ONLINE PAYMENT GATEWAY

By

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A PROJECT SUBMITTED IN THE DEPARTMENT OF COMPUTER SCIENCE AND MATHEMATICS, COLLEGE OF BASIC AND APPLIED SCIENCES, IN PARTIAL FULLFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE.

2022

DECLARATION

I hereby declare that this project written by me is a record of my own research work. It has not been presented in any previous application for a higher degree of this or any other University. All citations and sources of information are clearly acknowledged by means of reference.

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ADEBAYO, DAVID OLUWANIFEMI

_____

Date

CERTIFICATION

This project titled, "**ONLINE PAYMENT GATEWAY"**, prepared and submitted by **ADEBAYO DAVID OLUWANIFEMI** in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN COMPUTER SCIENCE,** The original research work was carried out by her under by supervision and is hereby accepted.

_____ (Signature and Date)

Dr Mebawondu Akindele

(Supervisor)

_____ (Signature and Date)

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Coordinator, Department of Computer Science and Mathematics.

DEDICATION

This Project is dedicated to the giver of life and wisdom: The Almighty God.

Acknowledgment

I owe my profound gratitude to giver of life, wisdom, courage, divine help and provisions, God almighty, for giving me the strength and capacity to successfully complete this project. I express gratitude to my supervisor, Dr Akindele for his guidance and counsel in the course of this project, God bless you sir. My heart-felt gratitude goes to the Ag. Dean, College of Basic and Applied Science- Dr Ofudje and all other members of the department of Computer science.

I heartily would like to thank my parents, Mr and Mrs Adebayo, and also my siblings, thank you all for your moral and financial support. I am grateful for all the investments into my education and future. I would not forget to remember all the students in the Department of Computer Science and Mathematics, for making my stay a worthwhile one, I say God bless you all richly.

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ABSTRACT

A payment gateway is a merchant service offered by an e-commerce application provider that allows e-businesses to process credit cards or direct payments. This school fees payment gateway is a research project that will provide a reliable method of taking payments from Mountain Top University students.

The objective of this paper is to develop and implement a sophisticated payment gateway that helps the university accepts payment in various currencies and even crypto-currency. This paper also explores the enhancement of the existing based payment gateway, using Inter-switch as the case study.

In order for the objectives of this paper to be actualized, Android-Java shall be used to develop the system so as it enable it a cross-platform software. We shall also be using an SDK (System Development Kit) of a popular fin-tech organization known as Paystack. Observation and thorough study of existing system would be utilized to gather information.

This project is made able to develop an efficient payment gateway which provides solutions to the drawbacks of the existing payment system used in Mountain Top University.

Keywords: Payment gateway, School fees, cross-platform, crypto-currency, flutter framework, inter-switch, System development kit.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

A payment gateway is a merchant service offered by an e-commerce application provider that allows e-businesses to process credit cards or direct payments. This school fees payment gateway is a research project that will provide a reliable method of taking payments from Mountain Top University students.

Online buying has become widespread in today's world, and using online payment offers a variety of benefits to both sellers and customers. Transactions that take place over the internet must go via a payment gateway to be processed. In practice, payment gateways serve as a conduit between the financial institutions in charge of the money transfer and the vendor's website.

Different factions are involved in the online payment process (as depicted in Figure 1) for selling and purchasing things when doing business over the Internet. An electronic Payment Gateway is a critical component of online transactions, and it is designed to reassure clients that their transactions are secure in every way.

An E-Commerce Payment Gateway is a critical piece of infrastructure that ensures that such transactions go off without a hitch and that the general security of electronic systems is preserved. A Payment Gateway serves as a point of entry into the national banking system. Every every online transaction must be processed through a Payment Gateway. A Payment Gateway connects connected banks and factions to route and

confirm payment details in incredibly secure ways. The Payment Gateway functions essentially as a "encoded" system.

Classification of Online Payment Systems

There are a slew of online payment services that have emerged in the payment system all around the world. Electronic cheques, e-cash, credit cards, and electronic fund transfers are examples of these.

1. Mobile Payments

Payments done via wireless devices such as smart phones and mobile phones are expected to lower transaction fees while also improving online payment security and convenience. Businesses have been able to obtain useful information on their clients and their purchases thanks to this payment mechanism. Mobile payment systems, according to , are applicable globally as a result of the phenomenal expansion and outright penetration of mobile devices in compared to traditional forms of telecommunication infrastructure.

It has been discovered that mobile payments can be utilized for both online and offline micro payments. Because mobile phones have such a large user base, online merchants may be drawn to this payment option. The use of mobile payment services lowers overall transaction costs while also improving security [50]. Nonetheless, their inability to meet international payment and privacy requirements has hampered its ability to attract a large user base.

2. Mobile Wallets

"A mobile wallet is produced when your smart phone acts like a leather wallet: it can include digital coupons, digital money (transactions), digital cards, and digital receipts," according to Doan (2014). Mobile wallets allow customers to download an application to their smart phones that they may use to make both offline and online purchases. Mobile wallets are expected to provide users with additional convenience in making transactions in the future, thanks to technologies that connect smart phones to the physical world via sound waves, cloud-based solutions, NFC (Near Field Communication), QR codes, and other means.

1.2 Statement of The Problem

In spite of the numerous advantages of the online payment systems, the university is facing a number of difficulty and challenges.. The challenges which have been identified such as not so good user interfaces, limitations to number of currency accepted on the platform, limited features on the payment platform e.t.c.

Hence, the main focus of this work is to design a payment platform that can be deployed by the university to accept whatsoever payment from the students.

1.3 Aim and Objectives of The Study

The objective of this paper is to develop and implement a sophisticated payment gateway that helps the university accepts payment in various currencies and even crypto-currency.

1.4 Scope of Study

This study focuses on the design and implementation of a mobile payment application named MTU Stack for helping Mountain Top University accept payments from her students.

1.5 Significance of Study

FOR MOUNTAIN TOP UNIVERSITY

The application will be used to accept all sort of payment in the university which cut-across maintenance fee, school fees, covid-19test fee, entrepreneurship fee, health care fee e.t.c. It would also enable foreigners who would like to enroll to the university able to pay their fees with their foreign currency.

Other educational institutions can also utilize this system and improve their payment system and save time.

1.6 Organization of Thesis

This project work has been organized into five (5) chapters: the remaining part is divided into four more chapters as follows:

a) Chapter Two: In chapter two, relevant literatures on the topic and related subject matters are fleshed out. The chapter also contains past works which are intensively reviewed. These were done to perfectly understand the full details of electronic payment gateway.
b) Chapter Three: This chapter explains the procedure deployed in the building (the development and implementation) of the software, MTU Stack.

c) Chapter four: Here, the result of the implementation in chapter three is presented. The tools used in the development are to be showcased. The way it works is explained.

d) Chapter five: This is the chapter where a brief summary of the whole project work is to be given. Some conclusions to be drawn and recommendations to be given as well.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

A payment gateway is a merchant service offered by an e-commerce application provider that allows e-businesses to process credit cards or direct payments. This school fees payment gateway is a research project that will provide a reliable method of taking payments from Mountain Top University students.

Payment is the action or process of paying someone or something or being paid. While payment gateway is a merchant service provided by an e-commerce application provider that authorizes credit cards or direct payments for processing for e-businesses (Sparklyn, 2022).

Every financial system strives to make it as simple and convenient as possible for their consumers to pay, therefore they provide a variety of payment options. A well-designed payment infrastructure aids in the smooth operation of firms and helps to reduce trade friction.

Services, assets, and products may not be transferred if the cost of the transaction exceeds the benefits expected from the trade. The availability of reliable and safe payment mechanisms for the transfer of funds is there for a sine qua non for the majority of economic interactions(that is,“no payment, no trade”) (Kokkola, 2010).

2.2 Related Concepts

2.2.1 Tranzgate

Tranzgate is a payment solution that provides users with multiple channels of collecting payments (Tranzgate, 2016).It is integrated with major switching firm Interswitch, Unified Payments and Remita to enable both public and private firms receive collections.

2.2.2 Flutterwave

Flutterwave is a fintech start-up located in Africa that provides payment infrastructure to international merchants and payment service providers across the continent. Iyinoluwa Aboyeji, Olugbenga Agboola, and Adeleke Adekoya formed the company in 2016, and it is headquartered in San Francisco, California, with operations in Nigeria, Kenya, Ghana, South Africa, and seven other African nations.

Flutterwave secured US$170 million in Series C funding in 2021. Flutterwave was classified as a unicorn at the time since this funding was the most ever received by an African software business, giving it a valuation of over US$1 billion. Y-Combinator, Visa Ventures, Mastercard, Avenir Growth Capital, and Tiger Global Management are a few of the companies that have invested in Flutterwave. Flutterwave raised a US$250 million Series D fundraising round at a valuation of over US$3 billion also in 2022.

Ayodeji Ibrahim Balogun, better known as Wizkid, a Nigerian Grammy Award-winning international musician, was appointed as the company's global ambassador when Flutterwave's Send, an African-focused remittances service, was

launched in December 2021. This move helped the company further establish its reputation among the diaspora's African population.

2.2.3 Paypal

PayPal Holdings, Inc. is an American international financial technology firm that operates an online payments system in the majority of nations that allow for online money transfers, and serves as an electronic alternative to traditional paper methods like cheques and money orders. The company charges a fee to act as a payment processor for online sellers, auction sites, and a variety of other commercial users.(PayPal Leadership). Paypal processes payments for internet retailers, auction sites, and several other business users for a fee.

Confinity, the company that founded PayPal in 1998, went public in 2002 through an IPO. Later that year, with a $1.5 billion market value, it became a fully owned subsidiary of eBay.PayPal was once again an independent firm in 2015 when eBay split out PayPal to its stockholders.The business was listed as the 143rd largest American corporation by revenue in the 2022 Fortune 500.

2.2.4 Stripe

Stripe, Inc. is an Irish-American financial services and software as a service (SaaS) firm with offices in both San Francisco and Dublin, Ireland. (Rudegeair Peter, 13 April 2021). Payment processing software and application programming interfaces (APIs) for e-commerce websites and mobile applications are the company's main offerings.

In 2009, Irish businessmen John and Patrick Collison established Stripe in Palo Alto, California. Co-founders of PayPal Elon Musk and Peter Thiel, Irish businessman Liam Casey, and venture capital firms Sequoia Capital, Andreessen Horowitz, and SV Angel contributed $2 million to the company in 2011.

Kickoff, a conversation and task-management tool, was purchased by Stripe for the first time in March 2013. The company relocated to San Francisco in 2012 from Palo Alto.The business announced its relocation from the South of Market neighborhood to Oyster Point in the neighboring city of South San Francisco in October 2019.

Mark Carney, a former governor of the Bank of England, was named to the Stripe board in February 2021. The accounting platform Recko was purchased by Stripe on October 20, 2021, and its product will be integrated to Stripe's current set of financial capabilities.

2.2.5 Paystack

Paystack is a Nigerian company that processes online payments. Paystack is based in Lagos, Nigeria, and was formed in 2015 by Nigerian software developers and lifelong friends Shola Akinlade and Ezra Olubi. Stripe purchased Paystack in a deal worth over $200 million on October 15, 2020, in order to expand Stripe's services beyond Africa.(Kene-Okafor, Tage, 15 October 2020).Prior to being acquired by Stripe, the company was said to be used by over 60,000 businesses in Nigeria and Ghana for online and offline payment collecting. Akinlade had more opportunities after Precurio's success, and banks began contacting him about developing software. The idea for Paystack first emerged while working on these initiatives.

"I've always known that the situation of payments wasn't what it should be, but I didn't believe it would be me. But just working with the banks, I just figured if there's someone who can figure out payments, it definitely would be me since I've previously produced world-class software and now that I have access, I know how the financial system works," he added.

Akinlade and his friend and co-founder Ezra Olubi completed a significant amount of the underground work within a year. Olubi was the ideal partner for Akinlade because he had previously worked on a payments business that failed. They faced a hurdle in bringing together the highly fragmented parts of the financial industry in order to address the problem of internet payments in Africa.

2.2.6 Interswitch

Interswitch is a local Nigeria financial services company headquartered in Lagos (Elegbe, 2015). Founded in 2002 as an Africa-focused integrated airtime seller, Mitchell Elegbe transformed the company into a digital payment corporation.

Mitchell Elegbe created the Interswitch company in 2002, and it has since developed into an integrated digital payments and commerce organization with a focus on Africa.

In 2010, a group headed by Helios Investment Partners purchased two thirds of the business. Interswitch acquired a 60% share in Uganda's Bankom in 2011.

Discover Financial Services and Interswitch signed a payment processing agreement in 2013.

Operations of Interswitch:

The Interswitch company was established as, common African financial services provider and maintains exclusively, a wide array of interconnected data centers in Africa.The company has over 11,000 ATM's on its network, with more users in Nigeria than anywhere else.

The Interswitch corporation was founded as a common provider of financial services in Africa and only operates a vast network of connected datacenters in that continent. With more users than anyplace else in the world, Nigeria is home to the majority of the company's over 11,000 ATMs.

Another division of Interswitch is the payment card business Verve. Kenya has also seen the release of Verve. Also owned by Interswitch is Quickteller, a company that offers payment services in addition to selling airtime for telecommunications.As a standard form of brand innovation, Interswitch Systems uses advanced firewalls and inter-networking security.

Quickteller introduced the Qtrybe community in October 2020. This group of talented students from Nigerian higher institutions will represent Quickteller and Interswitch on their campuses.

2.3 Drawbacks of Existing Payment Gateway (Interswitch)

Based on the analysis of existing systems, this section discusses limitations of Interswitch and other payment gateways used in Mountain Top University. These drawbacks were highlighted after a careful survey of the existing system among the students of the university.

I. High amount of charges on every transaction

The issue of charges on every transaction makes students prefer paying their fees as cash rather than paying online. Students use the platform to pay a lot of fees which cut across Health center fee, maintenance fee, vocational fee, sport fee, library fee and so on, and on each fee paid a charge of about a thousand naira is added. This has tremendously made student hate the platform.

II. Receipt do not reflect on the student portal

A huge percentage of the student of Mountain Top University have made it known that after payment has been made on the platform, they do not receive their receipt of payment on their student portal which therefore make them ineligible to resume on campus.

III. Poor user experience

User experience is how a user interacts with and experiences a product, system or service. The existing system makes it difficult for students to navigate through, therefore giving the users a tough time finding their way through the platform.

IV. Accepts just one currency

The existing payment platform used by Mountain Top University accepts only Naira. This is a limitationto the existing payment system.

V. Low tech support from the platform

Tech support is a type of advice service that is frequently delivered over the phone to clients who are having trouble utilizing a web app or a mobile app. The current method lacks technical support, which should have been available to assist students with any issues they may have while attempting to make payments.

2.4 Enhancement of Existing System

In the course of building this project, MTU Stack will provide quality solutions to the aforementioned drawbacks highlighted.

2.5 System Requirement Specification

The major users of this payment platform include students, sponsors and finance officers in the university finance department. Their requirement involve the following:

I. Students and sponsors should be able to enter transaction data into a user interface that accepts it.

II. Students/sponsors should be able to complete tuition payment online

III. Students/sponsors should be able to print and save evidence of payment

IV. Finance officers should be able to compile a report that summarizes all payments made through the system.

2.5.1 Functional Requirements

I. The system should accept valid input of registered student payment details

II. The system will include instructions on how to use the platform to make payments.

III. The system should provide feedback on the status of the transaction to students/sponsors.

IV. Finance administrators should be able to generate reports from the system.

2.6 Discussion

According to the debate above and after carefully observing and thoroughly researching the existing system, Mountain Top University's existing payment channels have cost students physical energy, time, and internet data. This new payment platform will help the university own its own payment platform, which will satisfy the expectations of the students,

CHAPTER THREE

METHODOLOGY

3.0 Introduction

Before proposing this project, we looked into the problems that university students were having when attempting to make a payment on the school's payment platform. This was done using a qualitative method, which included an informal interview with students.

This chapter explains the process used to design and implement MTU Stack to relieve the financial department's workload and provide a seamless transaction experience for Mountain Top University staff, parents and students.

As mentioned in chapter two of this project, this application is going to resolve the drawbacks of the existing payment system (Interswitch). Some of the problem includes;

i. High amount of charges on every transaction

ii. Receipt do not reflect on the student portal

iii. Accepts just one currency

iv. Low tech support from the platform

3.1 Method of Analysis

The suggested system was created with figma, a 21st-century software for product design and prototyping. Java was used to create the front end and back end of the payment platform, and SQLite was utilized as the database to hold the data of users on the platform.

3.2 Evaluation of Methodological Choices

The Java programming language was chosen for the payment platform implementation because it is an object-oriented programming language that can scale the application and is also simple to maintain.

3.3 System Analysis

System analysis depends on the model of the system. It is very important to carry out before implementing the system to be designed. It ensures that the system is designed accordingly. It involves a number of steps which the developing team followed in this project given. These include the following in the order at which it is stated:

i. **Requirements Identification:** Before designing, the design team ensured that they had their tools and outlined all the requirements needed so as to guide them during design.

ii. **Design:** After the system requirement and tools were in place, the project team knew all the entities and how the system should look and how it should function.

iii. **Implementation**: After the design analysis, the project team then implemented the design phase of the system.

iv. **Verification:** After designing the system, the team tested the designed system for bugs or errors and ensure that the system meets all the requirements and functionalities needed by the end users.

v. **Maintenance:** The system was maintained from time to time. For instance, adding new content, removing old content and improving existing content.

3.4 System Design

A design model is a simplified description of a software process, which provides process frameworks that may be extended and adapted to create more specific software engineering processes.

3.5 Software Development Life-cycle

Software Development Life Cycle is the application of normal business procedures to the development of software applications.

Processes involved in software development life-cycle are planning, analysis, design, implementation, testing and integration, and maintenance.

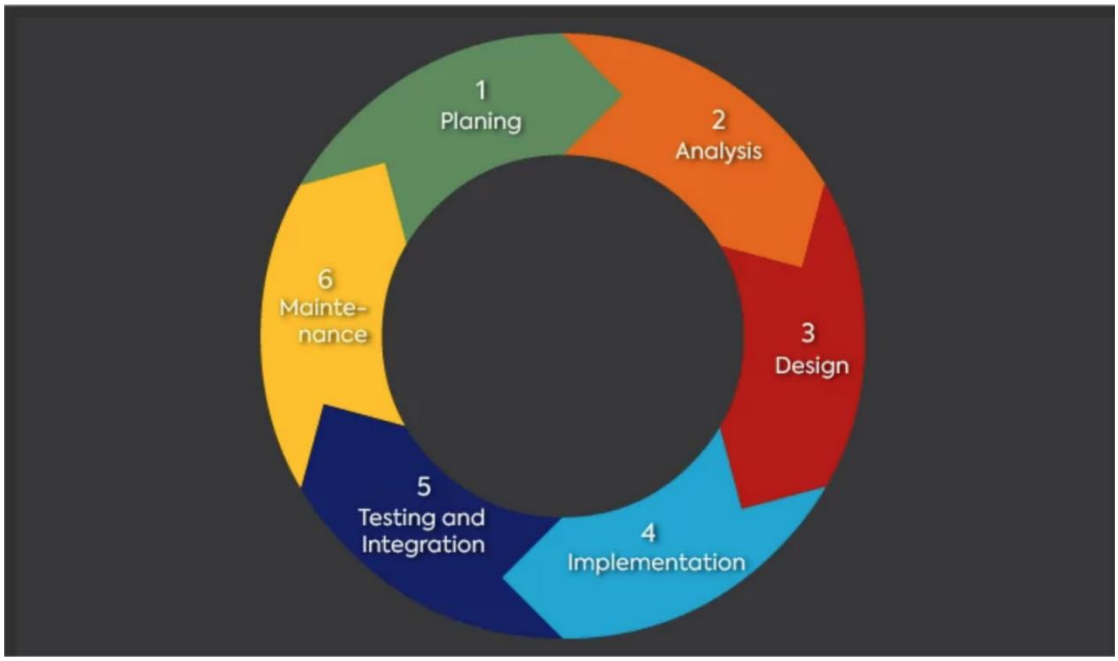


Fig 3.1 Stages in the SDLC

3.6 SDLC Methodology Used

Agile methodology is used in this project, the Agile paradigm is being used to manage this project as it is being developed.

Why Agile?

Project phases are separated into different phases using the Agile approach. At each step, it requires continued development as well as collaboration with stakeholders. As soon as work begins, teams go through a cycle of planning, carrying out, and evaluating. Both team members and project stakeholders must work together effectively.

Advantages of Agile methodology

i. able to accommodate additional adjustments or enhancements without a budget constraint throughout the development phase

ii. Rapid development and testing enable the identification of existing gaps in requirements or technology. This makes it simple to come up with different plans of action.

iii. aides development teams in identifying and resolving minor issues before they become major problems

iv. Because there is less documentation, it saves a lot of money and time.

3.7 System Design Tools

The design tools was divided into programming and product design. The main programming tool that was used for implementing the project throughout is ANDROID STUDIO.

Android is an open source mobile operating system that was created specifically for touchscreen mobile devices like smartphones and tablets. It is based on a modified version of the Linux kernel.

Applications for devices running the Android operating system are developed using the Android software development process. Google states that "Android apps can be written using Kotlin, Java, and C++ languages" using the Android software development kit, while using other languages is also possible.

3.7.1 Key Capabilities of Android

I. Beautiful user interface The default user interface of the Android operating system is stunning and simple.

II. Connectivity: GSM/EDGE, IDEN, CDMA, EV-DO, UMTS, Bluetooth, Wi-Fi, LTE, NFC, and WiMAX connectivity are all available.

III. Storage: For data storage, SQLite, a compact relational database, is employed.

IV. GCM: Without requiring a proprietary sync solution, Google Cloud Messaging (GCM) is a service that enables developers to transmit brief message data to their consumers on Android devices.

3.8 Identification of System Requirements

3.8.1 Functional Requirements

This is used to describe MTU Stack's specific functions or operations. The software's functional requirements are as follows:

I. When parents or students download and install the app on their mobile devices and are online, the app must offer a general page where the financial administrators can view a list of all the payments made by users.

II. The app must have a wallet that will enable students to save money for whatever purpose, and students should also be able to make transfers to their fellow students on campus.

III. The app should be able to allow the users i.e students, staffs and parents, conveniently lodge complaints and get timely response.

IV. The app should be able to suggest saving plans for students who would like to save money in their wallet. It should also be able to get feedback from users.

3.8.2 Non-functional Requirements

This summed up the app's behavior in terms of its functionality. It elucidates the app's performance characteristics. The majority of the system's non-functional needs were integrated at each stage of the software development process. Acceptability is the most

important non-functional need that this project will fulfill.

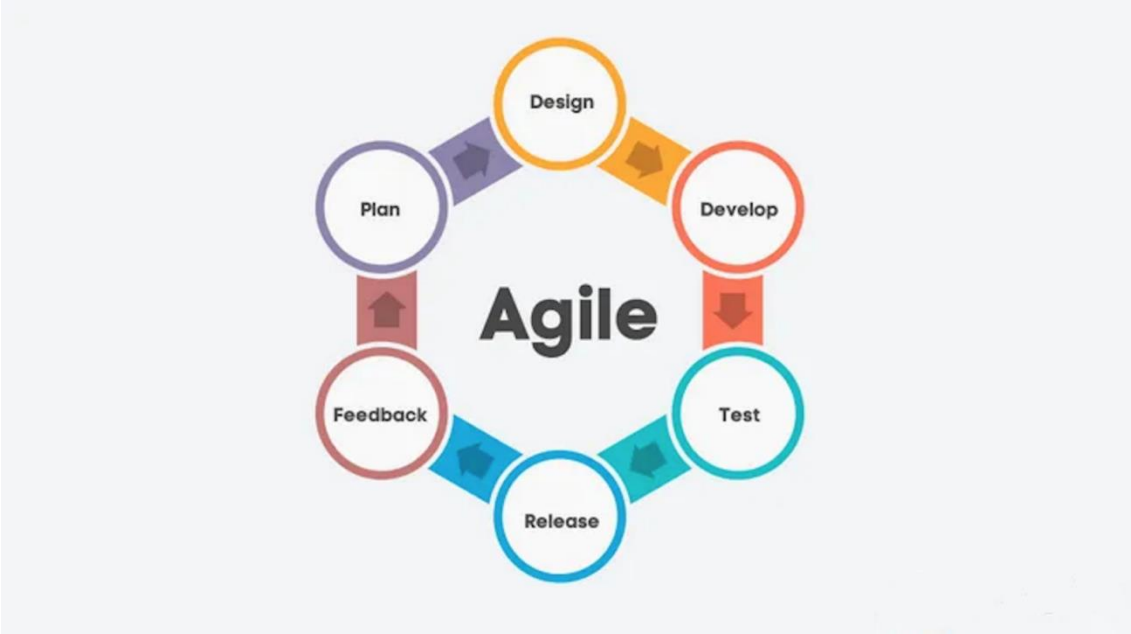


Fig 3.2 process of Agile methodology

3.9 Deploying Paystack software development kit (SDK) into MTU Stack

Paystack is a payment processing firm that assists African businesses in receiving payments from anyone, anywhere in the globe.

On their websites or mobile apps, Paystack allows businesses to take payments via credit card, debit card, money transfer, and mobile money.

Paystack payment software development kit was used to accept and process payments in this project.

What is an SDK?

SDK (short for software development kit) stands for software development kit. It's a collection of software tools and programs that developers utilize to create apps for various platforms.

SDK tools will feature a variety of items that developers may utilize and incorporate into their own projects, such as libraries, documentation, code examples, workflows, and instructions. Software development kits (SDKs) are tools for creating software that are specialized to particular platforms or coding languages.

Why are SDKs important?

A lot of this pre-built functionality would need to be created from scratch without an SDK. Because everything is pre-built, SDKs not only allow you to create new tools quickly, but also facilitate the process for all parties. Simply making new features work with the current system is all that is required.

Qualities of an Effective SDK

1. Easy for other developers to use
2. Complete documentation that details how your code operates
3. sufficient functionality to enhance the value of other apps
4. Does not adversely affect the CPU, battery, or data usage of a mobile device.
5. Compatible with different SDKs

Fig 3.3 Paystack SDK documentation page

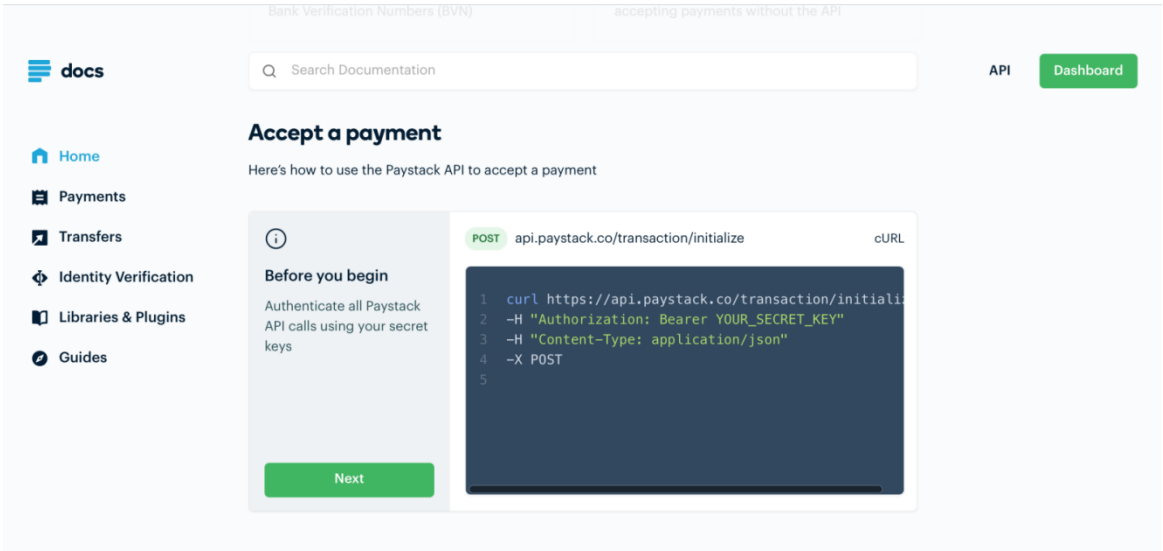


Fig 3.4 Paystack documentation homepage

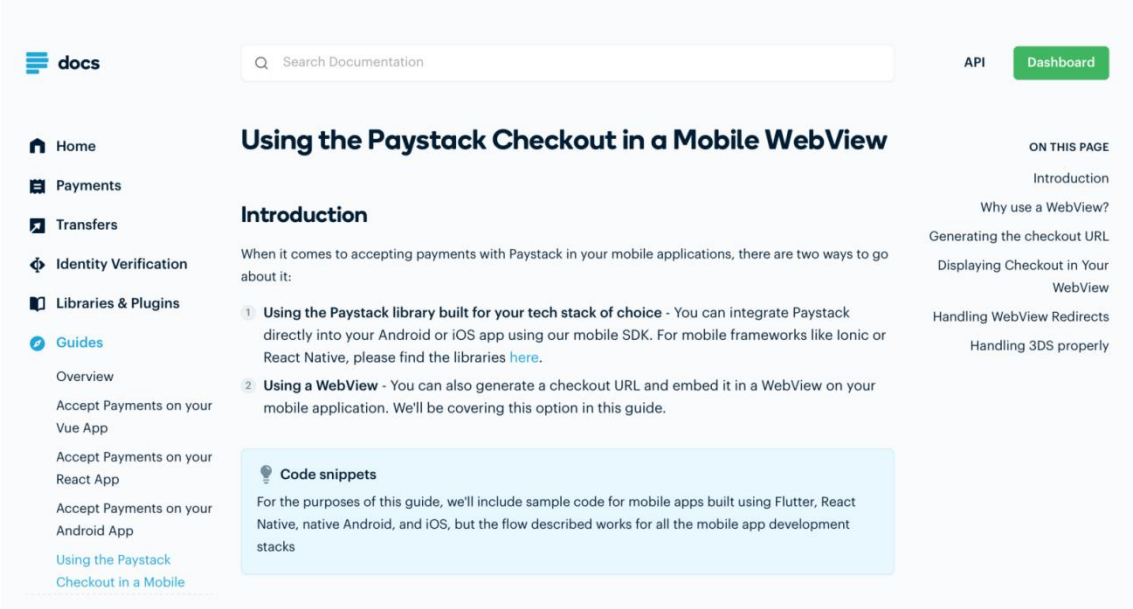


Fig 3.5 Paystack checkout documentation

CHAPTER FOUR

IMPLEMENTATION AND DOCUMENTATION

4.1 Introduction

This displays the details of MTU Stack implementation, it details the tools that were utilized in the development and implementation of the mobile app. These tools aided in the system design and development of the software's main idea and functionality in order to achieve the mission's goals.

It also includes a detailed discussion of how the proposed framework was created and the features that make it up.

4.2 Implementation Environment

The Android Studio IDE (Integrated Development Environment) was used to construct the payment platform (integrated development environment).

Built on JetBrains' IntelliJ IDEA software and customized exclusively for Android development, Android Studio is the official integrated development environment for Google's Android operating system. You can adjust your build in Android Studio to generate numerous build variations for different devices from a single project.

4.3 Installation of Android Studio

The MTU Stack code was written in Android Studio (Bumble bee) version. The following hardware and software specs were used for development, deployment, and testing on a MAC BOOK PRO computer:2.7 GHz Dual-Core Intel Core i5

I. 8 Gigabytes RAM (Random Access Memory

II. Retina, 13-inch

The installation process was done step by step, following the prompts displayed by the application setup until the installation was complete.

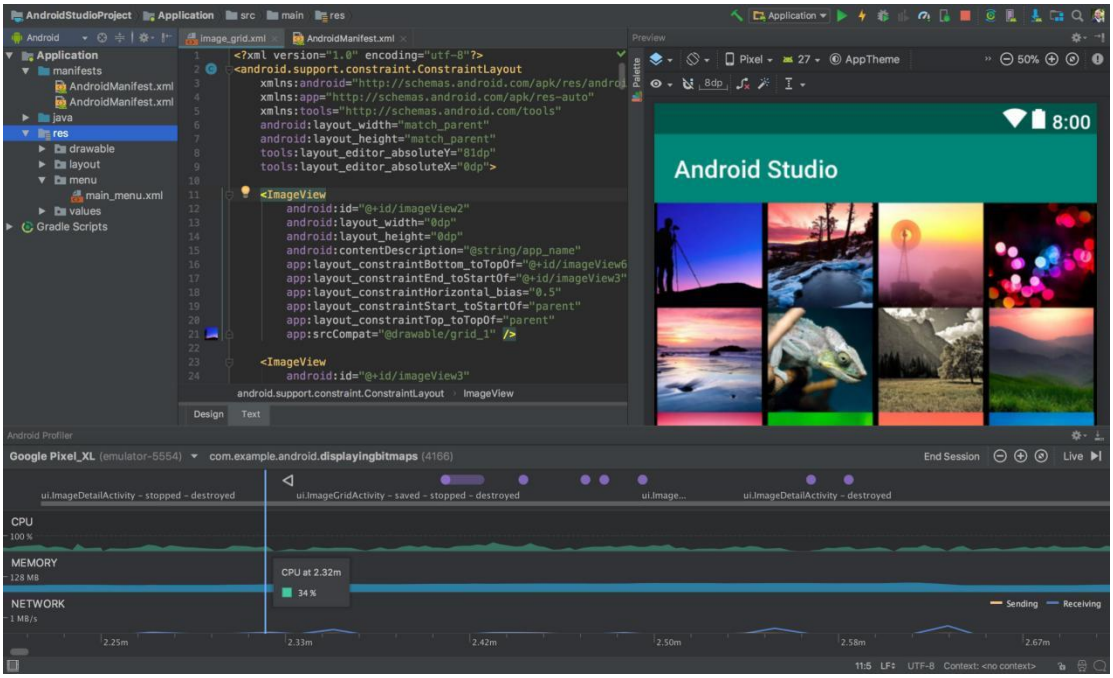


Fig 4.1 Visual layout of Android studio

4.4 MTU Stack Mobile App Requirements Analysis

This phase entailed learning and understanding what users want the system to perform for them, as well as specifying what the system need in order to function properly and efficiently. It entailed learning the system's functional and non-functional requirements.

4.4.1 Functional Requirements

This is used to describe MTU Stack's specific functions or operations. The software's functional requirements are as follows:

V. The app must have a general page in which the financial administrators can access the summary of all the payments made by students or parents once they download and install it on their mobile devices and are connected to the internet.

VI. The app must have a wallet that will enable students to save money for whatever purpose, and students should also be able to make transfers to their fellow students on campus.

VII. The app should be able to allow the users i.e students, staffs and parents, conveniently lodge complaints and get timely response.

VIII. The app should be able to suggest saving plans for students who would like to save money in their wallet. It should also be able to get feedback from users.

4.4.2 Non-functional Requirements

This summed up the app's behavior in terms of its functionality. It elucidates the app's performance characteristics. The majority of the system's non-functional needs were integrated at each stage of the software development process. Acceptability is the most important non-functional need that this project will fulfill.

4.5 User Requirements

Knowing the user requirements is an important and integral component of information system design, and it is critical to the success of any payment application. We developed the application for Mountain Top University to receive payments from students, faculty, and parents. The software was created to be unilingual, with English as the primary language.

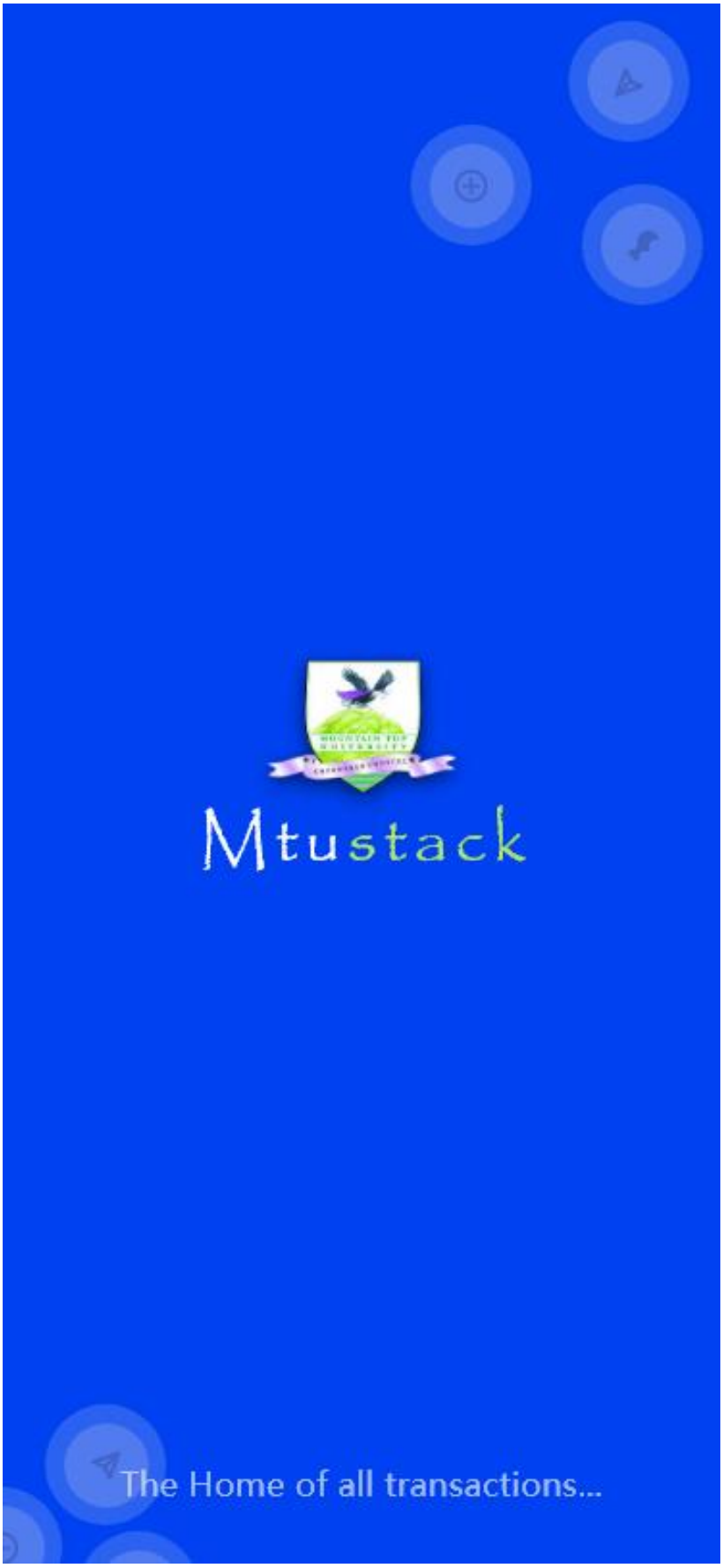
Software and Hardware Requirements

It is necessary to have a smart phone that runs on the Android operating system. Internet access is also required to conduct transactions and to fully enjoy the app's features.

4.6 Images of the Implementation Stage

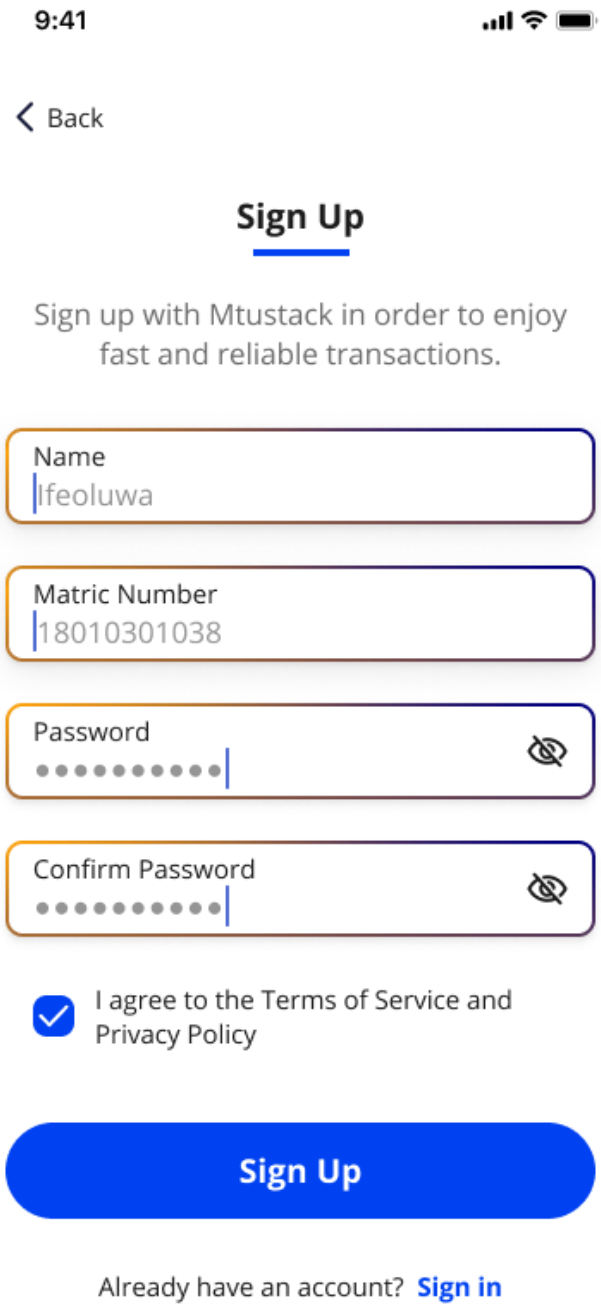
The screenshots of the implementation stages show the different views of the users depending on their roles with a brief description of what it entails.

1. **Splash Screen:** This is the first screen that appears when the mobile application is launched.


Mtustack
The Home of all transactions...

4.2 Splash Screen

2. **Registration:** To access the mobile application modules users log in with their existing accounts or create a new account. The user must first register or be registered by the administrator. To access the registration page, the user navigates through the application on click on the registration button as shown below before clicking the registration button for a successful registration.


9:41
Back
Sign Up
Sign up with Mtustack in order to enjoy fast and reliable transactions.
Name
Ifeoluwa
Matric Number
18010301038
Password
Confirm Password
I agree to the Terms of Service and Privacy Policy
Sign Up
Already have an account? Sign in

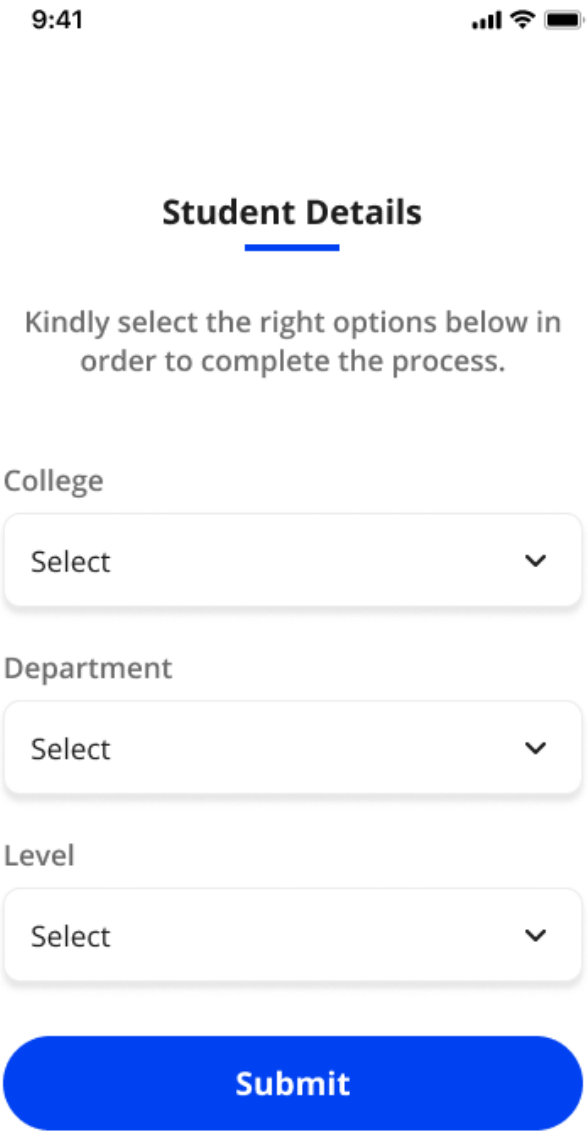


Fig 4.3 Registration page

3. **Checkout Screen**: This screen comes up when the user wants to make payment. The user is prompted to enter his/her card details for verification and transaction.

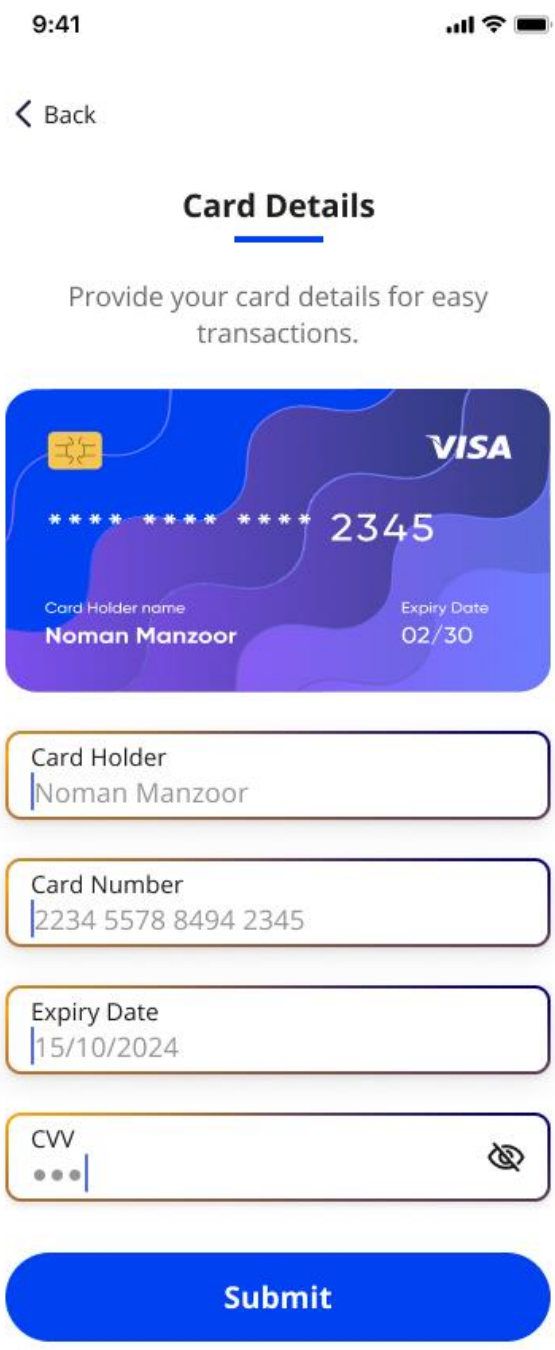


Fig 4.4 Checkout Screen

4. **Wallet Screen**: The wallet module in MTU Stack provide students with the facility to save money for future purposes. This is one of the unique feature of this mobile application.

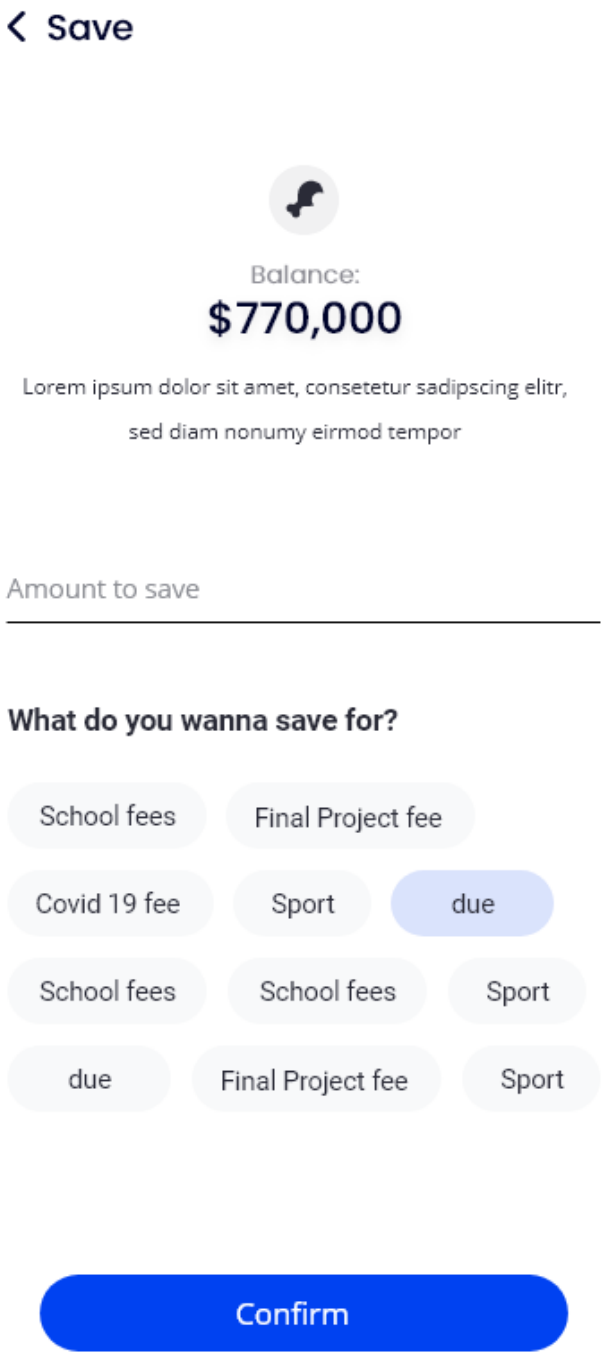


Fig 4.5 Wallet module

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

We cannot overlook the importance of a smooth transaction in gaining the support of Mountain Top University's students, faculty, and parents. People wanting to make payments won't feel the slightest bit anxious because their money is secure. It was the goal of this project to make this a reality and to guarantee that students liked utilizing the platform for anything financial.

5.2 Conclusion

The MTU STACK is an online payment system project plan specifically birthed for academic institutions, to help ease the payment processes in the course of stay in the academic environment. Loads of online payment gateways have been made to ease payment processes, some of which include; Interswitch, E-tranzact, Flutterwave and so on. The major functionalities, that makes MTU

STACK stand out includes;

I. Easy accessible interface

II. Saving payment plans for students

III. Accepting payments in foreign currencies

IV. No service charge

5.3 Recommendation

As in partial completion for my Four years in achieving a B.Sc. in Computer Science, I have encountered countless numbers of issues with the current payment system some of which include; not accepting MasterCard, giving run-time errors, high rate of transaction charge.

I will strongly recommend MTU STACK to be used as the payment gateway for MOUNTAIN TOP UNIVERSITY, to of course ease payment and enable easy access to any monetary affair in the

institution.

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