

From Re-Modelling to SCIMMA: A Smart Way of Inspiring Users to Connect, and Engage Services of a Nigerian University Library

INTRODUCTION



The Federal University of Agriculture, Abeokuta, Nigeria is one of the three specialized Universities of Agriculture in Nigeria. It was established in 1988 with a tripartite mandate of teaching, research and extension services in agricultural development. The role of the library as a resource centre has always been acknowledged right from the time of the founding fathers of the University. The University library therefore, has always been innovating its services to enhance her users' experience. In 2017, the library space was re-designed, thus creating more space for people to connect, explore and learn. This inspired our users to ask for more enhanced services. The reality of this became more obvious during COVID-19 pandemic, hence, the library applied for, and won an 'Institutional Research Based'(IBR) grant in 2021 sponsored by TETFUND to develop a 'Microservice-Based Social Media Centric Instant Messaging Mobile Application' (SCIMMA) to boost the library services delivery. Social media has been known to be used for personal daily activities and social interaction. It is now being used for academic and educational purposes. We therefore, felt it would be an ideal application to reach out to the contemporary 'born-digital' and 'tech-savvy' generation of library users who prefer their information needs are met round the clock and beyond the confines of traditional library borders. SCIMMA is thus, a mobile app specially designed for collaborative value-added library services without incurring extra cost of Internet provision or bandwidth consumption. It is based on microservices architecture; the app is still in progress and will be fully developed before the end of the year 2022. It is hoped that the app will enable, inspire, connect and engage the users especially in uncertain times.

RE-MODELLING THE LIBRARY SPACE

Old Reference Section



Now Known as Learning Common Room



Old Reference

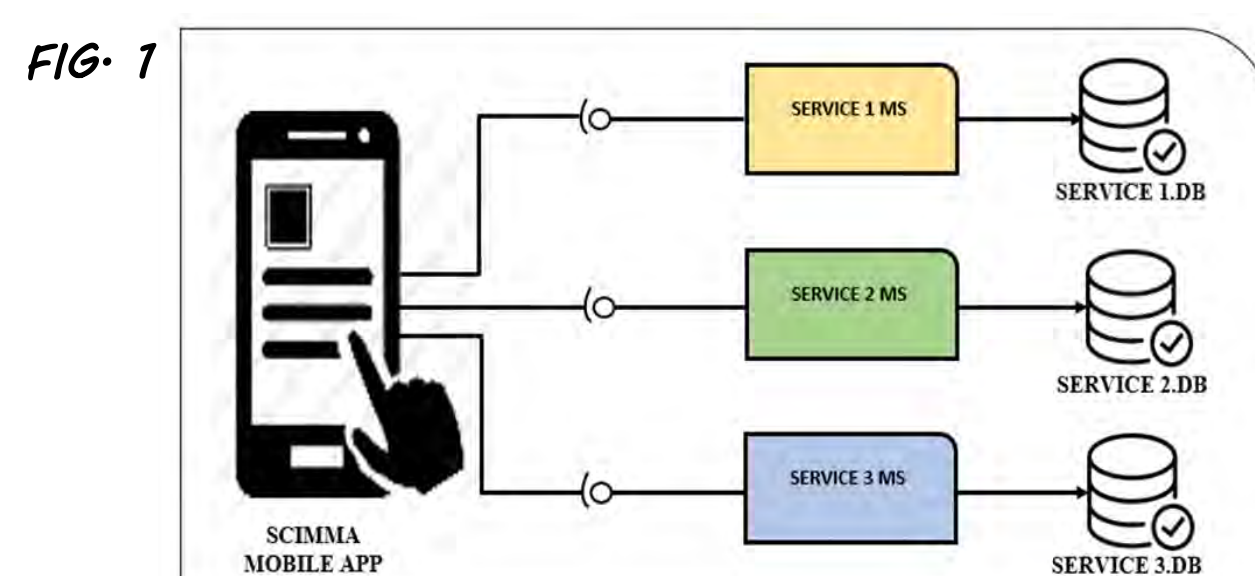


New Learning common



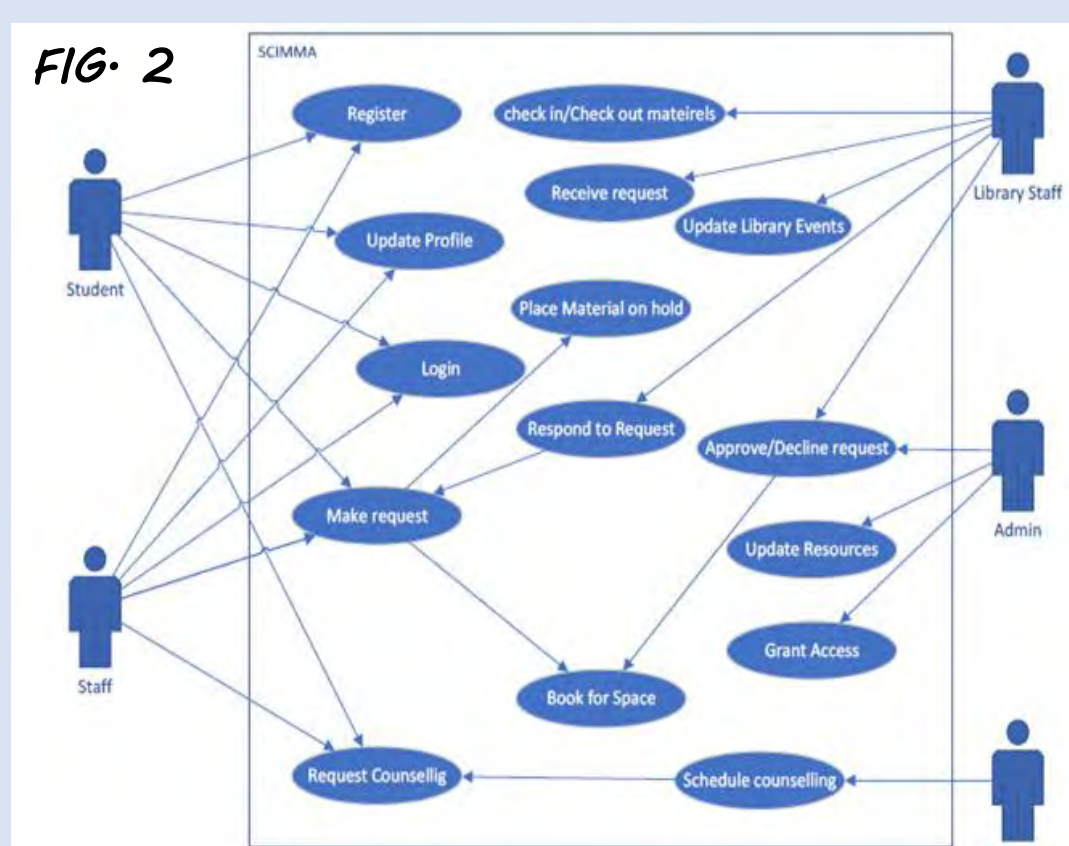
The Social Media-Centric Instant Message Mobile App (SCIMMA)

- The advent of ICT has made access to information now very fast through the internet. Users these days want ready information within their reach, thereby accessing information from any location. Unfortunately, there are many services being provided by the library that users are not accessing or use due to lack of awareness.
- Library users are not aware of the various resources and services available in the library. Most users depend on the internet to source for information and this have brought about under-utilization of library services. It has therefore, become important for libraries to publicise its resources and services.
- There is sporadic increase in the use of social media by internet users for their various activities like research, education, information and entertainment. Social media tools are very indispensable for communicating, interacting, and collaborating with friends, researchers, lecturers and other users in the social space. Libraries now adopt the social media template to reach out to their users.
- Amidst these library services is a unique one that attend to the needs of students with going into depression which is called Bibliotherapy. Bibliotherapy is a creative arts therapy modality of the use of books through reading of specific texts with the purpose of healing depression. Depression has found its way into many students and there has been cases of suicide in HEIs in Nigeria due to depression.
- Nigeria is set to continue to be relevant in the community of libraries, and to also rank among its peers across the globe. Furthermore, noting the economic situation in Nigeria which may not guarantee the availability of the tools needed for an effective use of internet facilities for the delivery of library services by academic libraries, social media-centric instant messaging mobile app will bridge this gap.
- The social media-centric instant message mobile app is proposed to be an application for a specialised and collaborative value-added way of rendering library services without incurring extra cost whether on internet provision or bandwidth consumption.
- The theory on which this study is based is microservices architecture. Microservices are a trend in software architecture that emphasizes the design and development of highly sustainable and scalable software.
- Theoretical Framework
- The architecture of the proposed solution follows the principles of the microservices architecture model. As already mentioned, each library unit has its specific set of services offered. Taking this into consideration, the proposed architecture will allow, for example, a catalogue unit to use only the unit module and other general management modules, without having to bear the costs of maintaining modules related to other services that are not even used and provided.
- In another example, the architecture will make it possible to manage instances of each microservice in a flexible way, thus allowing to meet the requirements of a more demanding service. The structure of the proposed architecture is presented in Figure 1.



The Architectural Design

- In this architecture, the services offered by the library are represented by blocks (Automation MS, Reader services MS, Bibliotherapy Clinic MS and Readers' advisory service MS, Selective Dissemination of Information/Current Awareness services, Library) where MS indicates that it is a microservice, where each block represents a self-contained and independent microservice, thus fitting with the assertion that each service must have a single purpose and be responsible for only one of the application's logical contexts.
- It is important to clarify that Figure 1 represents a narrow view of the proposed Framework. Thus, the complete framework integrates a much higher number of blocks or microservices.
- The architecture's microservices are organized according to the services offered by each library units. For example, Cataloguing MS represents the microservice of the architecture responsible for the logical processes related to Catalogue services. Similarly, the Reference MS and the Bibliotherapy Clinic MS are responsible for the specific rules of each specialty, for example, holding psychological counseling meetings.
- In a microservices architecture, it is essential that the components communicate with each other using simple mechanisms [12]. Thus, in Figure 1, these mechanisms are symbolized by the interfaces linked to the microservices, representing the APIs (Application Programming Interfaces) that provide communication to the microservices to which they are interconnected.
- The requests made to the microservices APIs are carried out through the use of another component of the architecture, which is called SCIMMA MobileApp. For the architecture, this component is a mobile application responsible for building the interface presented to the user, as well as for intermediating requests to the other microservices. This way, the SCIMMA mobileApp works as a Gateway API, abstracting all the APIs from the other microservices, receiving requests and designating them to their proper destination.
- Thus, the SCIMMA MobileApp assumes the role of orchestrator, controlling the destination and traffic of requests to avoid the congestion of requests sent to the target microservices. Since it is in front of the microservices, the SCIMMA mobile App performs authorization/authentication functions related to the requests originating from the users.



THE ARCHITECTURAL DESIGN

FIG- 3

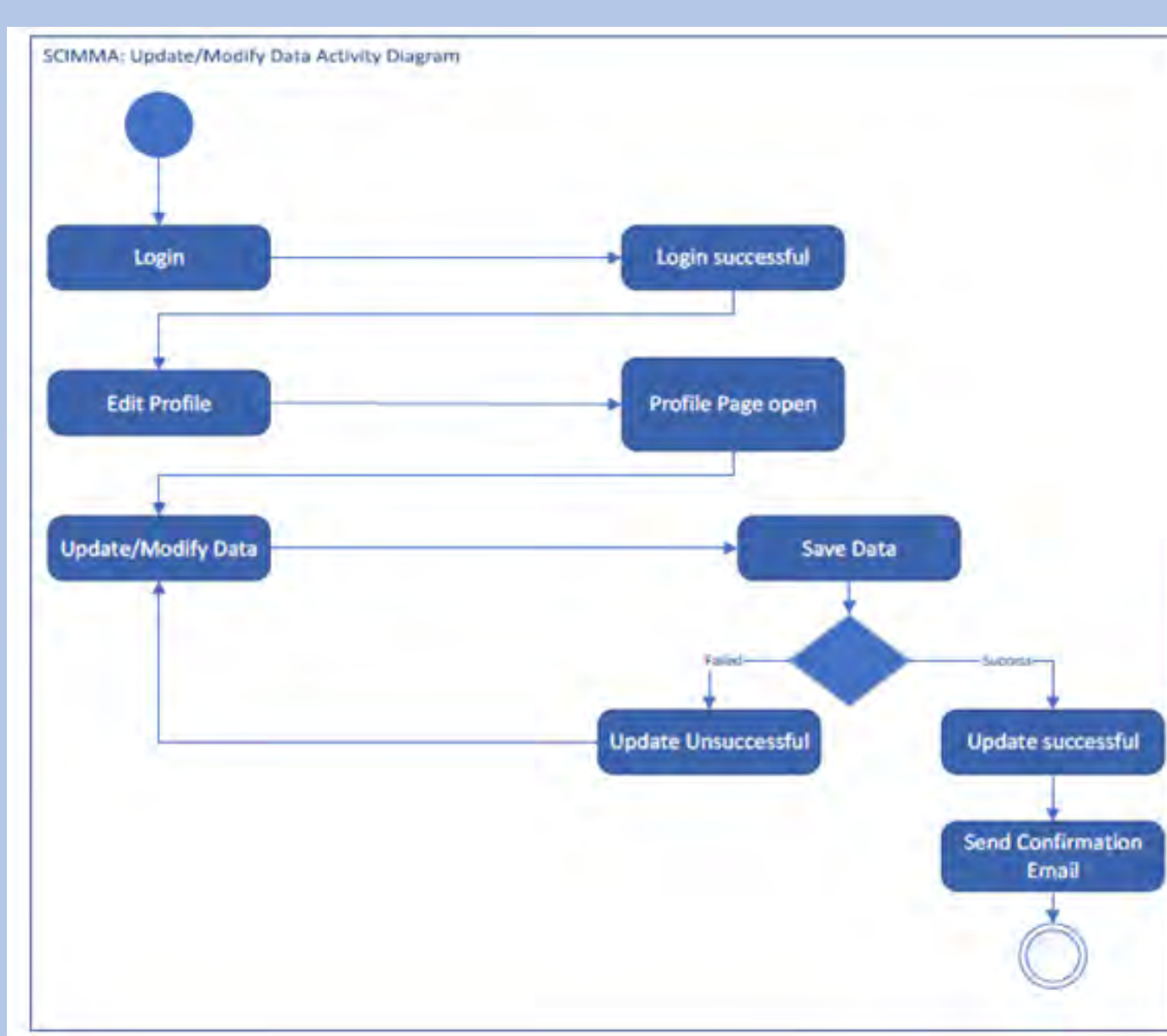
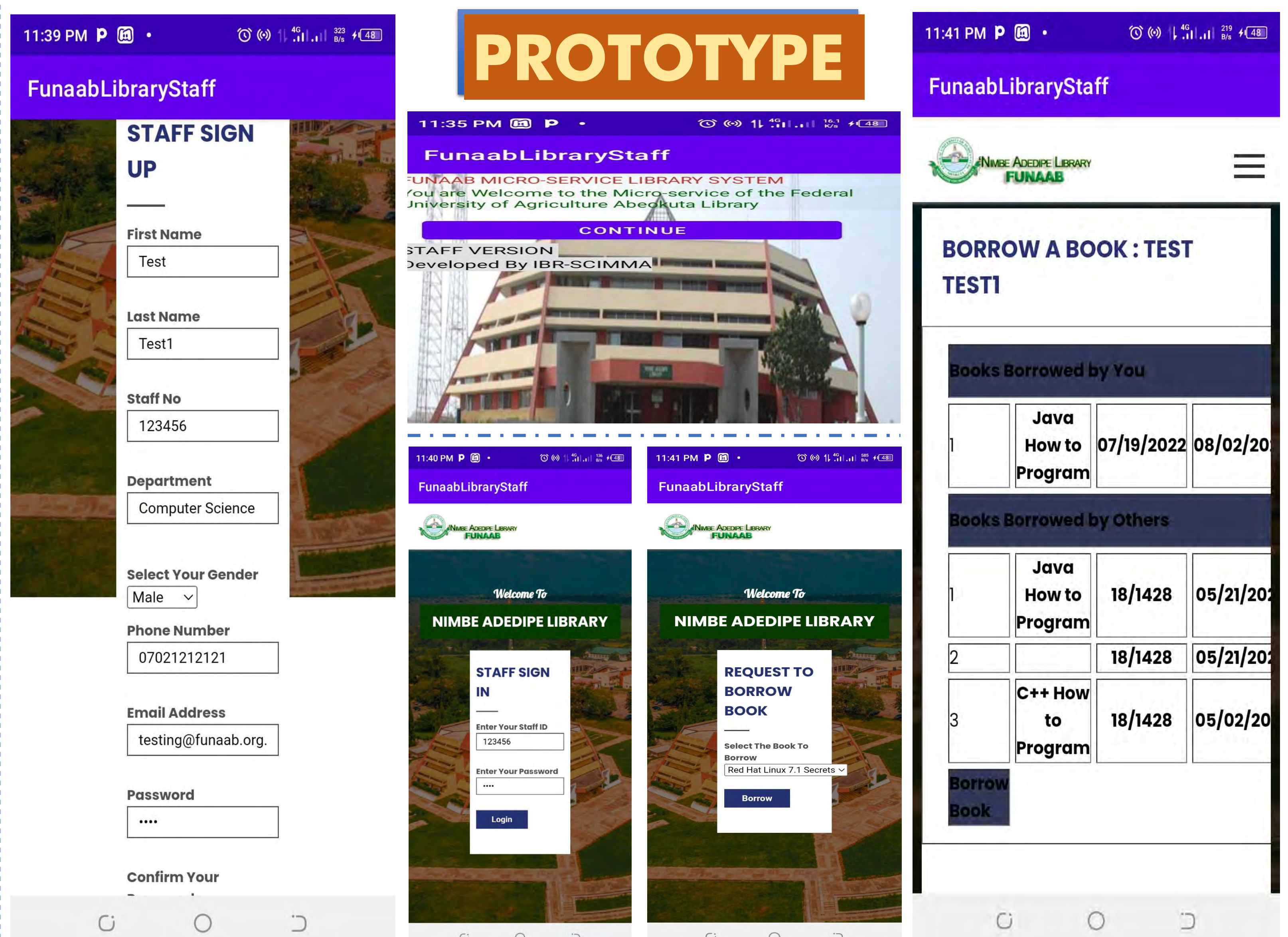
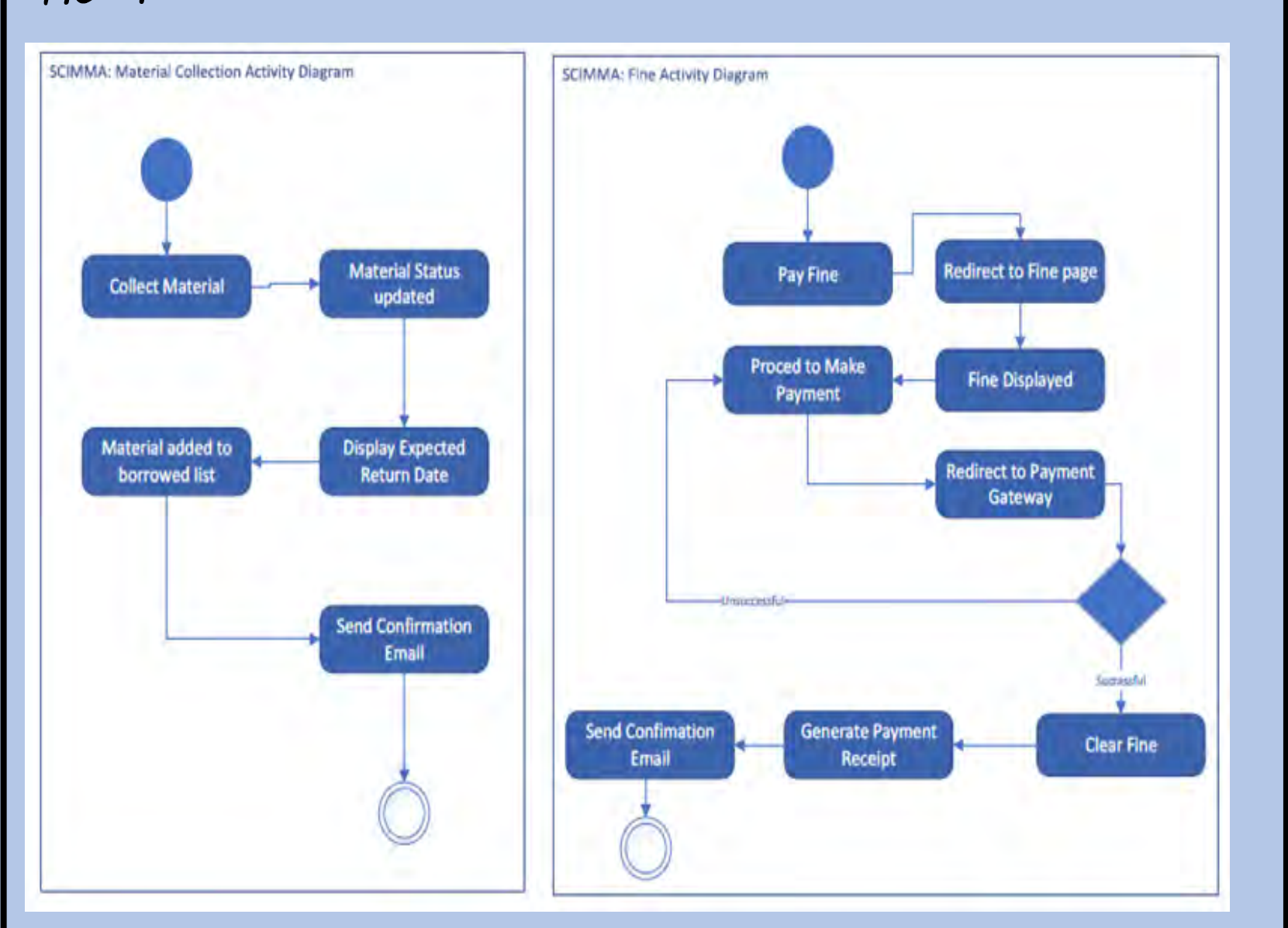


FIG- 4



APPRECIATION AND ACKNOWLEDGMENT

- It is our belief that when the App is fully developed it will enable the library to reach out to a large number of our users.
- It will also enhance the library service delivery in our University
- Acknowledgement**
- We hereby express our gratitude to the Federal University of Agriculture, Abeokuta, (FUNAAB) Nigeria for granting us this opportunity to developed this App through the Institutional based research grant (IBR).
- We also acknowledged the Tertiary Education Trust fund (TETFUND) for making the grant available.

