

# KNOWLEDGE MANAGEMENT SYSTEM

PROJECT WORK DONE AT  
**TRIGYN Technologies**



PROJECT REPORT

SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF  
**M.SC APPLIED SCIENCE (COMPUTER TECHNOLOGY)**  
OF BHARATHIAR UNIVERSITY, COIMBATORE.

P 557

*Submitted By*

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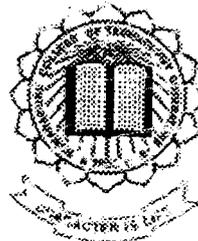
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April 2001

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**CERTIFICATE**

This is to certify that the project work entitled

**KNOWLEDGE MANAGEMENT SYSTEM**

Done by

**N.S. SUKANYA**  
Reg. No. 9937Q0012

Submitted in partial fulfillment of the requirements  
for the award of the degree of  
**M.Sc Applied Science (Computer Technology)**  
of Bharathiar University

  
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5<sup>th</sup> April 2001

To

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**TRIGYN**  
technologies

**Subject: "Project completion Certificate"**

This is to certify that Miss. N.S.SUKANYA, Reg. No. 9937Q0012, 4<sup>th</sup> Semester M.Sc.Applied Sciences(Computer Technology),Kumaraguru College of Technology,Coimbatore has satisfactorily carried out the project work titled "Knowledge Management System" in our organization.

The dissertation entitled "Knowledge Management System" can be submitted in partial fulfillment of the requirements for the award of the Degree of Master of Sciences in Computer Technology in Bharathiar University, for the academic year 2000 -2001.

Regards,

  
M.K.Srinivas

Program Manager

## DECLARATION

I hereby declare that the project entitled **KNOWLEDGE MANAGEMENT SYSTEM**, submitted to Bharathiar University as the project work of **M.Sc Applied Science (Computer Technology)** Degree, is a record of original work done by me under the supervision and guidance of **Mr.K.Srinidhi**, Project Leader, TRIGYN Technologies, Bangalore and **Mr.K.R.Bhaskaran, B.E., M.S., Asst. Professor**, Department of computer science and Engineering, Kumaraguru College of Technology, Coimbatore. And this project work has not found the basis for the award of any Degree/Diploma/ Associateship/Fellowship or similar title to any candidate of any university.

**Place: Coimbatore**

**Date: 24.04.2001**

  
**(N.S.Sukanya)**

**Countersigned by**

  
**INTERNAL GUIDE**

**DEDICATED TO**

**MY**

**BELOVED PARENTS**

## ACKNOWLEDGEMENT

An endeavor over a long period can be successful only with the advice and support of many well wishers. I would like to extend my gratitude and appreciation to all of them.

I wish to thank **Dr.K.K.Padmanabhan, B.Sc(Engg)., M.Tech., Ph.D.**, Principal, Kumaraguru College of Technology(Affiliated to Bharathiar University), Coimbatore, TamilNadu for his constant encouragement throughout the course.

I am deeply indebted to **Mr.Thangasamy, B.E(Hons).,Ph.D.** Head, Department of Computer Science, Kumaraguru College of Technology (Affiliated to Bharathiar University), Coimbatore, TamilNadu for constantly encouraging me to pursue new goals and ideas.

I sincerely thank **Mr.K.R.Bhaskaran, B.E., M.S.**, Senior Lecturer, Department of Computer Science, Kumaraguru College of Technology (Affiliated to Bharathiar University), Coimbatore, Tamilnadu, my Internal Guide, for his timely advise and kind word of encouragement.

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Last but not the least I appreciate the kindness extended to me by my family and friends.

**N.S. SUKANYA**

## SYNOPSIS

### *“Knowledge Management System”*

Knowledge management system is a web-based system that is developed to transform the unorganized file collections into knowledge accessible by the members of the organization. An effective knowledge management system changes the nature of the organization by providing the ability to quickly and accurately retrieve the knowledge wanted in terms of electronic files.

Any member of the organization can obtain the information they want from the company anywhere in the world.

The following are the results achieved with the developed system.

- ❖ All the files can be handled efficiently.
- ❖ Company suffering from loss of knowledge and information overload is prevented.
- ❖ High quality of service and good decision-making can be obtained.
- ❖ The files can be easily shared and distributed, whatever the size of the organization, location of the organization.

# 1. INTRODUCTION

## 1.1 PROJECT OVERVIEW

### **Knowledge Management System**

Knowledge Management System is a **Web-Based Knowledge Management** System to transform unorganized file collections into knowledge accessible by anyone who needs to use it. Links are used to describe and organize multiple collections of notes for multiple users. By following the attributes of a profile or links, users can easily navigate to particular notes. Essentially, an Intranet is the storage of notes as file-based data. A member of an organization should be able to obtain the notes he or she needs from an office anywhere in the world.

The Basic Focus is on the following areas:

- ❖ Notes Storage
- ❖ Notes Organization
- ❖ Fast Notes Search and Retrieval

### **Tasks in Knowledge Management**

The simple high-level task statement of “manage knowledge” can be broken down into all of the subtasks that are required to accomplish the goal. To begin, let’s break this task down into a set of high-level subtasks:

# CONTENTS

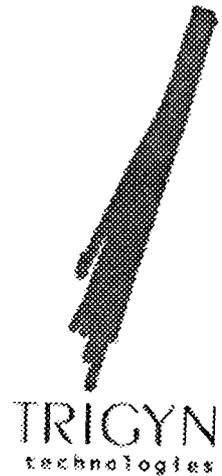
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- ❖ Identify User
- ❖ Upload Note
- ❖ Search Note
- ❖ Download Note
- ❖ Create Link
- ❖ Explore Link

The user can search for any required information, retrieve them, upload the details to the system and download the information to their machine if necessary.

## 1.2 ORGANIZATION PROFILE

TRIGYN technologies is a global information technology solutions and services company specializing in the Telecom, eBusiness and Finance areas. There are over 700 software professionals on board at locations in India, the US, Europe and the Far East. There are development centers in New Jersey, Bangalore, and two centers in Mumbai.



Trigyn Technologies is listed on the NSE, BSE and Ahmedabad Stock Exchange, and is headed by Suresh Rajpal, President and Chief Executive Officer, who is acknowledged as a leader in the IT field.

Trigyn offers breakthrough products and innovative services and solutions that enable and drive customer-centric convergence in enterprises.

### **Convergent Commerce - the core value propositions**

- ❖ Delivery of projects and services that enable and drive Convergent Commerce.
- ❖ Addressing the challenges of Financial services, Telecom industries and IT departments of enterprises by leveraging and applying their:
  - Domain expertise
  - Functional know-how
  - Our knowledge of specific technologies
- ❖ Building up a significant and skilled resource base to respond to the shortage of IT resources.

## **BREAKTHROUGH PRODUCTS - INNOVATIVE SERVICES:**

Trigyn products and solutions include Apollo - a convergent billing system; eVector - a mobile enablement product; SavvyFusion - Trigyn's eCRM product; Akcelo - a component-based tool to accelerate eBusiness application development; Web solutions that include developing and optimizing Internet strategy, developing infrastructure architecture, net branding, information and interface design, content management and graphic design; Professional services; I-Trade, I-Futures and the Global Financial Trading Suite.

## **A GROWING LIST OF SATISFIED CLIENTS**

The client list reads like the "who's who" of today's industrial world. It includes companies like Hewlett Packard, Y-Axis, TWI Interactive, Charles Stanley, Nokia, Vodafone, Talkcast, Credit Suisse First Boston, Solomon Smith Barney, HSBC, Systemax... and many more.

## **2. SYSTEM STUDY AND ANALYSIS**

### **2.1 EXISTING SYSTEM**

There is no existing system for knowledge management. Because of this around 98 percent of the users spend enormous amount of time looking for documents instead of reviewing them for the knowledge they need. Many times, because of the inability to find documents, user's don't even try. This results in a lower quality of service and impaired decision-making.

Many organizations claim that knowledge is their number-one asset. Therefore it is vital that files be handled efficiently. Thus a necessity araised for the development of a web-based knowledge management system.

### **2.2 PROPOSED SYSTEM**

This system is developed to improve the efficiency, effectiveness of the company to gain a competitive advantage and become more profitable. An effective knowledge management system can change the nature of the organization by providing the ability to quickly and accurately retrieve the knowledge wanted in terms of electronic files.

A file can be a text document, executable software, picture, or any type of format data. The standard method of managing files is to store the files in the directory system on either a user's desktop computer(distributed file storage) or network or network server(centralize file storage). The disadvantage of this method is that often it is not an efficient way to find files by navigating through the directory structure, because the directory hierarchy cannot appropriately represent the nature of a file and the relationship among different files.

Thus the links are used to describe and organize multiple collections of notes for multiple users. By following the attributes of links, users can easily navigate to particular notes.

### **2.3 REQUIREMENTS ON NEW SYSTEM**

The main functions required for the knowledge management system are as follows.

#### **Identify User**

In order to protect user's privacy and control sharing among users, we need to be able to identify the person using the system. This identification is accomplished by verifying User ID and Password. However, before a user can logon to the system, the information about the user has to be setup by the system administrator. A person with administrator's privilege will be able to manage users account.

Once the user has been setup and identified by the system, he or she can manipulate notes and their links in the system, including uploading /searching/downloading notes and creating/exploring links.

### **Upload Note**

This is the basic step to create a collection of notes. The user can upload any note on local machine to the system through the Internet/Intranet connection. There will be certain restriction on the total size of the user's uploading notes, which is preset by the system administrator.

In the process of uploading, the user should be able to create a profile for the uploading note, including File Name, Description, Subject, Category, keywords and decide whether or not share the note with other users in the system.

### **Search Note**

The user will not be aware of the actual storage location of the uploading note. Therefore, the system has to support searching for notes by multiple means commonly used by the target user population.

- ❖ Search by Name
- ❖ Search by Description
- ❖ Search by Keywords
- ❖ Search by Owner

- ❖ Search by Category
- ❖ Search by Subject
- ❖ Search by Creation Date
- ❖ Search by Domain (private or public)

### **Download Note**

Once the user finds the note, he or she can choose to download the note to the local computer in order to view/edit/print the note.

There should be two modes of downloading: Read-Only or Read/Write. The owner of a note can download the note in either of the modes; others can only download the note in Read-Only mode. If the user uploads a revised note to the system with its original name, the original one in the system should be kept unchanged, a new file should be created on file server, and a version-typed link should be automatically created between these two notes. Or the user can submit a different file name and explicitly specify a version-typed link for the two documents.

The use of Read/Write downloading mode should be to notify other users of the system when they browse or download a note in such a mode that the document may be under changing and ask them whether or not they want to receive the notification of update via E-mail when the new version is available .

## Create Link

This is one of the most important tasks to accomplish note organization in the system. User should be able to create links among all of his/her own notes and other users' public notes by simply indicating a source and a destination.

There should be two kinds of link in the system: Public Link and Private Link, which should be visible to everyone in the system and the owner only respectively. The public links among notes forms the Public Domain, which is accessible to everyone, and the private links forms the Private Domain, which is only accessible to the owner and is different from user to user. So the web of notes in this system should be composed of one public domain plus many private domains.

At the same time, in order to make the knowledge management more efficient, the user can define Type for each link . Link types can be defined according to the need of the organization.

Some of the types will be:

- ❖ A is new version of B, which is used as version control;
- ❖ A is comment on B, which is used as annotation;
- ❖ A is part of B, which may provide the structural information;
- ❖ A is result of B, which may provide work-flow information;

## **Explore Link**

Once a note has been selected, user should be able to explore links that connect the note with other notes in the collection. Links can be explored in the following ways:

- ❖ Explore by Keyword
- ❖ Explore by Owner
- ❖ Explore by Link Type
- ❖ Explore by Creation Date
- ❖ Explore by Domain (public vs. private)
- ❖ Explore by Direction (forward vs. backward)

## **2.4 User characteristics**

The users fall under 3 categories.

### **Administrator :**

One who administers the system on a regular basis.

### **Knowledge Generator :**

Organizer who takes care of the content to be published on KMS.

### **User :**

Users will be of 2 types

- ❖ Internal Users(Includes all employee's on roll)
- ❖ External Users(Customers, Vendors etc.,)

### **3. PROGRAMMING ENVIRONMENT**

#### **3.1 HARDWARE CONFIGURATION**

Hardware specifications are as listed below:

Processor	:	Intel Pentium III
Clock Speed	:	667 MHZ
Main Memory	:	512 MB
Cache	:	256 KB
Hard Disk	:	20 GB
Floppy Disk Drive	:	1.44 MB
CD-ROM Drive	:	48x-Creative
Display Type	:	SVGA Color Monitor.
Mouse	:	Logitech Mouse.
Keyboard	:	104 Standard
Printer	:	HP Laser Jet 8000 Series PCL 6

### **3.2. DESCRIPTION OF SOFTWARE & TOOLS USED**

Platform	:	Windows NT
Application Server	:	JRun
Database Used	:	MS SQL-Server 7.0
Web-Technologies Used	:	HTML, Javascript, Jsp, Servlets.

#### **Windows NT**

Windows NT is a network operating system with multi user, multitasking, multithreading operating system. It is secured enough to operate. The performance of Windows NT Workstation 4.0 makes it an ideal choice for today's business and organizations. The advanced security features of Windows NT Workstation 4.0 can be used in a variety of network environments.

#### **Jrun**

It is helpful in securely designing and implementing any Web application, regardless of the platform. Allaire's JRun 3.0 boasts support for today's hottest server-side Java technologies such as EJB 1.1 and JMS 1.0, as well as easy installation and true clustering support in the Enterprise Edition. Moreover, although its tight integration with JRun Studio 3.0 prevents similar integration with other development environments.

## **MSSQL-Server 7.0**

KMS (Knowledge Management System) uses Microsoft SQL-Server as a back end. This is relational database management system that helps to process the data without any redundancy. Version 7.0 was also constructed to provide more flexibility and power, while at the same time retaining the ease of use that makes SQL Server a hit in shops that aren't blessed with strong DBA support.

## **HTML**

Hyper Text Markup Language is used to design static web pages. It follows a standard of SGML (Standard General Markup Language). Web pages that are developed using this language can be transferred across the net. HTML is understandable by all the existing browsers.

## **Javascript**

This is used mainly for client-side validations . Javascripts are used to generate dynamic pages , inorder to respond to user actions .

## **JSP**

Java Server Pages is used to develop dynamic web pages. These pages are used when the design of a web page is more than the functionalities it provide. JavaServer Pages (JSP) technology allows web developers and designers to rapidly develop and easily maintain, information-rich, dynamic

web pages that leverage existing business systems. As part of the Java family, JSP technology enables rapid development of web-based applications that are platform independent. Java Server Pages technology separates the user interface from content generation enabling designers to change the overall page layout without altering the underlying dynamic content.

Java Server Pages technology is an extension of the Java Servlet technology. Servlets are platform-independent, 100% pure Java server-side modules that fit seamlessly into a web server framework and can be used to extend the capabilities of a web server with minimal overhead, maintenance, and support. Unlike other scripting languages, servlets involve no platform-specific consideration or modifications; they are Java application components that are downloaded, on demand, to the part of the system that needs them. Together, JSP technology and servlets provide an attractive alternative to other types of dynamic web scripting/programming that offers platform independence, enhanced performance, separation of logic from display, ease of administration, extensibility into the enterprise and most importantly, ease of use.

### **Servlets**

KMS (Knowledge Management System) also uses servlets to do back end process. Since the servlets are much useful in processing the information at the backend they are used in between the JSP and the database.

Java Servlet technology provides web developers with a simple, consistent mechanism for extending the functionality of a web server and for accessing existing business systems. A servlet can almost be thought of as an applet that runs on the server side -- without a face. Java servlets have made many web applications possible.

Servlets are the Java platform technology of choice for extending and enhancing web servers. They provide a component-based, platform-independent method for building web-based applications, without the performance limitations of CGI programs. And unlike proprietary server extension mechanisms (such as the Netscape Server API or Apache modules), servlets are server- and platform-independent. This leaves us free to select a "best of breed" strategy for our servers, platforms, and tools.

## 4. SYSTEM DESIGN & DEVELOPMENT

### 4.1 INPUT DESIGN

Input design is the part of the overall system design that requires careful attention. It is the point of contact of users with the computer system and so it is prone to error. If the input data is incorrect, then processing the output will magnify these errors.

Javascript provides excellent user friendly features. These features help data entry to be easy and comfortable to the user. Input screens have been designed in such a way as to carry out the requisite validation checks, provide online help and display appropriate error messages. The following are some constraints used in input design.

1. Specifying maximum length for each field.
2. Specifying the format for the data fields which are entered.

The input for each module is mentioned below:

#### **Problem Repository**

This section is concerned with submitting the resolved, unresolved problems and viewing all the submitted problems. The input parameters for posting a problem are as follows:

- ❖ Problem statement.
- ❖ Sub category.
- ❖ Project.
- ❖ Technology used.
- ❖ Languages.
- ❖ Tools used.
- ❖ Solutions.
- ❖ Keywords.
- ❖ Priority.

Once all these inputs are given the problem is uploaded. It can be viewed by the users of the system.

### **Documents**

This section is used to view, upload & download the documents.

To upload a document the input parameters are as follows:

- ❖ File location (The user can choose the location with the BROWSE button.)
- ❖ Keywords. All these inputs are given and the document is uploaded which can be viewed by all the users of the system.

## **Downloads**

This section is used to view, share the useful study materials, etc for the members of the organization and to view the top downloads of those materials.

To share a useful material the input parameters are as follows:

- ❖ Subcategory.
- ❖ File location (The user can choose the location with the BROWSE button.)
- ❖ Description.
- ❖ Keywords.

All these inputs are given and the material is uploaded which can be viewed by all the users of the system.

## **Components**

This section consists of the information about the components of the company and the external components, i.e., Trigyn components and External components.

To upload a component in any of the categories the input parameters are as follows:

- ❖ Component name.
- ❖ Version.
- ❖ Technology used.

- ❖ Languages used.
- ❖ System requirements.
- ❖ Design(File location can be choosed with the BROWSE button.)
- ❖ Brief description.
- ❖ Keywords.

All these inputs are given and the component is uploaded which can be viewed by all the users of the system.

### **Utilities**

This section consists of the information about the utilities of the company and the external utilities,i.e., Trigyn utilities and External utilities.

To upload a utility in any of the categories the input parameters are as follows:

- ❖ Utility name.
- ❖ Version.
- ❖ Technology used.
- ❖ Languages used.
- ❖ System requirements.
- ❖ Design(File location can be choosed with the BROWSE button.)
- ❖ Brief description.
- ❖ Keywords.

All these inputs are given and the utility is uploaded which can be viewed by all the users of the system.

## 4.2 OUTPUT DESIGN

Output is the most important and direct source of information to the user. Efficient output design should improve the system relationship with the user and help in decision-making. Output from the system is either by screen or by hardcopies. Display on the screen is for timely reference whereas hardcopy outputs are permanent and help a great deal for future reference.

The output of each module is mentioned below :

### **Problem Repository**

The view section of problem repository gives the information about the posted resolved and unresolved problems. The output parameters are as follows:

- ❖ Project
- ❖ Technology used.
- ❖ Languages.
- ❖ Tools used.
- ❖ Solutions.
- ❖ Contact person id..

## Documents

The **view** section of documents gives the document details.

The output parameters are as follows:

- ❖ Document name.
- ❖ Date of creation.
- ❖ Contact person.

The users can also download the document if they find it useful to them.

## Downloads

The **Top Downloads** section of downloads displays the most commonly used materials by the members of the organization.

The output parameters are as follows:

- ❖ File name.
- ❖ Description.
- ❖ Date of creation.
- ❖ Contact person.

## Components

On selecting the component to be viewed, the following are the output parameters.

- ❖ Component name.
- ❖ Version.
- ❖ Date of creation.
- ❖ Technology used.
- ❖ Languages.
- ❖ System requirements.
- ❖ Description.
- ❖ Design document name.
- ❖ Contact person.

## Utilities

On selecting the utility to be viewed, the following are the output parameters.

- ❖ Utility name.
- ❖ Version.
- ❖ Date of creation.
- ❖ Technology used.
- ❖ Languages.
- ❖ System requirements.
- ❖ Description.
- ❖ Design document name.
- ❖ Contact person.

## Tech Experts

This is the technical expert search and displays the following output parameters.

- ❖ Expert id.
- ❖ Expert name.
- ❖ Department.
- ❖ Extension no.

## References

The **view** section of references gives the list of categories. On selecting a category the list of useful sites under them are displayed. The output parameters are as follows:

- ❖ URL name.
- ❖ Description.
- ❖ Contact person.

### 4.3 DATABASE DESIGN

The most important aspect of building an application package is database design. The major steps involved in database design are

- ❖ Identifying the data that is needed for each table and their relationships.
- ❖ Normalise the data.
- ❖ Verify the design.
- ❖ Implement the design.

Various tables that are needed for KMS are listed below.

#### Category

Column Name	Data Type	Constraint
Cat_id	Numeric (3)	Primary Key
Cat_name	Varchar (50)	
Cat_type	Varchar (25)	

### Components

Column Name	Data Type	Constraint
Comp_id	Numeric (4)	Primary Key
Component_name	Varchar(40)	
Subcat_id	Numeric (5)	Foreign key [SUB_CATEGORY (SUBCAT_ID)]
Cat_id	Numeric (3)	Foreign Key [CATEGORY (CAT_ID)]
Date_of_Creation	Smalldatetime(4)	
Technology	Varchar(200)	
Languages	Varchar(200)	
System_requirements	Varchar(200)	
Description	Varchar(2000)	
Design_doc_name	Varchar(60)	
Contact_person_eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Version	Varchar (10)	
Keywords	Varchar(200)	

### Comp\_user\_details

Eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Project_name	Varchar(40)	
Purpose	Varchar(50)	
Comp_id	Numeric (4)	Foreign key [COMPONENTS (COMP_ID)]
Date_of_request	Smalldatetime(4)	

## **Tech Experts**

This section is used to retrieve the list of experts in the field specified by the users. The input parameters are as follows:

- ❖ Language or Platform, Technology, etc., .
- ❖ Subcategory (which may be project or modules or proficiency.)

## **References**

This section is used to view, share a useful site for the members of the organization. To share a site the input parameters are as follows:

- ❖ Subcategory.
- ❖ URL name.
- ❖ Description.

### Documents

Column Name	Data Type	Constraint
Doc_id	Numeric (4)	Primary Key
Document_name	Varchar(40)	
Date_of_creation	Smalldatetime(4)	
Contact_person_eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Cat_id	Numeric (3)	Foreign Key [CATEGORY (CAT_ID)]
Keywords	Varchar(200)	

### Downloads

Download_id	Numeric (4)	Primary Key
Downloaded_date	Smalldatetime(4)	
Object	Varchar(50)	
Description	Varchar(200)	
Contact_person_eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Subcat_id	Numeric (5)	Foreign key [SUB_CATEGORY (SUBCAT_ID)]
Keywords	Varchar(200)	

### Downloads\_user\_details

Eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Project_name	Varchar(40)	
Purpose	Varchar(50)	
Download_id	Numeric (4)	Foreign key [DOWNLOADS (DOWNLOAD_ID)]
Date_of_request	Smalldatetime(4)	

### Emp\_detail

Column Name	Data Type	Constraint
Eid	Numeric (6)	Primary Key
Extension_no	Numeric (4)	
Department	Varchar(15)	
Ename	Varchar(40)	
Pwd	Varchar(20)	
Location	Varchar(20)	

### Emp\_project

Eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Project	Varchar(40)	
Modules	Varchar(200)	
Proficiency	Varchar(50)	

### Feedback

Eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Comments	Varchar(50)	

### url\_list

Column Name	Data Type	Constraint
Subcat_id	Numeric (5)	Foreign key [SUB_CATEGORY (SUBCAT_ID)]
Url	Varchar(50)	
Description	Varchar(100)	
Eid	Varchar(6)	Foreign key [EMP_DETAIL (EID)]

### Utilities

Util_id	Numeric(4)	Primary Key
Subcat_id	Numeric (5)	Foreign key [SUB_CATEGORY (SUBCAT_ID)]
Utility_name	Varchar(25)	
Description	Varchar(100)	
Contact_person_eid	Numeric (6)	Foreign Key [EMP_DETAIL (EID)]
Util_file_name	Varchar(60)	
Cat_id	Numeric (3)	Foreign Key [CATEGORY (CAT_ID)]
Languages	Varchar(200)	
Technology	Varchar(200)	
Keywords	Varchar(200)	
Date_of_creation	Smalldatetime(4)	

### Util\_user\_details

Eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Project_name	Varchar(40)	
Purpose	Varchar(50)	
Util_id	Numeric (4)	Foreign key [UTILITIES (UTIL_ID)]
Date_of_request	Smalldatetime(4)	

### Problemslist

Column Name	Data Type	Constraint
Prob_id	Numeric (4)	Primary Key
Subcat_id	Numeric (5)	Foreign key [SUB_CATEGORY (SUBCAT_ID)]
Problem	Varchar(2000)	
Project	Varchar(40)	
Technology	Varchar(200)	
Languages	Varchar(200)	
Tools	Varchar(100)	
Status	Char(2)	
Priority	Varchar(15)	
Contact_person_eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Keywords	Varchar(200)	

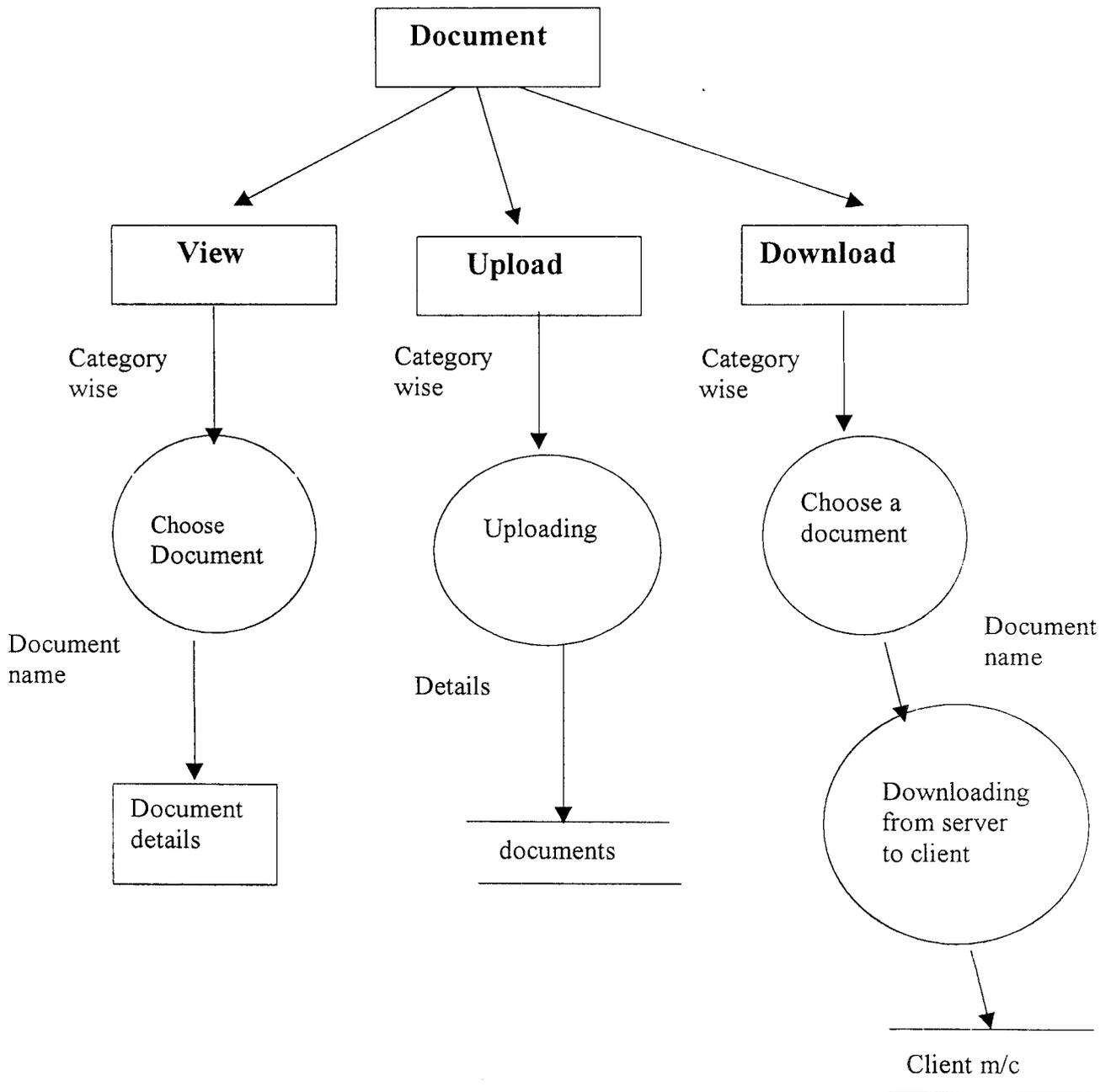
### Problem\_soln

Prob_id	Numeric (4)	Foreign key [PROBLEMSLIST (PROB_ID)]
Solution	Varchar(2000)	
Contact_person_eid	Numeric (6)	Foreign key [EMP_DETAIL (EID)]
Solution_level	Numeric (4)	

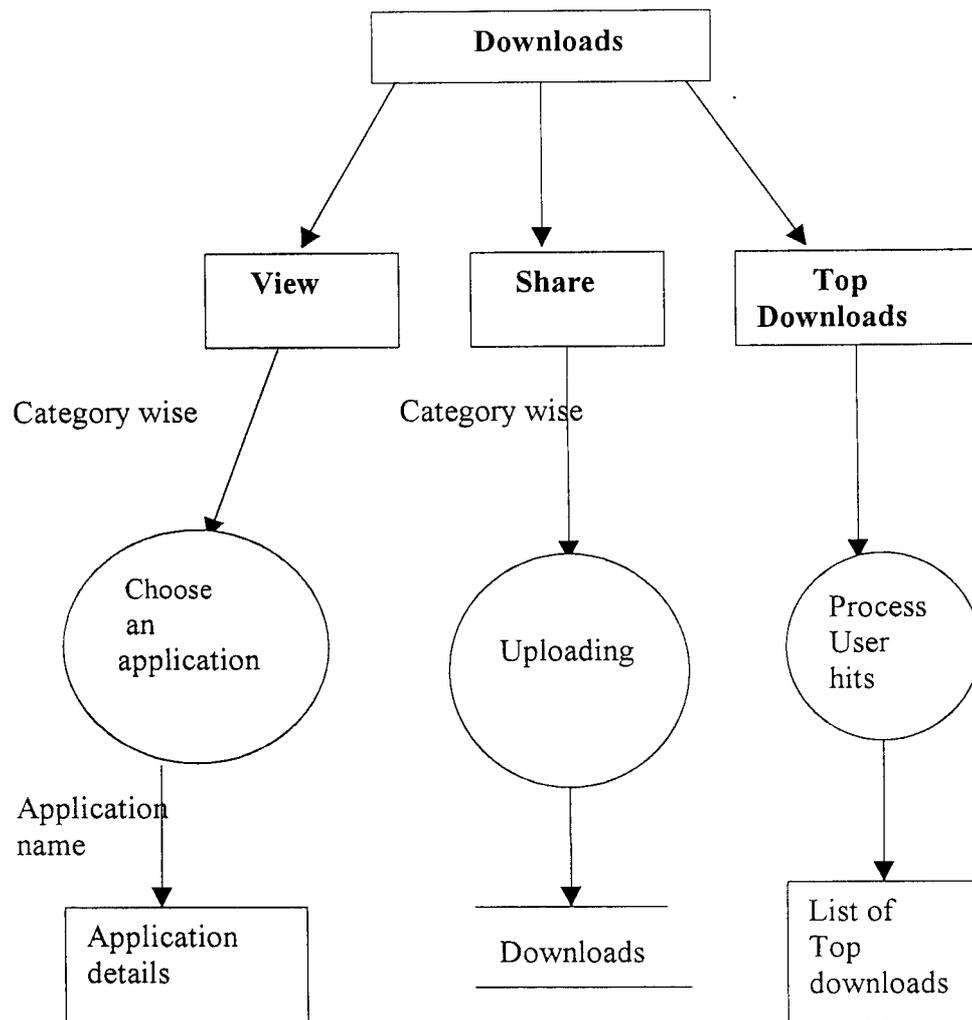
### Sub Category

Subcat_id	Numeric(5)	Primary Key
Cat_type	Varchar(50)	
Subcat_name	Varchar(20)	

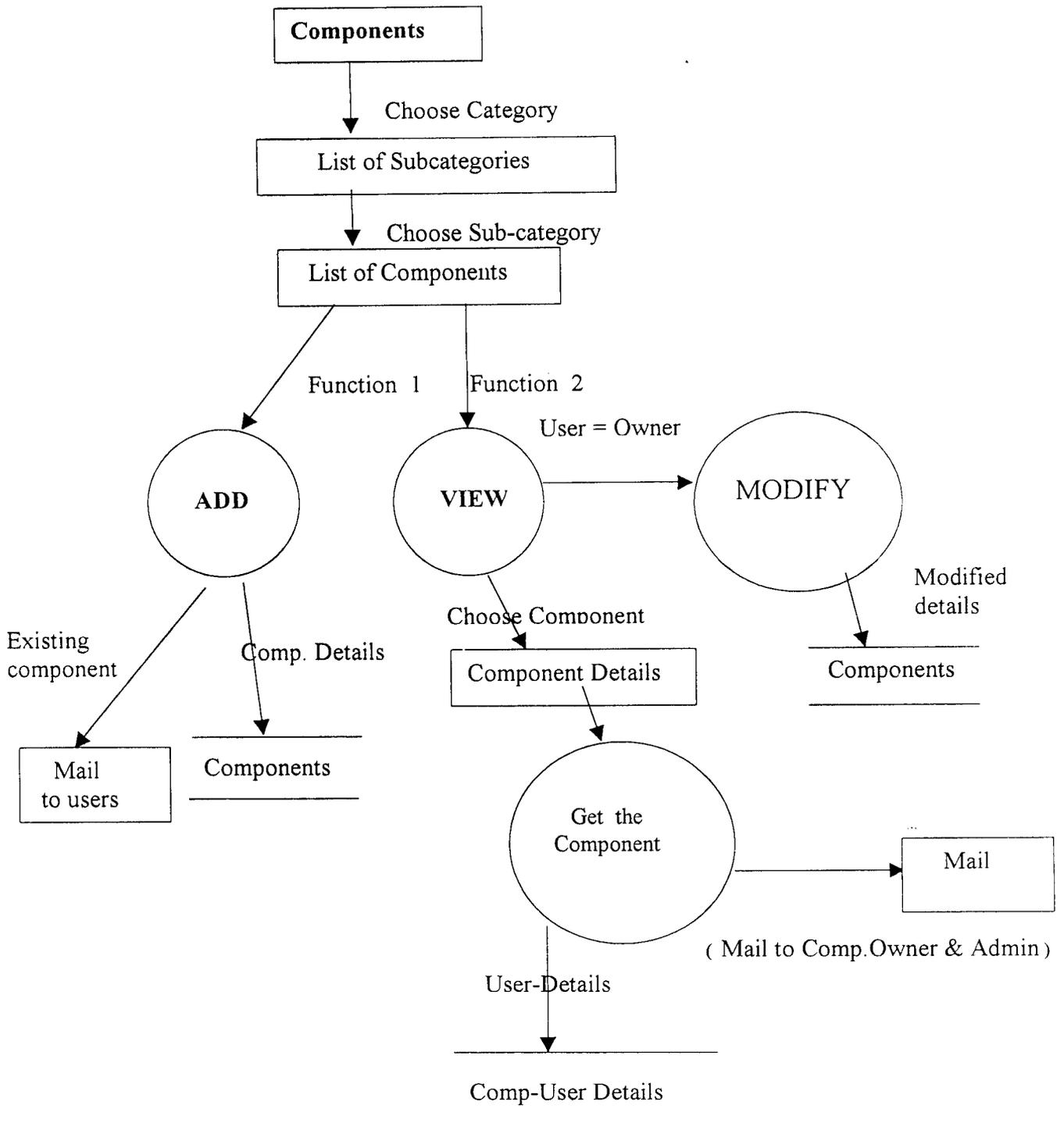
## b) Documents



c) Downloads

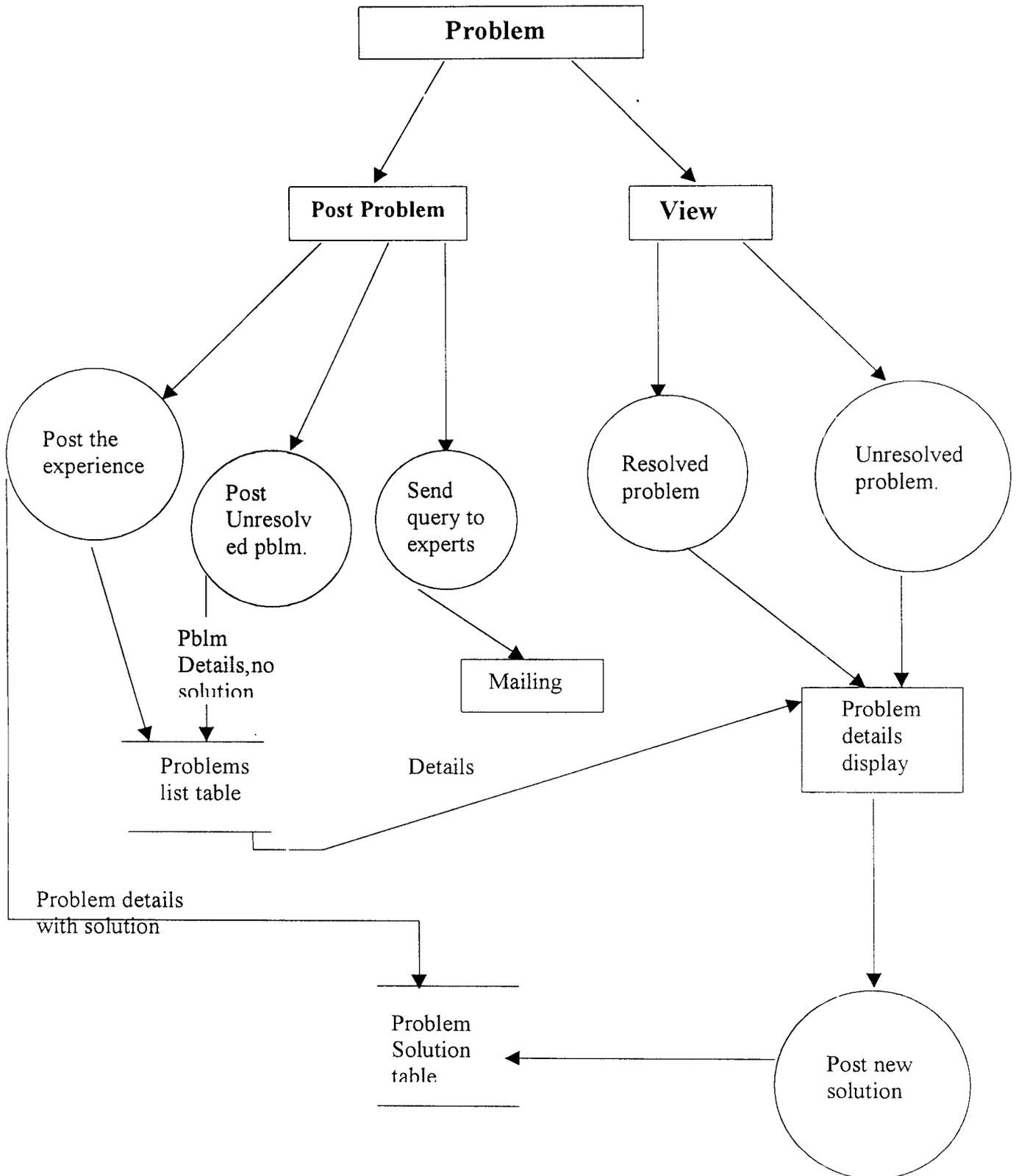


d) Components

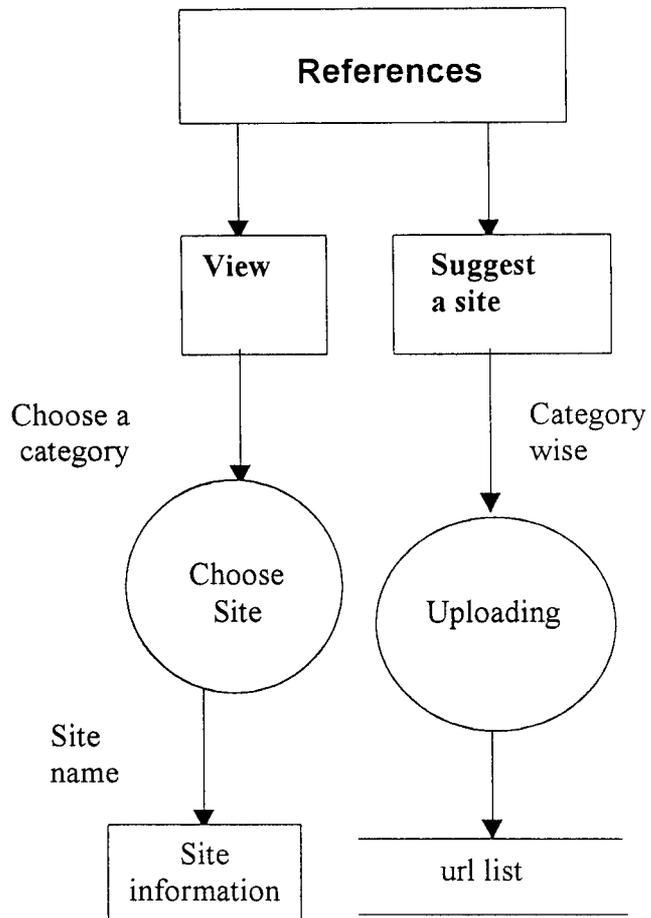


## 4.4 PROCESS DESIGN

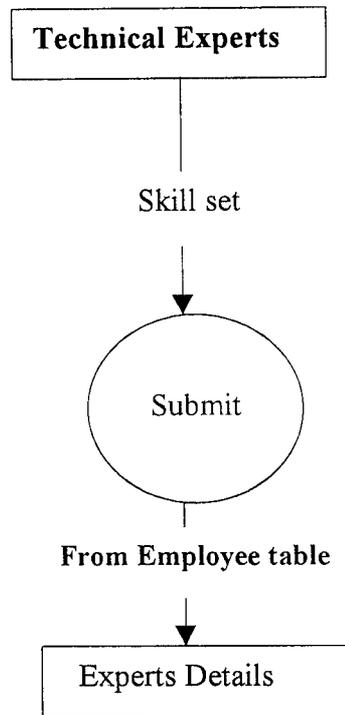
### a) Problem Repository



### e) References



**f) Technical Experts**



## **5. SYSTEM IMPLEMENTATION & TESTING**

### **5.1 SYSTEM IMPLEMENTATION:**

A crucial phase in the system development is the successful implementation of the new system. Implementation is the process of converting a new system design into an operational one. This involves creating computer compatible files to store the data, converting the data flow diagrams into coding and documentation.

Implementation is the stage of the project when the theoretical design is turned into a working system. At this stage the main workload, the upheaval and the major impact on the existing practice shifts to the user department. If the implementation stage is not carefully planned and controlled, it can cause chaos. Thus it can be considered to be most crucial stage in achieving a new successful system and in giving the users confidence that the new system will work and be effective. Implementation involves careful planning, investigation of the current system and its constraints on implementation, design of the methods to achieve the changeover, training of staff in the changeover procedures and evaluation of changeover methods. The first task is implementation planning, i.e., deciding on the methods and time scale to be adopted.

## 5.2 SYSTEM TESTING

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. Testing is a process of executing a program with the intent of finding an error.

KMS (Knowledge Management System) is tested thoroughly by

- ❖ Unit testing
- ❖ Integration testing
- ❖ Stress testing
- ❖ Validation testing

### Unit Testing

Each and every module implemented is thoroughly tested. In this testing each module of KMS(Knowledge Management System) is tested completely for interface, local data structures, boundary conditions, independent paths, error handling paths.

The following things are also tested

- ❖ Improper or inconsistent typing
- ❖ Erroneous initialization or default values
- ❖ Incorrect variable names
- ❖ Inconsistent data type
- ❖ Underflow, overflow, and addressing exceptions.

The following are the errors encountered .

- ❖ Validations for NOT NULL columns were not handled.
- ❖ The Tooltip texts indicating the constraints on the input to be given by the user were not handled.

These errors were overcome by taking respective actions.

### **Integration Testing**

Integration testing is a systematic technique for constructing the program structure while conducting tests to uncover errors associated with interfacing.

The need for integration is that

- ❖ Data could be lost across an interface.
- ❖ One module could have an adverse effect on another.
- ❖ Sub functions when combined may not produce the desired functions.

KMS (Knowledge Management System) is subjected to integration testing. Integrating step by step each module and then testing does integration testing. Each and every module of KMS after unit testing is integrated and tested for correctness.

The following are the errors encountered .

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- ❖ The Tooltip texts indicating the constraints on the input to be given by the user were not handled.

These errors were overcome by taking respective actions.

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## **Validation Testing**

Validation testing is concerned with evaluating a software product at the end of the development process to determine compliance with the product requirement. The plan and the procedure are designed to ensure that all functional characteristics are satisfied, all performance requirements are achieved, and other requirements like compatibility, error recovery and maintainability, etc., are met.

Validation for KMS is achieved through a series of black box tests that demonstrate conformity with requirements.

The following are the errors that were encountered during this testing.

- ❖ The output from a module was not transferred correctly to the other dependant module for which it is the input.
- ❖ There was difficulty in retrieving the session values.

### **Stress testing**

Stress testing executes the system in a manner that demands resources in an abnormal quantity, frequency or volume. It covers test cases that may require maximum memory or test cases causing excessive hunting for dissident data or input data rates could be increased by order of magnitude to determine how input functions could respond.

KMS is tested with stress data. The stress test is conducted with different test cases to evaluate the performance of the system. When the input was given such that it exceeds the maximum length of that attribute the system responded in an undesired manner.

Hence the corrective actions were taken to overcome such behaviors.

Once the planning has been completed, the major effort in computer department is to ensure that the programs in the system are working properly. At the same time the user department must concentrate on training user staff. when the staff has been trained, a full system test can be carried out, involving both the computer and clerical procedures. Education involves creating the right atmosphere and motivating the user. Staff education section should encourage participation from all sides.

The KMS software's analysis and design is converted into implementation with the help of language coding conventions. The depth of implementation is found out with the help of output from the implemented software. The main source for testing its accuracy is with the help of testing methodologies.

### **5.3 Refinements based on Feedback:**

The feedback from the users of the system and all visitors of the KMS (Knowledge Management System) is of great importance since it is they who ultimately going to use the system. This particular web site that has been developed has a large user base that are well educated and are capable of recommending valuable suggestions. A positive approach was made to all the suggestions made by the technical and non-technical reviews of our project. All the valid suggestions were taken into account and solutions were made found for them. The reasons for discarding the other recommendations were properly examined.

Some of the feedback is about the look and feel of the system. Look and feel of the system is changed once after suggestion is given. Additional helper function for navigation through the system is also done under the suggestion of the few people.

## 6. CONCLUSION

According to a study by Coopers and Lybrand, over 95% of company's knowledge is contained in electronic files. It is vital that the files be handled efficiently. Many organizations suffer from loss of knowledge and information overload.

Thus this project uses the latest technologies to create a Web-based knowledge management system . This can transform the unorganized file collections into knowledge accessible by any member of the organization who needs to use it , across any location.

## **7. SCOPE FOR FUTURE DEVELOPMENT**

The project has been successfully completed and all the requirements have been met. However, the possibilities for renovation like launch of further modules and additional functionalities are infinite and scope for development innumerable.

The project is now developed for the current location of the company and at any time in the future it can be enhanced to all the branches of Trigyn worldwide.

## **BIBLIOGRAPHY**

- ❖ Kipling, Rudyard."Implementing Knowledge Management System". Addison Wesley,Third Edition, 1999.
- ❖ Naughton,Patrick and Schildt, Herbert." The Complete Reference-Java 2.0". Tata McGraw-Hill Company, 2000.
- ❖ O'Neil, John. "Teach yourself Java". Tata McGraw-Hill Company, 1999.
- ❖ Moss Karl."Java Servlets". Tata McGraw-Hill, Second Edition.
- ❖ Goodwill James."Pure JSP".Techmedia publications, Second edition.

### **Web Sites Referred :**

- ❖ [www.microsoft.com](http://www.microsoft.com).
- ❖ [www.java.sun.com](http://www.java.sun.com)

# SAMPLE SCREENS

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### Welcome to 'Our Reuse Store' Sign up page.

As a signed user you can get the following features This innovative idea was coined by Ram and the people behind this magazine work are Sanman, Sadashiv and Sundar. This is a very innovative project designed just for the members of Trigyn. Through this project we have tried to gather all the information and problems which were faced by various people during their projects and how they came over the problem. It also aims at providing various useful sites, downloads, some tips, and reference materials in the form of white papers or websites, which aims at helping all those who need help while doing projects. It has also a unique feature called Newsgroup where any member of Trigyn can share his or her ideas with others in the newsgroup by just becoming the member for their particular field of interest. New groups can be included by entering the ids. Users can give their articles in a particular field and their article has every chance of getting selected for Article of the week column. This way people can exchange their ideas.

User Name(Enter Trigyn Email-ID)	Sukanya@NS
Password	
<input type="button" value="Sign Up"/> <input type="button" value="Clear"/>	

- Problem Repository
- Documents
- Downloads
- Components
- Utilities
- Tech Experts
- References
- Feedback

document13

### Document Details

Document name :	document1
Contact person id :	45766
Date of Creation :	2001-03-14 00:00:00

http://10.10.10.16:8100/kms/restore/kms/UserMainIndex.jsp



- Problem Repository
- Documents
- Downloads



- Components
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- Tech Experts
- References
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SubCategory	general
FILE	E:\jswdk\bin\info.xml
Description	This contains the Details to Connect to the Oracle Database.
Keywords	Database Connection XML File.

http://10.10.10.16:8100/kms/store/KmsUser/MainIndex.jsp



- [Problem Repository](#)
- [Documents](#)
- [Downloads](#)
- [Components](#)
- [Utilities](#)
- [Tech Experts](#)
- [References](#)
- [Feedback](#)

### Top Downloads

[trial.html](#)

this is to test a page with frames

1998-12-12

Suggested By: Avinash.KV

[try.html](#)

this is to test the expert search

2001-04-01

Suggested By: kothai.n

[reuseindex.html](#)

home page

2001-02-24

Suggested By: sukanya.ns

[festive.html](#)

new

2001-04-10

Suggested By: sukanya.ns

[HelloU.exe](#)

hello

2001-04-12

http://10.10.10.16:8100/kms/re-store/kmsUserMainIndex.jsp



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MODULES

java

Record No.	ExpertId	Expert Name	Department	Extension No.
1.	12321	Suneeth.Rao	EBU	1180

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linux utilities1

<b>Name of The Utility:</b>	linux utilities1
<b>Description:</b>	It is a linux utility
<b>Technology Used:</b>	client/ server
<b>Languages Used:</b>	java
<b>Design Document Name:</b>	Ak_Advertisement_Requirement&Specification
<b>Contact Person</b>	45766

linux utilities1

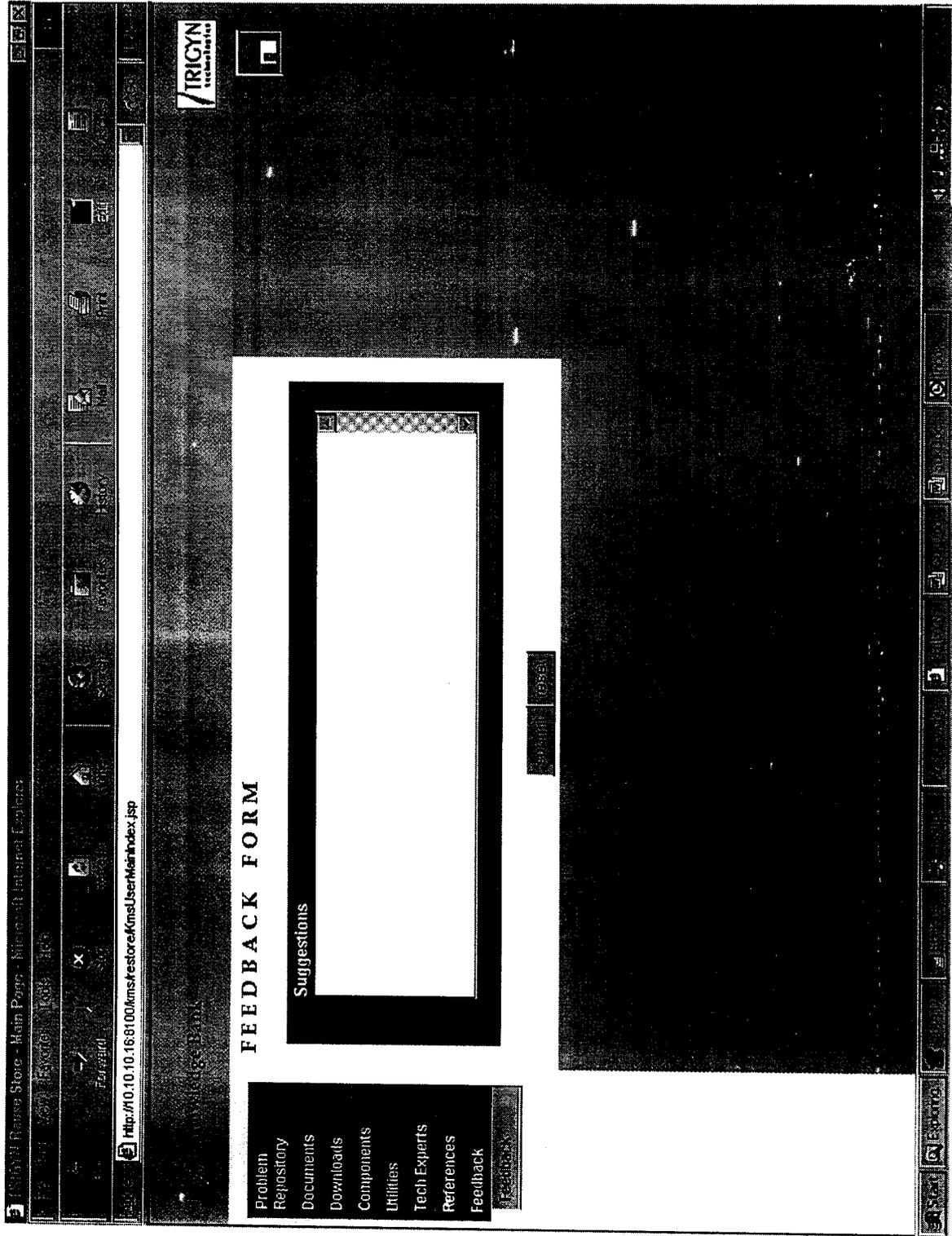
http://10.10.16.8100/kms/Store/KmsUserMainIndex.jsp



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- References

Feedback

SubCategory	Link1
URL Name	<a href="http://www.sys-con.com/java/current">http://www.sys-con.com/java/current</a>
Description	XML DOM Parser in Java.



Microsoft Internet Explorer - Main Page

http://10.10.10.16:8100/kms/estore/kmsdUserMainIndex.jsp



# FEEDBACK FORM

Suggestions

Large empty text input field for user suggestions.

- Problem Repository
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Submit Open