



## Social Media Web Application for Prospective and University Students

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### ABSTRACT

*This study aims to propose, design, model, implement and evaluate a social media platform dedicated to university students in Nigeria, to facilitate information exchange between the students irrespective of their Nigerian university. For this project, the Iterative Software Development Life Cycle that was employed. This model was chosen because it allows for the web application to be built in a flexible manner. This allowed the project to adopt changes easily while it was still in development. The proposed social media platform was designed with HTML (using Bootstrap as the design framework). The functionalities were achieved using JavaScript frameworks (Jquery and AJAX) and other libraries (Moment.js and sweetalert.js). The biggest of the constraints is that there was not enough data and time to build a modern up to date sophisticated Natural Language Processing system that can be used by the Auto Admin/Moderator. With an NPL, the Auto Admin/Moderator can better understand the way people in this part of the world communicate, the slang used and so on. With this, the Auto Admin/Moderator can better moderate the information users of theHub exchange on the platform. theHub is helpful to students and prospective students' admission processes in Nigeria. Though other versions will emerge, the features and processes will be improved based on user's experience. theHub can help students and prospective students to secure lifelong relationships with people on the platform which can help them secure career, funds, and projects in the future.*

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### INTRODUCTION

Social media refers to any digital platform, such as websites or apps that allows users to instantly have access to information with the public, (Matthew, 2020). There are many different websites and programs that fall under the category of social media. This includes Twitter that is focused on swapping and delivering brief messages. Other social media like Instagram are designed to allow the exchange of different types of media such as video.

What distinguishes social media from most media (newspapers, television) is that they are both vast and unregulated. While many social media businesses require

restrictions, like deleting photographs that represent violence, comparatively, there are few restrictions on what users may communicate when compared to traditional forms communication media. Individuals may register a social media profile, and use the platform to share contents that can either be made published to the public or private.

According to Lewis (2009), social media platforms connect individuals to give a mechanism for them to generate and exchange information. According to Choi and Kang (2014), social media may be divided into two categories such as for social networking like YouTube; and those used for educational activities such as Google classroom.

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Students have made significant contributions to the popularity of social media (Kirschner and Karpinski, 2010). However, its rise and growth of networking websites recently can be attributed to their widespread use by educational institutions. This is because its use has been shown to help students develop and engage in an academic environment, as well as improve on their knowledge (Choi and Kang, 2014).

### **The Way Social Media Works**

The fact that social media encompasses different types of applications, the role of the platforms varies as well. Most social media platforms begin with a user registering an account, generally by supplying the user's credential. Users may produce and share content after setting up an account. For example, an Instagram user is allowed to snap and upload a picture with a caption on their handle. Users may identify and follow other users whose content catch their interest. A user may "follow" other users, and include them as a "friend," or "subscribe" to their account.

"Feeds" are often used in social media so as to allow people browse contents uniquely. Social media businesses use algorithms to decide information that appears on every user's profile. Content from "followed" users and companies/individuals will be included in the feed.

### **MATERIALS AND METHODS**

Previous research has provided major reasons for the social networks most chosen and used by students, as well as why they use them and the advantages they give.

In 2020, there were around 28 million social media users in Nigeria that utilize it for communication purposes. The majority of inhabitants prefer material exchange via mobile applications such as WhatsApp. In the third quarter of 2021, the often used social media platform in Nigeria was WhatsApp, as reported by Sasu (2022) in internet statistics on Statista.com, which amounted to 93% of Internet users. Following this, 86% and 82% of those with access to the internet utilized Facebook and YouTube.

In a study by Pempek et al (2009), the quantity of time expended on social networking platforms each day varied substantially. The study showed that most users spent half an hour per day socializing, usually during late hours, while students expended about fifty minutes daily on Facebook. Over 50% of college students use social networking platforms severally (Sheldon, 2008). According to Quan-Haase and Young, (2010), 82% of students check Facebook many times each day. Younger students used Facebook as compared to older students (Pempek et al, 2009).

Similarly, Choi and Kang (2014) investigated the motivations of students for utilizing social media towards educational process. The study included 1010 students, and data were obtained utilizing an online survey. According to the responses, 71.2 percent of respondents used social media for the purpose of homework, 75.5 percent to explore for information, 61.4 percent for publishing content, 49.3 percent to ask questions, 44.5 percent to re-use information, and 39.4 percent to receive feedback.

However, many studies on students' usage of social media sites, like as San Miguel (2009), Choney (2010), and Enriquez (2010), found a disadvantageous influence of these sites on students' academic results.

According to Akua (2014), after surveying 1000 students at the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana, 697 students (72.9 percent) claimed that social media had a disadvantageous influence on reading comprehension, with just 259 (27.1 percent) believing differently. Only 129 (13.5%) students generally agree with the use of social media/networking for studying. Again, just 223 (23.3 percent) said they get instructional information through their interactions, while 733 (76.7 percent) said they get educational materials. Only 150 students (15.7 percent) agreed that social media helps logical thinking, and fewer than 30 percent utilized it to get academic content to assist research or to widen their knowledge in different specific fields of study. The study concluded that, while social media is important for academic reading in general, because of the different tools

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provided to students. Its usage by certain tertiary students, however, does not bode well for their academic success.

In support of the preceding study, Emmanuel et al (2013) concluded, after sampling 240 undergraduates from four higher education institutions in Imo state, that undergraduates are aware of social media tools but are not using them to advance their academic careers; rather, they are exploiting them for socialization purposes.

Furthermore, Okereke and Lucky (2014) found that (79.59 percent) of sampled undergraduates at Anambra State University, Delta State University, Nnamdi Azikiwe University-Awka, and Madonna University, Okija campus, underperform and lack concentration in academics because of the frequent use of social media activities, while (15.30 percent) perform well. According to these data, social media causes poor performance among Nigerian students.

However, research on social media undertaken by Pasek and Hanqittai (2009), Hanqittai and Hsich (2010), and, Ahmed and Qazi (2011), found no association between social media and student's performance in school.

Conclusively, research and facts collected from different sources indicates that, while social media appears to harm the learning activities of Nigerian students, it is seen as an additional platform for education among Nigerian students because the large number of undergraduate students use facilities embedded within social media (Nsikan et al, 2017).

## RESEARCH METHODOLOGY

For this project, the Software Development Life Cycle (SDLC) that was employed, is the Iterative Model. The Iterative Model is a particular implementation of a software development life cycle that focuses on an initial, simplified implementation, which then progressively gains more complexity and a broader feature set until the final system is complete. In short, iterative development is a way of breaking down the software development of a large application into smaller pieces. This model was chosen because it allows for the web application to be built in a

flexible manner. This allowed the project to adopt changes easily while it was still in development. However, the data/code that substantiates the conclusions of this study are accessible upon reasonable request from the corresponding author.

## RESULTS AND DISCUSSION

For admitted students and prospective students, theHub is a social networking web tool that allows them to ask inquiries about universities and engage in other discussions. An online platform like theHub allows students and prospective students to solve difficulties like picking a university, choosing a course of study, and being undecided about how to apply to any Tertiary institutions within Nigeria.

Among the many advantages of this online platform are: quick access to information, simplified contact between users, promoting social connections, no loss of relevant information, security, and access from anywhere. It's easy to use and doesn't require much more than a computer with internet connectivity. Admitted students and prospective students would be able to ask questions of other students and start a conversation with them.

Therefore, theHub offers the following benefits to users:

**Communities:** This is the main and most operational part of theHub. The idea of communities comes from the fact that theHub intends to bring students and prospective students in the spirit of a community. There are different communities based on courses, universities, Academic help, hobbies and lifestyle. Users; students and prospective students will be able to join these communities, post, comment, upvote and downvote a post.

**Post:** A post can be a question, information or instructions that a user would like to share with a community. Communities are about sharing and interactions only that on theHub, the focus is on academics.

**Comment:** Comment is an activity that a user of theHub will be able to carry out. This will allow users to provide answers, point of views and suggestions to another user's post.

**Upvote:** Upvoting is synonymous to liking a post or giving a thumbs up. When a user

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approves or is excited by a post or comment, that user can express their feelings by giving the post an upvote. The total upvotes a post accumulates over time can be used to better rank such a post.

**Downvote:** Downvotes is the direct opposite of upvotes. When a user disapproves of a post/comment, or dislikes a post/comment, such a user can downvote. The overall repercussion of this is that it can affect the credibility of a post or comment.

#### Auto admin/moderator bot

With powerful moderator control, an Auto Admin/Moderator is a moderation program that prohibits unsuitable or abusive discussion. Misspellings and evasive language are automatically detected by Auto Admin/Moderator. When a user sends a message that the Auto Admin/Moderator deems as possibly unsuitable, the message is removed and the user is given a warning strike. After three warning strikes, the auto Admin/Moderator can ban the user for a week.

It can handle a lot of the repetitious tasks that a moderator has to do. It's basically a bot that may be created with rules or instructions to automate various moderating activities.

The auto Admin/Moderator bot is designed to give warnings to the user based on what they did inappropriately. After a couple of such warnings, then the bot can actually take admin actions on the user's account such as blocking or banning such a user; a ban can be temporary like for a week. Here are some of

the rules and instructions of the Auto Admin/Moderator bot designed for theHub:

1. The Auto Admin/Moderator can delete a user's post if the post has an inappropriate word, it will be deleted by the Auto Admin/Moderator and then a warning strike will be assigned to the user.
2. The auto Admin/Moderator can issue a warning strike to a user.
3. The auto Admin/Moderator handles "Report Abuse" of other users concerning a post. If a post receives maybe 5 reports of abuse. The auto Admin/Moderator will automatically delete the post and also give the user a warning strike.

#### System Design

Designing a system demonstrates how it will achieve the goals or requirements specified during its evaluation and analysis. theHub is modeled with the following types of UML diagrams:

1. Use case diagram: This is a visual representation of a user's probable interactions with a system. Users and use cases are shown in a use case diagram, which is usually supplemented by other forms of diagram. Using either circles or ellipses, the use cases are shown on. Stick figures are commonly used to depict the actors.
2. Activity diagram: As a behavioral diagram, an activity diagram shows how a system behaves. It shows the control flow from an inception point, as well as the different decision pathways that exist while the activity is being carried out by a user.

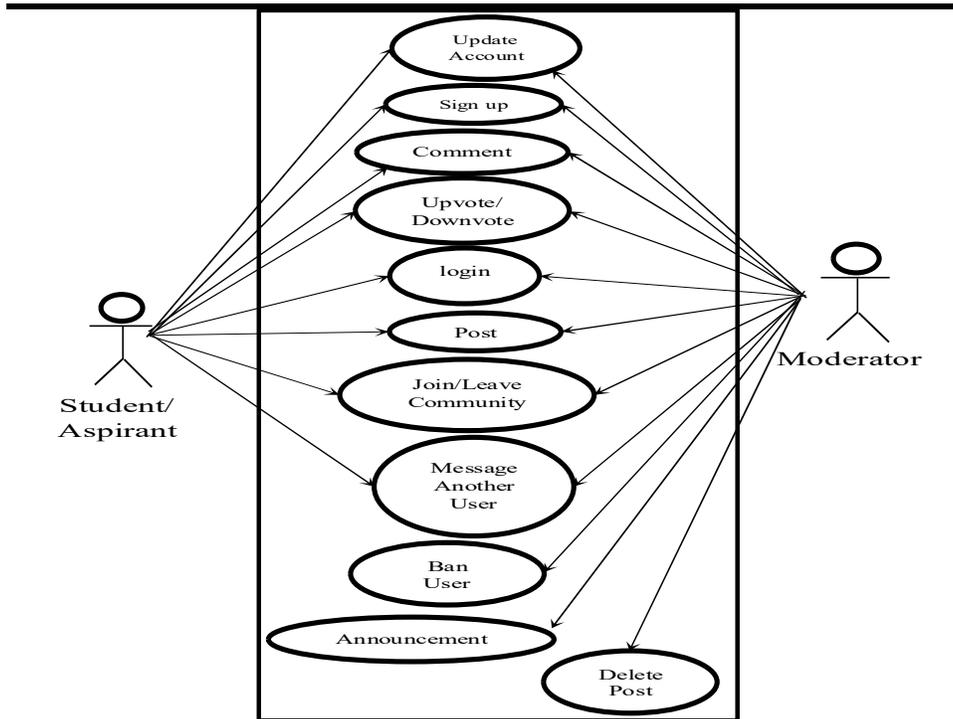


Fig. 1.1: The Use case diagram for the Student/Prospective Student and Moderator

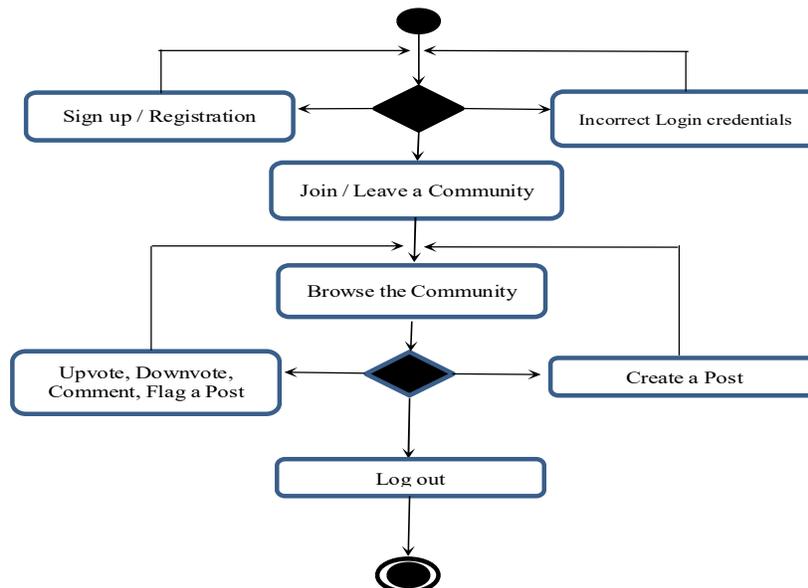


Fig. 1. 2: An example the activity diagram of a Student in the case of theHub

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### User Interfaces

These are to represent the various interactions actively performed on theHub. The

figures that follow represent the functionality of the web application.

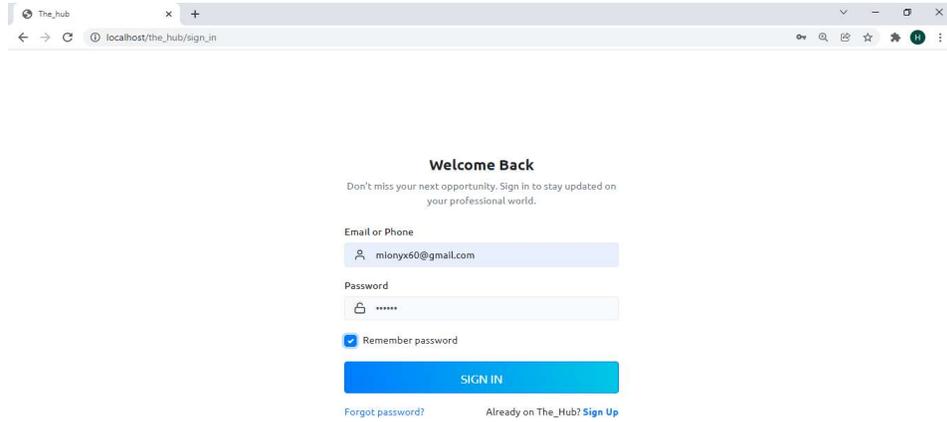


Fig. 1.3: theHub's Sign In page

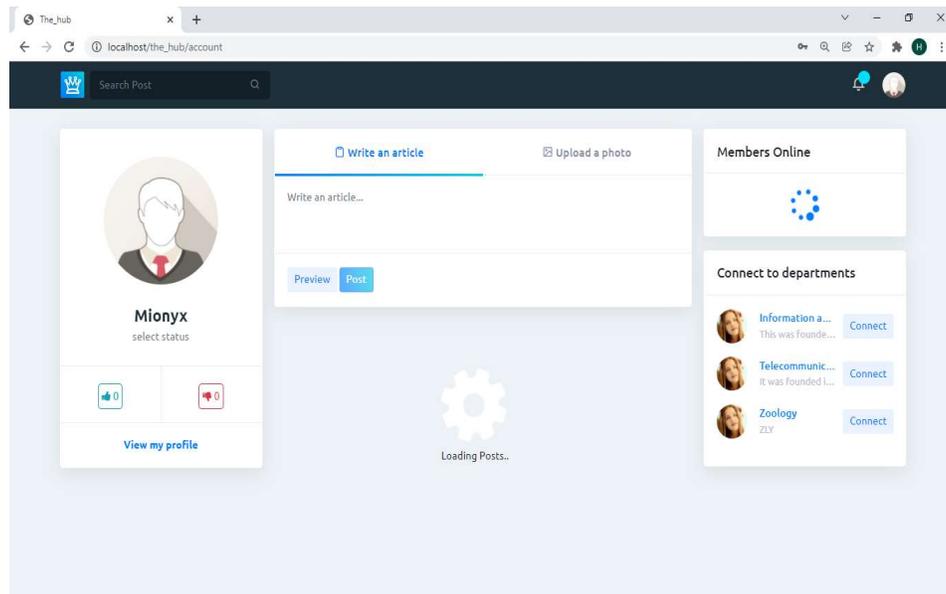


Fig. 1.4: The Homepage of a New User

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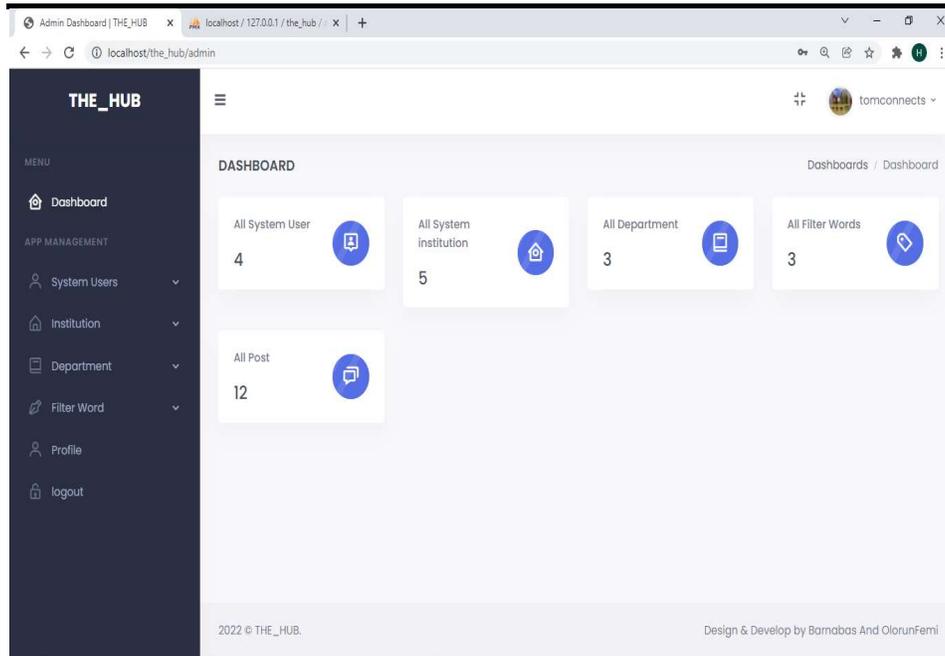


Fig. 1.5: The Admin dashboard

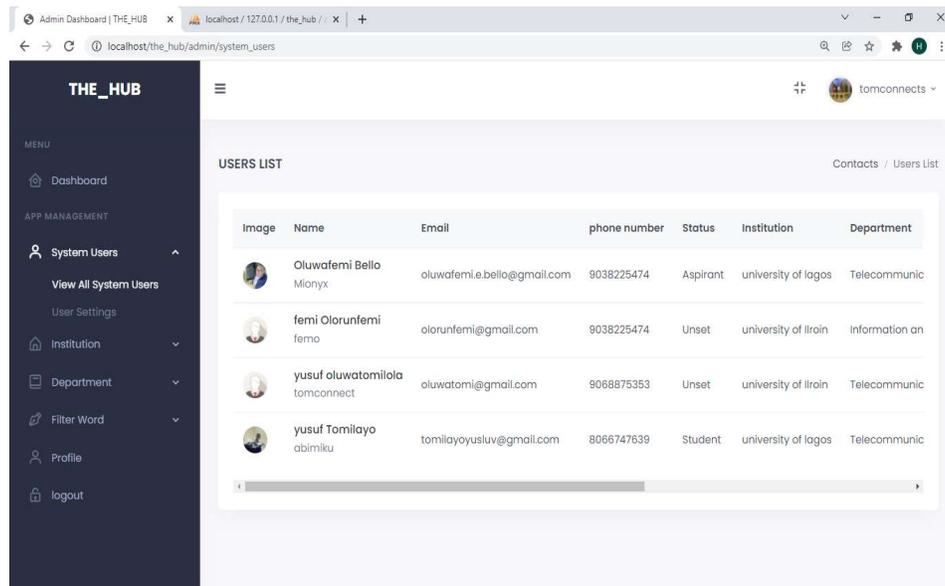


Fig. 1.6: System User Page

## CONCLUSIONS

As social media grows, student oriented Social Media platforms like theHub will be relevant to students and prospective students' admission, in Nigeria. Though newer

versions will be implemented, its features and processes will be improved based on user's experience.

theHub can help students and prospective students to secure lifelong

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relationships with people on the platform which can help them secure career, funds, and projects in the future.

Although Social Media platforms are significant tools for interaction, it is therefore recommended that the educational society including the lecturers recommend platforms like theHub for prospective students. From day to day interaction with prospective students both online and offline, most prospective students prefer to seek information from people who are already admitted to higher institutions and most preferably students studying the course they want to apply for, so that they can get easy access to information. The involvement of universities in Nigeria will be advantageous because they communicate with issues brought forward by users for improvement.

Also, social media is a platform that requires improvement, hence, this will be done on theHub by including applications like SMS services to enable interaction with mobile applications, so that users can get real time notifications.

Moving on, a Natural Language Processing (NLP) API which is a machine learned model for analyzing text can be developed for theHub. Further works can be carried out also to develop a more robust Auto Admin/Moderator for theHub. This development can make theHub one of the few self-moderated Social Media platforms.

#### Data Availability Statement

The data/code that substantiates the conclusions of this study is accessible upon reasonable request from the corresponding author.

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