HEXAVARSITY KNOWLEDGE EXECUTIVE SYSTEM

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Coimbatore

(Affiliated to Anna University)

A PROJECT REPORT

Submitted to the

FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING

In partial fulfillment of the requirements

for the award of the degree

Kumaraguru College of Technology

Coimbatore – 641006

Department of Computer Applications

Bonafide Certificate

Certified that this project report titled **HEXAVARSITY KNOWLEDGE EXECUTIVE SYSTEM** is the bonafide work of **Mr. T.GOKULAKRISHNAN (Reg No. 71203621015)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

30/05/06

GUIDE

HEAD OF THE DEPARTMENT

Submitted for the University Examination held on 29-06-2006

Certificate

This is to certify that **Mr. GokulaKrishnan T**, final year student of Kumaraguru College of Engineering & Technology, Coimbatore, Completed the project titled **"HexaVarsity Knowledge Executive System"** for our organisation towards partial fulfillment of the requirements of the degree of MCA, under the Guidance of Ms. Sharon S, Hexaware Technologies

The duration of the project was from January 2006 to April 2006; his performance during the period was good.

We wish him success in his future endeavors.

For Hexaware Technologies Ltd

for Dr.Sridharan P.N
Vice President – HexaVarsity
Hexaware Technologies
Chennai

ABSTRACT

The project titled **"HEXAVARSITY KNOWLEDGE EXECUTIVE SYSTEM"** is codenamed as **HKES**. HexaVarsity is a training department in Hexaware Technologies. HKES is web based Application software that keeps track of all the available knowledge resources in HexaVarsity. The project is developed for HexaVarsity, **HEXAWARE TECHNOLOGIES** situated in Chennai. The project is done with Windows 2000 operating system using Microsoft Visual studio Dot Net as front end and Microsoft SQL Server 2000 as backend.

The project includes learning materials and vendor information maintenance, reporting issued and imminent material information's and authorized role based access permissions as its modules. HKES reports the availability of knowledge information's for HexaVarsity employees as a preprocess activity for the preparation of the training programs. Books, Test Materials, Course Handouts, Trainer Manuals, PowerPoint Presentations, CDs, Movies, Word Document Files, Templates etc forms the different types knowledge's available in HexaVarsity for training. The process activities involved in HexaVarsity Knowledge Executive System includes learning materials updation, modification, deletion, report

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LIST OF SYMBOLS, ABBREVIATIONS AND NOMANCLATURE

DFD	:	Data Flow Diagram
ASP	:	Active Server Pages
SQL	:	Structured Query Language
HKES	:	HexaVarsity Knowledge Executive System.

1.1.2 Training Process

The employees have to check for the availability of these knowledge resources before the training commences. The courseware contains documents for both trainers and trainees. Indeed the trainers are provided with the materials a day before the training paying way for his preparation. Further the complete training schedules are also provided for both trainers and trainees. The trainees are provided with handouts and other materials during the training period. The trainers may be from the same company or an external one. Time sheets are also properly prepared for every training program.

1.1.3 Preparation constraints

The HexaVarsity employees are categorized and assigned work based on their technical skills. The materials here are categorized into internal and external ones. The internal materials are prepared by themselves i.e. Hexavarsity employees based on their needs. External materials are brought from external vendors and from external trainers. Employees here are categorized for these both kinds of materials. For instance employees for assigned for preparation of PeopleSoft, java etc.

1.1.4 Need for this project

So, irrespective of type of employees the checking for the availability of the materials for training program should be done and prepared if it is not there. Currently

System has been developed. Further this helps for generating the reports for all kinds of knowledge resources and vendor details available here.

1.2 OBJECTIVES

- The main objective of this application is to reduce the burden of the employees by reducing the time they spend for searching materials.
- To keep track of all the knowledge resources those are currently available and newly updated.
- To make much user friendly so that they can make their search process easy.
- To provide provisions for easy updation of new information's and editing the existing ones.
- To facilitate the remainder that reminds the users if any of the issued materials are not properly returned.
- To make available the provisions for taking printouts of information's they view through grids.
- To assist the users for generating reports.

1.2.1 BENEFITS

- It increases the speed of the preparation process.
- It allows the users to view the materials available by categorizing them.

- Automatic generation of the remainder when the user logs into the system intimating that the materials issued are not returned yet properly.
- It really makes the administrator easy for adding new users to the system and changing their access permissions.
- High security and role based accessing privileges for provided after proper authentication and authorization of users.

1.3 ORGANIZATIONAL PROFILE

1.3.1 Careers

Hexaware Technologies is a rapidly growing global IT solutions provider Hexaware is a high-growth multinational IT services firm focusing on e-commerce, EAI and Application Management. One of only 43 companies in the world achieving SEI CMM Level 5, Hexaware offers job seekers the opportunity to be part of a futuristic concern.

Hexaware gives the opportunity to work on great projects, to interface with colleagues across the world and to build a lucrative career. Hexaware recruits top professionals in the different technology, sales/marketing, and administrative operational areas. Our culture consists of a mix of intellectually driven, self-starters, able to work flexibly within an entrepreneurial environment.

Our industry-specific solutions are designed to provide custom software services to the Airlines, Banking, Insurance, Securities and Healthcare industries while our Technology Practices provide answers to the most critical technology challenges prevalent in the current environment.

Our project management methodology is assessed at SEI CMM-Level 5, the highest level of quality, adding value to our clients through continuous process improvements. Hexaware is one of the leading offshore outsourcing companies with offshore development centers based in India. Our long lasting client relationships are proof of our successful offshore outsourcing services and our technical strengths.

The recent merger between Hexaware and Aptech, a premier software company gives us the status of being one of the largest software companies in India. The objective of the merger is to provide a better geographical reach and a wider array of IT solutions to our worldwide clientele.

Spec soft, Inc., a software services company acquired by Aptech in October 2000, is now a subsidiary of Hexaware Technologies.

1.3.3 Quality Policy

1.3.4 Vision

Commitment, Competency and Consistency are our guiding values. To be continuously engaged in learning and developing a deep understanding of Information Technology, brining benefit to organization through its application.

At Hexaware, there is a constant focus on delving deeper and deeper into information Technology. Having garnered sufficient understanding in relevant and contemporary technologies, Hexaware focus on using this understanding to maximize benefit to its customers, helping them assimilate and use IT more effectively and efficiently.

1.3.5 History/Background

Hexaware was incorporated in 1991. It provided services to many clients and established a good track record with many blue chip customers like Equitable and Air Canada. By 1995, the US and Europe operations had been set up.

Over the next few years, Hexaware provided services to many other clients like Alliance Capital and Princeton University. Significant infrastructure investments were like made over this period. By 1998, three development centers- Mumbai, Chennai and one overseas at Princeton were established. Sales offices were opened in Chicago, Pleasanton and Montreal.

Hexaware was certified as SEI CMM Level 5, 2001, thereby providing the company's quality credentials. Now, in addition to the technology areas mentioned, Hexaware is also concentrating on Mobile Internet Services using the Wireless Application Protocol (WAP). It has been pioneer in WAP in the Indian market.

1.3.6 Protocol

A committed management team anchors the organization effectively to its goal of providing high quality software solutions to its clients. The technical staff consists of highly qualified developers and programmers, skillfully guided by an experienced upper management.

At Hexaware, we also practice fair and innovative HR policies. Hexaware support each individual. Make provisions free and open communication and encourage teamwork.

To be sure, the training programmers at Hexaware are comparable with the best in the world. With specially designed courseware to keep our people constantly in touch with emerging methodologies.

Equipped with technical expertise, excellence in domain knowledge and a versatile experience they nurture interactive relationships with the client community coordinating with them to provide the best platforms, tools and support which fuels

CHAPTER 2

SYSTEM REQUIREMENTS AND SPECIFICATION

2.1 HARDWARE REQUIREMENTS SPECIFICATION

2.1.1 System Requirements

Processor	:	Intel Pentium IV
RAM	:	256 MB RAM
Hard Disk	:	40GB

2.1.2 Server Requirements

Platform	:	Windows 2000
Database	:	Microsoft SQL Server

2.1.3 Client Requirements

Working Environment	:	Windows 2000

2.2 SOFTWARE REQUIREMENTS SPECIFICATION

2.2.1 Software's

Operating System	Windows 2000/NT
Front End	ASP.Net
Code Behind	C#
Back End	Microsoft SQL Server 2000
Browser	Internet Explorer

2.3 SOFTWARE OVERVIEW

2.3.1 Windows 2000

Windows 2000 Server includes improved network, application, and Web services. It provides increased reliability and scalability, lowers your cost of computing with powerful, flexible management services, and provides the best foundation for running business applications. With Windows 2000 Administration Tools, included on the Windows 2000 Server and Windows 2000 Advanced Server compact disc sets, you can manage a server remotely from any computer that is running Windows 2000.

Internet Authentication Service (IAS) uses the Remote Authentication Dial-in User Service (RADIUS) protocol to perform remote authentication. With IAS, you can centrally manage the authentication, authorization, and accounting of users. You can also use IAS to authenticate users in databases on your domain controller running Windows NT 4.0 or Windows 2000.IAS works equally well in homogeneous and heterogeneous networks running Windows 2000.

2.3.2 ASP.NET

ASP.NET, which is the .NET version of ASP, is built on Microsoft .NET Framework. Microsoft introduced the .NET Framework to help developers create globally distributed software with Internet functionality and interoperability.

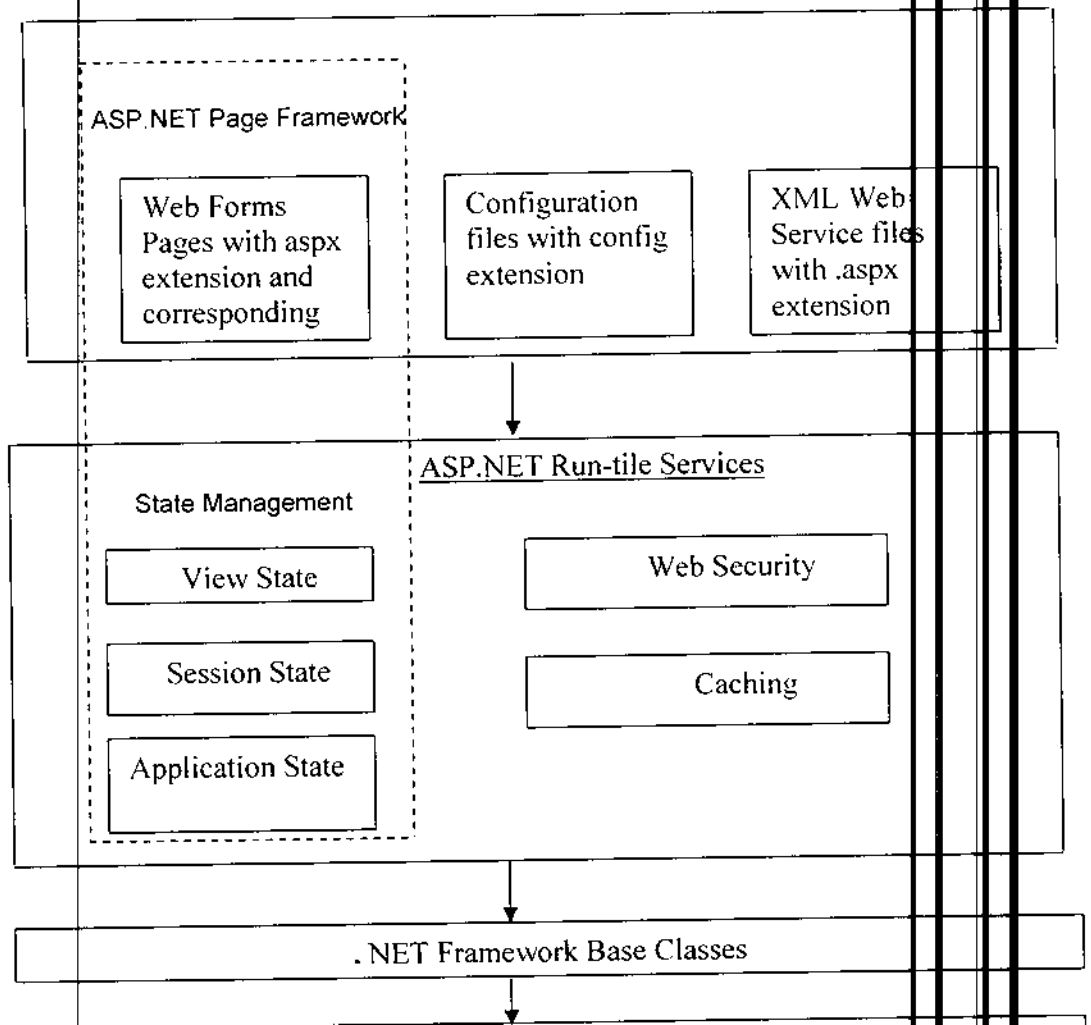
2.3.2.1 Features of ASP .NET

Compiled Code:

Code written in ASP .NET is compiled and not interpreted. This makes ASP .NET applications faster to execute than other server-side scripts that are interpreted, such as scripts written in a previous version of ASP.

Enriched Tool Support:

The following figure illustrates the elements of an ASP.NET application and how the elements fit in the broader context of the .NET Framework.



Power and Flexibility:

ASP .NET applications are based on Common Language Runtime (CLR). Therefore, the power and flexibility of the .NET platform is available to ASP .NET application developers ASP .NET applications enable us to ensure that the .NET Framework class library, messaging, and data access solutions are seamlessly accessible over the Web ASP .NET is also language-independent. Therefore, we can choose any .NET language to develop our application.

Simplicity:

ASP .NET enables us to build user interfaces that separate application logic from presentation content. In addition, CLR simplifies application development by using managed code services, such as automatic reference counting and garbage collection. Therefore, ASP .NET makes it easy to perform common tasks ranging from form submission and client authentication to site configuration and deployment.

Manageability:

ASP .NET enables us to manage Web applications by storing the configuration information in an XML file. We can open the XML file in the Visual Studio .NET IDE.

Security:

ASP .NET provides a number of options for implementing security and restricting user access to a Web application. All those options are configured within the configuration file.

2.3.2.2 SQL SERVER 2000

Microsoft SQL Server 2000 is a set of components that work together to meet the data storage and analysis needs of the largest Web sites and enterprise data processing systems, at the same time can provide easy-to-use data storage services to an individual or small business.

Features of SQL Server 2000

Microsoft SQL Server 2000 features include:

- Internet Integration.

  The SQL Server 2000 database engine includes integrated XML support. It also has the scalability, availability, and security features required to operate

- Scalability and Availability.

The same database engine can be used across platforms ranging from laptop computers running Microsoft Windows® 98 through large, multiprocessor servers running Microsoft Windows 2000 Data Center Edition. SQL Server 2000 Enterprise Edition supports features such as federated servers, indexed views, and large memory support that allow it to scale to the performance levels required by the largest Web sites.

- Enterprise-Level Database Features.

The SQL Server 2000 relational database engine supports the features required to support demanding data processing environments. The database engine protects data integrity while minimizing the overhead of managing thousands of users concurrently modifying the database. SQL Server 2000 distributed queries allow you to reference data from multiple sources as if it were a part of a SQL Server 2000 database, while at the same time, the distributed transaction support protects the integrity of any updates of the distributed data. Replication allows you to also maintain multiple copies of data, while ensuring that the separate copies remain synchronized. You can replicate a set of data to multiple, mobile, disconnected users, have them work autonomously, and then merge their modifications back to the publisher.

- Ease of installation, deployment, and use.

SQL Server applications that customers can implement with a minimum of installation and administrative overhead.

- Data warehousing.

SQL Server 2000 includes tools for extracting and analyzing summary data for online analytical processing. SQL Server also includes tools for visually designing databases and analyzing data using English-based questions.

CHAPTER 3

SYSTEM ANALYSIS

INTRODUCTION

System analysis is concerned with investigating and analyzing which is used to gain an understanding of the existing system and what is required. It is a general form refers to orderly structured process for identifying and problem solving. System Analysis is the process of analyzing a system with the potential goal of improving or modifying the system.

Analysis is breaking down the problem into smaller elements for study and ultimately providing better solution. System analysis is the application of the systems approach to problem solving using computers. The ingredients are systems elements, processes, and technology. This means that to do systems work, one needs to understand the systems concept and how organizations operate as a system.

System analysis is a process related to four significant phases namely

3.1 EXISTING SYSTEM

- Currently they are not maintaining any application for this preparation activity for the training process.
- The employees in HexaVarsity used to maintain the materials related to training through system folders by creating them with the particular material name in the server.
- The employees are provided with their login ids and passwords to connect with the server in order to check and access the materials they needed.
- The hard copies are maintained in the cupboards which are numbered. Employees have their appropriate keys to check for their availability.
- They manually keep track of the persons who borrow the training materials for their program.

The existing system is maintained manually. The HexaVarsity Knowledge Executive System provides provisions for the users to satisfy all their needs. It is also added with some intelligent extra features for the users.

The availability of required material cannot be found easily and this impacts on the inefficiency of preparation for training program. Users also feel complexity in generating reports for knowledge materials that are currently available.

- Increases processing overheads.
- Very low security over data.

3.2 PROPOSED SYSTEM

The proposed system is developed to overcome the common difficulties that are found in the manually maintained existing system. The system is developed in order to meet the HexaVarsity employee's requirements in the existing system boundaries such as making the searching process simple and efficient and maintaining the training materials in a well organized manner.

3.2.1 Modules

The modules involved in the proposed system are as follows.

- **Maintaining Training Materials**
- **Maintaining Material Vendors and Borrowers**
- **Security Settings**

3.2.2 Maintaining Training Materials

Training materials are classified into three categories as for as the employees are concerned. They are

- Internal Materials

Editing feature is provided through the grids where the information's are actually displayed. They can either update or cancel the changes made.

Provisions are made for placing new material details taking their forms (either hard copy or soft copy) into account. Updations of available materials ask users about the material details like their name, course, and form etc. But for Issued materials updation the name of the person who borrowed the materials and that persons contact details are recorded.

For eliminating the training material details the users are allowed to select the material name and course it belongs to. The details are displayed in the grid as for as selection is concerned for making sure of record they wish to discard.

Printing option is provided to reduce the overhead of users in generating reports. The grid which contains the details according to user selections alone get printed when the user goes for print option.

The above specified amenities are common for all the Internal, External and Online materials.

3.2.3 Internal Materials

3.2.4 External Materials

The trainers are also called from other companies for the training programs. In that kind of situation the materials brought by those persons are also maintained here as external materials. There are also some external vendors from whom the HexaVarsity gets training materials.

3.2.5 Online Materials

There are lots of online materials available in HexaVarsity intranet portal. Those material details including their location i.e. the file pathname are maintained. The uses of online training materials are allowed for the trainees through the intranet portal.

3.2.6 Maintaining Vendors and Material Borrowers

The external materials are obtained from the external trainers and vendors. Those vendors may be further used to get new materials for up coming training programs. So the vendor details are also recorded for future use. The amenities for placing new vendors, eliminating them and modifying them are made available for users.

The HexaVarsity employees from other branches may need the training

The remainder is generated in the intent of remaining the users about the materials that are not returned properly.

3.2.7 Security Settings

Since HKES is an intranet portal application the users are properly authenticated. Since the users are also classified based on their working field proper role based authentication is also efficiently made.

High securities for the users are provided and administrators are allowed for making security settings. Administrators are made capable to view the current users of the system and to add more users with accessing permissions in a well-organized manner.

Administrators are also empowered by providing means for them to change the accessing permissions of the current users and by eliminating the users. Irrespective of this all the users are allowed to change their passwords.

3.2.8 Features of proposed system

- The preparation process for the training program is made quite easily with short time period.
- The system can work in any windows operating systems, which has a

- The grid alone can be printed which contains the data according to the user selection.

3.2.9 Advantages

- Training Material management effort is reduced.
- Checking for availability of materials is made faster.
- Analyzing of reports is done easily.
- More manpower is reduced.
- Less chance for human errors to happen
- Time consumption is greatly reduced
- Decreases processing overheads
- Very high security over the data
- Role based accessing privileges for users.

The main goal of the proposed system is to meet these above requirements that supports for proper preparation for Training program for a well organized way of knowledge transfer.

3.3 FEASIBILITY STUDY

The main purpose of feasibility study is to determine whether the problem is worth solving. Feasibility study is high-level capsule version of the extra system analysis and design process. The success of a system also lies in the amount of

According to software engineering principles, operational feasibility or in other words usability should be high. A thorough analysis is done and found that the system is operational.

3.3.2 Technical Feasibility

Technical feasibility takes care of the technical issues that are to be tested to see whether the system is feasible. Technical feasibility analysis makes a comparison between the level of technology available and the technology that is needed for the project. The level of technology is determined by factors such as the software tools available, the machine environment, platform etc since, the resource required for the development of the project is already available in the organization, and this project is technically feasible.

3.3.3 Economical Feasibility

This is the most important aspect that has to be critically evaluated. The costs and benefits have to be estimated. Considering the cost factor, since the client is ready to pay a reasonable amount, which will be more than the cost of developing the system, the system will be economically feasible.

CHAPTER 4

4. SYSTEM DESIGN

INTRODUCTION

The most important and challenging phase of the system life cycle is system design. The design focuses on the detailed implementation of the system. The first step in system design phase is to determine how the outputs are produced and in what format. Secondly, input data and the tables have to be designed to meet the requirements of proposed system.

System Design is the process of developing specifications for a system that meet the criteria established in system analysis. The major step in design is the preparation of input design and design of output reports in a form acceptable by the user. System Design includes input to the system and the speed of retrieval of data.

Design is the first step of the development of the system. Design will be perfect only if the data collection is done properly with out errors. Design is the base

4.1 INPUT AND OUTPUT DESIGN

4.1.1 INPUT DESIGN

Input plays the most important role in feeding the computer with data. The goal of designing input data is to make data-entry as easy as possible and error-free. Input serves 4 purposes

- To control work flow
- To reduce redundancies in recording data
- To allow easier checking of data
- To increase clerical accuracy

Interactive screens are designed for retrieving inputs from the user. It is used to enter data and it allows correcting the incorrect entry of data. The system simplifies the computer data access or data entry. The operations like add, modify, delete and update have been taken care of.

Since the policies that govern the system resources must be added as and when required, a user-friendly interactive screen is designed. The policies may also need to be changed frequently. The system has been designed in such a way that these operations can be carried out with ease.

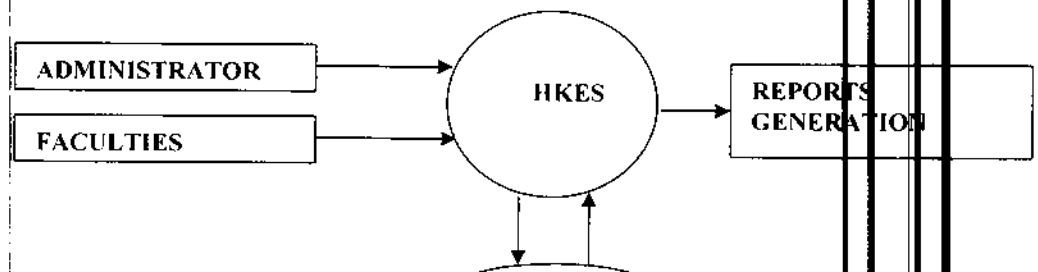
Other than this the reports are also produced for the vendor details from whom the materials have been purchased for training purpose.

4.2 DATA FLOW DIAGRAM

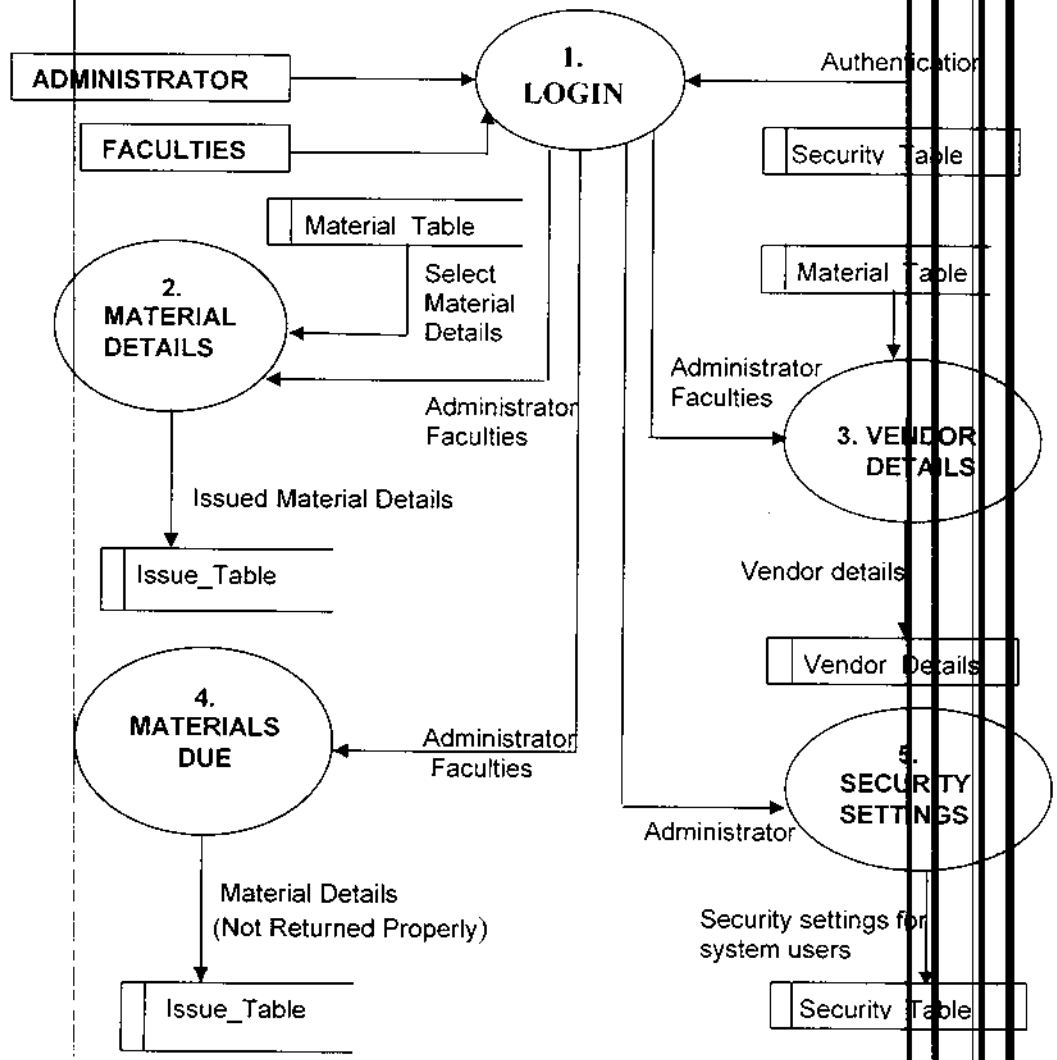
Data flow diagrams are commonly used during problem analysis and design. A DFD shows the flow of data through a system. It views the system as a function that transforms the inputs into desirable outputs. A DFD aims to capture the transformation that takes place within a system into output data so that eventually the output data is produced.

The agent that performs the transformation of data from one state to another is called a process (Bubble). The processes are shown by named circles and dataflow are represented by named arrows. A square defines a source or destination of system data. An open rectangle is a data source.

4.2.1 CONTEXT LEVEL DIAGRAM



4.2.2 Level 2 DFD



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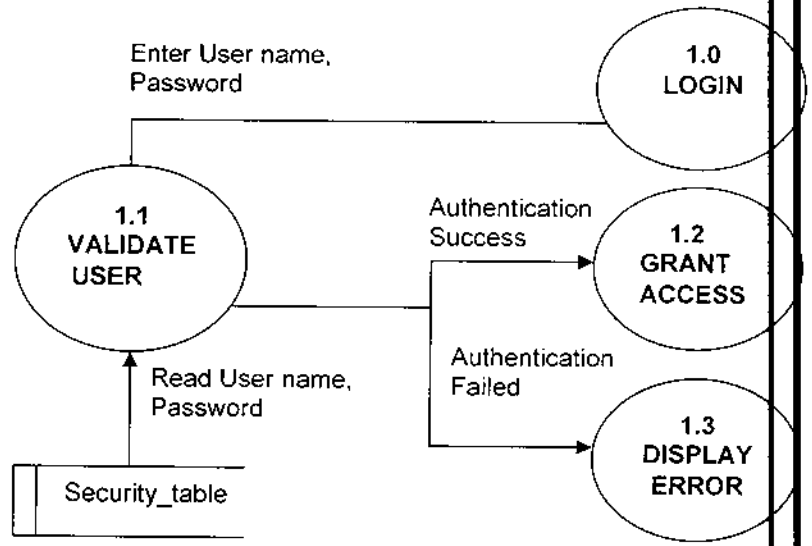
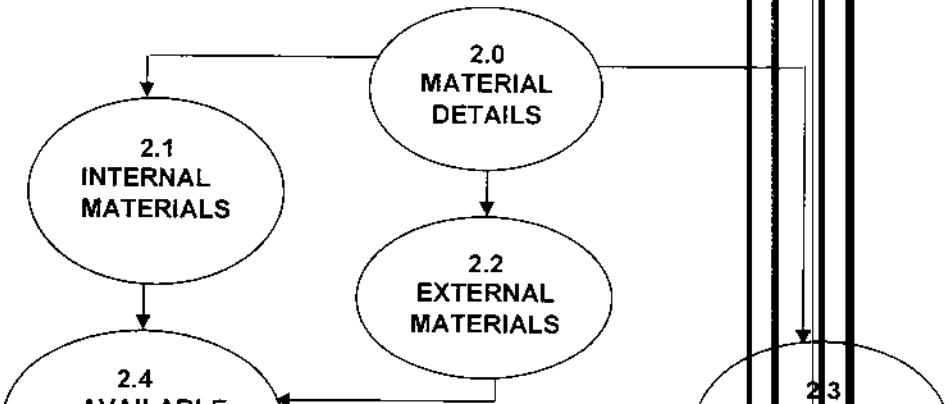
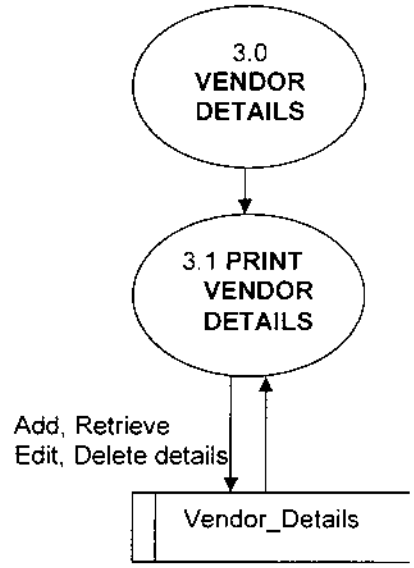


4.2.3 Authenticating users

4.2.4 Level 2 DFD

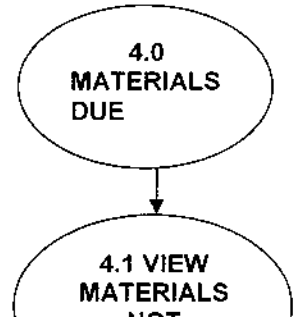


4.2.5 Level 2 DFD

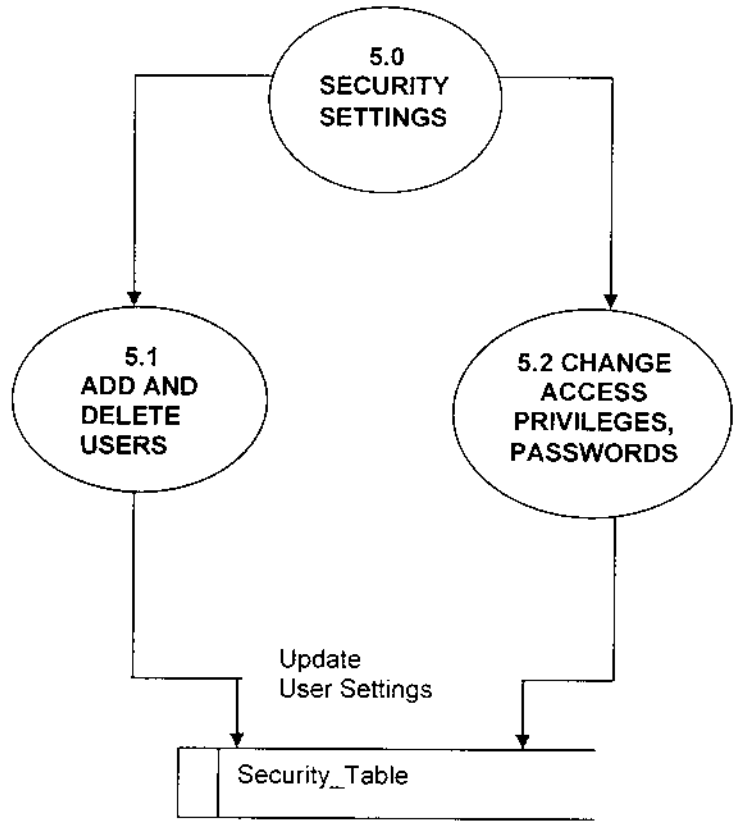


4.2.5 Sustaining Vendor Details

4.2.6 Level 2 DFD

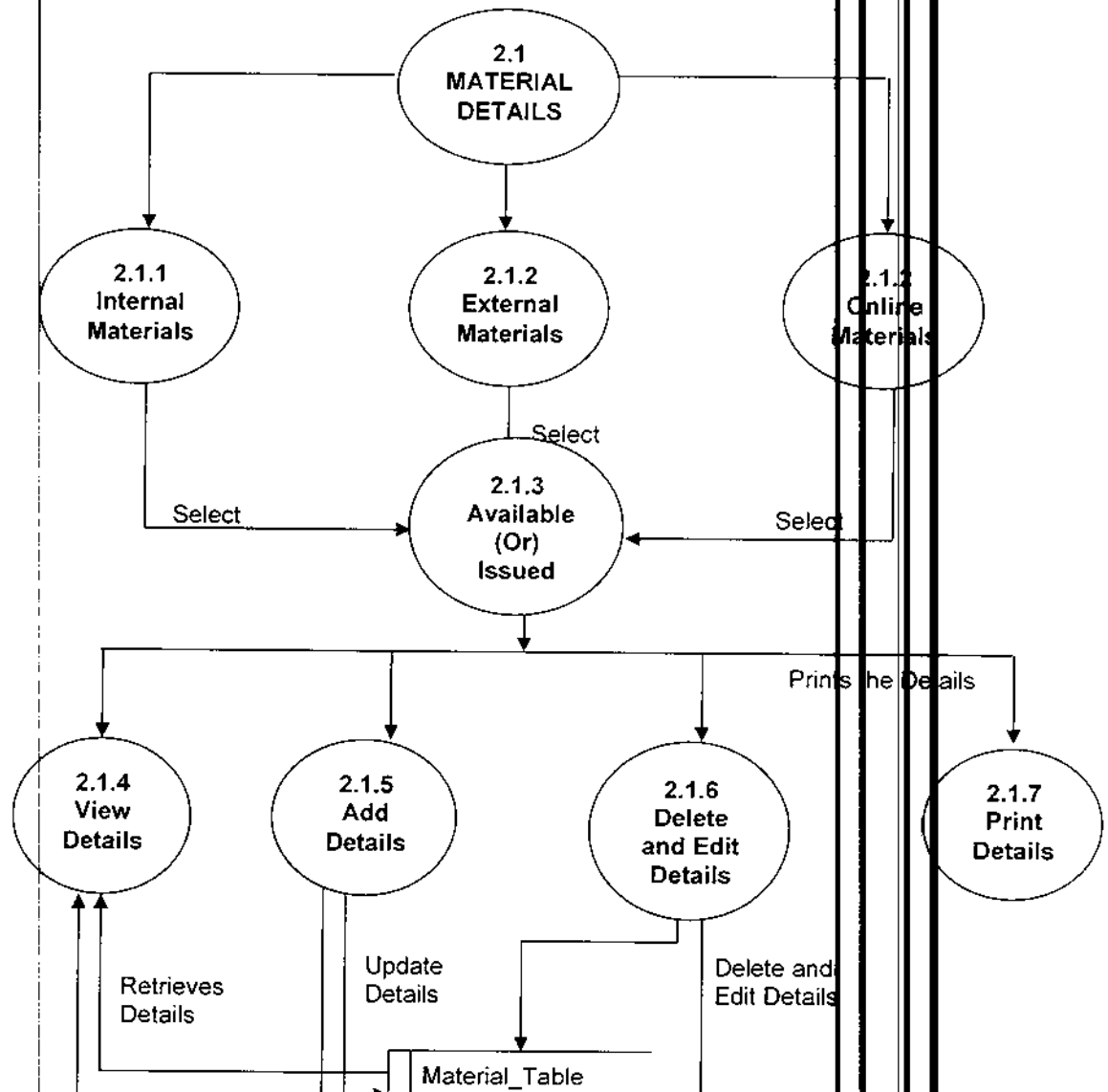


4.2.7 Level 2 DFD



4.2.7 Security Settings

4.2.8 Level 3 DFD



4.3 DATABASE DESIGN

4.3.1 Table Name: Security_Table

#	Field Name	Field Type	Max Length	Constraints	Mandatory
1.	Login Id	int	4	-	Yes
2.	UserName	nvarchar	30	Primary Key	Yes
3.	Passwd	nvarchar	30	Primary Key	Yes
4.	Privilege	nvarchar	20	-	Yes

4.3.2 Table Name: Material_Table

#	Field Name	Field Type	Max Length	Constraints	Mandatory
1.	Material Id	nvarchar	10	Primary Key	Yes
2.	Learning Material	nvarchar	50	-	Yes
3.	Course Code	nvarchar	20	-	-
4.	Course Name	nvarchar	50	-	Yes
5.	Form	nvarchar	20	-	-

4.3.3 Table Name: Issue_Table

#	Field Name	Field Type	Max Length	Constraints	Mandatory
1.	Material Id	nvarchar	10	Foreign Key	Yes
2.	BorrowerName	nvarchar	50	-	Yes
3.	Return Date	datetime	8	-	Yes
4.	Issue Date	datetime	8	-	Yes
5.	Location	nvarchar	50	-	Yes
6.	EmailId	nvarchar	100	-	Yes
7.	ContactNo	nvarchar	10	-	Yes

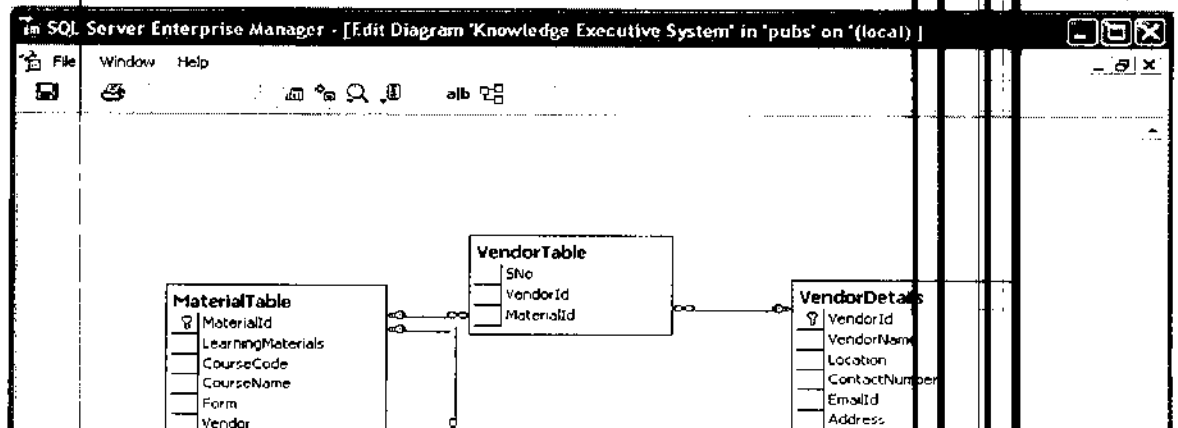
4.3.4 Table Name: Vendor_Details

#	Field Name	Field Type	Max Length	Constraints	Mandatory
1.	VendorId	nvarchar	10	Primary Key	Yes
2.	VendorName	nvarchar	50	-	Yes
3.	Location	nvarchar	50	-	Yes

4.3.5 Table Name: Vendor_Table

#	Field Name	Field Type	Max Length	Constraints	Mandatory
1.	SNo	int	4	-	Yes
2.	MaterialId	nvarchar	10	Foreign Key	Yes
3.	VendorId	nvarchar	10	Foreign Key	Yes

4.3.6 Table Relationship Diagram



CHAPTER 5

SYSTEM TESTING AND IMPLEMENTATION

INTRODUCTION

System implementation is considered to be the most crucial stage in objective to find how the successful new system will work and be effective. A crucial phase in any system is the System Implementation, which means that a new system design is converted in to operations. Conversion of manual system in to a new computer based system is known as System implementation.

The implementation is made such that to create accurate information and reports that helps the company to communicate easily through the system without finding any difficulties. The system should be implemented with the technique of planning and Control. A detailed correct plan should be defined over the system and the flow of control is implemented in such a way that meets the requirements.

The following are the different phases involved in system implementation such as verification, validation, system testing, and maintenance.

5.1 VERIFICATION

The verification is used to run the system in the stimulated environment using stimulated data. The stimulated test is to primarily looking for error and omission regarding end user and design specification. The verification procedure is to check each record, data item or field against certain criteria. The system should be verified and validated at each of the software process using documents produced during the previous stage.

Verification is rebuilding the product right. Verification involves the checking program confirms to each specification. Verification starts with requirement review and continues through design and code review to product testing. To satisfy the objectives static and dynamic techniques of system checking and analysis should be used. The system has been verified using sample data for all the modules.

There are two techniques known as **Static** and **Dynamic** technique.

Static technique is concerned with analysis and checking of system representations such as design diagram, requirements document. **Dynamic technique** or test involves an effective implementation of the system. However static technique was not used in the project and only dynamic technique was used successfully.

5.2.1 Completeness check

Completeness check ensures that all fields in a record are present and are read in the proper sequence. In Material details table, during insertion, all the fields must be fulfilled. Suppose any textbox left blank, then immediate relevant message will be showed. If the user enters numeric value in text field, then all data in the form are discarded. When the user click reset button, the all text boxes are clear whatever they show.

5.2.2 Consistency check

Consistency check refers to the relevance of one type of data to another. For example when the user selects the material name and its course name, then all relevant information about them are displayed in the form of grid.

5.2.3 Reasonableness check

Reasonableness check evaluates a transaction against a standard to determine whether it meets the test. For example, when a user enters integers for the name field during updation the immediate alert will be shown.

5.2.4 Sequence check

Sequence check verifies that data records are in sequence prior to processing. A check of duplicate records may also be incorporated in the routine.

There should be careful planning how the system will be proved and the test data designed. During system testing, the system is used experimentally to ensure that the software does not fail. In other words, we can say that it will run according to its specifications and in the way users expect.

It is desirable to discover any surprises before the organization implements the system and depends on it. Software testing accounts for the largest percentage of technical effort in the software process. Yet we are beginning to understand the subtleties of systematic test planning, execution and control. The objective of system testing is to uncover errors. To fulfill the objective the system testing is done in the following phases.

5.3.1 Unit Testing

Unit testing focuses verification effort on the module, the smallest unit of software design. The local data structure is examined to ensure that data stored temporarily maintains its integrity. Boundary conditions are tested to uncover the errors of the module within the boundary.

5.3.2 Integration Testing

After the complete testing of all modules, they are put together and integrated. The primary concern is the compatibility of individual modules. The specification for data type, length and name in each module is also tested for

with large number of fields. Several users were allowed to access the database simultaneously and the system survived this test successfully.

All the modules of this system were successfully tested using test data as well as real data collected. All the reports and the screens are tested for their validity and values in the database tables are checked for their correctness and consistency. After successful testing of the system, it was ready for implementation.

5.3.4 System Testing

System Testing was done by the inspection team to verify that all the functionality identified in the software requirements specifications has been implemented. Defects that crept in the integration phase were logged in the defect log and were removed successfully. This phase went on till there found to be no problems in the system functioning. The system has been found defect free and is working well.

System testing is concerned with the subtitles in the interfaces, decision logic, Control flow recovery procedures, and throughput, capacity and timing characteristics of the entire system. Careful test planning is done to determine the extent and nature of the system testing to be performed and to establish the criteria by which results will be evaluated.

5.3.5 Acceptance Testing

The system has been tested for performance at the unit level by the individuals through performance testing that is designed to test the run time performance of software. The performance of the fully integrated system is done and it is found good.

5.4 MAINTENANCE

The process of making changes and modifications to the system after it has been delivered implemented and is in use called software maintenance.

5.4.1 Corrective Maintenance

It is concerned with fixing reported errors in software. They are coding errors and design errors.

5.4.2 Adaptive Maintenance

It is concerned with changing the software to source and to adapt to the new and changing environment.

5.4.3 Defective Maintenance

It involves implementing new functioned or non-functional system requirements to ensure more effective execution of the system.

5.4.5 Preventive Maintenance

It concerns activities aimed at increasing the system's maintainability such as updating documentation adding comments, improving modular structure of the system.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

CONCLUSION

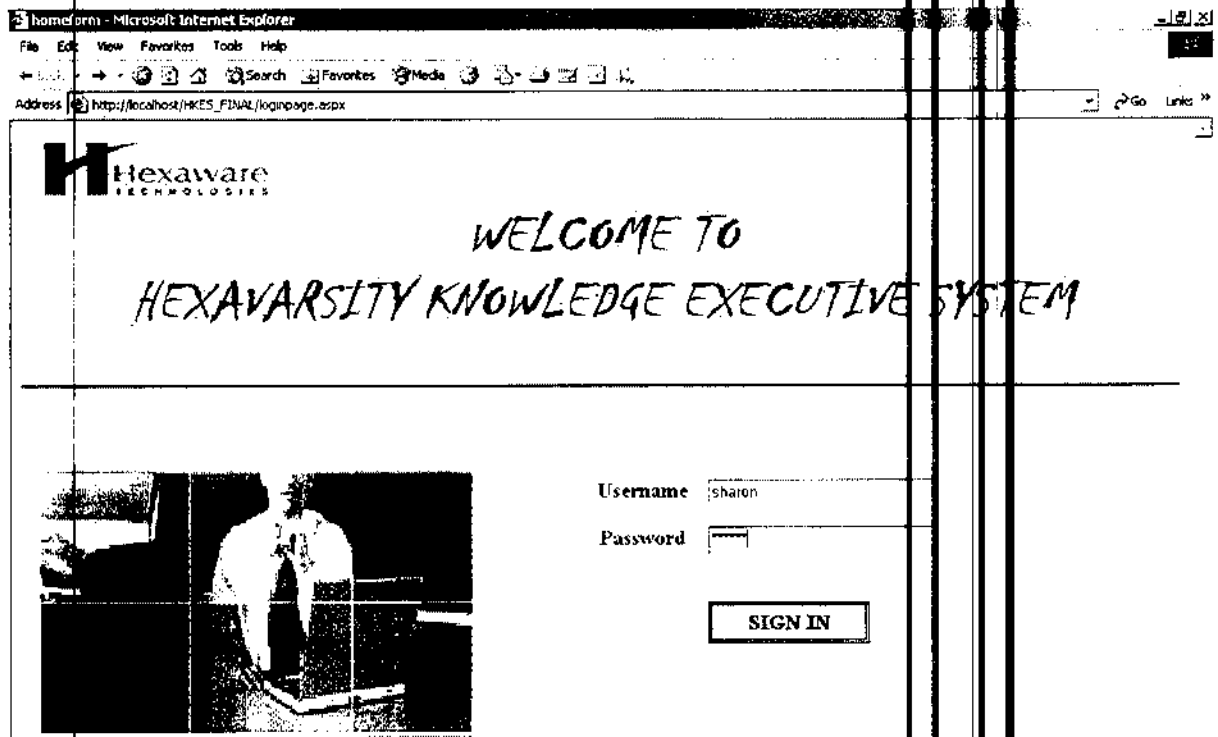
An effort has been made to computerize the complete Training activities in HexaVarsity, Hexaware Technologies, Chennai, up to the satisfactions of the company. HexaVarsity Knowledge Executive System is a part of enormous training process in HexaVarsity. The application is accessed online through intranet portal. The on-line inspections of training resources are taken care off. The computerized system automatically enquires and updates all relevant informations and it is found that it has successfully overcome the pitfalls in the manual system.

Comparative analysis is carried out and it is viewed that the new system is successfully working for the test data provided by the users and they hope that the software will be extremely helpful to the company. Finally I thank the Department of Computer Science and Engineering for providing me a good opportunity to carry out this project work with the guidance of staff.

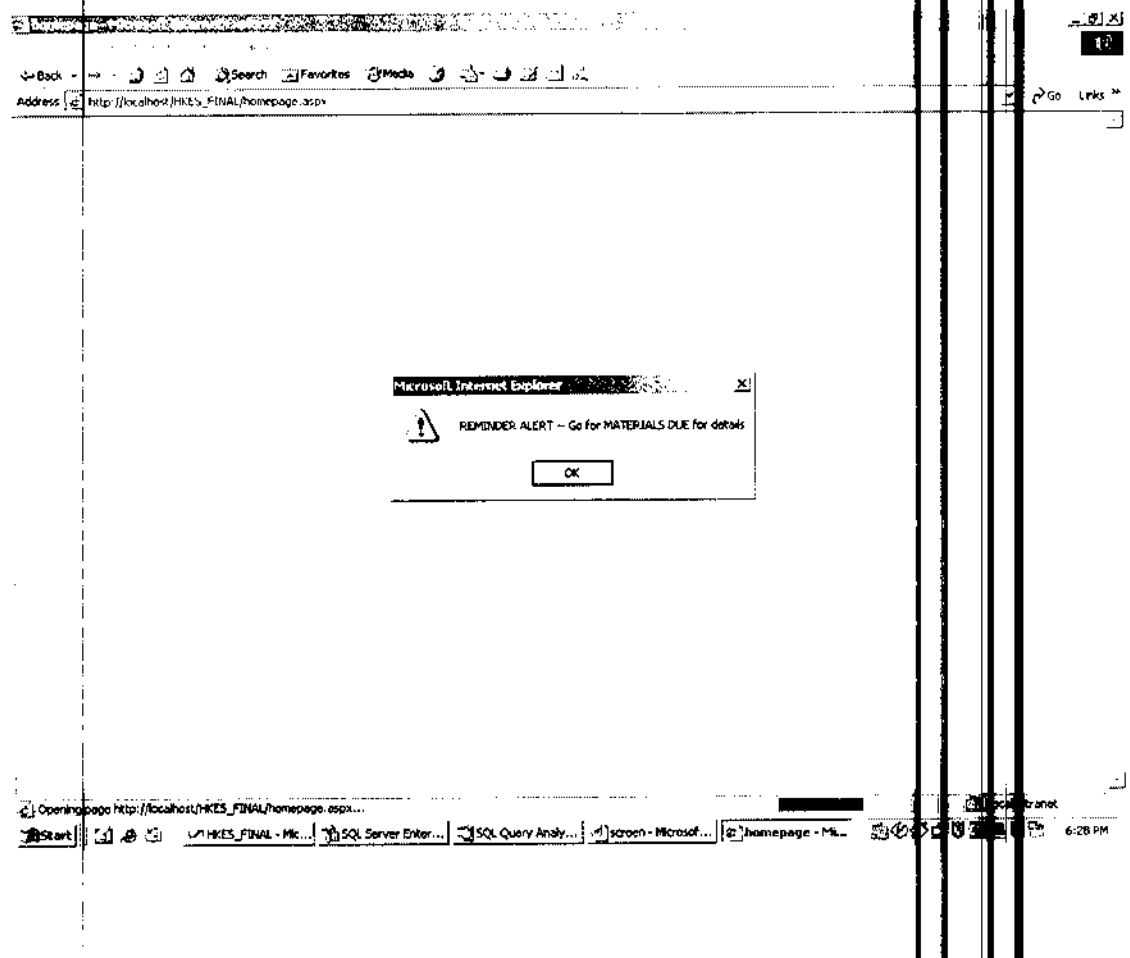
APPENDICES

APPENDIX I – SCREEN LAYOUT

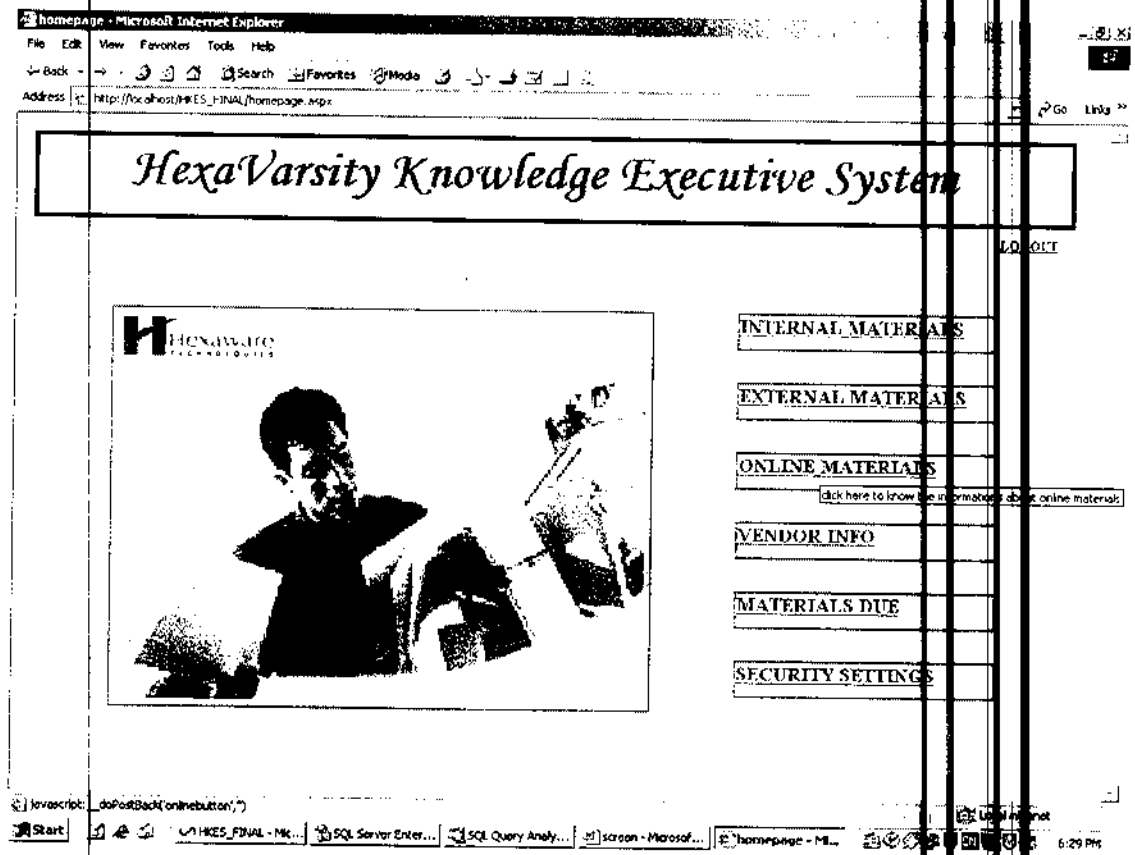
User Authentication



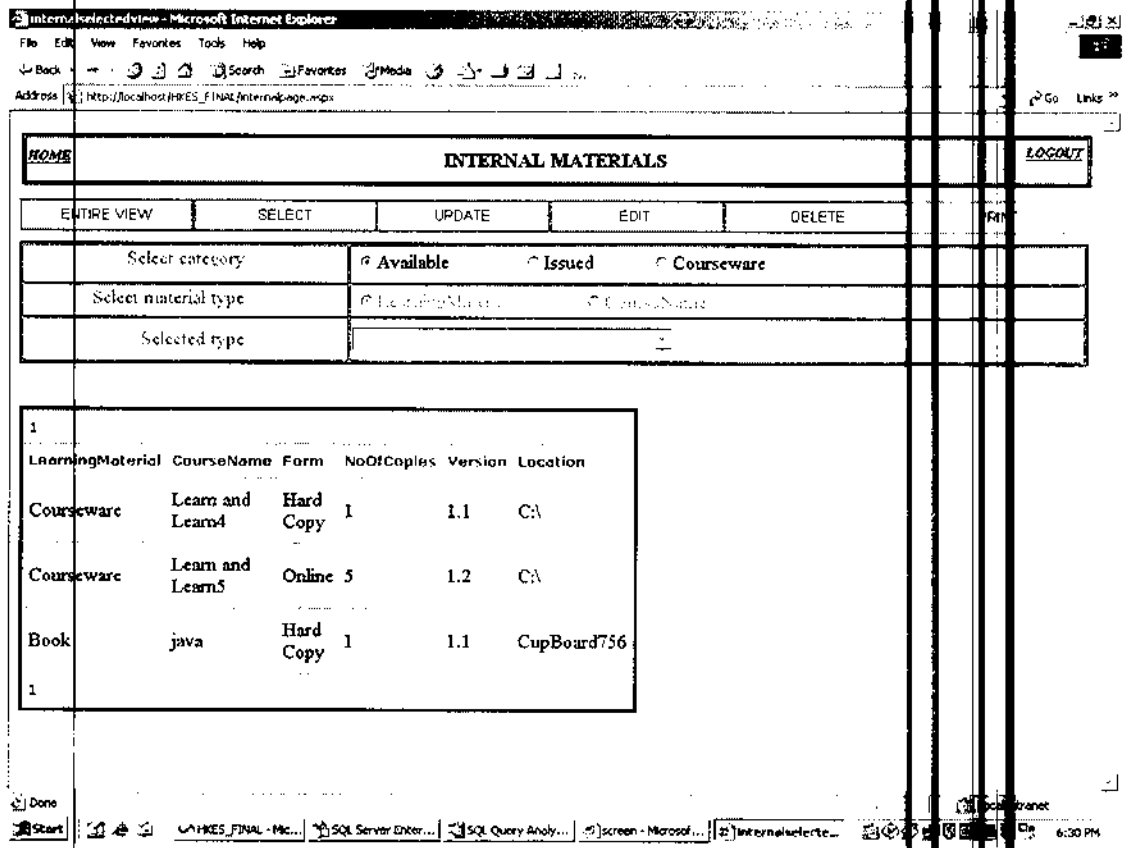
Remainder Generation



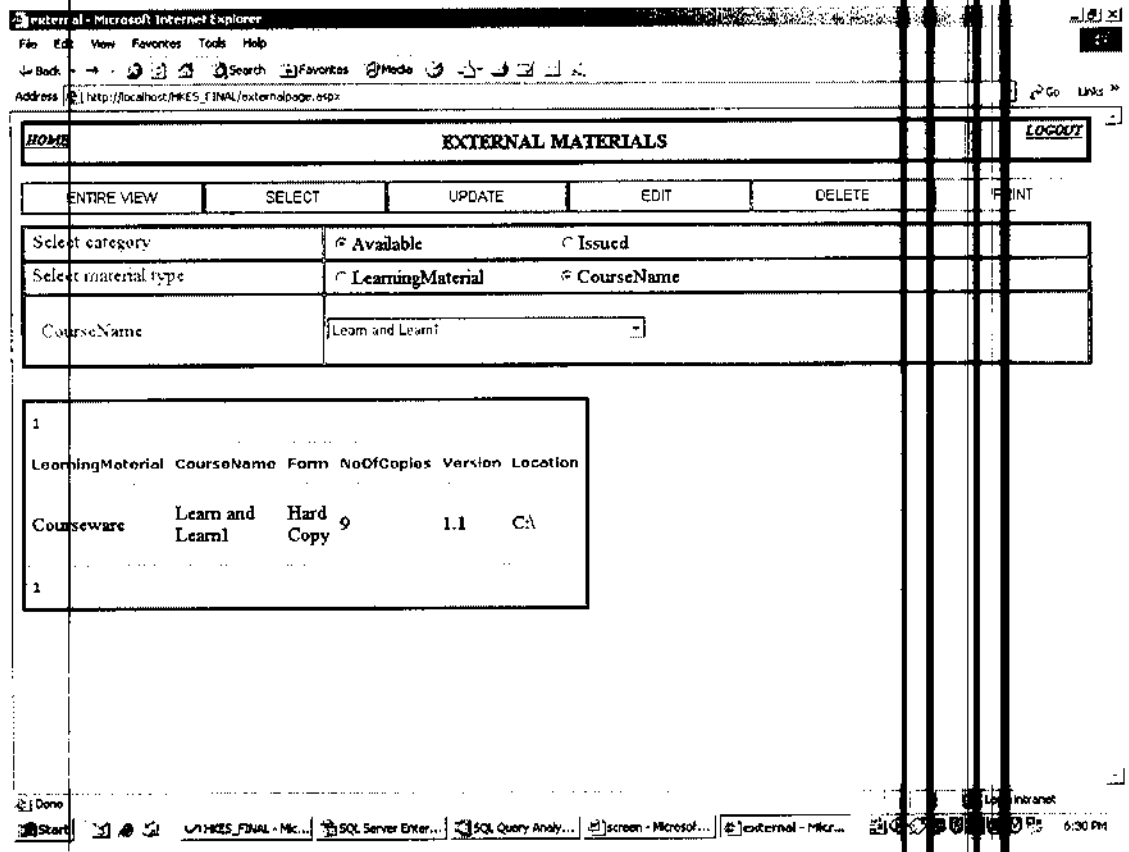
HKES - Home Page



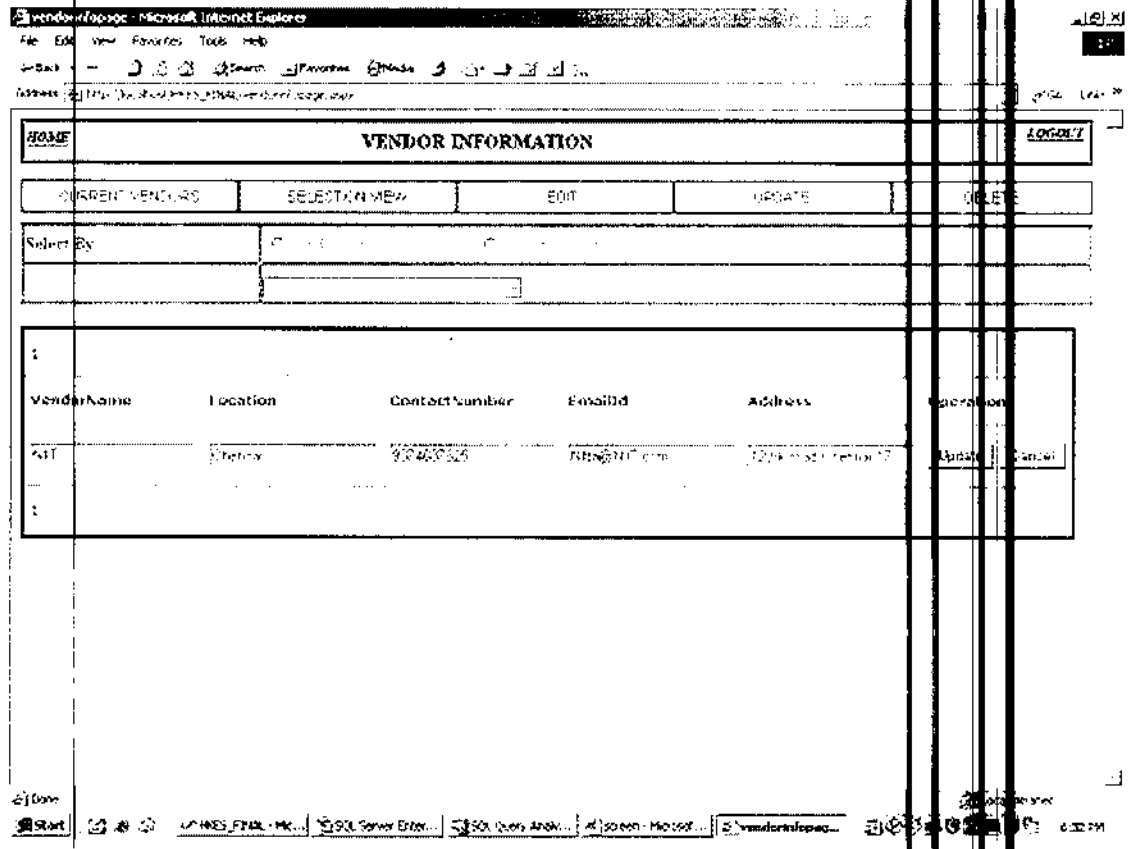
Entire view – Internal Materials



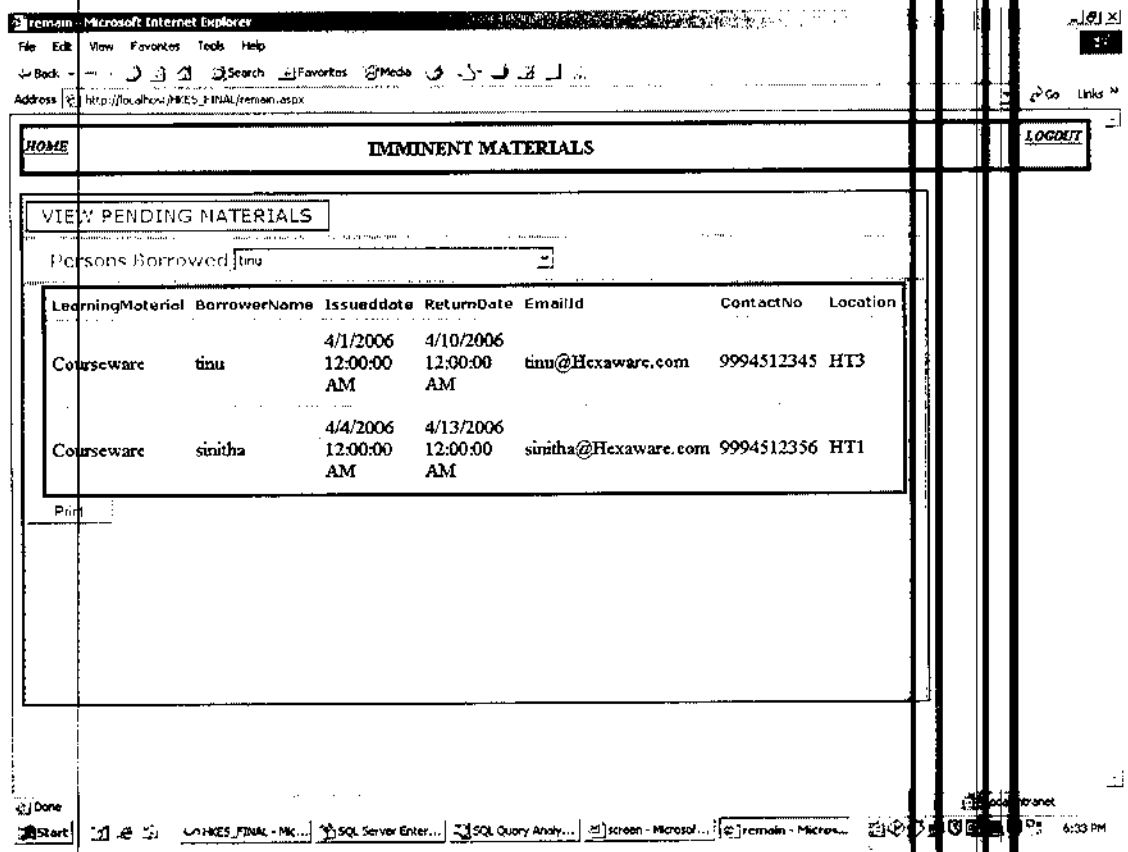
Selection View – External Materials



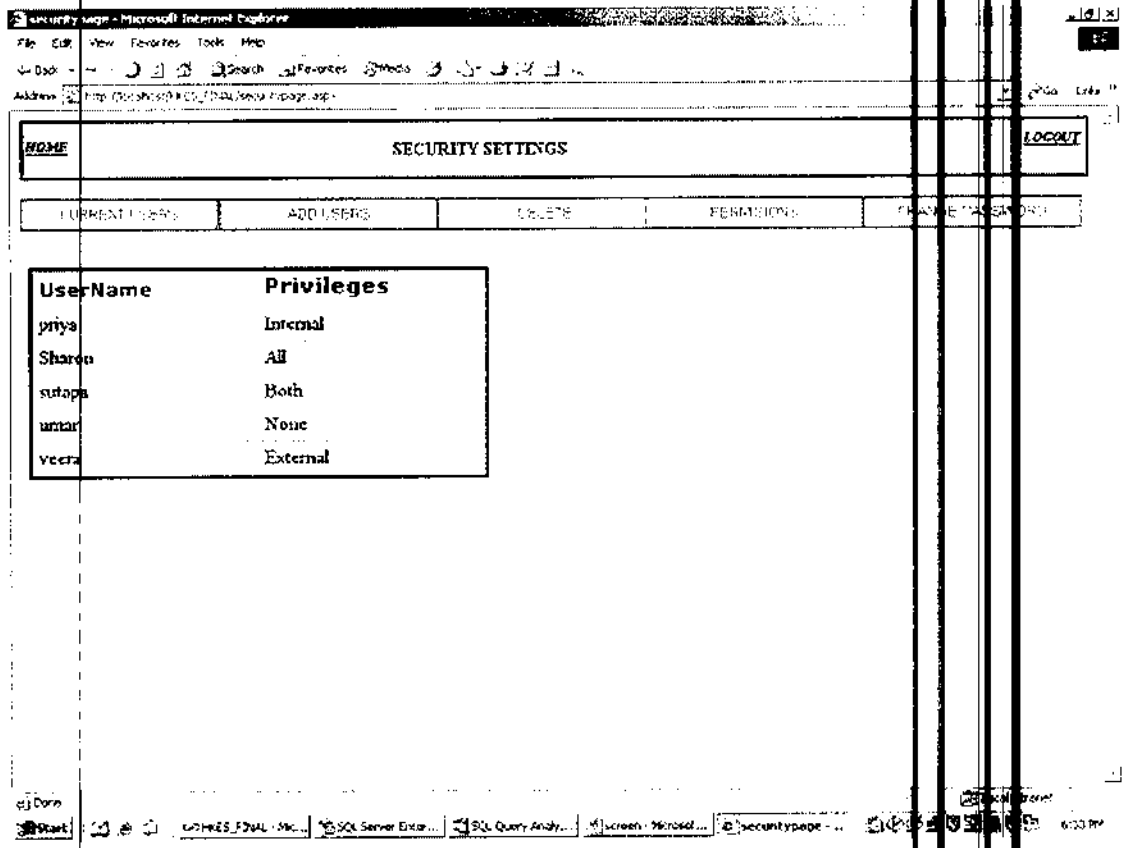
Vendor Details – Editing



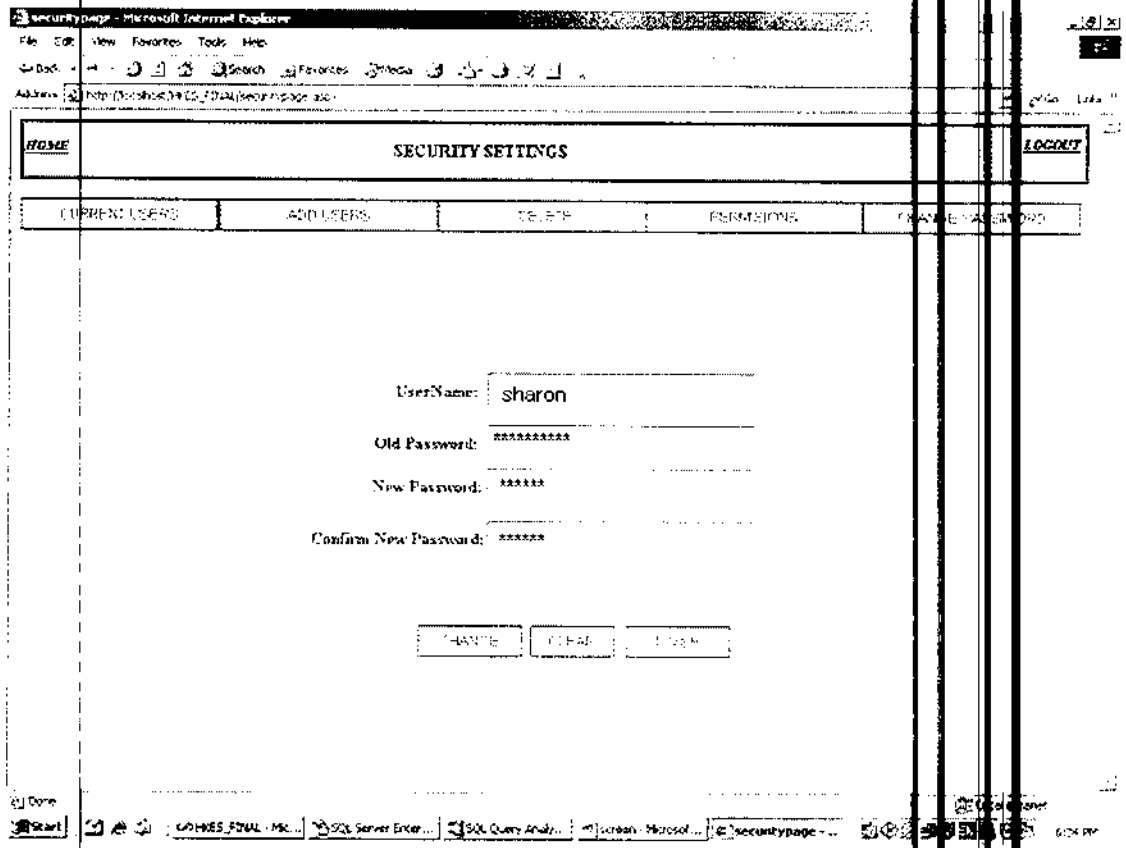
Imminent Materials – Complete View



Security Settings – Current Users



Security Settings - Changing Password



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WEBSITES