IJAAR PUBLISHING®

Scholarly Journal of Science and Technology Research & Development | ISSN: 2955-0807
Vol. 3, Issue 2 (February, 2024) | www.ijaar.org/sjstrd

Development of a Guidance and Counselling Software (A case study of Nigeria Army College of Environmental Science and Technology Makurdi)

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ABSTRACT

Physical method of counseling has proven a lot of challenges as humans are sometimes bias in nature, have personal acquaintance to clients, counselor at times becomes emotional and fails to give proper advice that will actually help the client, they also fail to guide their clients towards career goals. On the other hand, clients at times become so shy to go for counseling or because of their status in the society they become ignorant of the physical approach of counseling. This has generated a lot of problems to the society and the higher institution which has led to some clients ending-up having mental illness and some even committing suicide. This actually has caused a lot of menace to the society. Also, as the society is becoming densely populated, the quest for learning in higher institution is also increasing, that means the population of students of in higher institution is also increasing, as such the need to guide the students towards their career enhancement and also give them a metal balance towards Psychological, Cognitive, and Choice of Educational counseling is a key. As a result of the aforementioned, the development of a Guidance and Counselling Software was proposed with a peculiar lesson at Nigeria Army College of Environmental, Science and Technology. A verbal analysis of 250 of students was carried out to ascertain the students' needs (Psychological, Cognitive, Career, and Choice of Educational status) so as to develop a counseling software that will help solve their problem. The system was developed and experiments were carried out, the result has shown to be effective and efficient as the students were able to utilize the software with ease, the output has also proven that clients can communicate with their counselors effectively, they can also take quiz to determine the degree of their mental illness. The system has shown to be robust and has shown as proof concept.

Keywords: Counseling, Software, Needs, Therapist, html, Database

Nnonyelum, O. A. & Gafa, L. (2024). Development of a Guidance and Counselling Software (A case study of Nigeria Army College of Environmental Science and Technology Makurdi). *Scholarly Journal of Science and Technology Research & Development*. 3(2), 46-57.

I. INTRODUCTION

Guidance and counseling services are critical to students' development. These services help students assess their strengths and weaknesses, set reasonable goals, and design ways to achieve these goals. Unfortunately, many students at tertiary institutions, like Nigeria Army College of Environmental Sciences and Technology (NACEST), are unable to access these services due to lack of counseling staff and limited resources. To address this problem and enhance students' career and well-being, an online guidance and counseling software that provides personalized services to each student must be developed. Furthermore, technology-based therapies might be equally as effective as traditional in-person counseling. Technology in counseling may allow NACEST to improve the caliber of students she produced. Also, by utilizing technology in counseling, NACEST could be able to improve student outcomes like mental health, academic achievement, and overall satisfaction with college life, all while raising the bar and making its guidance and counseling services more accessible. To offer NACEST students remote support, a guidance and counseling software will be created. It will include virtual counseling sessions, counseling needs, self-help tools, and referrals. This digital platform seeks to address mental health and academic needs while improving access to counseling services.

II. Review of Related literatures.

This chapter summarizes the related literatures as regards to the concept of guidance and counselling, comparison of manual mode of counselling and online mode of counselling its advantages and importance of online guidance and counselling to students and the populace.

All facets of a person's life, including their physical, mental, vital, emotional, and spiritual development, as well as their stage of infancy through old age, can benefit from guidance. Geographical constraints have been a barrier to effective counselling since the beginning of psychology. Many mental health professionals have used technology over the years to reach clients who are geographically distant. This has included using online tools like email and letter writing as well as phone counselling (Goorma et al., 2008).

The American Counselling Association and the National Board for Certified Counsellors (NBCC) have created ethical guidelines for online counselling and have highlighted the use of online counselling services delivery. Online counselling will keep up with the advancement of technology. The significance of incorporating the technological competencies required for online counselling into the graduate curriculum has also been highlighted by ACES and CACREP.

Lairertics (2018) conducted a comparison between clients who received counselling via online means and clients who received counselling in traditional face-to-face settings. It appears that most clients are content with their online counsellors, but not as much as they are with those they see in person. King, et al. (2006) conducted research on younger clients using online counselling. The adolescent's experiences and motivations appeared pertinent to these studies. Three groups were used in Chaudoir and Fisher (2010) study of self-disclosure styles regarding e-therapy: clients currently receiving e-therapy, members of online support groups, and clients presently receiving traditional face-to-face counselling. The results showed that participants in online support performed better after the counselling.

Willey and Andrew (2011) state that in counselling, two people are involved: the one seeking assistance and the professionally trained individual assisting in problem-solving, guiding, and

directing the other toward a goal that promotes maximum growth and development. Therefore, counselling services are necessary for people who are experiencing developmental issues as a result of an emotional handicap that they have, whether as a result of environmental factors or genetics. An essential component of a comprehensive guidance program is counselling.

Counselling, as a concept, a practice, or a profession, suffers from a lack of clear definition among Nigerians in general and among other professions, including educators and educational administrators, who are among the counsellor's closest colleagues. Guidance and counselling services are said to be relatively new in developing African countries like Nigeria, at least when compared to countries like America and Canada. This likely explains why professional counselling is still viewed as irrelevant in a society where children are raised to rely on their elders, or "seniors," for all of their guidance regarding education, socialization, and developmental adjustments. People must be made aware of their fundamental personal requirements, aptitudes, resources, obligations, and potential; as a result, they must be made aware of their own advantages and disadvantages.

They must be given pertinent, useful, and important information to help them solve their problems.

The goal of the counsellor and guide is to teach the students how to catch fish on their own, not to catch fish on their own and give it to them.

The students should learn how to examine their weaknesses and then overcome them. Also, when it comes to choosing a career, students might also require counselling and guidance services; in this situation, they should help them make sensible, fulfilling, and engaging educational decisions.

In order for the teachers and parents to support the student receiving counselling and guidance sessions in an effective manner, they should also schedule a meeting with the counsellor or guide. It is imperative that educators and parents recognize the needs and challenges faced by their children. Harsh behaviour, such as yelling at students, is strictly forbidden.

As such, there has been proven benefits on online counselling as regards to when visiting a therapist in person, patients may worry that someone they know might notice them on the way to the appointment Several studies shown that that people benefit from being able to assume different personae (Barah, Mackenna & Fitzsimons 2003; Yurchisin, Watchurarigkan & Mccabe 2005). Anonymity can boost a client's sense of empowerment, especially if they don't have to travel or run the risk of being noticed. Otherwise, these clients might not have gone to counselling. Research by Adebowale (2014) indicated that students have positive attitude towards online counselling because it builds more trust and can make them anonymous.

Also, when trying to attend a therapy session, clients frequently experience stress due to work or family obligations. Being adaptable is essential, and this is especially true for online counselling sessions that take place in the morning or late at night. For therapists and clients alike, the flexibility of online counselling is a huge advantage (Schuster, Pokorny, Berger, Topoco, & Laireiter, 2018). Gives the therapist more time to prepare for sessions is another

advantage of flexible scheduling. This also benefits the client, who can now make the most of their time rather than wasting it travelling techniques.

The counsellors admit that online counselling offers cost-containment. This is because it creates the opportunity for the counsellor to potentially serve more clients daily, scheduling flexibility, and the opportunity to interact with peers in other locations (Attridge, 2004). The whole sessions are automatically recorded and documented, reducing the need for progress notes as well as enhancing supervisory capabilities (Sussman, 2004).

III. Methodology

Previously, counseling for NACEST students was conducted solely by hand and involved a significant amount of traditional counseling techniques, such as using humans and paper. This took time, complicated counseling sessions, and made test evaluation and data management challenging, among other issues. Counselors will have more opportunities to assist students in achieving their future goals and careers with the help of online counseling, which will simplify counseling, make counselors more accessible to students even in the comfort of their homes, and use less paper and time.

As such, the needs assessment survey to identify the counseling needs of NACEST students was carried out by verbally interacting with the students on campus to review the counselling needs the of the students.

The non-discriminate approach was adopted. About 100 students from the five schools of the institution of both male and female were recruited for the study through proportional random sampling technique without being biased. The counseling needs were Identified as (Psychological, Cognitive, Career, and Choice of Educational status and thus, counselors or therapist according to the students' needs were also identified and assign to any students whenever the needs arise. As such, the parameters were used to developed a system which can enable the students to identify if they need a counseling or not, and what kind of counselor or therapist do they need and the degree of their psychological distress.

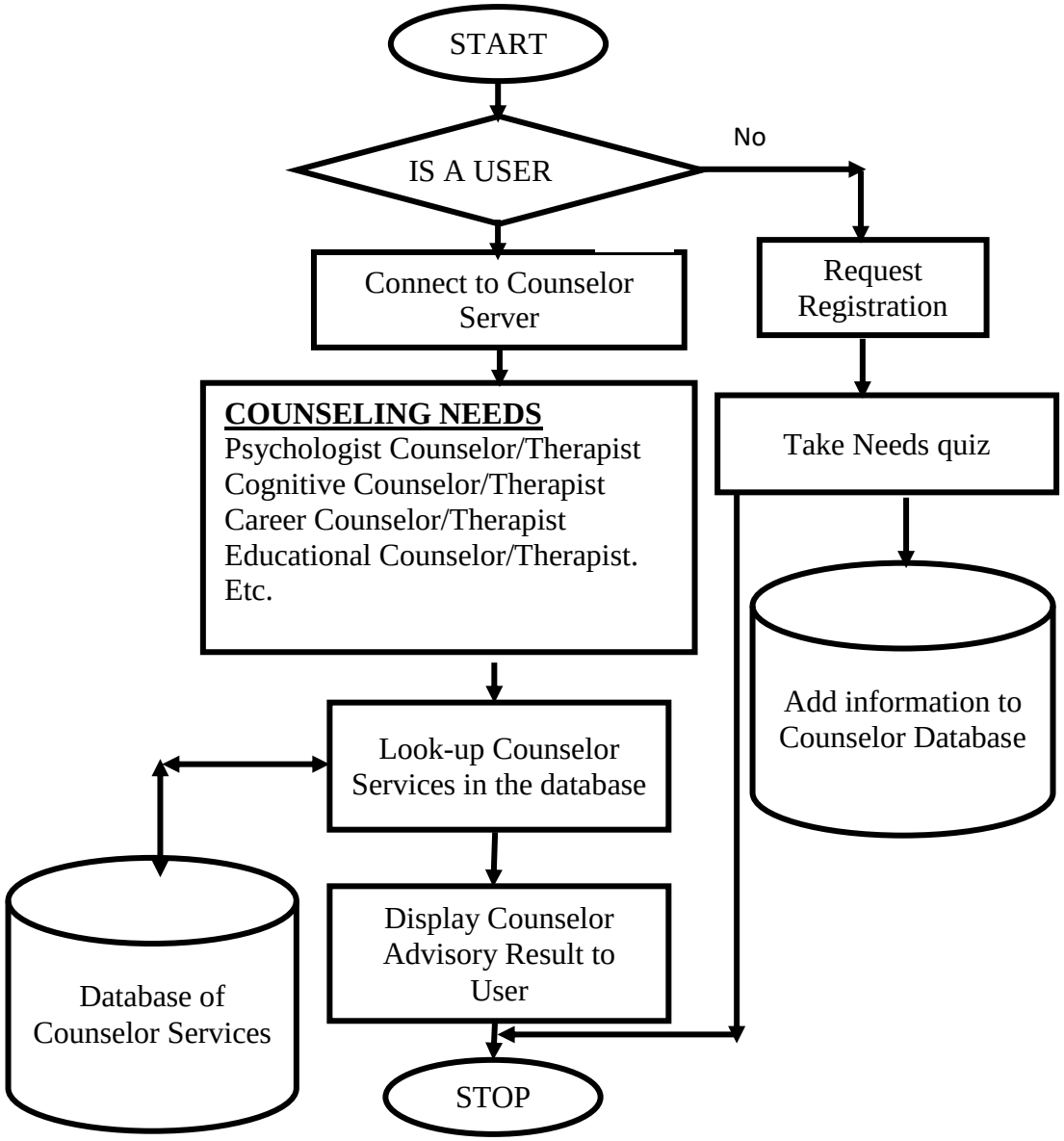
JavaScript, Mongo dB, Html, and CSS as object-oriented tool were used to carry-out design and development of the guidance and counselling application for the NACEST students so as to address the counselling needs. The application was developed using a water fall approach.

Module I
Algorithm for the Proposed System

Step 1– Start
Step 2- Register
Step 2 – login
Step 3 – Display Main Menu
Step 4 – Take counseling quiz to determine counseling status
Step 5 – If status requires counselor or therapist, Goto step 6
Step 6 – select counsellors
Step 7 – Counsel student based on needs assessment
Step 8- Make recommendation after counselling
Step 9- Archive Students Counselling Records
Step 11– Stop

Module II

Fig 2. Program flowchart for the System

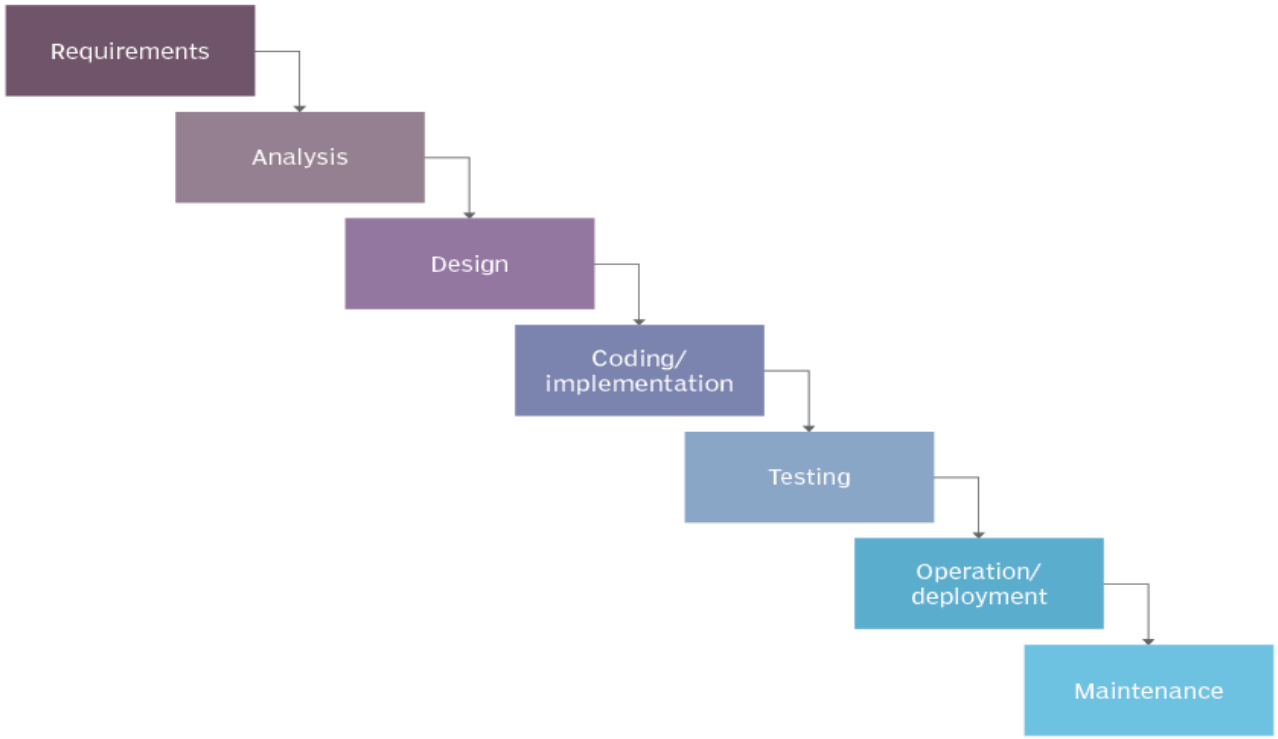


From module II, Fig 2, A user can create profile, or login if the user an existing user. If the user is a new user, the user takes a quiz and is then add to a database, a counselor based on the user needs is recommended and the counseling commence interaction with user. The counselor advisory result can be also being display based on their interaction.

Module III

Fig 3: Showing the water fall for the counseling System

A well-liked linear approach to the software development lifecycle, the waterfall model shows a project's steps as they logically flow over a cliff



Project Implementation

Hardware Requirements:
- Core 15 processor.
- 4 GBM Memory
- 250GB Hard-Disk
- Source of Internet

Software Requirements:
- Operating System: Windows 10
- Java
- Wamp Server
- Firefox Browser

IV. Results and Discussion

Projects Snapshot

Fig 3: Showing the Create account page for a new user

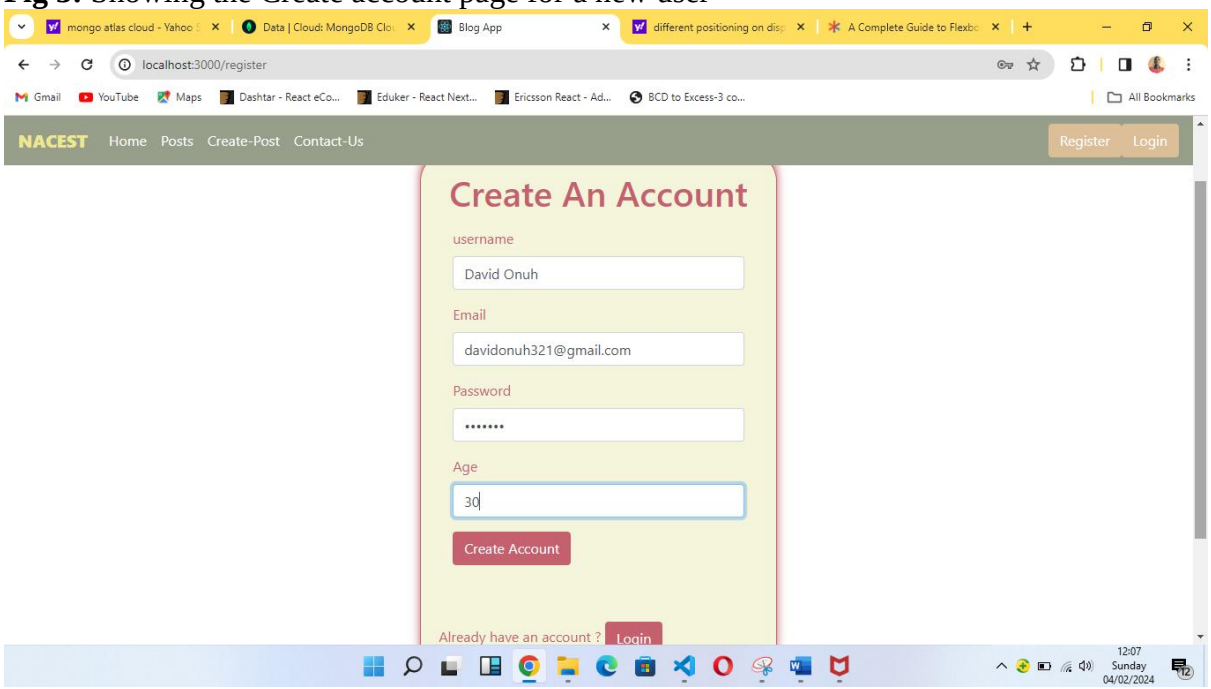
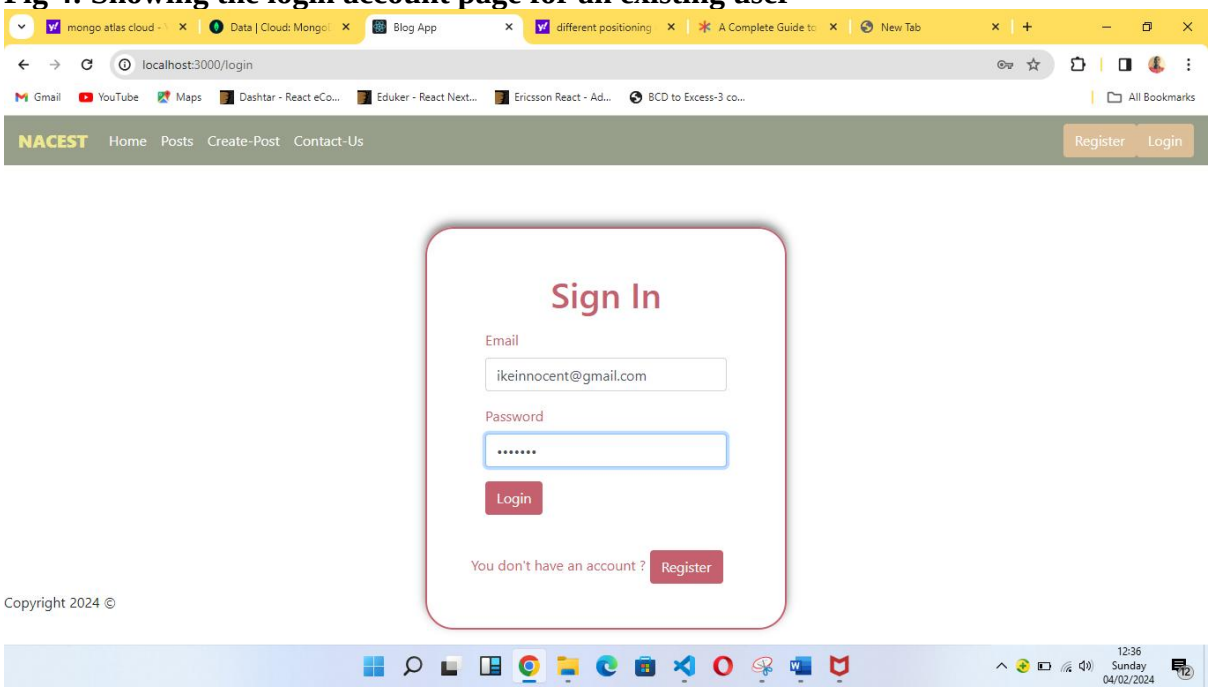


Fig 4: Showing the login account page for an existing user



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Fig 5: Showing the dashboard of various activities on the counseling system

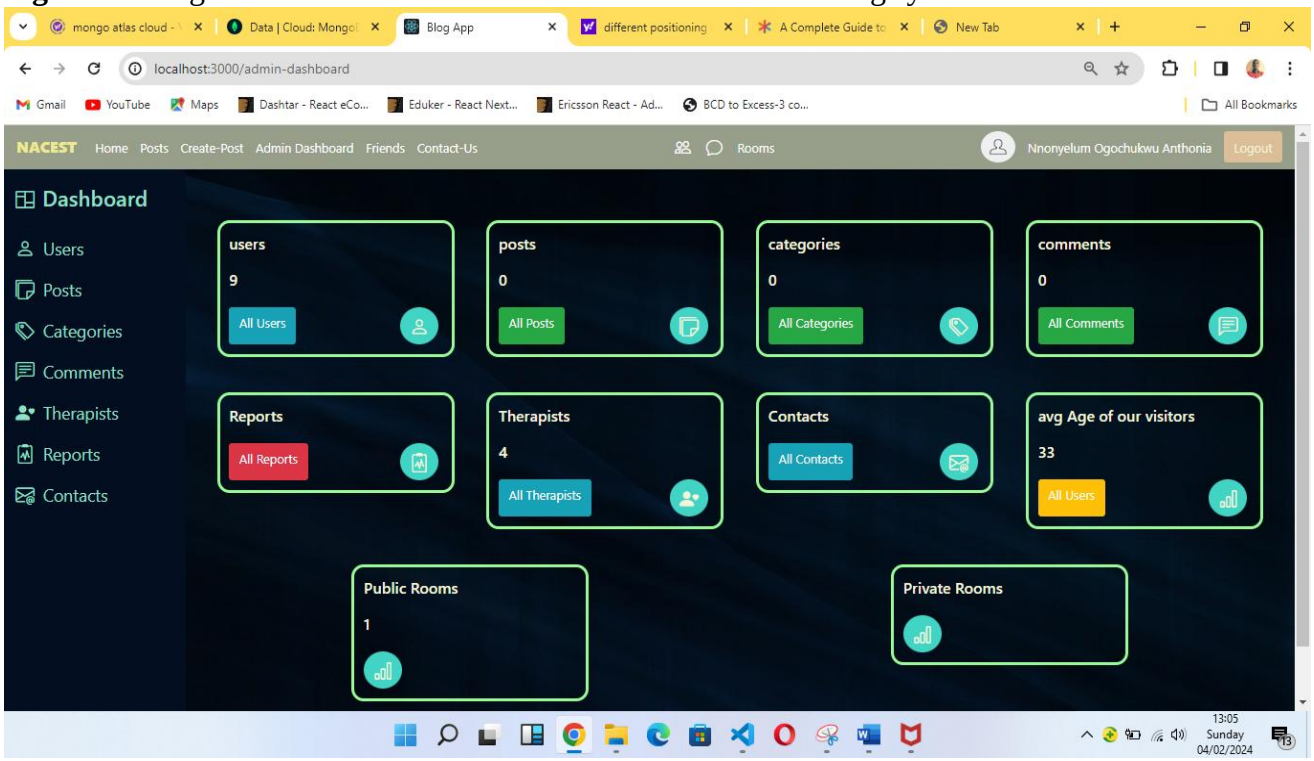


Fig 6: Showing the Therapist/Counselors page

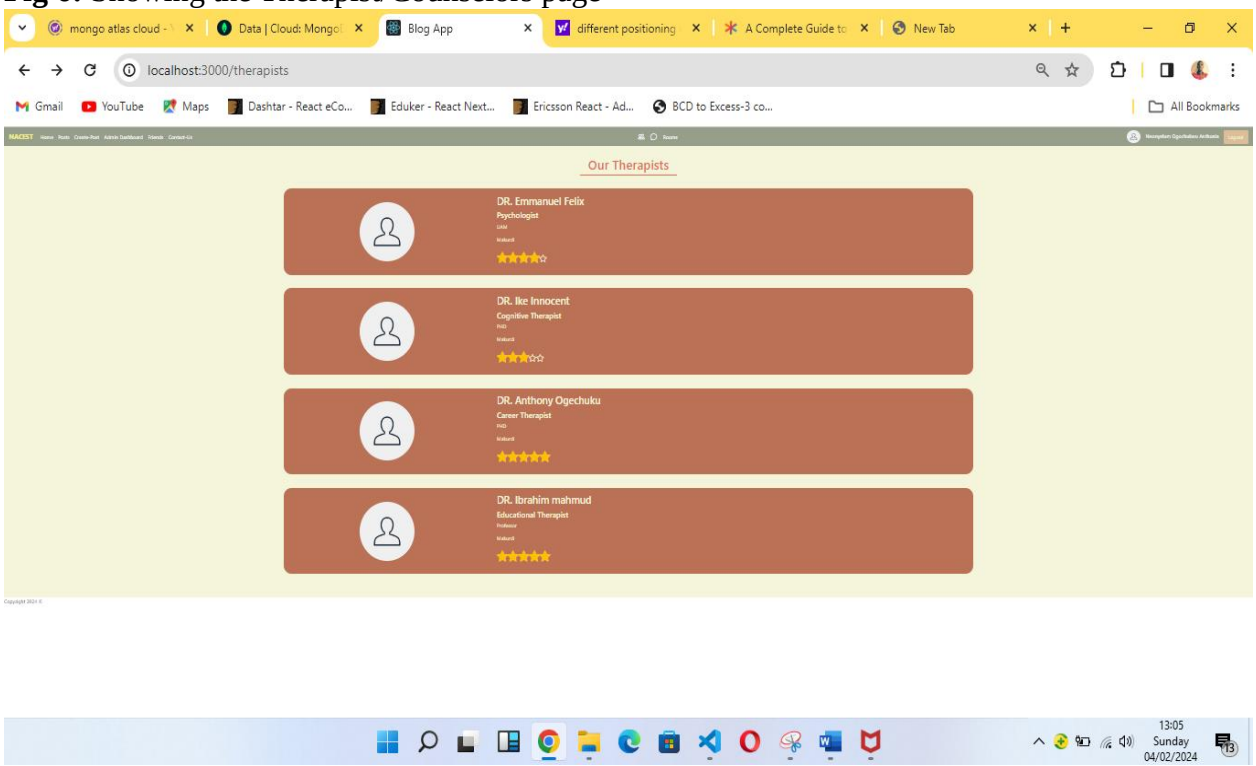


Fig 7: Showing the Home Page of Application Counseling

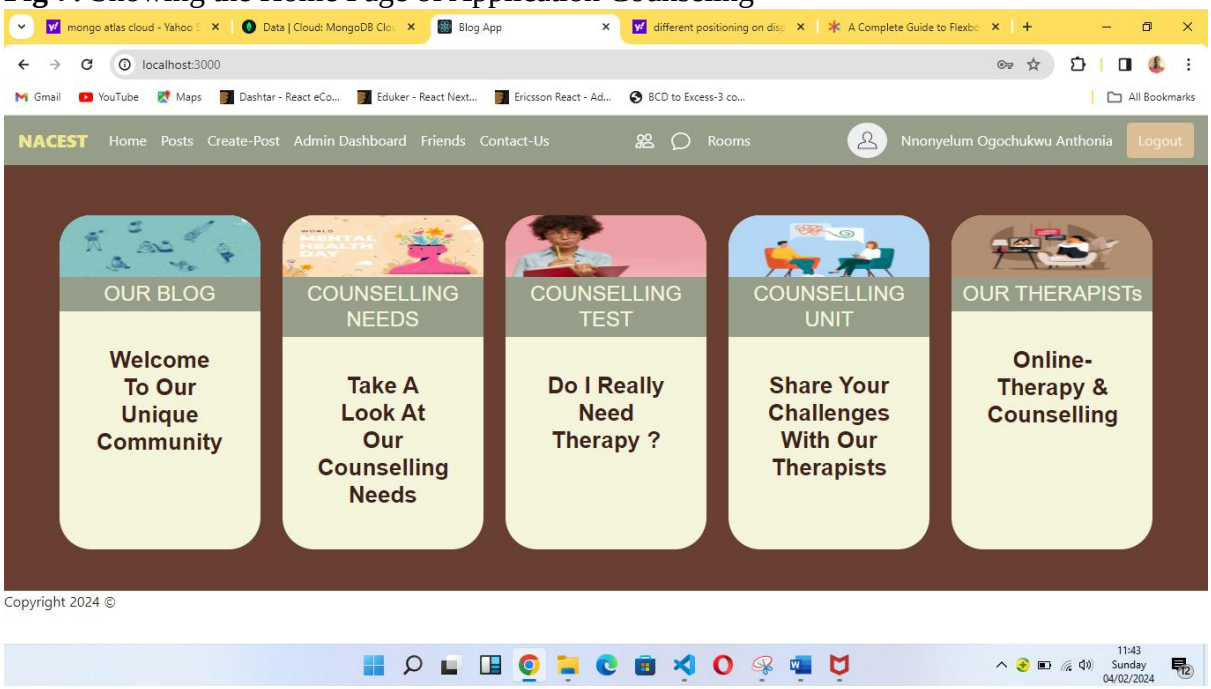
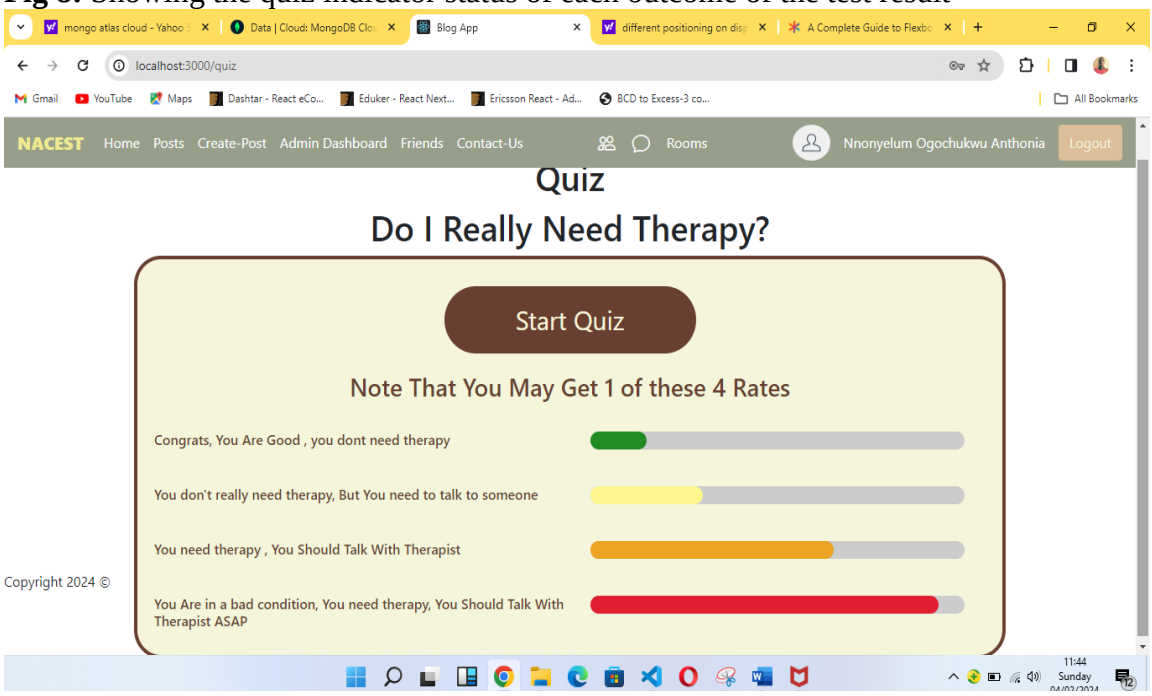


Fig 8: Showing the quiz indicator status of each outcome of the test result



Indicator Status
Green: You are good and do not need a therapist
Yellow: You don't really need a therapy. But you need to talk to someone
Orange: You need a therapy, you talk with a therapist
Red: You are in a bad condition and you need a therapist immediately.

Fig 9: Showing a conversation between a therapist and user during counseling

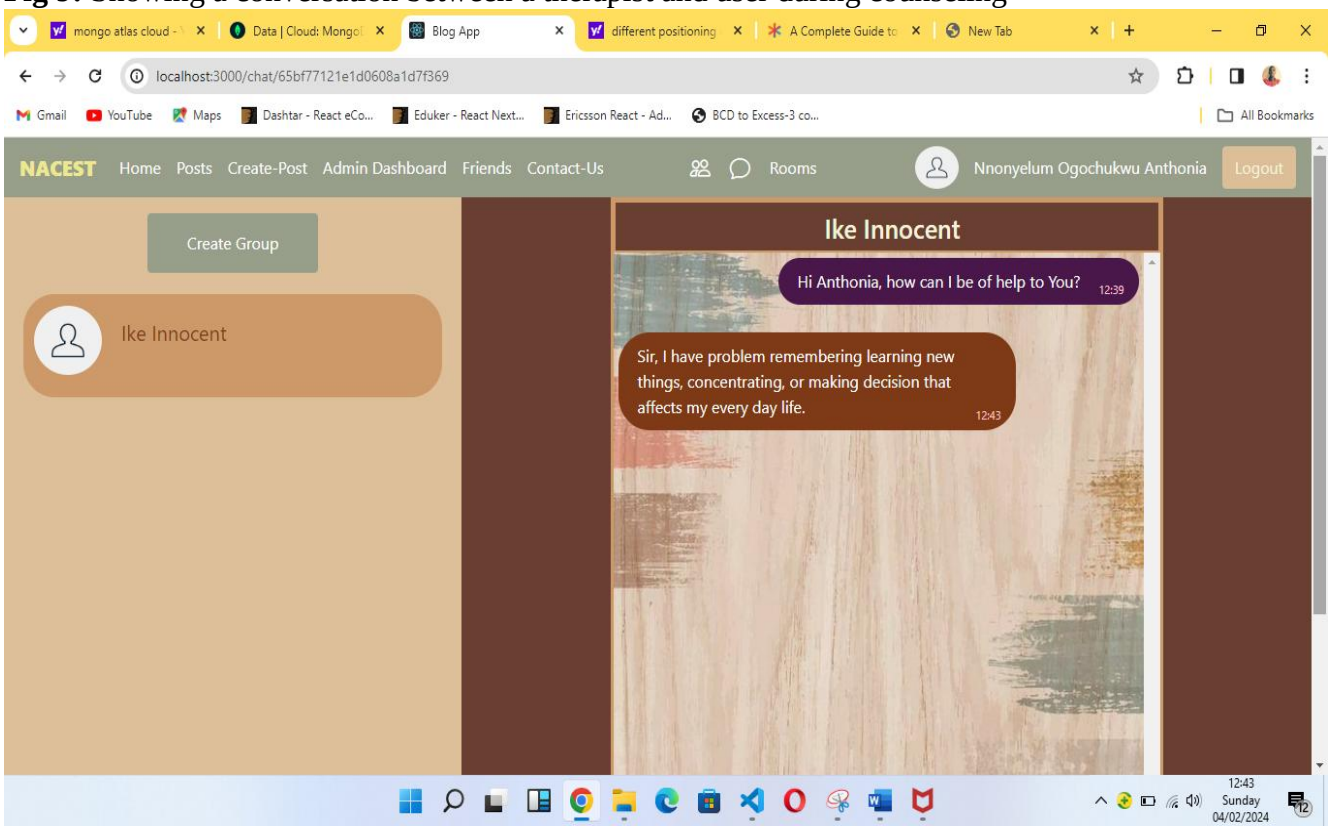
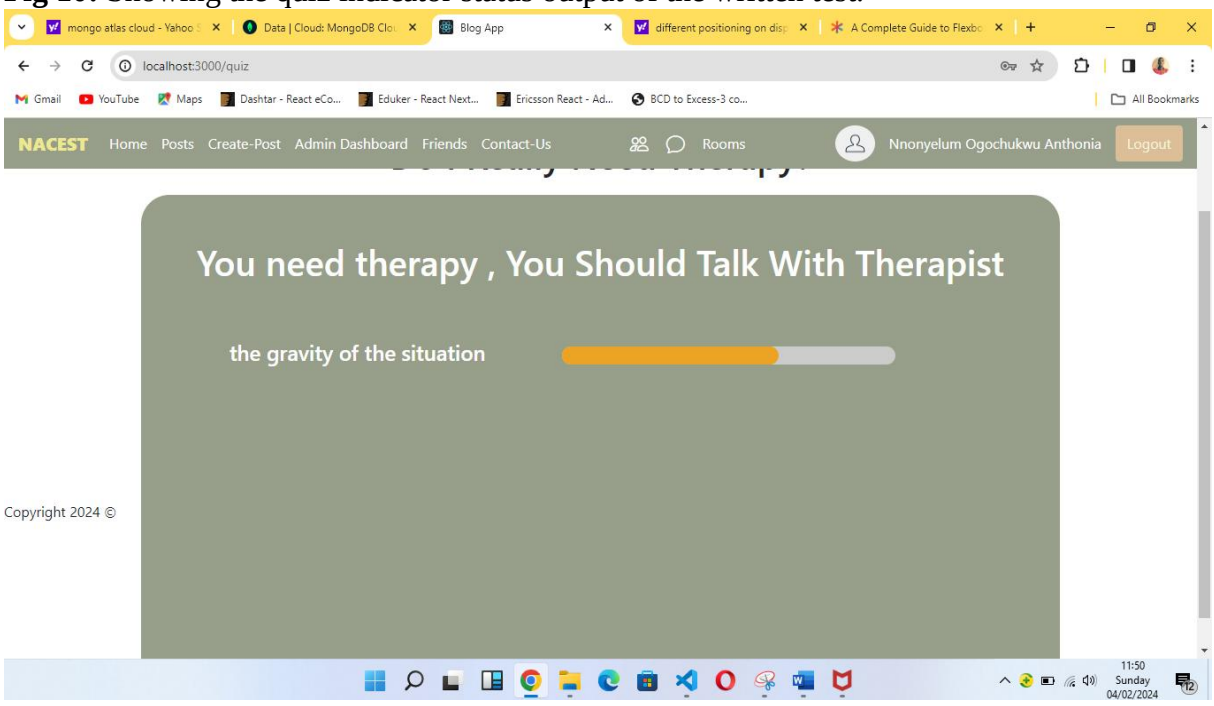
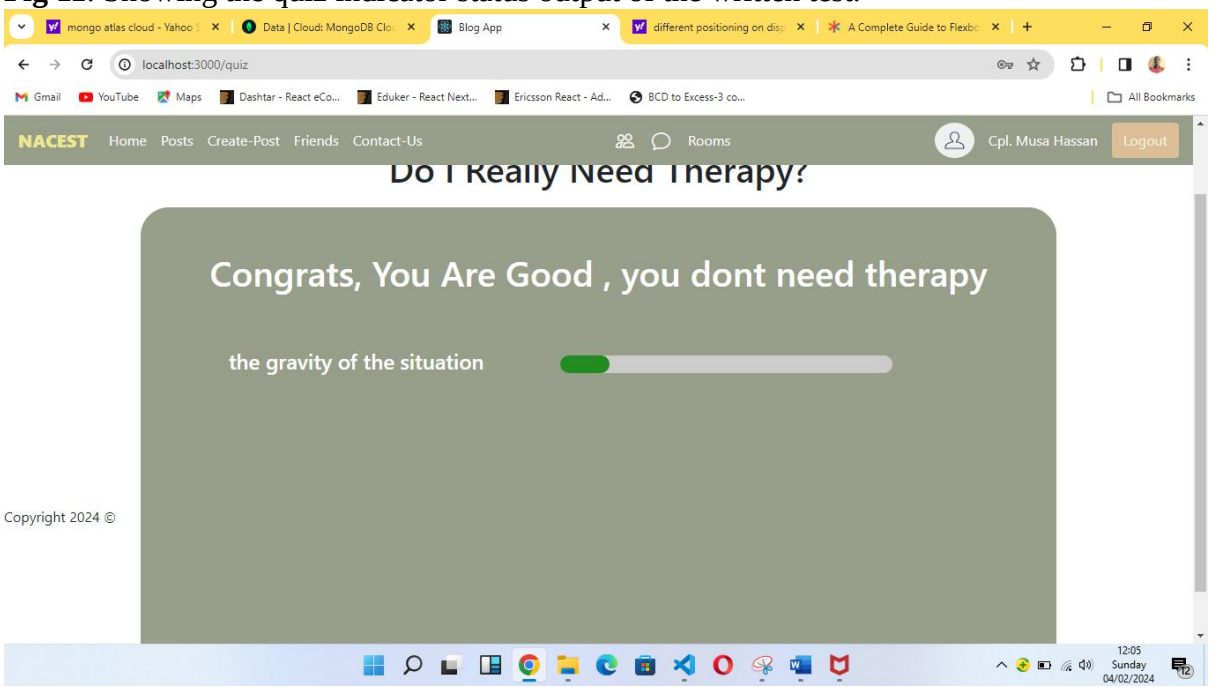


Fig 10: Showing the quiz indicator status output of the written test.



From Fig 4 show the result of a user whose quiz result shows that he needs a therapist as recommended by the counseling application system.

Fig 11: Showing the quiz indicator status output of the written test.



Features

Easy Use: Access to information and records can easily be checked on various modules.
Friendly Graphical User Interface: The software can be used with ease as regards to users.
Resourceful and dependable: Keeping all student data on a spreadsheet or in physical records would be inefficient compared to maintaining a secure database on the server that is accessible to users as needed and requires no maintenance.

Easy to Maintain: The Online Student Counseling System is intended to be easily navigable by users. Thus, upkeep is also easy.

V. Conclusion

Result from the various snapshots shows that the counseling system was effective. Users were able to create account, sign in and take counseling quiz, then the system display the quiz test including their indicator and also determine if they need a therapist or not. It also, output the conversation between a therapist and a (client). As such, students with Psychological, Cognitive, Career, and Choice of Educational status challenges can easily be attended to with aid of the system.

Consequently, the Student Counselling System led to a better organization structure for counseling of the students and also helps better fluency of counseling as well as efficient utilization of available resources. The system also utilized resource efficiently. The automated system also helps in reducing human errors, efforts and time towards counseling.

Recommendation

The system is recommended for Nigeria Army College of Environmental Science and Technology, all Tertiary institutions in Nigeria. As when implemented, the system will be able to solve several problems the students in higher institutions are encountering.

Acknowledgement:
I acknowledge Tertiary Education Trust fund (TedFund) for the support in carrying out this research.

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