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ENTERPRICE LOCAL AREA COMMUNICATION

Mr. Tarate Vilas G.*, Prof. Amrit Priyadarshi

*M.E.(IT) -II, Computer Department, DGOI, FOE, Swami chincholi, Daund, Pune University(MH),India
Assistant Professor, Computer Department, DGOI, FOE, Swami chincholi, Daund, Pune University(MH),India

ABSTRACT

In this project, we propose a Enterprise Local Area Communication approach to efficient and instant communication within local organization or enterprise with updated resource information.This projects tries to provide open but professional framework in organization for instant communication, resource information, open discussion , resource classification and grouping like features.Here we are trying to combine best features of ERP and Social Networking concepts.We maintained a local server for storing enterprise database and application programs for business logic. This application provide instant service to any employee or member of that organization who is registered and authenticated by administrator.This application contain main basic features as employee or department wall. Employee wall contain all his profile information , recent work, announcement information while department wall contain information about department resources, department notifications, member list, announcements etc.Features on wall contain modules for post, messages, events, create link, photos, forms link, like button, comment button, messaging groups, create groups , generate report link , etc. Benefits of this application is that everything information of enterprise is available at single point, also any new member or employee can understand organization discussion and work task completed in his absences.

Keywords: Posts, wall, create group, messages, create link, messages, like, comment, events, login, upload.

INTRODUCTION

Background

Today there are many applications are present for ERP- Enterprise resource planning and social networking. This project tries to combine some features of both application and develop professional application called ELAC- Enter Local Area Communication. ERP application contain readymade application for gathering all resources information and performing different operations on it to generate valuable reports so that management can perform monitoring activity and decision making activity.

Social Networking is forum for open discussion, sharing thoughts , ideas, concepts, knowledge, events and even some celebration.Both of above have some advantages and disadvantages ERP increases over stress on employees and management activity from top to bottom without open discussion or without sharing much of things like it Social Networking contain more freedom and open discussion and loosening its professionalisms. So we are trying to develop such application which will perform resource management as wel as open discussion and with better knowledge sharing.

Description

ELAC-Enterprise Local Area Communication is a web application for combining features of ERP and Social Networking. So that management of any organization can do monitoring, controlling ,planning decision making activity with open discussion of employee, knowledge sharing in employee , learning activity from seniors, instant communication within organization one to one or one to many or even one to all at same time. This application tries to take care to fulfill needs of management as wel as employees and try to maintain good healthy fresh environment in organization.It contain following modules to implement all above features Login for authenticating users, Registration for register user/member on this application, Wall contain department wall and user wall maintaining all his information, Posts for posting any message with photos or attaching any file so that all his follower can see this post, Create & Publish Link is for making permanent availability of that link with file attachment so that all follower can see and access it, Profile is contain all basic and official information with photos and finally report generation activity is for publishing form collecting

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information and generating valuable report so that management can do planning and decision making activity.

Motivation

As this application is new in market which is combining features of ERP and Social Networking with professional environment will greatly reduce communication gap between all resources of organization and also improves knowledge sharing in organization which helps to keep good friendly environment in organization result in increasing productivity of organization or any company.It contain challenging task as maintain all resources status information updated , maintain privacy of data , sharing specific message / data only with specific group only hence confidentiality, privacy also security as it public to all organization members.But still it is more beneficial and readymade application for those organizations which contain large number of resources as employee or departmental.

Application

- Instant communication within organization.
- All information at single point.
- Knowledge sharing.
- Message passing to one and may at time.
- Separate group creation.
- Collecting information and report generation, etc.

Problem Definition

In the area of enterprise and organization there is need of reducing communication gap and availabling all resources updated information at single point with maintaining professionalism and knowledge sharing by open discussion to improve management decision accuracy and finally improve overall enterprise/organization performance.

LITERATURE SURVEY

Several works has been done in the area of ERP & Social Networking with some advantages and disadvantages. Now here we are trying to combine both with required features. In this project we divided work in following classes. These classes are helpful for maintaining separation in case of work, privacy, security and modularity while designing and implementing project

Class 1: Based on registration part

This is first part of the project which is one time activity. It explain design and implementation of registration of user on this application for to become part of this ELAC application.In this part treys to collect basic information of employee or member. This basic information is useful for user identification.This registration part collect user information as first name, middle name, last name, e-mail, r-code and password for registration. R-code is code provided by administrator to register on this application. Which helps to avoid unauthorized and duplicated registration of users. Password is used to confirm password which is used for login purpose. Email is used for further communication. All these fields are checked syntactically by executing java script code. Names are checked for max length, email is checked for presence of '@' character. Password is checked for matching in both field. Use of this javscript code is try to eliminate load on server and check form data before submitting it to server.

Class 2: User Login

This is second part of project after registration happen once. It contain two fields one is username and other is password. It allowed user to login by using userid or by using email to reduce overhead of remembering userid. Here JavaScript code is also used to check length of userid and password. It also eliminate to enter special characters entry for avoiding special attacks to login page. After entering username and password and pressing login button that data is submitted to server by using POST method of form for keeping username and password hidden from hackers.On the server side it check matching username and password in database if found match it returns user wall with associated data of that username.

Class 3: Walls

After successful login there is next window as wall. It is of two types one is Departmental Wall and other is User Wall. This wall is nothing but web page which maintaining all information of that user or department. On this wall contain all links as messages , photos, events, posts, about us , settings, create link, publish form and generate report, search box, resource list, etc. Every user or department has same format of wall. Header part of wall is showing photos of that department which gives overall idea of that department or user. About field shows basic and official information of that department or user to visitor of enterprise. Messaging is for sending message to one or many and receiving messages.

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Creat link and publish is also uploading some message and files.

Class 4 : Posts
Post is one type of small message with attached photo or file. But it different from message as message is private but post is more public. When post is published it automatically displayed in all below levels follower. Every post has options as like comment share etc . so that post publisher person can understand what is reply/ response for our post. It helps to sharing knowledge concept and open discussion by using comments.For displaying post more older we try to use Ajax technology for loading only indivisual post instead of loading whole page.

Class 5 : Messaging
Messaging is used for making private communication in one to one or one to many at same time. You can send message with text also you can attach file for message. Message is more similar like emails.Message also allow to receive and forward message with delete option. It is essential and different from posts as it make confidential communication within organization. It shows basic options as inbox ,outbox and write message. It also show list of contacts to send that message or you can create your own group of contacts for sending message.

Class 6 : Create and publish link
This feature is basically added for making data available for accessing publicly to all departmental members. By using this feature any one can create link attach file and upload it with some message associated with it. So that this link is permanently available on publishers wall .as post is also visible to departmental member but it disappear as new posts arrive from other members.

Class 7: Profile
This feature contain all basic information as name, address, city , department, departmental all resources. User can edit and update this profile when it require. By using this feature information about that resource will be available instantly when required. This information is again attached with some access list or access matrix to maintain confidentiality of that information. Administrator can add more fields to profile for collecting more information from user.

Class 8 : Publish form and generate report
This feature is added for collecting information on demand and then generate final report by doing different operations on this information. This generated report help to make decisions in management activities. The technique used for it is create form in php-html and make group of users to publish it. Group creation activity is important for publishing form to only specific users not to all.
After submitting form by all users this information is stored in database in tabular form to perform different operations on it.

MATHEMATICAL MODEL

Search Box:
Separate search box and efficient algorithm should be there. For searching any people, group, or story, etc. Result should be retrieved on the basis of graph theory with more closeness or density. Density: Density is a measure of the closeness of a network. Given a number of nodes, the more links between them, the larger the density. Its formal definition is as follows.
If the number of nodes in a network is n, and the number of links l, then the density is,

$\rho = \frac{2l}{n*(n-1)}$ … for directed graph… (1)

$\rho = \frac{l}{n*(n-1)}$ …for undirected graph.. (2)

And

C = (f*(w*b)) + (f*(w*r)) + (f*(w* i))
.... for closeness of node... (3)

In the equation above, f denotes the frequency of a node behavior, and w is the weight of closeness for each node behavior. The three node behaviors are b=browsing, r=reading and i=interaction.

Access Control Matrix:
The protection state of a our system is abstracted as a set of objects O, that is the set of entities that needs to be protected (e.g. pages, data items, etc) and a set of subjects S, that consists of all active entities (e.g. users). Further there exists a set of rights $R$of the form $r(s, o)$, where $s \in S$, $o \in O$and $r(s, o) \subseteq R$. A right thereby specifies the kind of access a subject is allowed to process object.

	Page 1	Page 2	file	device
User 1	read, write, execute, own	execute	read	write
user 2	read	read, write, execute, own	read, write	Not Allowed

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SYSTEM DESIGN

Introduction

In the design part of our project first we will see the architecture of system and then detailed UML diagrams of project to understand flow and behavior of system.System design plays important role for its actual implementation in code. It also helps in understand interfaces of system with other environment as user or external system.

SYSTEM ARCHITECTURE

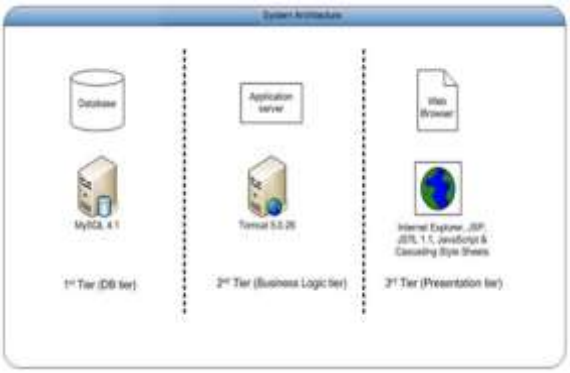

Fig.1.0 Basic architecture of system

The above finger shows basic architecture of system with 3 tiers. First is Data Base tier which is used to store and retrieve all user/department information in the form of collections/tables using SQL on the use of mysql database server.

Second tier is used to for application server on which contains php scripts for making our application dynamic. This tier is used for implementing all Business Logic with all security concepts. This tier is making connection between frontend and backend. Here front end is presentation tier or user tier and back end is database tier.

Third tier is presentation tier which is basically used for presenting view to user using HTML. Its shows user with different clicking links, forms, buttons, images tables, etc.

FLOW OF SYSTEM

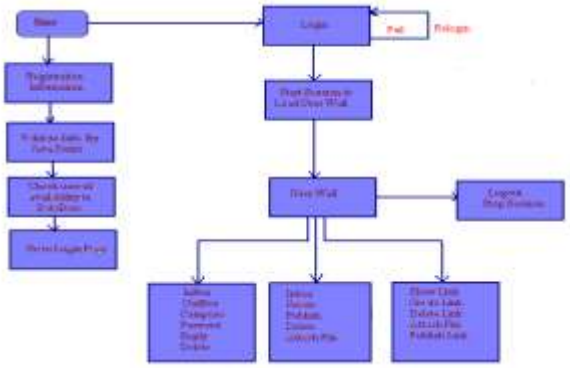

Figure 2.0 : Flow of System

MODULES IMPLEMENTATION

Introduction

This Enterprise Local Area communication (ELAC) system is web application implemented by using PHP technology with support of additional technology as HTML 5 , JavaScript, MySql, CSS etc. We divided our application into several modules.

1.Registration: This is the first activity which user must do before proceed further. In this activity user first register his information as First Name, Last Name, Email, Password, Rcode etc. This information is validates by JavaScript code that checking words length, its string data type, email @ characters, password match etc. purpose of this method is to filter data before submitting to server and reducing load of server.

Algorithm: Start
Accept First Name, Middle Name, Last Name, Email, Password and Rcode.
JavaScript( ) { Check_Length(First_Name, Middle_name, Last_name),
Check_emailid(email==’@’),
Check_Password(password1==password2)}
Db_Connect and check is_it_registered() if not save to database.
Show Registration Status.
If success in step III and IV go to Login else Reregister.
Stop.

Login:

This module is used to connect with database and check first is username is registered in database .if registered it check provided username and password with database matching. If it match it shows wall of provided username else show that incorrect username or password please relogin.

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Algorithm: Start .Accept username and password.
Database_connect() and isfound(userid)
If found check (username==db_username&& Password==db_password)then Show_Wall (user_name)
else go to step I.
Start session (Username).
Show Logout ().
Stop

Wall:

This module is activated after Login success. It shows first all incoming posts associated with that username. Shows links for opening messages also this page contain link for creating Link, deleting link, publishing Link etc.

Algorithm: Start.
Load Menu Options.
Load first incoming 10 posts.
Show Link for messaging.
Show Link for Link option.
Show link for photos etc.
Logout.
Stop.

Messages:

This module is used for showing incoming messages. It shows incoming messages with sender information. It also shows Outbox containing all sent messages. Every message is attached with information as sender, receiver, date, time.This module also shows contact list, compose, inbox, outbox, reply, forward, delete, etc options for managing instant messaging activity.

Algorithm: Start.
Load_inbox(to_username, linit_20).
On_click_message show message and reply, forward, delete options.
On_click_contact show all contacts with groups.
On_click_compose show textbox with contact information.
Stop.

Posts

This module is used for showing all posts from higher level persons and same Departmental level persons. This post contain one photo attached with some text and associated some buttons including share, comment, Like etc.

Posts are used for sharing any things with photo and text associated with it and collecting its comments, likes shares etc. By default opening wall this module is get activated.

Algorithm:
Start.
On_load_wall_open_posts (limit 10).
Show create_post ().
For every post show buttons Like, Comment, Share, Delete.
Onclick Like ConnectDb and Like=Like+1.
Onclick Comment show_textbox ().
Onclick Share show_contacts ().
Onclick Delete connect DB and delete post from Posts table.
Stop.

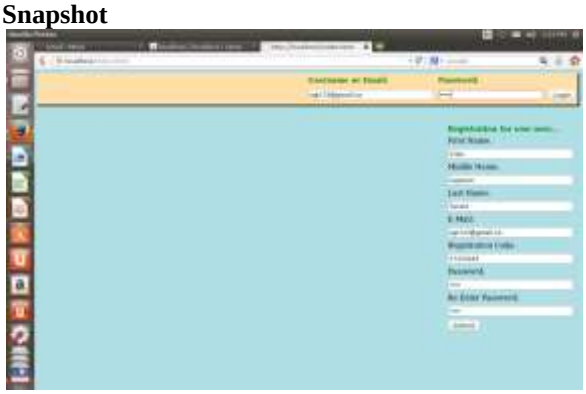
Links

This module is used for publishing some link to all followers with some file attachment or URL attachment to it. Difference between Link and post is post is getting disappeared as new post arrives but links stay forever to access followers permanently. This links are shown in left and right side of page. User has options as create, delete, attach and publish Link.

Algorithm: Start.
On_load_wall_left_&_right_Links (limit 20).
Show create_n0065w_link();
Show delete_link();
Show attach_file();
Show Publish_Link();
Stop.

RESULTS AND DISCUSSION

Snapshot



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CONCLUSION

This project is basically tries to combine some ERP concepts and some Social Networking concepts. In this system user register itself and create account of him for login into system. After login he get access of his wall in which contain his messages, posts, links published by his top level and horizontal level users/ employee members.It helps to achieve instant private communication within organization by messaging system. Posts are useful for publishing some things, sharing knowledge, publishing some notice, taking feedback on it by comments, understanding response for it by likes etc. Links are useful for keeping documents available by attaching file and message. Adding forms in link for collecting information.

Finally this system is helpful for decision-making activity of management as all data of organization available on every department wall also top-down and bottom-up instant communication. Also it keep good healthy environment within organization as knowledge sharing by employee through posts. It also helpful for new employees to understand and learn organization by viewing past posts in organization.

FUTURE SCOPE

This project has very bright scope in future with respect to:

- Instant communication in organization.
- Knowledge sharing in organization.
- Feedback response understanding via posts comment, likes, shares etc.
- Collecting information and generating report via publishing forms in link.
- Keeping good friendly environment in organization.
- Motivations in employees/members due to good and instant communication with getting success stories, awards and professional calibration via posts.
- Help in management, monitor, and control organization with good decision making capacity as generate report instantly.
- Digitalize all organization and help in assign roles and responsibilities to individuals hence decrees work conflict and increase overall performance.

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AUTHORS

	**Mr. Tarate Vilas G.** M.E IT (II) student at DGOI, FOE , Daund, Pune Reaserchintrest- Databse System, data mining.
	**Prof. AmritPriyadarshi** Assistant professor at computer engineering department, DGOI, FOE, Daund, Pune Teaching Experince- 11 years Reaserchintrest- operating system, data mining. Email:amritpriyadarshi@gmail.com