

Fall 12-1-2006

Project Content Management Tool

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PROJECT CONTENT MANAGEMENT TOOL

A graduate project submitted to Dakota State University in partial fulfillment of the

requirements for the degree of

Master of Science

In

Information Systems

December 2006

By

Ravikanth Reddy Singavaram

Project Committee:

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Dr.Stephen Krebsbach
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PROJECT APPROVAL FORM

We certify that we have read this project and that, in our opinion, it is satisfactory in scope and quality as a project for the degree of Master of Science in Information Systems.

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Abstract

Yash Solutions is an emerging leader in enterprise and datawarehousing solutions that facilitate corporations to operate more efficiently, implement IT solutions quickly keeping minimum system downtimes and enable to achieve their business objectives rapidly. The main problem for the employee who is working on different projects in a company is they get the email from their project members regarding the project start date, updates regarding the project and project end date. The employee needs to keep track of all the mails what he gets in order to be in touch with the other employees, if he needs to contact with the other projectmates. An Employee needs to keep all the mails in the inbox, sometimes there will be mails which are not related to his/her projects. The group head will be leading many projects, if he wants to see all the projects under him, when the deadlines are, he needs a detailed report like when the project closing date is and how many people are working under the project and so on. All of these features will be included in the "Project Management Tool".

Declaration

I hereby certify that this project constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions or writings of another.

I declare that the project describes original work that has not previously been presented for the award of any other degree of any institution.

Signed,

Ravikanth Reddy Singavaram

Table of Contents

Abstract.....	3
Declaration.....	4
Table of contents.....	5
List of figures	7
List of tables.....	10
1 Introduction.....	11
1.1 Company background.....	11
1.2 Statement of problem.....	12
1.3 Goals of the project.....	13
2 Analysis.....	14
2.1 Languages and technologies.....	14
2.2 Introduction to the web application development environment.....	15
2.3 HTTP (Hypertext Transfer Protocol).....	21
2.3.1 IIS 5.1 (Internet Information Services).....	22
2.3.2 IIS 5.1 Architecture overview.....	23
2.3.3 Installing IIS on windows XP professional.....	24
2.4 Active server pages.....	26
2.4.1 Client/Server Interaction for ASP.....	28
2.5 Communicating with database.....	29
2.5.1 ActiveX Data Objects (ADO).....	29

2.5.2 Accessing data stored in database from ASP page.....	30
2.5.3 Database.....	31
3 Database design.....	32
3.1 Table construction.....	35
3.1.1 Determine the tables needed.....	35
3.2 Database design.....	36
4 Application demonstration.....	46
5 Conclusion.....	77
6 References.....	78
Appendix A: Planning.....	79
A.1 Work breakdown structure.....	79
A.2 Gant chart.....	81
Appendix B: Code.....	82

List of Figures

Figure 2.1 Web application.....	16
Figure 2.1.1 Different layers.....	17
Figure 2.1.2 Web application tools.....	18
Figure 2.1.3 Web browser.....	19
Figure 2.3.2 IIS overview.....	20
Figure 2.3.3 Administrative tools.....	25
Figure 2.3.3.1 Internet information services.....	25
Figure 2.4.1 Client/Server interaction for ASP.....	28
Figure 2.5.1 Hierarchy of data access.....	30
Figure 3.0 Database system environment.....	34
Figure 3.1.1 E-R diagram.....	36
Figure 3.1 Tbl_project_category table design.....	37
Figure 3.2 Tbl_group table design.....	37
Figure 3.3 Tbl_group_project table design.....	38
Figure 3.4 Tbl_group_type table design.....	38
Figure 3.5 Tbl_menu table design.....	39
Figure 3.6 Tbl_page_layout table design.....	39
Figure 3.7 Tbl_project table design.....	40
Figure 3.8 Tbl_project_qr table design.....	40
Figure 3.9 Tbl_Qr_attachments table design.....	41
Figure 3.10 Tbl_Qr_details table design.....	41
Figure 3.11 Tbl_Qr_group table design.....	42
Figure 3.12 Tbl_Qr_seq table design.....	42
Figure 3.13 Tbl_Qr_subcategory table design.....	43
Figure 3.14 Tbl_Qr_task table design.....	43
Figure 3.15 Tbl_Qr_user table design.....	44
Figure 3.16 Tbl_securty table design.....	44
Figure 3.17 Tbl_task_user table design.....	45
Figure 3.18 Tbl_user table design.....	45
Figure 3.19 Tbl_user_group table design.....	46

Figure 3.20 Tbl_user_project table design.....	46
Figure 4.1 Home page.....	47
Figure 4.2 User login page.....	48
Figure 4.3 Forgot Password Page.....	49
Figure 4.4 Password sent page.....	49
Figure 4.5 Home page with correct user login.....	50
Figure 4.6 Personal home page for user.....	50
Figure 4.7 Open a QR.....	53
Figure 4.8 Add QR.....	53
Figure 4.9 Find a QR page.....	54
Figure 4.10 Find a QR search page.....	54
Figure 4.11 Find a QR result page.....	55
Figure 4.12 View a QR.....	56
Figure 4.13 Results of view a QR.....	56
Figure 4.14 View a QR-comment.....	57
Figure 4.15 View a QR-edit.....	57
Figure 4.16 View a QR- assign a task.....	58
Figure 4.17 View a QR-print page.....	58
Figure 4.18 Project menu.....	59
Figure 4.19 Create a project page.....	59
Figure 4.20 Create a project result page.....	60
Figure 4.21 Alter a project page.....	60
Figure 4.22 Edit in alter a project.....	61
Figure 4.23 view all projects.....	61
Figure 4.24 View open projects.....	62
Figure 4.25 View closed projects.....	62
Figure 4.26 Change QR security page.....	63
Figure 4.27 Change QR security example.....	63
Figure 4.28 Task menu.....	64
Figure 4.29 Assign a task.....	64
Figure 4.30 Assign a task example.....	65

Figure 4.31 Open tasks for me Page.....	65
Figure 4.32 Close a task.....	66
Figure 4.33 Edit a task.....	66
Figure 4.34 User menu.....	67
Figure 4.35 Create a user.....	67
Figure 4.36 Alter a user.....	68
Figure 4.37 Create user example.....	68
Figure 4.38 View user details.....	69
Figure 4.39 Group menu.....	70
Figure 4.40 Create a group.....	70
Figure 4.41 Create group example.....	71
Figure 4.42 Alter a group.....	72
Figure 4.43 Create a group.....	72
Figure 4.44 View group details.....	73
Figure 4.45 Recent QR's.....	73
Figure 4.46 All projects.....	74
Figure 4.47 View all projects.....	74
Figure 4.48 View all projects.....	75
Figure 4.49 Executive projects.....	75
Figure 4.50 Logout.....	76
Figure A.1 Gant chart.....	81

List of Tables

2.3.2. IIS 5.1 Architecture overview.....	22
2.4.2 Differences between client-side scripting and server-side ASP code.....	29

1. INTRODUCTION

1.1. Company Background

Yash Solutions is an emerging leader in enterprise and data warehousing solutions that allow corporations to operate more efficiently and quickly implement IT solutions, keeping minimum system downtimes and rapidly achieve their business objectives. Guided by a philosophy of attracting and retaining professionals who possess well-rounded domain and technical expertise, Yash Solutions builds teams of focused professionals who capitalize on their combined experiences to deliver practical solutions.

Our proven software development methodology includes a focus on key business drivers, emphasis on analysis, and reusable design elements. Yash Solution's domain knowledge, technical expertise and creative minds offer adaptive solutions that evolve with the changing requirements of global business.

Yash Solutions brings customers the best of both worlds: the savings and superior quality of offshore development, the immediacy and trust. It delivers the full range of software development, business process services, where business and technology strategies converge. Yash Solutions is an expert at managing highly complex, long-term engagements that its clients require. It can execute because of its unique, client-focused culture. It has the continuity and management depth to make sure that the technology supports their business and is backed up with the resources to deliver the cost, speed, and world-class process advantages of high offshore ratios.

1.2. Statement of Problem

The goal of this project is to develop a centralized web based project management content tool system for Yash Solutions. The main problem for the employee who is working on different projects in a company is they get the email from their project members regarding the project start date, updates regarding the project and project end date. The employee needs to keep track of all the mails that he gets in order to be in touch with the other employees, if he needs to contact with the other projectmates. An Employee needs to keep all the mails in the inbox, sometimes there will be mails which are not related to his/her projects. The group head will be leading many projects, if he wants to see all the projects under him, when the deadlines are, he needs a detailed report like when the project closing date is and how many people are working under the project and so on. All of these features will be included in the “Project Management Tool”.

This project report explains the details of the problems that forced Yash Solutions to develop this application, details of project management approach adopted, and the technological approach adopted to solve the problems. The report also explains the database designs of various modules and the usage of the application.

This project establishes a powerful and permanent system that can be used for effectively tracking Yash Solutions Projects. The project completely differs from the existing system. The existing system uses manual approach but the proposed project used modern technology for conducting the operations.

1.3. Goals of the Project

- Scheduling of the projects will be easy.
- Security Level will depend on the designation of the employee.
- Employee can open and close the tasks assigned to him.
- CEO and Project Managers will be having the full access to the application.
- Only the employees who are working on the projects will be able to communicate.
- Employee can open and close the tasks assigned to him.
- If the any project is finished then the project access will be removed to the employees in order to avoid the junk.

2. ANALYSIS

2.1. Languages and Technologies

Languages and technologies used in this design include :

- Relational Database Design: A relational database management system (DBMS) manages the stored data using only its relational capabilities.
- SQL (Structured Query Language): Language used to create, modify, retrieve and manipulate data.
- HTML(Hyper Text Markup Language): A text file containing markup tags which tells the Web browser how to display the page.
- JavaScript: A scripting language which consists of lines of executable computer code. JavaScript programs are run in the web browser on the client side rather than on the server.
- ASP (Active Server Pages): Server-side technology for making dynamic and interactive web pages.

Hardware and Software

Hardware and software used in this design paper:

Hardware

Pentium Mobile Processor

512 MB RAM

40 GB Hard Drive

Software

Microsoft Windows XP Professional Edition

SQL Server 2000

Visual Interdev Editor 6.0

IIS 5.0 server

ASP 3.0

Internet Explorer Browser 6.0

2.2. Introduction to the Web Application Development Environment

The Web is a collection of standard protocols, or instructions, sent back and forth over the Internet to gain access to information. The Internet, on the other hand, is a "network of networks" -- a more physical entity.

A Web application has six basic functions as follows:

1. **Provide a Query Interface** – Web applications are used as an interface for entering data. Data entered by user is called a “query” or a “request”. This query or request is used to obtain service on the web server machine.
2. **Transmit User-Defined Query** – After collection of data, it is sent to a web-server.
3. **Perform Server Side Processing** - Web server processes data using “middleware”. Middleware is software that serves as an intermediary between systems software and an application.

4. **Message Data** – The user-defined request specifies how the data should be manipulated on server.
5. **Transmit Query Results** - Processed data is returned to the client.
6. **Perform Client Side Processing** – Data is returned to client which may be a simple HTML page or it involves manipulation of the data.

A Web application can be described in the following steps

Consider a ASP page request in which a user

- 1) Instructs a web browser to
- 2) Contact a web server using the HTTP protocol, and
- 3) Ask it for a specific document
- 4) For which the server processes the request
- 5) Returns the requested data to be
- 6) Displayed by the web browser.

Generic web application work flow diagram:

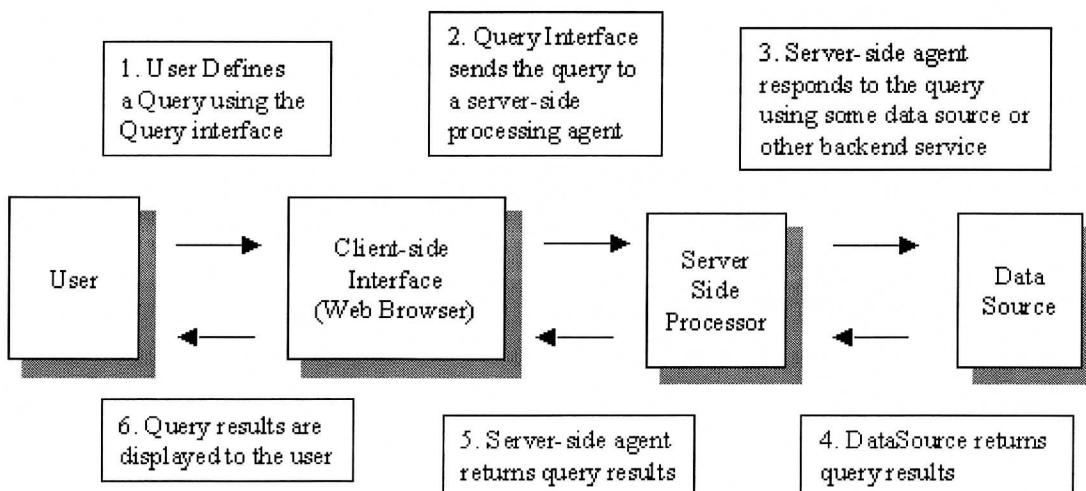


Figure 2.1 Web application

In the web application work flow, technologies are used to perform various tasks.

Technology will fall into the category of

- 1) The display layer (GUI)
- 2) The communication layer
- 3) The middleware layer or
- 4) The data layer.

This is illustrated in figure 2.1.1.

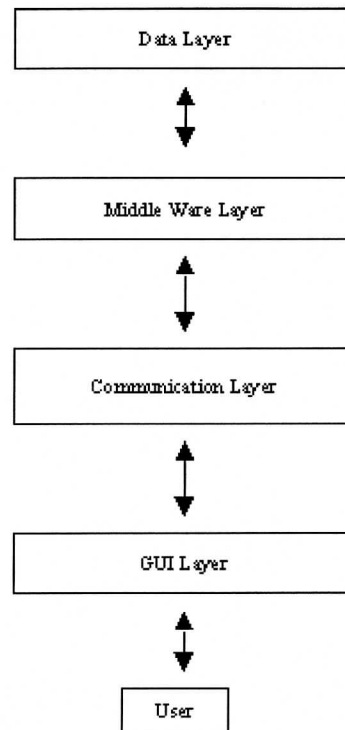


Figure 2.1.1 Different Layers

Figure 2.1.2 below illustrates different sections in a typical web application and technologies which fall into these sections.

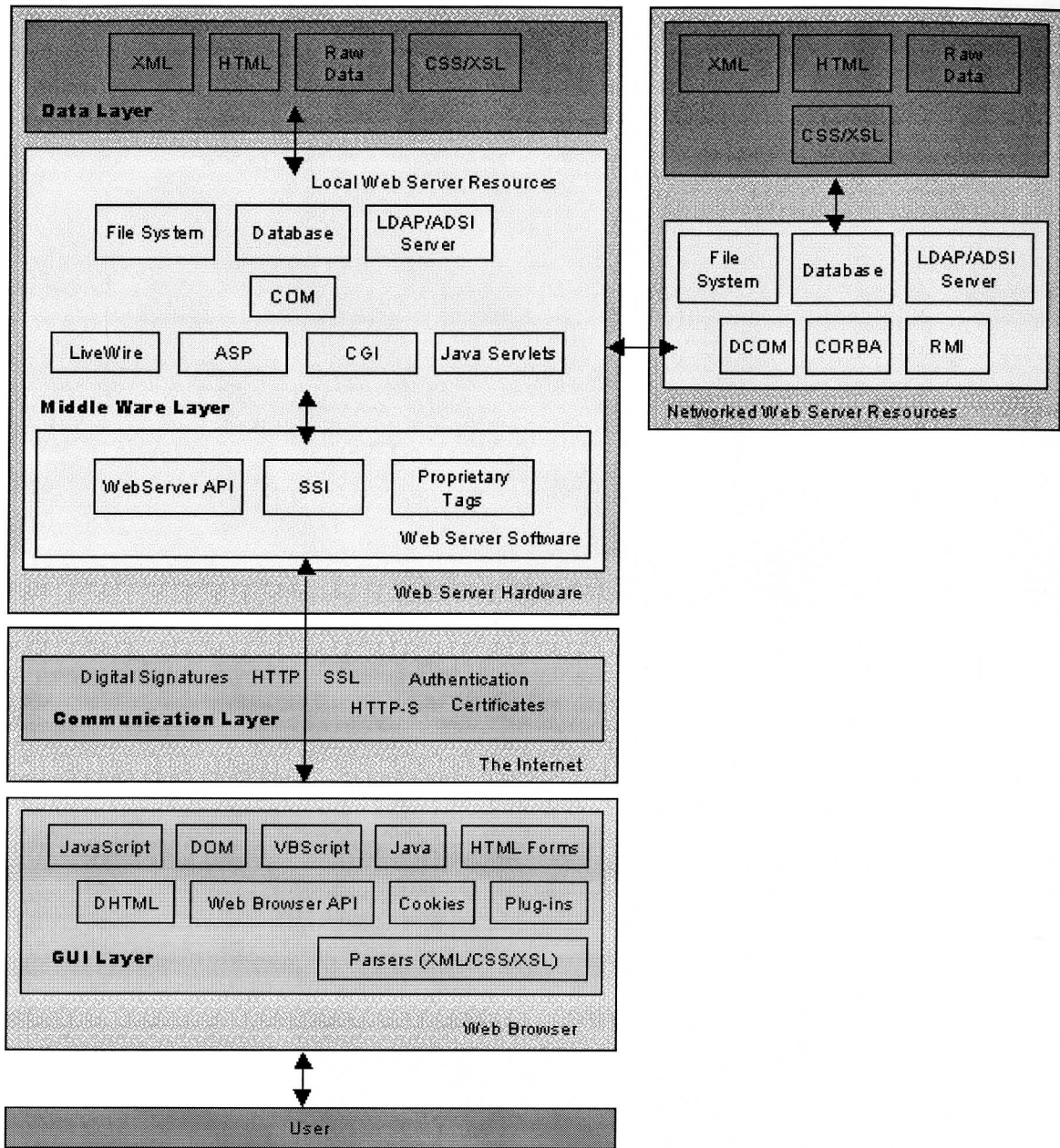


Figure 2.1.2 Web Application tools

Web Browser

A web browser is a software program that knows how to contact a web server (using the HTTP protocol), request a given document from that web server, and display that document returned by the server to a human user as shown in figure 2.1.3.

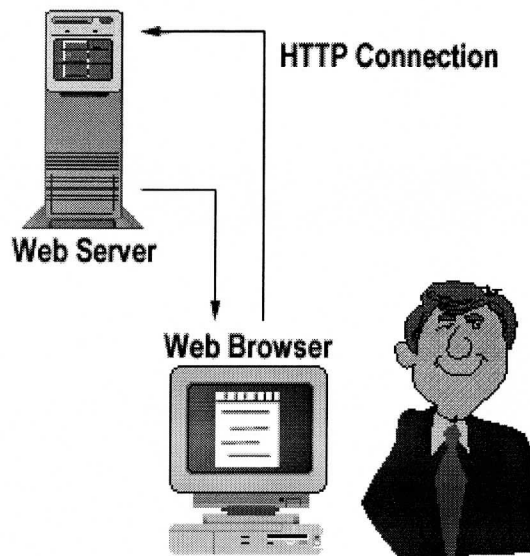


Figure 2.1.3 Web Browser

Client-Server Model

In a client-server model, two computers work together to perform a task. A client requests some needed information from a server computer. The server returns this information, and client acts on it.

A Web Server is a computer that contains all the pages for a particular website and has special software installed to send these web pages to web browsers that request them.

1. The client (the Web browser) locates the Web server specified by the first part of URL ..
2. The client then requests the static Web page specified by the second part of the URL .
3. The Web server sends the contents of that particular file to the client in HTML Format.
4. The client receives the HTML sent by the server and renders for user.

2.3 HTTP (Hypertext Transfer Protocol)

Http is an Internet client/server protocol designed for the delivery of hypertext materials such as html, images, and sounds. HTTP defines a set of rules regarding how messages and other data should be formatted and exchanged between servers and browsers.

The protocol is basically stateless, a transaction consisting of:

- Connection** The establishment of a connection by the client to the server - when using TCP/IP port 80 is the well-known port, but other non-reserved ports may be specified in the URL;
- Request** The sending, by the client, of a request message to the server;
- Response** The sending, by the server, of a response to the client;
- Close** The closing of the connection by either both parties.

HTTP does not attempt to retain information, or state, about the current connection after a request completes since it is stateless protocol. When a browser needs to obtain a resource, it sends the server an HTTP Request message containing various pieces of information telling the server the nature of the request and resource or document that it needs. When the server receives and processes this request, it generates an HTTP response message containing the contents of the requested document. Once this sequence of events completes the connection terminates and the server waits for the next request.

2.3.1 IIS 5.1 (Internet Information Services)

Internet Information Services (IIS) provides an integrated, reliable, scalable, secure, and manageable Web server capability over an intranet, the internet, or an extranet. IIS is a tool for creating a strong communications platform of dynamic network applications.

Internet: An interconnected system of networks that connects computers around the world via the TCP/IP protocol.

Intranet: An intranet is a private network that is contained within an enterprise.

Extranet: An extranet is a private network that uses the Internet protocol and the public telecommunication system to securely share part of a business's information or operations with suppliers, vendors, partners, customers, or other businesses.

2.3.2. IIS 5.1 Architecture Overview

Figure 2.3.2 below illustrates architectural features for IIS 5.1 version.

Feature	IIS 5.1
Platform	Windows XP Professional
Architecture	32-bit and 64-bit processors
Application process model	TCP/IP kernel Inetinfo.exe runs in-process applications (low isolation) Multiple DLLhost.exe processes run pooled-process or out-of-process applications (medium or high isolation)
Metabase configuration file type	Binary
Security	Windows authentication SSL Kerberos Web Server Certificate Wizard
Remote administration	No HTMLA Terminal Services
Administration technologies	ADSI and ABO
Cluster support	Windows Support
WWW services	IIS on Windows XP Professional (IIS is not installed by default)

Figure 2.3.2 IIS Overview

2.3.3 Installing IIS on Windows XP Professional

Internet Information Server 5.1 (IIS) is configured from Windows XP Professional installation CD by following the instructions below: -

1. Place the Windows XP Professional CD-Rom into your CD-Rom Drive.
2. Open '*Add/Remove Windows Components*' found in '*Add/Remove Programs*' in the '*Control Panel*'.
3. Place a tick in the check box for '*Internet Information Services (IIS)*'.
4. IIS installation can be checked on machine in a web browser by typing *http://localhost* (you can substitute '*localhost*' for the name of your computer) into the address bar of your web browser by viewing homepage. IIS documentation will appear.
5. Default web directory to place your web site in is '*C:\inetpub\wwwroot*', but if want to over write the IIS documentation found in this directory one can set up their own virtual directory through the '*Internet Information Services*' console.
6. The '*Internet Information Services*' console is found in the '*Administration Tools*' in the '*Control Panel*' under '*Performance and Maintenance*'.
7. Double-click on the '*Internet Information Services*' icon shown in figure 2.3.3.



Figure 2.3.3 Administrative tools

8. To add a new virtual directory right click on 'Default Web Site' and select 'New', followed by 'Virtual Directory', from the drop down list as shown in figure 2.3.3.1.

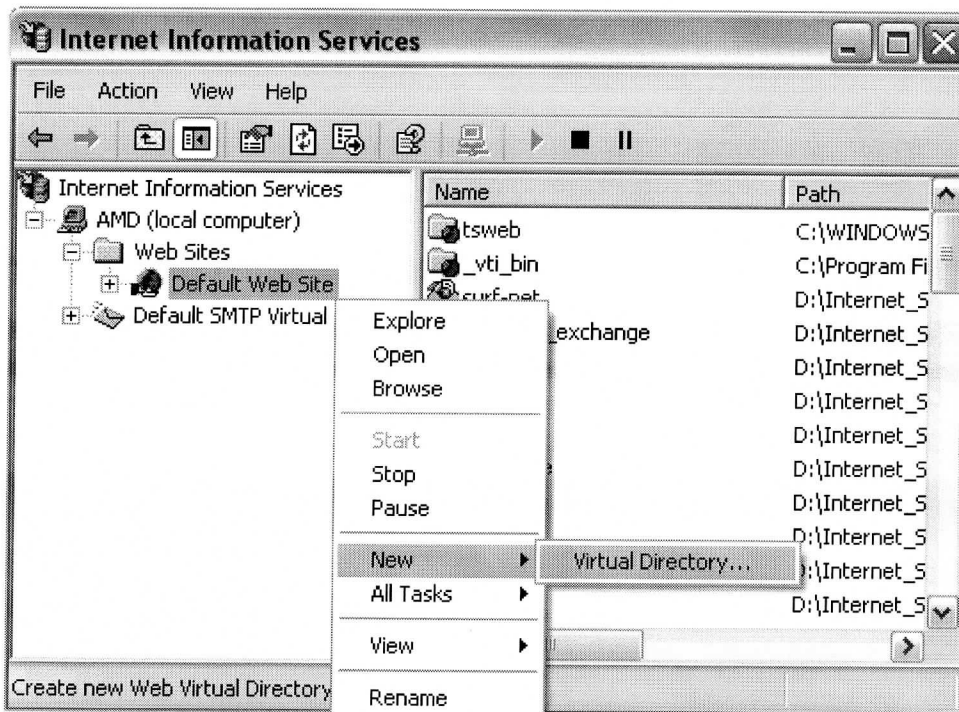


Figure 2.3.3.1 Internet Information Services

9. One can see the 'Virtual Directory Creation Wizard' from the first screen click the

'next' button.

10. Screen is prompted to type in an *'Alias'* by which one can access the virtual directory from the web browser.
11. Once the virtual directory is created one can view the web pages in the folder by typing *'http://localhost/aliasName'* (where *'aliasName'* is, place the alias you called the virtual directory) into the address bar of your web browser (you can substitute *'localhost'* for the name of your computer if you wish).

2.4. Active Server Pages

Active Server Pages (ASP) is a technology that enables you to make dynamic and interactive web pages. ASP uses server-side scripting to dynamically produce web pages. ASP contains two parts: programmatic code and embedded HTML. **Scripting language** is a particular syntax used to execute commands on a computer. The default scripting language used for writing ASP is VBScript; one can use other scripting languages like JScript .

An ASP file contain **server scripts**, surrounded by the delimiters `<%` and `%>`. `@Language` directive informs the Web server what scripting language the ASP page is using. HTML tags are surrounded by the two characters `<` and `>` called angle brackets. The `<html>` tag tells browser that this is the start of an HTML document. The last tag in document is `</html>` tag tells browser that this is the end of the HTML document. The text between the `<body>` tags is the text that will be displayed in browser.

ASP pages have the extension .asp instead of .htm, when a page with the extension .asp is requested by a browser the web server knows to interpret any ASP contained within the web page before sending the HTML produced to the browser. This way all the ASP is run on the web server and no ASP will ever be passed to the web browser. An ASP page cannot be run by just simply opening the page in a web browser because the page must be requested through a web server that supports ASP, this is why ASP stands for Active Server Pages, no server, no active pages.

2.4.1. Client/Server Interaction for ASP

When a browser requests an ASP page the following steps occur:

1. The client (the Web browser) locates the Web server specified by the first part of the URL
2. The client then requests the ASP page specified by the second part of the URL
3. The Web server reads the ASP file and processes the code.
4. After the ASP page has been completely processed by the Web server, the output is sent in HTML format to the client.
5. The client receives the HTML sent by the server and renders for user.

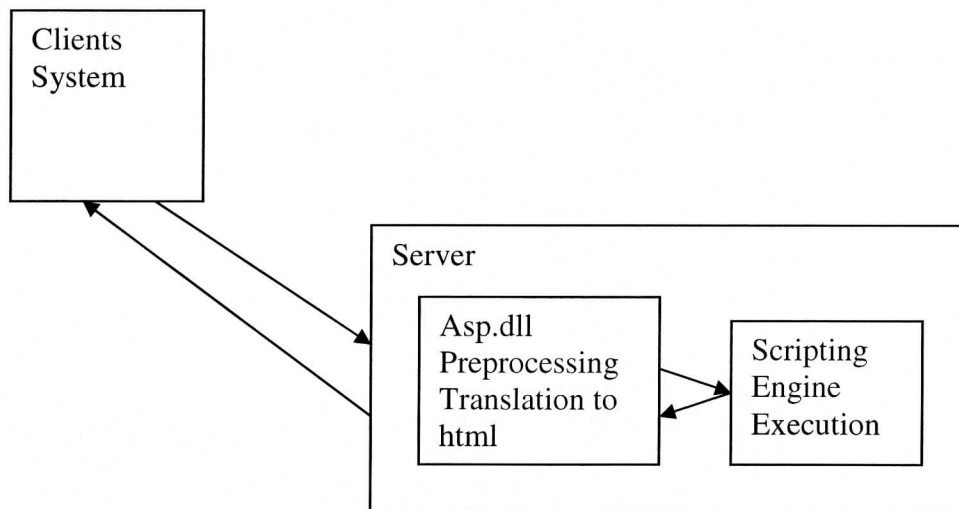


Figure 2.4.1 Client/Server Interaction for ASP

2.4.2. Differences between Client-Side Scripting and Server-Side ASP Code

Method	Differences
Client-side scripting	A client-side script is processed by client.
Server-side scripting	Server-side scripts are processed completely on web server. The client does not receive any code from server-side scripts; rather ,the client receives just the output of the sever-side scripts. Client-side scripts and server-side scripts cannot interact with one another because the client-side scripts are executed on the client, after the server-side scripts have finished processing completely.

2.5. Communicating with database

ASP uses ActiveX Data Objects to connect to databases. ActiveX Data Objects (ADO) is from Microsoft which enables a programmer writing Windows applications get access to a relational or non-relational base from both Microsoft and other database providers.

2.5.1. ActiveX Data Objects (ADO)

ActiveX Data Objects (ADO) is part of Microsoft's Universal Data Access Specification and can be used to access from different types of data sources no matter how the data in the data source is laid out. Using ODBC and OLEDB, ADO can be used to access data from any data source ADO provides programming interface to access data in a database as shown in figure 2.5.1. It is Microsoft technology installed automatically with IIS.

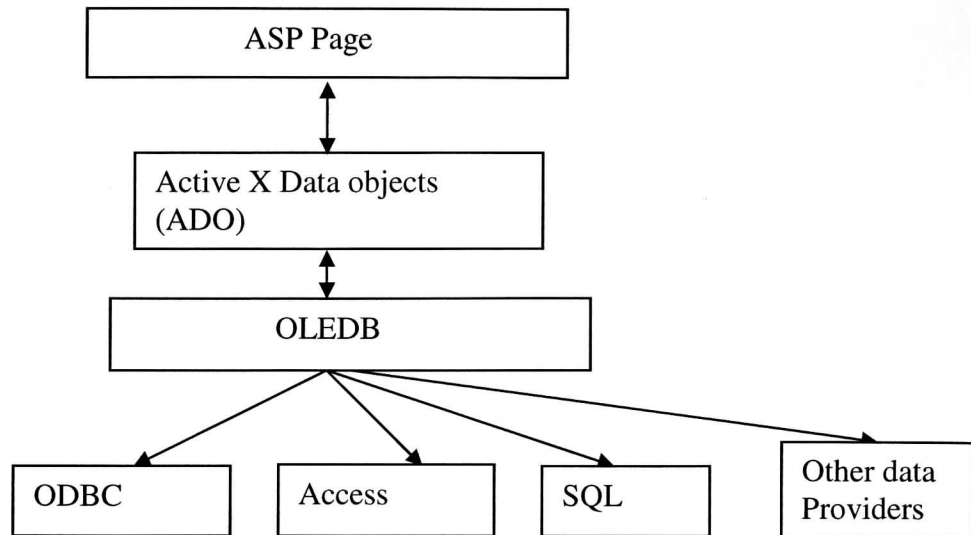


Figure 2.5.1 Hierarchy of data access

ODBC stands for Open Data Base Connectivity which provides an interface to connect to a database irrespective of programming languages and operating system.

COM (Component Object Model) is used to enable interprocess communication and dynamic object creation in any programming languages that supports the technology.

OLEDB stands for Object Linking and Embedding for Databases which is developed to overcome shortcomings of ODBC. It is Microsoft COM (Component Object Model) based data access object provides access to all types of data as well as disconnected data sources.

2.5.2. Accessing data stored in database from ASP page

Steps involved in accessing a database from an ASP page are:

1. Establish ADO connection to database.
2. Open database connection.
3. Create an ADO recordset. The Recordset Object contains a set of rows from a

table. It allows working with data in a table.

4. Open recordset object.
5. Manipulate data from recordset (reading, modifying, adding, deleting).
6. Close recordset.
7. Close connection

2.5.3. Database

SQL: Structured Query Language (SQL) is an interactive programming language used to send requests to the database. Using SQL data in the database can be easily manipulated and retrieved. SQL is also accepted universally by almost all Databases.

Data Layer: The data layer provides the storage platform. It contains the physical data that is used throughout the system. The data layer consists of a built in Microsoft SQL Server 2000. The DBMS in the data layer receives calls from the Business Layer and processes those calls and send back the appropriate data to the application layer.

SQL Server 2000: SQL Server is Microsoft's database management system, which accepts user calls in the form of SQL and processes those user calls and sends back the response to user. SQL Server is a very efficient and modern database management system, which provides many state of the art features like OLAP, Data Mining, Advanced Replication, and Distributed data processing. SQL Server is a fully Web-enabled database product that provides core support for Extensible Markup Language (XML) and the ability to query across the network

3. Database Design

A **database** is an organized collection of logically related data. Here data is referred as known facts. It can be of any size and varying complexity. For example in a salesperson's database, the data would include facts such as customer name, address, and telephone number. A database consists of objects such as tables, forms, queries and reports.

Table: A table is a set of data elements (cells) that is organized, defined and stored using a model of horizontal rows and vertical columns. A table has a specified number of columns but can have any number of rows. Here rows are records and columns are attributes.

Form: A set of attributes, in a predefined format, all based on a single database record.

Query: A database query is a specification of a result to be calculated from a database

Report: A set of attributes, in a predefined format, based on many unrelated database record.

Database Design:

Database design is a very important feature for any application. A good database design is the key to success of any application and also requires the designer to consider the information requirements and the organization's business rules.

A **database management system (DBMS)** is a collection of programs to create and maintain a database.

A **relational DBMS (RDBMS)** is a data management system which manipulates data as a collection of tables in which data relationships are represented by common values in related tables.

Properties of Relations:

1. Each relation (or table) in a database has a unique name;
2. An entry at the intersection of each row and column is atomic;
3. Each row is unique, no two rows in a relation are identical;
4. Each attribute within a table has a unique name;
5. The sequence of columns (left to right) is insignificant. The columns of a relation can be interchanged without changing the meaning or use of the relation;
6. The sequence of rows (top to bottom) is insignificant. As with columns, the rows of a relation may be interchanged or stored in any sequence.

An **entity** represents real-world objects in database. Each employee is an entity.

An **attribute** provides further description of an entity. For example employee salary

is an attribute for employee table.

A **relationship** is an association between entities.

A **database management system (DBMS)** is a collection of programs that enables users to create and maintain a database. The database and software (which is used to manipulate the database) together constitute a **database system** as shown in figure 4.0.

Users/Programmers

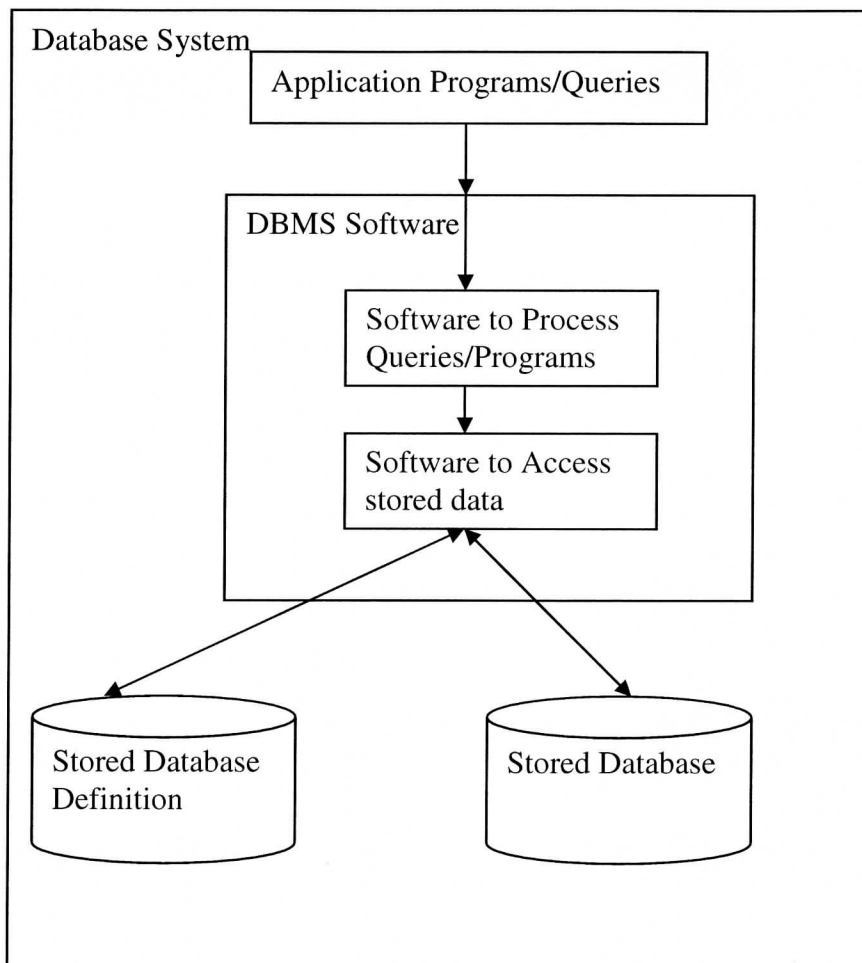


Figure 3.0 Database System Environment

3.1. Table Construction

A table is a collection of data about a specific topic. One or more tables can exist in a database. A table consists of records and fields.

3.1.1. Determine the Tables Needed

- The information to be stored in the database should be gathered and then divided into separate tables.
- The same information should not appear in more than one table in the database.

3.1.2. Determine the Fields Needed

- Each field should relate directly to the subject of the table; and
- The information should be broken down into its smallest parts.

TBL_PROJECT_CATEGORY

The Table Project category has all the information regarding the project categories like Project id,project category id,project category,project_category desc,project category status,project category date and project category date.

Column Name	Data Type	Length	Allow Nulls
PROJECT_ID	int	4	
PROJECT_CATEGORY_ID	int	4	
PROJECT_CATEGORY	varchar	50	✓
PROJECT_CATEGORY_DESC	varchar	400	✓
PROJECT_CATEGORY_STATUS	varchar	10	✓
PROJECT_CATEGORY_DATE	smalldatetime	4	✓
PROJECT_CATEGORY_MODIFIED_DATE	smalldatetime	4	✓

Figure 3.1 Tbl_project_category table design

TBL_GROUP

The TBL_GROUP has the information related to group id,groupname,group description,group author,group creation date,group modified date,group status and group type.This table is used for allocating different users to a perticular group.

Column Name	Data Type	Length	Allow Nulls
GROUP_ID	int	4	
GROUP_NAME	varchar	50	
GROUP_DESC	varchar	100	✓
GROUP_AUTHOR	int	4	✓
GROUP_CREATION_DATE	smalldatetime	4	✓
GROUP_MODIFIED_DATE	smalldatetime	4	✓
GROUP_STATUS	varchar	50	✓
GROUP_TYPE	int	4	✓

Figure 3.2 Tbl_group table design

TBL_GROUP_PROJECT

This contains the group id and project id for the project .

SQL Server Enterprise Manager - [Design Table 'TBL_GROUP_PROJECT' in 'pmdb' on '(local)']

Column Name	Data Type	Length	Allow Nulls
GROUP_ID	int	4	✓
PROJECT_ID	int	4	✓

Columns

Description
Default Value
Precision 10
Scale 0

Figure 3.3 Tbl_group_project table design

TBL_GROUP_TYPE

This table contains the type_id and type_desc for the project.

SQL Server Enterprise Manager - [Design Table 'TBL_GROUP_TYPE' in...]

Column Name	Data Type	Length	Allow Nulls
TYPE_ID	int	4	
TYPE_Desc	varchar	50	✓

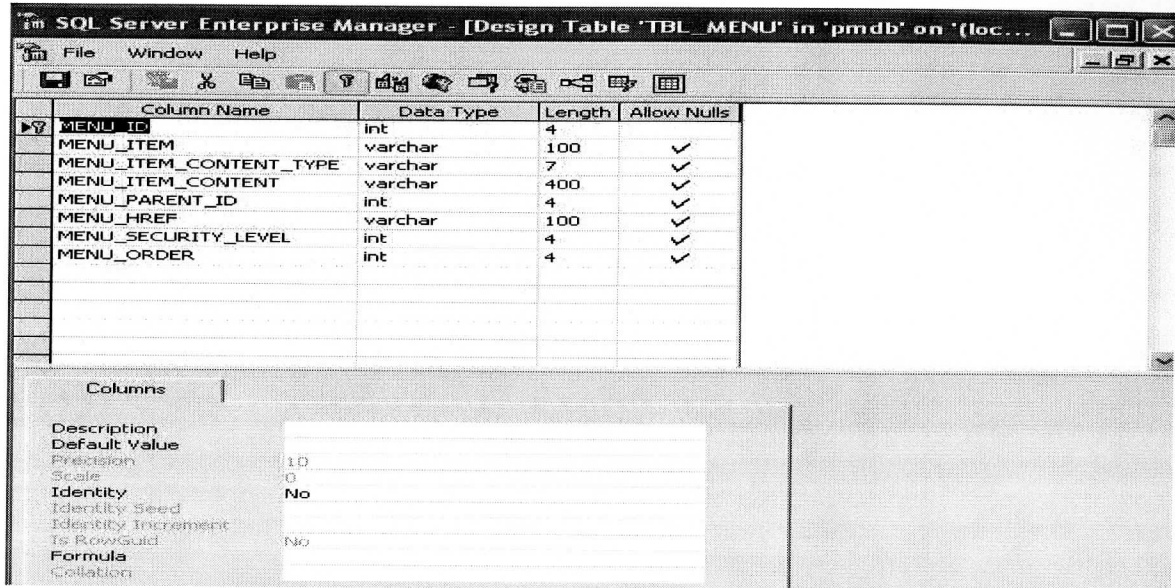
Columns

Description
Default Value

Figure 3.4 Tbl_group_type table design

TBL_MENU

The TBL_MENU contains fields menu_id,menu_item,menu_item_content_type, menu_item_content,menu_parent_id,menu_href,menu_security_level and menu_order.

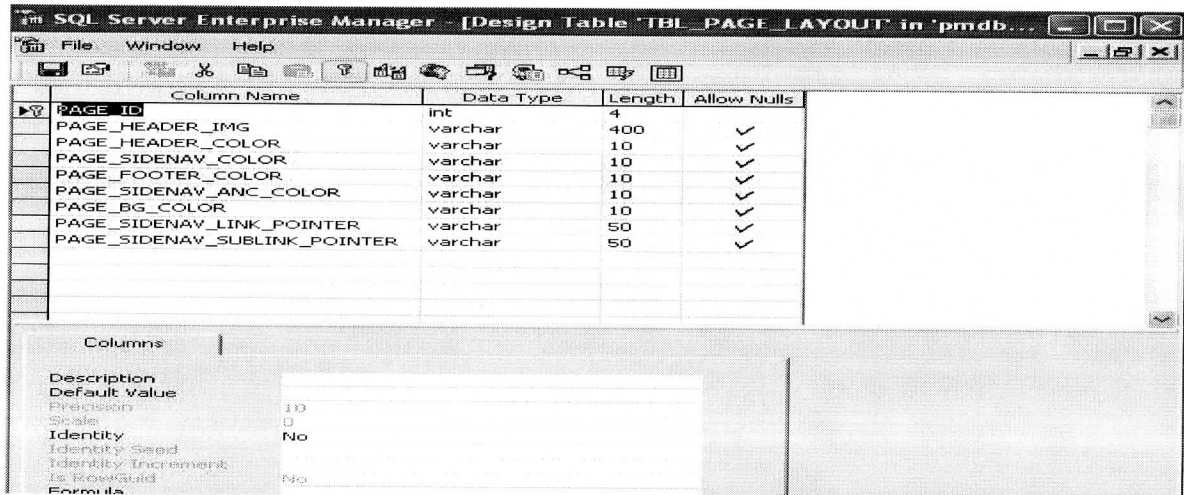


Column Name	Data Type	Length	Allow Nulls
MENU_ID	int	4	
MENU_ITEM	varchar	100	✓
MENU_ITEM_CONTENT_TYPE	varchar	7	✓
MENU_ITEM_CONTENT	varchar	400	✓
MENU_PARENT_ID	int	4	✓
MENU_HREF	varchar	100	✓
MENU_SECURITY_LEVEL	int	4	✓
MENU_ORDER	int	4	✓

Figure 3.5 Tbl_menu table design

TBL_PAGE_LAYOUT

The table contains page_id,page_header_img,page_header_color, page_sidenav_color, page_footer_color,page_bg_color,page_sidenav_link_pointer,page_sidenav_sublink_pointer. This table is being used for the layout of the page.



Column Name	Data Type	Length	Allow Nulls
PAGE_ID	int	4	
PAGE_HEADER_IMG	varchar	400	✓
PAGE_HEADER_COLOR	varchar	10	✓
PAGE_SIDENAV_COLOR	varchar	10	✓
PAGE_FOOTER_COLOR	varchar	10	✓
PAGE_SIDENAV_ANC_COLOR	varchar	10	✓
PAGE_BG_COLOR	varchar	10	✓
PAGE_SIDENAV_LINK_POINTER	varchar	50	✓
PAGE_SIDENAV_SUBLINK_POINTER	varchar	50	✓

Figure 3.6 Tbl_page_layout table design

TBL_PROJECT

This table contains project_id, project_name, project_author, project_creation_date, project_status, project_modified_date, project_due_date, project_start_date, project_date_c completed.

Column Name	Data Type	Length	Allow Nulls
PROJECT_ID	int	4	
PROJECT_NAME	varchar	100	✓
PROJECT_DESC	varchar	600	✓
PROJECT_AUTHOR	int	4	✓
PROJECT_CREATION_DATE	smalldatetime	4	✓
PROJECT_STATUS	varchar	10	✓
PROJECT_MODIFIED_DATE	smalldatetime	4	✓
PROJECT_DUE_DATE	datetime	8	✓
PROJECT_START_DATE	smalldatetime	4	✓
PROJECT_DATE_COMPLETED	smalldatetime	4	✓

Figure 3.7 Tbl_project table design

TBL_PROJECT_QR

The table TBL_PROJECT_QR contains qr_id, project_id, project_category_id, qr_author, qr_creation_date, qr_status, qr_subject, qr_due_date, qr_priority, qr_category_id. This table is used for storing the information of all the QR.

Column Name	Data Type	Length	Allow Nulls
QR_ID	varchar	100	
PROJECT_ID	int	4	✓
PROJECT_CATEGORY_ID	int	4	✓
QR_AUTHOR	int	4	✓
QR_CREATION_DATE	datetime	8	✓
QR_STATUS	char	10	✓
QR_SUBJECT	varchar	400	✓
QR_DUE_DATE	smalldatetime	4	✓
QR_PRIORITY	varchar	10	✓
QR_CATEGORY_ID	int	4	✓

Figure 3.8 Tbl_project_qr table design

TBL_QR_ATTACHMENTS

The table TBL_QR_ATTACHMENTS contains qr_id,qr_detail_id, qr_attchement.

This table is used to store the information regarding the qr attachemnts.

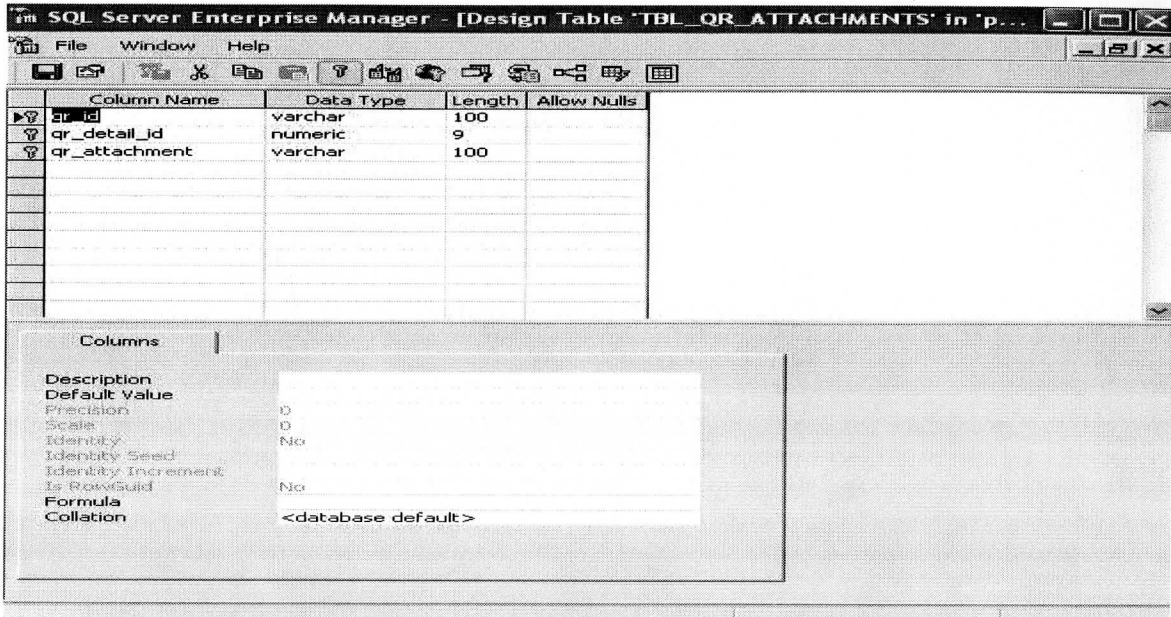


Figure 3.9 Tbl_qr_attachments table design

TBL_QR_DETAILS

The table TBL_QR_DETAILS conatins the qr_id,qr_detail_id,qr_detail_creation_date, qr_detail_modification_date, qr_detail_author, qr_detail, qr_detail2, qr_attachment01, qr_is_init_comment.This table is used to store the information of the qr details.

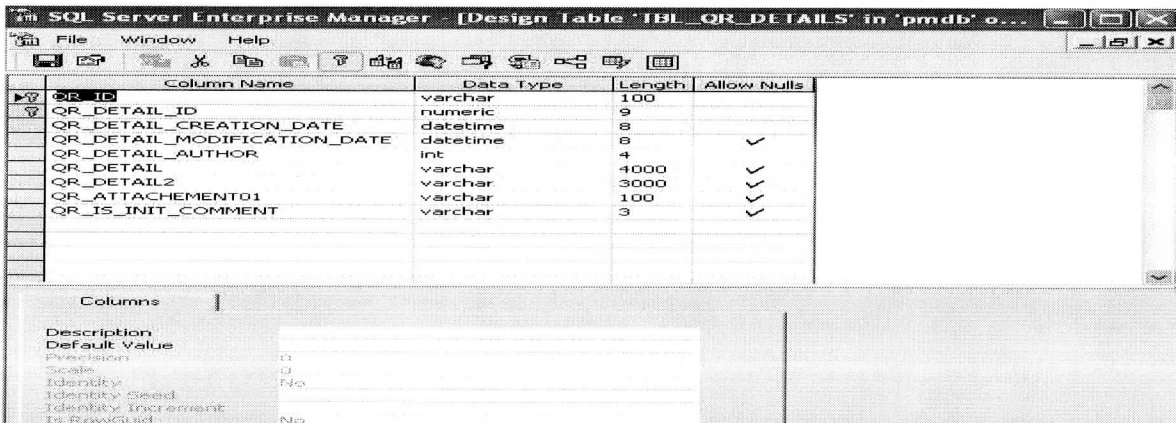
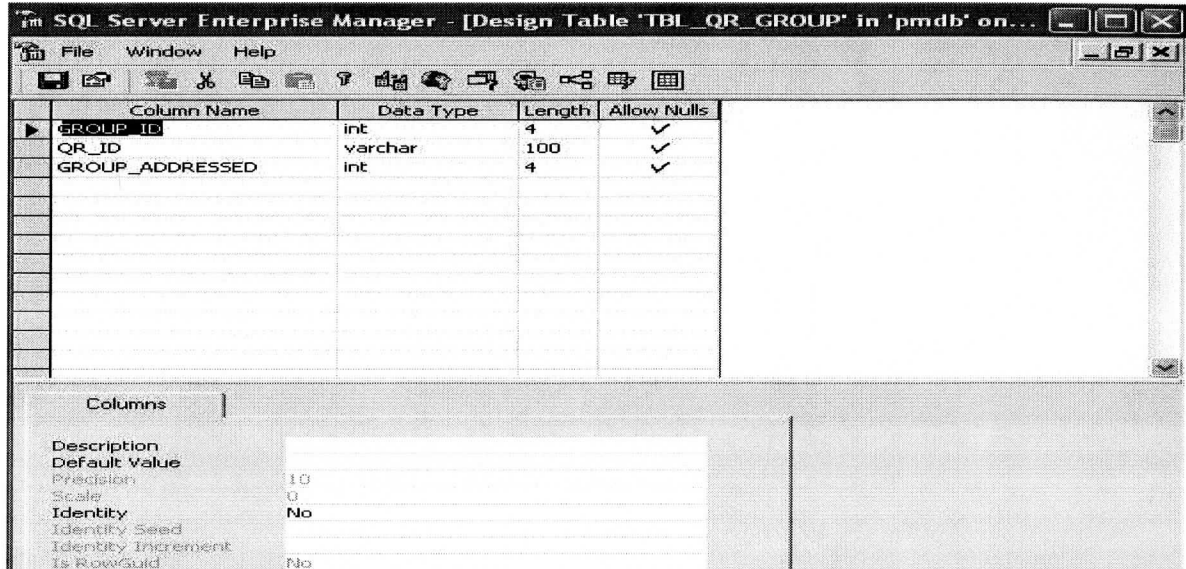


Figure 3.10 Tbl_qr_details table design

TBL_QR_GROUP

This table contains group_id, qr_id and group_addressed. This table is used to store the information regarding qr group.



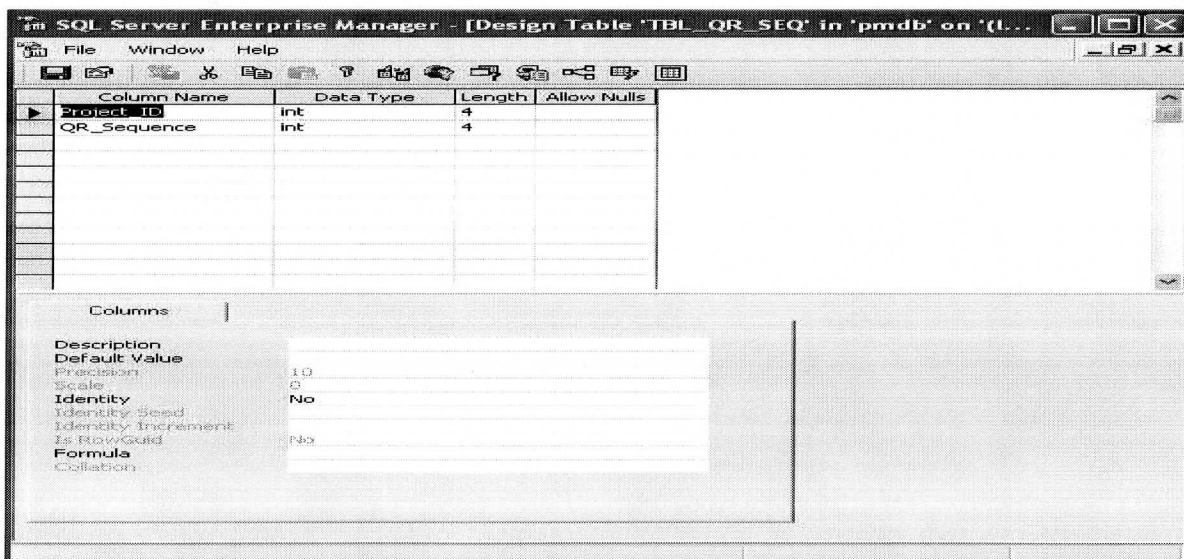
Column Name	Data Type	Length	Allow Nulls
GROUP_ID	int	4	✓
QR_ID	varchar	100	✓
GROUP_ADDRESSED	int	4	✓

Description	
Default Value	
Precision	10
Scale	0
Identity	No
Identity Seed	
Identity Increment	
Is RowGuid	No

Figure 3.11 Tbl_qr_group table design

TBL_QR_SEQ

This table contains the project_id and qr_sequence. This table is used to store the information qr sequence.



Column Name	Data Type	Length	Allow Nulls
Project_ID	int	4	✓
QR_Sequence	int	4	✓

Description	
Default Value	
Precision	10
Scale	0
Identity	No
Identity Seed	
Identity Increment	
Is RowGuid	No
Formula	
Collation	

Figure 3.12 Tbl_qr_seq table design

TBL_QR_SUBCATEGORY

This table TBL_QR_SUBCATEGORY contains qr_category_id, qr_category_desc. This contains information about qr category.

Column Name	Data Type	Length	Allow Nulls
QR_CATEGORY_ID	int	4	
QR_CATEGORY_DESC	varchar	100	✓

Columns

Description	
Default Value	
Precision	10
Scale	0
Identity	No
Identity Seed	
Identity Increment	
Is Rowguid	No
Formula	

Figure 3.13 Tbl_qr_subcategory table design

TBL_QR_TASK

The table TBL_QR_TASK has task_id, qr_id, task_due_date, task_description, task_user_responsible, task_status, task_date_created, task_author, task_closing_date, task_external_user, task_attachment01, task_attachment02. This table contains information regarding tasks.

Column Name	Data Type	Length	Allow Nulls
TASK_ID	numeric	9	
QR_ID	varchar	100	
TASK_DUE_DATE	datetime	8	
TASK_DESCRIPTION	varchar	4000	✓
TASK_USER_RESPONSIBLE	int	4	✓
TASK_STATUS	int	4	✓
TASK_DATE_CREATED	datetime	8	✓
TASK_AUTHOR	int	4	✓
TASK_CLOSING_DATE	datetime	8	✓
TASK_EXTERNAL_USER	varchar	50	✓
TASK_ATTACHMENT01	varchar	300	✓
TASK_ATTACHMENT02	varchar	300	✓

Columns

Description	
Default Value	
Precision	18
Scale	0
Identity	Yes
Identity Seed	1
Identity Increment	1
Is Rowguid	No
Formula	

Figure 3.14 Tbl_qr_task table design

TBL_QR_USER

This table TBL_QR_USER has user_id, qr_id and user_addressed. This table contains information about QR and user.

SQL Server Enterprise Manager - [Design Table 'TBL_QR_USER' in 'pmdb' on '(...]

Column Name	Data Type	Length	Allow Nulls
USER_ID	int	4	
QR_ID	varchar	100	
USER_ADDRESSED	int	4	✓

Columns

Description
Default Value
Precision: 10
Scale: 0
Identity: No
Identity Seed
Identity Increment
Is RowGuid: No
Formula
Collation

Figure 3.15 Tbl_qr_user table design

TBL_SECURITY

This table contains security_id and security_role. This contains information about security.

SQL Server Enterprise Manager - [Design Table 'TBL_SECURITY' in 'pmdb' on '(...]

Column Name	Data Type	Length	Allow Nulls
SECURITY_ID	int	4	
SECURITY_ROLE	varchar	15	✓

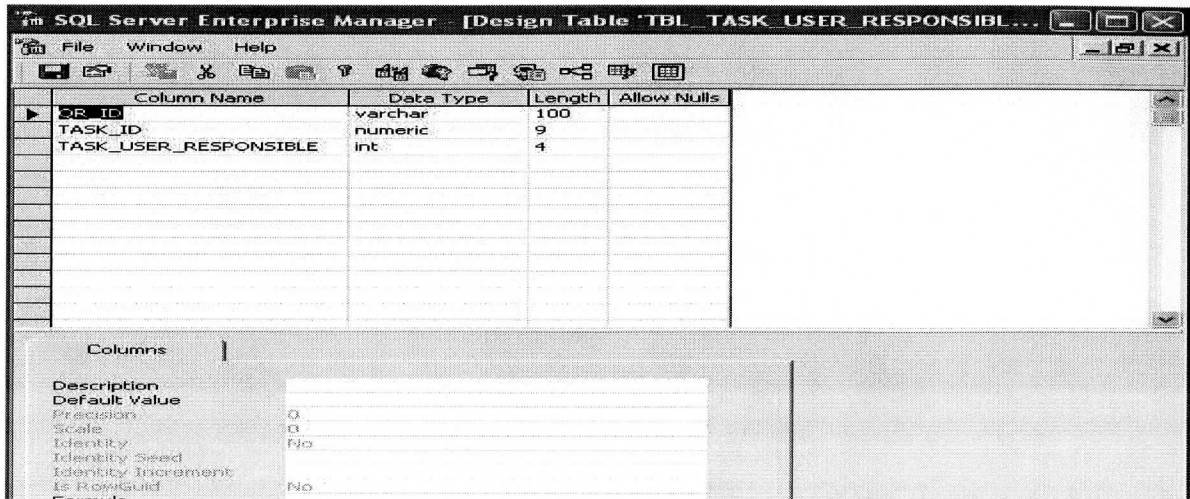
Columns

Description
Default Value
Precision: 10
Scale: 0
Identity: No
Identity Seed
Identity Increment
Is RowGuid: No
Formula
Collation

Figure 3.16 Tbl_security table design

TBL_TASK_USER

This table contains qr_id, task_id and task_user_details. This table contains information regarding QR and task.

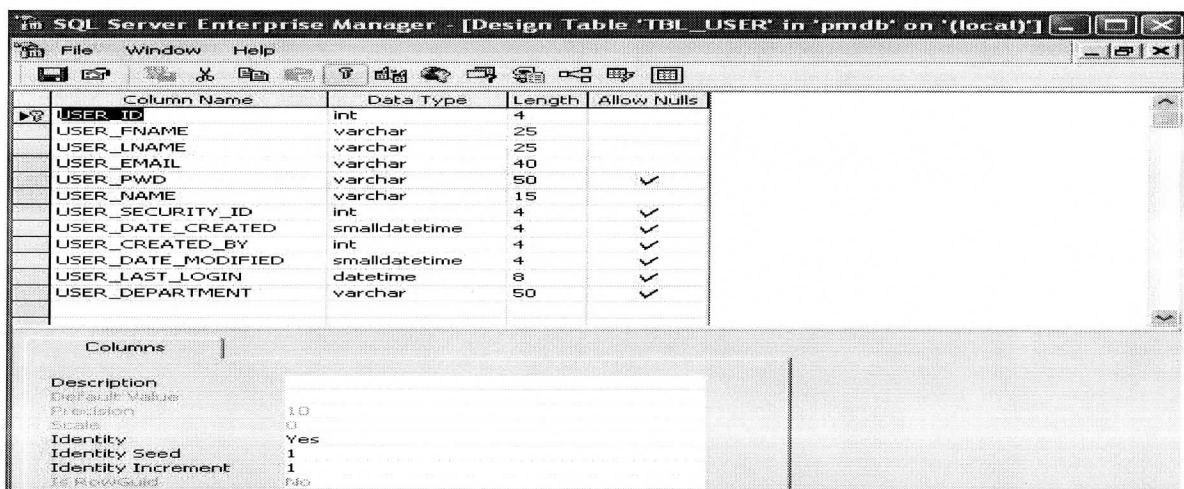


Column Name	Data Type	Length	Allow Nulls
QR_ID	varchar	100	
TASK_ID	numeric	9	
TASK_USER_RESPONSIBLE	int	4	

Figure 3.17 Tbl_task_user table design

TBL_USER

This table contains user_id, user_fname, user_lname, user_email, user_pwd, user_name, user_security_id, user_data_created, user_created_by, user_date_modified, user_last_login, user_department. This table contains information regarding all users.

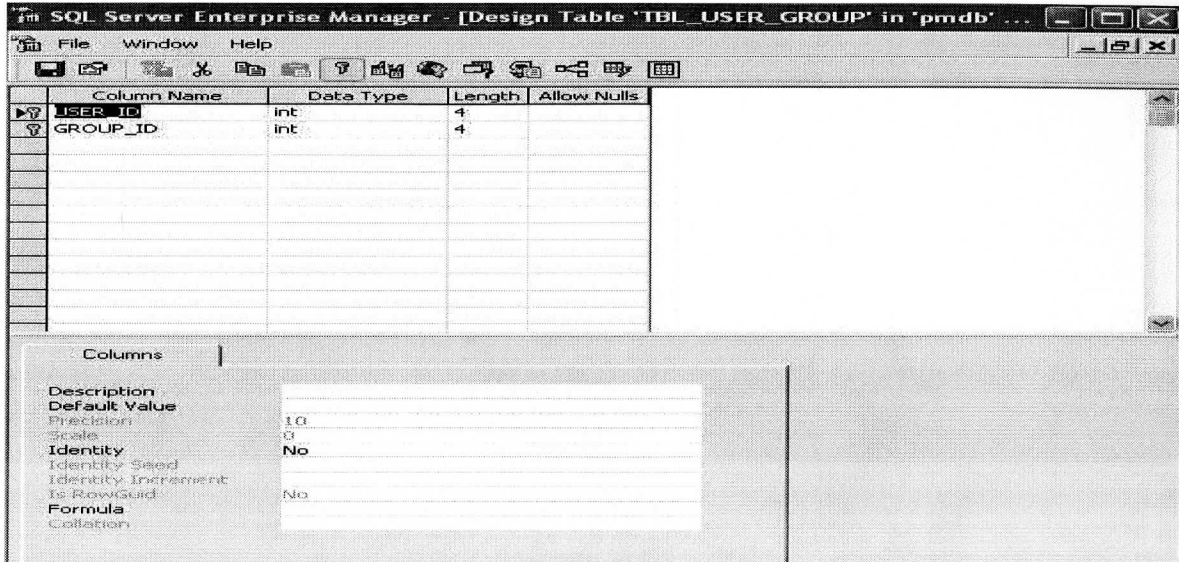


Column Name	Data Type	Length	Allow Nulls
USER_ID	int	4	
USER_FNAME	varchar	25	
USER_LNAME	varchar	25	
USER_EMAIL	varchar	40	
USER_PWD	varchar	50	✓
USER_NAME	varchar	15	
USER_SECURITY_ID	int	4	✓
USER_DATE_CREATED	smalldatetime	4	✓
USER_CREATED_BY	int	4	✓
USER_DATE_MODIFIED	smalldatetime	4	✓
USER_LAST_LOGIN	datetime	8	✓
USER_DEPARTMENT	varchar	50	✓

Figure 3.18 Tbl_user table design

TBL_USER_GROUP

This table contains user_id and group_id.



Column Name	Data Type	Length	Allow Nulls
USER_ID	int	4	
GROUP_ID	int	4	

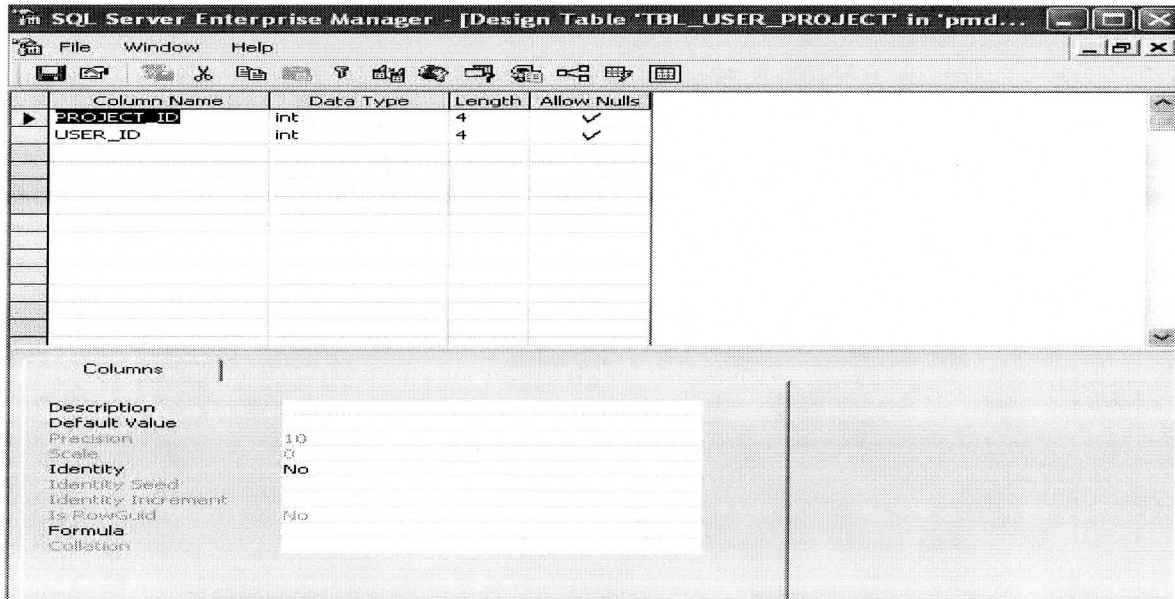
Columns

Description
Default Value
Precision 10
Scale 0
Identity No
Identity Seed
Identity Increment
Is RowGuid
Formula
Collation

Figure 3.19 Tbl_user_group Table design

TBL_USER_PROJECT

This table contains project_id and user_id.



Column Name	Data Type	Length	Allow Nulls
PROJECT_ID	int	4	<input checked="" type="checkbox"/>
USER_ID	int	4	<input checked="" type="checkbox"/>

Columns

Description
Default Value
Precision 10
Scale 0
Identity No
Identity Seed
Identity Increment
Is RowGuid
Formula
Collation

Figure 3.20 Tbl_user_project Table Design

4. Application Demonstration

The Application can be accessed from a web browser. The homepage acts as a gateway to different modules in the application, users can click on any link shown in the homepage to enter respective module.

Home Page

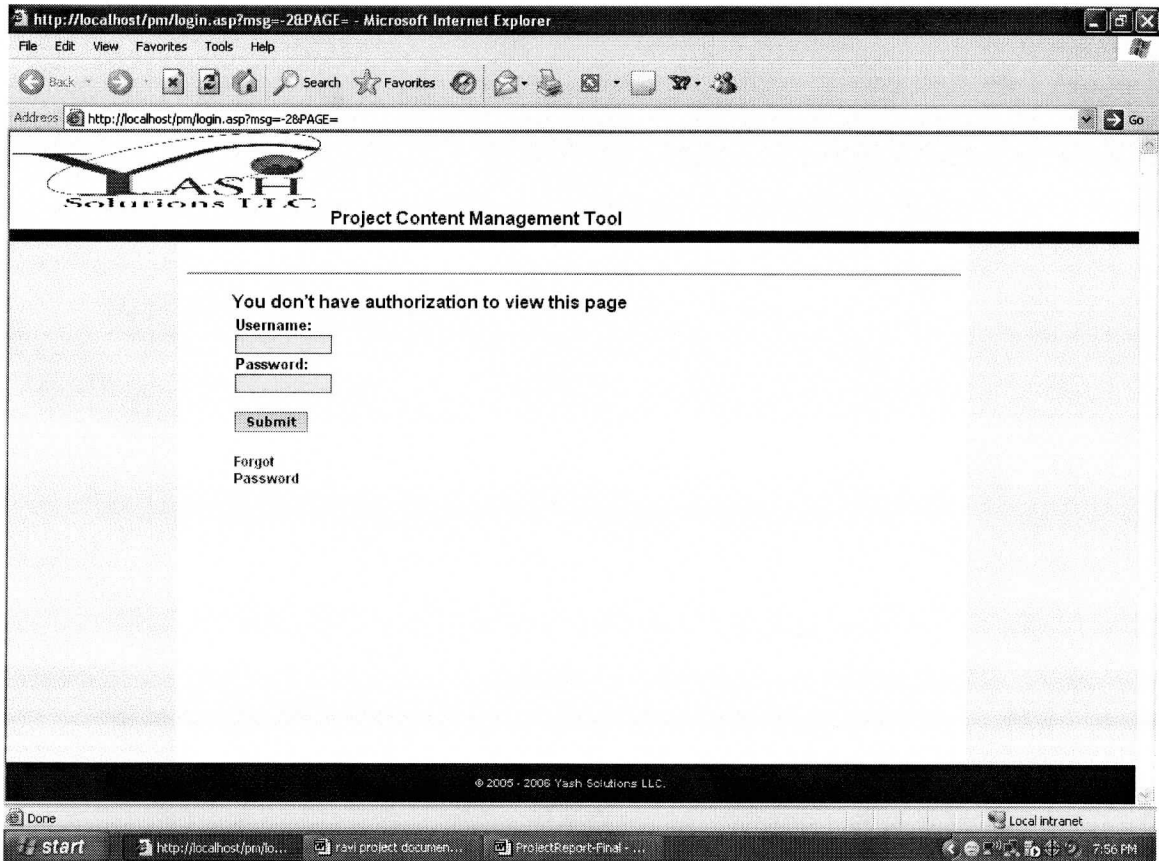


Figure 4.1 Home Page

Homepage provides access to the Project Content Management Tool. This home page contains

User Login

User login link is for users with operator rights; by click on this link users can go to user login pages. Users can use the login pages to login to the web site and perform tasks. No user can access the website contents with out logging in, “user session” is always checked before allowing user in to the website. Depending on the login type the will be redirected to their personal home page. If user fails to provide valid credentials he/she will not be allowed to access the website contents.

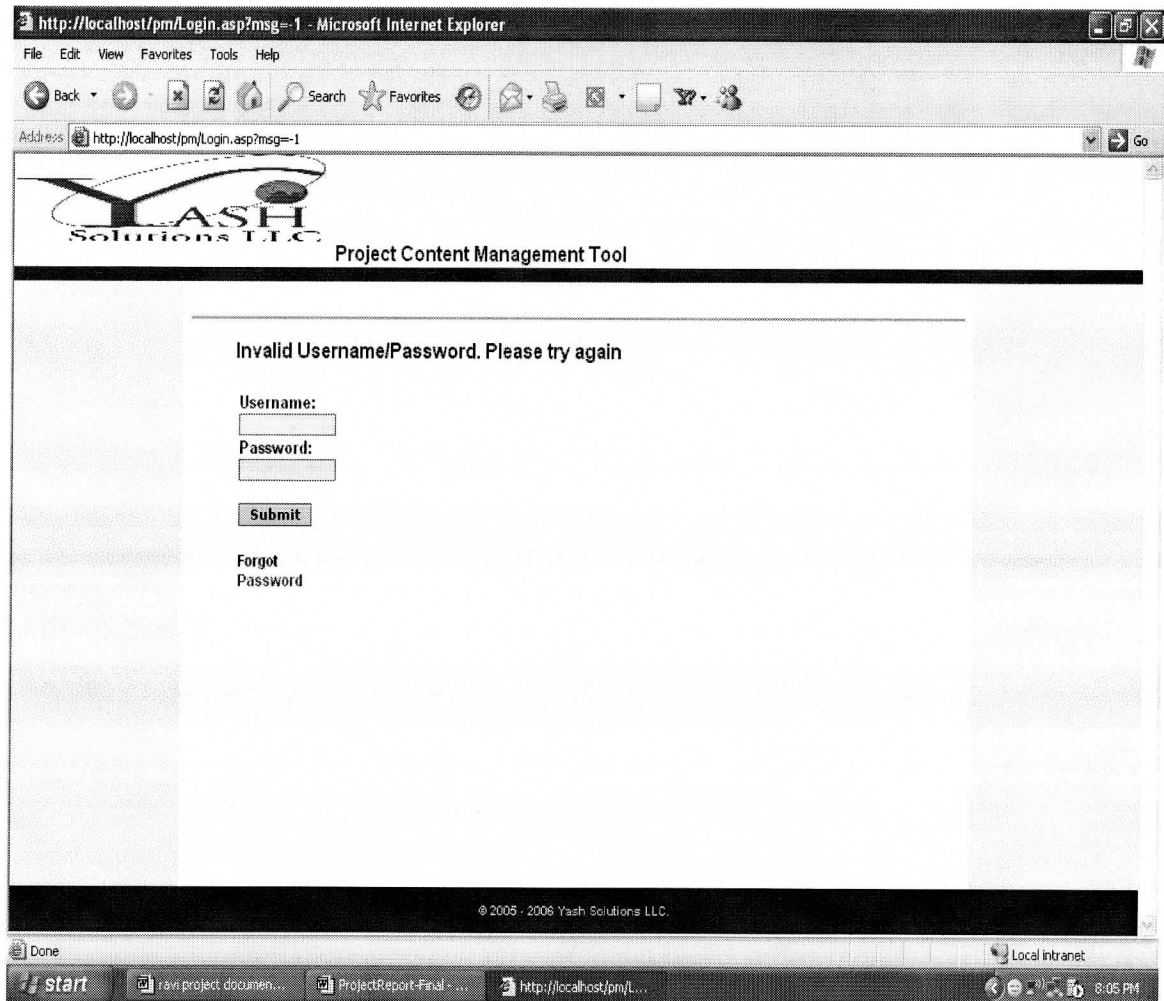


Figure 4.2 User login page

If a user forgot his password, he/she can click on the “Forgot Password “link in the home page and submit there user name.

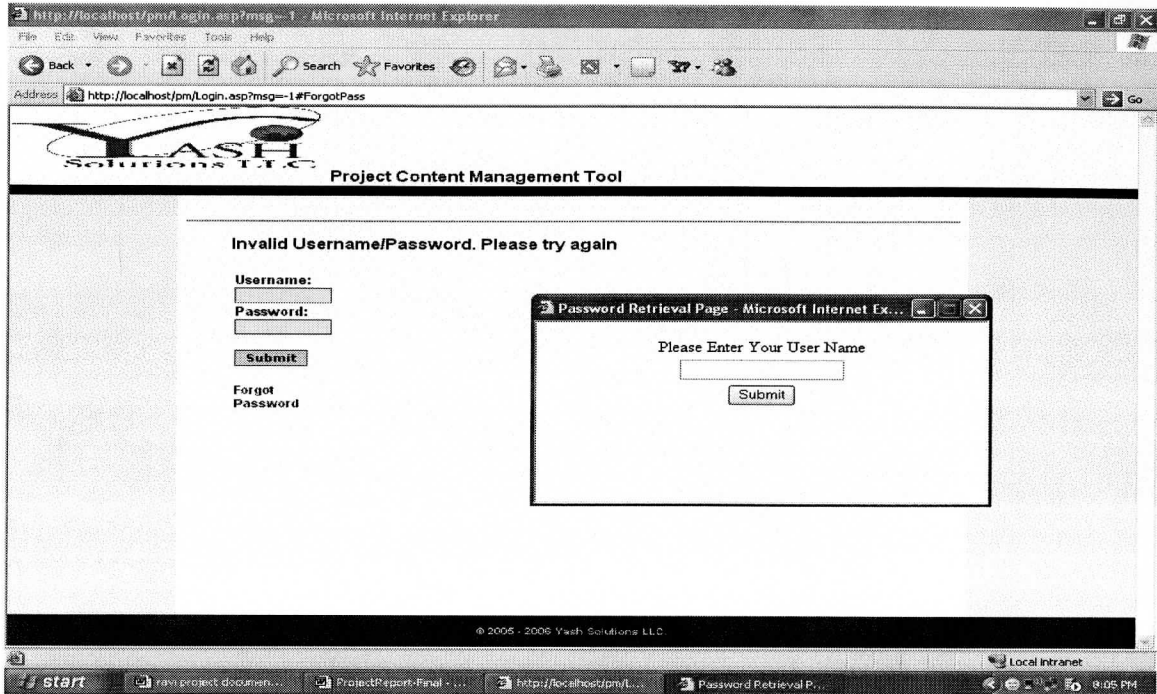


Figure 4.3 Forgot password page

After they submit there username there password will be sent to there email id.

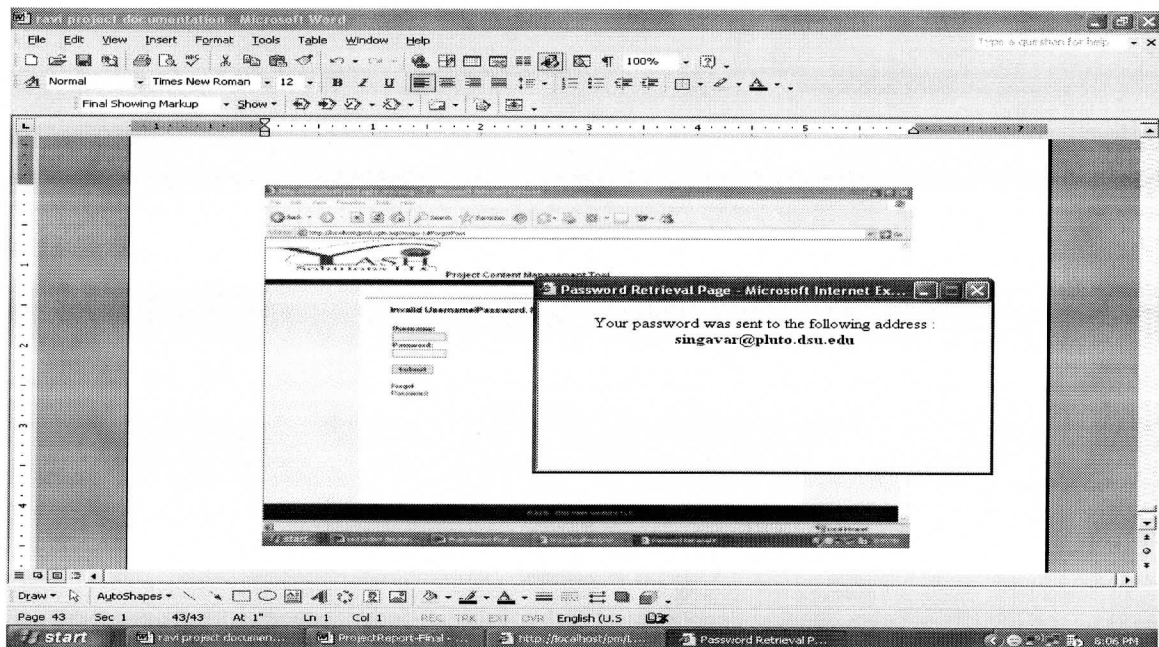


Figure 4.4 Password sent page

When the user submits their correct username and password. They will be directed to their personal home page.

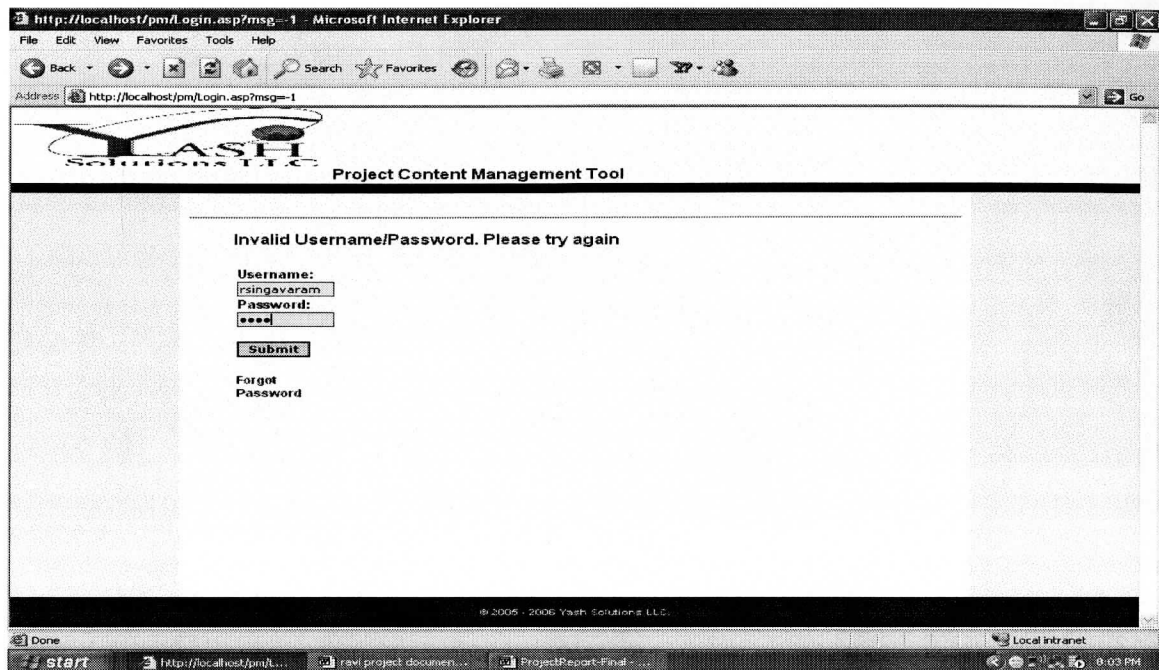


Figure 4.5 Home page with correct user login

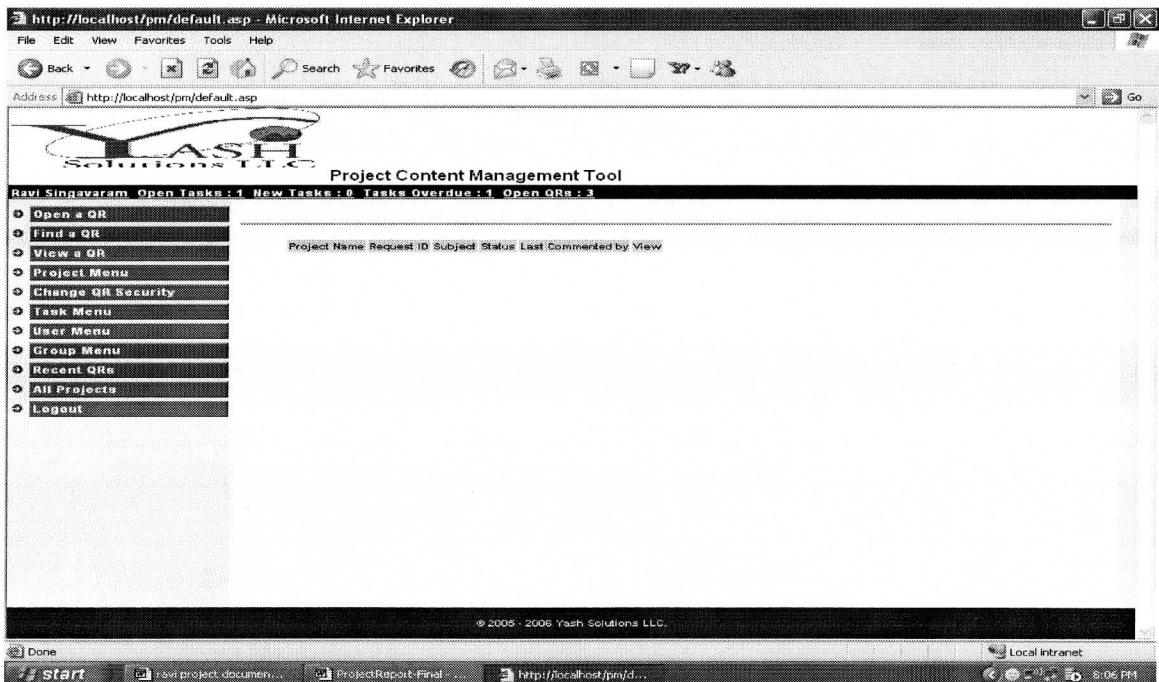


Figure 4.6 Personal home page for user

When we enter the correct userid and password we get the homepage for the user.

User home page

Up on successful log will be redirected to user home page. The user home page contains most of the links available in the web site. The top navigation bar in the website appears throughout the website and will permit users easily navigate between different sections of the web site.

The links in the web site include

1. Open a QR (Question Request)

2 .Find a QR (Question Request)

3. View a QR (Question Request)

4. Project Menu

- Create a Project
- Alter a Project
- View all Projects
- View Open Projects
- View Closed Projects

5. Change QR (Question Request) security

6. Task Menu

- Assign a Task
- Open Tasks for me
- Open Tasks for my project
- Close a Task
- Edit a Task

7. User Menu

- Create a user
- Alter a user
- View user details

8. Group Menu

- Create a Group
- Alter a group
- View Group details

9. Recent QR (Question Request)

10. All Projects

- View all projects
- Executive projects

11. Logout

Open a QR (Question Request)

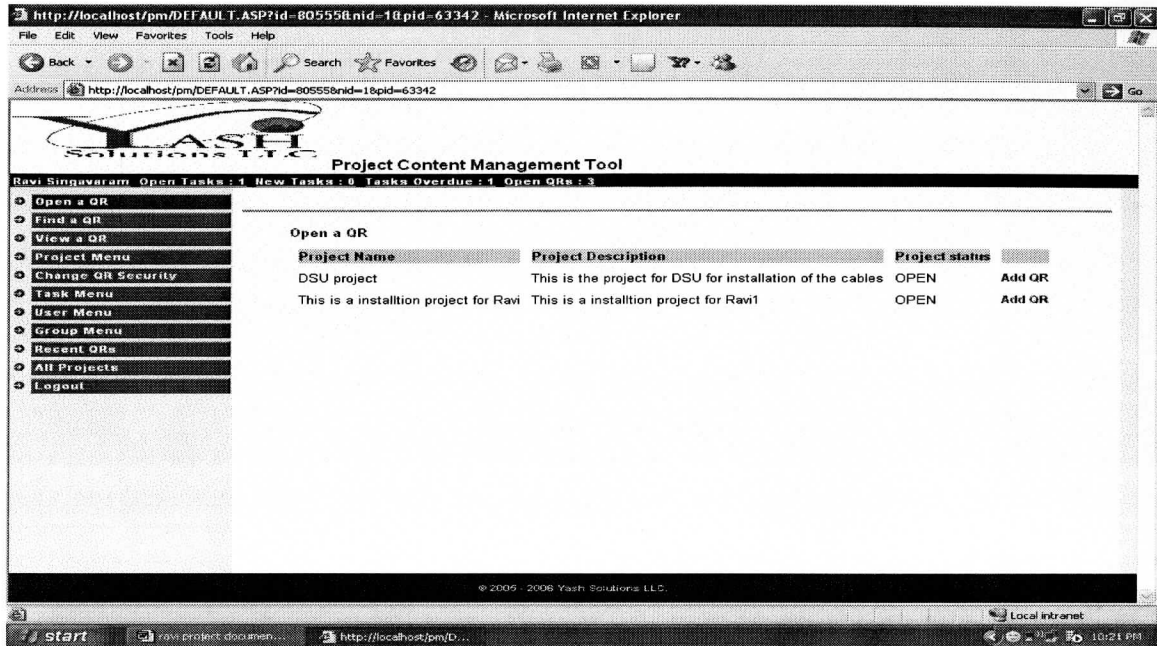


Figure 4.7 Open a QR

We can open the QR which is open to the user.

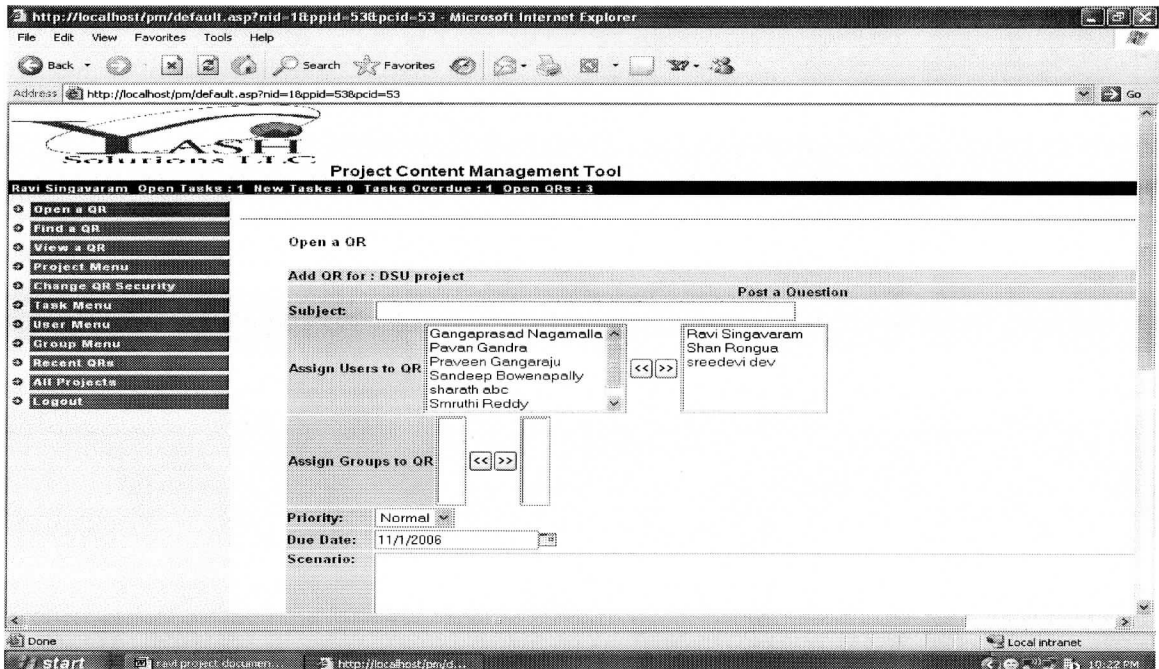


Figure 4.8 Add QR

This form is to add QR and assign the QR to the team or individual.

Find a QR (Question Request)

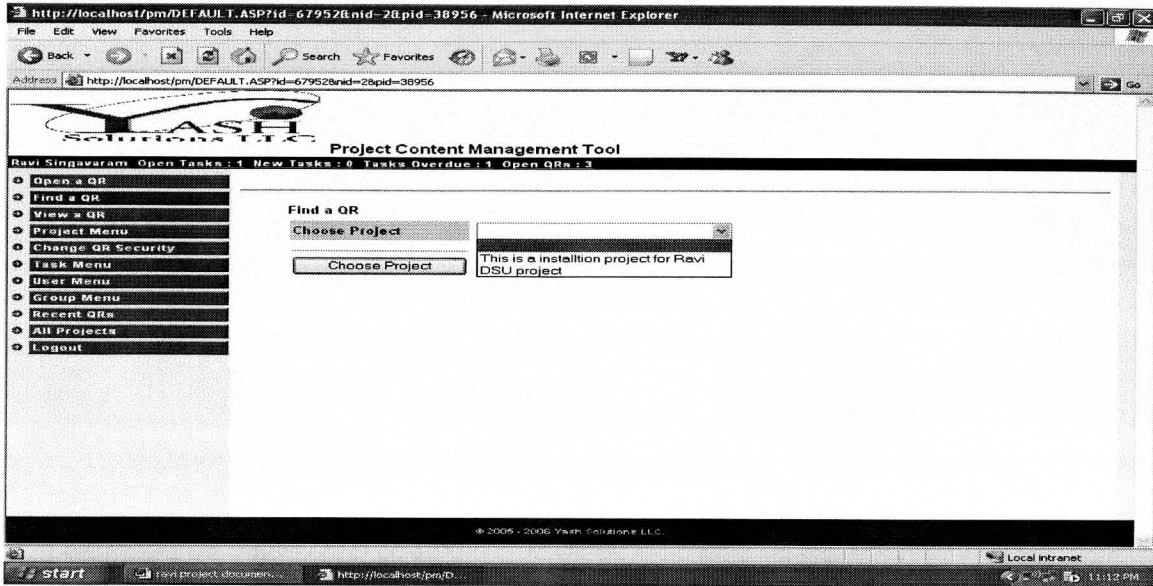


Figure 4.9 Find a QR page

In this page we can find the QR for all the projects which are assigned to the user. We can select the project and we will be able to see all the QR for that project.

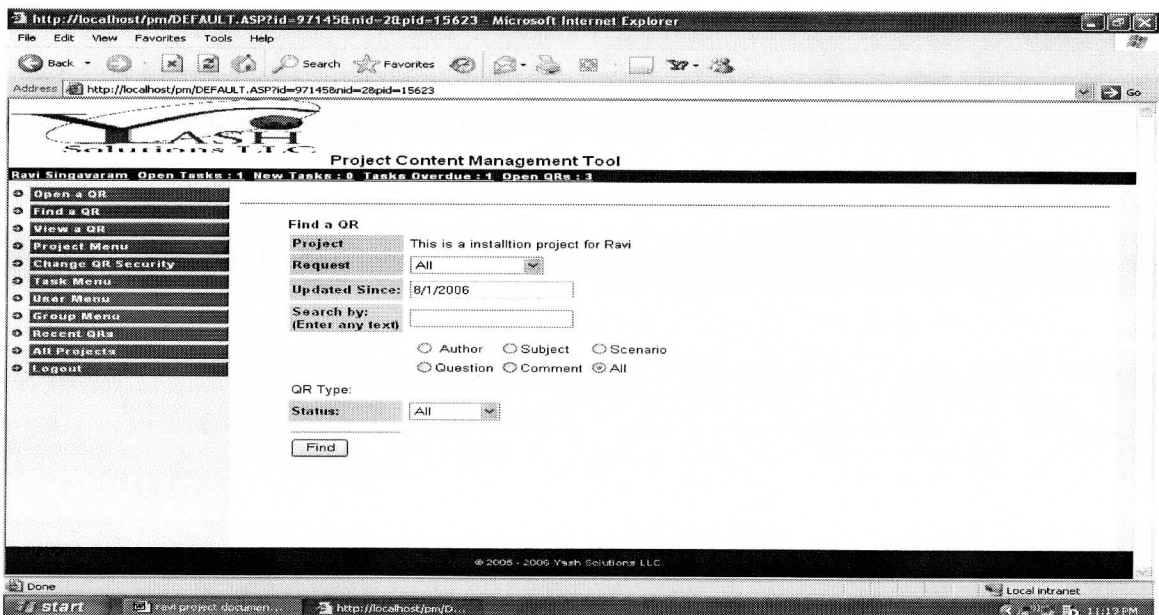


Figure 4.10 Find a QR search page

If we select the project then we can search depending on different options. We can search the QR by Author, Subject, Scenario, Question, Comment and All. We can select any of these options and search a QR. We can search the QR depending on the status type also just by selecting open or closed.

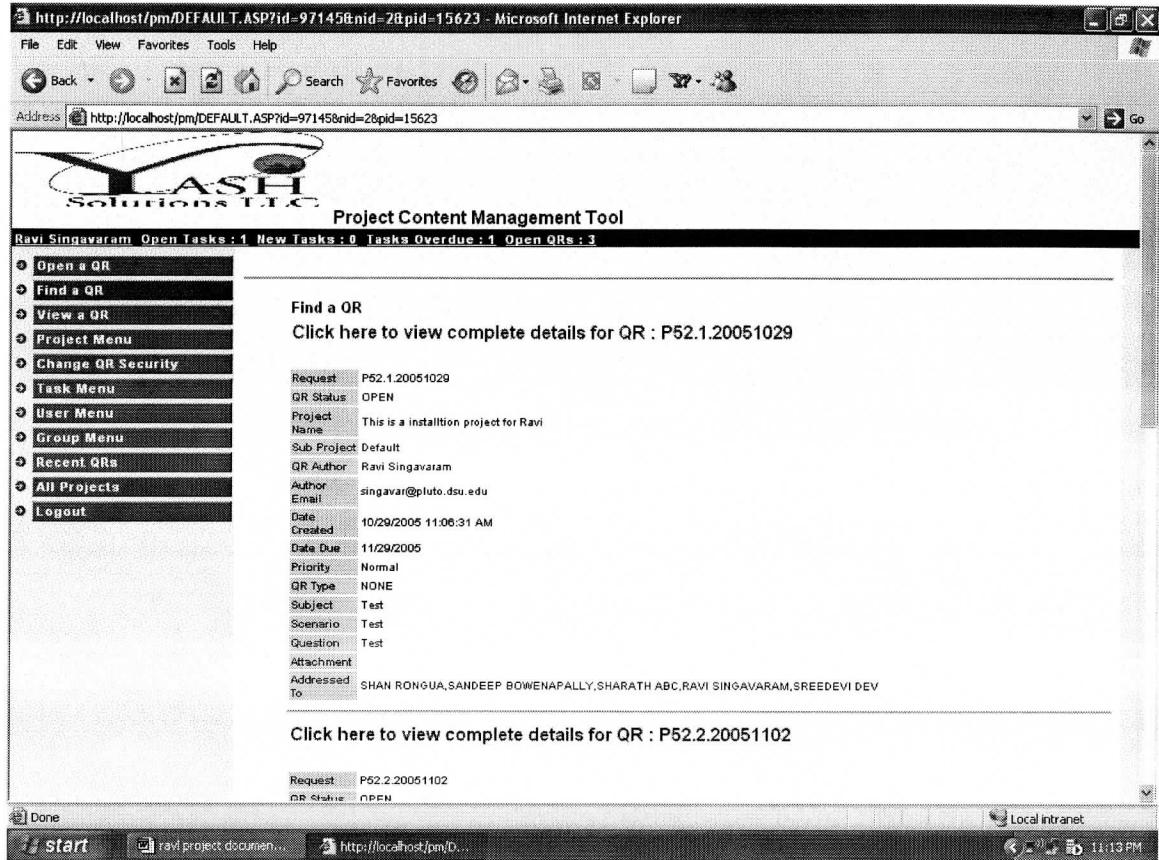


Figure 4.11 Find a QR result page

View a QR (Question Request)

When we search a QR with any of the search options we get all the QR's for that project.

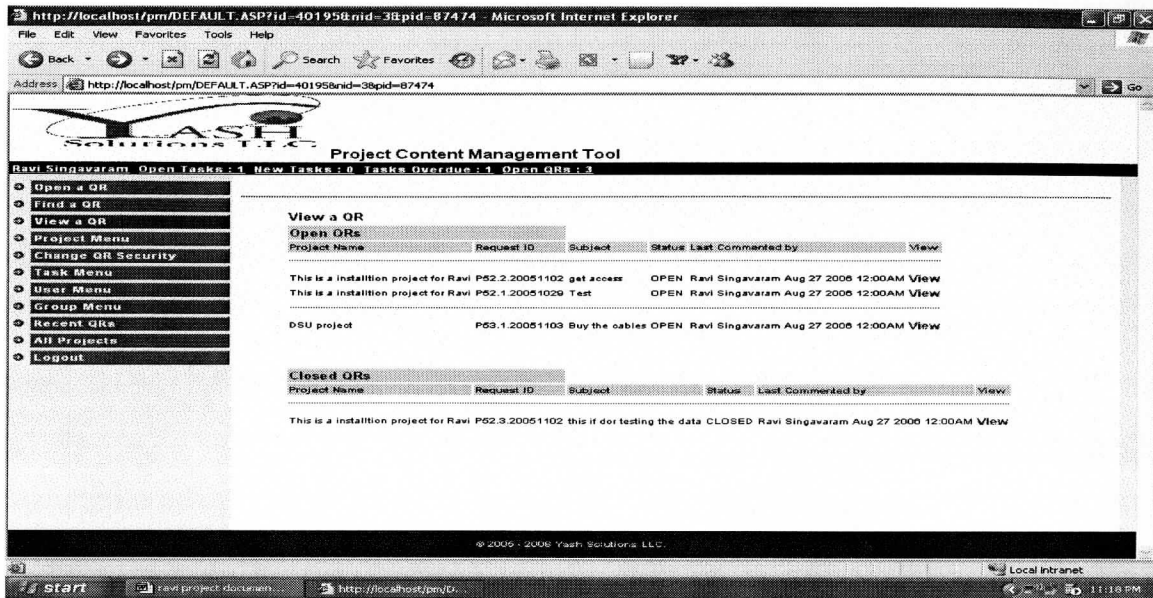


Figure 4.12 View a QR

In this section we can view all the QR's which are OPEN and CLOSED for all the projects which are allotted to you. If we click on the view we can see the complete information regarding the QR.

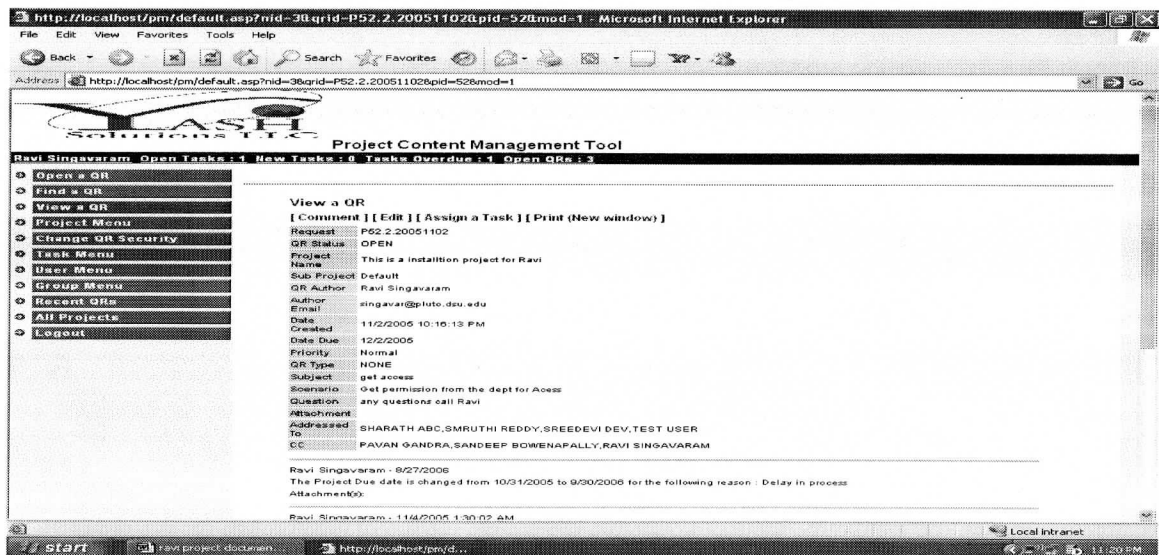


Figure 4.13 Results of view a QR

If we click on the view the above page will be displayed. Here we have different options like comment, edit, assign a task, print (new window).

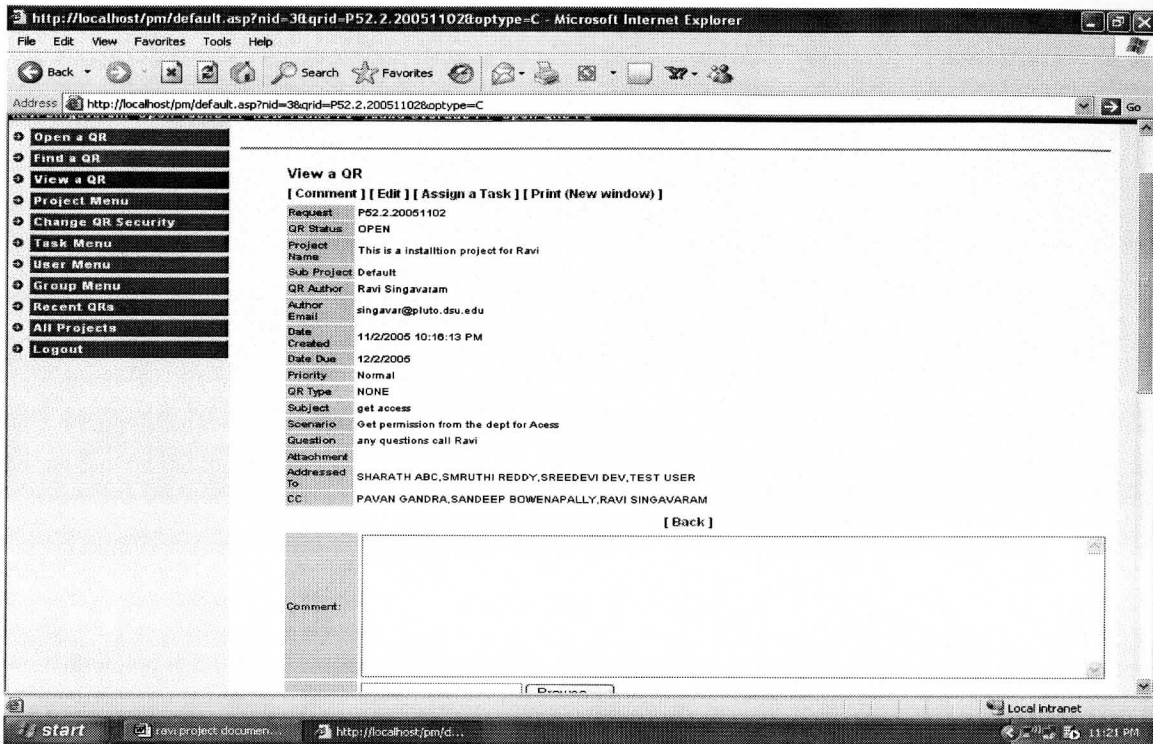


Figure 4.14 View a QR-comment

If we click on the comment on the top of the page, we can add any comment to the QR. We have option at the bottom of the page to add comments to the QR.

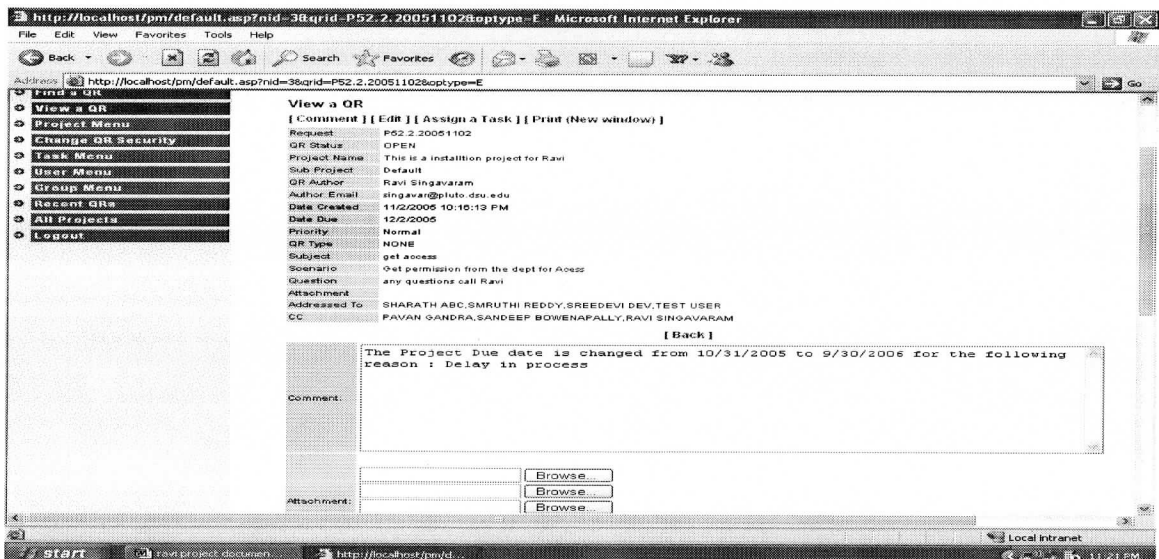


Figure 4.15 View a QR-edit

If we click on the edit on the top of the page, we can edit the comments which are there for the QR. We have option at the bottom of the page to edit the comments to the QR.

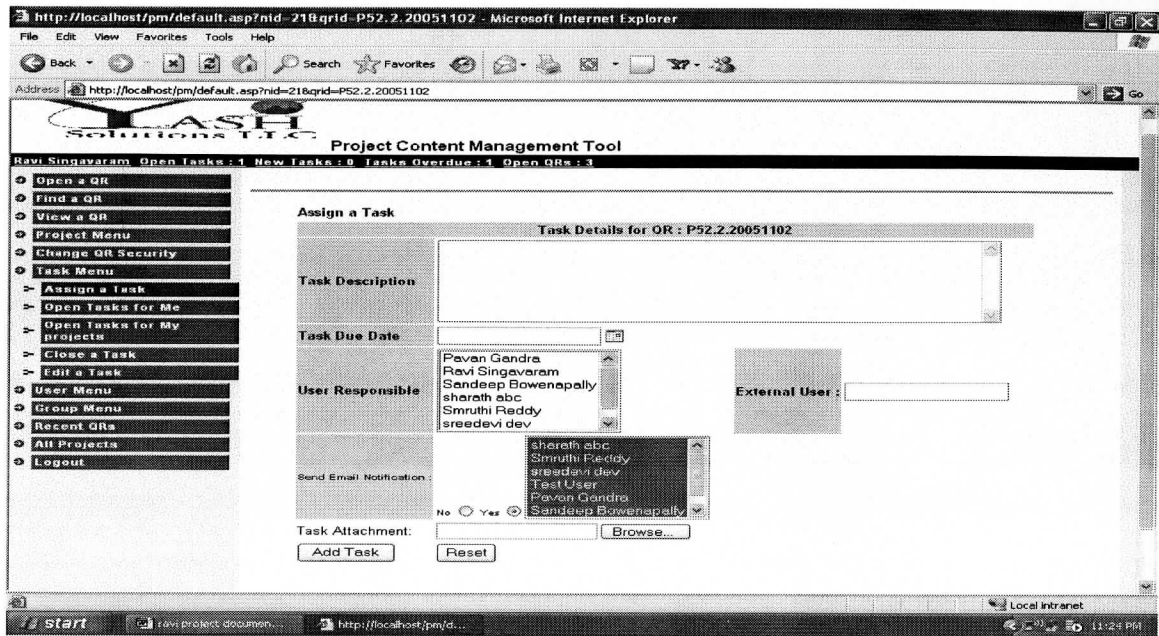


Figure 4.16 View a QR- assign a task

If we click on the assign a task then it will redirect to the task menu, there we have options to assign a QR to different team members.

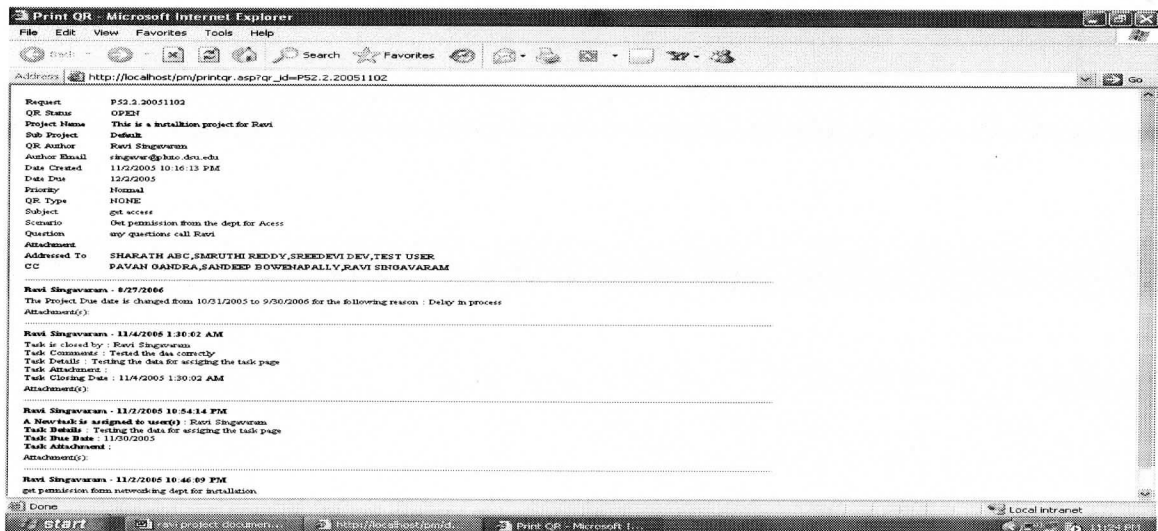


Figure 4.17 View a QR-print page

If we click on the Print (new window) we get all the QR's in the printable format.

Project Menu

In Project Menu we can create a project, alter a project, view all projects, view open projects, view closed projects. We can get all the information regarding the project in this menu.

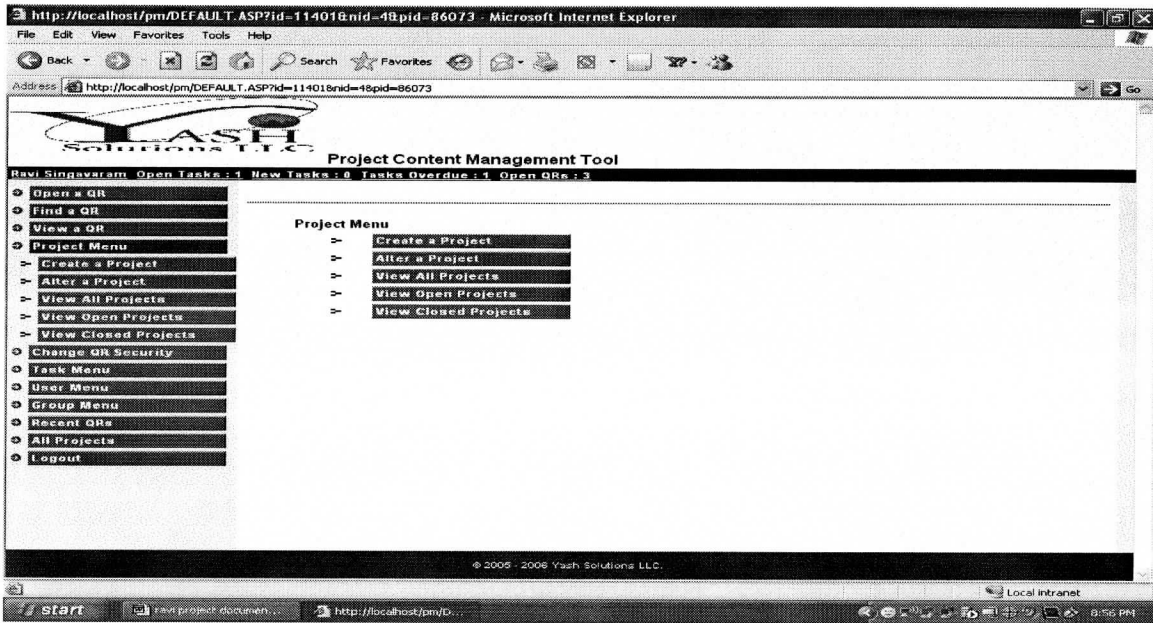


Figure 4.18 Project menu

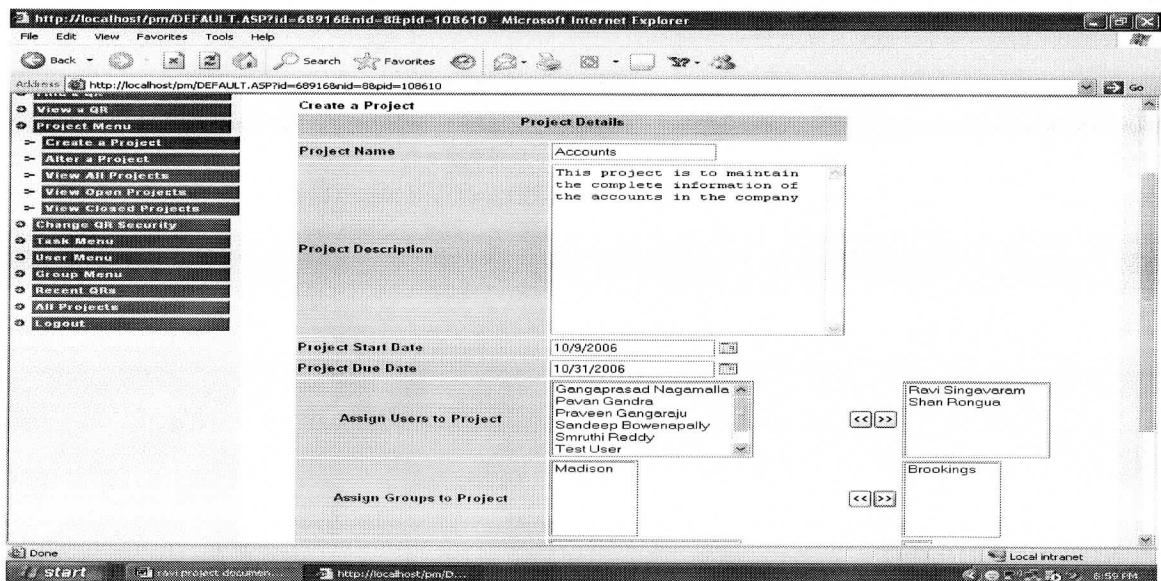


Figure 4.19 Create a project page

This is used to create a new project.

In this we can create a new project. We need to enter details link name of the project, project description, project start date and close date and assign users to the projects.

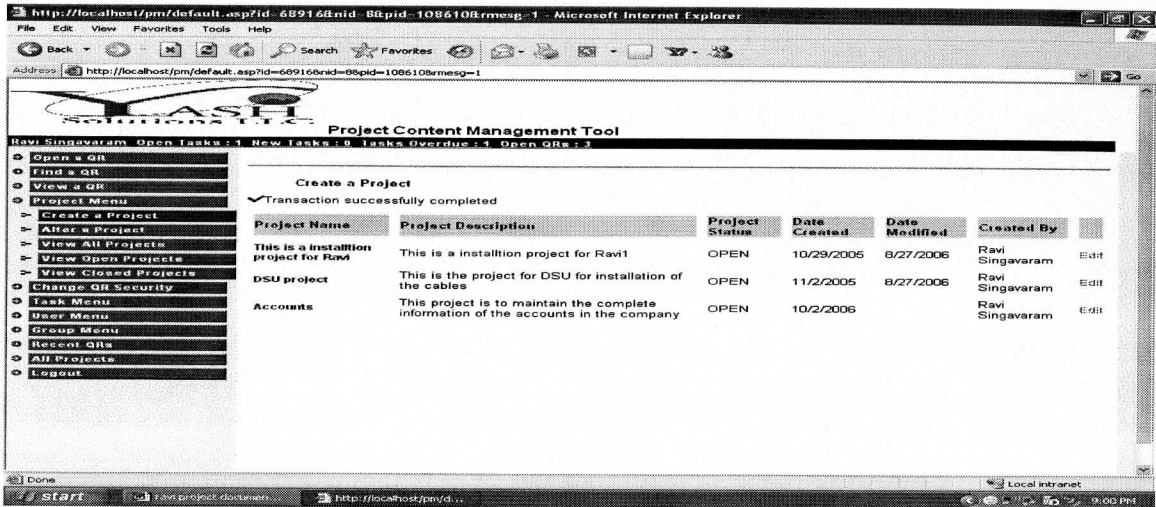


Figure 4.20 Create a project result page

In the above figure we can see the project being successfully created.

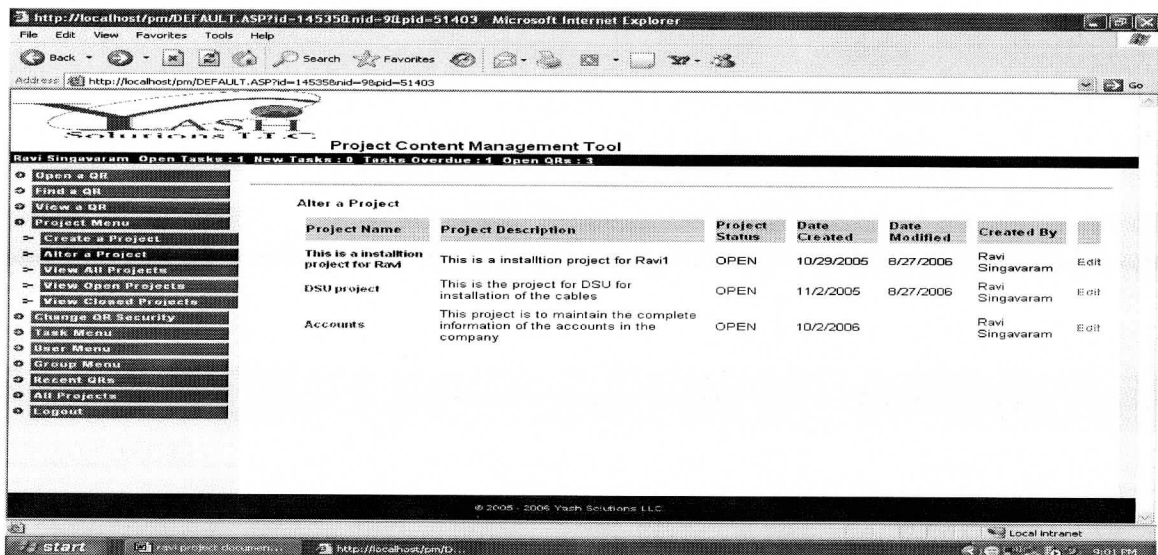


Figure 4.21 alter a project page

If we feel like altering the project details then we can use the alter a project option. We can click on that and we can go and edit the project.

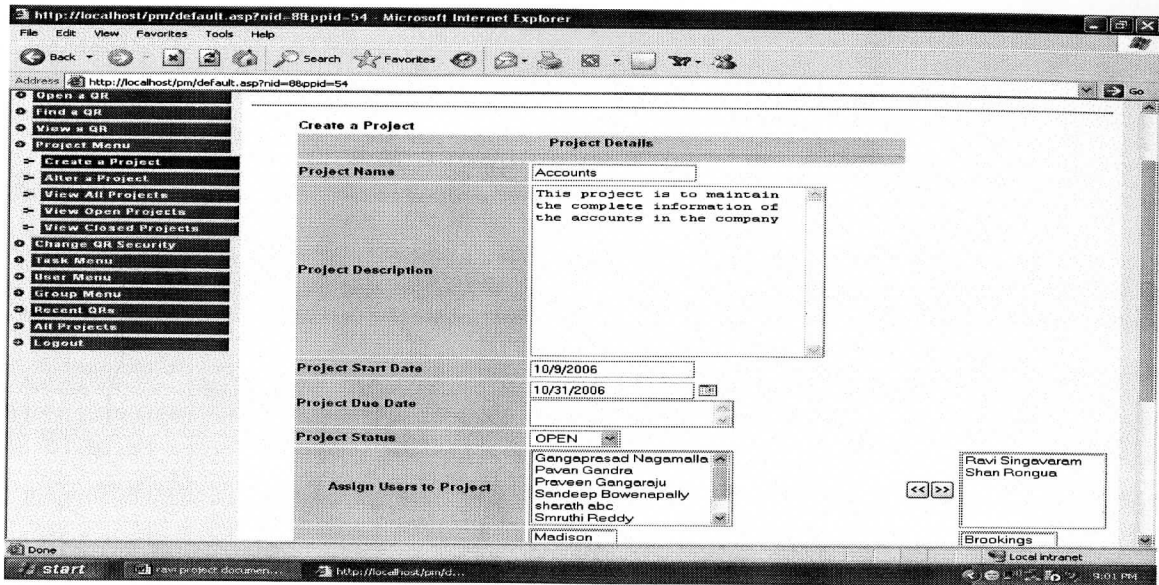


Figure 4.22 Edit in alter a project

When we click on edit it will direct to create a project page with all the details. We can edit the project details and submit.

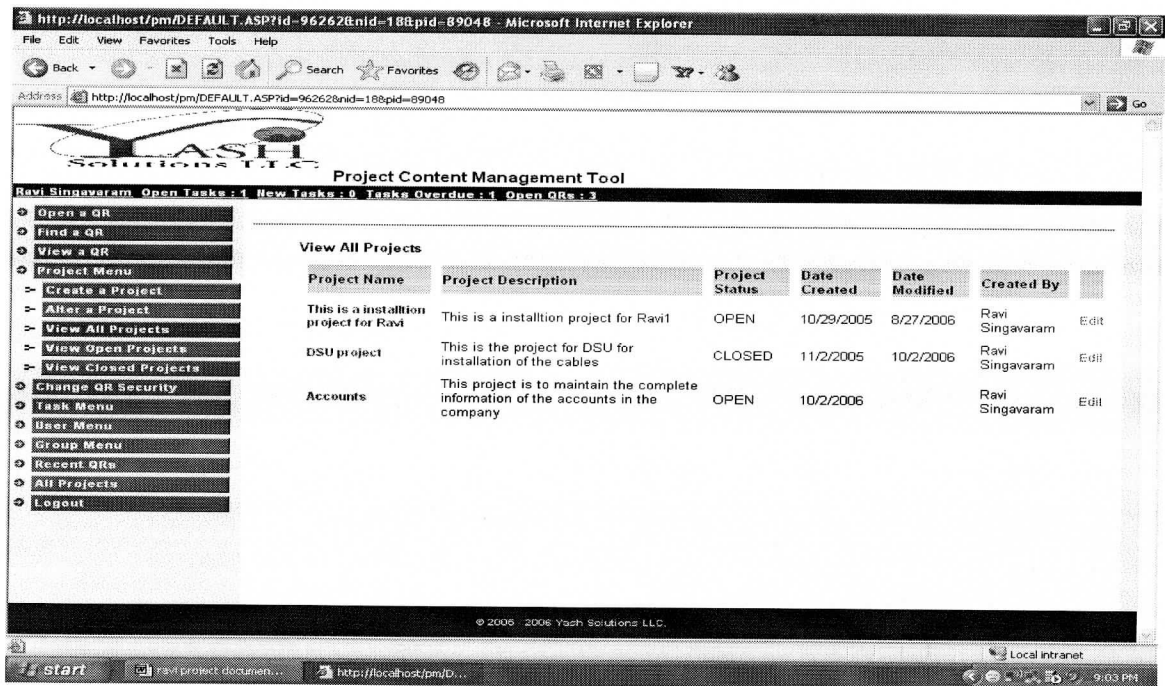


Figure 4.23 view all projects

In this we can see the projects on which the user was working. We can see both closed and open projects.

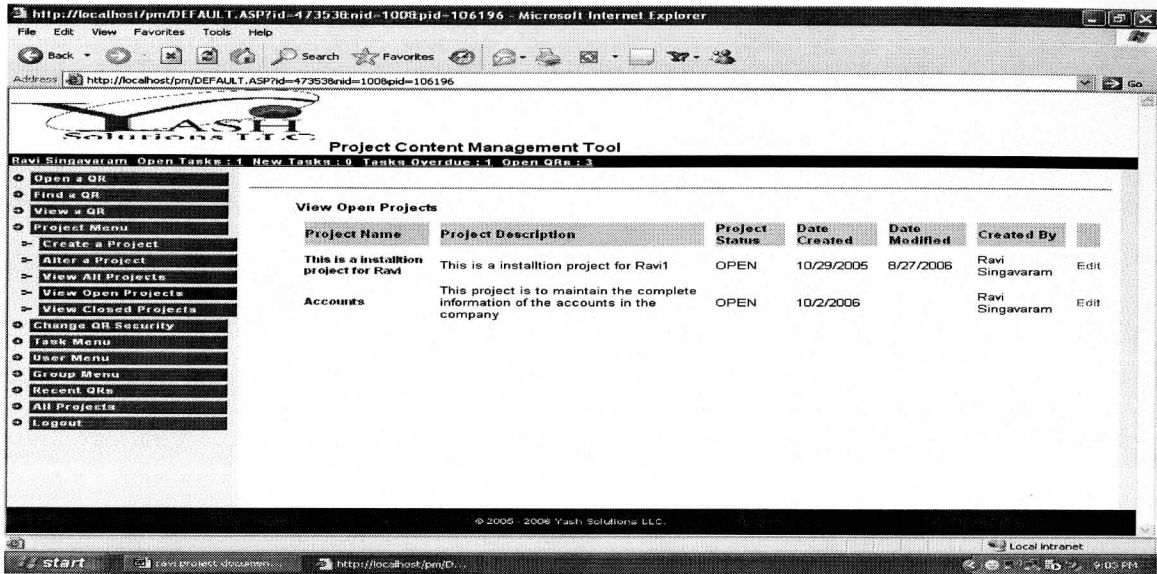


Figure 4.24 View open projects

When we click on the view open projects and see all the projects which the user is currently working. The user can click on the Edit and close the project, if it is done.

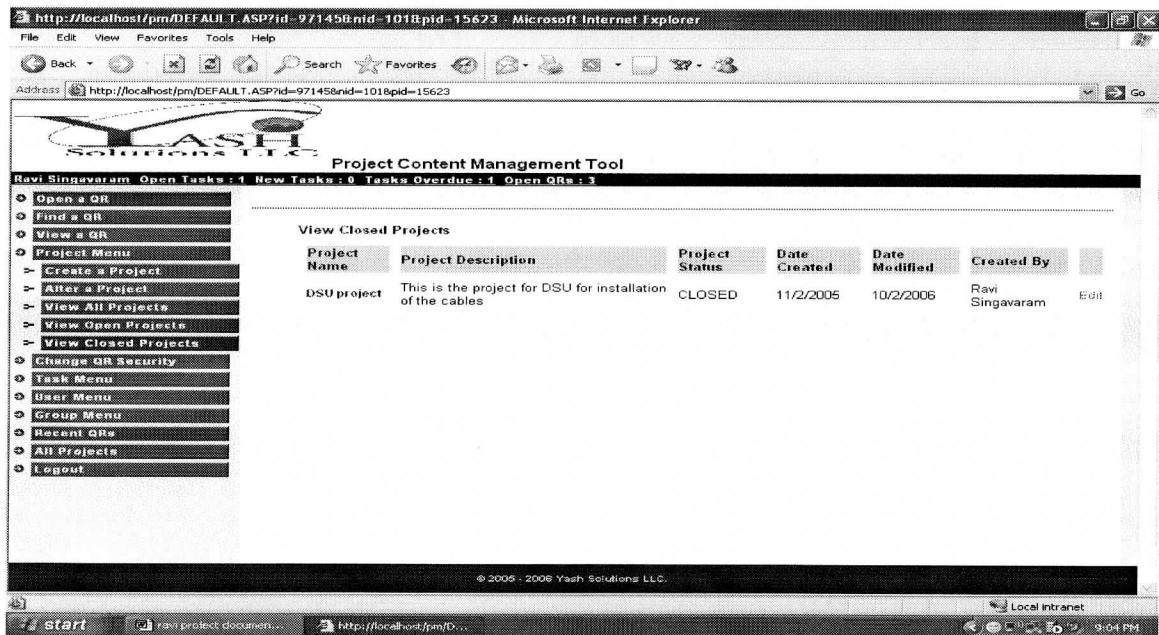


Figure 4.25 View closed projects

We can see the projects which are being closed for the user.

Change QR security

In this we can change the QR security.

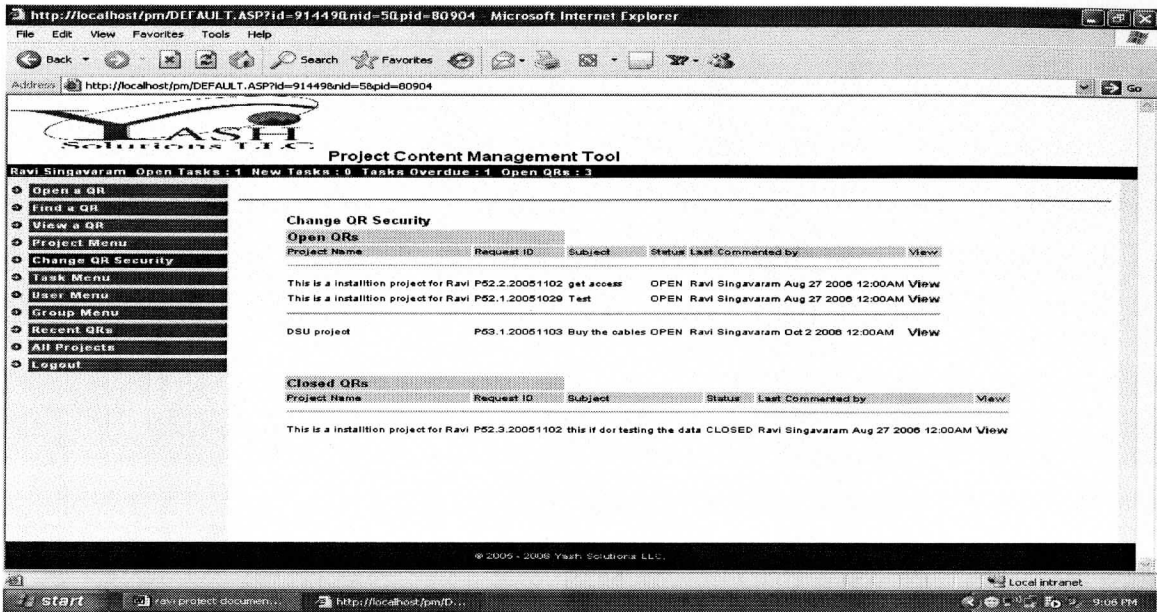


Figure 4.26 Change QR security page

In this page we have the option to change the QR security. We can see all the projects which are being done in the company, if we want to change the we need to click on the View and change the security.

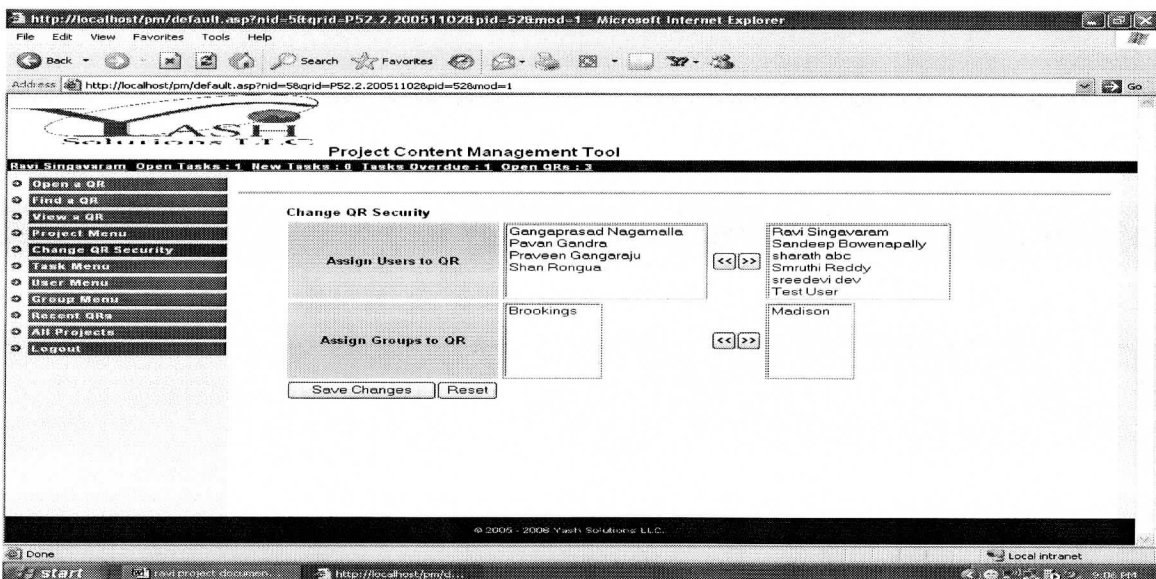


Figure 4.27 Change QR security example

When we click on the view we get the above page. Here if we want to add or remove a user from the project .We can assign or revoke the project to the group also.

Task Menu

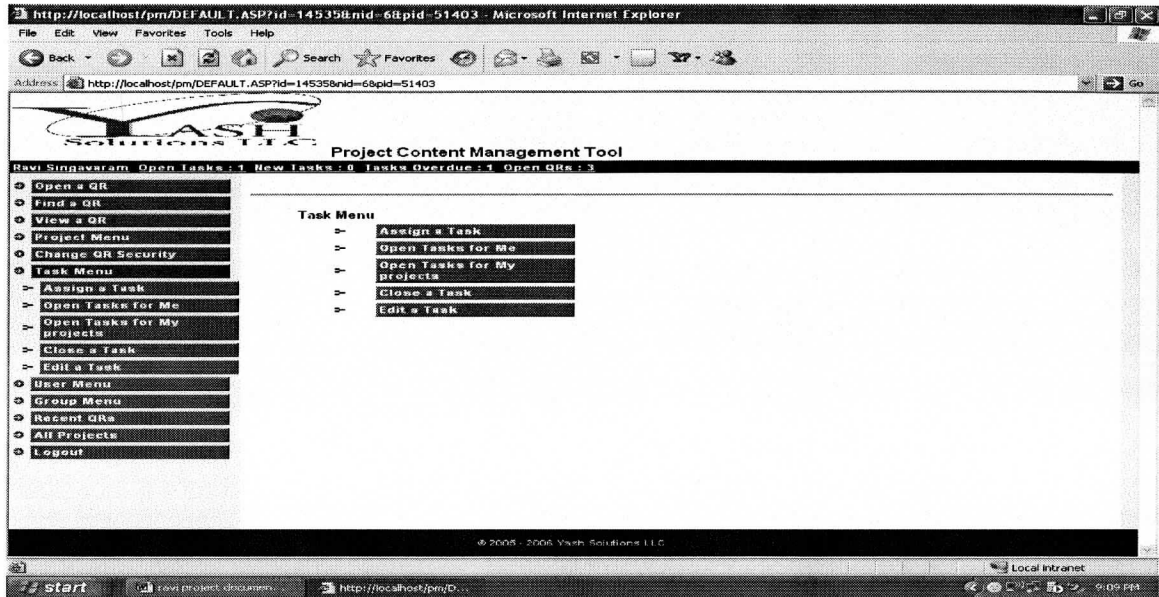


Figure 4.28 Task menu

In task menu we can assign a task, open tasks for me, open tasks for my project, change a task, and end a task. We can perform all these operations in task menu.

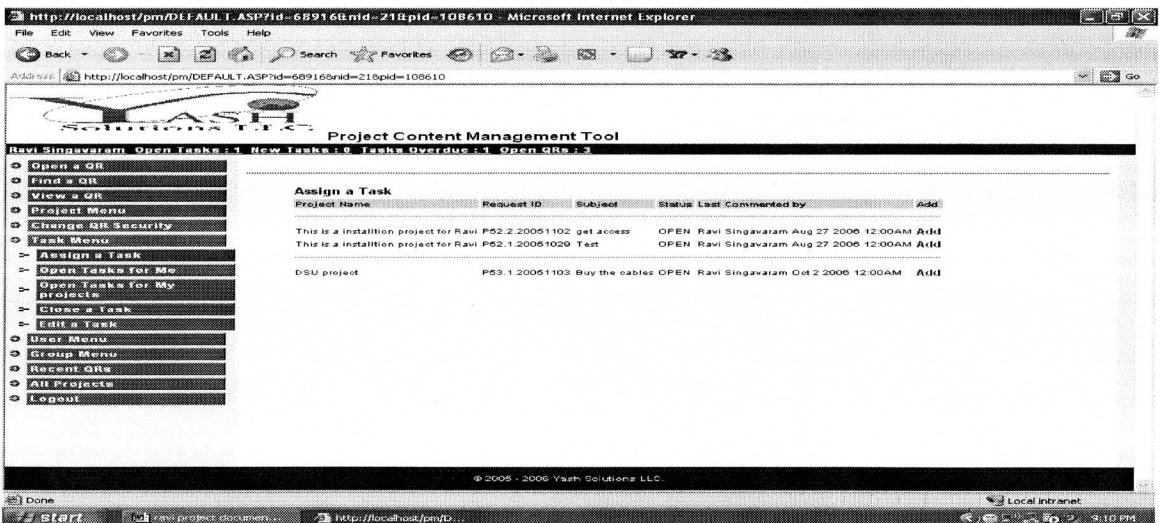


Figure 4.29 Assign a task

With the assign task option we can assign a task to a group or individual. We need to select the project where we need to assign the task. We have option add then we can assign the task for a user.

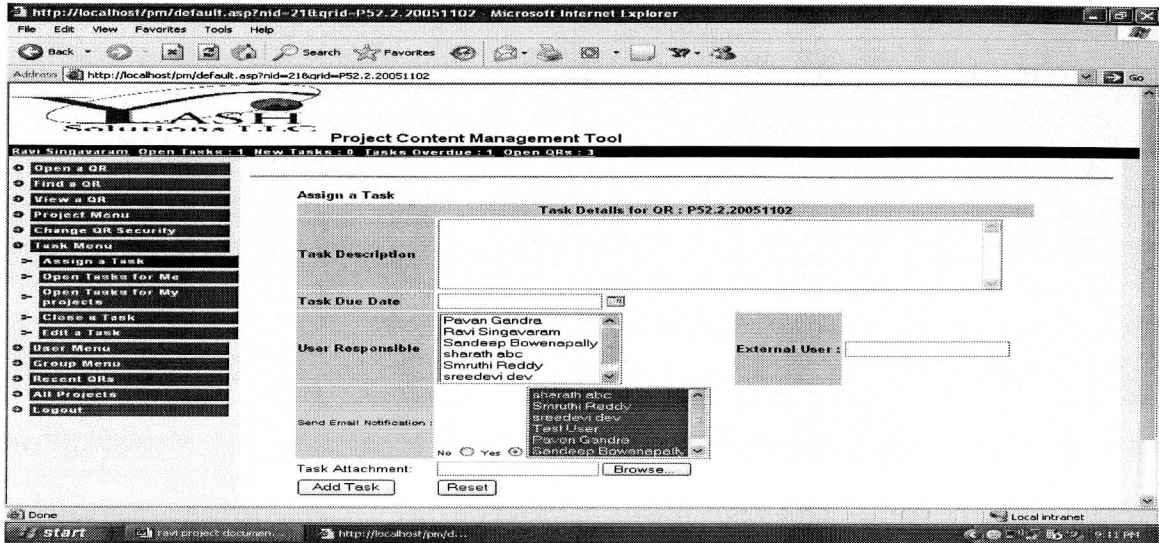


Figure 4.30 Assign a task example

We can give the task description, task due date and users responsible for the task and we can send email notification for the users who were assigned tasks.

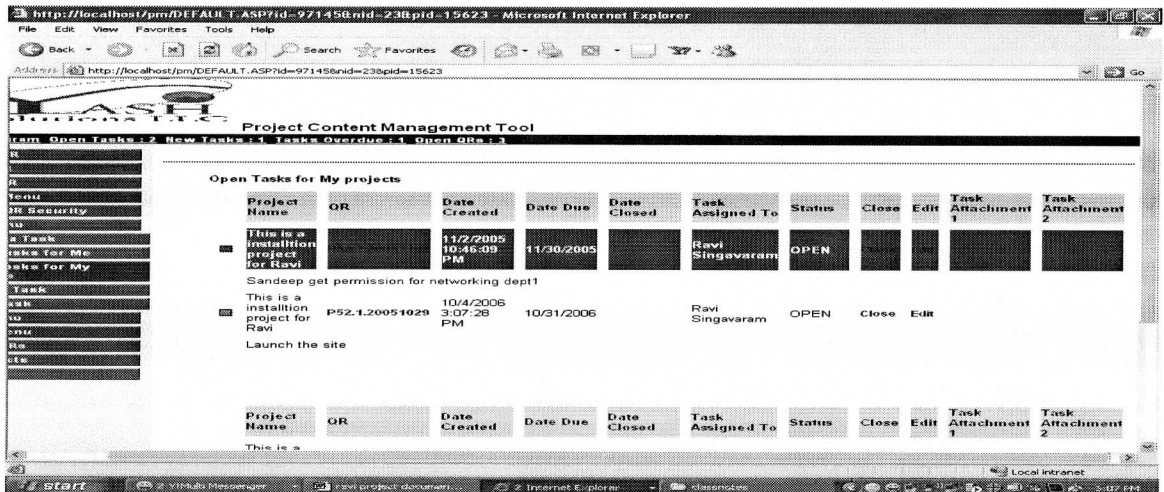


Figure 4.31 Open tasks for me Page

With this option we can see what all tasks are assigned to user. We can see the closed and open projects to the user. If a task is overdue it will appear in red and it will be green if the task is not overdue.

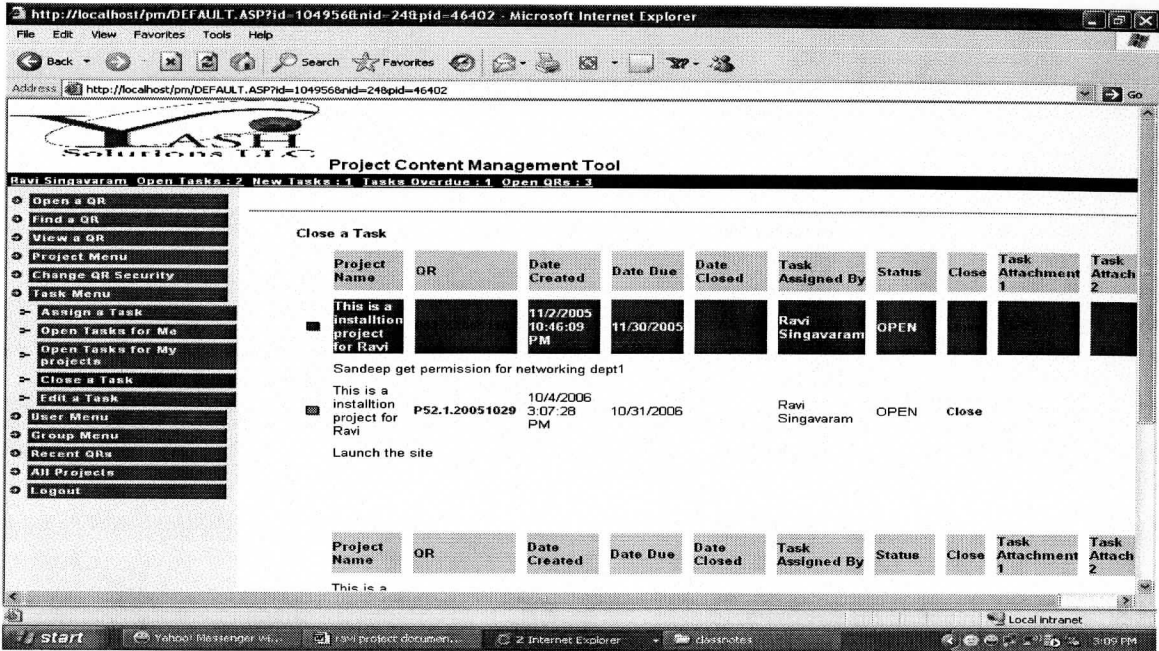


Figure 4.32 Close a task

We can close a task if its completed with this option .When we click on the close option in the page it will direct to edit a task page, there we can edit and close the task.

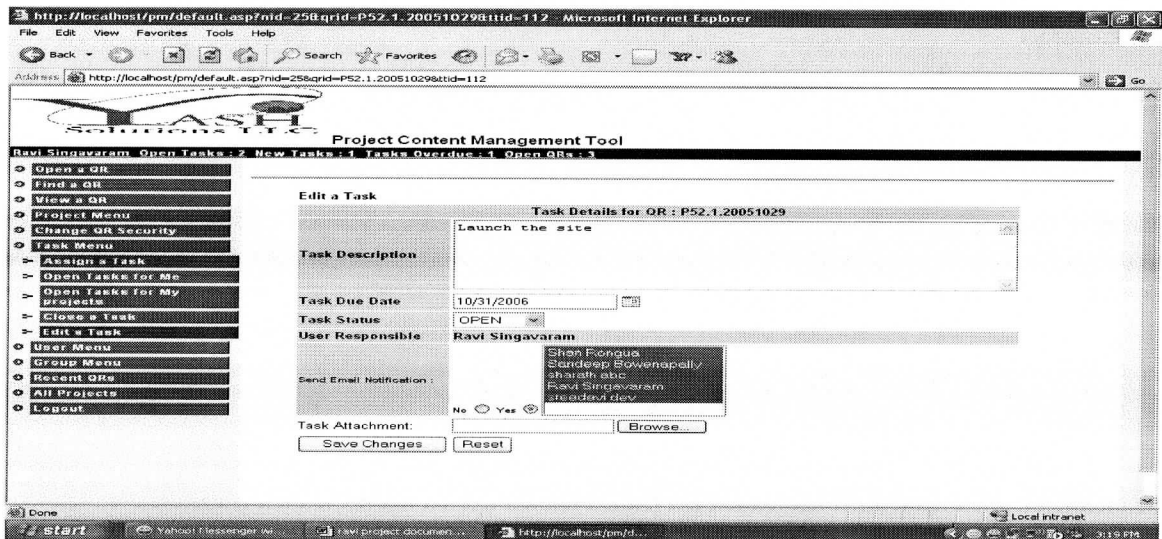


Figure 4.33 Edit a task

We can edit the task with this option and save the changes.

User Menu

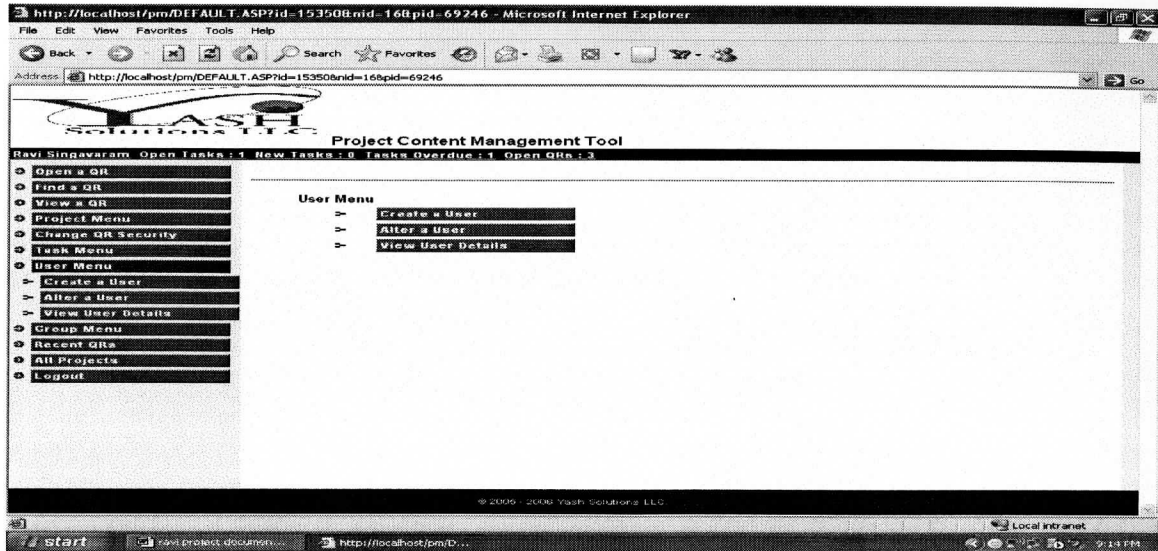


Figure 4.34 User menu

We have three options here create a user, alter a user and view user details.

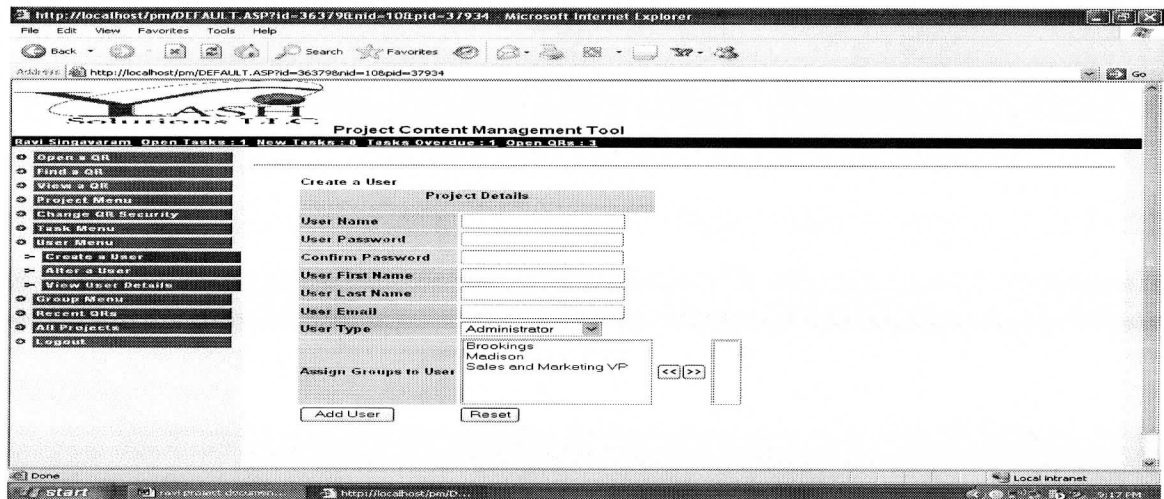


Figure 4.35 Create a user

In create a user we can create a users in the company and assign them to user type. We have 4 types of users here. Administrator, Project Manager, Super Admin, User. The privileges for them differ by the user type. We can create a user and assign them to different groups.

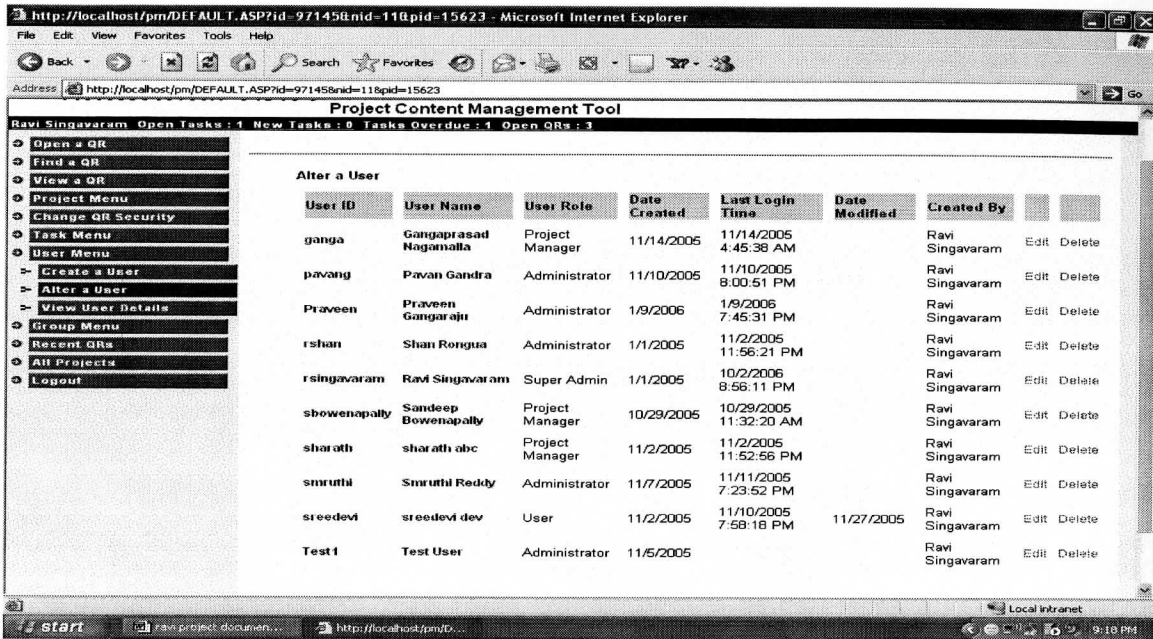


Figure 4.36 Alter a user

With this option we can see all the users with the details. We can see details like user name, userid, user role, date created, last login time, created by who.

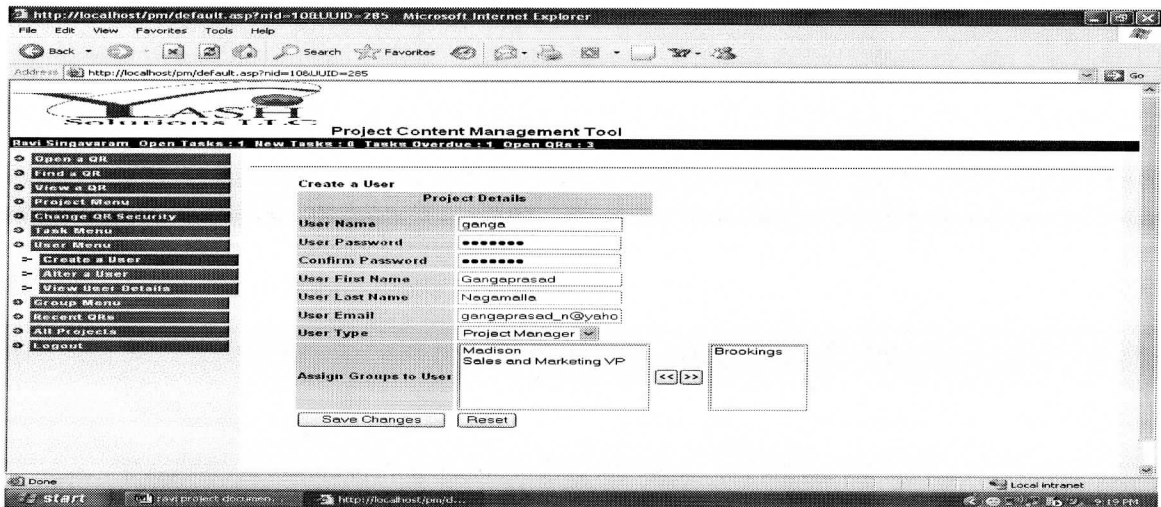


Figure 4.37 Create user example

I am creating a user will all the details in the above window.

http://localhost/pmr/DEFAULT.ASP?id=104956&nid=148&pid=46402 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://localhost/pmr/DEFAULT.ASP?id=104956&nid=148&pid=46402

Project Content Management Tool

Ravi Singavaram Open Tasks : 1 New Tasks : 0 Tasks Overdue : 1 Open QRs : 3

- Open a QR
- Find a QR
- View a QR
- Project Menu
- Change QR Security
- Task Menu
- User Menu
 - Create a User
 - Alter a User
 - View User Details
- Group Menu
- Recent QRs
- All Projects
- Logout

View User Details

User ID	User Name	User Role	Date Created	Last Login Time	Date Modified	Created By		
ganga	Gangaprasad Naganalla	Project Manager	11/14/2005	11/14/2005 4:45:38 AM		Ravi Singavaram	Edit	Delete
pavang	Pavan Gandra	Administrator	11/10/2005	11/10/2005 8:00:51 PM		Ravi Singavaram	Edit	Delete
Praveen	Praveen Gangaraju	Administrator	1/9/2006	1/9/2006 7:45:31 PM		Ravi Singavaram	Edit	Delete
rshian	Shan Rongua	Administrator	1/1/2005	11/2/2005 11:56:21 PM		Ravi Singavaram	Edit	Delete
rsingavaram	Ravi Singavaram	Super Admin	1/1/2005	10/2/2006 8:56:11 PM		Ravi Singavaram	Edit	Delete
sbowenapally	Sandeep Bowenapally	Project Manager	10/29/2005	10/29/2005 11:32:20 AM		Ravi Singavaram	Edit	Delete
sharath	sharath abc	Project Manager	11/2/2005	11/2/2005 11:52:56 PM		Ravi Singavaram	Edit	Delete
snruthi	Snruthi Reddy	Administrator	11/7/2005	11/11/2005 7:23:52 PM		Ravi Singavaram	Edit	Delete
sreedevi	sreedevi dev	User	11/2/2005	11/10/2005 7:58:18 PM	11/27/2005	Ravi Singavaram	Edit	Delete
Test1	Test User	Administrator	11/5/2005			Ravi Singavaram	Edit	Delete

start ravi project document... http://localhost/pmr/... Local intranet 9:20 PM

Figure 4.38 View user details

Group Menu

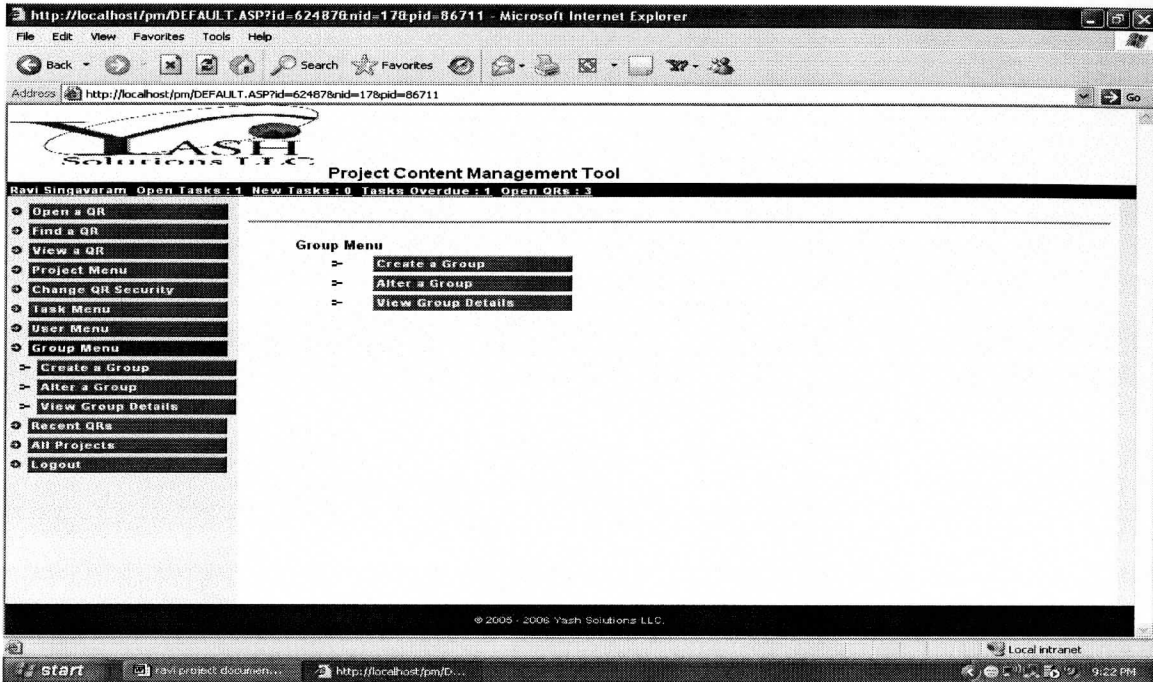


Figure 4.39 Group menu

In group menu we have create a group, alter a group, and view group details.

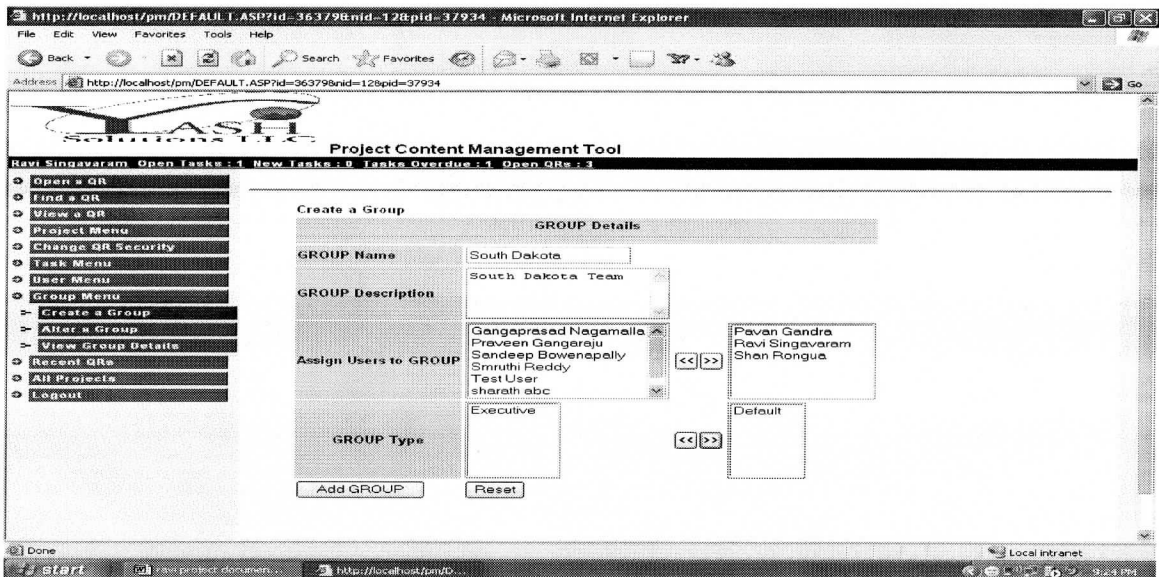


Figure 4.40 Create a group

When we click on the create a group we get the above page. We create the group by filling the groupname, group designation. We can also assign the users to group and Group type.

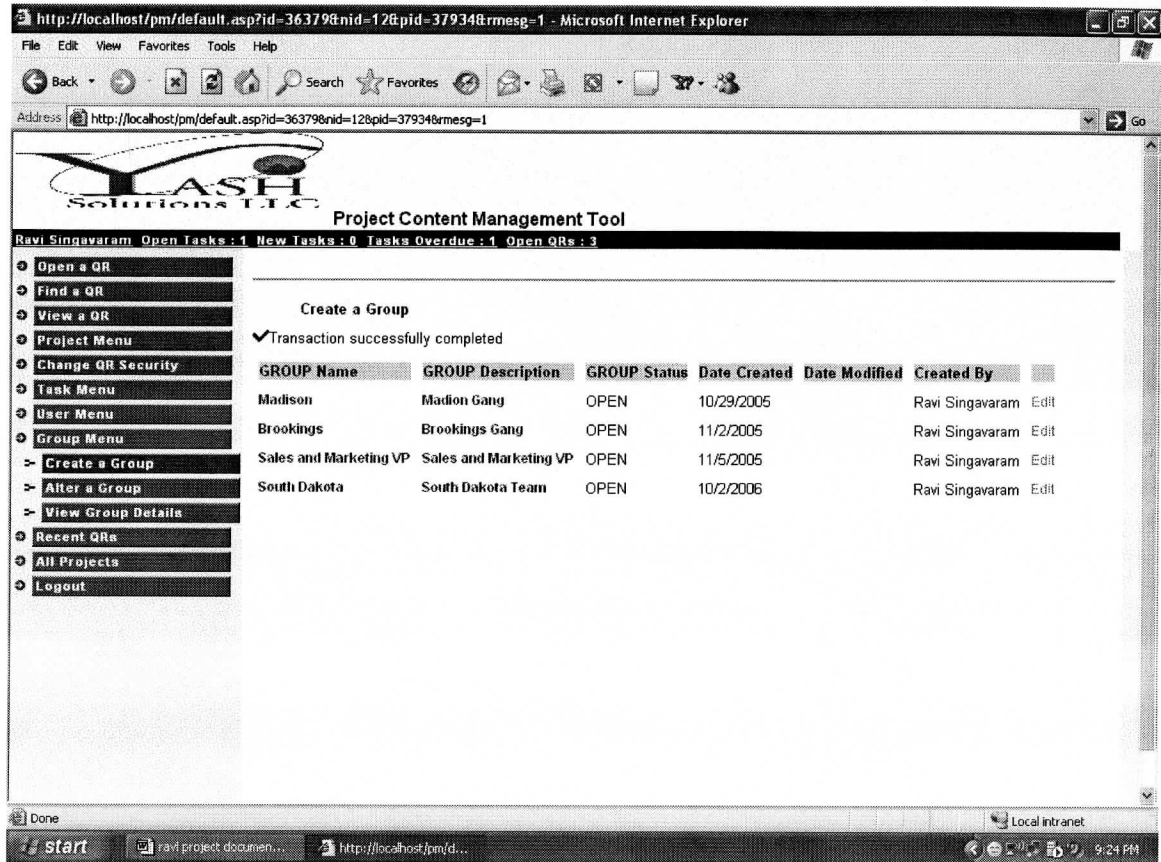


Figure 4.41 Create group example

We can see the group South Dakota was created successfully.

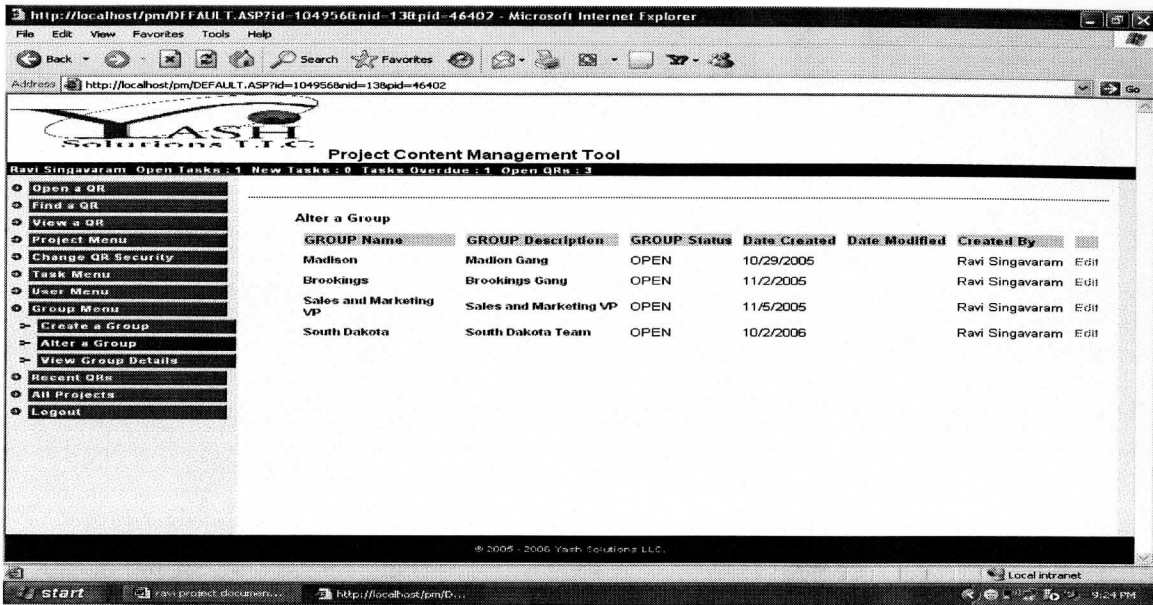


Figure 4.42 Alter a group

we can alter a group by clicking on the alter a group option. we will be getting all the group names and we can click on the edit and alter the group.

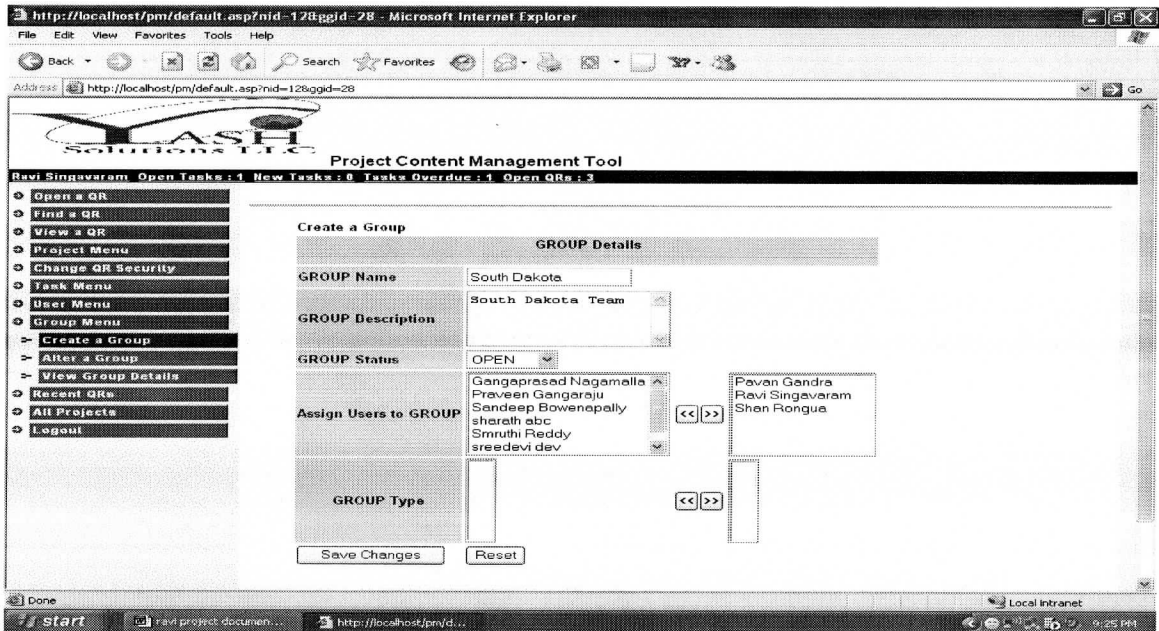


Figure 4.43 Create a group

When we click on the edit and alter a group .when we click on edit it will direct to create a group with the group name and all other details, we can alter what ever we need.

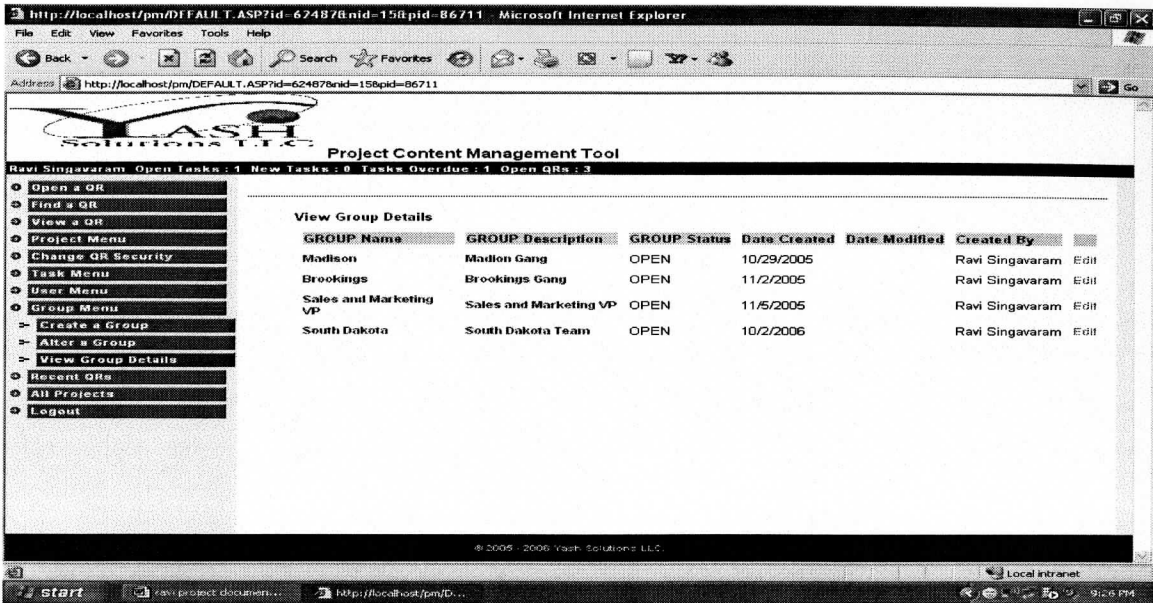


Figure 4.44 View group details

We can view all the groups that exist and see whether the group is open or closed, group creation date, group name and group description. We can edit the group if we need any changes to be made.

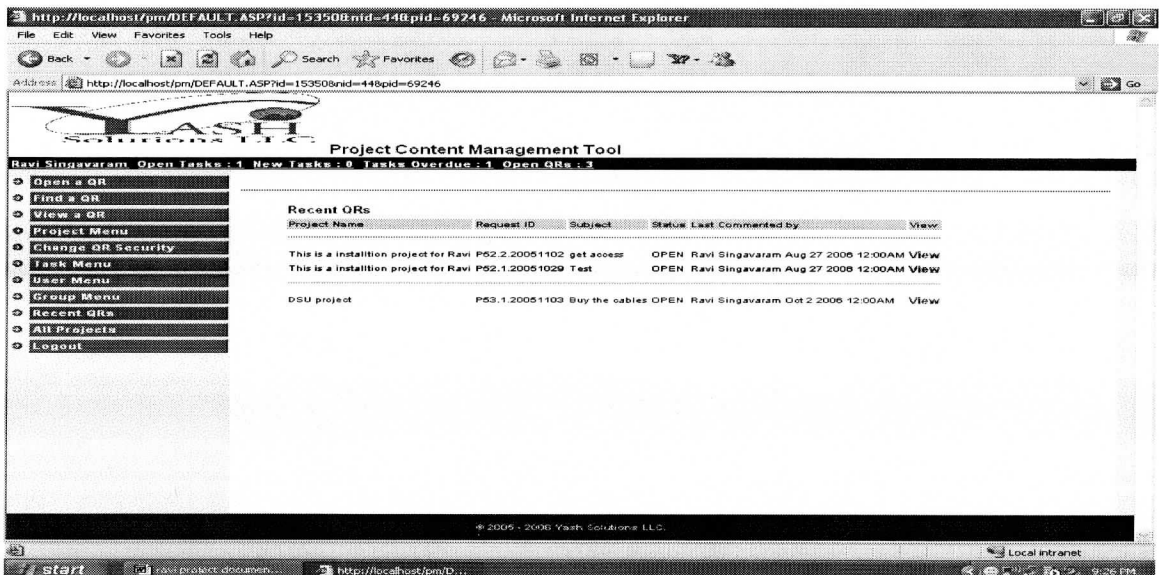


Figure 4.45 Recent QR's

We can view the recent QR's for all the projects user is being assigned to.

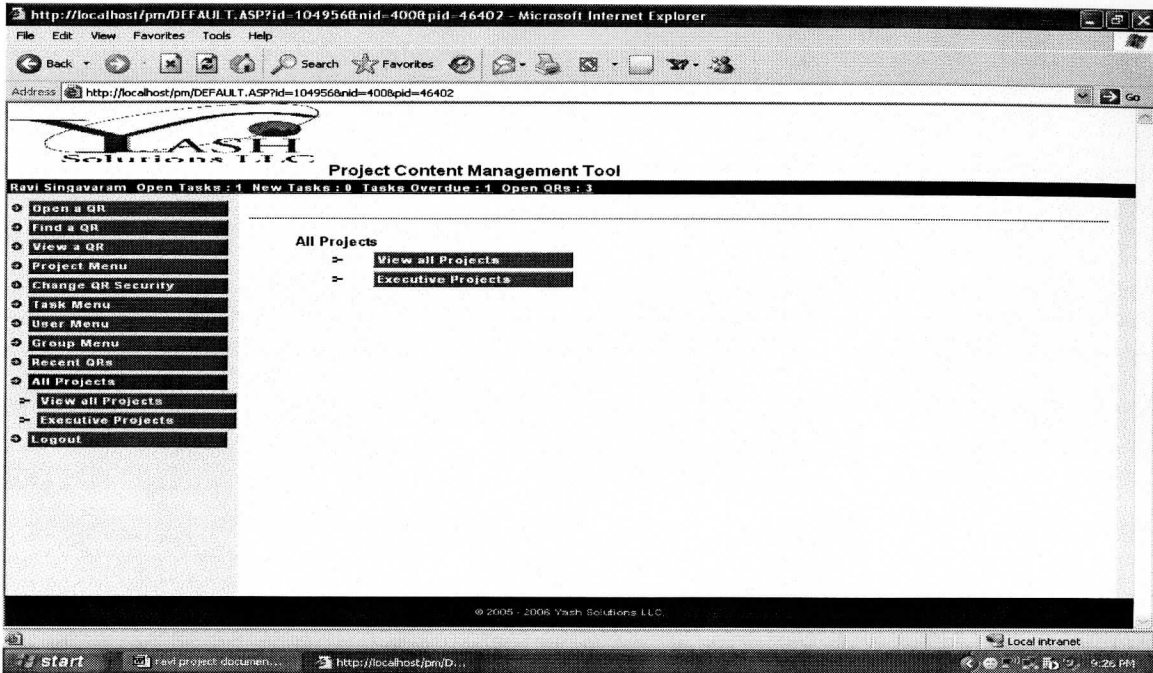


Figure 4.46 All projects

This is Option is for the high level management team. They can view all the technical projects and executive projects.

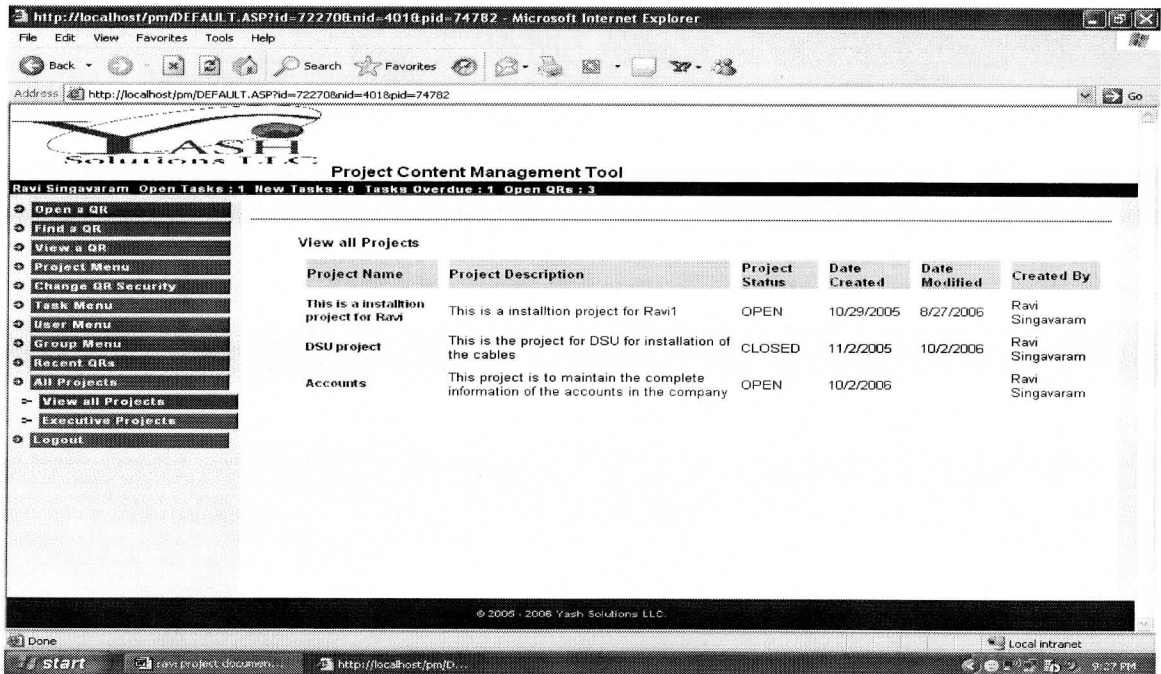


Figure 4.47 View all projects

We can view all the projects in the company which are open and closed.

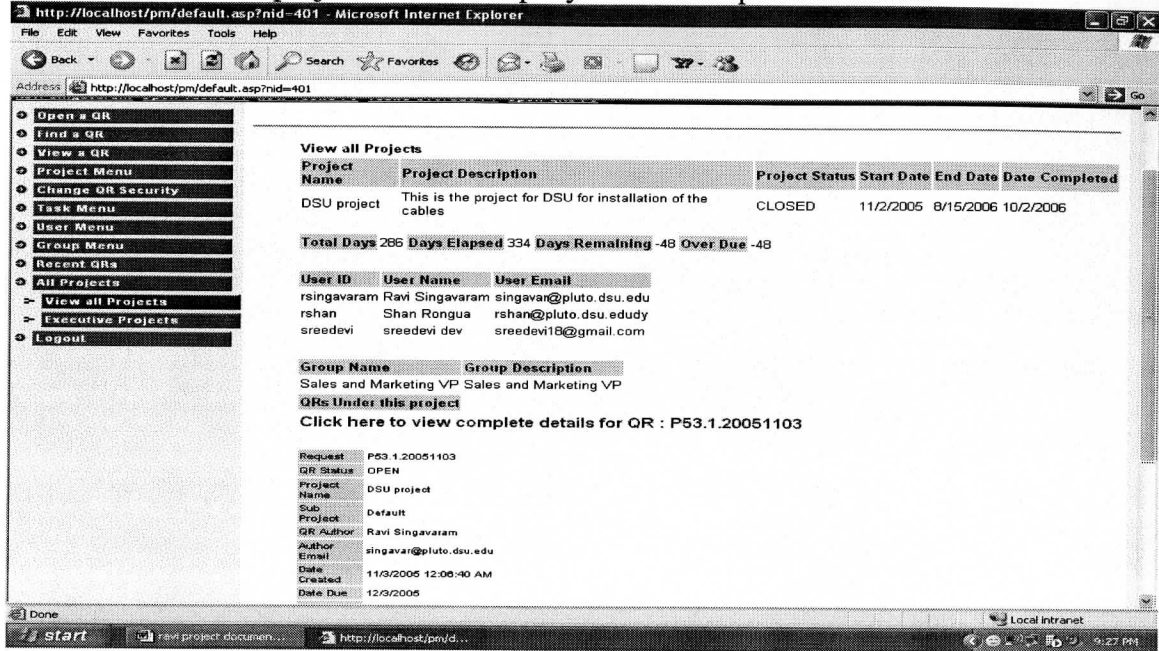


Figure 4.48 View all projects

We can view all the details regarding the project like start date, end date, days elapsed, days remaining, who are the involved in the project and all the QR's.

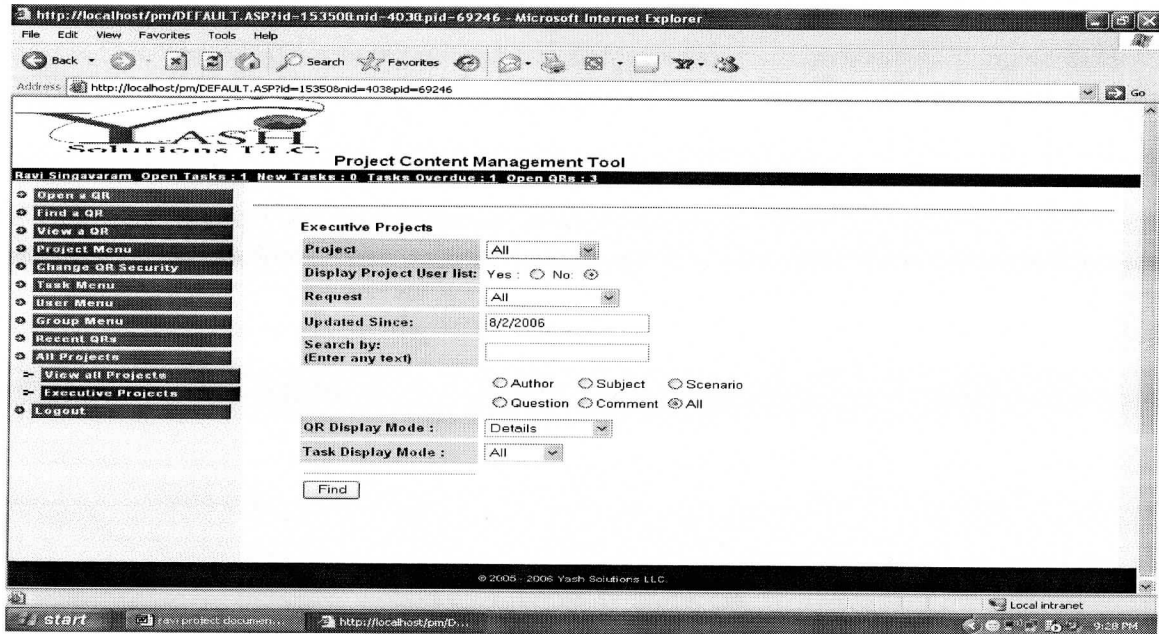


Figure 4.49 Executive projects

We can view all executive projects by search criteria.

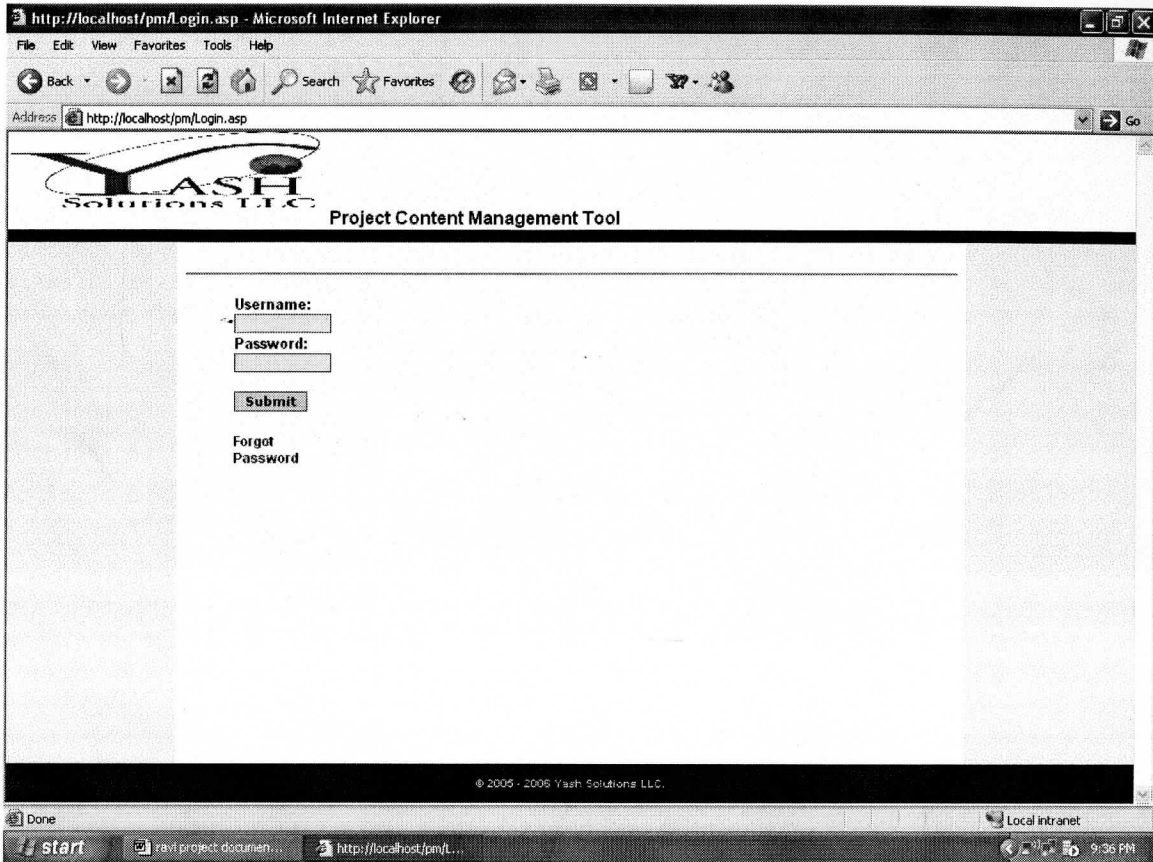


Figure 4.49 Logout

When we click on the logout it redirect to the homepage.

5. Conclusions

The Implementation of the project is completed successfully at Yash Solutions.

It was great experience working in Yash solutions.Learnt different skills and implemented in the project. It was a nice exposure to large scale environment. This project establishes a powerful and permanent system that can be used for effectively tracking project details. The project completely differs from the existing system. The existing system uses manual approach but the proposed project used modern technology.

The whole system is developed to meet the following requirements:

User Convenience: The user interface, which is easy to handle.

Fast Analysis: This system provides the opportunity to evaluate the projects status quickly.

Flexibility: The whole system is flexible, where improvements and modifications can be conducted when needed.

The key areas where the application can be improved are

- 1.) The application can be launched in World Wide Web. Currently they are planning to go on company intranet.
- 2.) Plans are being made to add meeting invitations and minutes of the meetings available through this application.
- 3.) Various Kinds of Reports which can be generated through this can be added in the View all Projects Section.

6. References

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APPENDIX A: Project Planning

A.1. Work Breakdown Structure (WBS)

Planning

Identify problems

Define requirements

Feasibility analysis

Develop and prepare plan/proposal document.

Designing

Web designing

Prepare Layouts for different modules

Select the best layout.

Implementation

Web development

Setup web server

Create Web pages for various tasks

Database development

Creating tables in the database

Tune the database and web server

Testing

Test the WebPages

Test the database

Documentation

Prepare detailed user manual

Execution

Identify efficient maintenance techniques.

Launch the application

Project closing

Project presentation

A.2. Gantt Chart

The figure shows the Gantt Chart of the project. It shows the different stages in the project and the time estimated to finish each task.

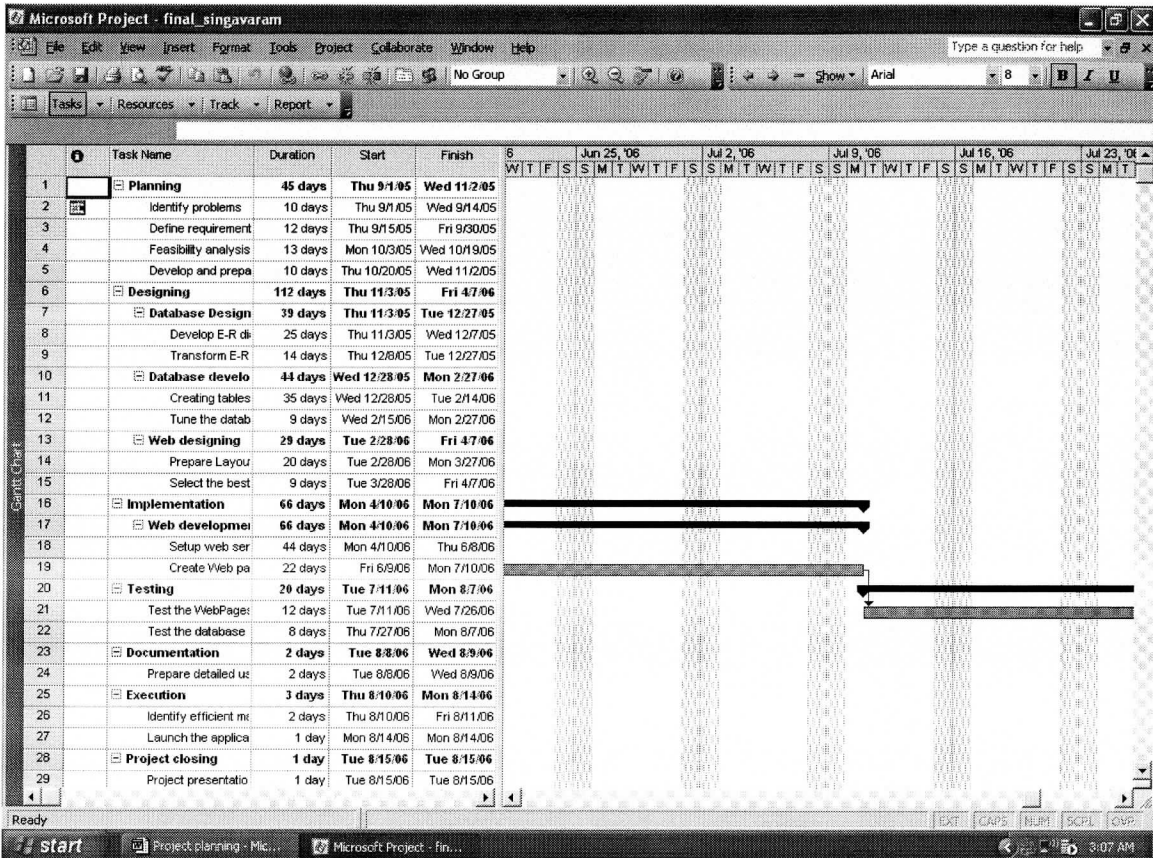


Figure A.1 Gantt Chart

Appendix B: Code

```
<%  
dim  
PROJECT_ID,PROJECT_NAME,PROJECT_DESC,PROJECT_STATUS,PROJECT_C  
ATEGORY_ID,PROJECT_CATEGORY,PROJECT_CATEGORY_DESC,PROJECT_C  
ATEGORY_STATUS,PROJECT_DUE_DATE,PROJECT_START_DATE
```

```
Function isProjectopen(ppid) 'Checking to see if a project is open or closed  
If ppid<>"" Then
```

```
    set rsProject=Server.CreateObject("ADODB.RecordSet")  
    rsProject.Open "Select project_status from tbl_project where  
project_id=" & ppid & "",con
```

```
        If not rsProject.EOF Then  
            If trim(rsProject("Project_status"))="OPEN" Then  
                isProjectopen=true  
            Else  
                isProjectopen=false  
            End IF
```

```
        Else  
            isProjectopen=false  
        End IF
```

```
    rsProject.close  
    set rsProject=nothing
```

```
End If  
End Function
```

```
<%  
dim TASK_ID, TASK_DUE_DATE, TASK_DESCRIPTION,  
TASK_USER_RESPONSIBLE, TASK_EXTERNAL_USER,theFormtsk  
Function Opentasks(security)
```

```
Set theFormtsk = Server.CreateObject("ABCUpload4.XForm")
```

```
    If theFormtsk("ttid")="" Then  
        showmytasks(security)
```

```
    Else
```

```
        ' if security is close then this will present the user with an option to close  
the task.
```

```
        If theFormtsk("optype")="close" Then  
            CloseTask
```

```
theFormtsk("ttid"),theFormtsk("qrid"),theFormtsk("nid")
```

```
        ' if edit this will generate a form for editing the taks  
elseif theFormtsk("optype")="edit" Then
```

```
            NewtaskFormgen()
```

```
'if updating this will grab the information from the edit form and saves in
the database
elseif theFormtsk("optype")="update" Then
    addedittask(theFormtsk("optype"))
End IF
End If
End Function
```