DESIGN AND IMPLEMENTATION OF A CORPORATE INTRANET

by
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Submitted to the Faculty of Computer Science

National University of Sciences and Technology,Rawalpindi
In partial fulfillment for the requirements of an M.S degree
January 2002

DEDICATION

The theoretical name of

“GOD”

is

“GOD”

The practical name of

“GOD”

is

“LOVE”

And I dedicate my MSc thesis to

THE LOVE OF MY PARENTS

Who always pray for my success in every walk of life.

THE LOVE OF MY TEACHERS

Who guided me to the end of my master’s degree with an honorable touch.

THE LOVE OF MY FRIENDS

Who helped me in every difficulty I faced and made me a success.

ACKNOWLEDGEMENTS

I wish to thank Almighty Allah who enabled me to complete this project. I gratefully acknowledge the help and guidance provided by my project advisor Dr. Romana Aziz. Without her personal supervision, advice and valuable guidance, completion of this project would have been difficult. I am deeply indebted to her for her encouragement and continual help during this work.

My very special thanks are extended to the members of my guidance committee namely Mr. Arif Raza, Maj. Fazal and Col. Muhammad Nadeem , for their very useful suggestions and critical reviews that assisted me in widening the perspective of this project.

I deeply treasure the unparalleled support and forbearance that I received from my parents.

ABSTRACT

The research work presented in this thesis covers the design and development of a number of web-based software tools, which are integrated to set up a customizable website for Corporate Intranet. This software system can be used by institutions like

private companies,firms and educational institutions, wishing to expand into the arena of intranet technology.

The software system has two front ends : first one for the employees and the other for the corporate intranet administration.Different options are available for the employees and the administrator and there is an authorization section which confirms their identity before allowing them to make use of the intranet facilities.The software developed for the Corporate Intranet has two main modules:

- Employees Control Panel
- Administrator Control Panel

Employees Control Panel includes employees phone directory, discussion board,online polls,e-mails,company forms,live conferencing and change password. The job of the Administrator is to maintain and update the information system of the corporate intranet.Administrators work closely with technical and support service personnel, ensuring that the technological resources are effectively deployed.In the Administrator Control Panel,the administrator can add an employee's name to the company employees phone directory on receiving instructions from the administration.He/she can also delete or update an employee record. In the Employees Control Panel,the employees can search information about any employee working in the corporation. The employees can also participate in the company's polls by entering the go-to-polls option.All the entries are automatically filled through session tracking.An employee can cast his vote only once.He can also view the poll results graphically. There is a discussion board through which employees can read and post messages.The e-mail system is used to post personal messages to one another.Online company forms are also available and employees can submit them to the concerned person.Live conferencing is also provided to hold online discussion about company issues.The tools used are Java Script, HTML,Flash,Active Server Pages and MS-Access.

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CHAPTER 1

INTRODUCTION

Intranet is not a misspelling of the word Internet. Actually, these two technologies are quite similiar but are not one and the same.The Latin prefix 'intra' means 'within,' while 'inter' means 'between.' An intranet is an internal internet.

'An Intranet is a computer network that uses internet standards and protocols, allowing members of an organization to communicate and collaborate more efficiently.It is not visible to the world outside the organization.'
[Ref :Callahan,99].

Essentially, an intranet is a private internet that runs on an internal network. Like the internet, intranets use TCP/IP protocol and use e-mail (SMTP) file transfer (FTP) and other world wide web standards like HTTP (HyperText Transfer Protocol). Unlike the internet, intranets are private networks owned by the organization they serve and access by invitation only.

'An Intranet is defined as an infrastructure based on the internet standards and technologies that supports sharing of content within a limited and well defined group. The infrastructure referred to is the organizational and management infrastructure that created, managed and shared the content.The only constraint is that the physical network is based on the Internetworking Protocol (IP).An intranet is a set of content shared by a well-defined group within a single organization and does not cross the enterprise boundaries. The firewall surrounding an intranet fends off unauthorized access. It is much less expensive to build and manage

than private networks based on proprietary protocols. ' [Callahan,99].

Quicktranet is a flexible intranet that fits the company of all sizes. Smaller companies can access it over the web , while larger companies can install it internally. Either way, the application is very customizable and can even be extended to add whatever functionality is needed. No technical knowledge is required to administer quicktranet. [Ref: 21]

1.1 Benefits of Intranets

This section will try to justify the need for an intranet.It will cover some of the most important reasons to implement intranets. [Ref: 23]

1.1.1 Saves Time

An intranet can cut down the time the employees spend on routine communication tasks. If one is using email internally one already knows the benefits over trying to get someone on the phone. The one problem with using email is that the entire message is usually not conveyed in the first communication. One email usually starts a string of emails back and forth until the other party completely understands the request or message.Instead consider putting forms on your Intranet. Design the forms for frequently requested tasks within your organization. For example request for PC repair, stationary reorder from supply room and telephone messages. Have the users fill out the form and make sure the required information is entered by using data validation. This will provide the recipient with an email that is complete with all the required information and save a lot of time.

The employees spend time chasing paper and trying to hunt down paper forms , reports, documents, microfilm etc.Converting these documents to electronic formats using scanners, OCR software or other means. Provide a search interface to these documents using Intranet. Once

users know how easily accessible these documents are over the Intranet, they will prefer the faster solution.

1.1.2 Lowers Costs

A company spends a lot of money on printing the company phone-book , the HR benefits literature distributed to each employee or the new pay scale information . With an Intranet solution, one can now publish most of the paper documents on the internal web. Starting with simple solutions like a corporate phonebook, one can find a number of applications that will save the company money in terms of publishing and distribution costs.

Compared to a conventional client-server or legacy system, the "per seat" costs will be much lower. The server end can be scaled up from a simple desktop scraped from an old pc to a high end UNIX or NT web server. Thus the system can grow with one's needs, saving the company valuable budget at startup.

1.1.3 Platform Independent

Intranets work across a number of platforms. Pages can be viewed by browsers on UNIX boxes, Macs, Windows and a number of other platforms.Once one gets into advanced applications and starts using the latest technologies (Java, ActiveX etc.) ,one will realize that he has only to fine tune his applications to support a "certain" type of browsers. Vendors are working to resolve conflicts and establish standards, but we all know how that works.

1.1.4 Does not Require an Internet Connection

Intranet can be up and running by itself without any connection to the outside world. One will still be using technologies prevailing on the Internet like web servers, browsers, chat scripts, news and mail servers etc, but you do not have to be connected to the internet unless you want your intranet users to access content from the internet.

1.1.5 Requires Little Maintenance

Intranet can grow real fast. Having no good plan and growth strategy in place, one has to spend a lot of time on small, routine maintenance tasks,such as adding new publishers, adding users, maintaining the user database, keeping the content and technology current, coping with growing demand for bandwidth, applications and information.These are just a few issues you will have to deal with. One will also need a good set of policies in place.

1.1.6 Secure

If an Intranet is not connected to the Internet and does not provide dial in access, there is a lot less to worry about. Even with an incoming connection, one has a number of options to secure the intranet. Firewalls, SSL, password authentication, IP blocking and other techniques are available to secure intranet from intruders.

1.1.7 Internal Webs

An intranet is not limited to web site. The technology is adopted from the internet and the Internet is a lot more than web sites. One can use simple technology like enterprise-wide email , push technology, newsgroups, chat etc. which are all based on TCP/IP protocols within the intranet.

1.2 Thesis Proposal

The research and development work proposed for my Msc thesis focuses on design and implementation of a corporate intranet.The software system can be used by organizations like private companies.This software system has two front ends,one for employees and the other for the corporate intranet administration.

In this project I have used configuration of intranet with networked PC's.The employees will be provided with the intranet technologies. Anyone who gets employed in the company will be put up by the administration in the company employees list.The corporate intranet will have it's own page ,which includes employees phone directory,discussion board,online polls,emails,company forms and live conferencing.In the employees management area,the employees can search information about any employee in the company.They can also view the whole phone directory at a glance.In the polls area , an employee can go to the polls and cast his vote on the subject issued by the company.An employee can cast his vote only oncefor the current subject.They will also have the facility to send their personal messages through e-mails.To enter the e-mails section,they have to enter their password.They can also send queries to the administrator.There is also an administrator area through which he can keep the intranet system (corporate intranet) up-to-date.The tools which I have used are Java Script,Flash,Active Server Pages(ASP) and MS-Access.

1.3 Thesis Description

The main objective of this software is development of an Intranet to provide serviceswithin the organization that utilizes internet technologies , provide better network monitoring , more homogenous user environment and security. The services includeemployees phone directory , online polls , discussion board , email , live conferencing ,company forms etc. The networked PC's configuration has been used in the design andimplementation of a corporate intranet. PC's have been networked using TCP/IP and the server used is Internet Information Server(IIS) for Windows 2000. There are two different main modules regarding the corporate intranet which are shown in Fig 1.1.

These modules are:

1. Administrator Control Panel

2. Employees Control Pane

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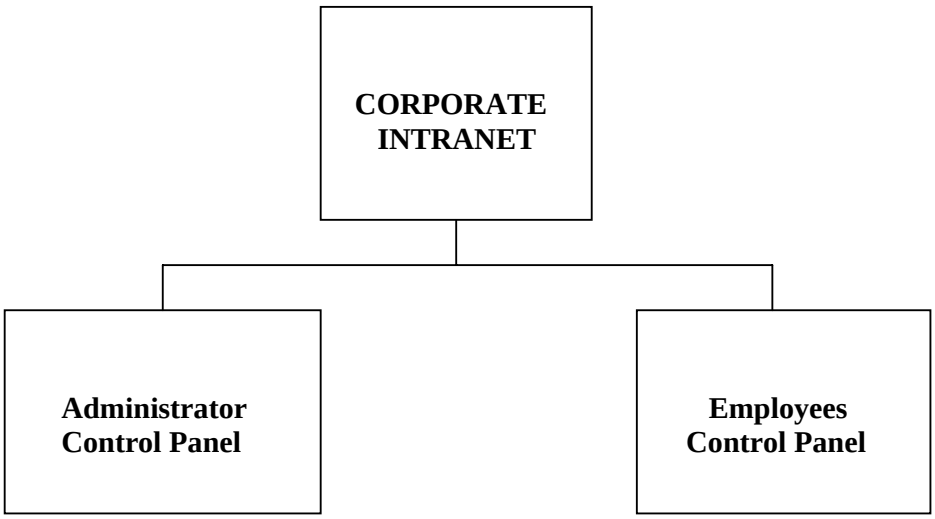

Fig 1.1 Interaction of Main Modules with the Corporate Intranet.

1.3.1 Administrator Control Panel

The job of an administrator is to maintain and update the environment of the corporate intranet. If some sort of problem arises,it is the responsibility of the administrator to remove this problem.

Although administrators are typically influential in planning an intranet program,they are consensus builders, decision makers, and referees. They work closely with technical and support service personnel, ensuring that the technological resources are effectively deployed to further the organization's mission. Most importantly, they maintain an intuitive focus, realizing that meeting the needs of employees is their ultimate responsibility.In the administrator area there is a panel of different options, through which the administrator can maintain the corporate intranet system easily rather than penetrating into the system. These options are shown in figure 1.2

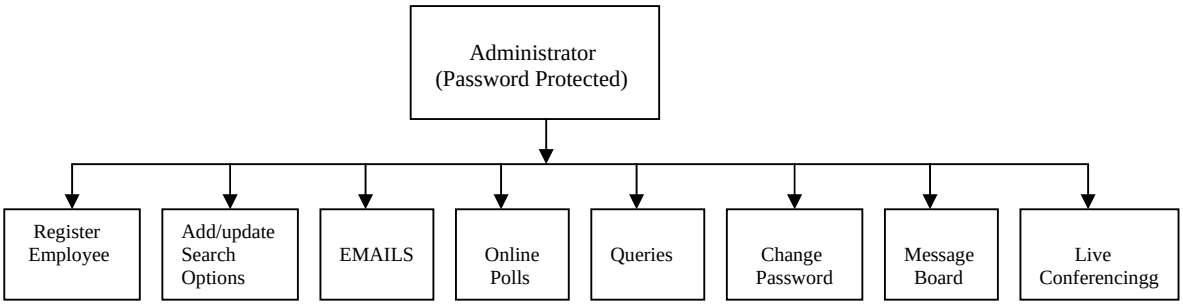

Fig 1.2 Options in the Administrator Control Panel

1.3.2 Employees Control Panel

The success of a company rests squarely on the performance of its employees.An Intranet can help employees tremendously in achieving their goals and targets .The services an Intranet provides to the employees can make their tasks easier to achieve in less time and perhaps also saving money. Employees are provided with different services by the administrator which include phone directory , online polls, discussion board , emails , live conferencing and company forms.The employees can also put a query to the administrator if they have any problem or want any information from the administrator In the employees area there is a panel of different options through which the employees can make use of the services provided by the intranet system easily rather than penetrating into the system. These options are shown in Figure 1.3

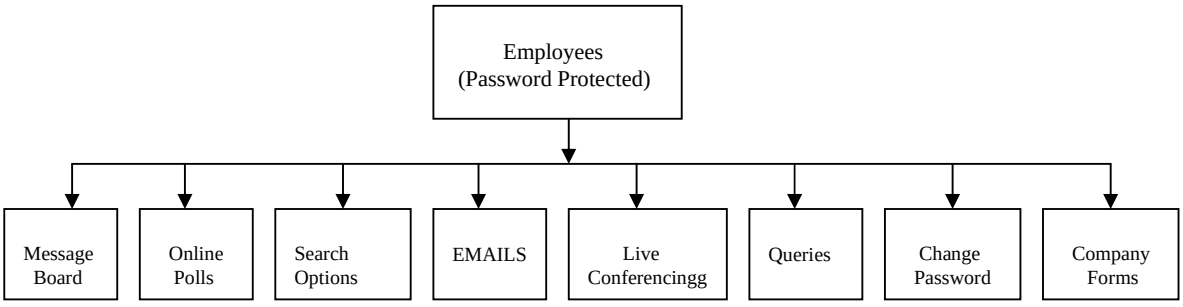

Fig 1.3 Options in the Employees Control Panel

1.4 Overview of The Thesis

The thesis contains a total of six chapters. Chapter 1 describes intranets ,their applications and why they are used. The setup of corporate intranets using networked PC's , their various applications and the description of my purposed thesis work are also given in this chapter.

Chapter 2 discusses the corporate intranets and their organizational issues.It also dicusses the intranets application features and benefits to these features. steps required in the setting up of an intranet and calender-driven versus event-driven publishing is also discussed in detail in this chapter.

Chapter 3 describes the the usages of web technologies such as client-server modeling, browsers, servers, protocols, URLs and common gateway interfaces (CGI). Different participants in the intranets along with their capabilities and limitations have been described. It also covers the planning and organization of an intranet.

Chapter 4 includes the different modern and old applications of an intranet. This chapter also deals with the future of Intranets.The applications of Intranet are discussed in detail in this chapter , as to how an intranet can help a corporate body achieve its desired goals through the adoption of various technologies.

Chapter 5 describes the software requirements and specification (SRS). SRS describes the product scope, description system model, system functionality, user characteristics, interfacing requirements,data flow diagrams (DFD) and process specification of the system.

Chapter 6 describes the implementation of the system, eg. how different users can interact with the system according to their authorizations. Recommendations for future development of the system are also discussed.

1.5 CONCLUSION

Intranets are small internets designed for an organization which want to avail the facilities of the web technology but donot want to share it's data with other users.It is not visible to the world outside the organization.It is based on

TCP/IP,SMTP and FTP protocols suit.Intranet doesnot require any internet connection and the maintenance cost is also very low.Intranets are an ideal tool to streamline routine employee processes and to reduce the cost of supporting employees.Sharing information, including policies and procedures,employee directories,benefits,announcements is a snap with a corporate intranet.These are less expensive to start and are extensible to a variety of media types(audio,video and interactive application).Employees can benefit from the ease of navigation,ease of accessing information and reduction of time spent searching for the desired document,file or other information source. Productivity increases as corporate knowledge is more accessible and the data is more accurate. Flexibility in time of delivery of knowledge is gained as information is always a click away. Intranets allow for a place where boundaries are lowered and information exchange is encouraged. This leads to more informed employees with the ability to make better, faster decisions. This in turn leads to better productivity and more time for revenue generation.

When building an intranet , the benefits in business gains such as savings in operation cost,reduction in paper work,improved customer service,better and faster access to up-to-date information.The initial cost of setting up an intranet includes harware,software and labour.These factors should be included for long term intranet related cost.It should be easy to start and manageable as it grows. A lot of resources for the management of intanet should be spent if there is no growth well in advance.The need for the training of developers and users must be conducted. An intranet can enhance productivity to a great extent. A lot depends on the type of system the intranet is replacing. If an intranet solution is replacing a traditional paper based information access methodology (ex. printed manuals) the improvement in productivity will be tremendous. On the other hand, if it is introducing a completely new process,it may not be able to measure the productivity in an accurate manner.It also addresses the security issues through secure server,firewall,password protected access and physical security for the server machines.

CHAPTER 2

CORPORATE INTRANET: THE NEW WAVE

The "Corporate Intranet" is a recent phenomenon that brings the technology of the Internet into organizations. The Corporate Intranet has started to replace applications for specific departments because it provides a simple and easy to use mechanism for rapidly getting information to anyone who needs it. An Intranet is extremely simple to setup and deploy. In fact, employees already have a web browser on their desktops. A simple web server can be set up in the department or by the Information System department.

An Intranet is not simply an internal "web site", but a way to share critical information, and to help streamline internal process such as HR, IS, etc. An Intranet application can be a set of pages, or can tie into corporate databases, thereby "unlocking" important information and making it available to the people who need it without having to install any extra software on their machines.

2.1 Intranet Application Types

Intranets are ideal for the following types of applications:

2.1.1 Information Distribution

Sharing corporate information, including policies and procedures, employee directories, benefits, announcements is a snap with a corporate intranet. This can significantly reduce the amount of paper work and make the latest, up-to-date information available to all departments simultaneously.

2.1.2 Information Collection

Letting employees contribute to the corporate intranet is an excellent way to foster a sense of community and to reduce paperwork.

2.1.3 Internal Forms Processing

A corporate Intranet can be an ideal tool to streamline routine employee processes and to reduce the cost of supporting employees. This can include submittal of timesheets, expense reports, self-service for HR-related changes, and internal IS / Help Desk.

2.1.4 Internal Knowledge Base

An internal knowledge base, which is updated by employees on an on-going basis helps to "capture" information and expertise and put it in a central place so that anyone can find the answers they need.

2.2 Corporate Intranet Explosion

Information systems (IS) and functional department managers quickly identified the power of this new communications medium as a resource to be leveraged on the corporate network as well. Many are installing Web servers on their corporate networks (intranet applications) for internal usage only. Forrester Research interviewed 50 Fortune 500 companies and found that fully two-thirds already have or are considering some involvement with intranet applications. These companies have identified the intranet as a powerful mechanism to make information more readily available.

With corporations under tremendous pressure to empower employees and to better leverage internal information resources, intranets provide a highly effective communications platform, one that is both timely and extensible. A basic intranet can be set up in hours or days and can ultimately serve as an "information hub" for the entire company, its remote offices, partners, suppliers, and customers. [Ref: 18]

2.3 Intranets Application Features:

1. Rapid prototyping (can be measured in hours or days).
2. Scalable (start small, build as needs, requirements allow).
3. Easy navigation (internal home page provides links to information).
4. Accessible via most computing platforms.
5. Can integrate distributed computing strategy (localized Web servers residing closer

to the content author).

6. Can be tied in to "legacy" information sources (databases, existing word processing documents, other groupware applications).
7. Extensible to a variety of media types (audio, video, interactive applications).

2.4 Benefits To These Features

1. Inexpensive to start, requires little investment either in dollars or infrastructure.
2. More timely and less expensive than traditional information (paper) delivery.
3. Distributed computing strategy uses computing resources more effectively.
4. Users familiar with link metaphor from surfing experiences.
5. Open platform architecture means large (and increasing) number of add-on applications available.

Forrester Research interview 50 Fortine 500 companies and found that fully two-thirds already have or are considering some involvement with the intranet applications.Fig 2.1 shows the corporate plans for use of intranet.Only 16% of the corporates have intranet set up.

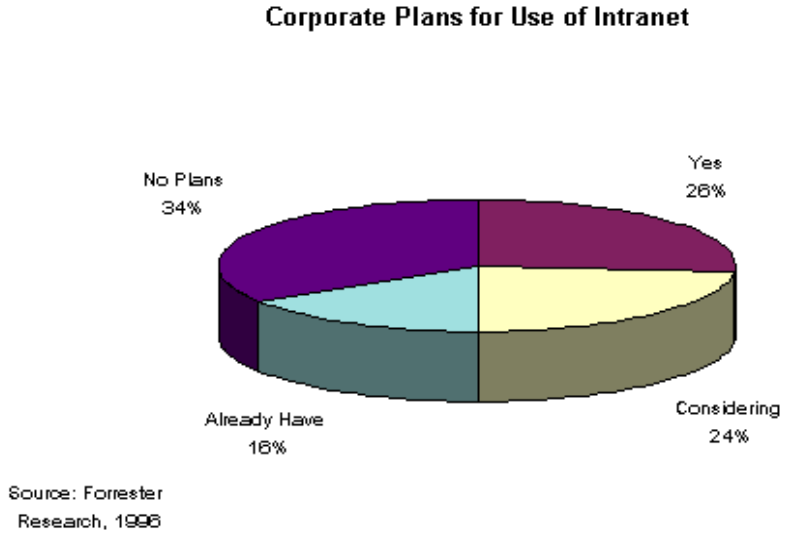

Fig 2.1 Corporate Plans for use of Intranet

2.5 New Information Paradigm

Intranets leverage the concept that the Web browser is quickly becoming the universal information interface. An increasing number of workers gain Internet access from their work desk every day and are becoming accustomed to retrieving information through the now ubiquitous browser. While most of this information today comes from beyond the firewall, International Data Corporation (IDC) reports that, even in 1995, sales of Web servers for intranet use outdistanced those sold for Internet use.This is depicted in Fig 1.2 whereby sale of intranet servers is 55% and that of internet servers is only 45%.

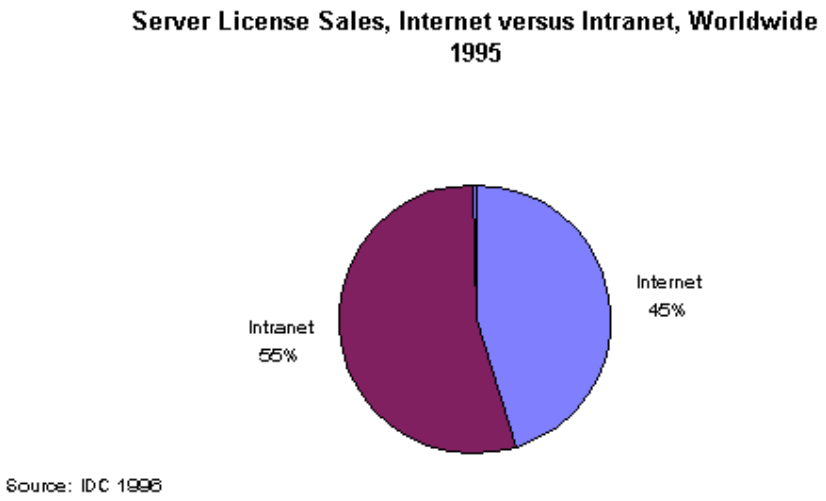

Fig 2.2 Server Internet versus Intranet Usage

Furthermore, IDC forecasts that by the year 2000, server licenses sold for intranet usage will

outdistance those for Internet usage by a factor of 10 to one. Clearly, many organizations are quickly adopting this new information delivery paradigm.

2.6 Calender-Driven Versus Event-Driven Publishing

One of the key drivers in this adoption curve is that intranets allow organizations to evolve from a "calendar-" or "schedule-" based publishing strategy, to one of an "event-driven" or "needs-based" publishing strategy. In the past, companies

published an employee handbook once a year, whether or not the policies changed to coincide with that publication date.

Traditionally, even though these handbooks may have been outdated as soon as they arrived on users' desks (and were promptly misplaced), they would not be updated until the following year.

With an intranet publishing strategy, information can be updated instantly. If an organization adds a new mutual fund to its 401K program, content on the benefits page can be immediately updated to reflect that change, and the company internal home page can have a brief announcement about the change. Then, as soon as employees look up the 401K program, they have the new information at their fingertips. Content can be changed or updated to reflect new information at any time.

2.7 Traditional Publishing Model

Just as importantly, intranets dramatically reduce the costs (and time) of content development,

duplication, distribution, and usage. The traditional publication model includes a multi-step process including:

- Creation of content.
- Migration of content to desktop publishing environment.
- Production of draft.
- Revision.
- Final draft production.
- Duplication and distribution.

2.8 Intranet Publishing Model

The intranet publishing model includes a much shorter process, skipping many of the steps involved in the traditional publication model:

- Creation of content.
- Migration of content to intranet environment.

In this latter model, revision becomes part of the updating process while the original content is available to the end users, thus dramatically reducing the time it takes for the information to become available to the user of that information. As the information is centrally stored and always presumed to be current, the company will not have to retrieve "old" information from employees to be replaced with new information, thus saving any expenses incurred in updating.

This new publishing model can dramatically reduce both costs and the timeframe involved. Assuming that the corporate LAN environment can support intranet activities (and most can), the information technology (IT) infrastructure is already in place. In addition, most popular intranet Web servers can run on platforms widely found in most organizations (Wintel 80486 or Pentium computers, Apple Macintosh, Novell NetWare, etc.), so that little if any additional infrastructure is needed.

Organizations estimate that the traditional model may entail physical duplication and distribution costs of as high as $15 per employee, costs separate from the content development or testing phases. An organization with 100,000 employees may find potential cost savings of moving to an intranet strategy for a single application-the employee policies and benefits manual-of $1.5 million alone. And this cost saving does not reflect the additional value in an intranet solution which makes information more readily available to employees, thus raising both their productivity and job satisfaction. [Ref: 18,20]

2.9 Corporate Intranets support Distributed Computing Strategy

An additional driver in the growth and speed of this adoption curve is the fact that intranet applications can fully support a distributed computing strategy-one that places the server and content closer to the owner of that content. Ultimately, basic Web servers may be included as utilities shipped with every operating system, in effect allowing everyone to be a publisher.

Until that time, intranet servers may be located strategically at the group or department level to

minimize administrative delays in posting content.In addition, for strategic or technical reasons, intranet servers will continue to be located centrally in departments or organizations to provide coordinated access to legacy databases and other external resources, with individual users conducting "secondary" publishing roles.

This distributed computing strategy allows the content developer or functional department manager to both develop and maintain the content, and thereby avoiding having to deal with different departments that may have different agendas or timing requirements. In this instance, the functional department, having decided that a particular set of information would be valuable to employees, has the full control to empower the distribution of that information.

2.10 Setting Up a Corporate Intranet

Intranet applications are scalable-they can start small and grow. This feature allows many companies to "try out" an intranet pilot to publish a limited amount of content on a single platform, and gauge the results. If the pilot proves promising, additional content can be migrated to the intranet server.

The first step in building an intranet is to identify a likely area for deployment. A quick sampling of the paper flow within the organization may point to a likely candidate, whether it be the company newsletter, human resources or employee benefits handbook, competitive sales information, etc. The more ambitious may want to look at information needs and build an information flow strategy from scratch (not trying simply to deliver previously paper-based information electronically).

The second step is to identify the content source or author-the person actually responsible for the intelligence behind the information and for getting it down on paper. Where does the information currently reside? Is it in a series of Microsoft Word or Word Perfect documents? Excel spreadsheets? Lotus Notes, Oracle or other database? Should this particular person be responsible for "HTMLizing" the information, for serving it on their personal computer?

Further study will uncover other authors of similar information, most likely leading to a distributed content development and serving strategy. Individual content owners, most likely line managers and individual contributors, save their documents to HTML (or leave them in their original format) and forward them to a group administrative assistant. This assistant, who may already have desktop publishing responsibilities for the group, can apply the content to a Web server running on their local personal computer, validate, and establish links to other information resources.

Alternatively, the content can be forwarded to an IS manager who can apply it on a system running other company applications, aggregating both the management and security activities for the content. Thus the content is available to anyone with appropriate access rights to the site.[Ref: 19,20]

2.10.1 Likely Content

Organizations must determine whether information should be made available via a Web server, via e-mail, or through some other means.

If the information is of general relevance, such as company travel guidelines or mileage reimbursement, it can be posted on a Web server so that when people require

this information, they click on "travel guidelines" from the human resources page, and receive the most current information.

Many companies find building Web interfaces to "legacy information" as a key application. With straightforward tools, end users can build simple point and click access to this legacy information, making it available to non-technical users through their Web browser. Key database applications include: customer records, product information, inventory, technical problem tracking, call reports, etc. In addition, individuals can quickly set up seminar or training registration forms for short term usage, loading the registrants' information into an easily manipulated database.

Conversely, inter-office e-mail may be more appropriate for "interrupt-driven" time sensitive

information, particularly for a focused group of recipients. "Our largest customer is coming in

tomorrow, so please be sure to attend the briefing at 4:00 p.m." In this situation, the Web server can be used as an extended information resource: "Before attending the meeting, please be sure to check the internal Web server link for 'Current Customers' for more information on the history behind this account."[Ref:20]

2.10.2 Organiztional Issues

Typically, intranets are based around functional department support-sales/marketing, human

resources, engineering, finance, etc. It is entirely appropriate, and usually beneficial, for these

departments to take responsibility for both developing the content for the intranet server and for keeping it updated. In this manner, the content owner can publish the information more quickly and the users or consumers of the information can apply it to their competitive advantage more quickly.

2.10.3 Challenges

The technical capabilities of Web servers bring up certain organizational challenges, including:

- Security
- Privacy

- Currency

Each of these issues, and many others, can be resolved through careful planning and implementation of an intranet strategy.

2.10.3.1 Security

Security is a multi-headed issue. Firstly, security can be defined as providing access by the

appropriate personnel to the correct information, while at the same time barring access to all others. Most popular Web servers today allow such access configuration on a user/group/realm basis, while some in fact allow the systems administrator to go far beyond this, allowing them to limit access rights by specific IP address for individual pages. This capability would potentially allow the systems administrator to set access to financial records or personnel files only for the personal computer in the CEO's office.

Similarly, access can be barred to all other users or groups, keeping unauthorized personnel from gaining access to sensitive financial, company, or personnel records.

Secondly, security may include encryption, also at several levels. Again, popular Web servers offer Secure Sockets Layer (SSL) encryption for communications between the server and browser, effectively scrambling the message and keeping it from interception. Encryption may also play a role if the intranet application spans multiple organizations or locations-effectively a virtual private network running over the public Internet. An increasing number of organizations use their public Web servers in this manner-setting certain pages for use only by partners or customers through access control. Intelligent firewall solutions can create "tunnelling" applications that establish and keep open trusted communications lines between sites for further security. [Ref: 22]

2.10.3.2 Developing Privilege Tables

Determining who gets access to what information is not a challenge created by Intranets. The issue is as old as information itself. Since information first went up on computers, access control has been an issue. A popular method for documenting, and

implementing computer security is the use of "Privilege Tables." A privilege table contains a row of all the unique security classes of information and a list of all users with access to the system. The cells in the resulting table are used to record the access privileges of each user. In each cell a user either has access or has not.

Privilege tables are popular because they provide a documentation format that can be easily
implemented in an automated access control program. When a user logs on, the system authenticates her. When she requests access to particular information, the software looks at the privilege table to determine if she is authorized. This type of system not only simplifies the management of who gets access, but it simplifies access for the user. Because of the privilege table, the user only has to be authenticated once, rather than at each access.

An Intranet does create a complication in that Intranet information usually resides on more than one computer system. As of this writing, there are no widely-trusted, commercially-available systems to allow single-point authentication across an Intranet in an acceptable way. Some companies have developed home grown systems, and many of the web server vendors are getting ready to deliver these systems. Nevertheless, using a privilege table to develop and document user access privileges provides valuable process aid.

One of the major issues in developing an enterprise privilege table is determining the granularity of fields. From a process standpoint it is useful to lump users into specific user classes, and make decisions based on the user class rather than the individual. Likewise, it is more efficient to lump information into information classes and again make those decisions for the class rather than each piece of information. In theory, it would only be a matter of matching information classes with user classes, and the job would be done.[Ref:22]

2.10.3.3 Privacy

Privacy is largely an organizational issue, clarified and intensified by the potential capabilities of technology to invade one's privacy. In this area, intranet applications can either assist in maintaining users' privacy, or potentially invade it if the developer or systems administrator is not careful.

Privacy can be enhanced by the use of intranet applications through the delivery of sensitive

information in a largely anonymous manner. While the inter-office mail staff may snicker (or worse,peep) when they deliver a memo marked confidential, the intranet server will serve all pages with no similar bias or prejudice.Employees can feel free to review the employee assistance program information at their desktops. Similarly, they may browse information on maternity leave or sabbatical programs without fear of raising eyebrows (or gossip) from their managers or from personnel representatives.

On the other hand, some of the tools taken for granted in the Web server marketplace, such as the site log, do have the potential for invading privacy. Intranet administrators must balance the desire to track visitors (and therefore, value attained from the site) with the need for privacy with regard to certain content. It may simply be inappropriate for the company to track who has visited the employee assistance program page, particularly since those with access to the log files may be IS rather than human resources personnel.

Some intranet servers allow logging control at the individual file level, allowing systems administrators to disable logging for particularly sensitive pages, and thereby avoiding the invasion of users' privacy specifically for those pages that may contain sensitive information.

2.10.3.4 Currency

While intranets allow information to be updated instantly, by no means do they guarantee currency. To this end, publishers must be committed to keeping the intranet site up-to-date, and certain steps may be taken to ensure that consumers of the information use it appropriately. Simply putting the "date of last change" on each page will help tremendously in this respect, allowing a browser to check that the information is indeed current.

In addition, certain pages, such as competitive matrices, should have regular updates or "refreshes" scheduled, along with someone identified to provide instant updating as soon as new competitive information is received. In this way, browsers can trust that the information represents the competitive wisdom of the company.

Other steps, such as providing an e-mail address or telephone number of the author, can furtherassist in the use of the information, as users will be able to contact the author to request further information or clarification on specific points. [Ref:22]

2.11 Conclusion

A corporate intranet is a communication infrastructure.It is based on the communication standards of intranet and the content standards of world wide web.Therefore the tools used to create an intranet are identical to those used for internet and web applications.The distinguishing feature of corporate intranet is that the access to information published on the intranet is restricted to clients in the intranet group.This has been accomplished by the use of LANs protectected by firewalls.These are the silicon of software.Developing a corporate intranet is a layered process.Corporate intranets are not great because of their design or the level of automation they have achieved, but they are great because they help communicate people in new and useful ways.The goal of building corporate intranets is to enable as many people in the organization as possible to be full participants in the communication process.

CHAPTER 3

INTRANET: AN INTERNET TECHNOLOGY

Over the past few years, a major explosion in the growth of the Internet has taken place. It is becoming increasingly the place where people go to find information, share information, do their commerce and learn new things. The Internet "information highway" creates a revolutionary forum for the exchange of ideas, fundamentally changing the way we communicate. It is an indispensable tool in the information age. The collection of networks began as a research vehicle, but grew to become much more. The Internet connects thousands of computers and millions of people around the world. The future of software development is taken to new heights with the development of new Intranet/Internet applications on the World Wide Web (WWW).

3.1 Web Technology

The World Wide Web (WWW) shortly written as the Web is one of the most popular services provided via Internet. There are thousands of web sites available to the browser. The user has wide choice of exploring exotic destinations with the excitement of playing a video game, listening to a music CD, or even doing virtual shopping, banking and on-line payments. The most appealing aspect of the Web and Internet is that any body can publish his/her pages, and place it as a web site in the Internet. Basically, the web is a collection of all browsers, servers, files, and browser-accessible services available through the Internet.

Intranets are small Internets designed for an organization which wants to avail the facilities of the web technology but do not want to share its data with other users.

3.1.1 Web Client/Browser

To access information stored in the form of web pages, users must connect to a web server. Once connected, an interface that displays the contents of the web page is required.

Computers that offer the facility to read information stored in web pages are called "web clients". Web clients run special software called "Browser" that allows them to:

1. Connect to an appropriate server.
2. Query the server for the information to be read.
3. Provides an interface to read the information returned by the server.

Some of the most popular browser software that clients run to allow them to query web servers for information are Netscape Communicator and Microsoft Internet Explorer.The latest versions of these browsers support both the Java Script and VB Script. Today's web browsers extend Mosaic's GUI features with multimedia capabilities and with browser programming language such as Java, Java Script and VB Script [Bayross,99].

3.1.2 Web Server

Web pages are created using HTML syntex. These pages must be organized and stored at a central computer. The organization of web pages into directories and files stored on the Hard Disk Drive (HDD) of a central computer is called "Web Site" creation. Computers that store web pages into directories and files and provide these files to be read are called "servers". They act like service providers that service the need for information [Bayross,99]. The server computer runs special software called 'Web Server' software that allows:

1. Web site management.
2. Accept client's request for information.
3. Respond to a client's request by providing the page with the required information.

Some of the most popular software, which servers run to allow them to respond to client request for information, is Internet information server (I.I.S),Apache Web Server, Netscape Server, and Microsoft Personal Web Server.

Web server software stores and manages web pages when required; the web server accepts requests for these web pages, retrieves these web pages from its HDD and sends the page back to the client who requested for it.

3.1.3 Role Of Internet

The Internet is the largest, most powerful computer network in the world. It encompasses more than 1.5 million computers with Internet addresses that are used by more than 100 million

people in most of the countries in the world.[Ref: 22].As more and more colleges, universities, schools, companies, and private citizens connect to the Internet either through affiliations with regional not-for-profit networks or by subscribing to information services provided by for-profit companies, more possibilities are opened for distance educators to overcome time and distance to reach students.

As technological advances in the computer hardware and software industries continued to grow over the years, a new form of communication emerged, *Computer Communication*. Computer Communication is the exchange of information between persons by the way of computer networks. The information exchanged can be text, images, audio, and video. The information exchanged can be done in real time (synchronously), or the exchange of information can be done in different times (asynchronously).

Examples of using a computer network include:

- Modem with an analog or digital telephone line.
- Local Area Network (LAN).
- Wide Area Network (WAN).
- T1/T3 (Time Division Multiplication) transmission network.

One of the applications that benefited from technological enhancements to computer networks is the Internet. The Internet’s original mission, before the recent explosion of commerce on the Internet, was a medium "in support of research and education". As the telecommunications and computer industries continued to grow and expand to change our lives, educators and information providers struggled to find a useful use for this new medium. Initially, university professors and researchers around the world shared information and communicated with each other by using the Internet. Over time,educators recognized that the Internet can be useful as a medium to educate and teach people, from young children in lower grades to college students. People can access the Internet anytime they choose to and from any place in the world. Over time,thousands and thousands on-line resources were added to the Internet, and new

applications emerged to allow people to communicate and share information over the computer network and the Internet. [Kauffman,99].

3.1.4 Protocols and URL

The Web uses the Internet as its communication medium; it must follow Internet communication protocols. A protocol is a set of rules governing the procedures for exchanging information. The Internet's Transmission Control Protocol (TCP) and Internet Protocol (IP) enable worldwide connectivity between browsers and servers. In addition to using the TCP/IP protocols for communication across the Internet, the web also uses its own protocol, called the Hyper Text Transfer Protocol (HTTP), for exchange between browsers and servers. HTTP is used by browsers to request documents from servers to return requested document to browsers. Fig 3.1 shows browsers and servers communication via HTTP over the Internet or Intranet [Kauffman,99].

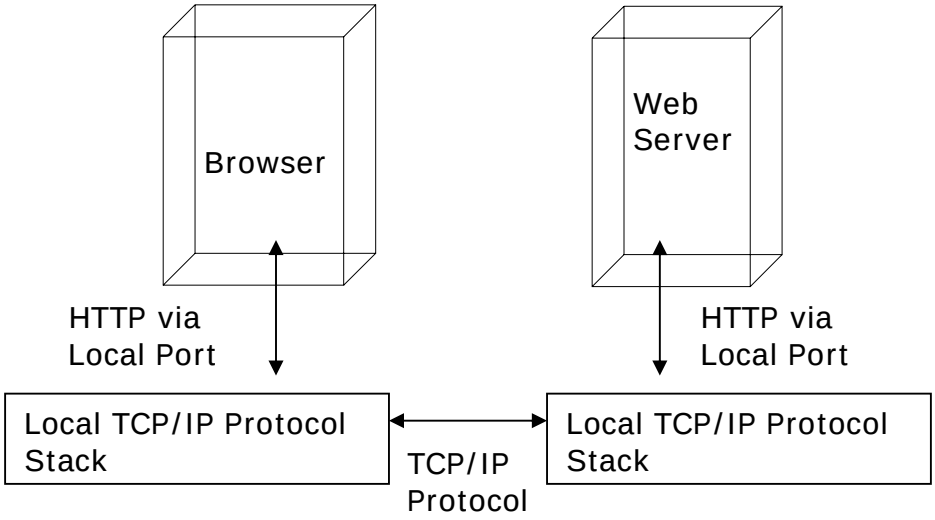

Fig 3.1 Browsers and Web Servers Communication

A client makes an HTTP request by means of a Uniform Resource Location (URL). This URL could be typed in to 'Location' window of browser, be a hyperlink or be

specified in the ‘Action’ attribute of an HTML <form> tag. From URL, the web server determines that it should activate the gateway program listed in the URL and send any parameters passed via the URL to that program. A client’s browser retrieves a web page from the server and displays the web page in the browser. The communication steps between a client and web server can be summarized as follows [Bayross,99] :

3.1.5 Client Server Model

The client server terminology can almost perfectly be applied to the web technology. The machine that runs the web server software could be remote machine setting at the other side of the network, or even other side of the world, or it could be one’s own home machine. The user’s browser acts as the client. In other words server is one that stores, processes and distributes data and the client accesses server for information [Kauffman,99].

Keeping the client server model in mind designers of web technology have developed two types of scripting languages. The two types are server side and client side scripting described as under:

3.1.5.1 Server Side Scripting

A script is a type of computer code that can be used to make a Web page dynamic. For example, a script could be used to include a "number of visitors" counter that increments each time someone visits a Web page. Or a script could be used to include a countdown to a special event: "only *x* more days", where *x* decreases by 1 every day. Creating scripts is an advanced Office feature that requires programming knowledge.

A script that is interpreted by the web server is called a server side script. A server side script is an instruction set that is processed by the server, and which generates HTML. The resulting HTML is sent as part of the HTTP response to the browser.

Presently, server side scripting is created in these languages:

1. Active Server Pages (ASP)
2. Cold Fusion
3. Java Server Pages (JSP)
4. Personal Home Page (PHP)

3.1.5.2 Client Side Scripting

A script that is interpreted by the browser is called a client side script. A client side script is also an instruction set but the web server does not process it. Instead, it is sent to the browser (as part of HTTP response) and is processed by the browser. The browser on the monitor then displays the result.

There are four major client side technologies used for creating web pages. These are:

1. Java Script/ Jscript
2. VB Script
3. Java
4. Active X Controls

3.1.6 Common Gateway Interface (CGI)

The Common Gateway Interface (CGI) is a specification defined by the WWW consortium, defining how a program interacts with a HTTP server. The CGI provides a middle ware between WWW servers and external databases and information processing, retrieval, and formatting tasks on behalf of WWW servers.

A CGI program is a computer program that is started by the web servers in response to an HTTP request. CGI programs are developed in C, C++, Visual Basic Script (VB Script), ASP, Perl, Java, Java Script, TCL, Python, Icon, Apple Script, Unix Shell Script and even Dos Batch Files. [Kauffman,99]

The Figure 3.2 shows the working of CGI.

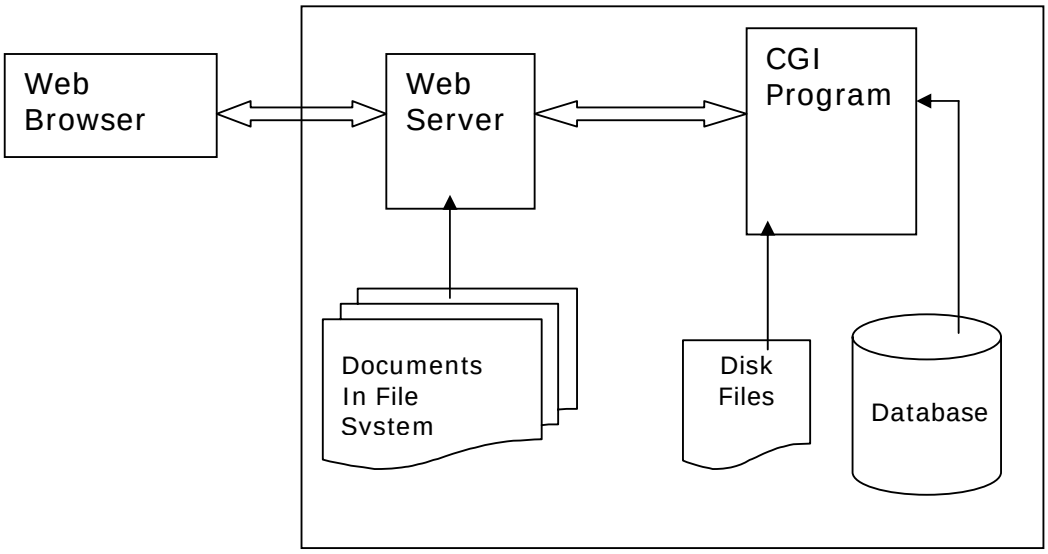

Fig 3.2 Working of CGI Programming

As shown in the figure 3.2, a web browser running on a client machine exchanges information with a web server using the HTTP. The web server and the CGI program normally run on the same system, which the web server resides on. Depending on the type of request from the browser, the web server either provides a document from its own document directory or executes a CGI program.

To web server is configure by informing it of the directory where the CGI program reside. The URL specifying a CGI program looks like any other URL, but the web server can examine the directory name and determine whether URL is normal document or a CGI program. [Kauffman,99]

3.1.7 Server/Client vs. Master/Slave Relationship

The kind of Student/Teacher relationship in a real classroom is hard to simulate in the current Server/Client architecture that is supported in the current WWW System.In the current transfer protocol, the HTTP just provides us with a pair of Client and Server which are suitable for only basic data search and retrieval, but not for our needs.

- Inter Client Communication is supported. Servers and clients can communicate with each other and one client can communicate with the other. One client is a teacher and the other clients are students, all of which need to know what the other is doing.
- HTTP has not the capability to define a state to client,which is necessary for any model that is using synchronous method. The teacher needs to be identified as different from the rest of the clients, and has special privileges and controls.
- The Client/Server connection only remains till the time the Client request has been dealt with, and then it closes. For synchronous DL,there needs to be a continuous connection between the Client and the Server.

Thus to enable the system to provide for a State to the Clients and control in the navigation and activity,an additional Master/Slave model can be implemented.

This Master/Slave model gives a role to all the clients in a group, and specifies the privileges and control for each of them. The Master is the teacher in the real classroom world, while the Slaves are all the students in the real classroom model. It is important to emphasize that this distinction is a logical distinction that allows us to enhance the Server/Client model.

The basic Client/Server model also remains in that the server is still a repository of all the information and clients are the ones accessing it, but now one of the clients logs in as a Master, who has special privileges and forms a group of Slaves for a particular group. So after taking permission from the group Master, the slaves log into a session, which connects themselves to the same synchronous activities going on in the session. The master (teacher) has the navigational controls, which he can pass down to the slaves (employees), and then take it back from them. [Ref: 17,19]

3.2 Planning and Organization of an Intranet

Planning is a critical step in the intranet deployment process. Planning is a systematic approach used to identify in advance the parameters and actions necessary to execute or arrange an activity, function, or project. It is an ongoing process that begins as early as practical to allow sufficient time to address issues such as:

- Funding.
- Organizational interfaces and authorities.
- Resource allocation.
- Requirements for written procedures and drawings.
- Identification of safety standards and requirements.
- Identification of security requirements and controls.
- Training needs for staff.

Good planning of an intranet generally results in higher efficiency, effectiveness, safety, and quality in products and services.

- Operation and planning meetings (e.g., staff meetings,project meetings, program reviews).
- Work plans or work authorizations that address work objectives, resource requirements, work hazards, and the implementation of safety controls.
- Work or project schedule.
- Operational policies and procedures.
- Performance measures and results.

Planning is a critical step in the intranet deployment process. A successful deployment plan accomplishes the following goals:

- **Minimize hardware investment.** Obtain the greatest functionality with the least amount of additional hardware, because additional hardware brings with it increased support, configuration, and cost requirements.
- **Achieve required service levels.** Effectively meet the needs for which one is installing intranet in the first place. These include the following major user services:

    1. Information sharing and management.
    2. Communication and collaboration .
    3. Navigation.
    4. Application access.
    5. Security.
    6. Management.

- **Make effective use of bandwidth.** It is important to deploy the right number of servers in the optimal locations on the network. Inefficient server deployment can lead to slow network throughput, resulting in unacceptable lag-time for network users.
- **Maximize the existing support infrastructure.** Maintaining an intranet leverages and builds on the skills and knowledge of the existing network personnel. Rather than bring in a new group of administrators, one can train the people who are already familiar with the unique features of the network.
- **Reduce administrative costs.** Phasing out proprietary, non-Internet-based products in favor of widely adopted, open standards-based solutions saves you time and money. You no longer need to manage multiple directory systems, email gateways, and document management systems. A single, open architecture is much easier to implement and support than multiple, proprietary legacy systems.
- **Minimize the impact on the existing network infrastructure.** Much like using the existing IS personnel, the most efficient intranet deployment utilizes your existing network connections, particularly your existing LANs.

Ethernet connections are the most widely used. WANs have limited bandwidth and can be expensive to maintain.

Staff Proficiency

Staff proficiency involves hiring and retaining staff who have the appropriate skills, experience, and qualifications to carry out their work assignments successfully and safely. To ensure consistent hiring practices, the corporate should provide the institutional policies and procedures for personnel qualification, selection, and training.

Supervisors and managers must also ensure that the following activities related to staff proficiency are accomplished and documented for each individual in their organization:

- Position requirements must be established at the time of recruitment and selection. The requirements define the minimum education, experience, and skills necessary to fill the position. .
- Training needs for each position must be determined and documented based on the scope, hazards, and complexity of the job and on any institutional and regulatory training requirements.
- Performance evaluations must be conducted at least annually for every position to ensure that job proficiency is being maintained and improved.[Ref: 19]

Conclusion

Intranet,an internet technology provides a rich medium for the corporates.Administrators and employees should consider the available technology to enhance their working environment .The intranet is a flexible ,powerful and efficient tool to supplement or replace other internet delivery modes.Study programs in corporate firms demonstrate the successful use of the intranet for communication,instructional delivery and information access.Intranet access for each and every person, is that the rich networking resources will be of

personal benefit to them in their own professional growth,research and collaborative efforts.The intranet is a user friendly environment that promotes the engagement of employees thus increasing the information efficiency,low technological implementation and increase in financial gains.

CHAPTER 5

SOFTWARE REQUIREMENTS AND SPECIFICATIONS (SRS)

This chapter covers the requirements specifications of the software system. The software requirements specification portion covers scope of the product, product perspective,system functionality,user characteristics, general constraints, data flow diagrams and the process specification.An SRS should be correct,unambiguous, complete,consistent,ranked for importance or stability,verifiable,modifiable and traceable.The SRS may need to evolve as the development of the software product progresses. [Pressman,97]

5.1 Software Requirements and Specification (SRS)

The software system requirements are as follows:

5.1.1 Scope of Product

The main scope of the thesis is the design and implementation of a corporate intranet. This product can be used by the private companies and corporates. This software system has two front ends, one for employees and the other for the corporate intranet administration. The front ends are:

1. Employees Control Panel
2. Administrator Control Panel

Each one of these front ends contains different options.

5.1.1.1 Administrator Control Panel

In the administrator area, there is a panel of different options, which he/she can perform. These options are:

1. Discussion board
2. Registration
3. Queries
4. Change password
5. Deletion options
6. Add and update options
7. Emails
8. Live conferencing

5.1.1.2 Employees Control Panel

The available options for employees are:

1. Employees phone directory
2. Online polls
3. Live conferencing
4. Emails
5. Company forms
6. Discussion board
7. Queries
8. Change password
9. View results
10. Archives

5.1.2 Benefits of The Product

The benefits and implications of an intranet can be enormous. The advantages of this software system are as follows :

- This software can be used to increase both individual and group productivity. Through browser-based software,the administrator can update employees profiles, schedule meetings and accomplish a variety of other tasks. Employees spend more time working and less time figuring out new software, as applications are in the familiar browser environment.
- Employees can benefit from the ease of navigation, ease of accessing information and reduction of time spent searching for the desired document, file or other information source.
- It can also lead to a sense of unity within an organization and enhanced working relationships among employees, different groups or divisions, or within a company and its partners or customers.
- Efficient work-flow and information that's immediately available and up-to-date helps an organization make decisions more quickly. The corporate intranet accomplishes this, and more, and is proving to be the next evolutionary stage in computing.
- This software has only one server to handle all Intranet services.
- It can save both time and money for e-publishing. Posting company procedures, policies and manuals on the Intranet saves time spent on printing, filing and distributing documents, as well as time employees spend searching for the most recent documents.

5.1.3 Product Perspective

The techniques and tools which I have used are Active Server Pages (ASP), Hyper Text Markup Language(HTML),JavaScript,MsAccess,Flash4.0,FrontPage2000, Visual InterDev, Internet Information Server (IIS), Internet Explorer and Microsoft Windows 2000 (Professional) as operating system. [Pressman,97]

5.1.3.1 HTML

HyperText Markup Language (HTML) is used for creating hypertext on the Web. Conceived as a semantic markup language to mark the logical structure of a document, HTML gives users a way to identify the structural parts of a document. HTML involves finding out what tags are used to mark the parts of a document and how these tags are used in creating an HTML document. HTML was not originally intended to be a page-layout language; instead, it was to be a language used to mark the structural parts of a document-parts such as paragraphs, lists, headings, block quotations, and others. Based on the identification of these document parts, the programs that render HTML documents (Web browsers) display the HTML in a readable form. This organization allows for separation of a document's structural specification in the HTML code from its formatted appearance in an HTML browser. In practice, there now are many language constructs that one can use in HTML to control the appearance of a document.

Developments tools like FrontPage 2000 and Visual InterDev are popular in web development because they generate the HTML automatically when some component is addes in the web page accordingly. [Chase,99]

5.1.3.2 ASP

Active Server Pages (ASP) are a powerful server based technology from Microsoft, designed to create dynamic and interactive HTML pages for World Wide Web. Introduction of ASP was a milestone in the development of dynamic, interactive and scalable web applications and it has matured great deal since its inception.

ASP is now considered an integral part of working with windows on Internet. ASP integrates with the latest version of exciting new technologies such as ADO, COM + and XML. With ASP compelling, practical web applications with intelligent, dynamic pages can be produced. ASP works by allowing us the functionality of programming

language; we write programming code that will generate the HTML for the web pages dynamically. Whenever a user browses to our website and requests one of our ASP pages, the ASP code is processed at that time by a special piece of software- the web server. This processing generates the HTML, which is then passed to the browser and used to create the page on the user screen.

Most important advantage that ASP brings is its ability to create pages that are sensitive to factors such as time and place, and user's identity and previous choices and actions. It means that the text, images, tables, forms and even the layout of the page can be selected automatically at the time the user requests the page. [Artkinson,01]

5.1.3.3 Java Script

This language is known as Client-Side Scripting. This means that this language is run on the client browser and has nothing to do with the server side. JavaScript exposes properties related to the document windows, the history list, the loaded documents, frames, forms, and links to the programmer. In addition, JavaScript can be used to trap user events, such as changing form values or pointing at links, so that appropriate programs can be developed for each event.

JavaScript is an interpreted language. Source code is compiled prior to runtime,i.e in an interpreted language source code files are executed directly at runtime in JavaScript. JavaScript is generally simpler than compiled languages and is easy to learn. It is often easier to develop, change, and trouble-shoot programs because the need to recompile with each change is removed. [Artkinson,01]

5.1.4 System Functionality

The main idea of this software is to provide a simple, easy to use mechanism for rapidly getting information to anyone who needs it, to share critical information, and to help streamline internal process such as HR, IS, etc ; thereby "unlocking" important information and making it available to the people;To allow Users to gain quick and timely access to a much wider variety of existing information residing in a variety of original forms and sources, ranging from word processing files to databases to Lotus Notes and other resources.

The software system provides the employees to search information about any employee in the organization through an employee phone directory.In the discussion board,employees can post messages either to their own department or to other departments. Similarly an employee can check messages floating in his own department as well as messages posted in other departments(i,e the whole company).They can also check messages issued from the administrator. Discussion board(message board) is an area of general notices where employees can post and read messages. In the polling section, employees can go to the polls and cast their vote only once on any major issue of the company.If they try to cast their vote more than once,the software will not allow them to do so giving them warning that they have already cast their vote.The employees have also been given the facility to send their personal messages to other employees in the company .For this,to receive or send their messages,they have to enter their email address and password for authentication purposes.Online company forms are also available and the employees can submit to the concerned person. To hold discussions and company related debates,the employees can hold live conferences at their scheduled time.The company can set the time and date prior to the meeting through the message board informing the employees about scheduled meeting.

In this software system,the job of Administrator is to maintain and update the database of the corporate intranet. The administrator performs actions on the database (insert, delete, update) under the instruction of administration. [Pressman,97]

In short this system leads to a sense of unity within an organization and enhances working relationships among employees, different groups or divisions, or within a company and its partners or customers. It can be used to manage the flow of a business and the development process, providing a quick and easy way for a specific task to be accomplished. Online purchase requests, vacation requests and task assignments are just some of the features included in many corporate intranets.

5.1.5 User Characteristics

The characteristics of the different users of this software system are as follows:

5.1.5.1 Employees

Employees bring basic characteristics to their working experience which influence their success in company's productivity. Corporate employees:

- Are determined to increase the company's productivity.
- Have post-secondary technical goals with expectations for higher gains.
- Are highly motivated and self-disciplined.
- Can play a major role in the corporate infrastructure.

Studies also conclude that similar factors determine successful development towards the progress of a corporate firm if the employees are devoted to their tasks.

These factors include:

- Willingness to initiate calls to bosses for assistance.
- Possessing a more serious attitude toward the assignment.
- Previous experience in a related field.

5.1.5.2 Administrators

Administrators are typically influential in planning and setting of an intranet program and they often lose contact or relinquish control to technical managers once the program is operational. Administrators are more than ideal people. They are consensus builders, decision makers, and referees. They work closely with technical and support service personnel, ensuring that technological resources are effectively deployed to further the company's mission. Most importantly, they maintain an intuitive focus, realizing that meeting the needs of employees is their ultimate responsibility.

5.1.6 Functional Requirments

This section will specify the requirements of the system,i.e, the services/tasks to be provided. The exact organization and information content of this is dependent on the requirments methodology used.

5.1.6.1 Administrator Control Panel

The job of the Administrator is to maintain and update the information system of the corporate intranet. Administrators work closely with technical and

support service personnel, ensuring that technological resources are effectively deployed.

- **Employee Phone Directory:** This option contains several sub options and divided into five categories namely, add an employee record ,update an employee record ,delete an employee record ,search an employee and show all employees.When an employee joins a company,the administrator adds that employee in to the company's database.The administrator can also make changes in the records of the employees through the update option.He/she can search information about any particular employee and delete an employee record if someone quits the company.He can also view all the employees record at the same time with show all employees option.
- **Discussion Board:** Through the discussion board,the administrator can send the important messages, news and any kind of information regarding the departments, administration, policies and other information to the employees area.
- **Online Polls:** This option also contains several sub options namely, insert question, insert archive poll results, view results, delete polled results and delete vote casting area. In the insert section, the administrator puts a question on the polling area given to him by the administration to which the employees will give their opinion .The administrator can view the poll results and can delete the question when the administration asks him/her to do so.He can also delete the previous votes casted by the employees on the insertion of new question by the administration.
- **Emails :** This option allows the administrator to send personal message to any employee.It has three catogaries namely, send emails ,receive emails ,empty emails and logout .The administrator can also delete any particular emails if he doesnot want to empty his/her email box.
- **Live Conferencing:** The administrator can also join the live conferencing if the company wants him to attend the meeting on particular matters related to administration. The administrator can stay in the chat room to make sure the employees don't stray from the scheduled topics and there is no misuse of the facility to express their opinions
- **Record Deletions:** This option contains several sub options and divided into three categories namely discussion board, employee queries and employee

record. By these options the administrator can delete outdated messages of the discussion board, queries which employees have sent to the administrator and are outdated and delete the personal record of any employee incase he/she quits the company.

- **Queries:** The administrator uses this option to answer various queries.
- **Change Password:** The administrator can also change the password. To change the password, administrator provides the User-id, old password, new password and then confirm password. If any of the information is not provided correctly then the system will not change the password and indicate about that wrong entry.
- **Sign Out and Home Page:** Sign out option ends the session on the web. Once the administrator is signed out then he/she has to log in again. Through Home option,the administrator can view the corporate intranet home page without ending the session and can again enter into the administrator control panel without logging in again.

5.1.6.2 Employees Control Panel

Employees have different options in their control panel. To enter into the employees control panel they have to fill a login form, which checks the authorization.

- **Employee Phone Directory:** This option contains two further sub options namely, search an employee record and show all employees working in the company.Through this option the employees can get information about any one working in the company by just typing the employee-id.This option will give whole information about any employee working in the company.The employees can also view all the employees record at a simple click of the mouse.
- **Discussion Board:**Contains four options,write department messages,receive company,department and administrator notices.. The employees can write the notices (messages, news, and information) in the department area only, but can read the notices, which have been sent by the other departments and the administrator.

- **Online Polls:** This option allows employees to caste their vote on any particular issue of the company.It has three options namely go to polls,view poll results and check archive polls.In go to polls area ,employees will caste their vote and click on any one of the options yes/no to give their opinion.An employee can not caste its vote twice .After casting the vote ,the employee can check the results instantly.They have also the option to check the archive poll results.
- **Emails:** In e-mails section an employee can send,receive and empty his/her email box.There is also another feature which allows the employee to delete his emails by his choice,if he doesn't wish to delete all the emails.Emails are used to send personal message to any employee in the company belonging to the same or different department.
- **Company Forms:** Online company forms ease the work of employees from searching the forms or writing them on paper.Different types of forms are available namely,leave advance loan form ,house requisition form etc. These forms are submitted by the employees to the concerned person in the department.They have also the option to check the forms submitted to them by different employees in the department.
- **Live Conferencing:** This most important option allows the employees to hold online discussion. It enables employees to use their web browsers and logon to corporate chat room at scheduled times to discuss issues relevant to the working of the organization. A chat group may also act as a think tank or a brainstorming session. Chat room can be enabled at pre-determined times.
- **Change Password:** To change the password, firstly the employee has to provide the User-id, old password, new password and then confirm password. If any of the information is not submitted correctly, the system will not change the password and indicate about the incorrect entry.
- **Query Form:** If the employees have any query,then they can ask the administrator. Employees have to fill the form, which contains: employee name, employee-id, e-mail address, and department name.
- **Sign Out and Home Page:** Sign out option ends the session on the web, then employee cannot enter into control panel and perform any kind of operation. For this,the employee have to log in again. Through Home option,the employee can view the home page and perform any sort of work without

ending the session and can again enter into the employees control panel without logging in again.

5.1.7 Interface Requirements

To run this software system different users need systems with different hardware and software specifications according to their authorization level.

5.1.7.1 Administrator's System Requirements

The following system is required by the administrator to maintain the corporate information system update.

- **Operating System:** Windows 2000 Server, Windows 2000 professional, Windows NT4.0
- **Web Server:** Internet Information Server (IIS) version 4.0 or 5.0, Personal Web Server (PWS) 4.0.
- **System:** 1 GB Hard Disk, 600 MHz (Branded), Complete Multimedia
- **Random Access Memory (RAM):** 256 MB RAM
- **Web Browser:** Latest version of Internet Explorer, Latest version of Netscape.

5.1.7.2 Employees' System Requirements

The following system is required by the employees to attend their on-line functions:

- **Operating System:** Windows 2000 Server, Windows 2000 professional, Windows NT 4.0, Windows 98.
- **Web Server:** Internet Information Server 5.0, Internet Information Server 4.0, Personal Web Server 4.0 (for win98)
- **Processor:** 1 GB Hard Disk, 400 MHz, Complete Multimedia
- **Random Access Memory (RAM):** 128 MB RAM
- **Web Browser:** Internet Explorer4.0 or higher, Netscape Communicator 3.0 or higher.

The mode of interaction between various applications is shown in Figure 5.1

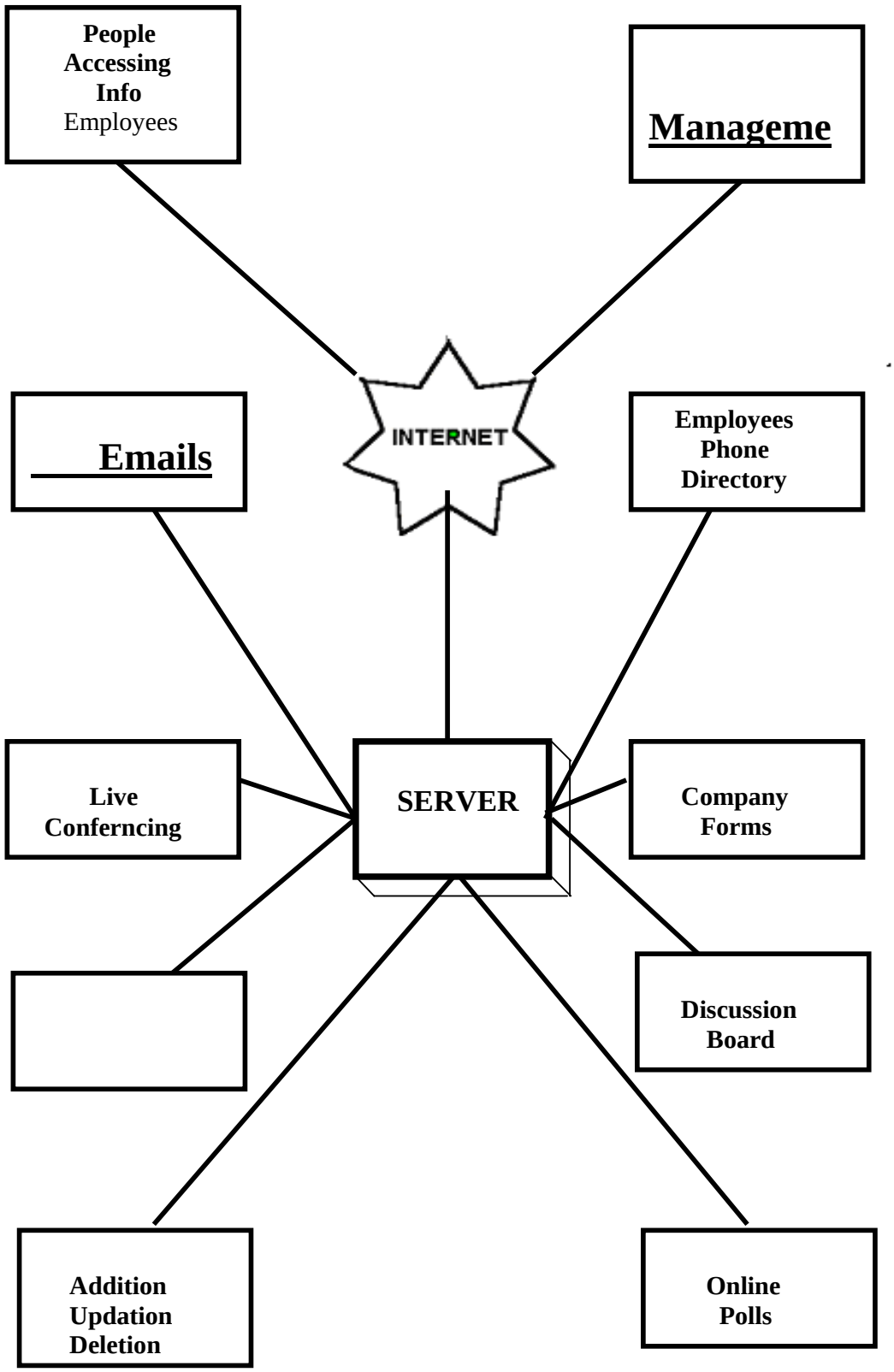

Fig 5.1 Mode of Interacaction Between Various Applications With The Server

5.1.8 Data Flow Diagrams (DFD)

DFD is a Graphical Representation Technique. DFD shows the whole system as graphical manner

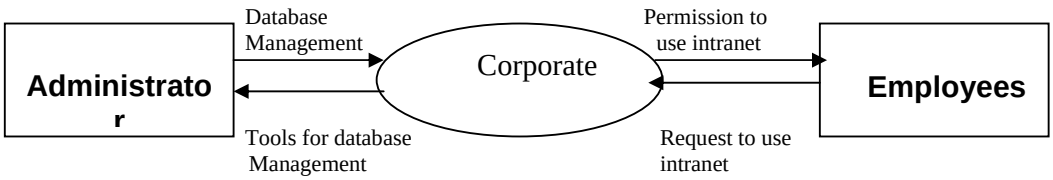

Fig 5.2 Context Level (Level 0)

5.1.9 Process Specification

The definition of each function is defined into this model, also known as (PSPEC)

5.1.9.1 Level 1 DFD

- **Authorize Area:** Only employees and administrator can access in this area. This area contains the control panels for the employees and administrator of the corporate.
- **Check Password:** To enter into the company authorized area, employees provide their identity. Password, employee id and department.
- **Confirms Password:** To enter into the company's authorized area, authorization is necessary. This authorization is then checked from the corporate database.
- **Administrator Area:** If the authorization for the administrator is confirmed, then the administrator can enters into the control panel and performs necessary actions.
- **Employees Area:** If the authorization of employees is confirmed then they can enter into their control panel and can use the intranet facilities.
- **Control Panel:** If the authorization is confirmed then the employee or the administrator is able to enter their respective control panels to make use of the intranet options.

Level 1 DFD is shown in Fig 5.3

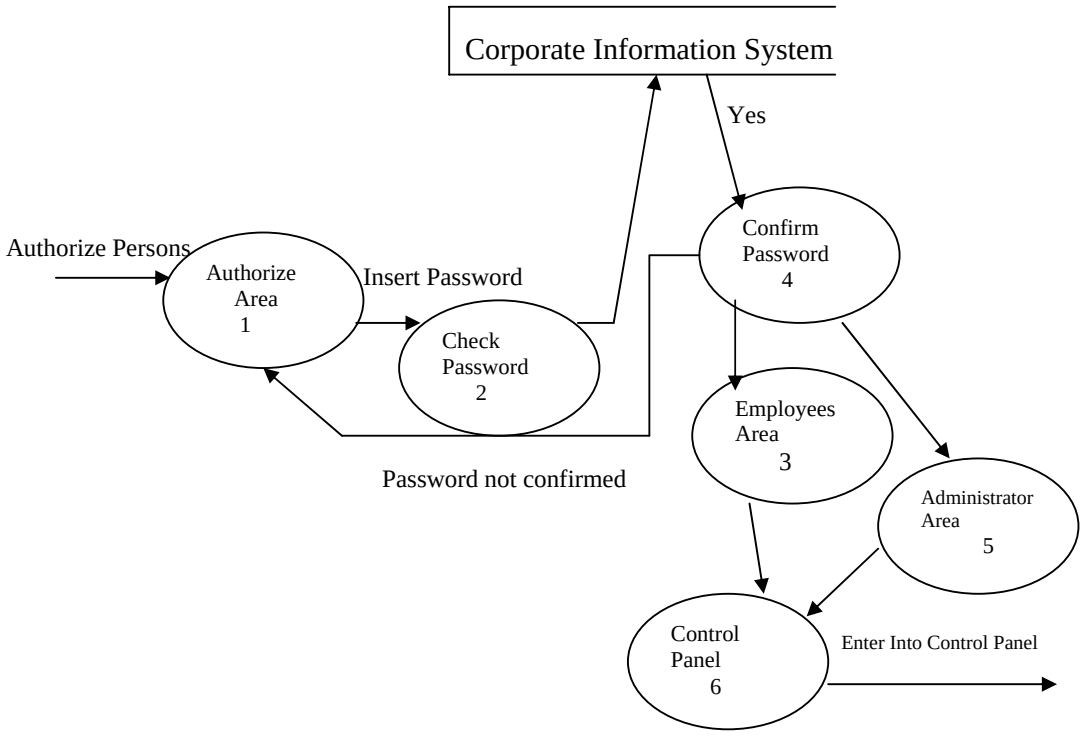

Fig 5.3 Level 1 DFD

5.1.9.2 Level 2 DFD (Administrator Area)

- **Administrator Control Panel.** Enter his/her control panel after login. Then first check for queries and the instruction from the administration. The administrator can perform many operations through the control panel.
- **Queries.** These queries can be asked from the employees.If the administrator knows about these quires then he replies to the concern person otherwise send to the concerned person.
- **Change Password.** Administrator can change the password any time. This step is necessary to prevent hacking.
- **Discussion Board.** Read notices from the employees, and can also send notices to them.It has three options.The administrator checks employee messages,check company messages and delete outdated messages.

- **administration Requirements.** Check the instructions, which are directed through administration department. These instructions could be to addition of an employee record, deletion, and updation of an existing record.
- **Employees Phone Directory.** After getting instructions from the administration,the administrator goes to the employees phone directory option and does the required addition,deletion or updation as told by the administration.He can also search any employee record for further information about an employee.
- **Emails.** The emails option is used by the administrator to send personal messages to the employees,if he does not want his message to be delivered to the employee through discussion board because he may not want everyone to view it .
- **Online Polls .** In online polls,the administrator has many sub-options namely insert question,view poll results,insert archive poll results,delete votes cast for the previous polling and delete the outdated question.

Level 2 DFD (Administrator Area) is shown in Fig 5.4

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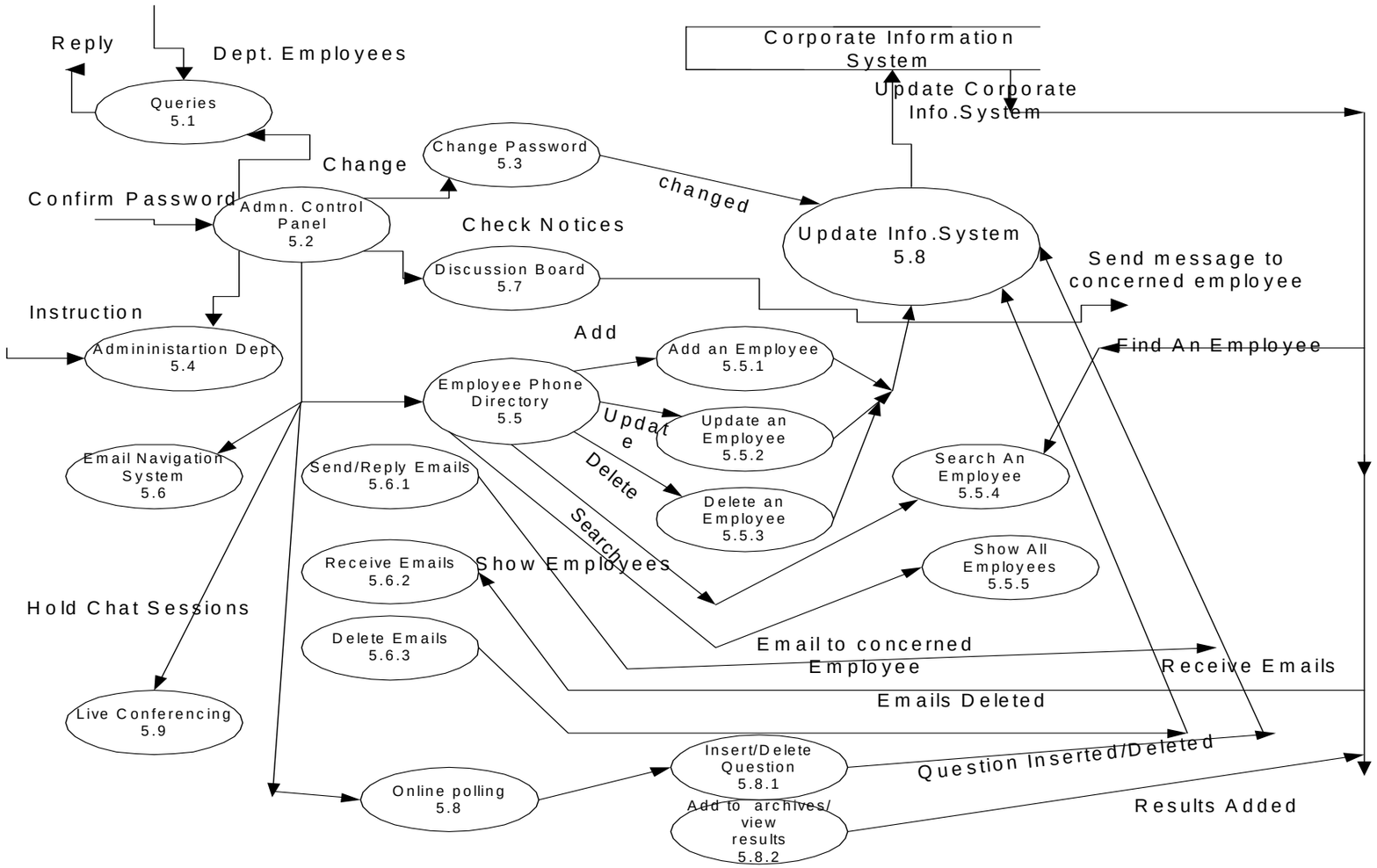


Fig 5.4 Level 2 DFD [Exploding Process 5 (Administrator Area)]

5.1.9.3 Level 2 DFD (Employees Area)

- **Employee Control Panel.** Enter his/her control panel after login. The employees can perform operation by using different options in the control panel. The options are emails, change password, discussion board,search any empoyee,live conferencing, online polls, notice board, queries and company forms.
- **Queries.** The employee can send the queries to the administrator in case of some problem or he/she needs some information.
- **Change Password.** The employee can change the password any time. This step is necessary to prevent hacking or the employee has forgot the password. Then employee can send e-mail to the administrator in this regard.
- **Update corporate Information System.** Collect all these information (employee record, poll results, company forms, emails) and then update the corporate information system.
- **Discussion Board.** The employee can read and write notices through this option.
- **Employee Queries.** Employees can make queries from administrator. The administrator replies their queries through their e-mail address.
- **Read Notices.** Employee can retrieve the notices from the information system to read the notices.
- **Write Notices.** Employee can write the notices to give some sort of information, to other employees and the administrator, and can also reply to the notices.
- **Employee Phone Directory.** Employees can search information about any employee working in his/her department or a different department.He can also glance through all employees record by clicking the show all employees option.
- **Company Forms.** Employees can submit the forms online.Different forms are available online which he/she can fill according to his/her requirement and then submit to the concerned person.Forms like leave application form,income tax form ,house requisition form etc.
- **Online Polls.** This option has three sub options.Employees can go to the polls to caste their vote on any issue of the company.They can view the poll results

instantly.They also have the option to view the archive poll results.An employee can cast his/her vote only once for a particular issue.

- **Emails.** Emails option is used by the employee to send his/her personal messages to his colleages in the department .For this,he /she has to type the email address and password to get access to the emails sent to him.The employee can either empty the whole mail box or delete his mails individually according to his choice ,may be he/she does not want to delete all the mails.
- **Live Conferencing.** This option is used by the employees if they want to hold on line discussions and company matters.They can set the date and time for the meeting in advance about the upcoming meeting. A chat group may also act as a think tank or a brainstorming session. Chat room can be enabled at predetermined times. Form a policy on what is acceptable and unacceptable behavior during chats.The employees make sure all of them have read and understood the policies before entering the chat room.

Level 2 DFD (Employees Area) is shown in Fig 5.5

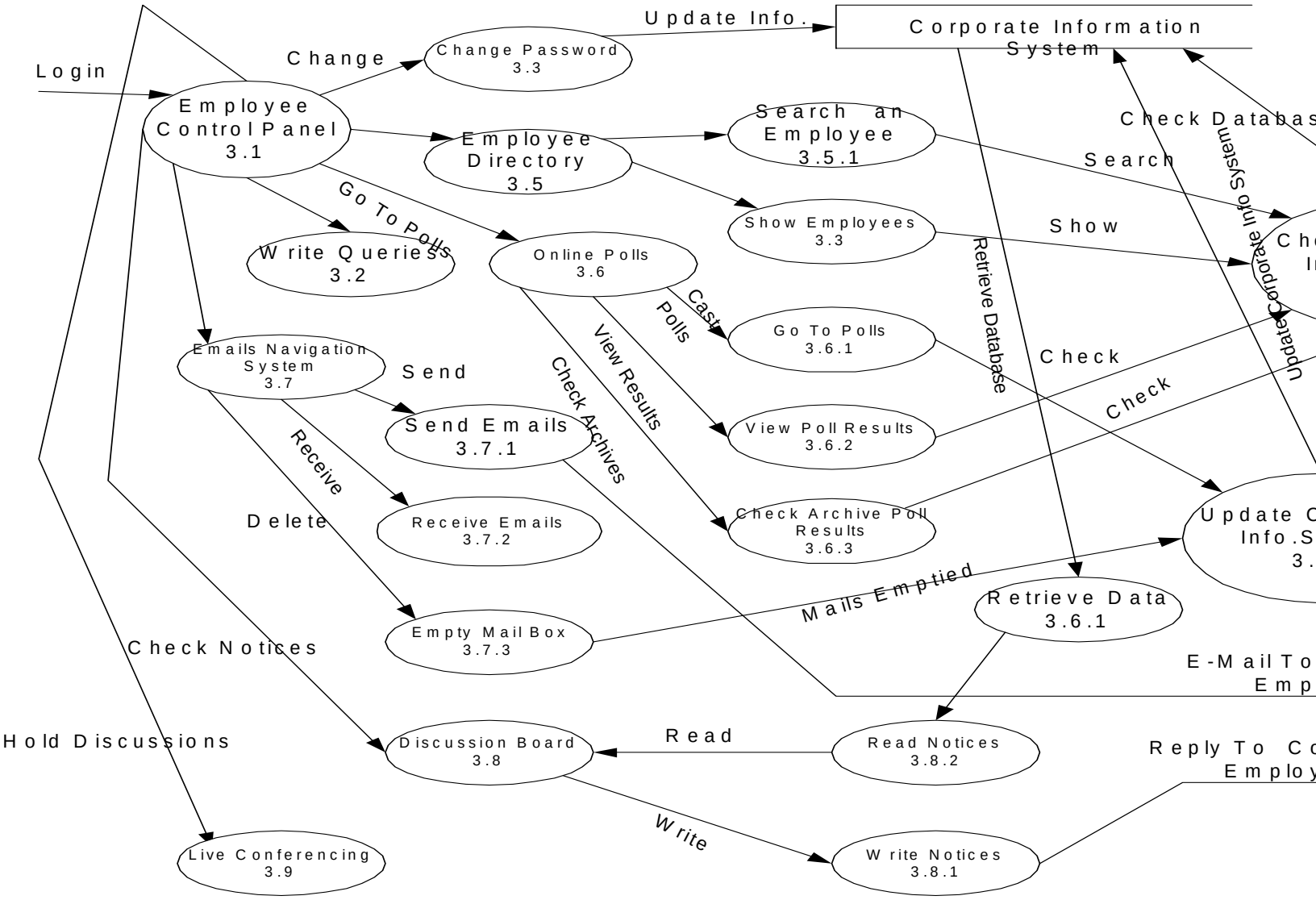


Fig 5.5 Level 2 DFD [Exploding Process 3 (Employees Area)]

5.1.9.4 Level 3 DFD [Discussion Board (Employee Area)]

- **Control Panel.** This control panel belongs to Employees Area, and members can enter into the control panel after login. To view or write notices,there is an option, named Discussion Board.
- **Receive Notices.** The employee can view the notices after retrieving from the corporate information system
- **Write Notices.** The employee can also write the notices/messages for different departments of corporate.
- **Discussion Board Types.** There are two types of notices. Departmental notices and company notices. The Employee can read or write in both these categories.
- **Departmental Notices.** The employee can send and view any information into his/her own department. area. So can send and view messages into both areas.
- **Company Notices.** The employee can send any information into any department. There are two categories employees area and administrator area .both areas. This option can be viewed through any department.
- **Administrator Area.** The Administrator can view and write messages. This area is not visible to employees. There are three options for the administrator in this panel.He/she can send messages to employees,receive company messages and can also delete outdated massages/notices.
- **Employees Area.** The employees can view and write messages. This area is also visible to employees. There are two categories: company and departmental notices. The company notices are visible to all the departments and employees, and departmental notices are visible to employees of the same department.

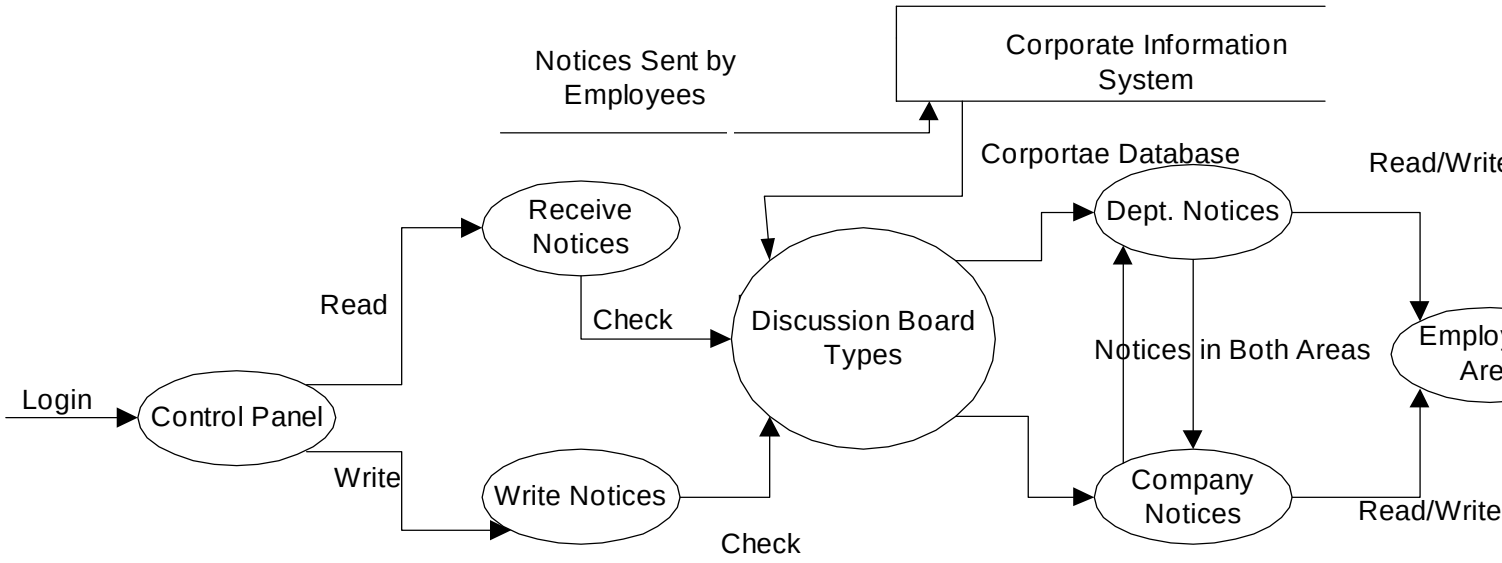


Fig 5.6 Level 3 DFD [Exploding Process 8 (Discussion Board)]

CHAPTER 6

IMPLEMENTATION OF THE SOFTWARE SYSTEM

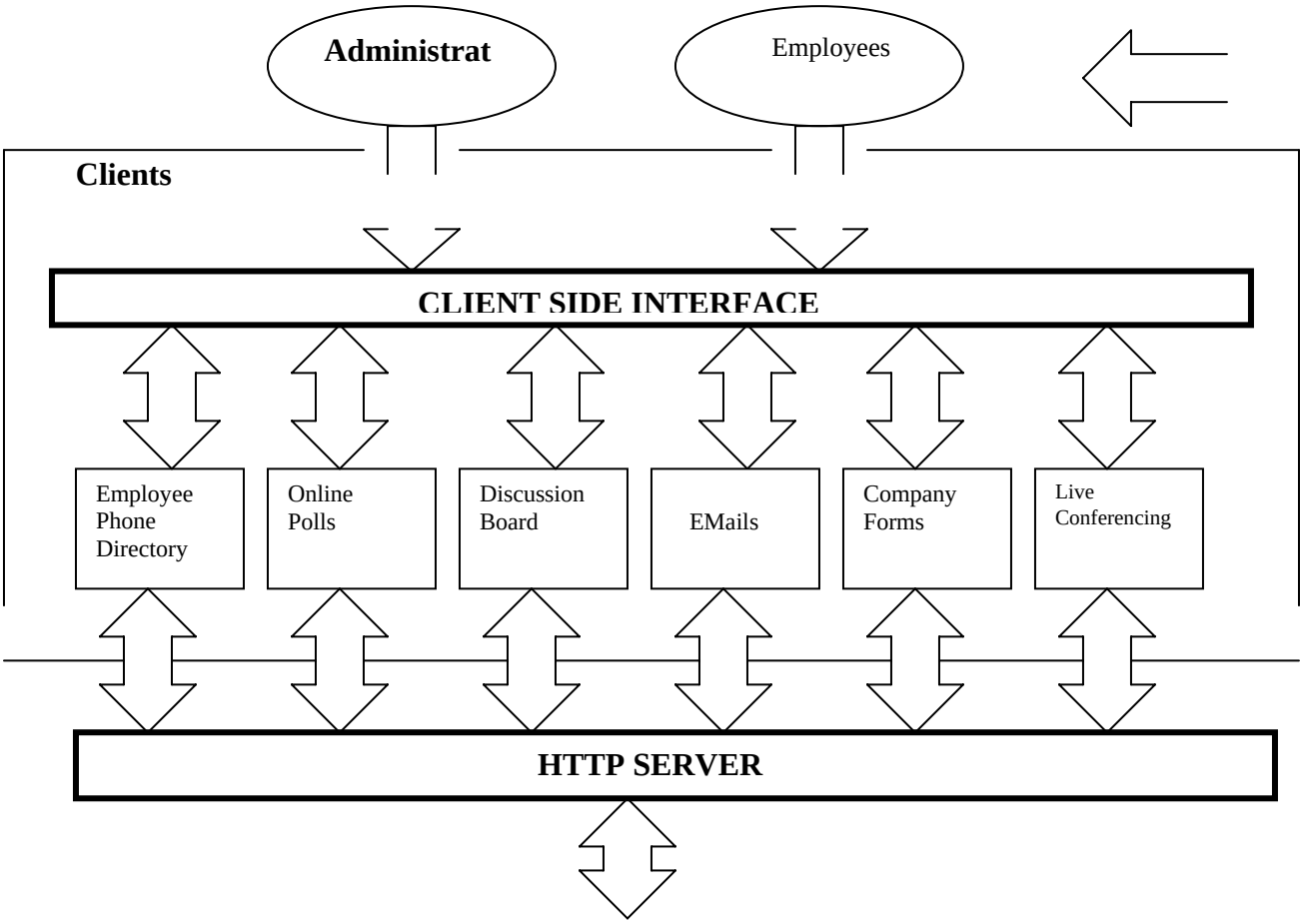
This chapter gives information about the implementation and working of different modules in the Corporate Intranet web site.

There are two different main modules regarding the Corporate Intranet. These modules are:

- Administrator Control Panel
- Employees Control Panel

6.1 High Level Architecture Diagram Description

The corporate intranet server (Internet Information Server) in Fig 6.1 is built over HTTP Server and World Wide Web (WWW) and is used to arrange and search the applications. The end users, employees and administration, interact with the corporate intranet server directly. When the corporate database is accessed,the corporate server links with HTTP Server



CORPORATE DATABASE

Fig 6.1 High Level Architecture Diagram

6.2 Detailed Description

This system is divided into two main portions. These two are the main modules. The main web page of the Corporate Intranet is shown in Fig 6.2.

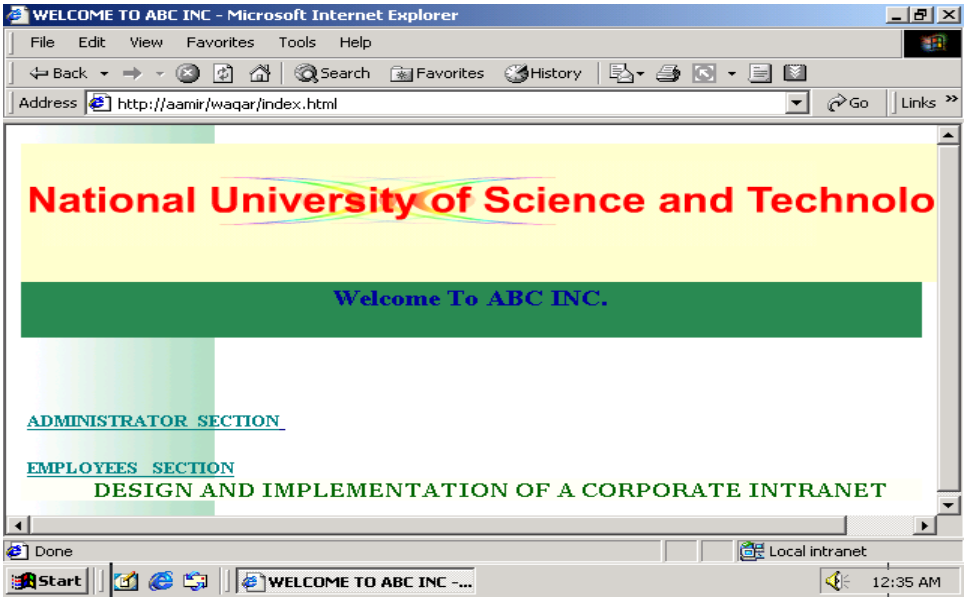


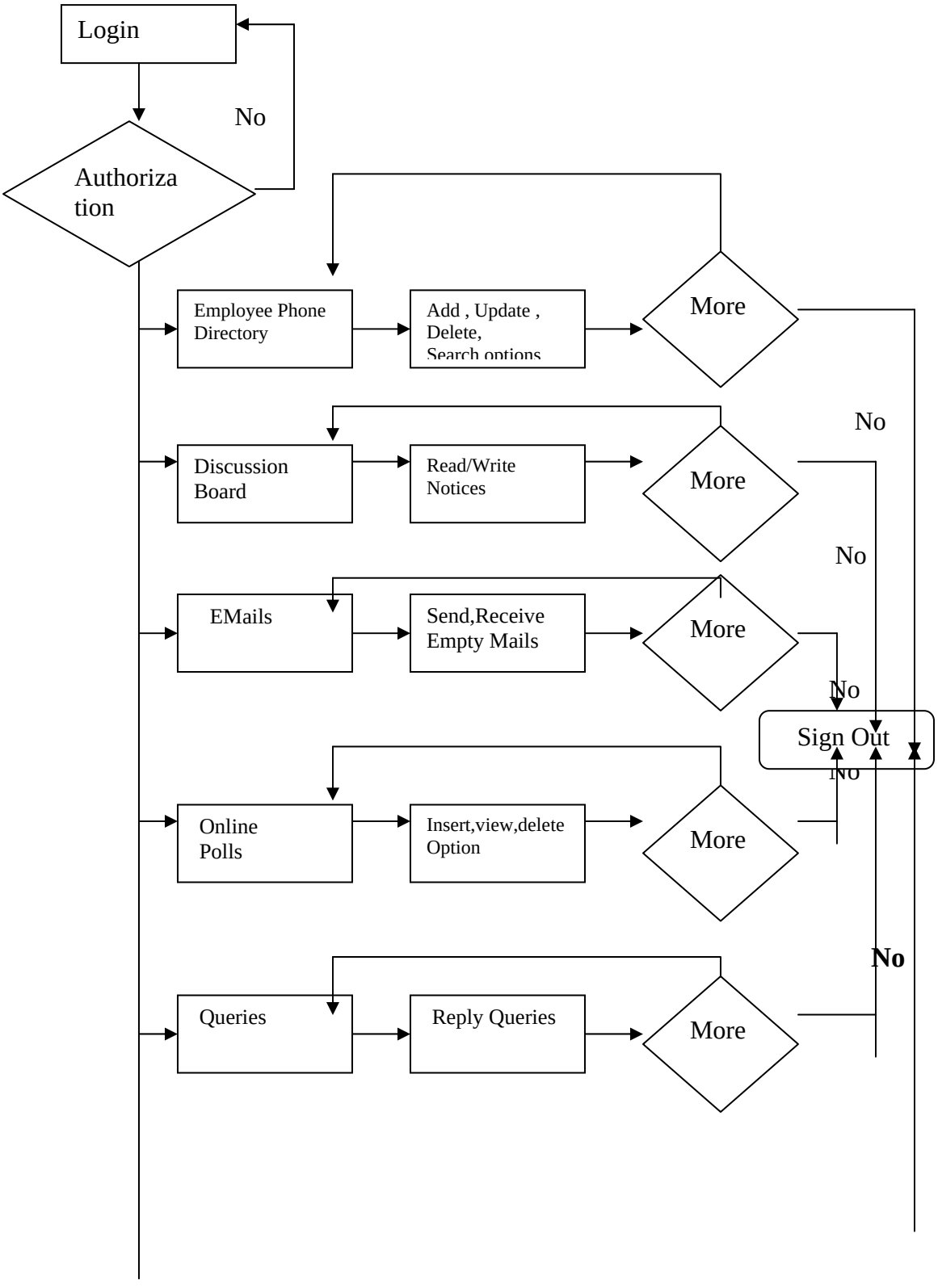
Fig 6.2 Main Web Page of Corporate Intranet

6.2.1 Administrator Control Panel

In this Corporate Intranet , the job of the Administrator is to maintain and update the database of the corporate. The administrator performs actions over the database (insert, delete, update) under the supervision of administration.

To enter into the administrator authorization area, a login window will appear which will ask for the user name, user id and password. If any of these options are wrong then the

system tells the administrator about it and again asks for the correct entries. When the entries are correct, the system allows the administrator to enter into the administrator control panel . The control flow diagram of Administrator Control Panel is shown in Figure 6.3 and the web page of administrator control panel is shown in Fig 6.4.



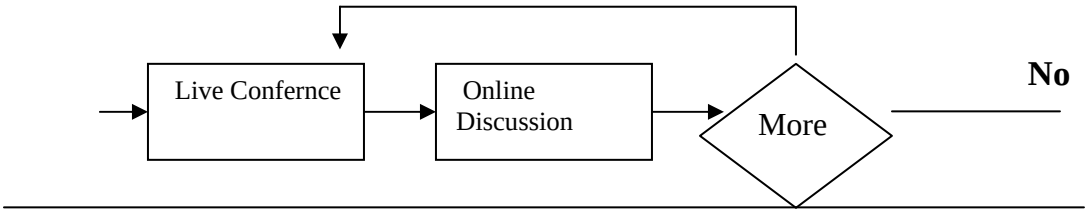


Fig 6.3 Control Flow Diagram of Administrator Control Panel

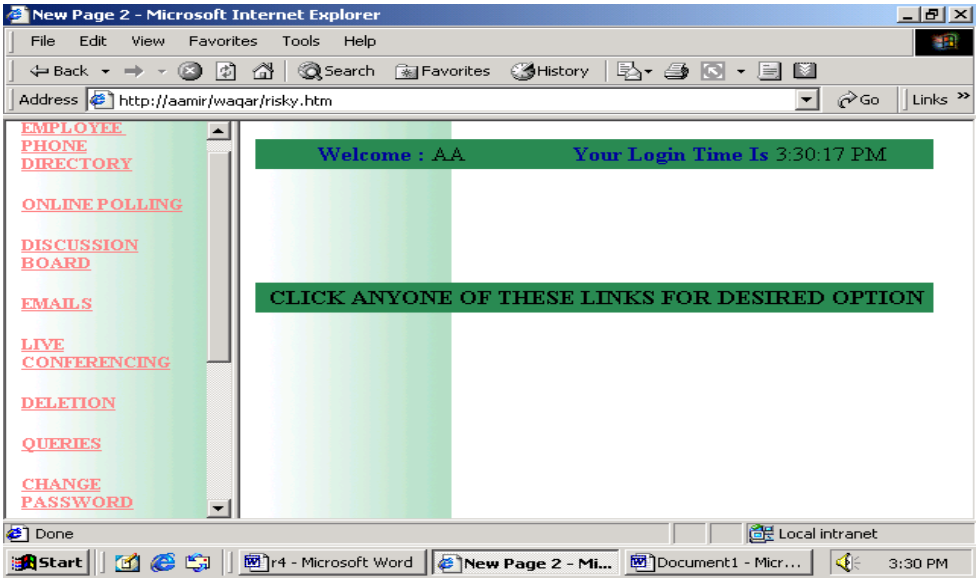


Fig 6.4 Administrator Control Panel

6.2.1.1 Employee Phone Directory

The very first option in the Administrator Control Panel is the employee phone directory.By clicking this link , the administrator finds a list of different options for the phone

directory.These options are add an employee record,update an employee record,delete an employee,search an employee and show all employees.Through these options, the administrator adds an employee in to the corporate database when he gets instructions from the administration. He/she can also update any employee record .If some employee quits the company, the administrator deletes his/her name from the employees list.The administrator can also view all employees information at a simple click of the link.After

performing these options,the administrator informs the administration about the said changes ,additions or deletions.The employee phone directory web page is shown in Fig 6.5.

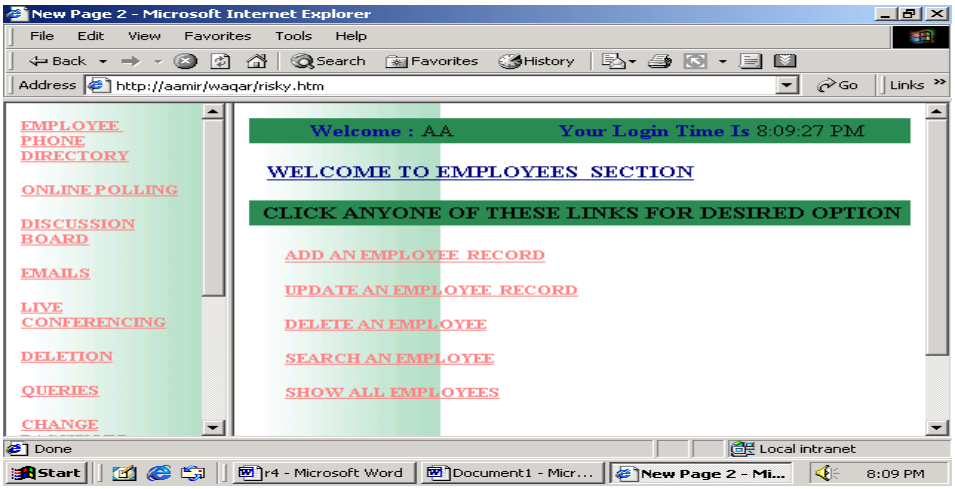


Fig 6.5 Employee Phone Directory Web Page(Administrator Control Panel)

6.2.1.2 Discussion Board

The second option in the Administrator control panel is the Discussion Board.Through this option, the administrator can send notices to departments and employees.This is an asynchronous technique to send notices.Through the notice board,the administrator can send important messages,news and any kind of information regarding department,administration policies and other information which are related to the employees.

Though information can be sent through e-mail ,its very difficult to send the information to each and every employee of the corporate.So through this option,the administrator can broadcast any information to all the the departments of the company.The administrator has also the facility to delete the outdated messages so that the messages on the discussion board remain up-to-date.The discussion board is shown in Fig 6.6.

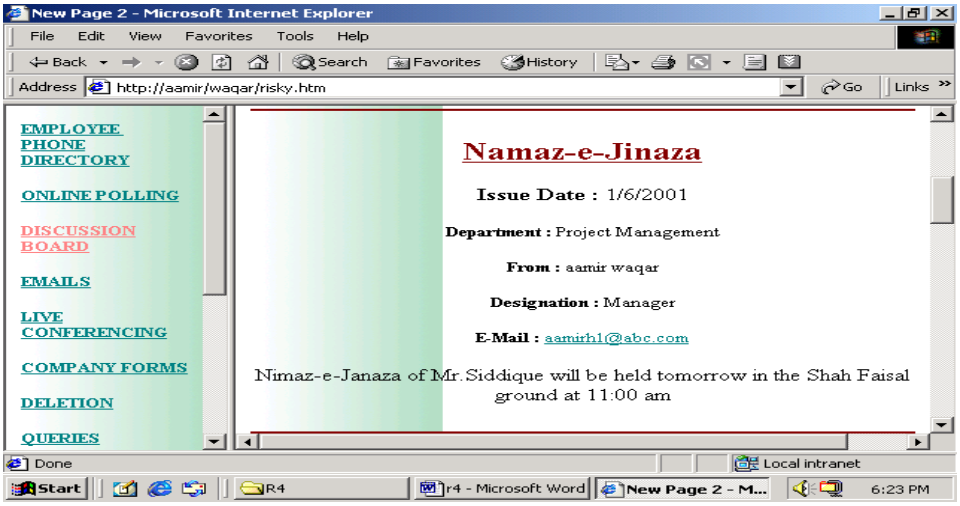


Fig 6.6 Discussion Board(Administrator Control Panel)

6.2.1.3 Online polling

This very important option enables the employees to give their opinion about any issue of the company.In the Administrator Control Panel,this option contains several sub options namely, insert poll question ,view results ,insert archive poll results ,delete polled question and delete results area.

In the insert question link,the administrator adds a new question for the polls as given to him/her by the administration.The insert archive poll results option adds the previous poll results to the archive table for record purposes.In the view poll results option,the administrator can view the poll results instantly.The poll results show the total number of votes cast,total number and percentage of yes votes and total number and percentage of no votes.It also shows graphical represntation of total ,yes and no votes percentage so that one can quickly judge the poll results at a glance.

The administrator can delete the polled question as he gets instructions from the administration.The administrator will also delete the results area so that for the new question,the polls are started from the beginning.Suboptions in the online polls are shown in Fig 6.7.

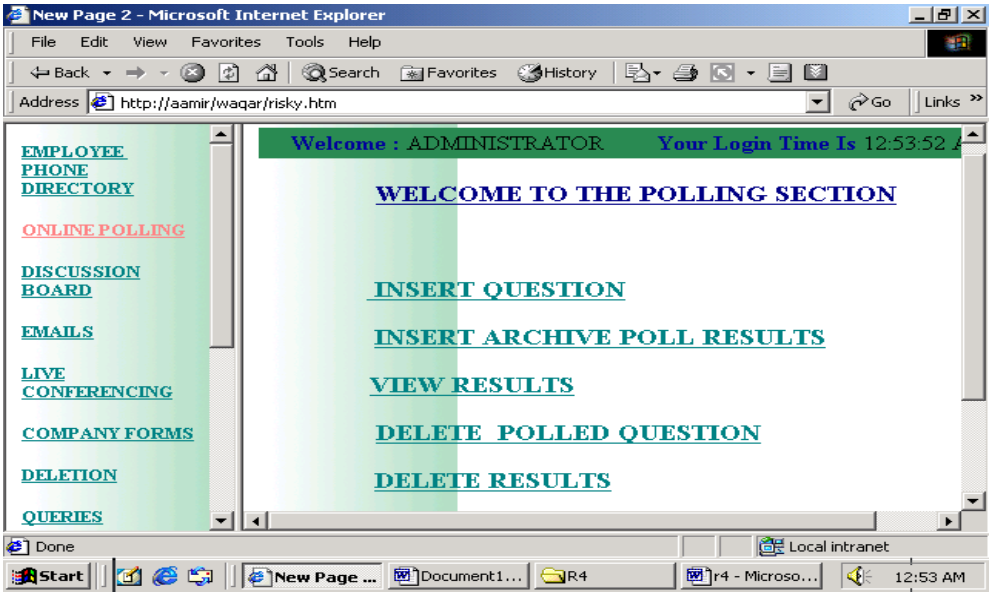


Fig 6.7 Sub Options in the Online Polls(Administrator Area)

6.2.1.4 Emails

This option is used by the administrator to send personal messages to the employees.This option contains several other sub options,namely send mails,receive emails and empty mail box.The send mail link opens a page in which the employee has to write the email address of the person he wants to send the mail,the subject and the message.To receive e-mails,he has to click the receive mails option.After reading the mails,he can delete his/her mails individually and can keep the mails which he /she does not want to delete.The empty mail box deletes al l the mails from his box. The web page where the administrator enters his password to enter the e-mail section is shown in Fig 6.8 and the web page where different e-mail options are available is shown in Fig 6.9.

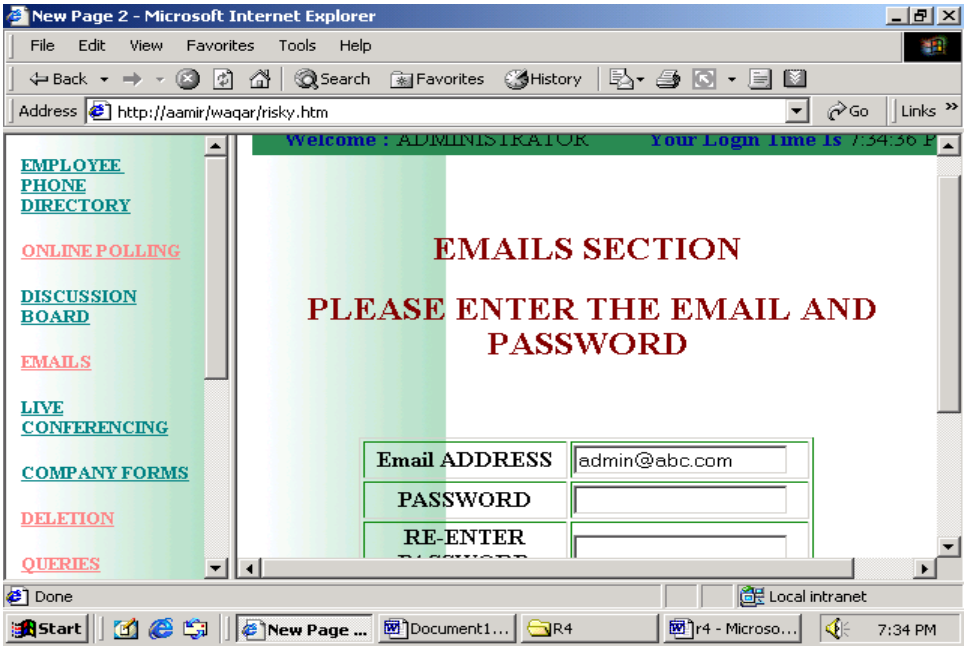


Fig 6.8 Login Page to enter Emails Section

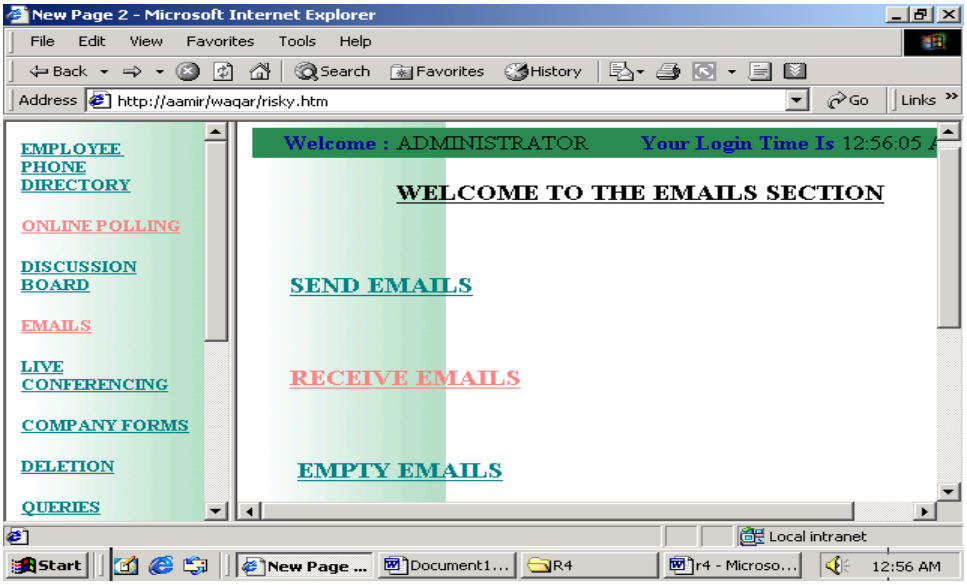


Fig 6.9 Sub Options in the Email Section

6.2.1.5 Records Deletion

By clicking the records deletion option link, the administrator finds a list of different options for deletions. These options are discussion board, employee queries,employee record. Through these options,the administrator can delete the record of employees, discussion board and queries.The administrator can delete some records under specific instructions from the corporate administration). Some fields can be deleted after a specific time such as discussion board entries and queries option is deleted after answering the queries immediately.

All these above entries can be deleted through the administrator control panel or from the database directly. For these deletions,the administrator is informed by the administration through e-mail system and after deleting the particular records, the administrator inform the administration. The records deletion sub option s are shown in Fig 6.10.

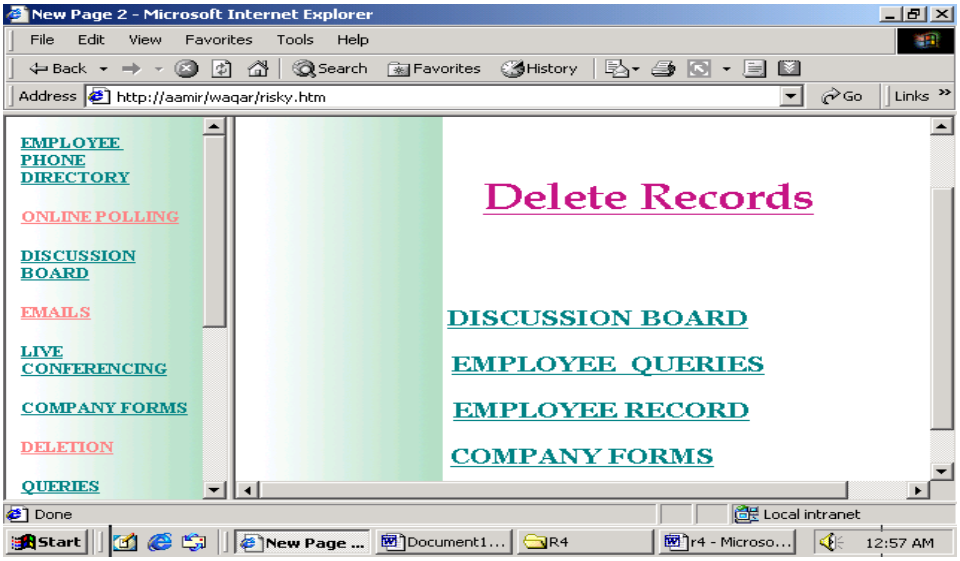


Fig 6.10 Records Deletion Sub Options

6.2.1.6 Queries

The next option in the administrator control panel is Queries. By clicking this option,the administrator can find all the queries, which are being made by the employees from different departments. Employees query option contains Employee name, E-mail address, employee-id, department and the query. The administrator answers these queries accordingly.If he is not concerned with any of these queries then the he forwards the query to the concerned person. The Administrator answers the queries through the e-mail addresses of the employees.The web page for employees queries is shown in Fig 6.11.

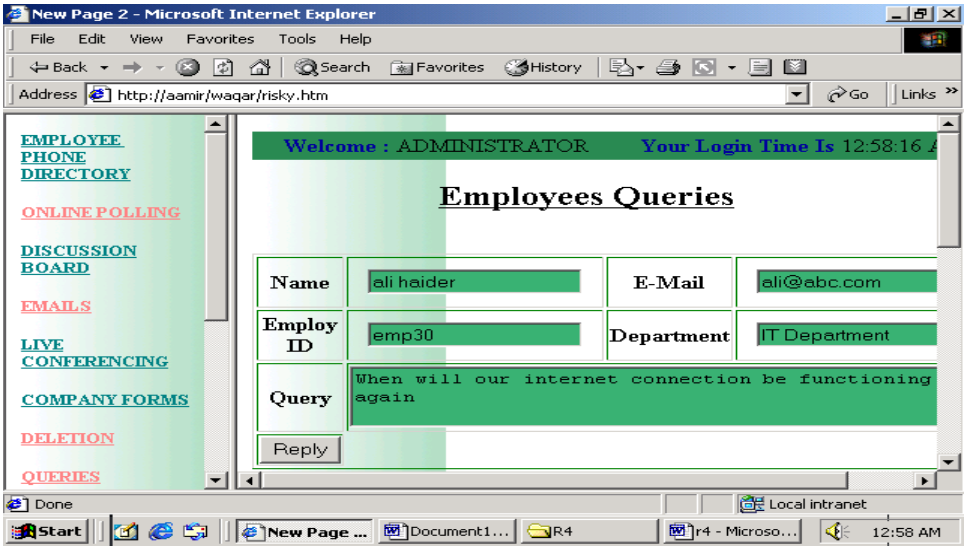


Fig 6.11 Employees Queries Web Page

6.2.1.7 Change Password

The next option is Change Password. Though this option,the administrator has full access to the database.The administrator can also change the password through web application. If the administrator changes the password regularly,the password can be saved from hacking. To change the password,the administrator has to provide the User-id, old password, new password and then confirm password. If any of the information is not provided correctly, the system will not change the password and indicate about the incorrect entry.If the entries for the confirm password are not filled correctly, the system will not change the password and indicate about password mismatch. When the entries are filled correctly,the system will change the password. This will be the new password for the next time when the administrator logs in.The Change Password web page is shown in Fig 6.12

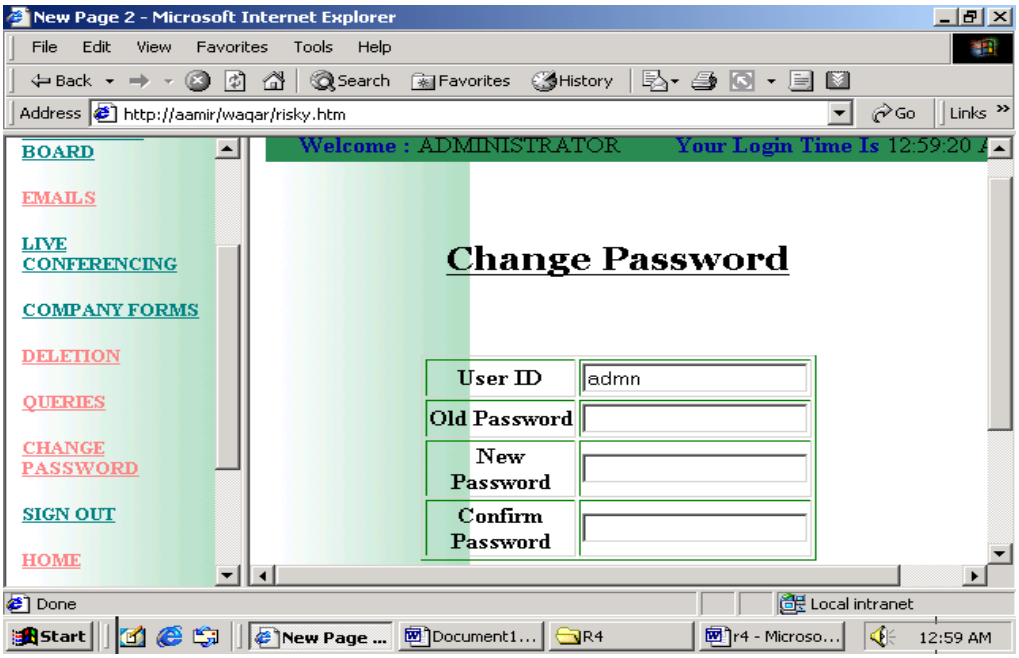


Fig 6.12 Web Page for Change Password(Administrator Area)

6.2.1.8 Sign Out and Home

The next options are Sign Out and Home. Through clicking on the Sign Out option the administrator can end the session on the web. Once the administrator is signed out, he/she or any one else cannot enter into the control panel and perform any kind of operation. For this, the administrator has to log in again once he/she has signed out.

Through Home option,the administrator can view the home page and perform any sort of work without ending the session and can again enter into the administrator control panel without logging in again.The Sign Out web page is shown in Fig 6.13

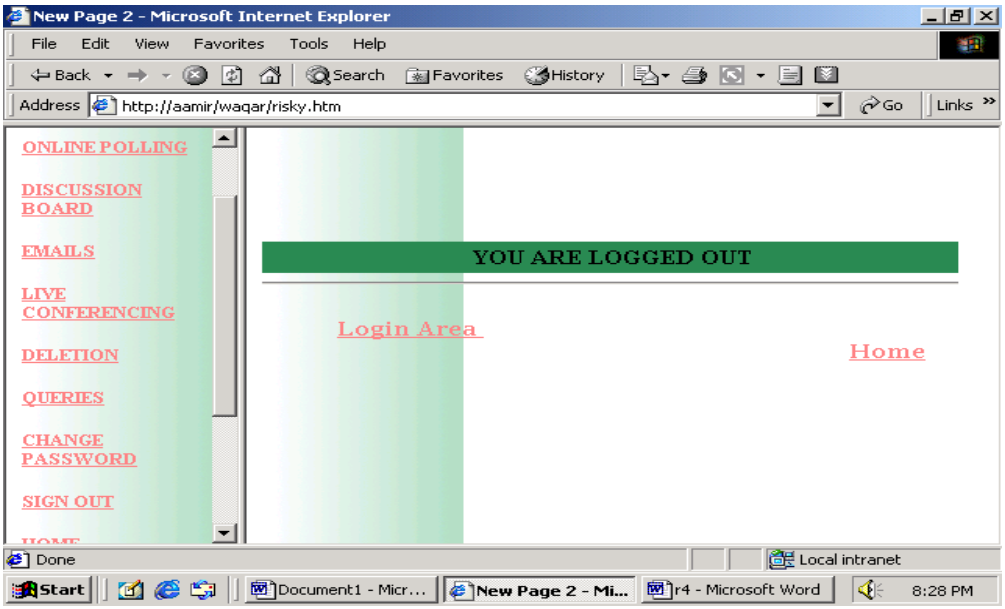


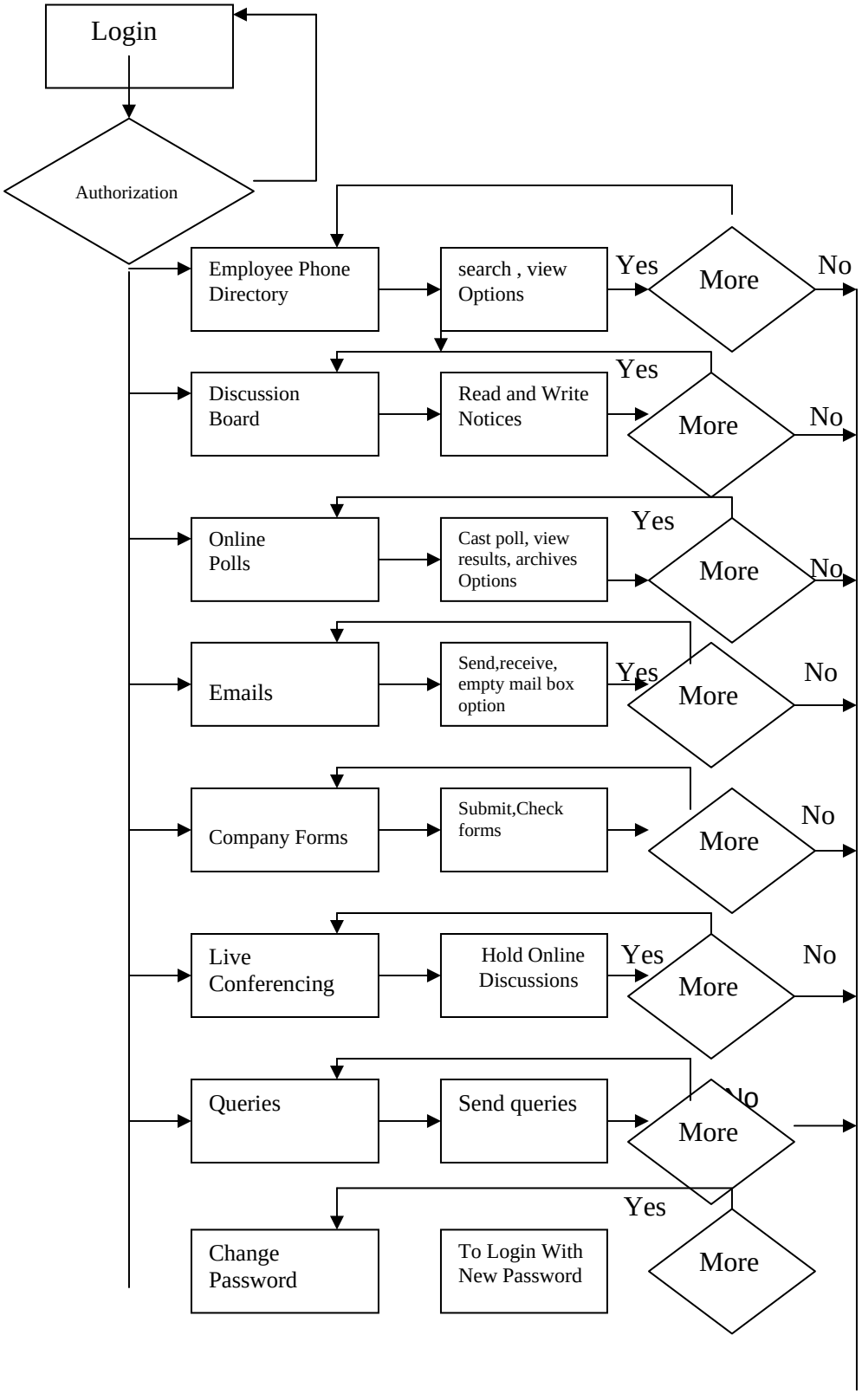
Fig 6.13 Sign Out Web Page(Administrator Area)

6.2.2 Employees Control Panel

For the employees of the corporate,there is an Employees Control Panel where they have different options to use the intranet applications,namely employee phone directory,online polls,emails,live conferencing,discussion board,company forms,queries,change password and sign out.

To enter into the employees control panel, a login window appears, which will ask for the name, employee-id , department and password. If any of the information is incorrect, the system tells you about it and ask for the correct entries.If the employees provide different

entries for confirm password,the system will give warning with the message password mismatch.In case of an untyped entry, the system will prompt with the invalid entry message. When the entries are correct,the system allows the employees to enter into the employees control panel. The working of Employees Control Panel is shown in Figure no 6.14.



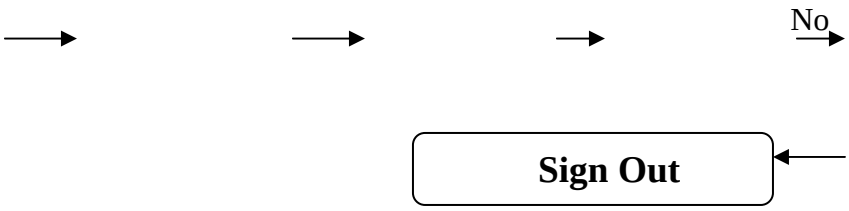


Fig 6.14 Control Flow Diagram of Employees Control Panel

6.2.2.1 Employee Phone Directory

The very first option in the employees control panel is the employee phone directory.By clicking this link , the employee finds a list of different options for the phone directory.These options are search an employee record and show all employees.Through these options,the employee can find information about any other employee working in his/her organization..The search option contains the following attributes for any employee in the corporate namely , his/her name ,department , gender , address, telephone number , email , city , country and email address. Any employee can also view all employees information at a simple click of the link. An employee phone directory helps an employee search any employee information quickly by just typing his/her first name , last name and employ-id.The database searches for the required information and sends back all the information to the web browser.The main web page for employees area is shown in Fig 6.15.

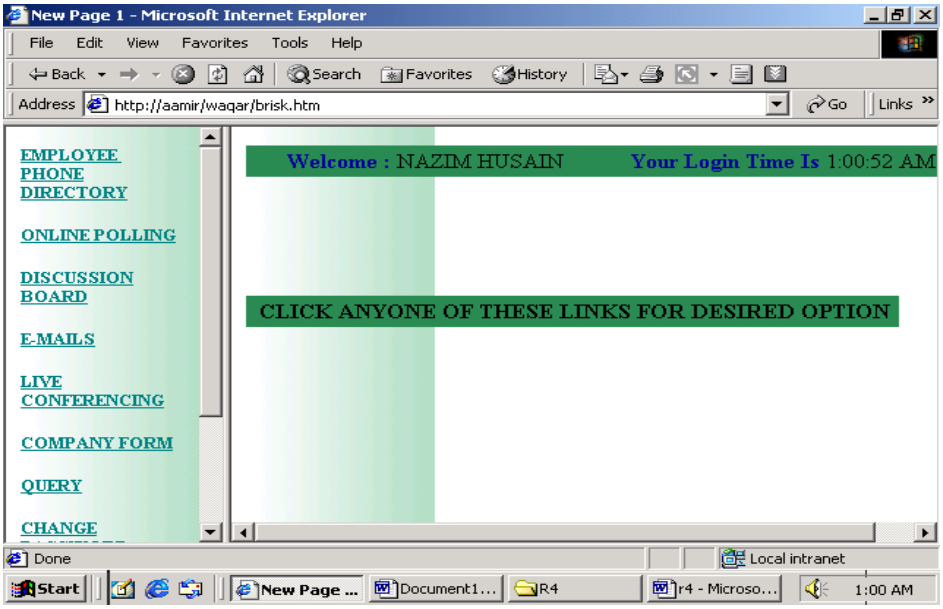


Fig 6.15 Main Web Page of Employees Area

6.2.2.2 Online Polls

This option is used by the company employees to cast their votes on any issue of the company. This option has three sub options namely go to polls,view poll results and check archive poll . In the go to polls sub option, an employee can go to this link and submit his/her vote on the subject issue.Once he/she has cast the vote,he can not cast his vote again on the same question issued by the administration and the system will prompt with the message that you have already cast your vote.

The employee has just to click on the yes or no option.Any other information regarding this

Section is provided by the session tracking.The view results option show the total number of votes cast , the total number and percentage of yes votes and the total number and percentage of no votes.It has also a unique feature of dispaying the results graphically to show the results of the polls instantly.The online polls web page in the employees control panel is shown in Fig 6.16.

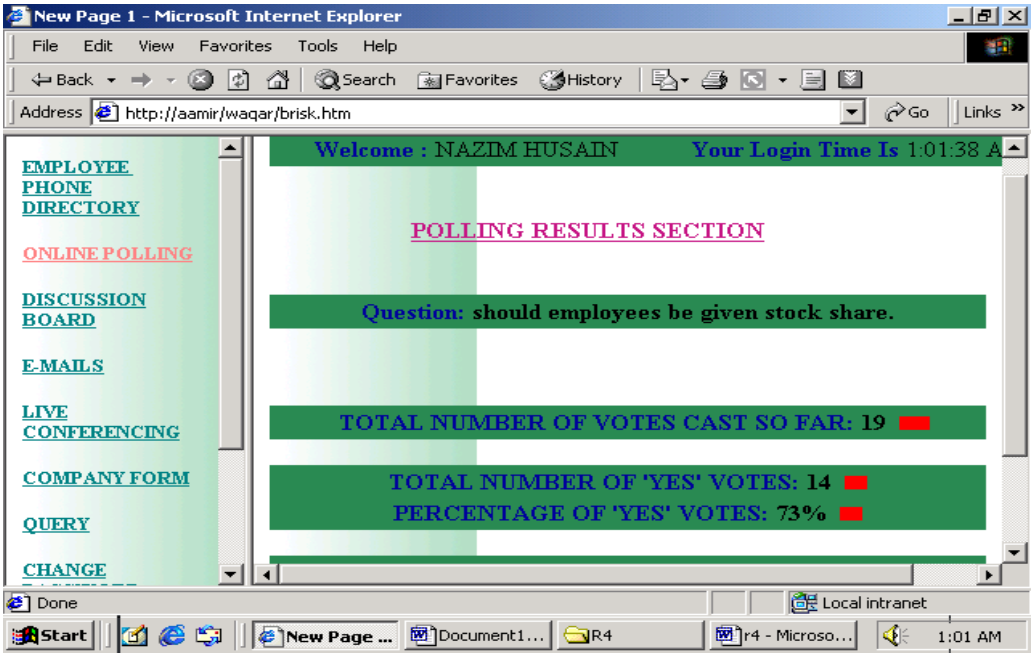


Fig 6.16 Online Polls Web Page (Employees Area)

In the check archive polls option,the employees can view the results of the previous polls conducted by the company at their respective schedules.If anyone wants to review previous poll results,he/she can use this option to view the archive polls conducted on various dates.

The check archive polls web page is shown in Fig 6.17.

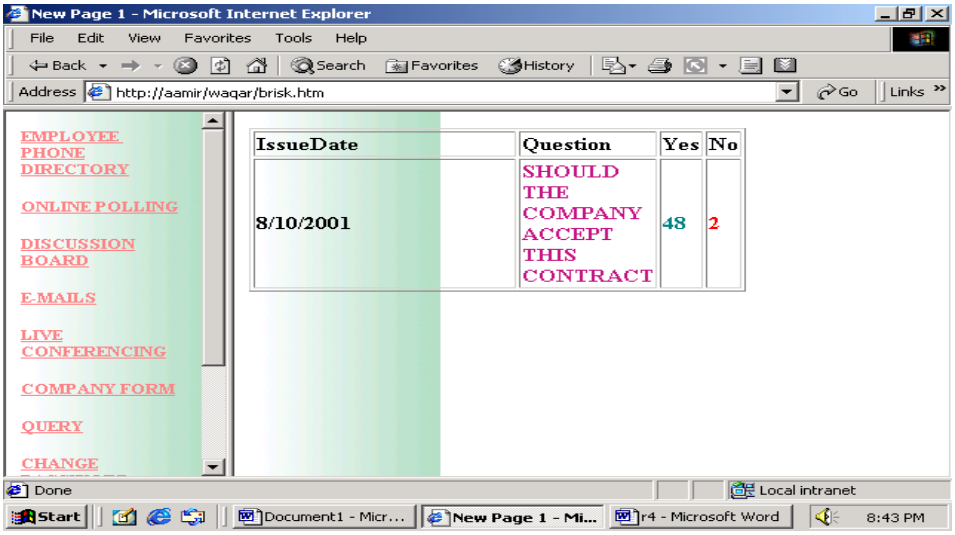


Fig 6.17 Check Archive Polls (Employees Area)

6.2.2.3 Discussion Board

The next option in employee control panel is the Discussion Board. The discussion board option is divided into four portions:Write department messages,receive department messages,write company messages,receive company messges and receive administrator messages.

The first option is write department messages. The employee can send notices (messages, news, announcements and information) in his/her own department and can also broadcast these notices into the whole corporate area. Similarly,the employee can also read the notices from his/her department and from with in the whole company which are send by other department members. The employee broadcasts these notices into his department area or other departments.

The last option is receive administrator messages. Here,the employees can only read the notices that are sent by the administrator. While filling the discussion board form, the most important field is 'Date', because after this due date the message will be removed by the administrator. If the employee wants to extend the due date,he/she has to inform the administrator for the next due date. The next important field is 'Heading' because this field shows the importance of the notice. If there is some sort of mistake in the notice,the employee has to inform the administrator about it, for correction or removal of notice.

Though information can be sent through e-mail , but it's very difficult to send the information to each and every employee of the corporate.So through this option,the employee

can broadcast any information within the whole company or the respective departments.Various options in the discussion Board(Employees Area) is shown in Fig 6.18

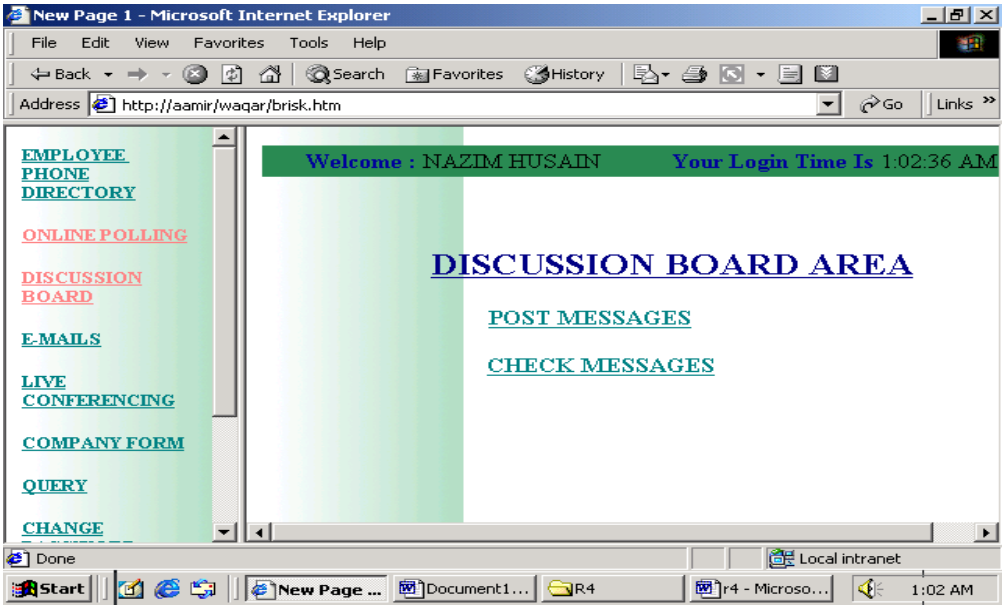


Fig 6.18 Options in the Discussion Board(Employees Area)

6.2.2.4 Emails

This option is used by the employees to send personal messages to their fellow colleages and the administrator .This option contains several other sub options,namely send mails,receive emails and empty mail box.The send mail link opens a page in which the employee has to write the email address of the person (he wants to send mail) ,the subject and the message.To receive mails he has to click the receive mails option.After reading the mails,he can delete his/her mails individually and can keep the mails which he /she does not want to delete.The empty mail box deletes all the mails from his/her box.Different Emails retrieved are shown in Fig 6.19 and the message format in emails is shown in Fig 6.20

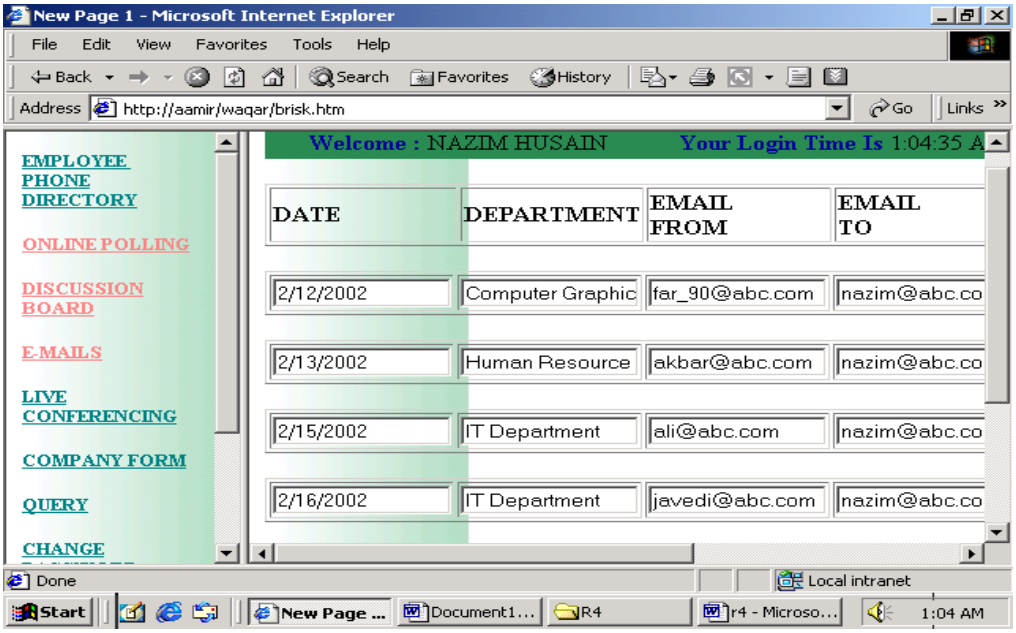


Fig 6.19 Web Page Showing Different Emails (Employees Area)

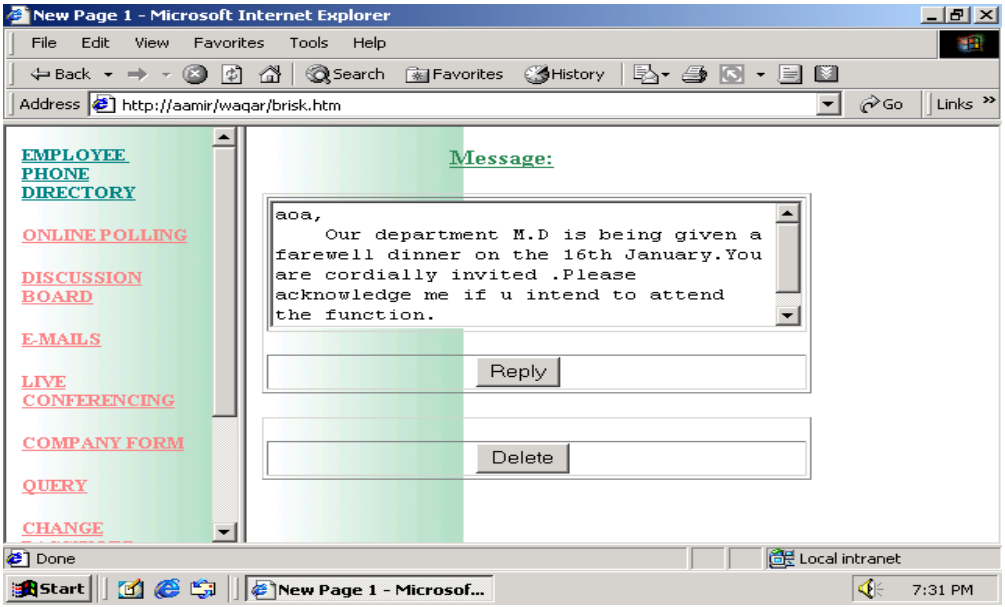


Fig 6.20 Message Format in Emails (Employees Area)

6.2.2.5 Company Forms

Online company forms are available to the employees to reduce their work load.If forms are available online,it eliminates the headache of searching the required forms and then filling them by hand. Thus this facility saves time and money.If no printing is required for the forms,then the company can save a lot of money and spend the same on some new projects and bonuses.This option has two sub options namely submit company form and check company forms.The submit company form option takes the employee to various form options namely leave application form , income tax form, house requisition form and so on.The employee fills the required parameters of the form and submits it to the administrator.Similarly the check form option enables the administrator to view the forms submitted to him so that he can take further action . A company form eg leave application form is shown in Fig 6.21

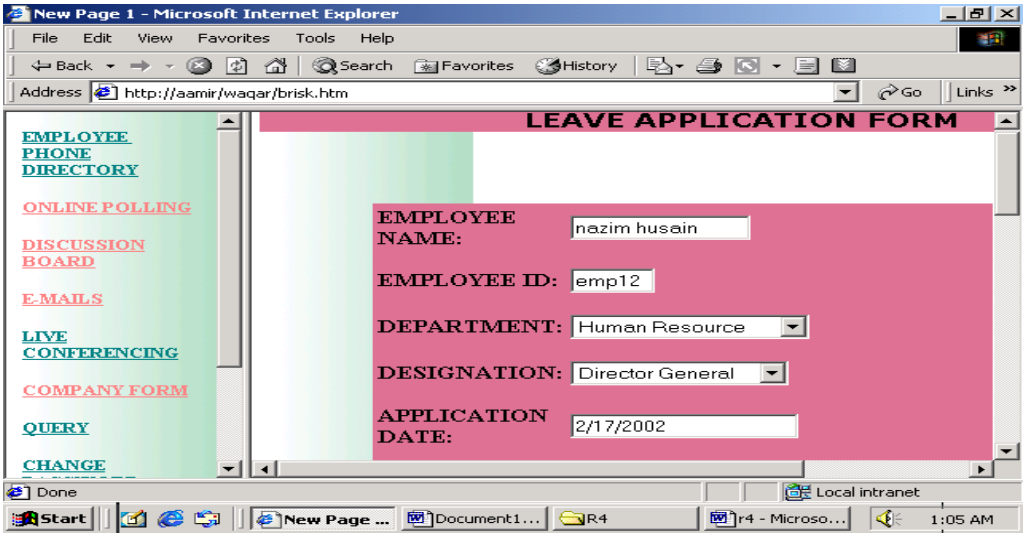


Fig 6.21 Leave Application Form (Employees Area)

6.2.2.6 Live Conferencing

A tricky application of intranet technology is the live conferencing,which can be applied to enable the intranet users to use their web browsers and logon to corporate chat room at scheduled times to discuss issues relevant to the working of the organization. A chat group may also act as a think tank or a brainstorming session. Chat room can be enabled at predetermined times. This option allows the employees to

hold online discussions to share their company fellow views and ideas about any subject matter of the corporate.When the employee enters the chat room, the date and time when he/she joins the room is also displayed so that other members notice his/her presence.There is a separate panel that shows the name of employees present in the conferencing sessions.When he/she quits the session a message for the convenience of others is displayed "he/she has left ".The employees discuss company policies,rules and regulations and various other important matters.Web page for live conferencing is shown in Fig 6.22

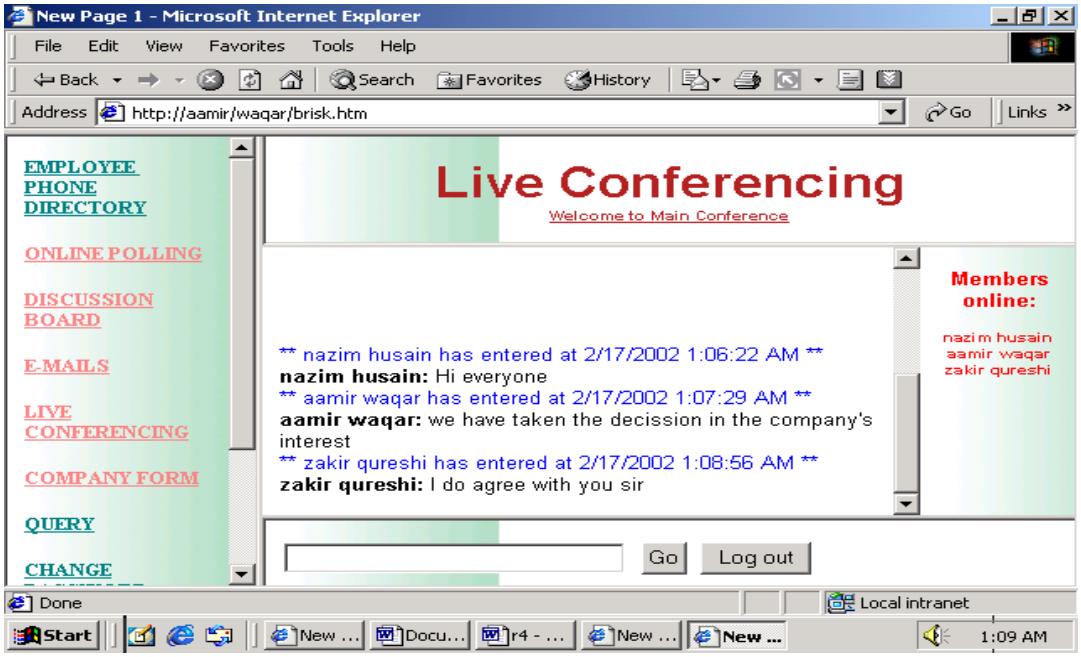


Fig 6.22 **Live Conferencing Web Page**

6.2.2.7 Queries

If the employees have any query,they can make this to the administrator. For this the employees have to fill the form which contains these fields, employee name, employees'-id, e-mail address, department name and the query. The administrator answers the query on his/her e-mail address. This form collects all the information about the employee (employee name, employee ID, e-mail address and department)through session tracking and by this nobody can misuse it because nobody can send mails on others behalf,so it is a

security check feature .The employees fill only the query field, for their query.The query form format is shown in Fig 6.23.

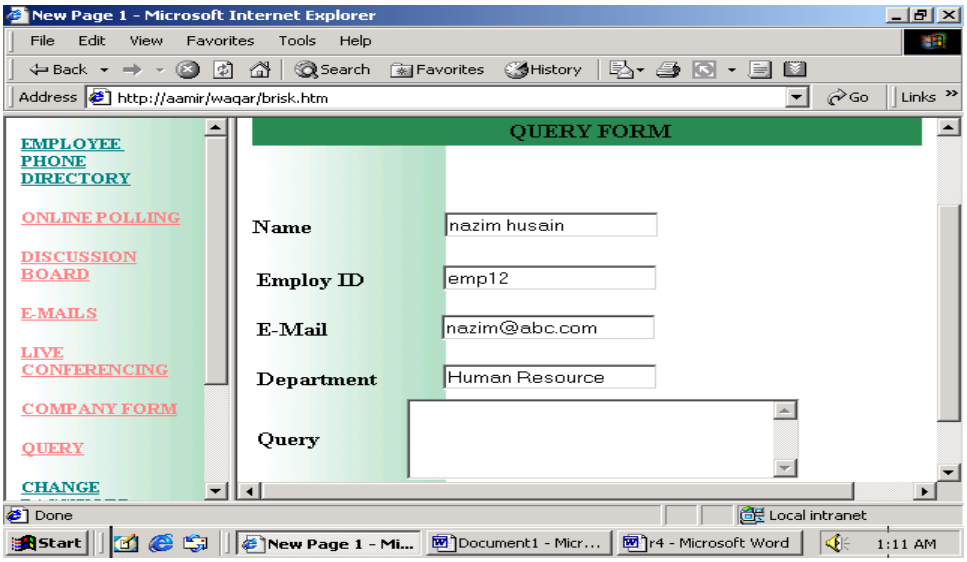


Fig 6.23 Query Form Format(Employees Area)

6.2.2.8 Change Password

The next option is Change password. If the employee changes the password regularly, the password can be saved from hacking. To change the password, the employee has to provide the User-id, old password, new password and then confirm password. If any of the information is not submitted correctly, the system will not change the password and indicate about the incorrect entry. When the entries are filled correctly,the system will change the password. This will be the new password for the next time, when the employee logs in. If the employee forgets the password or the password has been hacked, he/she has to e-mail the administrator immediately. The administrator issues him the new password.The change password option in the employees area is shown in Fig 6.25

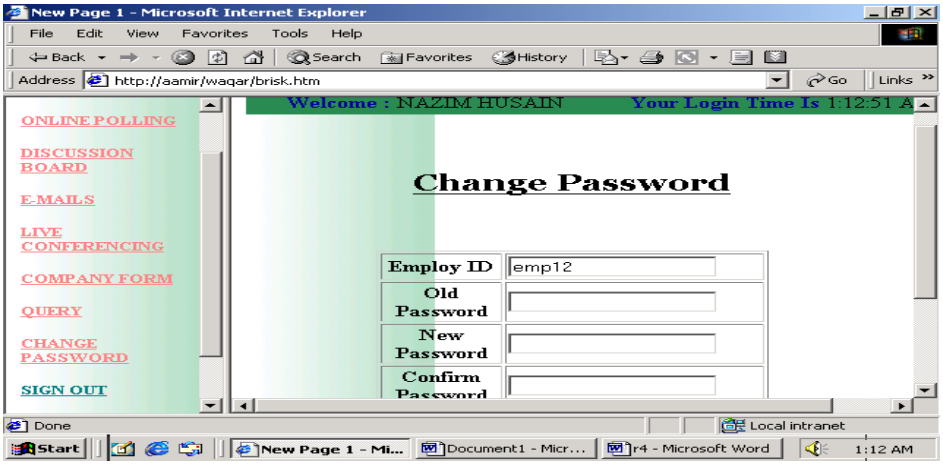


Fig 6.24 Change Password Option (Employees Area)

6.2.2.9 Sign Out and Home

The next options are Sign Out and Home. On clicking the Sign Out option,the employee can end his/her session on the web. Once the employee has singed out, then he/she or any one else cannot enter into employee control panel and perform any kind of operation. For this, the employee has to log in again once he/she has signed out.

Through the Home option, the employee can view the home page and performs any sort of work without ending the session and can enter into the employee control panel without logging in again.The sign out and home option is shown in Fig 6.27

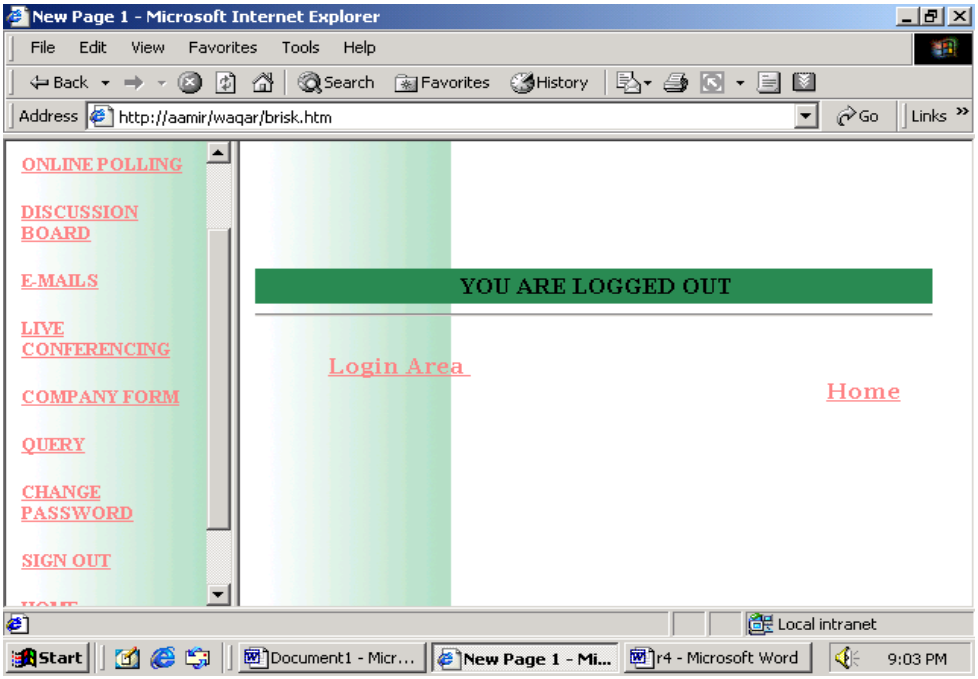


Fig 6.25 Sign Out and Home Option (Employees Area)

6.3 Conclusions

Intranets ,especially corporate intranets, have a central role in the internet technology in the new century .Social, economic ,political and technological forces are all pulling this form of internal network to the center of policy stage.

The enormous uptake and interest in intranet technologies is apparent. Ninety percent of technology sales by Netscape Communications are intranet related. Part of the reason for the large interest and deployment of intranets is attributed to the benefits an intranet can bring to a corporation. These are financial gains ,increased information efficiency, low technological implementation and ease of use. Intranets are described as a path to educeinformation costs via their simplistic models of navigation through hypertextual based links, rather than highly structured documents. Some organizations in Pakistan like National Database Registration Authority (NADRA) are implementing intranet technology in their institutions to communicate and collaborate more effectively.

6.4 Future Enhancements

Apart from the objectives of the project , there is still room for the improvement inthe present features. the project could be enhanced and updated for further improvement.The Intranet is reaping huge benefits by making information, once buried in hundreds of places in the organization, available to everyone. It has the power to change the whole business culture.

The future prospects of the project are as follows:-

- Facilities can be provided to the employees which include video and audio conferencing . The technology already exists to integrate both voice and video conferencing in the Intranet infrastructure. As the bandwidth will increase, the technology will mature.
- Another enhancement can be shared white boards. The same window or page appears on more than one computer. All the participants can both make changes as well as see the changes as they are made. The use of this technology will increase as the organizations gain experience with and incorporate Intranet collaboration into their work cultures.
- On-Line library System can be a good sub module of this corporate intranet.Employees could be provided with on-line training that might include courses

  useful for their respective departments. This can broaden their horizon and thinking

  and they can contribute to the company tasks more effectively Employees can be provided with stock quotes that will keep themselves update with the current market shares.

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APPENDIX 'A'

READ ME FILE

Following are the steps to install this software system

1. Operating System

In my thesis I have used Windows 2000 professional. But for this system Windows NT 4.0 and Windows 98 can also be used.

2. Server

For this thesis I have used Internet Information Server 5.0 (IIS 5.0). But Internet Information Server 4.0 for Windows NT 4.0 and Personal Web Server 4.0 for Windows 98 can also be used.

3. Installation of Web Server

Open control panel option from start. Click add/removes programs then click on windows setup then click to select IIS and script debugging option. After selecting these option click on. In this way the server will be installed.

4. How to Make Virtual Directory

After installing server, select any folder, press right click of mouse, then window appears, select middle option WEB SHARING. There are two options

1. Share this Folder
2. Do not share this folder

Select first option then system will ask for Alias name then give any name or do not change the name. In this way the virtual directory will be created.

5. Software System Installation

After completing steps 1, 2 and 3 except step 4 copy this software into drive d. Then repeat step no. 4 on the directory named "waqar" and make it virtual directory with the alias name waqar. Then in Internet Explorer or in Netscape type the following URL address.

"http://www/aamir/waqar/index.htm"

Where “aamir” is the computer name. You have to write the name of the computer after “http://www/ --computer name--”

“waqar” is the name of the virtual directory.

“Other” is the folder name where “index.htm” file is located. You can also place this file any where in the virtual directory, because web server only locates the file named “index.htm” or “default.htm”.

After completing these steps run this software system on your computer.