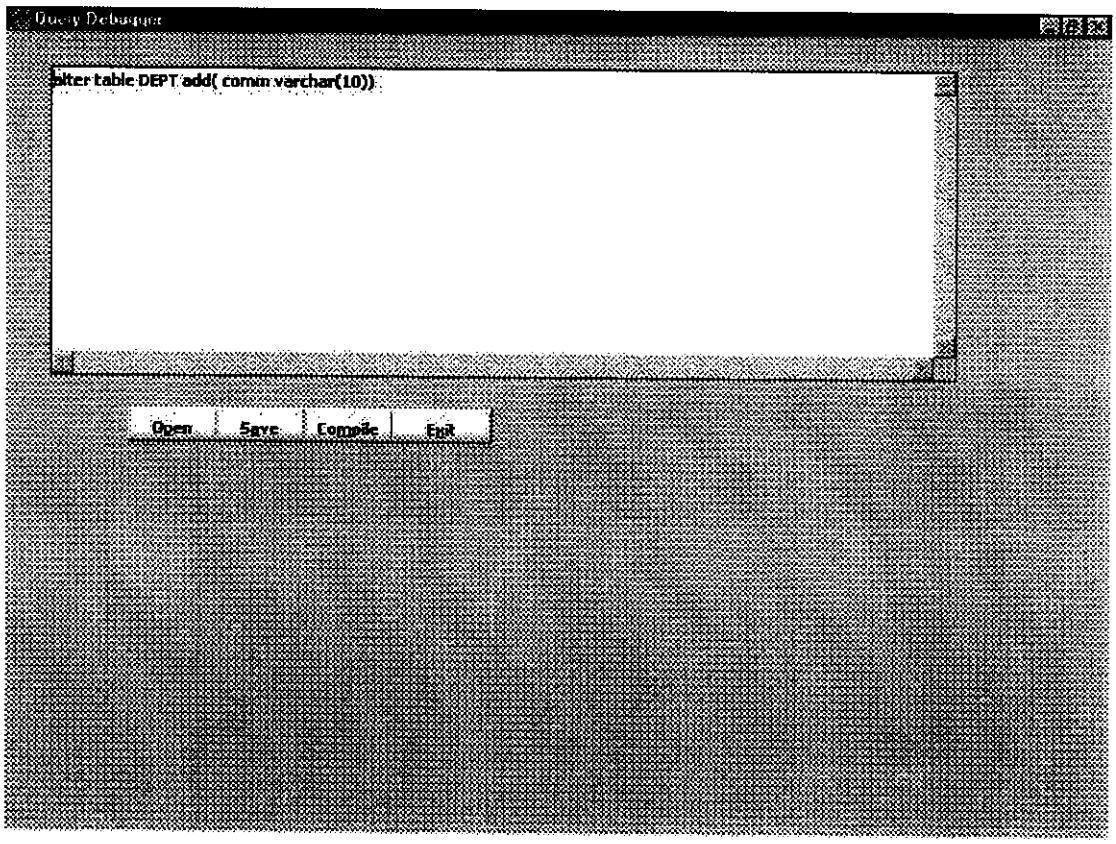

alter
table
sequence
user
Open
Save
Compile
Exit


Query Debugger
Select The Table Name
BONUS
CH
DD
DEPT
DINE
DOIT
DONT
EMP
Ok
Cancel

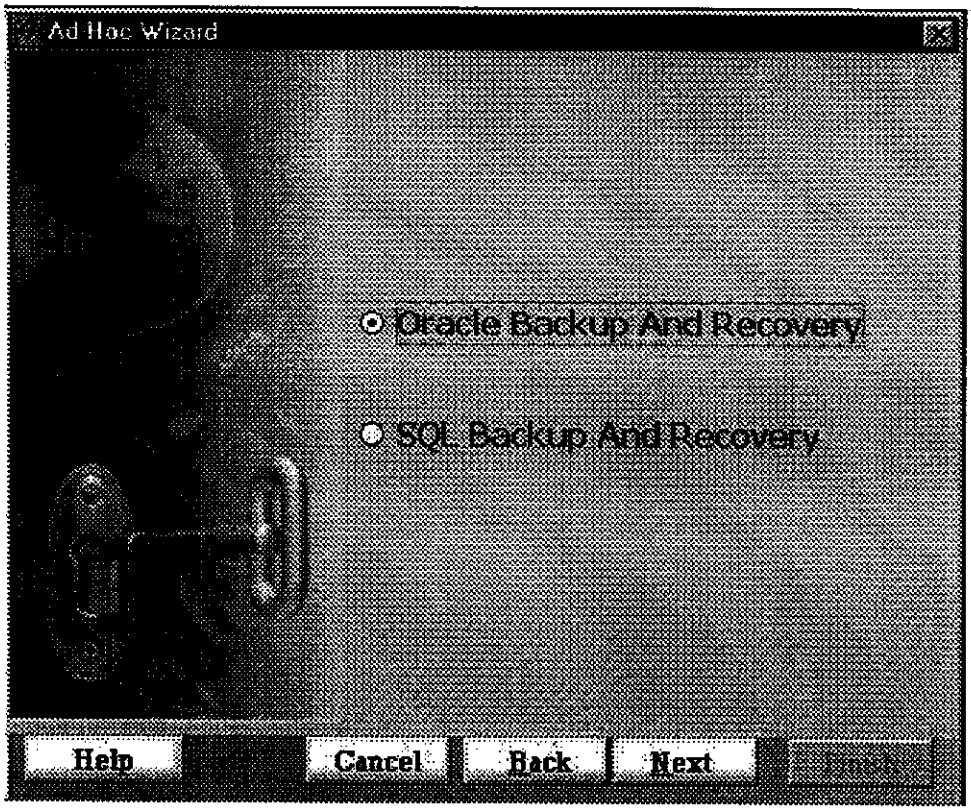

alter table
Dump Debugger
Select The Table Name
DEPT
Add
Modify
Drop
Disable
Enable
Constraint
Columns
Ok
Cancel

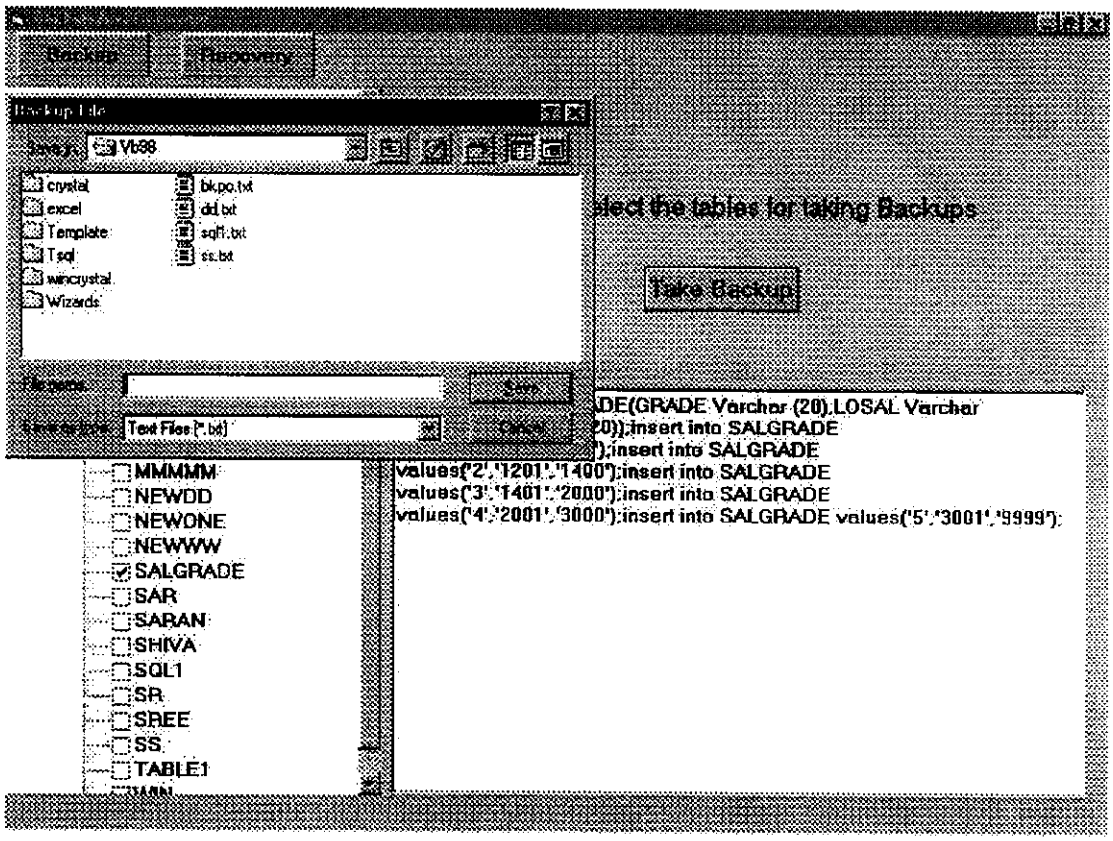

alter table
Query Debugger
DEPT
Ok
Cancel
Add
Modify
Drop
Disable
Enable
Constraint
Column
Enter The Field Name
comm
Enter The Data field
Enter The size

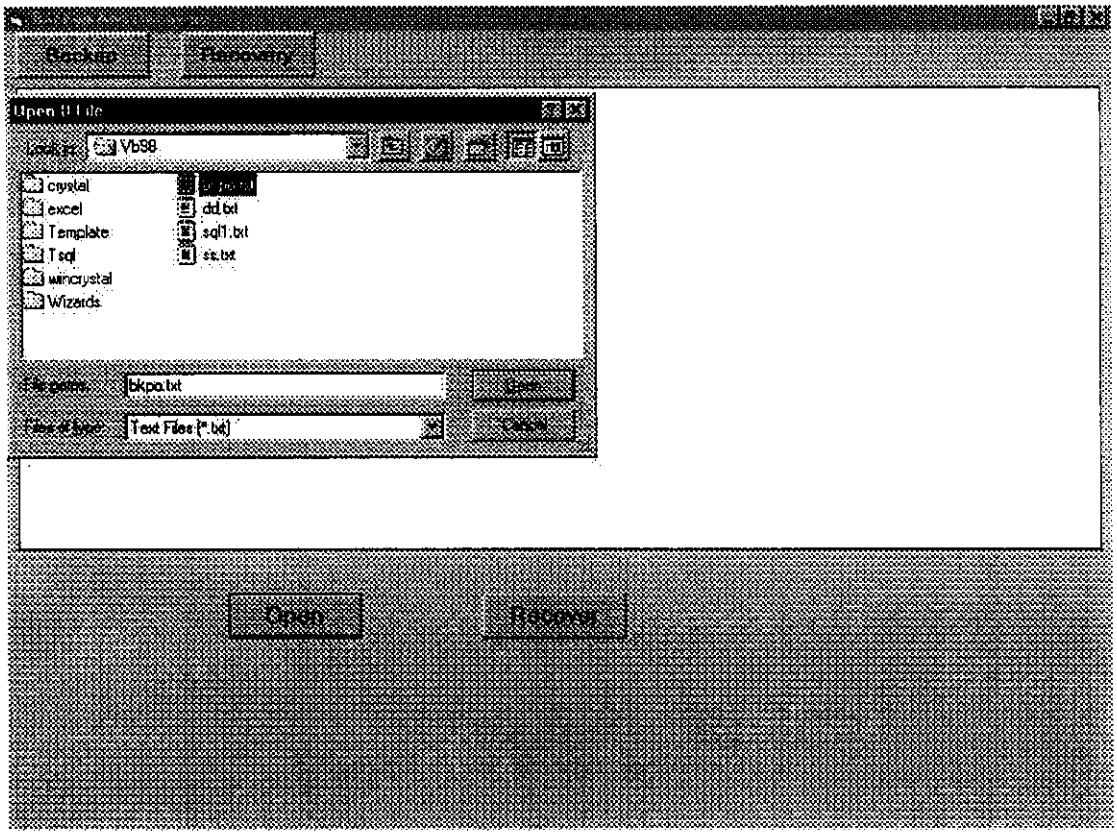

alter table DEPT add(comm varchar(10)
Open
Save
Compile

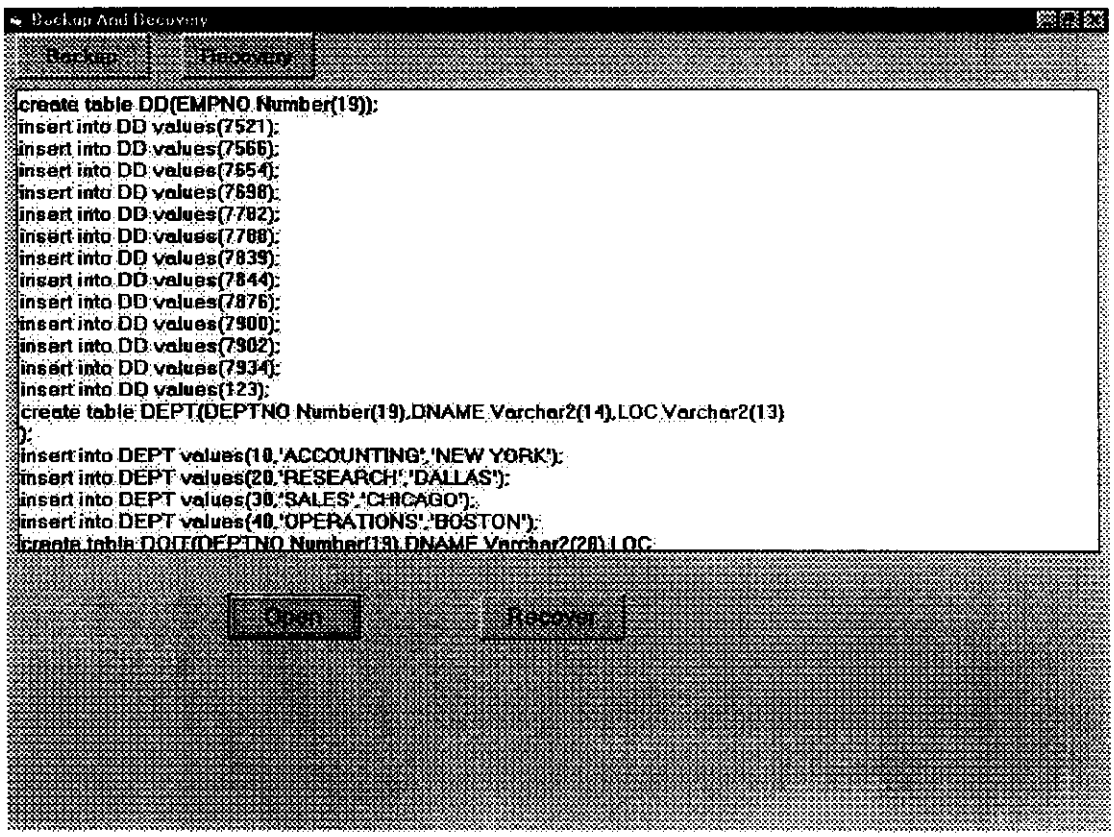

Query Debugger
alter table DEPT add(comm varchar(10))
Open
Save
Compile
Exit

5.2. Backup & Recovery:




Backup
Recovery
Vb98
crystal
excel
Template
Tsql
wincrystal
Wizards
bk.po.txt
dd.txt
sqlf.txt
ss.txt
Text Files (*.txt)
Save
Cancel
elect the tables for taking Backups
Take Backup
MMMMM
NEWDD
NEWONE
NEWWW
SALGRADE
SAR
SARAN
SHIVA
SQL1
SR
SREE
SS
TABLE1
DE(GRADE Varchar (20),LOSAL Varchar
20));insert into SALGRADE
');insert into SALGRADE
values('2','1201','1400');insert into SALGRADE
values('3','1401','2000');insert into SALGRADE
values('4','2001','3000');insert into SALGRADE values('5','3001','9999');


Backup
Recovery
Open a File
Look in:
Vb98
crystal
excel
Template
Tsql
wincrystal
Wizards
dd.txt
sql1.txt
File name:
bkpa.txt
Open
Files of type:
Text Files (*.txt)
Cancel
Open
Recover


Backup And Recovery
Backup
Recovery
create table DD(EMPNO Number(19));
insert into DD values(7521);
insert into DD values(7566);
insert into DD values(7654);
insert into DD values(7698);
insert into DD values(7782);
insert into DD values(7788);
insert into DD values(7839);
insert into DD values(7844);
insert into DD values(7876);
insert into DD values(7900);
insert into DD values(7902);
insert into DD values(7934);
insert into DD values(123);
create table DEPT(DEPTNO Number(19),DNAME Varchar2(14),LOC Varchar2(13)
);
insert into DEPT values(10,'ACCOUNTING','NEW YORK');
insert into DEPT values(20,'RESEARCH','DALLAS');
insert into DEPT values(30,'SALES','CHICAGO');
insert into DEPT values(40,'OPERATIONS','BOSTON');
create table DOIT(DEPTNO Number(19),DNAME Varchar2(28),LOC
Open
Recover

6.0 System Testing And Implementation

6.1. Testing

Testing is an important phase in development in software development and application development in the world wide web. Testing will lead the error free application to the client.For this Automating Resources Time Scheduling there is a need of six types of testing.

- ✓ They are
- ✓ Unit Testing
- ✓ Validation Testing
- ✓ Integration Testing
- ✓ Output Testing
- ✓ Acceptance Testing
- ✓ User Acceptance Testing

6.1.1. Unit Testing:

Unit testing comprises the set of tests performed by an individual programmer prior to the integration of the unit into the large system. A program unit is usually small enough that the programmer who developed the unit can test it. Then the unit is integrated into the large part of the system. Unit testing is always white-box oriented and the step can be conducted in parallel for modules.

6.1.2. Validation Testing:

Software testing and validation is achieved through a series of black box tests that demonstrate conformity with the requirement. A test plan outlines the classes to test to be conducted and a test procedure defines specific test cases that will be used to demonstrate conformity with the requirements.

Both, the planned the procedures are designed to ensure that all functional requirements are achieved, documentation is correct and other requirements are met. After each validation test case has been conducted, one of the two possible conditions exists.They are the function or performance characteristics conform to the specification and are accepted.

A deviation from specification is uncovered and a deficiency list is created.This project is validated under different test conditions. The requirements as per the specification are met.

6.1.3. Integration Testing:

Bottom-up integration is the traditional strategy to integrate the components of the software system into the functional unit. Bottom-up integration consists of unit testing of the entire system.

Modules are tested in isolation from one another in an artificial environment, known as a **"test hareness",**which consist of the driver programs and data necessary to exercise the modules.

Moreover Integration testing addresses the issues associated with the dual problem of verification and program construction. After the appplication has been integrated a set of high-order tests were conducted.

6.1.4. Output Testing:

The outputs are thoroughly tested by giving sample data, for which results are known.The outputs from the system are matched with that of the known values and the results are found to be accurate.

6.1.5. Acceptance Testing:

Acceptance testing involves planning and execution of functional tests,performance tests, and stress tests in order to demonstrate that the implemented system satisfies its requirtements.

In addition to the functional performance tests, stress tests are performed to determine the limitations of the system. Tools of special importance during acceptance testing include a test coversge analyzer, a timing analyzer and a coding standard checker.Testing is the process of executing test cases with the intension of exposing the errors.

6.2 System Implementation:

Implementation is the stage where the thoeratical design is converted into working system. It consist of

- ✓ Testing and Debugging
- ✓ Error Correction
- ✓ Training the user
- ✓ Change over

Implementation includes equipments installation and user training. For the system to begin operation, a sufficient number of users have been trained to the system. Several hours were sheduled for a number of users so that they were able to fully understand the new system and had an opportunity to familarize themselves with the various input screens and the generation of output.

The change over is another important aspect of the implementation process and had to be handled carefully.The existing system is changed to the new system and the system is found to meet its objectives. Data from the previous system, static contend, is ported to the new system and the result produced are compared with that of the previous system. The new system is found to satisfy the user needs.

It allows the result to the new system to be compared with the old system before acceptance by the user, there by promoting the user confidence.

Conclusion

The project **ADHOC Query** was successfully designed and developed for the client for their Database activities. It has helped in understanding practical problems in real life situation.

The application is very user-friendly and after successful testing and implementation the feed back was taken from the client users that it works efficiently and the application was fruitful.

The application does not include operations on PL/SQL and can be enhanced as per the user's requirements.

Thus I conclude that this project has been developed successfully satisfying the requirements put forth.

References

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- Software Engineering – A practitioner's Approach

  By Roger Pressman
- Oracle 9i , by **Nancy Greenberg**
- SQL Server Books - **Online Help**
- SQL Server books, by **Fernando G. Guerrero**