

Design and development of a cheap and secured communication application network for academic community as an alternative to the expensive traditional social media application Network

Oluwaleke A A ^{1,*} and Ishaku A L ²

¹ Department of Electrical and information engineering, Achievers University Owo, Ondo State.

² Department of Advanced Engineering, Blackpool and The Fylde College

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Abstract

The internet has been a platform for individuals, groups of people and companies to interact with one another through social media applications that either provides instant messaging service or non- instant messaging service. The social media has truly aided interactions among various settings and even business services, etc. Social media applications are now been used as tools/platforms to create discussions, connect with people (mostly of similar interests) and as sources of relevant information. This work intends to make use of social media platform as tool in helping information dissemination among students in academic community, especially now when the need for information dissemination seems unfeasible as a result of cost of connectivity attached to the current instant messaging system like 2go, WhatsApp and so on. In the work, an instant messaging system that can be used by students without any cost of internet connectivity was developed. The system was purely an implementation of networking related classes and interfaces in Java. The system was tested after its implementation and found effective with its operation.

Keywords: Internet; messaging; services; information; Network; Application; WhatsApp; Academic; Community; Dissemination

1. Introduction

1.1. Background to the Study

Communication is a basic human need and for that reason, man has always found a means of meeting this need. The media, which is an umbrella term for various means of communication, has become an integral part of human life around the world. The earliest forms of personal media, speech and gestures, had the benefit of being easy to use and did not necessarily need complex technology. [3]

Through the social media or instant messaging system, the internet community has drastically increased over the years. The social media has become a significant part of today modern civilization. It is a defining trait of how integrated social interactions have become. The impact of the social media have been seen in basically five different contexts; new interactions, political landscapes, learning and marketing. With over 80 percent of teen internet users frequently using social media sites, it's no wonder the real world society lives are seeing some changes. Social media is definitely changing the way people communicate, but in many ways it is for the better as we expand our social circles and explore new horizons through our online connections. [5]

* Corresponding author: Oluwaleke A A

The emergence of online forums on some of these social media applications have become hugely popular in recent times with interactions based on similar discussions, post and threads. These online forums have become powerful tools for sharing information. Online discussion forums have also become one of the most popular places to ask and answer questions [9].

1.2. Definition of terms

- Chat room: A design area or forum that allows users to communicate with each other through instant messaging system. Text is instantly display in the chat room conversations log after a user hits enter or send. Other users included in the chat sessions are able to see what another user types. [7]
- Instant Messaging System: A system for exchanging typed electronic message instantly via the internet or a cellular network, using a shared software application a personal computer or mobile phones. [2]
- Social Media Network: means including related links, information and terms. This type of collaboration and sharing of data is often referred as social media unlike traditional media that is often created by no more than 10 people, social media sites contains content that has been created by hundreds or even millions of different people. [3]
- Internet: A global computer network providing a variety of information communication facilities, consisting of interconnected networks using standardized communication protocols. [6]
- Server: In technical scene, a server is an instance of a computer program that accept and responds to requests made by another program; known as a client. Less formally, any device that runs server software could be considered as a server as well. Servers are used to manage network resources. [6]
- Client: A client is a piece of software that accesses a service made available by a server. The server is often (but not always) on another computer system, in which case the client accesses the service by way of a network. The terms applied to programs or device that is part of a client server model. [1]

1.3. Overview of Social Media Application Concept

Social media application is a form of electronic communication which facilitate interaction based on certain interests and characteristics. Social media are media for social interaction, using highly accessible and scalable publishing techniques. Social media use networked-based technologies to transform and broadcast media monologues into social dialogues [5]. Statistics has shown that the use of social network such as Facebook, Twitter and LinkedIn is on the increase most especially among young individuals, the crop of which are students of tertiary institutions.

1.3.1. History of Social Media Application

According to, the social media application started as a concept many years ago but has evolved into sophisticated technology. The concept of social media can be dated back to the use of the analogue telephone for social interaction. The most recognized use of social media was through innovative application, an online dialogue framework created by Ward Christensen, a former IBM employee and Randy Seuss. Initially, they envisioned a place where they could immediately contact their co-employees for announcements, i.e. meetings, reports, and other affairs, rather than making multiple calls, distributing memos, and the like. They were looking into creating a computerized bulletin board, which is why they named the program CBBS (Computerized Bulletin Board System). Soon enough, more and more employees contributed their ideas and comments in the said online community. That event was a momentous episode in the history of computer and internet. It was the birth of online social networking. [3]

The CBBS platform was made known to other companies and has been specific purposes. The Bulletin Board System expanded largely and began breaking into the mainstream much sooner than it was planned to. It was during the rise of the Internet Service Providers in the early 1990s when social networking sites began to flourish. Along with availability of internet service to people, many people rummaged to have themselves acquainted with this new technology. With the fast response of people to the budding internet community, the bulletin boards which were usually used by companies have started to their roles by offering their service to more people around the globe. More and more people joined the online community with the innate goal of creating an identity in this space and at the same time exploring the vast place that is the internet. Because of this, many internet-savvy companies gave what people wanted-getting to know more people and sharing common interests and points of view; that is through websites where they can socialize. websites which are now referred to as social networking sites. [1]

Social media attained a great measure of success with the launch of the then very popular friendster.com. Creator of Friendster, Jonathan Abrams concocted a perfect mix of popular features from earlier social networking predecessors. Friendster became an instant success and gathered about three million members who signed up in its early months of launch.[3]

The conception of myspace.com opened the internet users to vast opportunities of self expression which include wide control over a user's profile content. Practically different people from all walks of life have dedicated pages in MySpace. In MySpace, user experienced the best of creating unique identities to show to the online world. My Space remained as the uncontested favourite among all the social networking sites until 2005 when it met its future competitor in the market. Soon enough, My Space created additional feature like mobile applications in order to keep up with the latest trends in the online community and at the same time be at par with the growing popularity of contemporary social networking sites, more specifically the next thing in line.[4]

Facebook started as a local social network made for the students of Harvard. It was developed by a sophomore, Mark Zuckerberg. Facebook was actually made by hacking Harvard's database containing identification images of students. The initial idea was actually to compare the faces of students with images of animals, for entertainment purpose. However, due to the potentially damaging contents of the site, the creators decided to put clown before it caught the attention of school authorities. The application was shut down, but the idea of creating an online community of students came to existence. The platform was then improved and sooner than they expected, Facebook was released in campuses other than Harvard. Thereafter, high schools were already starting to get attracted to the idea of having online communities, thus opening the website to the younger population. In 2006, facebook.com ultimately offered the opportunity to the rest of the world. As 2007 approached, the registrants reached an overwhelming digit-roughly a million dozen Facebook has grown to become the biggest and most popular social networking site today with a population of above 500 million active users.

Other social networking sites continued to appear in the scene. Micro blogging partnered with social networking became popular with the launch of Twitter. On Twiter, online users can post their Tweets, basically a 140 character phrase or line about what they have in mind.[3]

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With the help of API (Application Programming Interface), micro blogging sites like Twitter and Tumbler and other dedicated sites like Flicker, Photo bucket and many others were able to connect with popular social networking sites, making an unending link of information in the World Wide Web.[7]

1.3.2. Uses of Social Media Application

Social media application provides a unique type of social environment that enables people to share and access information freely. Users can either start new topics or leave comments in the threads of existing topics. Usually, an online social media application has tens or hundreds of distinct boards or communities. These boards or communities group hundreds to thousands of threads of similar related topics together. Because of the huge numbers of users and the high dynamics of online social media application, this type of environment has a rich complexity.[4]

A social media application is also a system designed for the discussion of topics, with each topic separated into its own area, called a thread. A thread is begun by a user writing a short document, called a post which introduces the topic or asks a question about the topic. Internet users search online social media application, generally, for two types of information. Some of them search the forums for subjective information such as different viewpoints, opinions, emotions, evaluations, etc., on specific problems instead of a single correct answer.[3]

1.3.3. Structure of a Social Media Application

A social media application as a whole contains various categories (broad subject areas), which themselves contain media (more specific subject areas) which contain topics (threads or discussions) which are made up of individual posts (where a user writes something). It is arranged in a very unique way/form i.e. From Categories to sub social application to more sub media and from these subfolders to threads, where members can start their discussions or posts. However, the following are the categories of users: [4]

- User groups and Levels: User groups are groups of users that divide the community into manageable sections board administrators can work with. Each user can belong to several groups and each group can be assigned individual permissions. This provides an easy way for administrators to change permissions for many users at once, such as changing moderator permissions or granting users access to a private social media application. There are three major user groups in social media application: [6]

- Moderators: They are individuals (or groups of individuals) who look after the social media application from day to day. They have the authority to edit or delete posts and lock, unlock, move, delete and split topics in the application they moderate. Generally, moderators are present to prevent users from going off-topic or posting abusive or offensive material. Common privileges of moderators include: deleting, merging, moving, and splitting of posts and threads, locking, renaming, sticking of threads, banning, suspending, unsuspending, unbanning, warning the members, or adding, editing, removing the polls of threads. [3]
- Administrators: They are members assigned with the highest level of control over the entire board. These members can control all facets of board operation, including setting permissions, banning users, creating user groups or moderators, etc., dependent upon the board founder and what permissions he or she has given the other administrators. They may also have full moderator capabilities in all social applications, depending on the settings put forth by the board founder. These are individuals who have been assigned to manage a forum. They can also be referred to as social applications owners. There are where administrators relate to each other to share their knowledge.[2]
- Users: are individuals or members who have been given access to a forum or who have publicly registered to access the social applications. These members do not have any special privileges unless otherwise given by the Forum owner. Users can become Moderators or Administrators, if designated by the Administrator. [4]
- Post: A post is a user-submitted message enclosed into a block containing the user's details and the date and time it was submitted. Members are usually allowed to edit or delete their own posts. Posts are contained in threads, where they appear as boxes one after another. The first post starts the thread; this may be called the TS (thread starter) or OP (original post). Posts that follow in the thread are meant to continue discussion about that post or respond to other replies: it is not uncommon for discussions to be derailed. [3]
- Threads: A thread is started on some subject by an initiator. If they are interested in the subject of the thread, people post their opinions in reply posts. Because reply posts can reply to any preceding post, many branches (sub-threads) of discussion appear in a thread, and a thread ends up with a tree-shaped structure. We refer to this as a thread structure. A thread starts with the publication of a post which in turn triggers an amount of activity in form of comments. Threads are very important concepts in conversations on online forums.[6]

1.3.4. Features of a Social Media Application

The ability of online social applications to be able to submit threads and posts brought the invention of new web technologies/features. In this project some of these under-listed features will be used like private messages and emoticons. These are some standard features of an online social media application:[3]

- Trip codes and Cap codes: In a trip code system, a secret password is added to the user's name following a separator character. This password, or trip code, is hashed into a special key, or trip, distinguishable from the name by HTML styles. Trip codes cannot be faked but on some types of social media application software they are insecure and can be guessed.[5]
- Private Messages: There are three reasons for this; you are not registered and/or not logged on, the board administrator has disabled private messaging for the entire board, or the board administrator has prevented you from sending messages. Contact a board administrator for some information.[1]
- Attachment: An attachment is a file or image uploaded to go with a post. It can be a convenient way for members to share documents and photos. The administrator sets who can attach files, how many per post, how large, and what types and size they can be in the Attachments and Avatars centre. [8]
- Emoticon: Emoticons are essentially textual representations of oral discourse markers, generally utilized to convey a writer's sense of emotion and involvement. It is also a mode of representing a writer's feelings in communication.[8]
- Poll: As with posts, polls can only be edited by the original poster, a moderator or an administrator. To edit a poll, click to edit the first post in the topic; this always has the poll associated with it. If no one has cast a vote, users can delete the poll or edit any poll option. However, if members have already placed votes, only moderators or administrators can edit or delete it. This prevents the poll's options from being changed mid-way through a poll.[4]
- RSS and ATOM feeds: The RSS (Rich Site Summary and Really Simple Syndication) feed is not human readable. It is an XML format which is designed to be read by machines rather than humans. There are different versions of RSS in use. RSS 2.0 is the most common. It is used for news/blog feeds as well as for Podcasting. A newer format, called Atom, is a more standardized way of providing XML content updates. However, it has not gotten wide acceptance yet outside of the blog communities. [7]

1.3.5. Applications of Online Social Media Applications

The world has given way to some great advancement on the internet, which has brought about the solution to different problems. In this context, online forums have served as "Q&A" web application; where individuals with any question about any topic can be answered, and a social network; where groups are formed and interactions are made.[3]

Online social media application has been applied in different spheres of the internet. These are the following applications of social media online today:

- Learning in schools through student interactions: Online social media application have served as platforms for students to communicate with their fellow classmates, lecturers and other e-distance learning students. It has created e-learning opportunities for schools which are having issues with student interactions within the class.[7]
- Discussions: Online social media applications have also facilitated different forms of discussions in schools, organizations and on other larger environments. For example, students given assignments over the holidays can ask for assistance and still receive their feedbacks. They also provide a means to interactively participate in discussions or obtain/provide answers to questions; the vast volumes of data contained in social media application them a valuable resource for "support sharing".[8]
- Business Marketing: Organizations have started to make use of online social application for finding new customers or gaining insights from those they already have. Online social media application can benefit business in several ways like crowd sourcing service and support, consumer research, social CRM (customer relationship management).etc. Online social media applications have created the opportunity where companies and customers can talk and it may even escalate to the manager of that company.[1]
- Decision-Making support: It has been noticed that most online social media application users have one decision or more to make at that point in time. This has led to scientists coming up with decision trees to understand the behaviour of online social media application. It can really be of use in schools, businesses, and so on.[4]

1.4. Review of Existing System

Several platforms/systems have already been established as online social media applications. This section carefully reviews each of these existing systems in line with this project:

1.4.1. The Student Room (World's Largest Student Community)

The Student Room has attracted students to its site for help with their studies, advice from their peers and quite often, just to have a good conversation.

A large part of the Student Room consists of the forum, of which the major sections are:[3]

- Institution Applications.
- Institution Courses: most subjects have their own sub social applications.
- Institutions: most universities or polytechnics towns have their own sub social applications.
- Examinations.
- Academic Help: at any educational level though mostly focused on secondary school and college level; each subject with its own sub social applications.
- Course duration.
- Debate and Discussion: with academics discussion, society, religion. Model Parliament sub social applications.

1.4.2. Google Groups is a service from Google Inc.

that provides discussion groups for people sharing common interests. It became operational in February 2001, following Google's acquisition of Deja's Usenet archive. A new and redesigned Google Groups was leased in February 2012 with an updated user interface. A Help Centre has also been. [2]

2. Methodology

2.1. Introduction

In this section, the requirements for Student Hub were gathered by existing systems and their operations. This section also provides details on the design of the proposed networked application. It describes the methodology and will be used

in modelling the application with the necessary object-oriented programming language (JAVA) diagrams that will be used to analyse the architecture of this system using GUI, activity diagrams and sequence diagrams. [4]

2.1.1. Instant Messaging System

Student Hub is an online forum built basically for prospective students as a where their questions about institutions can be aired and other discussion can be discussed. Student Hub takes advantage of the usefulness of an online forum in the environment, to provide the best solution to various problems like selecting their choosing courses of study and indecisions about how to apply to any institution choice (INTERLINK POLYTECHNIC will be used as our case study).[8]

The benefits of this networked application include: easy access to information streamlined interaction between students, fostering social interactions, no loss of information, security & access from anywhere. It is flexible and requires nothing more than computer system with access to the web. Student Hub proposes to allow prospective get answers to their questions from fellow students and start up any discussion will Student Hub provides users (mostly guest users) with the following features:[2]

Discussion Forums: This is the main and most operational part of InterpolyChatMe. has some sections like latest discussions on the institution. Users; students or pros students (guest users) have the opportunity to participate in discussions. Only guest users allowed to post questions/topics of their choice.[4]

News Section: This section creates an opportunity for guest users to have a knowledge about events, seminars, conferences, etc. that are going on in the polytechnic.

Moderator's News: This section is aligned with the Latest Discussions on the Home Page. It is where Moderators have the opportunity to make their own suggestions/opinions, answers to questions and messages to any user (whether guest or student user) and news.[7]

2.2. System Requirements and Analysis

2.2.1. Software Architecture of InterpolyChatMe

The software architecture of this web application which represents its software (logical) implementation and deployment processes. This software architecture comprises of three (3) main layers under the server-side logic and one separate Layer: Presentation, Business and Data Layers and the cross-cutting concerns.[2]

2.2.2. System Analysis

System Analysis is problem solving technique that entails the decomposition of the studied system into its component parts with the view of studying the various functionalities and how those component parts interact to accomplish the system's purpose . It also involves the breakdown of a system and the study of components work together. The basic process of system analysis involves the following:[1]

- Understanding the Existing Systems.
- Identifying Improvements.
- Defining Requirements for the New System (InterpolyChatMe).

InterpolyChatMe is conceived in different interfaces for the different Guest Students, Moderators and the Administrator. Each interface has different requirements.

For the Guest Students, these are the requirements that have to be met: [5]

- Manage their account.
- Post questions/topics under any category.
- Respond to their posts and other posts.

For the Students, these are the requirements that have to be met: [3]

- Respond to posts from guest students.
- Manage their account .

For the Moderators, these are the requirements that have to be met: [2]

- Manage their account.
- Edit and View all posts.
- Add News to the Moderator's Block.

For the Administrator, these are the requirements that have to be met: [6]

- Tracking the number of users at each time.
- Add moderators and students.
- Manage students, guest students and moderators personal accounts.

The above functional requirements will be carefully met in the development of this networked application.

Look and Feel Requirements

- Interpoly ChatMe should be presentable on low resolution PCs
- Interpoly ChatMe should require less memory capacity

Usability Requirements

- Ergonomic and clear usage.
- Users will have no problem learning how to use this web application,
- Convenience of usage.

Performance Requirements

- Reliable storage of information.
- Guest Students will be able to respond to their questions as a means of follow-up,
- Posts will be placed in the right category for quick response by Students.

Operational Requirements

- Interpoly Chat Me should be able to work with relevant hardware devices.
- Not prone to crashing
- Interpoly ChatMe should be able to handle multiple users.

Security Requirements

- Only a moderator has access to any posts
- Sensitive information is hidden from non-users
- Password sensitive.
- Only registered users can use the system except for the administrator,
- If anyone responds to any question, the user can know if they are a guest student or student.

Portability Requirements

- Interpoly ChatMe should operate on demand.
- Interpoly ChatMe should work on the browser of any operating system.

Legal Requirements

- Personal information of users should be protected.
- Interpoly ChatMe should comply with quality assurance standards,
- The Administrator is fully responsible for most operations in the forum.

2.3. System Design

The system design illustrates how the system will fulfil the objectives or require identified during the analysis of the system. In system design, the question "How?" is raised. It also illustrates the overall architecture of the system and the setting of standard example, for the design of an artificially intelligent system [3]. This utilizes the Object- oriented analysis and design methods which are becoming the widely used methods for computer systems design.

2.3.1. Object Oriented Analysis and Design

Object-oriented analysis and design (OOAD) refers to the use of object-oriented modelling (an approach where a system is modelled in terms of objects which have attributes and perform operations) in the analysis of systems or in modelling the system requirements and in the design of object-oriented systems fulfilling these requirements. [4]

Object-oriented analysis and design (OOAD) is a software engineering approach that models a system as a group of interacting objects. Each object represents some entity of info in the system being modelled, and is characterized by its class, its state (data elements), behaviour. Various models can be created to show the static structure, dynamic behaviour and run-time deployment of these collaborating objects.[3]

2.3.2. Unified Modelling Language (UML)

Unified Modelling Language is a diagrammatic object-oriented modelling language that uses diagrams to document an object-based decomposition of systems showing interaction between these objects and the dynamics of these objects. UML aims to provide a common vocabulary of object-based terms and diagramming techniques that is rich enough to model any system development project from analysis to design.[5]

This system is modelled with: Use case diagram, sequence diagram, and activity diagram.

Use case diagram.

2.3.3. Use case diagrams were used to perform requirements analysis in order to understand the core functionalities and usage scenarios associated with the identified requirements.

A use case diagram simply shows a look at the system from an outsider (e.g. user) point of view. The system is treated as a black box and one solely identifies what the system is used for. The components of a use case diagram include, Actors, Use cases, Associations and the system boundary.[9]

Actors: represents the external entities of the system i.e. people or things that interact with the system that is being modelled. Use Cases: are functional parts of the system. It is what an actor does e.g. a customer “browses the catalogue”, “chooses items to buy”, and pays for the item.[2]

Associations: are shown between actors and use cases, by drawing a solid line between them. It links an actor with the use case it interacts with.

System boundary: represents the scope of the system the actor is interacting with. The use case has four actors and nine (9) use cases. The Administrator is the manager of the system and the Moderator, Student and Guest students are the main users of the system.[5]

2.3.4. Sequence Diagram

A Sequence diagram provides a graphical representation of interactions between objects over time. It shows the messages that pass between classes over time for a use. The objects involved in the operation are listed from left to right according to when they take part in the message sequence. A sequence diagram typically shows a user or an actor objects and components they interact with in the execution of a use case. [7]

There are four primary elements of a sequence diagram:[6]

Objects: are arranged on the horizontal axis. Time increases downwards. Below each object there is a vertical dashed line. That is the life-line of the object spanning the period (the vertical axis represents time) over which the object lives.

Lifelines: the life-line of the object spanning the period (the vertical axis represents time) over which the object lives.

Messages: Between the life lines (or activity bars) we show arrows representing the messages which are exchanged between objects. The message itself is as a label on the message arrow.

Focus of control: these are vertical rectangular boxes used to connect and send messages between two objects in a sequence diagram. It is also used to bridge the communication of different lifelines.

2.3.5. Activity diagram

The activity diagram depicts the workflow of activities within the system. It graphically represent the flow of performance of various actions by the system entities. [3]

2.4. The user interface Designs

A graphical User Interface (GUI) is a medium through which the system users interacts with the system. It is a medium through which the system users send in their request into the system, displays the outputs to the users alongside various option.[5]

The InterpolyChatMe home page is the first interface displays at logon to both the existing users and the guest users. It presents the general overview of the online forum, showing the various tabs, links, and login section, register e.t.c.

The User Registration Interface

Every Guest Student will have to click on the register link on the Home page to access this page.

The Login Page Interface

On the page, students, guest students and moderators can log-on.

Database Design

A database is a mechanism that is used to store and manipulate information, or data. With a database, users are able to store data in an organized way and once it is stored, it is easy to retrieve any form of information. This can be implemented using a database management system (DBMS). A DBMS is software that allows the storage and access of data to a user. The database design is geared towards stating the purpose of the database of this system [6].

The Database Design was conducted to show a modeled view of the system. The database program for InterPolyChatMe is the MySQL; a relational database design was implemented and tested using a local MySQL (open-source relational database management system).[3]

A description of tables and their different columns are stated below: Note; PK means the primary key in the tables on database "Studentforum"

Table 1 Database scheme for InterpolyChatMe. [5]

Table Name	Column	Description
Admin	Id(pk), username, password	Stores the admin log-in details.
Guest	Id(pk), full_name, username, email, int_course, gender, password.	Stores the guest student profile details.
Moderators	Id(pk), full_name, username, email, password, postheld.	Stores moderators profile details.
News	Id(pk), title, news, date_time	Stores and maintain all news posted by the moderator
Post	Id(pk), title, category, post, date_time user_id, username	Stores and maintain guest students posts.
Post_comment	Id(pk), post_id comment, user_id, date_time, user full name, User type	Stores and maintains students comments

2.5. Platform and tool used for implementation

As earlier stated this system was built with java programming language. The database software used was MySQL. These tools and others that were used during this project are stated below: [4]

Java: java is a programming language expressly designed for use in the distributed environment of the internet. It was designed to have the look and feel c++ and enforces an object-oriented programming model. Java can be used to create complete applications that may run on a simple computer or be distributed among servers and clients in a network. It can also be used to build a small application module or applet for use as part of a web page. Applets make it possible for a web page user to interact with the page. [4]

SQL: SQL (structured query language) is a standard language for accessing databases. SQL is used to access and manipulate data in: MySQL, SQL Server, Access, Oracle, Sybase, DB2, and other database management systems. [2]

MySQL: The MySQL database management system served as the database for building and testing the system, It also served as the platform where all data used in the application could be manipulated. [4]

2.6. The Different Forum User Interfaces

These interfaces are to show the different interactions users actively perform on InterpolyChatMe. The figures below will give a pictorial view of the functionality of web application.

2.6.1. The Guest Student's post page

On this page, Guest student post their questions based on the categories they pick.

2.6.2. The Guest Student's 'My Posts' Page

On this page student have the opportunity to follow up and view Only their post.

2.6.3. The Student's view post page

On this page student can respond to any post by guest student and they can also view these posts. This page has a section for commenting and a button to minimize the post.

2.6.4. The moderator's Add New page

On this page the Moderator can add news that can be viewed on the home page by any user that visit InterPolyChatMe.

2.6.5. The Administrator's Delete Account page

On this page, the Administrator can view and delete any Guest student's account but cannot create/add any Guest Student, The Administrator also has the privilege to create and delete a student or moderator profile.

2.6.6. System Requirements

The system requirements consist of the various tools required from the point of design and development to the eventual deployment of the portal system. These requirements are presented in the tables below.

Table 2 The Software Requirements. [5]

Requirements	Software
Operating system	Microsoft Windows 8
Database management system	Mysql database management system
Model design tools (uml modelling)	Microsoft office visio 2007
Programming language used	Java
Integrated development environment	Netbeans 7.0
Web servers	Extension of Java Server class server, Add mysql server.

Table 3 The hardware requirements [3]

Minimum requirements
Minimum of 1GB, Random Access Memory (RAM)
Minimum of 32 bit Video Graphics Adapter (VGA)
Modem or Ethernet card
Keyboard and mouse
Uninterrupted power supply (UPS)

2.7. Summary

The research work investigated and identified the relevant additional requirements that can be catered for in the design and the development of an online forum. Through this study, we have been able to explore relevant literatures and existing systems to discover the right requirements to be considered in the development of this application, model some of the operations of Interpoly ChatMe employing object oriented analysis and design using UML diagrams and develop and effective online forum for prospective students, where they can share different questions or views topics and majorly make relevant information about that institution accessible.

2.8. Recommendations

Although online forum are significant tools for interaction, the integration of other popular social networks to make it accessible to everyone can be a big plus to this work. Also most students are able to relate with Q & A' more, so they can get any information they want easily. The participation of the institution involved will also be an advantage because will be able to relate with this issues and problem raised by the prospective students to improve some of their operations.

InterPolyChatMe by integrating third party tools like SMS services to connect to their mobile devices, etc. further work should also be carried out on properly evaluating and testing the web application.

3. Conclusion

As the social media grows, online forums like Interpoly Chat Me will be relevant to students and youths around the world. Even as other versions will be later developed, the activities and features on the sites will increase because they will be built to meet the end users requirements.

Online forums have presented students with systems designed for the discussion of topics, with each topic separated into its own area called a thread. A thread is begun by a user writing a short document, called a post, which introduces the topic or asks a question about the topic.

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