SMART RACK

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<u>CERTIFICATE</u>

This is to certify that the work titled **<u>SMART RACK</u>** submitted by **<u>NATASHA LALIT</u>** **<u>(101307)</u>** partial fulfillment for the award of degree of **<u>BACHELOR OF</u>** **<u>TECHNOLOGY IN COMPUTER SCIENCE</u>** of Jaypee University of Information Technology, Waknaghat has been carried out under my supervision. This work has not been submitted partially or wholly to any other University or Institute for the award of this or any other degree or diploma.

Signature of Supervisor   :   --------------------------------------

Name   :   **Dr. DEEPAK DAHYIA**

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ACKNOWLEDGEMENT

It is great pleasure to present this report on the project named Web Application on Cloud Computing system "SMART RACK" undertaken by me as part of my B.tech curriculum.

I am thankful to Jaypee University for offering me such a wonderful challenging opportunity and I express my deepest thanks to my supervisor 'Dr. DEEPAK DAHIYA', for providing all the possible help and assistance and his constant encouragement. For his coherent guidance throughout the tenure of the project, I feel fortunate to be taught by him, who gave me his unwavering support.

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ABSTRACT

Project "smart rack " is   aimed at developing a web application to help in file and

document management of an individual or group .It is web – based application that can

be accessed by all authorized user. This site claims to be add and maintain document and

soft data of an individual's anywhere and anytime. It will provide an online way of

accessing the media and the document. It provides online procedure for add new files and

make them share to other single or in group. It will act as a complete resource for user to

gain access of document, media   and its date of modification ,doc details and document

lists and provision to delete and download all available document .

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Chapter 1: Introduction

OBJECTIVE

Project "smart rack" is aimed at developing a web application to help in file and document management of an individual or group .It is web – based application that can be accessed by all authorized user. This site claims to be add and maintain document and soft data of an individual's anywhere and anytime. It will provide an online way of accessing the media and the document. It provides online procedure for add new files and make them share to other single or in group.

It will act as a complete resource for user to gain access of document, media   and its date of modification ,doc details and documnent lists and provession to delete and download all available document .

Here admin can create edit and delete user name and password .Admin is able to change the password of an existing user.

Significance of Project work

To get correct knowledge site can turn out to be very useful. Demand of shopping, organization, administrative, proper item tracking of all year and its easy to mention record of all Items, guidance in stylish electronic way is bouncing high. A discussion with our project guide produced enthusiastic response and we decided to take this challenge. Also this topic is chosen as it is going to give us a lifetime experience studying and developing a full fledged Web Application as per today's trends and help us choking out a nice career for ourselves. In current Competitive Environment every user wants to keep their records in an online database. The basic motive for this is just to reduce the paper work, avoiding usages of hard ware storage unit and increase the efficiency. This project is totally based on this requirement the other major requirements are described as we go on.

1.2 Topic background

Overview Of The Project:

The project is based upon an idea of Cloud computing Application. The project includes the following features:

1. An Admin should be able to
   - Create user name password.
   - Manipulation in user account detail.
   - Add file and document.
   - Remove file and document.

2. User is organization administrative and organization of user.

3. Show list of documents.

4. Organizational administration is able to see the user records.

5. Data of all the files added.

6. A complete Training kit of Microsoft .Net Framework 2.0 Web Based client development.

7. A complete .net Library.

8. It provides 100% security assurance.

9. Various links to allow easy navigation.

10. User and admin log as per there credentials.

11. The rack space support many document formats.

Plan of Work:

The various steps that have to be taken regarding the project development are:

1. Decide on Requirements of our site. Fix up the features that should be included.

2. Make a database of people. Decide the various details of people that should be stored in database like their Name, City, and Password in cryptic form etc.

3. Create the front-page of the site giving a brief description about the institute.

4. Create the help-pages of the system in the form of Q&A. This will help you also when implementing the system

5. Create other sub system like search, login, sending e-mail.

Identification Of Need:

Easy Stock , one of the leading and latest them to development centers in the past had a manual based data keeping of this system. This had several drawbacks, the major ones being listed below:

1) All the details of the Employee and product were being entered on paper manually which was an extremely cumbersome as well as time consuming process.

2) Further it was inefficient as stacks of storage were required to maintain these records.

3) There was growing negative Employee/admin feedback since the record retrieval information was slow and the records occasionally tended to get lost which further led to inconvenience to the Employees.

Keeping all these drawbacks in mind, there was a need felt for having an automated data Management System in place which could address all the above issues and provide viable solutions.

Preliminary Investigation:

The basic purpose behind Preliminary Investigation is to first clarify, understand and evaluate the Project Request.

Preliminary Investigation basically refers to the collection of information that guides the management of an organization or am singel man to evaluate the merits and demerits of the project request and make an informed judgment about the feasibility of the proposed system. This sort of investigation provides us with a through picture of the kind of software and hardware requirements which are most feasible for the system, plus the environment in which the entire project has to be installed and made operational.

1) *__Reviewing the Documents provided by the Organization:__*

They were quite effective in guiding us towards visualizing the features that were needed to be put together in the system and the required output which had to be generated once the system became functional.
These specifications provided to us by the organization showed how the new system should look like; it helped us in understanding the basic structure of the application which we were supposed to develop.

2) *__On site Observation:__*

Another technique utilized by us to gain information about the project was to visit the client site where the system had to be installed. Here a detailed system study was carried out, checking the existing system to replicate it with our system. On observing the existing system which the client was using helped us a lot in taking a decision regarding the feasibility of putting a Sql which could be made compatible with their other running systems.

3) *__Conducting Interviews__:*
This method of investigation conducted by us involved questioning the concerned personnel to get the user's (client) view about the system and the features they desired it to have. Some of the Questions put forward by our team were:
   a) The amount of data needed to be stored which would give us an idea of the
   b) The number of customers using the system and number of which the application needed to be installed.
   c) The issue of our application with existing system was widely discussed.
   d) Various standards and norm As of coding the application were looked

Scope Of The Project:

Completion of the development process will result in a software package that will provide user-friendly environment, which is very easy to work with, even for people with very little knowledge of form submit application of organization .

Management of various tasks is incorporated in the package and will deliver the required information in a very easy to use and easy to access manner.

This application will provide accuracy, efficiency, speed and easiness to the end user. Since the system is verified with valid as well as invalid data and is run with an insight into the necessary modifications that may require in the future, it can be maintained successfully without much hassle.

Benefits of the proposed system:

The benefits of the proposed system must also be evaluated. Benefits may be categorized as tangible or intangible.

Tangible benefits which are measured in money terms consist of the saving of

- Time.
- Certain operating costs.

Intangible benefits are more difficult to estimate and justify. They are often impossible to give a money value to. These may include:

- Satisfaction of the companies and Employees
- Efficiency.

Methodology Adopted:

Prototyping Model has been used for software development according to which a throwaway prototype of the proposed system, based on the currently known requirements, is given to the user so that he has a fair idea about how the proposed system is going to be like. This will help him in deciding the interface, input and output requirements.

It can be easily adjudged that inputs and outputs are big in number, can increase exponentially and may create a big chaos if not restricted properly. As the user spends some time on the prototype, he will become more precise about his own input and output requirements. This prototype will provide him with an environment analogous to the proposed system's environment.

Because of object oriented support in .NET, various concepts (like reusability, polymorphism, isolation etc.) are already there but for the efficient management of system components, Component based Software Engineering will also be exercised which will help in a resultant library of components, the benefit of which will be reusability and fast development.

Because of lack of hierarchical structure in object-oriented approach, there is no meaning of Bottom-up or Top-down testing. Testing will begin from the most rudimentary levels of the system and will move towards higher level components which will be based on design phase rather than coding phase. In little words, it can be said that 'CLUSTER Testing' will be exercised to scrutinize all the parts and their associative functionality.

Chapter 2:Project Review

Working Environment

2.1Understanding Dot Net Frame Work:

Definition:

The .Net framework can be defined as a language neutral platform designed to provide a number of rich and powerful application development tools and technologies. It has an extensive class library that provides wide-ranging support for data access.

.Net framework has an independent code execution and management environment called the Common Language Runtime (CLR) which ensures that code is safe to run, and provides an abstract layer on top of the operating system, which allows the elements of the .Net framework to run on many operating systems and devices.

The .Net Vision:

The basic idea behind the development of the .Net framework is that a global broadband network will someday globally connect all devices and the software will become a service provided over this network. Now devices will use common languages like XML over standardized or shared protocols such as HTTP and these devices will be running a multitude of software on   various operating systems.

This is not limited to Microsoft but also to other operating systems such as sun, IBM. The .Net framework provides the tools and the technologies needed to write applications that can seamlessly and easily communicate over the Internet using open standards like XML and SOAP. It also aims at solving the various problems that are faced by developers while working on applications made using the windows DNA. It provides a solution to problems such as registering of components and shutting down applications in order to upgrade them.

Benefits Of Using .Net:

The windows platform is inherently complex and may pose several problems for programmers. However the .Net platform is used as it provides solutions to many such problems and offers an Internet centric platform.

Multiple platform Support:

.Net platform has been designed keeping multiple platform support as a key feature. For version 2.0 this means that the code written using the .Net platform can run on all versions of Windows. i.e. Windows 98,95,NT,2000 and so on.

Microsoft has included rich support for all the platforms. Also this code shall also work on any 64-bit processor that may be used by Microsoft later.

It is also expected that .Net shall run on other platforms like UNIX also, however it is not for sure that all functionality will be available for the same.
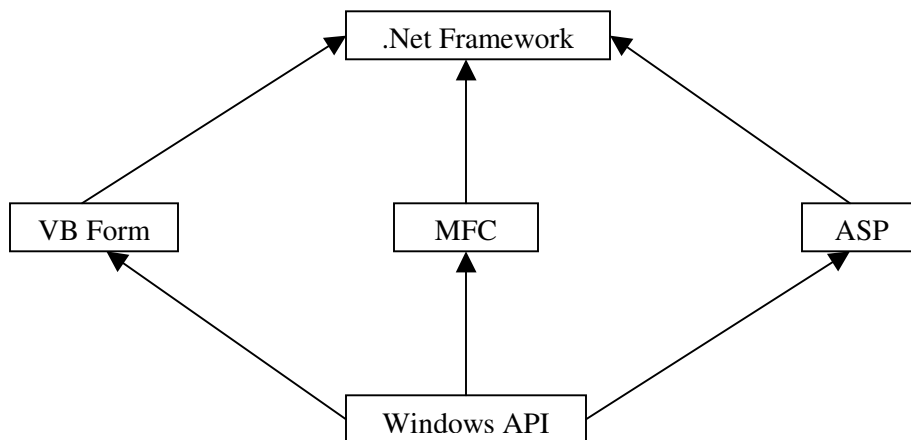
Dot Net as a clean start:

On the windows platform, the technologies available often depend on the programming language that they are written in, so they are very different.

Depending on the chosen programming language, these technologies can be restrictive.

The problem with this approach is that it makes the Windows platform harder to understand.

Using .Net there is just one simple object oriented way of accessing the functionality of the .Net Framework.

```
                        ┌──────────────────┐
                        │  .Net Framework  │
                        └──────────────────┘
                  ↗              ↑              ↖
     ┌───────────┐      ┌──────────────┐      ┌─────────┐
     │  VB Form  │      │     MFC      │      │   ASP   │
     └───────────┘      └──────────────┘      └─────────┘
            ↖                  ↑                    ↗
                       ┌──────────────┐
                       │ Windows API  │
                       └──────────────┘
```

(The best and most commonly used technologies being merged in .Net)

1) *Performance:*
   . Net has been designed to provide great performance and scalability. For .Net to succeed, the companies must be able to migrate their applications and not suffer due to the way the CLR works. To ensure this CLR converts the code into native

machine code. So the conversion can take step-by-step method and will make use of the given machines resources and processor features.

As newer versions of the CLR are released and technologies like windows forms are released, each release will have a better performance and smaller memory footprints. Also .Net has succeeded in replacing completely the older technologies like COM with better and efficient design equivalents. At the heart of the .Net platform is the CLR.

Dot Net Framework Drill Down:

The .Net framework consists of four major areas:

1. Application development technologies
2. Class libraries
3. Base class libraries
4. The Common Language Runtime

.Net Framework	Application Development technologies
	Class Libraries
	Base Class Libraries
	Common Language Runtime
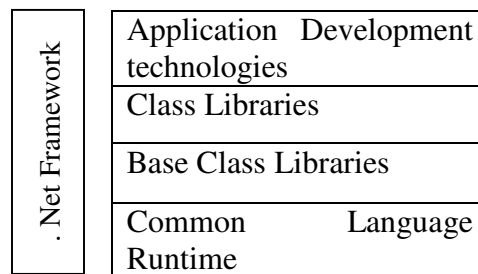
(Description of the layered .Net Framework architecture)

The various layers can be explained in detail as:

- *Application Development Technologies:*
  .Net offers technologies for building web applications, providing many new features and a much cleaner programming model. The two main features are:
    1. **Web Services:-**
       These are programmable business logic components that serve as black boxes to provide access to functionality via the Internet using the standard protocols such as HTTP.
       Web services are based on the application of XML called the SOAP (Simple Object Access Protocol)
    2. **Windows forms:-**
       For developing standard GUI applications, the .Net Framework provides the window forms.

Window forms are an extensive class library that exposes the functionality of the Windows common Controls using the Object Oriented capabilities of .net Framework.

- *Class libraries:*
  The .Net Framework provides an extensive set of class libraries. This includes classes for:

  1. **Data access:-**
  High performance data access classes for connecting to SQL server, ORACLE or any other database for which OLEDB or ODBC provider is available.
  2. **XML Support:-**

  It includes next generation XML support.

- *Base Class Libraries:*
  The base class library in the .Net framework is huge. It covers areas such as collections; thread support, code generation, IO, reflection and   many more.
  The list of base class libraries is huge but can be looked in through the Wincv tool that is used to locate them.

- *Common Language Runtime:* The CLR proves to be one of the most radical tools use in the .Net Framework. It is a language neutral platform that converts code generated by all the languages in the .Net platform to a language called the (IL) Intermediate Language. This is further converted into the native machine language.

  The CLR enables the .Net framework to run on a number of different devices. It forms an intermediate layer between the operating system and the .Net Framework.

Testing Technologies Used:

As already mentioned, the whole development process is object oriented and implementation will also be in object oriented environment i.e. .NET. So, anticipated testing techniques automatically imply to be object oriented. In object oriented approach, the semantic constructs appear at all the stages, so it is better to find the problem in early stages so that we start testing parallel to development process and will be taken in consideration at each stage.

Grossly, the testing strategy is divided in the following steps:

Step 1: Object oriented analysis and object oriented design models will be checked for consistency.

Step 2: Unit testing will be exercised in context to object orientation in which each class with their methods and operations are scrutinized.

Step 3: Integration testing at various stages of testing will be exercised to find associative errors. Regression testing will be utilized but at the same time, it will also be based on object-oriented view.

Step 4: Finally, termination of testing will be supported by Validation testing and System testing which includes requirements, review, stress testing, security testing, recovery testing etc.

2.2Microsoft SQL Server™ 2008

Microsoft SQL Server 2008 is a full-featured relational database management system (RDBMS) that offers a variety of administrative tools to ease the burdens of database development, maintenance and administration. In this article, we'll cover six of the more frequently used tools: Enterprise Manager, Query Analyzer, SQL Profiler, Service Manager, Data Transformation Services and Books Online.

COMPONENTS:

- *Enterprise Manager:* is the main administrative console for SQL Server installations. It provides you with a graphical "birds-eye" view of all of the SQL Server installations on your network. You can perform high-level administrative functions that affect one or more servers, schedule common maintenance tasks or create and modify the structure of individual databases.

- *Query Analyzer:* offers a quick and dirty method for performing queries against any of your SQL Server databases. It's a great way to quickly pull information out of a database in response to a user request, test queries before implementing them in other applications, create/modify stored procedures and execute administrative tasks.

- *SQL Profiler:* provides a window into the inner workings of your database. You can monitor many different event types and observe database performance in real time. SQL Profiler allows you to capture and replay system "traces" that log various activities. It's a great tool for optimizing databases with performance issues or troubleshooting particular problems.

- *Service Manager:* is used to control the MSSQLServer (the main SQL Server process), MSDTC (Microsoft Distributed Transaction Coordinator) and SQLServerAgent processes. An icon for this service normally resides in the system tray of machines running SQL Server.

- *Data Transformation Services (DTS):* provide an extremely flexible method for importing and exporting data between a Microsoft SQL Server installation and a large variety of other formats. The most commonly used DTS application is the "Import and Export Data" wizard found in the SQL Server program group.

- *__Books Online:__* is an often overlooked resource provided with SQL Server that contains answers to a variety of administrative, development and installation issues. It's a great resource to consult before turning to the Internet or technical support.

FEATURES:

- *__User-Defined Functions:__*SQL Server 2008 introduces the long-awaited support for user-defined functions. User-defined functions can take zero or more input parameters and return a single value—either a scalar value like the system-defined functions, or a table result. Table-valued functions can be used anywhere table or view expressions can be used in queries, and they can perform more complex logic than is allowed in a view.

- *__Indexed Views:__*Views are often used to simplify complex queries, and they can contain joins and aggregate functions. In SQL Server 2000 Enterprise or Developer Edition, you can define indexes on views to improve query performance against the view. When creating an index on a view, the result set of the view is stored and indexed in the database. Existing applications can take advantage of the performance improvements without needing to be modified.

  Indexed views can improve performance for the following types of queries:
  1. Joins and aggregations that process many rows

  2. Join and aggregation operations that are performed frequently within many queries

  3. Decision support queries that rely on summarized, aggregated data that is infrequently updated.

- *__Distributed Partitioned Views:__*SQL Server 2008 expands the ability to create partitioned views by allowing you to horizontally partition tables across multiple SQL Servers. The feature helps you scale out one database server to multiple database servers, while making the data appear as if it comes from a single table on a single SQL Server. In addition, partitioned views are now able to be updated.

- *__New Data types:__* SQL Server 2008 introduces three new data types. Two of these can be used as data types for local variables, stored procedure parameters and return values, user-defined function parameters and return values, or table columns:

- *__Text in Row Data:__* SQL Server 2008 provides a new text in row table option that allows small text and image data values to be placed directly in the data row, instead of requiring a separate data page. This can reduce the amount of space

required to store small text and image data values, as well as reduce the amount of I/O required to retrieve rows containing small text and image data values.

- *Cascading RI Constraints:* SQL Server 2008 provides the ability to specify the action to take when a column referenced by a foreign key constraint is updated or deleted. You can still abort the update or delete if related foreign key records exist by specifying the NO ACTION option, or you can specify the new CASCADE option, which will cascade the update or delete operation to the related foreign key records.

PROJECT ARCHITECTURE
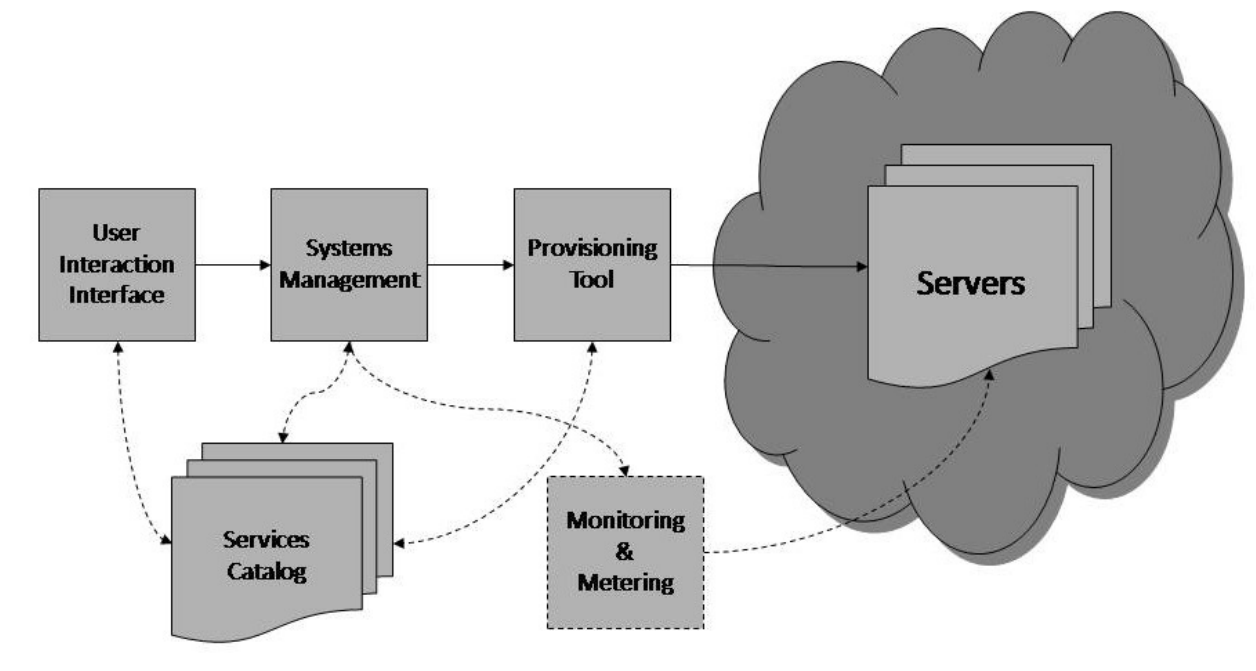
Chapter 3: Project work

3.1-Definition of Problem

One must know what the problem is before it can be solved. The basis for the candidate system is the recognition of a need for improving an information system or a procedure.

Organization exam form management systems have become quite popular with so many educational institutes. Today a number of leading organization s uses organization management system. It is helpful to Employees as well as the management & faculty members.

In this project Employees can know about important notices, their results, subjects, assignments and can have access to ask for queries.

Also it provides facility to know the no. of courses/Branch available in the organization and the full details of Employee like their name, address, percentage, start year, completion year etc.

It also provides details about admission procedure, organization 's vision exam.

Modification over existing system is that like in the website of our organization there is no management system & also the information given is not up to satisfactory level. So I'll try to improve certain features which are lacking in the website like:

Feasibility Study

System Feasibility:

Introduction:

Prior to stating whether the system we have to develop is feasible or not we believe that we should emphasize on what is implied by the word "Feasibility". Feasibility is the measure of how beneficial or practical the development of the system will be to the organization. It is a preliminary survey for the systems investigation. It aims to provide information to facilitate a later in-depth investigation.

3.2-PROJECT ANALYSIS

Analysis is detailed study of various operation performed by the system and their relationship within and outside the system. Outside factor also plays major role in the system like government, vendors, customers etc. A key question is what must be done to solve the problem? One aspect of the analysis is defining the boundaries of the system and determining whether or not a candidate system should consider other related systems.

During analysis, data are collected on available files, decision points and transaction handled by the present system. There are many tools, which are available to do the analysis part like interview, questionnaire, fact analysis and review of written documents after all these tools flow charts or decision tables are built which clearly shows the problem. The interview is a commonly used tool in analysis. The analysis require special skill to the subject being interview and the way in which interview is taken. Bias in data collection and interpretation can be a problem. Training, experience and common sense are required for collection of the information needed to do the analysis. The environment in which analysis is carried out plays an important role that is how the system analyst deals with the interviewing staff. With the corporation and satisfaction of the user staff analysis part can be successfully taken. In analysis, we

design the system logically that is how the system will look like, after the analysis part we move from logical system to physical system that is how actually the system will be. So after analysis that is logical there is a physical part called design that is very important stage in system development life cycle. Once analysis is completed, the analyst has a firm understanding of what is to be done. The next step is to decide how the problem might be solved. Thus, in system design, we move from the logical to the physical aspects of the life cycle.

3.3-Hardware and Software Requirements

Platform

.NET Framework System Requirements:
To ensure adequate performance, .NET Framework has the following minimum and recommended system requirements for client and server applications:

➢ **Operating System Requirements:**

The .NET Framework is supported on the following platforms:

Scenario	Operating System
Client	MS Windows 98
	MS Windows 98 Second Edition
	MS Windows Millennium Edition
	MS Windows NT 4.0 Workstation with service pack 6.0a or later
	MS Windows NT 4.0 Server with service pack 6.0a or later
	MS Windows 2000 Professional
	MS Windows 2000 Server
	MS Windows 2000 Advanced Server
	MS Windows 2000 Datacenter Server
	MS Windows XP Home Edition Professional
	MS Windows Server 2003 Family

Note: On all these systems, MS Internet Explorer 5.01 or later and MS Windows Installer 2.0 or later are also required.

Server   MS Windows 2000 Professional
                                MS Windows 2000 Server with service pack
                                2.0
                                MS Windows 2000 Advanced Server with service
                                pack 2.0
                                MS Windows 2000
                                Datacenter Server with service pack 2.0
                                MS Windows XP Professional
                                MS Windows Server 2003 Family

> **Additional Software Requirements:**

To use additional features such as ASP.Net, COM+ services and SQL Server .NET
Data Provider, you will need the following additional software's:

Scenario	Feature	Required Software
Client	SQL Server .Net Data Provider	MS Data Access Components (MDAC) 2.6 or later
	Access to system management	Windows Management Instrumentation (WMI) (installed with OS on Windows 2000, Windows Millennium Edition and Windows XP)
	COM+ Services	Windows 2000 with service Pack 2.0
Server	SQL Server .Net Data Provider	MS Data Access Components (MDAC) 2.7
	ASP.Net	MS Internet Information Services (IIS) 5.0

> **Hardware Requirements:**

Scenario	Processor		RAM	
	Required	Recommended	Required	Recommended
Client	Pentium 500 MHz*	Pentium 1 GHz 64 MB*	128 MB or higher	
Server	Pentium 667 MHz*	Pentium 1 GHz 128 MB*	256 MB or higher	

3.4-SYSTEM ANALYSIS

Before we start studying the system we are to known with the term system. What is system? The term system is derived from the Greek word system, which means an organized relationship among functioning units or components. A system exists because it is designed to achieve one or more objective.

The term system refers to an orderly grouping of interdependent components linked together according to a plan to achieve a specific objective. The idea of system becomes most practical and necessary in conceptualizing the interrelationship and integration of operations especially when using computers. Thus, a system is a way of thinking of organizations and their problems. It involves a set of techniques that helps in solving the problems. A system has many elements these are input and output processors, control, feedback, environment, boundary and interface. System takes input from outside and gives output to outside. So practically system is an open system that interacts with the environment.
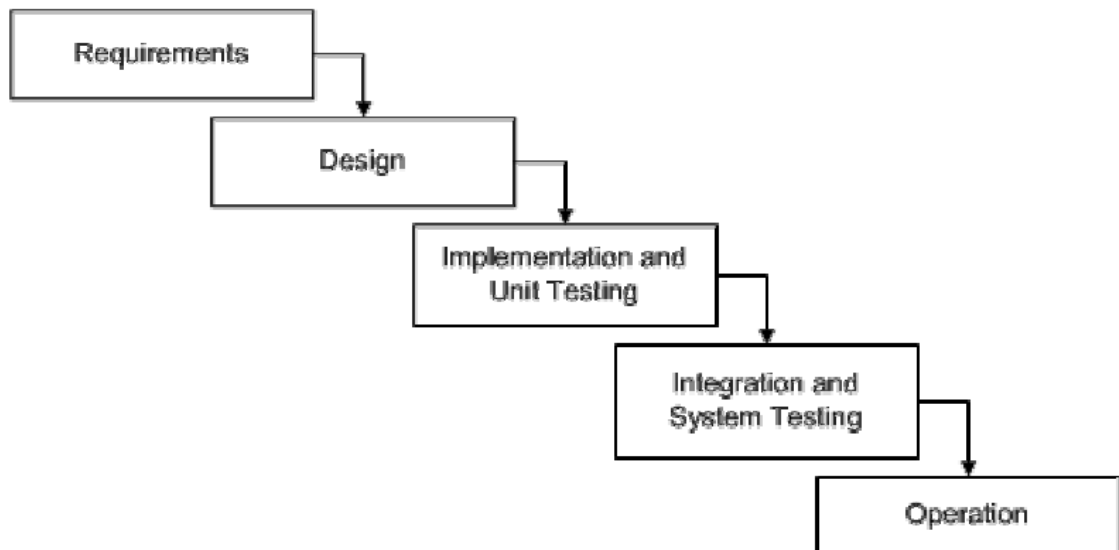
A study of system concept has three basic implications:

1. A system must be designed to achieve a predetermined objective.

2. Interrelationship and interdependence must exist among the component.

3. The objective of the organization as a whole has higher priority than the objective of its sub system for example computerizing personal applications must conform to the organization policy on privacy, confidentiality and security, as well as making selective data (pay roll) available to the accounting division on request.

In the present study, a system is an integrated collection of programs and data files. The combination of all these programs and databases made this system. The process of designing a system is not done in one phase.

3.6-INFORMATION GATHERING

After defining the problem, the next step in the system analysis is to gather information. Information gathering is an art and science. The approach and manner in which information is gathered require persons with sensitivity, commonsense and knowledge of what and when to gather and what channels to use in securing information. This means that information getting is neither easy nor routine. Much preparation, experience and training are required. Before one determines where to go for information or what tool to use, the first requirement is to figure out what information to gather. The approach and the manner in which the information is gathered require a person with sensitivity, skill and common sense of the following: -

1) Kind of information needed: -

Before one determines where to go and what tool to use, first requirement is to figure out what information to gather. The basic information required is how organization of personnel or official contacts as well as appointment takes place.

2) Sources of information

Information is gathered from two main sources namely personal and written documents within the police stations.

Two main sources of information are: -

1) External sources.

2) Internal sources.

Information gathering tools: -

There are no general rules for using the tools for the information gathering. An important rule is that information is acquired accurately, methodically under right Conditions and with minimum interruption to the user staff.

Following are the common information gathering tools: -

a) **Review procedure manuals**

b) **Onsite observation**

c) **Interview**

d) **Questionnaires**

e) **Work measurement**

f) **Sampling**

g) **Meeting**

3.7 FEASIBILITY STUDY

The dictionary meaning of feasibility is "the work study, we need to consider the economic, technical and behavioral factors in the system development. Feasibility study is procedure that identifies, describes and evaluates candidate system and selects the best system for the job.

Depending on the result of the initial investigation, the survey is expanded to a more feasibility study. A feasibility study is a test of system proposal according to its workability impact on the organization, ability to meet the user needs, and effective use of resources.

IT FOCUSES ON THREE MAJOR QUESTIONS:

❖ What are the user's demonstrable needs and how the candidate system meets them?

❖ What resources are available for the candidate system? Is the problem worth solving?

❖ What are the likely impacts of the candidate system on the organization?

Each of these questions must be answered carefully. They revolve around the investigation and evaluation of the problem, identification and description of candidate system, specification of performance and not cost of each system, and the final selection of the best system. The objective of the feasibility study is not to solve the problem but to acquire a sense of its scope.

The result of the feasibility study is a formal proposal. This is simply a report – a formal document detailing the nature and scope of proposed system. Feasibility study involves many steps. After all the steps feasibility report is prepared, which is given to the management for the approval of the project. The proposal summarizes what is known

and what is going to be done. Therefore feasibility study also plays major role in the system development life cycle.

Feasibility study is the test of the system   proposal according to its, workability, impact on the organization ability to meet the user needs and effective use of resources. The objective of feasibility is not solving the problem but a sense of its scope. During the feasibility study the problem definition is crystallized and aspects of the problem to be included in the system are determined. Consequently the cost and the benefits are estimated with greater accuracy at this stage.

An initial investigation culminates in a proposal that determine whether an alternative system is feasible. This is the step to determine what the candidate system is to do by defining its expected performance. Thus, a feasibility study is carried out to select the best system that meets performance requirements. This entails identification, description and evaluation of candidate system and selection for the best system for the job. This then addresses the system performance definition and expounded on the feasibility study as a second major step in system development life cycle.

System performance definition

A system's required performance is defined by describing its output in a user acceptable format and at a higher level of detail than what was described in the initial investigation. This involves three steps:

1) **Statement of constraints**
2) **Identification of specific system objective**
3) **Description of output**

This phase builds on the previous phase in that much of work may already have been done.

Many feasibility studies are disillusioning for both user and analyst. First, the study often presupposes that when the feasibility document is being prepared, the analyst is in a position to evaluate solution. Second most studies tend to overlook the confusion inherent in the system development – the constraints and the assumed attributes if the feasibility study is to serve as a decision document. It must answer following questions: -

1) Will the cost of a new system will be more than the profit expected from implementation of the new system that is the solution economically feasible?

2) Is there a new and better way to do the job that will benefit the user.

The most successful system projects are not necessarily the biggest or most visible in a business but rather those that truly meets the users expectations. More project fail because of inflated expectations than for any other reason.

FEASIBILITY CONSIDERATIONS

There are three essential considerations that are involved in the feasibility analysis.

1) **Technical Feasibility**

2) **Economical Feasibility**

3) **Behavioral Feasibility**

Technical Feasibility:

Technical feasibility centers on the existing computer system (hardware, software etc) and to what extent it can support the proposed edition. For example, if the current system ids operating 80% capacity –and arbitrary ceiling – then running another application could overload the system or required additional hardware. This involves financial consideration to accommodate technical enhancements. If the budget is a serious constraint, then the project is judged not feasible. The proposed system was found to be technically feasible in all aspects.

Economical Feasibility:

Economic analysis is the most frequently method used for evaluating the effectiveness of a candidate system. More commonly known as cost and benefit analysis, the procedure is to determine the benefits and saving that are expected from a candidate system and compare them with cost. If benefits outweigh costs then the decision is make to design and implement the system. The proposed system is economically feasible and it fulfills all the requirements of the existing with much more accuracy. Lots of paper work will be reduced and the time consumed will become minimum. In short it will over weigh the existing system in costs compared to benefits.

Behavioral Feasibility :

People are inherently resistant to change, and computers have been known to facilitate change. An estimate should be made of how strong a reaction the user staff is likely to have towards the development of computerized system.

Steps in feasibility analysis: -

It involves the eight steps:

1) **Form a project team appoints a project leader.**

2) **Prepare system flowcharts.**

3) **Enumerate potential candidate system.**

4) **Describe the identity characteristics of candidate system.**

5) **Determine and evaluate performance and cost effectiveness of each candidate system.**

6) **Weigh system performance and cost data.**

7) **Select the best candidate system.**

8) **Prepare a report final project directive to management.**

3.8-Cost and Benefit Analysis

Cost and Benefit Analysis is a procedure that gives a picture of the various costs, benefits and rules associated with a system. To what extent benefits outweigh costs is the function of cost/benefit analysis.

The various costs involved in this software are:

➢ **Hardware Cost:** Various hardware requirements have already been mentioned and the hardware cost may be ascertained on that basis.

➢ **Personnel Cost:** It requires only one person i.e. administrator to work on the system

➢ **Facility Cost:** Since it is an online application, no facility costs are involved.

➢ **Operating Cost:** No day-to-day costs are involved. However, the application needs to be registered which is a onetime expenditure and the domain name needs to be renewed on a yearly basis.

A system is also expected to provide benefits. The first task is to identify each benefit and then assign a monetary value to it. **Benefits** may be tangible or intangible, direct or indirect. Some of them are:

➢ User friendly interface

➢ Properly organized system

➢ Proper work flow

➢ Information will be well used

Constraints And Limitations:

The constraints and limitation within a system are the drawbacks that occur during the implementation of the system. These limitations and constraints can crop up in almost every system; the most important fact is to find a way to overcome these problems.
Software design is the first of three technical activities – design, code generation, and test that are required to build and verify the software. Each activity transforms information in manner that ultimately results in validated computer software.
The design task produces a data design, an architectural design, an interface design and component design.

The design of an information system produces the details that clearly describe how a system will meet the requirements identified during system analysis. The system design process is not a step by step adherence of clear procedures and guidelines. When I started working on system design, I face different types of problems; many of these are due to constraints imposed by the user or limitations of hardware and software available. Some times it was quite difficult to enumerate that complexity of the problems and solutions thereof since the variety of likely problems is so great and no solutions are exactly similar however the following consideration I kept in mind during design phased.

Software Requirement Specification:

The software requirement specification is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional description, a representation of system behavior, an indication of performance requirement and design constraints appropriate validation criteria, and other information pertinent to requirement.

The introduction to software requirements specification states the goals and objectives of the software, describing it in the context of the computer based system. The Information Description provides a detailed description of the problem that the software must solve. Information content, flow and structure are documented.

A description of each function required to solve the problem is presented in the Functional Description. Validation Criteria is probably the most important and ironically the most often neglected section of the software requirement specification. Software requirement specification can be used for different purpose. Here are the major uses.

Statement of user needs:

A main purpose of the product specification is to define the need of the product's user. Some times, the specification may be a part of a contract sign between the producer and the user.

It could also form part of the user manuals. A user's needs are sometimes not clearly understood by the developer. If this is the case, a careful analysis – involving much interaction with the user should be devoted to reaching a clear statement of requirements, in order to avoid possible misunderstandings. Sometimes, at the beginning of a project, even the user has no clear idea of what exactly the desired product is. Think for instance of user interface, a user with no previous experience with computer products may not appreciate the difference between , say menu driven interaction and a command line interface. Even an exact formation of system functions and performance may be missing an initial description produced by an inexperienced user.

Chapter-4

PROJECT DESIGN

The most creative and challenging of the system life cycle is system design. The term design describes the final system and the process by which it is developed. It refers to the technical specifications that will be applied to implement the candidate system. It also includes the construction of programs and program testing. The key question is here: how should the problem be solved.

System design is a solution, a "how to" approach to the creation of a new system. The term design describes a final system and the process by which it is developed. It provides the understanding and procedural details necessary for implementing the system recommended in the feasibility study. Emphasis on translating the performance requirement into design specifications. Design goes through both logical and physical stages of development. Logical design reviews the present physical system, prepares input and output specification, and makes edit security and control specifications. The physical design maps out the details of the physical system, plans the system implementation, devises a test and implementation plan, and specifies any new hardware and software. Design includes the construction of programs and program testing. The first step is to determined how the output is to be produced and in what format.

Second input data and master files (data bases) have to be design to meets the requirement of the proposed output. The operational phases are handled through program construction and testing, including a list of program needed to meet the system's objective and complete documentation. The final report prior to the implementation phase includes procedural flow charts, record lay out and workable plan for

implementing the candidate system. Information are personnel, money, hardware, facilities, and their estimated cost must also be available. At this point, projected cost must be close to actual costs of implementation. In design phase forms are formed for ideal computer output and databases are designed. Databases are consisting of files, files consist of records, records consist of data items and data items are consist of bytes. Database administrator does this job.

Design goes through logical physical stages of development. Logical design reviews the present physical, prepares input and output specifications.

Various steps are involved in system design. These steps are as follows: -

1) **Problem definition.**

2) **Input – output specification.**

3) **Database design.**

4) **Modular program design.**

5) **Preparation of source code.**

6) **Testing and debugging.**

Process of design: -

The system design goes through two phases of development:

Logical and physical design, Data flow diagram shows the logical flow of the system. It basically described the input of the system, the database used and the procedure depicting the flow of data, all in a format that is understandable to the user.

The design covers the following:

1) Review the current physical system and its dataflow. File contents volumes, frequencies.

2) Prepare output specification: that is determining the format, contents and frequencies of reports, including terminal specifications and locations.

3) Prepare input specifications: that is format, contents and the most of the input function.

4) Prepare edit, control and security specification, which includes specifying the back procedure, and controls that ensures file integrity.

5) Specific implementation plan.

6) Review benefits, cost, target dates and system constraints.

After logical design physical design follows. This produces the working system by defining the design specification that tells the programmer exactly what the candidate system must do. Physicals system consists of the following steps: -

1) **Design the physical system**

a) **Specify input output media.**

b) **Design the database.**

c) **Design physical information flow through the system and a physical walks through.**

2) **PLAN SYSTEM IMPLEMENTATION:**

a) Prepared a conversion schedule

b) Determine training procedure.

3) Review the test and implementation plan and specify the new hardware and software.

4) Update benefits, cost, conversion and system constraints.

INPUT DESIGN

Input data

The goal of designing the input data is to make data entry easy as well as free from errors as possible. In entering data, operators needs to know

The following: -

1) The space allocated to each field.

2) Field sequence, which must match that in source document.

3) The format in which data fields are entered.

When we approach input data design, we design the source document that capture the data and then select the media used to enter them into the computer.

OUTPUT DESIGN

Output is the most important and the direct source of information to the user efficient, intelligible design includes system credibility and helps user in decision-making. Efficient intelligible output design should improve the system relation ship with the user and help in decision-making. A major form of output is a hard copy from the printer. Printouts should be designed around the output requirements of the user.

DATA FLOW DIAGRAM

Login Module
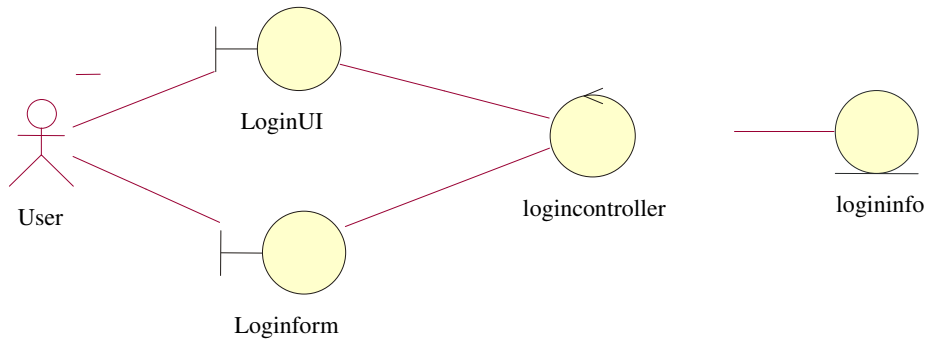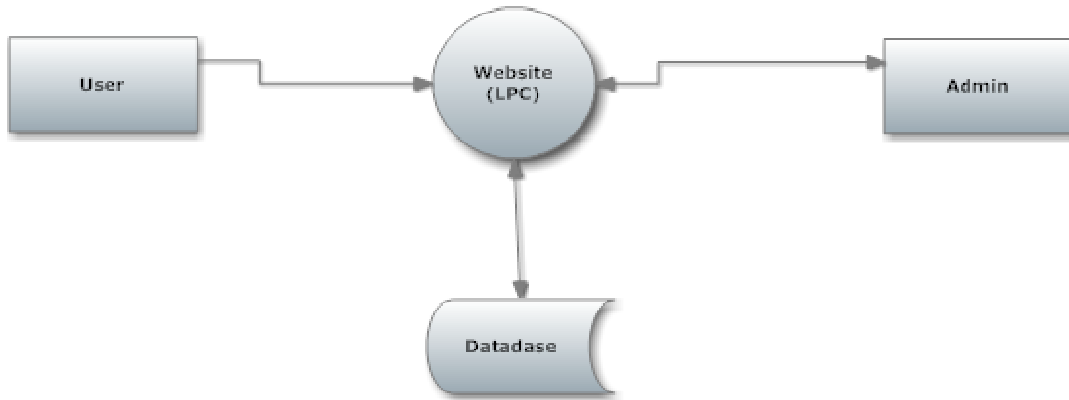
Sequence Diagram:
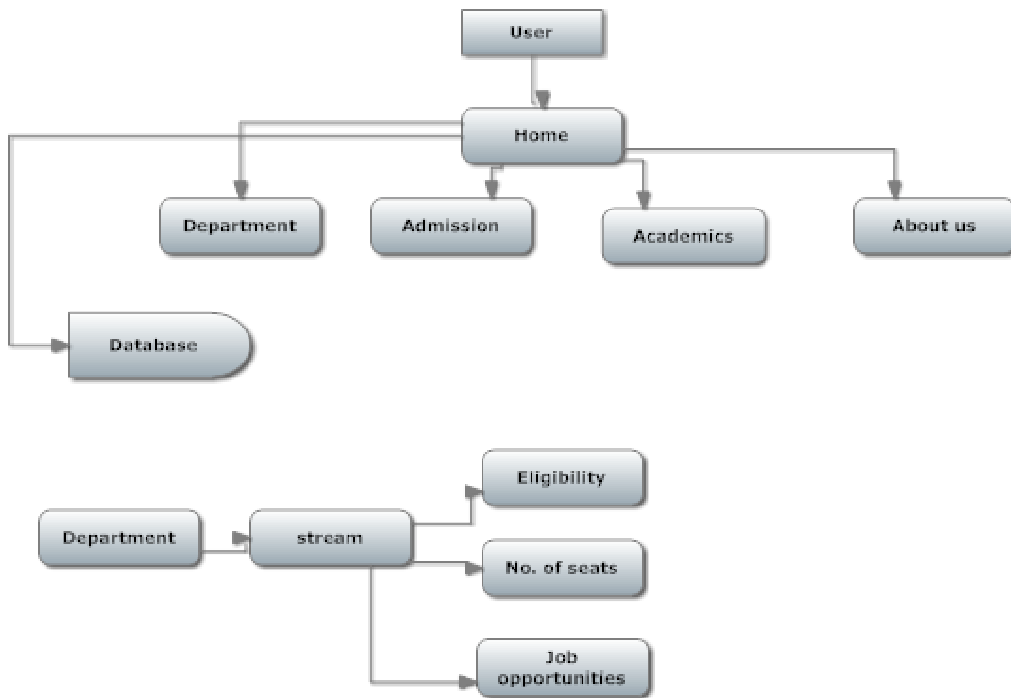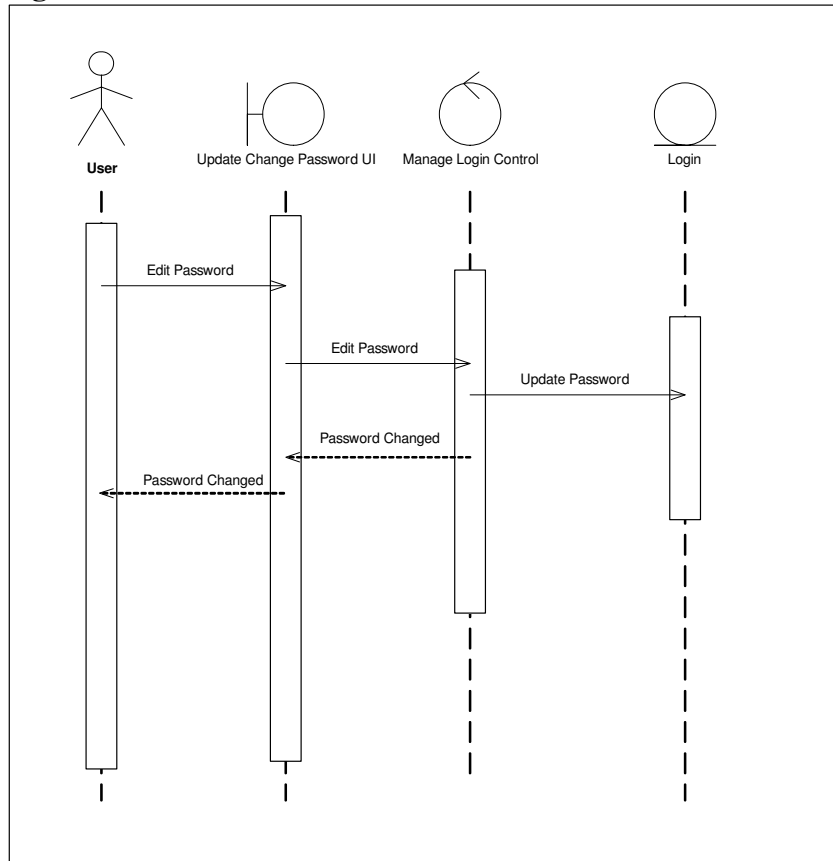
System Design

Introduction:

System design is the process of developing specifications for a candidate system that meet the criteria established in the system analysis. Major step in system design is the preparation of the input forms and the output reports in a form applicable to the user.

The main objective of the system design is to make the system user friendly. System design involves various stages as:

> ➢ Data Entry
> ➢ Data Correction
> ➢ Data Deletion
> ➢ Processing
> ➢ Sorting and Indexing
> ➢ Report Generation

System design is the creative act of invention, developing new inputs, a database, offline files, procedures and output for processing business to meet an organization objective. System design builds information gathered during the system analysis.

Characteristics Of A Well Defined System:

In design an efficient and effective system is of great importance to consider the human factor and equipment that these will require to use. System analyst must evaluate the capabilities and limitations of the personal and corresponding factors of the equipment itself.

The characteristics associated with effective system operations are:

> ➢ Accessibility
> ➢ Decision Making Ability
> ➢ Economy
> ➢ Flexibility
> ➢ Reliability
> ➢ Simplicity

Success is a new system pivots on its acceptance or non-acceptance by the organization.

Optimization Of Code:

Code optimization involves the application of rules and algorithms to program code with the goal of making it faster, smaller, more efficient, and so on. Often these types of optimizations conflict with each other, for instance, faster code usually ends up larger, not smaller.
There are two goals for optimizing code:

> ➤ Optimizing for time efficiency (runtime savings).
> ➤ Optimizing for memory conservation.

In some cases both optimizations go hand in hand, in other cases you trade in one for the other. Using less memory means to transfer less memory which reduces the time needed for memory transfers. But often memory is used to store pre calculated values to avoid the actual calculation at runtime. In this case you trade space consumption for runtime efficiency.

> ➤ Optimizing for time efficiency
> ➤ Reducing the number of calculations
> ➤ Using a different algorithm
> ➤ Declaring things constant
> ➤ Reducing frequency of function calls
> ➤ Optimizing for memory conservation
> ➤ Shared use of memory
> ➤ Data structure
> ➤ Data type size

How code optimization is achieved in the project?

We have made the use of the concept of global variable which we are declaring only once in a single form and which can be used across the forms in the project. Hence less memory will be used .This global variable is used to check the particular user who create, update, modify data in any form. We have declared global variable Created By, Created Date, Updated By and Updated Date only once in a form.

Verification & Validation:

Validation refers to the process of using software in a live environment using real data. The process of validation refers to a set of activities that ensure that the software that has been built is matching to customer requirement. Validation is successful when software functions in a manner that can be reasonably expected by the customer.

Suitable validation checks have been put wherever need was felt so as to avoid wrong data input. Coding has been done so as to avoid wrong entries in the tables. For example Numeric characters are not allowed in the Employee's name.

Two types of V:

> *Verification:* This checks if we are building the product right (i.e. does it meet the requirements specification?)

> *Validation:* This determines if we are building the right product? (i.e. does the requirement specification describe what the customer wants?)

The various kinds of validations performed in our system are as follows:

1. *Date Validation:* The validation on date data type has been specified to be of the format DD/MM/YY. Any other format is unacceptable.

2. *Amount Validation:* There is a validation on amount that is entered in rupees in the following format. "00,000,000.00" E.g. 15,65,789.00

3. *From Date to Date:* The "From Date" always has to be less than the "To Date", e.g. From 1 Nov, 2003 to 4 Nov, 2003 is correct and it cannot be other way round.

4. *Number Field Validation:* The field specified with Number as then their data-type will not accept Character or any other data type.

5. *User Authentication:* When a user logs on to the system to access data from the database, the password needs to be checked for user authentication.

6. *Password change Validation:* Only authorized users are allowed to change the password and the process requires asking the old password before changing it to the new one.

Presentation Layer : Presentation layer consists of web pages which include:

Master Pages:

> Master Page is Common Template that can be implemented on more than one Page. We can make changes whenever needed.
> Master page extension is *.Master*
> It can never be start up page.
> We can create properties, methods, classes in master pages.
> Multiple master pages can be there in single application.

<u>Content Pages:</u>

- ➤ Content pages are web pages which can be made as startup page.
- ➤ Content page extension is .aspx
- ➤ Multiple content pages can be there in single master page.
- ➤ Finally came the job of training the users which meant that the clients were given instructions regarding the working of the system which included teaching them the When the user was fully trained, he or she was asked to run the system independently and enter different sorts of data to test the system to its limits.

- ➤ Our system not only met the user requirements but to certain extent exceeded in achieving much more then what was actually needed.

Security Features

Authentication is the process of identifying users. Authorization is the process of granting access to users based on identity. Together, authentication and authorization provide the means to keep your application secure from intruders.

The kind of security measures used in our System are as follows:

> ### *User Authentication:*
> Only the Valid users, who are present in the pre defined list of Users stored in User Master table are granted permissions to enter the System . Any user apart from Record of Users are denied access.

> ### *User Authorization:*
> A privilege is a right to execute a particular type of SQL statement or to access another user's object. Some examples of privileges include the right to:
>
>   > - Connect to the database (create a session)
>   > - Create a table
>   > - Select rows from another user's table
>   > - Execute another user's stored procedure

Privileges are granted to users so that they can accomplish tasks required for their jobs. A privilege should be granted only to a user who absolutely requires it to accomplish necessary task. Excessive granting can compromise security.

A privilege can be granted in 2 ways:

> - Grant privileges to users explicitly.
> - Grant privileges to a role (a named group of privileges), and then grant the role to one or more users. Because roles allow for easier and better management of privileges, you should normally grant privileges to roles and not to specific users.
> - There are two distinct categories of privileges:
> - System privileges
> - Schema object privileges
> - System Privileges

A system privilege is the right to perform a particular action, or to perform an action on any schema objects of a particular type. For example, the privileges to create tablespaces and to delete the rows of any table in a database are system privileges. There are over 60 distinct system privileges. You can grant or revoke system privileges to users and roles. Only users who have been granted a specific system privilege with the Admin option or users with the system privileges Grant any privilage or Grant any object privilage can grant or revoke system privileges to other users. We grant system privileges only to administrative personnel and application developers. End users normally do not require the associated capabilities.

Schema Object Privileges

A schema object privilege is a privilege or right to perform a particular action on a specific schema object:

- ➢ Table
- ➢ View
- ➢ Sequence
- ➢ Procedure
- ➢ Function
- ➢ Package

A user automatically has all object privileges for schema objects contained in his or her schema. A user can grant any object privilege on any schema object he or she owns to any other user or role.

Reduced privilege administration rather than granting the same set of privileges explicitly to several users, you can grant the privileges for a group of related users to a role, and then only the role needs to be granted to each member of the group.

If the privileges of a group must change, only the privileges of the role need to be modified. The security domains of all users granted the group's role automatically reflect the changes made to the role.

Any user granted a can grant or revoke that role to or from other users or roles of the database. This option allows administrative powers for roles on a selective basis.

Create Role Admin_Control;
Grant Admin_Control To Administrator;

Table Level Security:

Schema object privileges for tables allow table security at the level of Data Manipulation Language and Data Definition Language operations.

We can grant privileges to use the various DML statements like DELETE, INSERT, SELECT, and UPDATE to perform operations on a table or view. We grant these privileges only to users and roles that need to query or manipulate a table's data.

With selective INSERT, a privileged user can insert a row with values for the selected columns. All other columns receive NULL or the column's default value. With selective UPDATE, a user can update only specific column values of a row. Selective INSERT and UPDATE privileges are used to restrict a user's access to sensitive data.

Cost Estimation:

The cost estimation depends upon the following:

- ➢ Project complexity

- ➢ Project size

- ➢ Degree of structural uncertainty

- ➢ Human, technical, environmental, political – can affect the ultimate cost of software and effort applied to develop it.

- ➢ Delay estimation until late in the project.

- ➢ Base estimates on similar projects that have already been completed.

- ➢ Use relatively simple decomposition techniques to generate project cost and effort estimates.

- ➢ Use one or more empirical models for software cost and effort estimation.

- ➢ Project complexity, project size and the degree of structural uncertainty all affect the reliability of estimates. For complex, custom systems, a large cost estimation error can make the difference between profit and loss. A model is based on experience and takes the form: **D = f (Vi)**

- ➢ Where d is one of a number of estimated values (e.g. effort, cost, project duration) and (Vi) are selected independent parameters (e.g. estimated LOC (Line of Code) or FP (Functional parameters))

New Hardware & Software:

Intel Pentium – IV Processor
Windows 2000 (Professional)
SQL SERVER (SINGLE USER WITH 15 LICENSES)

Different Phases Of Proposed Software Development:
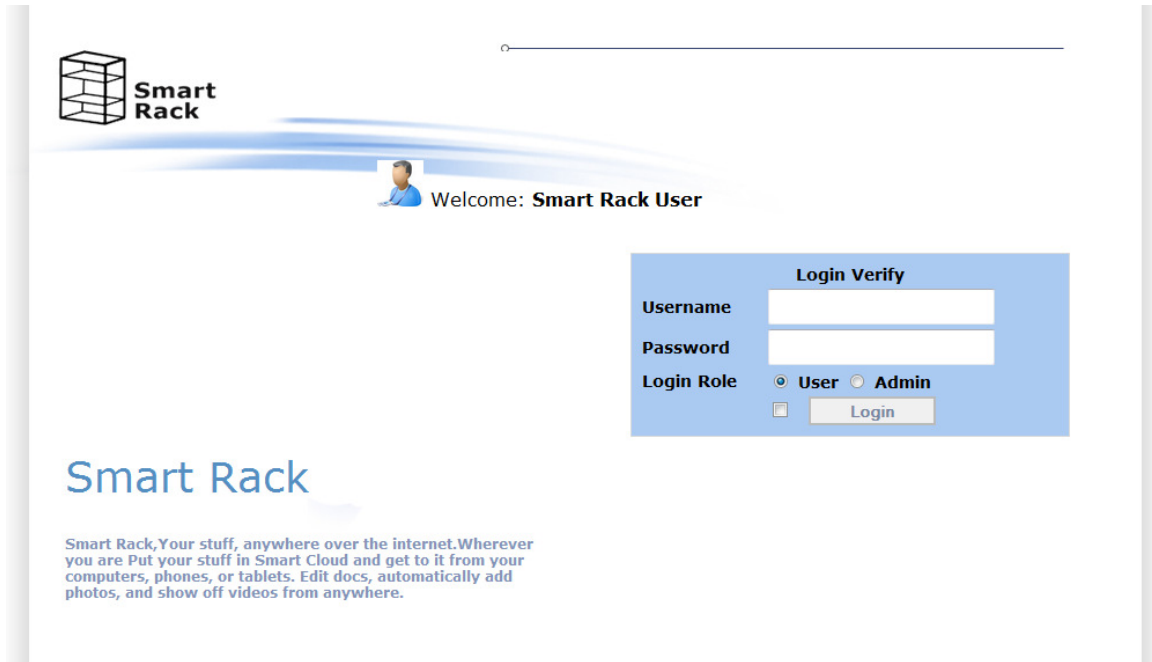
- ➢ System Study
- ➢ SRS (System Requirement Study) Documents and approval
- ➢ Advance Amount (50% of development charges + full cost of the software)
- ➢ Starting Of development (Interface Design and Approval)
- ➢ Development
- ➢ Presentation of New System
- ➢ 2nd partial development charges (Rest 50%).
- ➢ User training.
- ➢ Implementation.
- ➢ Support.
- ➢ Support for the futuristic changes.
- ➢ Price Quotation

The process will start after the system study and with an advance amount of 50% from the corporate as advance.

The project will approximately require 4 man months (4 person for 1 month) to be completed.

SNAPSHOTS OF APPLICATION:

Login Page :

Smart Rack

Welcome: **Smart Rack User**

Login Verify

Username	
Password	
Login Role	⦿ **User** ○ **Admin**
	☐ Login

Smart Rack

Smart Rack,Your stuff, anywhere over the internet.Wherever you are Put your stuff in Smart Cloud and get to it from your computers, phones, or tablets. Edit docs, automatically add photos, and show off videos from anywhere.

Home Page :

Smart Rack

HOME CHAT MAIL ADDRESS BOOK GROUPS DOCUMENTS SIGN OUT

Welcome: **all**

- admin
  - Vivek
  - all
  - second
  - second1

Change Photo

Source

Document Menu:

Create Group Menu :

Group Chat :
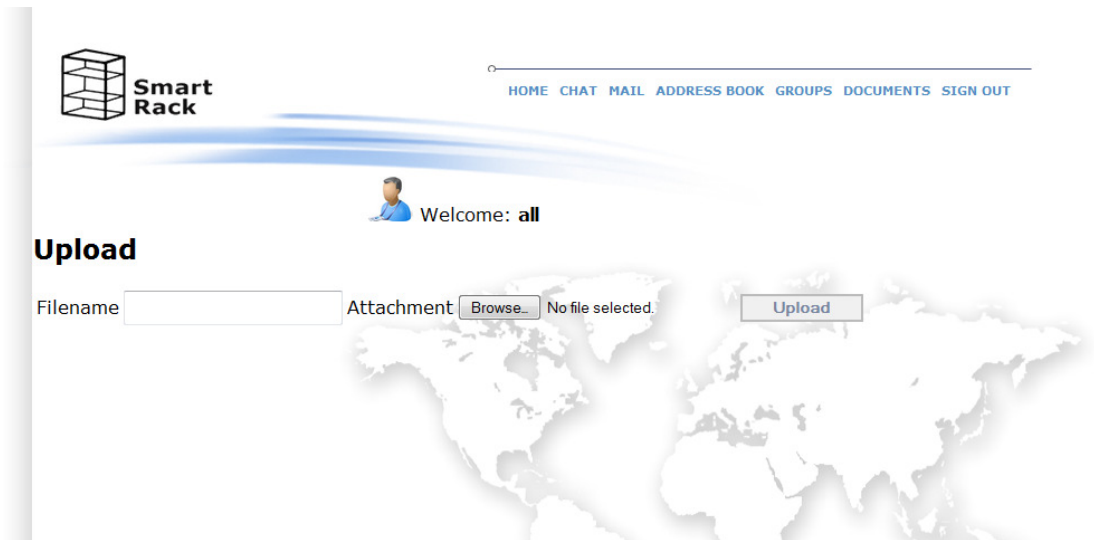
Add Document :

Brows Document:
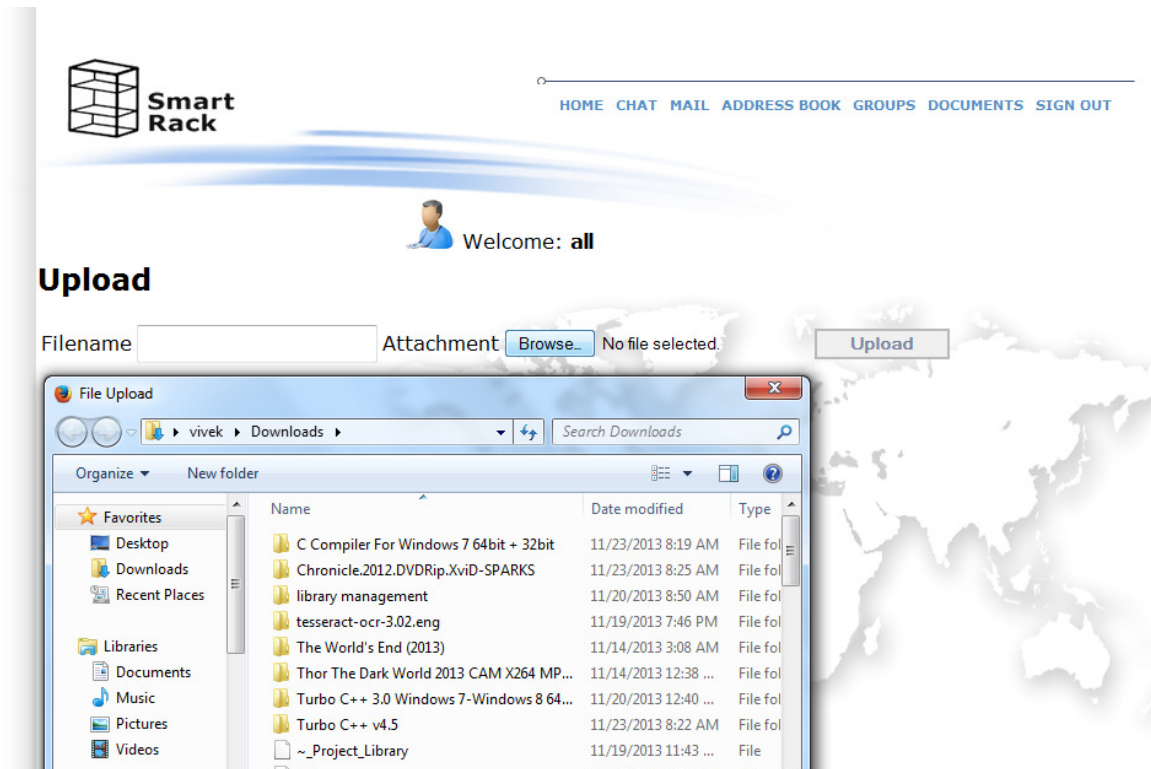
Add New User:

SmartRack

HOME CHAT MAIL ADDRESS BOOK ADD USER GROUPS FILES
DOCUMENTS SIGN OUT

Welcome: **admin**

Add user

Fill User Name
Please fill a unique user name.

This is the create user page. Here you can create the user and update there details.

On the left hand side you will enter the username and password. If the user already exist you can update there information at right hand side. Otherwise new user will create.

User Name	
Password	
Login Role	User ▾
	Submit

Show me all user

User List:

SmartRack

HOME CHAT MAIL ADDRESS BOOK ADD USER GROUPS FILES
DOCUMENTS SIGN OUT

Welcome: **admin**

viewAllUsers

Username	Login Role	Name	Address	Phone	Action
Vivek	User	Vivek			Activate
all	User				Activate
second	Admin				Activate
second1	User	sj@gcom		1722738138	Activate

Document Detail:

Create / Edit User Detail:

Mail:

View All Mail:

Start Chat :

Online Detail:

Start Chat :

Online selected user chat :
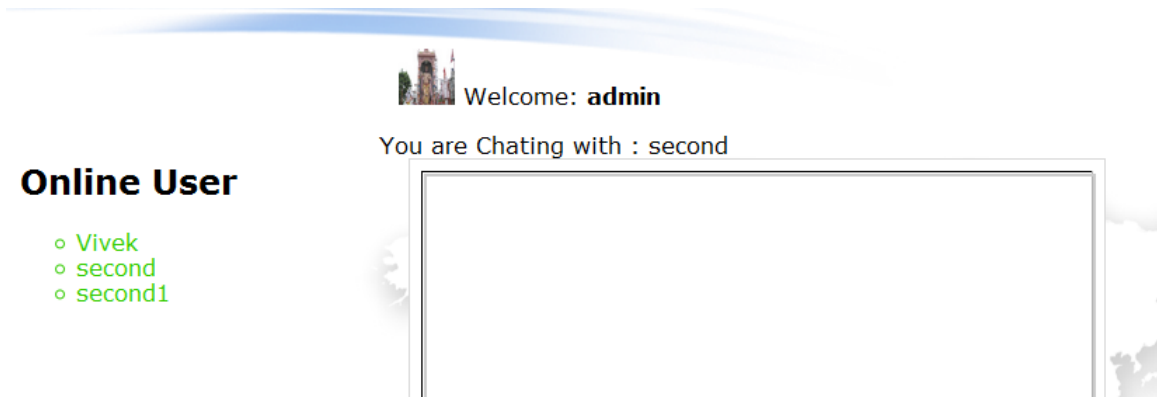
User Profile Change photo:

TESTING

4.3-Testing Methodology Used

As already mentioned, the whole development process is object oriented and implementation is also done in object oriented environment i.e. asp.net. So, anticipated testing technique automatically implies to be object oriented. In object oriented approach, the semantic constructs appear at all the stages, so it is better to find the problem in early stages so that we start testing parallel to development process and will be taken in consideration at each stage.

Grossly, the testing strategy is divided in the following steps:

Step 1: Object oriented analysis and object oriented design models were checked for consistency.

Step 2: Unit testing was exercised in context to object orientation in which each class with their methods and operations were scrutinized.

Step 3: Integration testing at various stages of testing was exercised to find associative errors. Regression testing was utilized but at the same time, it was also based on object oriented view. Specifically, Cluster testing is a good choice.

Step 4: Finally, termination of testing was supported by Validation testing and System testing which includes requirements review, stress testing, security testing, recovery testing etc.

These different levels of testing attempt to detect different types of faults. The relation of the faults introduced in different phases, and the different levels of testing are shown:

CLIENTS NEEDS ← **ACCEPTANCE TESTING**

REQUIREMENTS ↔ **SYSTEM TESTING**

DESIGN ↔ **INTEGRATION TESTING**
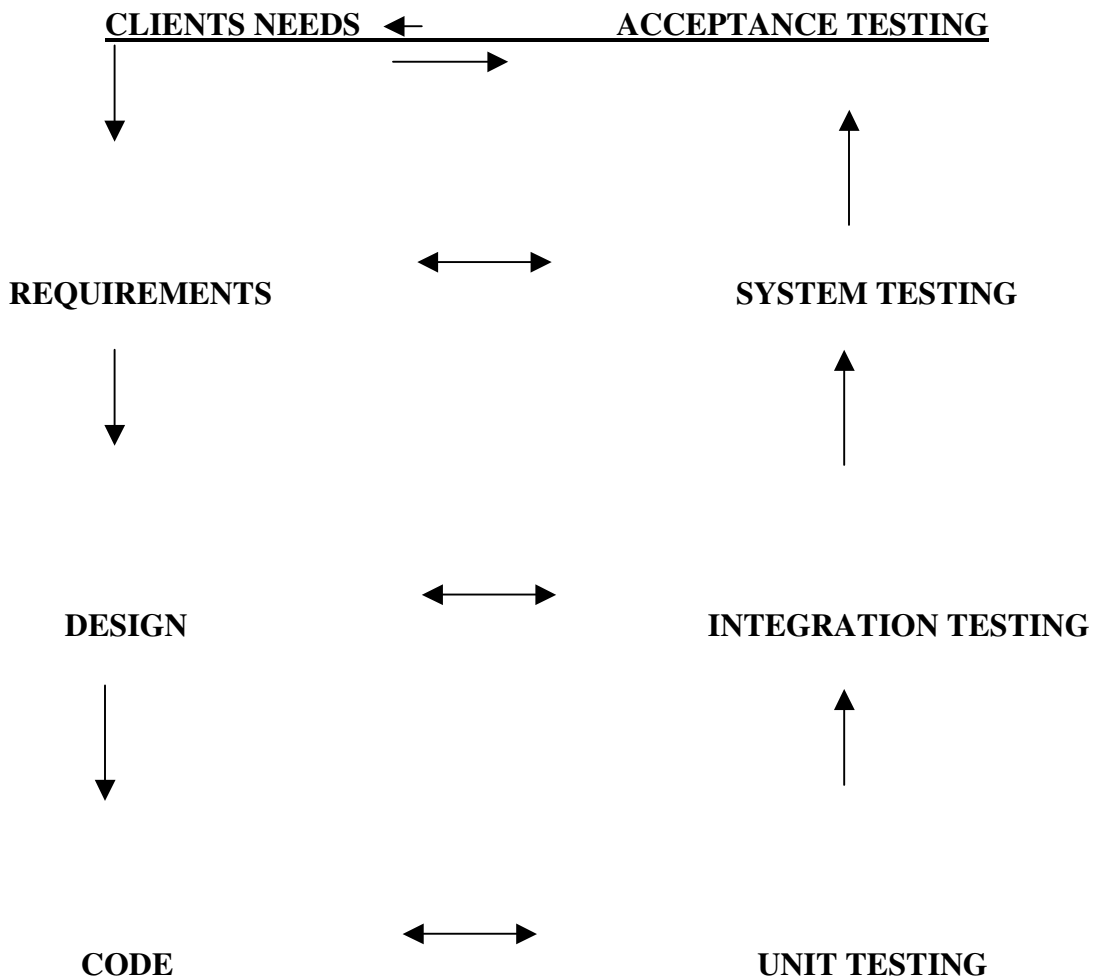
CODE ↔ **UNIT TESTING**

1) UNIT TESTING:

 The first level of testing is unit testing. In this different modules are tested against the specifications produced during design for the modules. Unit testing is essential for

verification of the code produced during the coding phase and hence the goal is to test the internal logic of the modules.

2) INTEGRATION TESTING:

The next level of testing is often called integration testing. In this many tested modules are combined into sub-systems, which are then tested .the goal here is to see if the modules can be integrated properly, the emphasis being on testing interfaces between modules. This activity can be considered as testing the design, and hence the emphasis on testing module interactions.

3) SYSTEM TESTING:

The next level of testing is system testing. Here the entire software system is tested. The reference document for this process is requirement document, and the goal is to see if the software meets its requirements. This is essentially a validation exercise.

4) ACCEPTANCE TESTING:

The last level of testing is acceptance testing. Acceptance testing is performed with realistic data of the client to demonstrate that the software is working satisfactorily. Testing here focuses on the external behavior of the system; the internal logic of the program is not emphasized.

Testing Done in our System:

The best testing is to test each subsystem separately as we have done in our project. It is best to test a system during the implementation stage in form of small sub steps rather then large chunks. We have tested each module separately i.e. have completed unit testing first and system testing was done after combining /linking all different Modules with different menus and thorough testing was done. Once each lowest level unit has

been tested, units are combined with related units and retested in combination. This proceeds hierarchically bottom-up until the entire system is tested as a whole. Hence we have used the Top Up approach for testing our system.

Typical levels of testing in our system:

Unit:- procedure, function, method

Module:- package, abstract data type

Sub-system:- collection of related modules, method-message paths

Acceptance Testing:- whole system with real data (involve customer, user, etc)

Presentation Layer:

Presentation layer consists of web pages which include:

> **Master Pages:**

Master Page is Common Template that can be implemented on more than one Page. We can make changes whenever needed.

Master page extension is .Master

It can never be start up page.

We can create properties, methods, classes in master pages.

Multiple master pages can be there in single application.

4.4-System Implementation

Implementation implies what configurations are required to implement the given software at the end user's site.

➢ There must be a LAN available on which the system can work.

➢ There must be .Net Framework 2.0 loaded on all the computers that will provide support to the computer on which the application is running. Then, install the installation on the system using its installer.

➢ There must be SQL Server 2005 installed on the system to provide the support of database.

After the system is implemented, a review of the system is conducted by the users and the analysts alike to determine how well the system is working, how it has been accepted and whether any adjustments are needed. It is also important to gather information for the maintenance of the system.

Security Aspects

System security is a vital aspect when it comes to developing a system. The system should ensure the facility of preventing unauthorized personnel from accessing the information and the data within the system. The system should provide total protection for each user's information so that the integrity of the data is sustained.

The proposed system ensures the security and the integrity of data. This is done by providing a *password login system* for each authorized user. At the starting of the application, the user is asked for username and password and only the correct information allows further navigation in the project. However, the System Administrator has access to all kinds of information.

Table Level Security:

Schema object privileges for tables allow table security at the level of Data Manipulation Language and Data Definition Language operations.
We can grant privileges to use the various DML statements like DELETE, INSERT, SELECT, and UPDATE to perform operations on a table or view. We grant these privileges only to users and roles that need to query or manipulate a table's data.
With selective INSERT, a privileged user can insert a row with values for the selected columns. All other columns receive NULL or the column's default value. With selective UPDATE, a user can update only specific column values of a row. Selective INSERT and UPDATE privileges are used to restrict a user's access to sensitive data.

Our project includes two panels:

Admin Panel

User Panel

Database Layer:

Tables

Stored Procedures

Data Flow diagram

Stored Procedures:

There are five kinds of stored procedures for each table. They are:

- **Insert**

- **Update**

- **Delete**

   Number of modules and their description:

According to the requirement login is provided to Limited users and administrator. This module is integrated with Restriction of unauthorized access. Each user can only access those data, which are required for his/her work.

Enquiry:- It is a First step of this System. It involves adding new enquiry made by Employee so that Employee can get registered. This module is just to add the basic information of the Employee. New account detail is get stored in Employees information database.

Records:- This module is for checking all types of records related to the registered Employees.

Updation:- This module is to update all the records of a Employee or of multiple Employees at a time.

Administrator:- This module has only access to the administrator.the administrator only can check this module and make the required modifications as per requirements and he can add and delete the users.

4.5-System Maintenance

System maintenance is an extremely important activity in the life of a software product that starts after the implementation phase. It is one form of change or rework. For proper maintenance of this system, I am spending a good time on documentation so that I or some other person can easily understand this system later when there is a need for maintenance.

Because of the full development being Object Oriented and MS support with this product, this system can be easily connected to any other MS product with a very small effort. Except Web support, more modules can also be easily added because of the 3 tier approach in design; any development or modification is as simple as

creating a new application. We don't have to follow the old patterns; we can just start with a new style and add the new modules in to the older one without any problem

<u>Maintenance</u>

The maintenance starts after the final software product is delivered to the client. The maintenance phase identifies and implements the change associated with the correction of errors that may arise after the customer has started using the developed software. This also maintains the change associated with changes in the software environment and customer requirements. Once the system is a live one, Maintenance phase is important. Service after sale is a must and users/ clients must be helped after the system is implemented. If he/she faces any problem in using the system, one or two trained persons from developer's side can be deputed at the client's site, so as to avoid any problem and if any problem occurs immediate solution may be provided.

The maintenance provided with our system after installation is as follows:

> First of all there was a Classification of Maintenance Plan which meant that the people involved in providing the after support were divided.

> The main responsibility was on the shoulders of the Project Manager who would be informed in case any bug appeared in the system or any other kind of problem rose causing a disturbance in functioning.

> The Project leader in turn would approach us to solve the various problems at technical level. (E.g. The form isn't accepting data in a proper format or it is not saving data in the database.)

> <u>Alternative:</u>

<u>Silver light</u>

> WPF - **W**indow **P**resentation **F**oundation.

> XAML

> AJAX

Disadvantages:

> ➢ We can make it more interactive.

> ➢ We can add more forms.

Advantage:

> ➢ Not at university level.

Development Tools

1. ASP.Net MVC Framework
2. C#
3. SQL
4. Smart Draw

Chapter-5

CONCLUSION & FUTURE SCOPE

DEGREE OF SUCCESS:
1. All the requirements given in the specification are met.
2. The project is completed within specified time and budget.

EXPERIENCE GAINED:
1. Got knowledge of new language asp.net with c#.
2. Got experience of developing design documents in Smart Draw for the first time.
3. Learnt and implemented RUP methodology for the first time.
4. Learnt the importance of *ADVANCED OBJECT ORIENTED METHODOLOGIES* and about various elements of it.
5. Got the experience on cloud computing project.

PROBLEMS FACED AND SOLUTIONS:
1. Unfamiliarity with UML diagrams was the main problem but the courseware slides, MSB lecture and books proved to be very useful. Internets were also an important source or research.
2. Window Azure was also very new to us but all the doubts got clear.

LIMITATIONS:
1. It will not conduct user logs.
2. Online document editing.
3. Limited space for storage.
4. Print of chat and mail is not available.

ENHANCEMENTS:
1. In future system can conduct an online document creation doc , pdf etc.
2. User can create a document that can simultaneously available to other user with it is shared and all can edit in real time.
3. Notification on SMS if any mail is received.
4. Bulk SMS feature.

Chapter-6

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