DEVELOPMENT AND IMPLEMENTATION OF A LOCAL FOOD FINDER ANDROID APPLICATION

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Declaration

We thusly pronounce that we have read the University regulations relating to plagiarism and therefore declare that this thesis is of our own work in a result of our own field research. We further announce that this piece of work has never been submitted to any university in part or whole for a degree or any award elsewhere. All materials used within this thesis would be acknowledged in the reference page, as well as using quotation marks to clarify external sources of information used to support our discoveries.

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Dedication

First and foremost, we dedicate this piece of academic work to the almighty God (our father in heaven) for His favor, grace, guidelines, blessings and protection throughout this project work. We as a team are grateful to our creator. Secondly we wish to dedicate this project to our IT department and that of our lecturer DR. Kwame Gyasi for hiss encouragement and support. This work is also dedicated to our parent for their prayers, advice, financial support and encouragement.

Acknowledgement

We as a term are very grateful to the Almighty God for how far He has brought through this project work. We are highly indebted to our supervisor, Dr. Kwame Oteng Gyasi for his constant encouragement, support guidelines, constructive suggestions and right criticisms that has helped us through this project and brought this project work to a successful end. Our deepest appreciation drives to our family and friends for their financial support and constantly praying for us.

"With God all things are possible"

~Matthew 19:26~

Abstract

On the verge of information and innovation headway versatile application are applied innovatively in various territory, for example, learning, correspondence, networking, organizing, excitement, security and so on. In the time of advancement and innovation, improvement and utilization of portable applications have immediately expanded in different regions. Mobile application has become a standout amongst the best ways to keep shoppers drew in with a brand as they are moving. With the increase in demand for smartphones and efficiency of wireless network, the demand for mobile application has magnificently enlarged.

The purpose of this project is to develop and implement an efficient mobile application for people to be able to get directions to local fufu chop bars within Kumasi metropolis, order and make reservations of foods sold at these chop bars. Consumers of this application will be able to create accounts which will give them an easy to use interface that would be able to get locations of local fufu chop bars, order for food or make reservations of their favorite food when necessary. It is also a basic requirement that users of this application will be able to firmly register and manage their profiles. The motive to develop such system was due to the issues faced by some Individuals who want good food to eat. Some issues were that, people find it difficult to decide on where and what to eat, due to many eating outlets where quality is unknown. In addition, decent eating places may not be spotted easily from afar. People sometimes may know what food they wish to eat but unaware of the food outlet that sells such food they want to eat.

The application will contain various kinds of local food, which would be accessible for clients to purchase through application by means of on the web. This nourishment application will

incorporate highlights, for example, the area of the eating outlet by means of GPS area to decide the clients'-based area. Through the area of the eating outlets and clients based current area, the application will demonstrate all the adjacent neighborhood eatery or eating outlets, this will allow clients to request and reserve a spot. This android application will likewise allow clients to communicate with their companion or close-by clients by following their remarks through a Write survey framework which enables clients to remark and rate sustenance sold by a specific nearby eatery or eating outlets**.** This android application will provide a user information about the types of food and eating outlet available around their location, this is to help users to decide where and what they wish to eat without the need of visiting various restaurant.

With the help of a user acceptance testing results, will show that the objectives of this development have been achieved. For this development users can find and access various information concerning the most popular, most recent and nearest food outlet and restaurant near them and by interacting with their system and other users by sharing their customer experience and food review.

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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Information and communication Technology sector has emerged worldwide as most resilient indicator and a key driver for the growth, development and employment. Globally, every country is trying to develop its technological space to ensure growth and development in its economy. Likewise is Ghana; there are conscious efforts by the successive governments to digitize the Ghanaian economy to help reduce unemployment among the youth in Ghana. Key interventions recently initiated in that direction is the introduction of Ghana Digital Address System and the Issuance of National Identification Card. It is expected that Ghana as a country can completely reap the digital dividends, associated with implementation of ICT as a means of our socioeconomic revolution if it is introduce in all spheres of the economy.

There is progression of technology and this has transported ease to the hectic life of human beings. In our world today, as human our life is always on the move. Due to the advancement in technology in our world today, smart mobile phones today have immense capabilities to provide user with rich experience, including interactive facilities. Due to the popularity of mobile technologies, we us humans are able to constantly be in touch with the world. With this effective means of technology, different aspects of our lives has been brought together for easy access. For instance, an individual could be making finishing touches to his presentation for next day, wholes discussing with his or her spouse about dinner and booking a flight for a weekend getaway, to mention a few, all in the same place and likely simultaneously (Olanigan, 2013).

As time goes on and with time changes, as humans we have seen that mobile technology has changed a lot and in the last few years, as we have seen the arrival of countless new kinds of gadgets, such as Smartphone, camera-phone, Android phones and tablet phones. With the demand for cell phones is high lately and in order to satisfy large number of cell phone consumers, the mobile phone industry is making countless developments in cell phone hardware as well as software. Hence the science fiction devices of yesteryear have become reality [Li, 2010]. Cellular telephones today are significant in their advancement. However cell phones back in the days were used as a communication devices, but for many people today, a cell phone is not communication tool to communicate with others; but it serves as an internet browser, notepad, camera, computer game calendar, alarm clock, calculator, GPS and voice recorder. In our world today cell phone are not just used as telephones, but they serves as small computer with substantial processing power [Li, 2010].

Mobile phone technology in this day and age allow innovative application to be implemented in lots of forms follow – on in social networking. Statistic illustrate that 52% of people using mobile phones communicate their experience with their associates and family and additional 19% upload such photos to the net at least once a month [Todd Wasserman 2011]

The ever increasing quantity of the mobile policy users has led to the rise on the number of application developed for mobile plans (often referred to as mobile application). Mobile application (aps) is an application software that deliberate to move along on mobile. Mobile application (apps) is application software that is designed to run on mobile procedures such as smart phone. The applications grant comparable services with the application in the computer, but with fewer functionality. The application partake of to be downloaded from the app store to be put in safekeeping to be adept to be used. Application accumulation (app store) is an online

store room where mobile application are on hand to be purchased and downloaded. Normally, apiece mobile in operating system will maintain its own app store [Luhur & Widjaja, 2014]. This is one district of mobile cell phone technology enhancement that allow developers and programmers to recommend users on what they search for under their chosen part of interest. Google's android is one of the newest and unique innovations, which has taken over the mobile market world.

The benefit of Android application are as follows:

- Mobile application is suitable to carry

- International partnership and large inaugurate support

- Strong development and education framework

- Vulnerable marketplace for distributing apps

1.2 Problem statement

Statistics show that: about though 51.3% of the people is between 15 - 64 being with 4.7% aged 60 living and above (Ghana Statistical Service, 2003). With this indicator, it can be seen that most of the Ghanaian population are youth. According to Cheng (2013), nowadays, nearly everyone persons gain their meals outside. In our world today most people are interested in knowing places where delicious foods can be located without having without having to move around or visit every restaurant. However, deciding on where and what to eat for lunch can be tricky and difficult, this is because there are many ingestion outlet where quality food are sold and their location may not be known. Besides, good eating outlet may not be easily spotted.

Most people at times may know what to food they want and wish to eat, however they might it very tricky and difficult to locate the restaurant that sells such food they crave for. With this application location based mobile app for food would allow and enable users to easily search for restaurant in their area without the need to physically be present at the chosen restaurant.

The idea for this project was born out of the following gap: local chop bars in Kumasi have the difficulties in creating and prompting to people of their local food joints. More so, there are difficulties in food order and reservation made concerning our local food joints or restaurants. There is a need for an android mobile application, which would be used to help assist users toward their decision making on their preferred eating outlet, food preferred, preferred location, price, taste of the food as reviewed by other users' experience.

There are existing applications which allow users to search for restaurant using their based location via GPS, or to search for available discounts, or to submit food review on their service experience at an outlet, or to take a picture, which is sharable to friends and family. However, there has never been an application or an android app that integrates all the above feature in a single application [Cheng, 2013] most especially in Ghana. Application developed only allows users to switch between application to fulfil their request and needs for operation such as food and discounts.

The main purpose of this project is to develop and implement a functional mobile application for people to be able to get directions to local fufu chop bars within Kumasi metropolis, order and make reservations of foods sold at these chop bars. The customers and users of this application can and will be able to build an accounts which will provide an easy to use interface that will allow and enable them to get locations of local food outlet or restaurant , order for food or make

reservations of their favorite food when necessary. It is also a basic requirement that users of this application will have login and signup interface, which allows them to securely register and manage their accounts and that of their profile page.

Customers and users will also be able to navigate through various food provided and available at the restaurant, and at the same time be able to use search functions for easier navigation. Finally, with this application development there would be a payment system inbuilt to allow users to purchase food items using mobile money, this would help abstract away the most difficult part of online purchasing. The application would be maintained and manage by administrators and merchant. With such operators they will have full control and authority to approve and reject request and maintain various list of food available at the various restaurant.

1.3 Objective of the study

The main objectives of this study is to develop and implement an android application for users to be able to locate local restaurants in the Kumasi Metropolis.

Specifically, the objectives of the study is to:

1. Help people locate and get directions to popular local food restaurants in the Kumasi Metropolis using GPRS in their smartphone.
2. Enable people order and take delivery of local foods using their smartphones.
3. Enable people make reservations at local foods restaurants using smartphones.

4. Enable local restaurants the privilege to sign up and register their restaurants; to allow customers gain access to their services and possible purchase their food

5. Enable people write reviews and read reviews of other users on a local restaurant.

1.4 Justification of the study

This proposal is written to propose an efficient food tracking system to enhance and promote our local fufu locations, which will enable people to locate and gain easy access to different joints location within Kumasi, and allowing them to make orders and reservations for our traditional food. This system aims to improve the existing traditional ways of advertising our local restaurants. The local eating restaurant will be endorsed indirectly if all the food snap shot have reviews, ratings and location attached to it and accessible via a mobile application therefore promoting and increasing the consumption of local food of which government is making a concerted effort to promote.

By the development of this application, we are sure to expect that people can have all-in-one information in one application to help them mingle, search restaurants, learn about food, as well as enjoy discounts and promotions in local restaurants in the Kumasi Metropolis.

1.5 Organization of the study

Chapter One: This chapter of the research report outlines the background of the study, the problem statement, and the objectives for the study, the justification of the study, and the organization of the study.

Chapter Two: This chapter provides a review of relevant literature. This review of literature is made up of theoretical literature and empirical literature. Thus, theories developed by academicians and studies conducted by other researchers respectively.

Chapter Three: This chapter defines the methodology for the study. This comprise of research design, population and sampling plan, research instrument, and statistical analysis.

Chapter Four: This chapter of the research report presents the result of the study field work done and discussion of the findings**.**

Chapter Five: This chapter draws a conclusion to the research and also relevant recommendations. This encompasses the summary, recommendation, limitations and further studies.

CHAPTER TWO
LITERATURE REVIEW

2.1 Mobile Telephony In Ghana And Kumasi

A yearly report discharged by worldwide advanced organizations, (We Are Social and Hootsuite), has appeared 10,110,000 Ghanaians are utilizing the web. The figure shows that 35% of the all-out 29,150,000 populace of Ghana and is an expansion of two million on the figure recorded in January 2017. Quite a bit of Ghana's development in web clients was credited to increasingly reasonable cell phones and portable information plans.

As per the report, the Ghana at present has 5.6 million dynamic web-based life clients, 19.53 million versatile clients and 4.90 dynamic internet-based life clients - an expansion of 22% (one million) on the January 2017 figure.

2.1.1 Internet Speed In Ghana

The normal web speed by means of fixed associations was observed to be 19.2mbps while normal web speed through portable associations was 9.23 mbps.

The report found that most Ghanaians incline toward cell phones for perusing the web when contrasted with workstations/work areas and tablet gadgets.

The most well-known gadget for perusing the web in Ghana was observed to be the cell phone, with a level of 75% of the populace (an expansion of +7% of the January 2017 figure) while 22% utilized either PCs of personal computers and tablets with 3%.

2.2 Telecom Data Subscription

2G/3G Mobile Data Figures For December 2018

Toward the finish of December 2018, the absolute memberships of 2G/3G versatile information in Ghana were 26,184,235 with an infiltration rate of 88.84%.

Out of an all-out populace of 1,267,685 people matured 12 years and more established in the Kumasi Metropolis, three out of each four (72.4%) have advanced cells with a functioning web.

A study by KMA with donor funding from DANIDA asserts that, the extent of guys (76.3%) that have cell phones is higher than their female partners (69.0%).It is believe that the proportion of male adults who eats outside the homes are as twice as high compare to their female counterparts.

2.3 Technology Overview

2.3.1 Android Framework

Android is a portable working framework dependent on the Linux Kernel. It is fundamentally intended for touchscreen cell phones, for example, tablet computers and smartphones. The

Android working framework is broadly utilized in recreations comforts, TVs, computerized cameras and different hardware in light of its open and customization highlights. Android was grown at first by Android, Inc. what's and purchased by Google in 2005.

The source code for Android is accessible under free and open-source programming licenses. It implies that the gadget remote transporters, makes and devotee designers can unreservedly make changes to and circulate the product. Most Android gadgets accompany a mix of open source and restrictive.

Android applications are generally created in the Java language utilizing the Android Software Development Kit.

When the application is created, Android applications can be bundled effectively and sold out either through a store, for example, Google Play, Opera Mobile Store, SlideMe, APKPure, Mobango, F-droid and the Amazon Appstore. Android is on a huge number of cell phones in excess of 190 nations around the globe. It has the biggest introduced base of any versatile stage and it is developing. Consistently in excess of a million new Android gadgets are enacted around the world.

Today, Android has turned into the most prevalent versatile Operating System, and is the pioneer in the cell phone advertise on the planet. An ever-increasing number of clients select cell phones with the Android working framework as their first decision. In the meantime, a great deal of software engineers are learning android application improvement. Geo coding, Maps and Location-Based Services-Embedded guide backing empowers you to make various kinds of guide-based applications that influence the portability of Android gadgets. Android gives you a

chance to structure client intuitive interfaces that incorporate intelligent Google Maps that the software engineer can control and comment on utilizing Android's rich designs library.

Android's area-based administrations oversee innovations, for example, GPS and Google's system-based area innovation to decide the gadget's present position. These administrations authorize a reflection from explicit area recognizing innovation and let you determine least necessities (e.g., accuracy or cost) instead of choosing a specific innovation. This additionally implies your area-based applications will work regardless of what innovation the host gadget bolsters. To combine maps with locations, Android includes an API for reverse and forward geocoding that lets you find map coordinates for an address, and the address of a map position.

The key highlights of Android design are appeared in the figure 1 underneath.

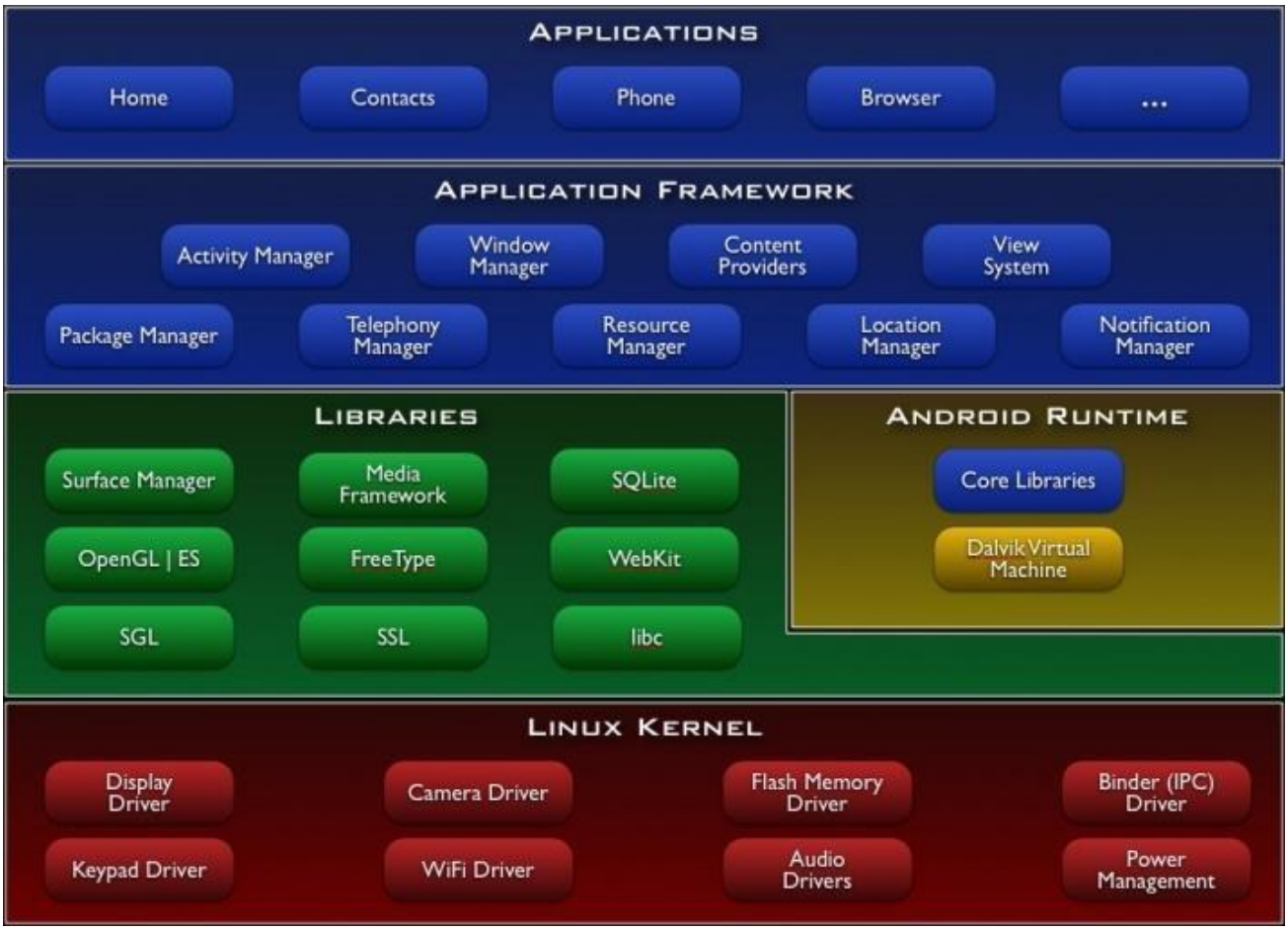

Figure 1: The key component of android engineering

Linux kernel

At the base of the layers is Linux - Linux 3.6 with roughly 115 fixes as at January 2019. This gives a dimension of reflection between the gadget equipment and it contains all the required equipment drivers like keypad, camera, show units and so on. Likewise, the part handles every one of the things that Linux is noted for, for example, organizing and numerous equipment

gadget drivers, which remove the agony from interfacing to fringe equipment. Android is between operable with other programming.

Libraries

At the summit of the Linux bit there is a lot of libraries, for example, open-source Web program motor WebKit, library libc, SQLite database which fills in as an archive for capacity and sharing of use information, SSL libraries in charge of Internet security, libraries to record and play sound and video and so forth.

Android Libraries

This class incorporates those Java-based libraries that are explicit to the Android improvement condition. Instances of libraries here incorporate the application system libraries and those that encourage UI building, database access and illustrations drawing. Models are as per the following:

android.app − It offers access to the application model and is the gravestone of all Android applications.

android.content − It helps in substance access, informing, and distributing among applications and application parts.

android.database −This is utilized to get to information distributed by substance suppliers and incorporates SQLite database the executive's classes.

android.opengl − A Java interface to the OpenGL ES 3D illustrations rendering API.

android.os − Provides applications with access to standard working framework administrations including messages, between procedure correspondence and framework administrations

android.text − Used to render and control message on a gadget show.

android.view − The fundamental structure squares of use UI **android.widget** − A rich gathering of pre-manufactured UI segments, for example, names, catches, format chiefs, list sees and so on. **android.webkit** − explicitly plan for web-perusing abilities to be incorporated with applications.

Android Runtime

This is the third area of the design and accessible on the second layer from the base. This segment gives a significant part called Dalvik Virtual Machine which is a sort of Java Virtual Machine uniquely structured and enhanced for Android.

The Dalvik VM utilizes Linux center highlights like memory the executives and multi-stringing, which is inborn in the Java language. The Dalvik VM empowers each Android application to keep running in its own procedure, with its very own example of the Dalvik virtual machine.

The Android runtime additionally provides for the designer a lot of center libraries which empower Android application engineers to compose Android applications utilizing standard Java programming language.

2.3.2 Application Framework

The Application Framework layer gives numerous more elevated amount administrations to applications as Java classes. Application designers are permitted to utilize these administrations in their applications.

It is on this framework that we will build our local restaurant application using the following key services that the Android framework provide.

1. Activity Manager − Controls all parts of the application lifecycle and movement stack.
2. Content Providers − Allows applications to distribute and impart information to different applications.
3. Resource Manager − Provides access to non-code inserted assets, for example, strings, shading settings and UI formats.
4. Notifications Manager − Allows applications to show notices and alarms to the client.
5. View System − An extensible arrangement of perspectives used to make application UIs.

2.4 Global Positioning System.

The GPS venture initially started in 1973 and turned out to be completely operational in 1994. The framework is controlled by the United States Department of Defense and was initially implied for military applications just, however was made accessible for open use on fruition. The GPS framework is comprised of a system of 24 dynamic satellites (and 8 saves) found almost 20,000 km over the world's surface. Each satellite communicates various sign which can be followed by a GPS collector on earth, which are then broke down by the GPS recipient to decide

its exact area. The sign work in every single climate condition however can't infiltrate through strong articles, so GPS recipients perform best when they have an unmistakable perspective on the sky. GPS collectors come in every extraordinary shape and sizes, are boundless and are moderate. Today, GPS beneficiaries can be found in watches, PCs, tablets, telephones vehicles and a wide assortment of different gadgets. Any place you are on the planet, at any rate four GPS satellites are 'noticeable' whenever. Everyone transmits data about its position and the present time at standard interims. These signals, going at the speed of light, are caught by your GPS collector, which ascertains how far away each satellite depends on to what extent it took for the messages to arrive.

When it has data on how far away in any event three satellites are, your GPS beneficiary can pinpoint your area utilizing a procedure called trilateration.

To manufacture net association is the initial step to acknowledge GPS situating. Portable specialized gadgets sign on net by GPS or Wi-Fi (a prominent innovation that enables an electronic gadget to trade information remotely (utilizing radio waves) over a PC arrange, including rapid Internet associations.), at that point fabricate association with framework foundation server by SOCKET (an end-point in a correspondence over a system or the Internet). The implicit GPS route module look for situating information from satellites, at that point break down the locator information and status data from the longitude, scope and bearings. Next, the resultant information are transferred to Background checking server for handling in order to find and screen and client mobile phones.

2.5 The Principles of GPS Navigation In Android-Based Smart Phone

The situating in Android-based advanced mobile phone is finished by the inherent locator module, including route programming, GSM correspondence module and GPS chip. They get situating signals from satellite persistently and GPS module make sense of the related data through examination, similar to course, or speed of target. The accompanying three modules are musts for GPS route in Android-based PDA.

1. GPS module is the essence in working; it gathers information of following and situating from satellites.
2. Map Navigation programming pictures the information from GPS module. The product revives the e-map with the information to ensure the situating precipitously.
3. GSM correspondence module breaks down the information from the other two module and transfer the outcome to the planned site.

2.6 Mobile Application Development

Mobile application can be characterized as “an (information technology) IT software artifact that is specifically developed for mobile operating systems installed on handheld devices, such as smartphones or tablet computers” (Hoehle and Venkatesh, 2015).

Mobile Application Development (MAD) is the procedure by which applications are produced for little low-control handheld gadgets. Despite the fact that the portable application improvement procedure is like programming building, it likewise introduces some extra prerequisites for which the conventional programming advancement procedure must be redone

[1, 2]. The key qualities and highlights that separate a versatile form from a customary work area application

Can be gathered into three classes: for example, Equipment, Software and Communication. These days, portable applications can be quickly utilized for business, person to person communication, shopping, instruction, travel, banking and system utility as was done as of late by certain understudies from KNUST. In the writing, versatile applications were characterized into correspondence, diversions, media, profitability, travel, utilities concerning its application region [Islam et al. 2010]. Portable applications have noteworthy commitment in people, business and social zone [Islam et al, 2010]. Because of the easy to use quality, the utilizations and fame of versatile applications are expanded massively in the spot of workstations. Portable applications give brisk correspondence, spare time and increment profitability, cost sparing, and amusement. This prompts its noteworthy impact on society [Islam et al, 2010]. Presently, security is additionally a significant worry about versatile applications [Mahmood et al. 2016; Mutchler 2011].

There are different variables influencing the client's fulfillment for clients of versatile applications.

These variables incorporated client's necessity satisfaction, the value of application, simple to utilize, execution improvement, security/protection, social acclimating, and impact of companions [Chun et al. 2013].

In the writing, three distinct methodologies, for example, improvement in graphical symbols, utilization of multi-layered interfaces and enlarging the portable interface were investigated to upgrade learning capacity of versatile programming applications. On the off chance that the

versatile clients have brilliant experience while utilizing portable applications on their cell phone, at that point the appropriation rate of versatile application was expanded among the clients [Wac et al., 2014]

In the time of correspondence innovation, versatile application's qualities were ordered into three classes, for example, equipment, programming, and correspondence [Flora et al., 2014]. In this, the equipment incorporates less power, an info component, screen estimate, startup time, physical parameters, gadget discontinuity, programming including application collaboration, application advancement, application security, and correspondence incorporate system availability [Flora etal. 2014].

In the writing, different confinements were investigated during the utilization of portable applications, for example, absence of windows, little screen size, route, and speed and so on. Different issue identified with client's fulfillment were distinguished in the portable applications. These issues identified with setting, intrusion, security and remote network [Olubusola, 2015]. Moreover, different outcomes of versatile application use were recognized and influenced adversely by clients' propensities, for example, enslavement, apathy, etc. [Olubusola, 2015]. Convenience of portable applications fuses viability being used, productivity being used, and opportunity from hazard, setting inclusion and fulfillment in its utilization [Harrison et al., 2013].

2.6.1 Challenges of Mobile Application Development

Hardly any specialists were attempted to distinguish difficulties in regard to the advancement of mobile Applications. [Capretz 2013] referenced, the reasons for disappointment of versatile applications comprise of an interface, equipment, non-executable document, information input, remote system, portable database, OS variant, and programming up-degree. Every one of these

parameters are important to set up unwavering quality in the portable applications accessible on PDAs.

Joorabchi et al. (2014) referenced the issue identified with the improvement of versatile applications, for example, creating applications over different stages, absence of strong checking, investigation, and testing apparatuses, and moderate emulators, extra highlights for cell phones.

There are number of real things discovered when taking a gander toward the start to finish procedure of building up a versatile application, from business disclosure and improvement to help and advertising. Until now, few investigations have recognized and distributed the essential difficulties in versatile registering. Williamson (2012) recorded the novel difficulties for versatile application improvement, for example, structure elements and client input innovation, ease of use and client communication plan, and decision of

Execution innovation for local, web and half-breed portable application usage. Wasserman ET. al. (2010) recognized issues identified with portable application advancement dependent on

Advancement forms, instruments, UI structure, application movability, quality, and security.

Dehlinger et al. (2011) recognized four principle challenges for portable application programming building. They watched these difficulties especially when making all-inclusive UIs, when empowering programming reuse crosswise over versatile stages, when structuring setting mindful portable applications, and keeping in mind that adjusting readiness and vulnerability in necessities. Moreover, Dye et al. (2013) talked about different security challenges because of the bounty of versatile programming applications as of late and communicated about the potential dangers that these gadgets are presented to because of absence of improvement gauges and best practices. These issues are basic and ought to be considered

during the early improvement process so as to alleviate these issues could be settled by portable application's designer to upgrade their relevance and ease of use for the client. While creating portable web applications different quality properties must be considered. The designers must chip away at such properties like increment the convenience, appropriateness, effectiveness of applications, remote system, compactness, and applications should support and keep running on the heterogeneous cell phone (Spriestersbach and Springer 2004). The designers must focus towards the application's dimensions of security which additionally influence the ease of use of mobile applications.

2.7 Best Practices

With the majority of the ongoing background in making portable applications, much is thought about how to assemble them and about how individuals utilize their gadgets and these applications. In the meantime, everything except the biggest and most muddled programming and framework improvement undertakings have moved far from a procedure concentrated methodology toward an increasingly spry methodology, with the Scrum approach (Schwaber, 2004) and other dexterous systems, e.g., test-driven advancement, finding across the board acknowledgment. That is especially valid for applications created for the Web, where the advancement model depends on numerous progressive arrivals of the developing item. The Scrum improvement procedure is an arrangement of short (2 a month) "runs" where a group tends to a lot of undertakings as an item increase, with each run tending to an "overabundance" of necessities. Our review of versatile engineers (Agrawal and Wasserman, 2010) proposed that even individual designers are following a Scrum like procedure as they create portable

applications. Well beyond the procedure, however, is the efficient codification of information about the prescribed procedures to pursue for application improvement. The World Wide Web Consortium has issued a competitor set of suggestions for versatile web (not local) applications. Apple has distributed an iPhone

Application Programming Guide with rules for various parts of iPhone advancement. The Developer's Guide for Android incorporates a Best Practices segment that tends to application similarity, UI rules, and structuring for execution and responsiveness, in addition to other things.

To put it plainly, engineers can discover a great deal of direction to assist them with programming their applications. Stage designers have drawn on many years of programming building learning to make programming models and SDKs that give engineers with access to required gadget assets. Be that as it may, these specialized perspectives don't address the bigger issues of making enormous scale applications.

CHAPTER THREE
METHODOLOGY

3.1 INTRODUCTION

A product advancement approach or framework improvement philosophy in programming designing is a system that is utilized to structure, plan and control the way toward building up a data framework. Normal system incorporate cascade, prototyping, iterative and steady advancement, quick application improvement, and outrageous programming. A philosophy can likewise incorporate parts of the advancement condition (for example IDEs), MODELBASED improvement, PC supported programming advancement, and the usage of specific systems (for example programming libraries or different devices).

Technique is the efficient, hypothetical investigation of the strategies connected to a field of study or the hypothetical examination of the group of techniques and standards related with a part of information. It normally, includes ideas, for example, worldview, hypothetical mode, stages and quantitative or subjective procedures. A system does not set out to give arrangements but rather offers the hypothetical basis for understanding which technique, set of strategies or purported "best practices" can be connected to a particular case.

The task included breaking down the plan of couple of uses in order to make the application easier to use. To do as such, it was extremely critical to keep the routes from one screen to the next well-requested and in the meantime diminishing the measure of composing the client needs to do. So as to makes the application progressively available, the android variant must be picked so it is perfect with the greater part of the Android gadgets. Subsequently Android 4.1 x Jelly Bean form was picked.

3.2 Project Description

This project plans to give a social versatile application to clients to have the option to find nearby sustenance cafés in the Kumasi Metropolis. The neighborhood sustenance audits are related with the area of the eating outlets by utilizing the highlights on the cell phones, for example, GPS area or system area to decide clients' area. At the time a client begins up the versatile application, clients' area will be resolved and used to question the adjacent eating outlets from the database. Rundown of nearby sustenance surveys that are close to clients will at that point be appeared on the primary screen of the versatile application as appeared in Figure 2.

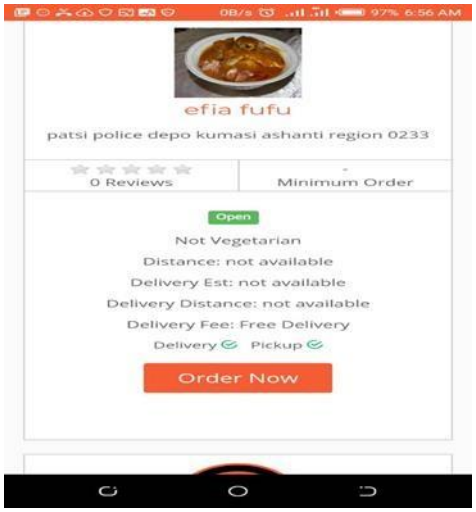

Figure 2: List of Food Reviews on Mobile application

Highlights, for example, remarking, and rating frameworks are likewise executed in this venture to enable clients to communicate with others. These highlights can build client's commitment.

3.2.1 Requirement Gathering

As a matter of first importance, we have to totally dissect the issue definition and all the different venture necessities. This phase is commonly referred to as 'Requirement Analysis'. Our Requirement Analysis includes the materials or tools we are going to use in developing the system. We gathered all this information and listed them below.

- ✓ Android studio and visual studio code (a multi-purpose text editor) was used in its development.
- ✓ Laravel framework was used as a server side supporting script to facilitate the speed of the development.
- ✓ Bootstrap was also used as a frontend supporting framework to enhance the interface of the system.

- ✓ The scripting language used for the server was PHP and MySQL Database. PHP was used to interface with the server and the SQL codes with the Database separately.
- ✓ The project team used android studio to design the interface, Java to implement responsiveness and client-side interactivity of the overall web interface.

GPS Coordinates of the following local restaurants in Kumasi.

i. Deli ii.

ii. Fufu Plaza (Silver Lobster Restaurant)

iii. Efie fufu

iv. Las Palmas Restaurant – Eduane pa pa fie

v. Rakho – opposite rahko

vi. Yaa Serwaa Chop- bar vii.

vii. Accuzi -ayeduase, around the KNUST gate

viii. Asafo British Pub (Popularly Known as Aduani pa in Accra)

3.3 SYSTEM ANALYSIS AND DESIGN

Improvement of automated frameworks requires examination of the procedure to be digitized so as to empower a right framework, a framework that capacities as required and to help the potential clients of the framework comprehend the general usefulness of the framework. The examination points of interest the framework's goals and imperatives to which fashioners must

go along. The reason for the doing examination is to change the framework's real contributions to organized detail.

When the highlights to execute were chosen and the important framework necessity for the application were altogether accumulated, a framework configuration was expected to actualize the application. This area delineates the structure utilizing the Unified Modeling Language. Use Case Diagram would be utilized to actualize and test the application.

3.3.1 USE CASE DIAGRAM

An utilization case Diagram catches the on-screen characters and the job they perform in a framework. It portrays the jobs performed by every on-screen character. The three entertainers for this venture are Users, Merchant and Admin.

Below are use cases depicting how users (Customer, Merchant and Administrator) interact with the system;

Figure 3: describes the various activities that a customer performs on the system.

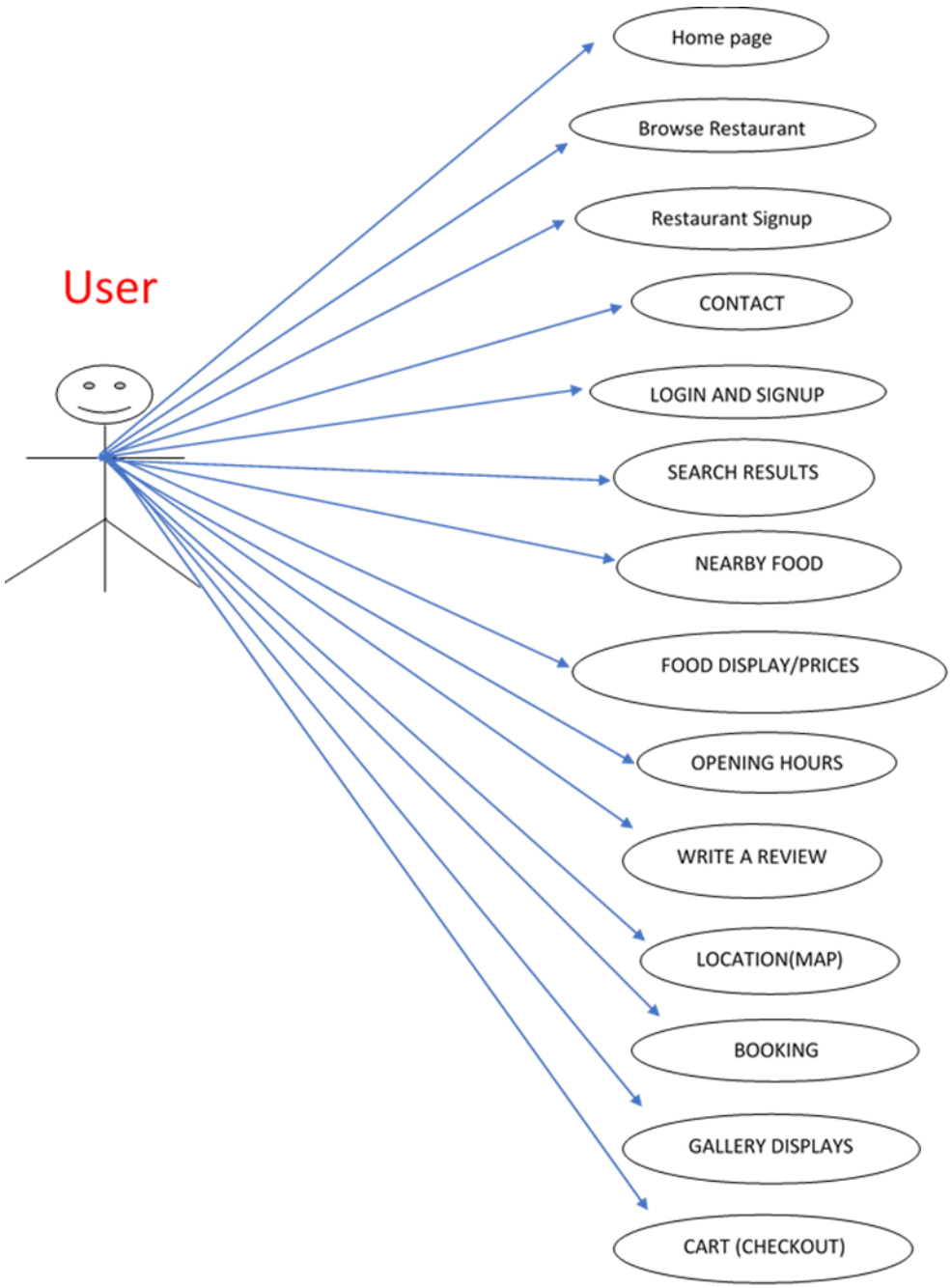

Figure 3: Use case for client

Figure 4: use case diagram of Merchant, explaining the activities that Merchant performs in the system.

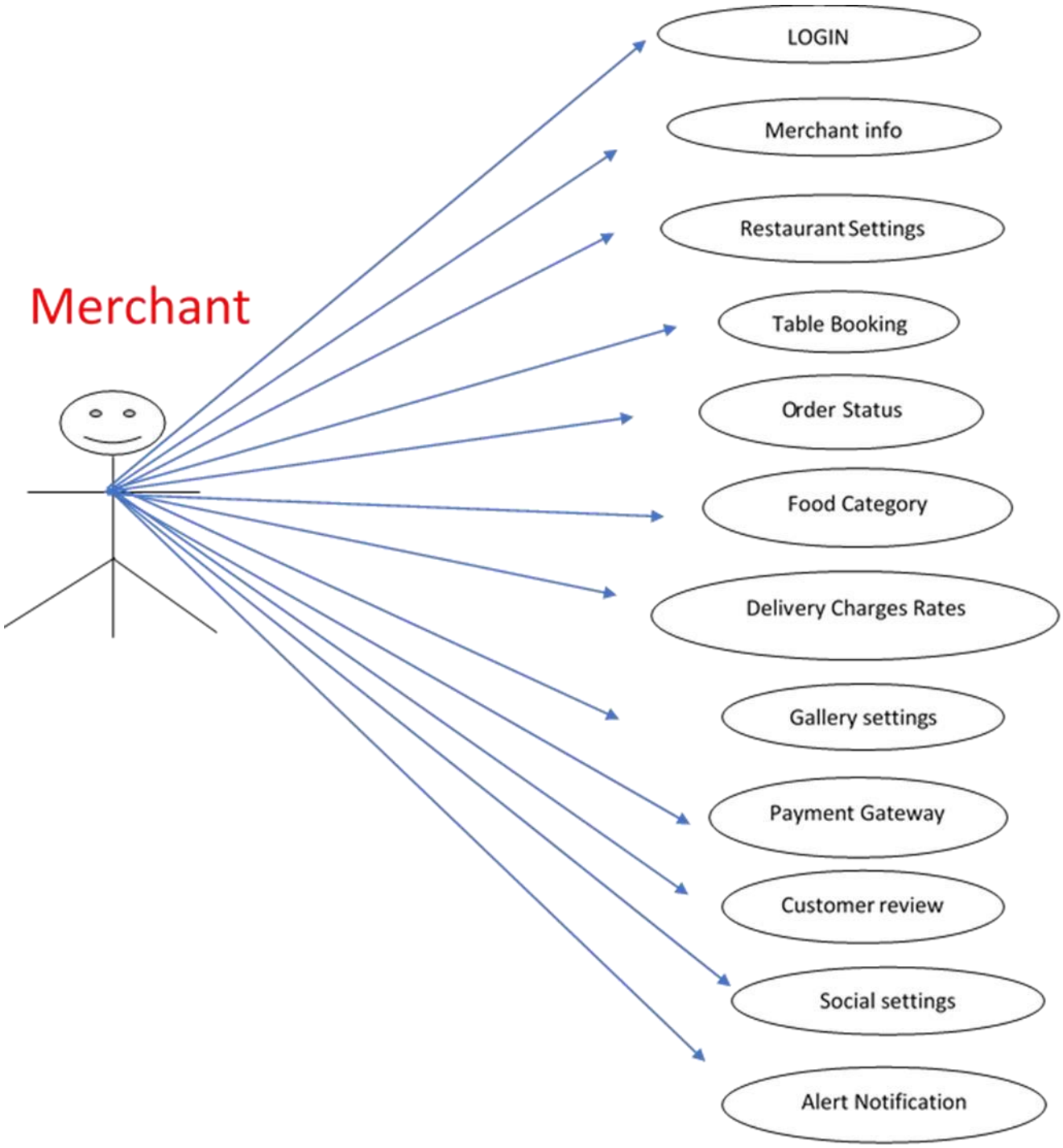

Figure 4: Use case for Merchant

Figures 5: use case diagram of administrator, explaining the activities that administrator performs in the system

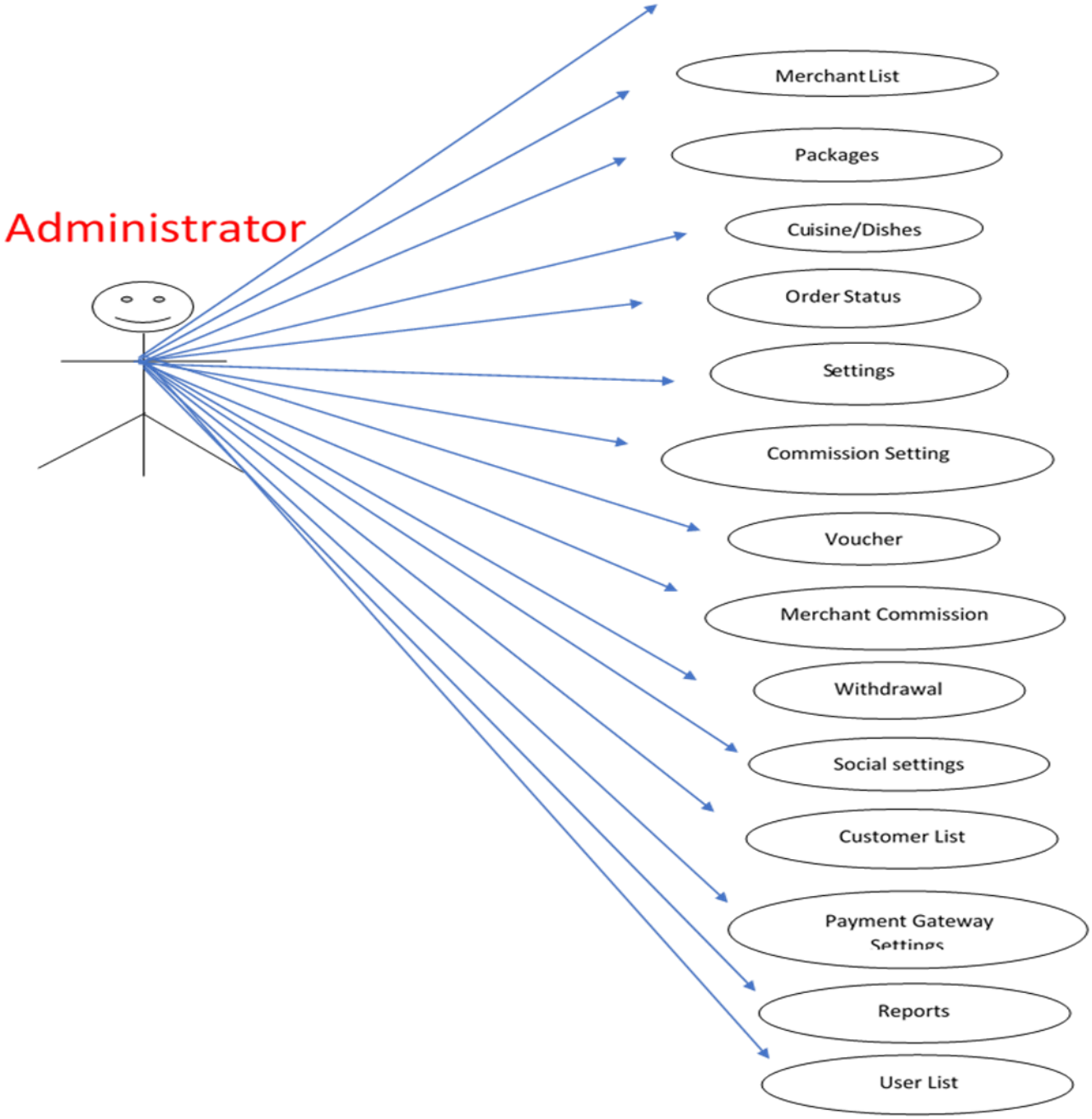

Figure 5: Use case for Administrator

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3.3.2 Context Diagram

This is a short structure which delineates that condition where a product exists and aides in conveying about what lies outside the framework limit.

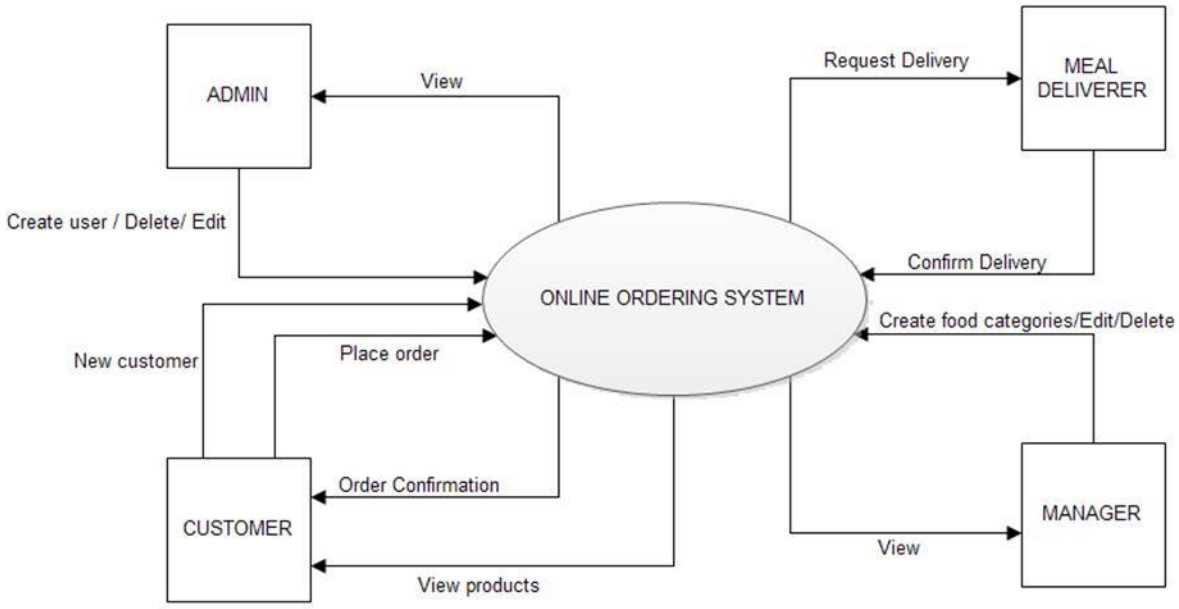


Figure 6: Context Diagram

3.3.3 Data Flow Diagram

It is a two-dimensional chart that clarifies how information is prepared and moved in a framework. The graphical portrayal distinguishes each wellspring of information and how it interfaces with other information sources to achieve a typical yield.

Director Module

Functionalities gave:

- Create usernames and passwords
- View/erase client accounts

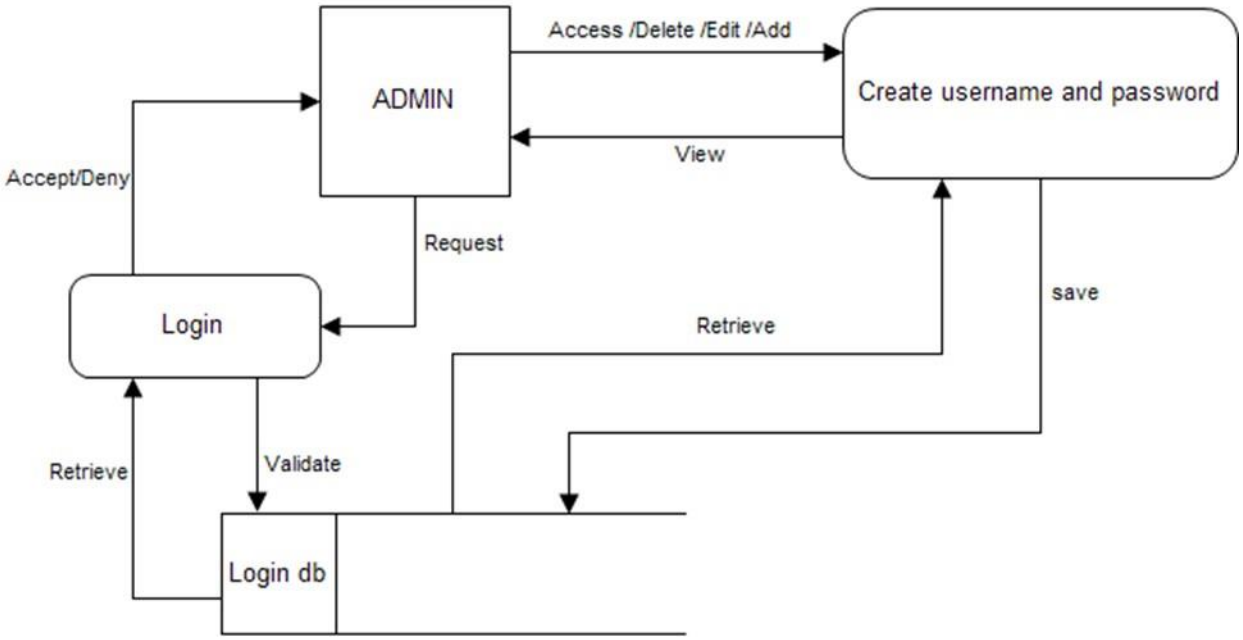


Figure 7: Data Flow Diagram

Customer Module

Functionalities provided:

- View product's list
- Register
- Place orders

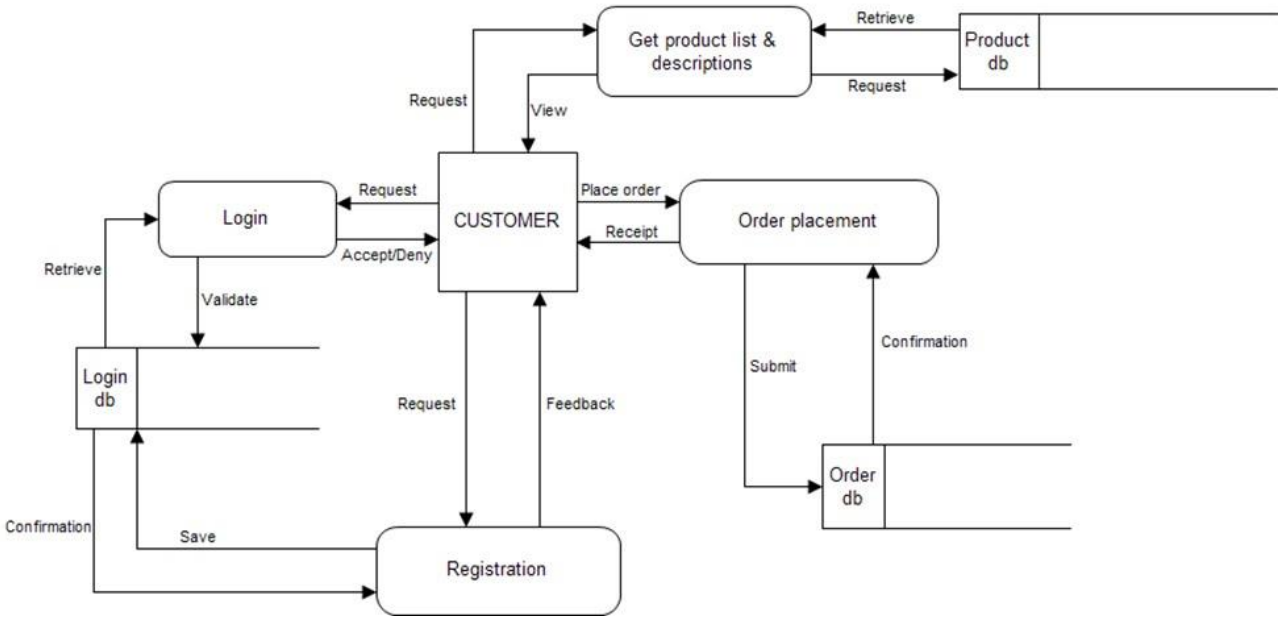


Figure 8: Customer Module

Manager Module

Functionalities provided

- Create product categories and functionalities
- Edit / delete product categories and descriptions
- View and manage orders and sales report

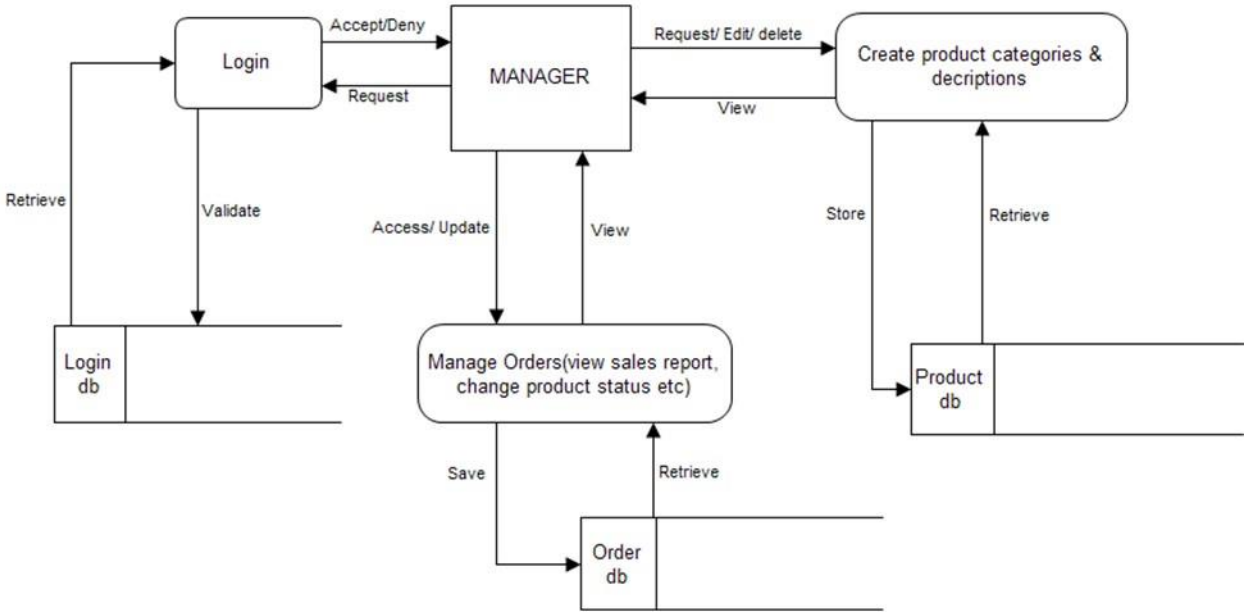


Figure 9: Manager Module

Meal deliver module

Functionalities gave:

- View pending requests and conveyance subtleties
- Confirm request conveyances

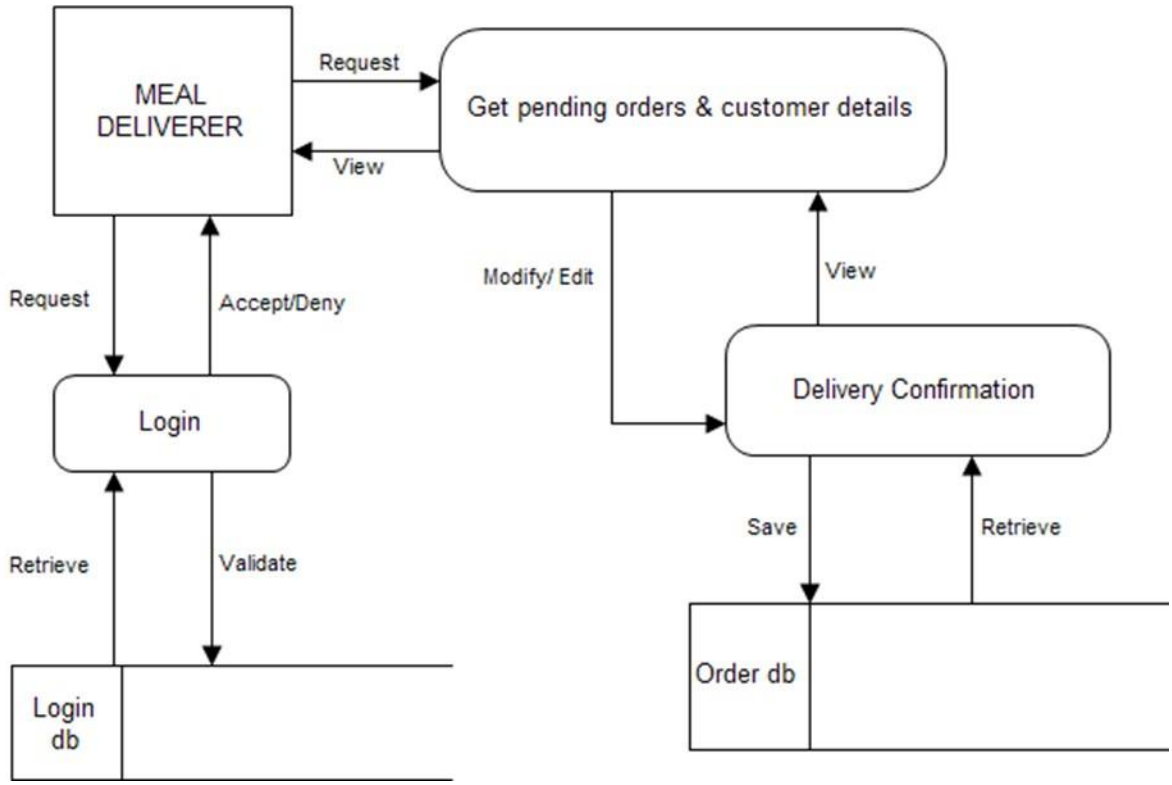


Figure 10: Meal Deliver Module

3.4 User Requirements

The framework will be intended to be easy to understand. The easy to understand and intuitive interfaces configuration accomplishes this by empowering clients to effectively peruse through the menus spot orders with only a couple of snaps and furthermore enables restaurant representatives to rapidly experience the requests as they are set and produce the important things with insignificant postponement and disarray. The framework will be easy to utilize.

3.5 Functional Requirements

Utilitarian necessities characterize the abilities and capacities that a framework must almost certainly perform effectively. The useful prerequisites of this web-based requesting framework include:

- The framework will empower the client to see the items menu, make a record, login to the framework and put in a request.
- The client will determine whether the request is to be grabbed or conveyed.
- The framework will show the nourishment things requested, the individual sustenance thing costs and the installment sum determined.
- The framework will provoke client to affirm the supper request.
- The framework will give visual affirmation of the request situation.
- The framework will empower the supervisor to see, make, alter and erase nourishment classification and portrayals.
- The framework will permit affirmation of pending requests.
- The framework will permit age of offers report for the requests made.
- The framework will enable the supervisor to refresh extra data (depiction, photograph, fixings and so on.) for a given nourishment thing.
- The framework will enable the chief to refresh cost for a given sustenance thing

3.6 Non- Functional Requirements

A Non-practical prerequisite is a necessity that determines criteria that can be utilized to pass judgment on the activity of a framework, as opposed to explicit practices. A portion of the nonpractice prerequisites include:

- There ought to be adequate system data transmission.
- Backup – arrangement for the information reinforcement
- Maintainability - simple to keep up
- Performance/reaction time - quick reaction
- Usability by target client network simple to utilize
- Expandability – should be future confirmation or upgradable
- Safety-ought to be protected to utilize

3.7 System Requirement

These comprise of the equipment and programming segments of a PC framework that are required to introduce so as to utilize the product proficiently.

3.7.1 Software Requirements

- Operating framework: Android
- Browser : Google Chrome
- Technology : PHP
- Database : MySQL
- Tool : Android Studio

- Backup and Data Recovery programming

3.7.2 Hardware Requirements

- **Processor:** Intel dual core or above
- **Processor Speed:**1.0GHZ or above
- **RAM:** 1 GB RAM or above
- **Hard Disk:** 100 GB hard disk or above
- Printer for printing reports
- Uninterruptible power supply to ensure a constant access of data.
- USB flash disk(At least 2GB)

Highlights that are required in this application for clients are as per the following:

i. Home Page – this serves as a start page for customers who wish to connect to our services, this allows users to further explore our services and offers.

ii. Browse Restaurant – this allows customers to browse different types of restaurant available within our app.

iii. Restaurant signup - this allows customers who wish to sign up their restaurant or partnership with us as a host of their local dishes.

iv. Contact – this allows customers to get in touch with us. For example, additional information on signing up their restaurant.

v. Login and sign-up – this function allow registered customers to log into their accounts, as well as unregistered users being able to sign up for an account.

vi. Search result – this allows users to search for their preferred restaurant and locations which they which to visit for their local dishes

vii. Nearby food – this function makes it possible for customers to search for nearby food around their based location,

viii. Food displayed – this function allows users to view different food available at a restaurant of their choice.

ix. Opening hours – this function provides users with information on when their choice of restaurant is opened.

x. Write a review – users can write reviews concerning their customers' service experience. This component helps client in observing every one of the audits of an eateries composed by different clients.

xi. Location (MAP) – the function allows users to be able to locate the where about of a restaurant (restaurant-based location), the client can see the route to an eatery from the chosen source with the assistance of Google API. This can be seen either in Maps application or in the internet browser as per the clients' decision.

xii. Booking – the function allows users to make reservation for tables and food preferred

xiii. Gallery Displays – the allows users to view images of food provided by their preferred restaurant)

xiv. Cart (Checkout) – this allow users to order their food and make payment At the point when a client needs to look at the things in the shopping basket, the accompanying procedure must be finished: The checkout procedure begins when the client clicks Shopping Cart symbol at the top of the page.

xv. Request Status-Order status is the element that will be utilized to show request status comprise of "request got" implies that request has been received by restaurant "request affirmed" implies that request has been affirmed by restaurant, "cooking" implies that

request is being set up by the restaurant, "conveying request" implies that request is being conveyed, and "done" implies that request has been finished. Client can likewise demonstrate the conveyance map while the status is on "conveying request".

xvi. Profile Edit – Edit Setting is the element that will be utilized to appear and to change client profile, comprise of name, address, email, and telephone number.

xvii. Show Reviews - This feature helps client in observing every one of the surveys of an eateries composed by different clients.

Highlights that are required in this application for vendor are as per the following:

i. Login – this feature allows the merchant access to its accounts. With the right login details, the merchant can control what customers can view and the type of services they provide as a restaurant

ii. Merchant info – this allows the merchant to input its information such as name, contact, addresses and its nature of business.

iii. Restaurant Setting - this is where logo and other information about the restaurant can be inputted

iv. Table Booking – this allow the merchant to included information about their bookings and services offered to their customers.

v. Order status – allows the merchant to check their orders status and acting according to the request of customers

vi. Food Category – this is here information about their services would be inputted. For example, types of food, they offer as a restaurant.

vii. Delivery Charges rates – allow the merchant to set prices concerning their deliver changes and conditions related to their delivery service.

viii. Gallery Setting – allow the merchant to displayed images of their restaurant and the type of food they serve,

ix. Payment Getaway – allows the merchant to set its preferred payment methods such as mobile money

x. Customer review - allow the merchant to view comments posted by their customers and this would be used to help improve their services if required

xi. Social setting - this allow the input of social media into the system.

xii. Alert Notification – this feature allows information to be sent to the merchant when requested by the user. For example, when there is a new order requested by a customer.

Highlights that are required in the application for administrator are as per the following:

i. View Menu - is the element that will be utilized to indicate restaurant list. Administrator can embed new restaurant and alter restaurant information including changing restaurant dynamic or idle status through this element.

ii. Menu - Menu is the element that will be utilized to demonstrate menu rundown of every restaurant. Administrator can likewise adjust every menu through this component.

iii. Customer-Customer is the element that will be utilized to indicate client list in this application. Administrator can likewise alter client profile through this component.

iv. Login – this function allows the admin access to its area of control and other controls in relations to the user and the merchant. With this access the admin can auto login into the

merchants' accounts and having features such as being able to add a merchant, change merchant name and password on a request.

v. Merchant List – this feature displayed all the merchant registered with us. This provide information about the merchant, the type of food sold, and location based.

vi. Packages – this function is a displayed of all the packages we have to offer our customers once they wish to have a partnership with us. For example, we have Gold and Basic packages.

vii. Cuisine/ Dishes – this provides information about registered restaurants who are vegetarian or not vegetarian. This function allows customers to select their preferred restaurants

viii. Order status – this informs the admin about the status of an order made by a customer, whether the order is paid for, delivered, cancelled or pending. In a way it allows the admin to gain information about the number of users who are using the app to purchase food.

ix. Settings – this feature allows the admin to input and change information concerning the app information such as title and logo

x. Commission Setting – a system for calculating, processing and payment

xi. Voucher – admin can use this feature to create a discount method for its users and Merchant

xii. Merchant Commission- this allows the admin to check on the commissions gain by the merchant between time periods

xiii. Withdrawal- this feature provided information about the users or merchant who wants to pull out of our partnership.

xiv. Social settings- this allow the input of social media into the system.

xv. Customer list - this shows all the customers that have signed up with the system

xvi. Payment Gateway – this shows all the feature that can be enabled for payment gateway for merchant

xvii. Reports- allows the admin to gain access to merchant registration, payment, ales report and sales summary

xviii. User List- provides information about the user, such as name and the date he or she created the account.

3.8 The Android Framework Part Of The Design Process

In this section, we look at the intent and activity part of the android application.

AndroidManifest.xml file

Each android application must have an AndroidManifest.xml record in its root registry. This records out every one of the exercises, purposes, expectation channels, authorizations and so forth the application client. This document is in charge of giving all the data about the application to the Android framework. It likewise has the base SDK variant expected to run the application. The authorizations to get to the web, compose onto a schedule and so forth are likewise pronounced in this record.

Activities

An activity offers a means of interaction to the client. It gives a window where the UI can be structured by the window. Practically all exercises cooperate with the clients. This application has the accompanying exercises: Restaurant Finder Activity, Login Activity, Register Activity, Search Result Activity, Advanced Search Result Activity, Advanced Search List Activity, Restaurant Details Activity, Write Review Activity, Show Reviews Activity, Show Route Activity, Send Invitation Activity, Show Invitations Activity and Invitation Details Activity.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

In this section, execution and the testing result for the framework runtime will be appeared. Included highlights of the versatile application would be clarified using screen captures of the portable application created. Client acknowledgment testing was additionally completed in this section.

4.2 Implementation And Unit Testing

This is the development of the application stage; it incorporates making database and interpreting the plan result done in the past stages to programming language codes. From that point forward, a program unit testing will be finished.

4.3 Coding

The execution of the plans included complex coding and the use of CASE tools that will enable rapid development of the software. In implementing the design, Android studio and visual studio code (a multi-purpose text editor) was used in its development. Laravel framework was used as a server side supporting script to facilitate the speed of the development. Bootstrap was also used as a frontend supporting framework to enhance the interface of the system. The scripting language used for the server was PHP and MySQL Database. PHP was used to act together with the server and the SQL codes with the Database respectively. The project team used android studio to design the interface, Java to implement responsiveness and client-side interactivity of the overall web interface.

4.4 Graphical User interface

The client interface is held in reserve uncomplicated and understandable. Due to the simplicity the user doesn't require any extra exertion to comprehend the usefulness and the route in the use of the. The application is design in ways enable technical and non-technical users' access and easy view through the application. The colours are selected in such a way that a client or the user can easily read text and able to understand were an input must be given for your request to be processed. On the home page hints are given to help users provide the correct input for effective result. Insights are given to help the client in giving the right info.

Coming up next are the highlights included in the application improvement:

- Home page
- Browse Restaurant
- Restaurant Signup
- Contact
- Login and Signup
- Search Results
- Show Nearby Food page
- Food display/Prices page
- Opening Hours
- Write a Review page
- Location (map) page
- Booking page
- Gallery display page
- Cart (checkout page)

4.4.1 Home Page

The Home Page is the interface presented once the application is view by the user, it can be seen as the starting page for users and the starting page of the application .the home page allows

navigation to pages such as e Browse Restaurant, Restaurant Signup, Contact, Login, and also users can register through the home page menu. The user is able to login and register from the below screenshot.

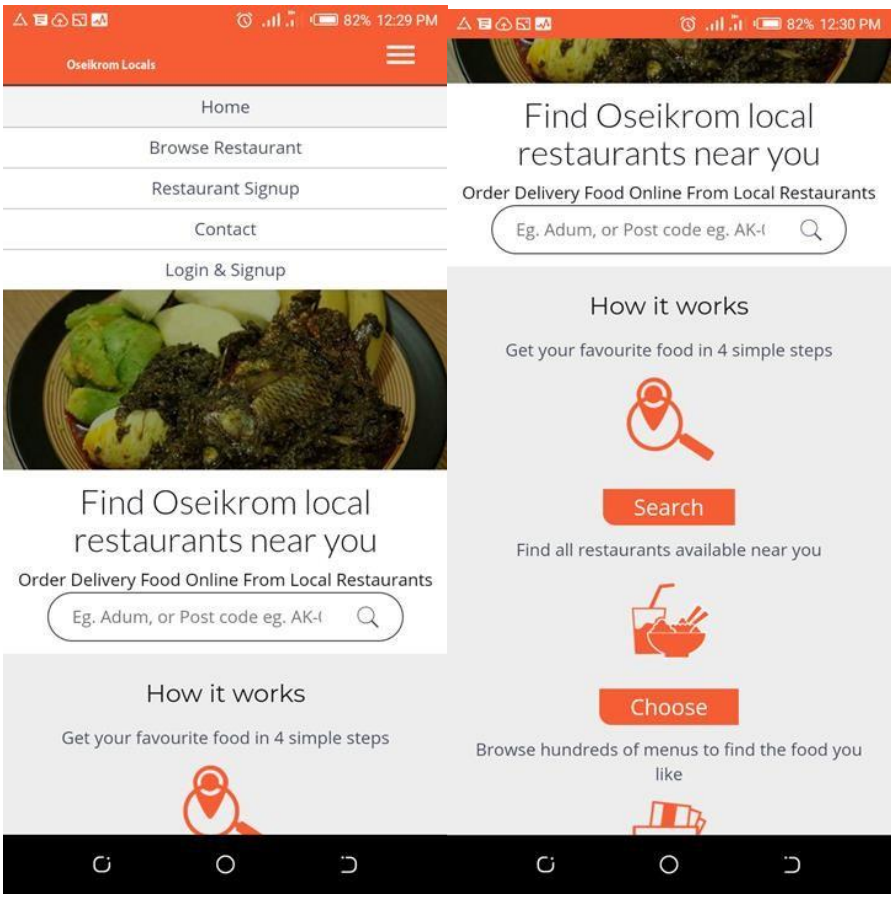


Figure 11: Home page

4.4.2 Browse Restaurant

The browse restaurant allows customers to browse on different types of restaurant available within the app. Once clicked on; different restaurant would be displayed for you to choose from.

This feature makes it easy for users to browse all the restaurant available instead of searching for a restaurant.

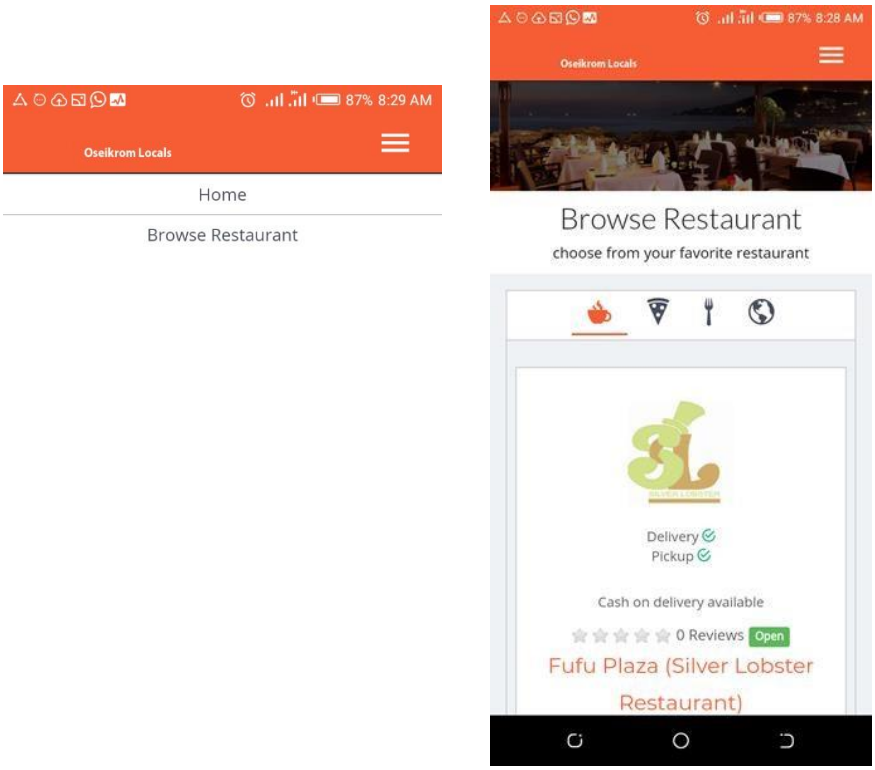


Figure 12: Browse Restaurant

4.4.3 Restaurant Signup

Restaurant signup allows customers who wish to sign up their restaurant or partnership with us as a host of their local dishes. This section is created for restaurants that wants to communicate to potential customers or users who may wish to use this android development.

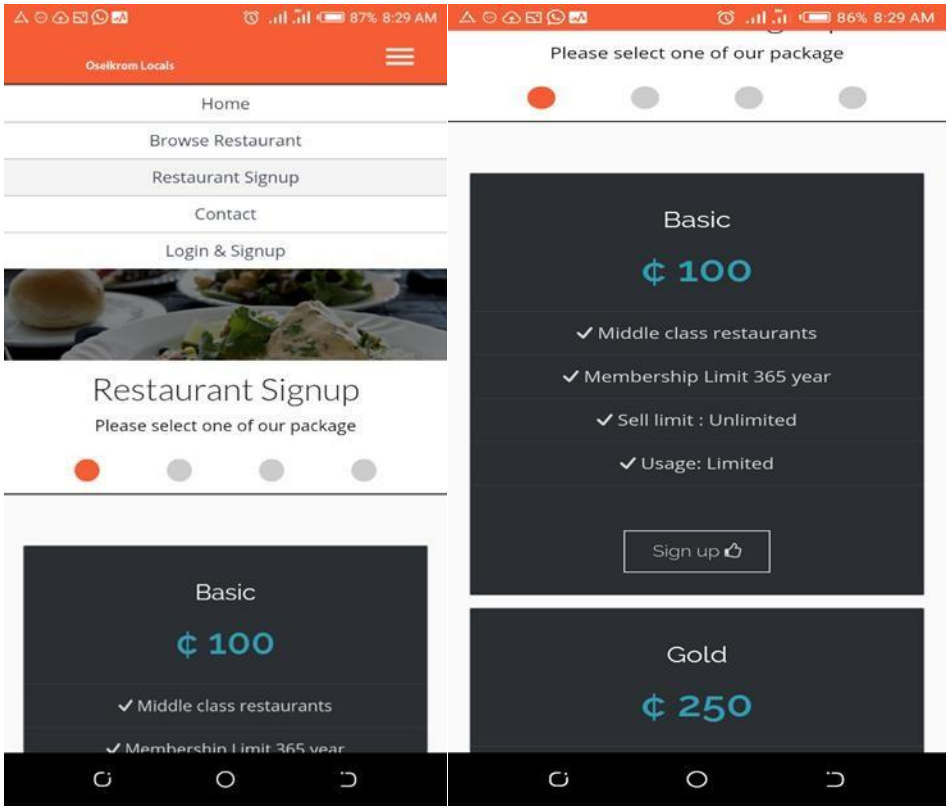


Figure 13: Restaurant Signup

4.4.4 Contact

Contact allows customers to get in touch with us. For example, additional information on signing up their restaurant. This feature is mainly aim at merchant, as they it would allow them to have a personal relationship with the admin if they decide to work with us.

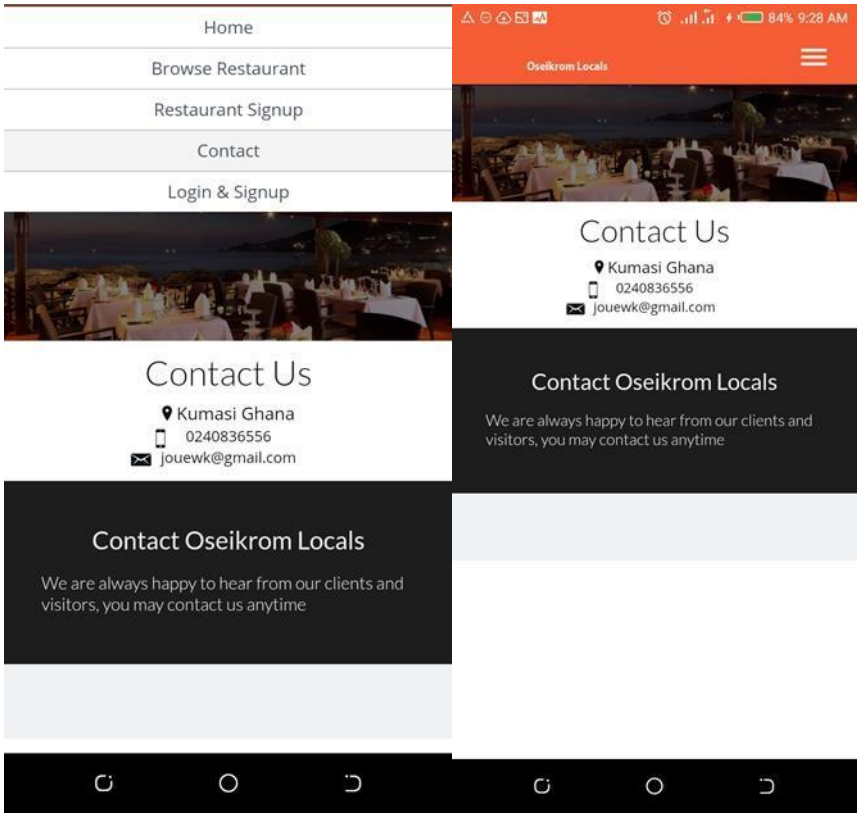


Figure 14: Contact

4.4.5 Login Page And Registration Page

Login and sign-up, this function allows registered customers to log into their accounts, as well as unregistered users being able to sign up for an account. This gives the user the power to create accounts and benefits from the services the app has to offer. For example, being able to view for different restaurants and that of making orders.

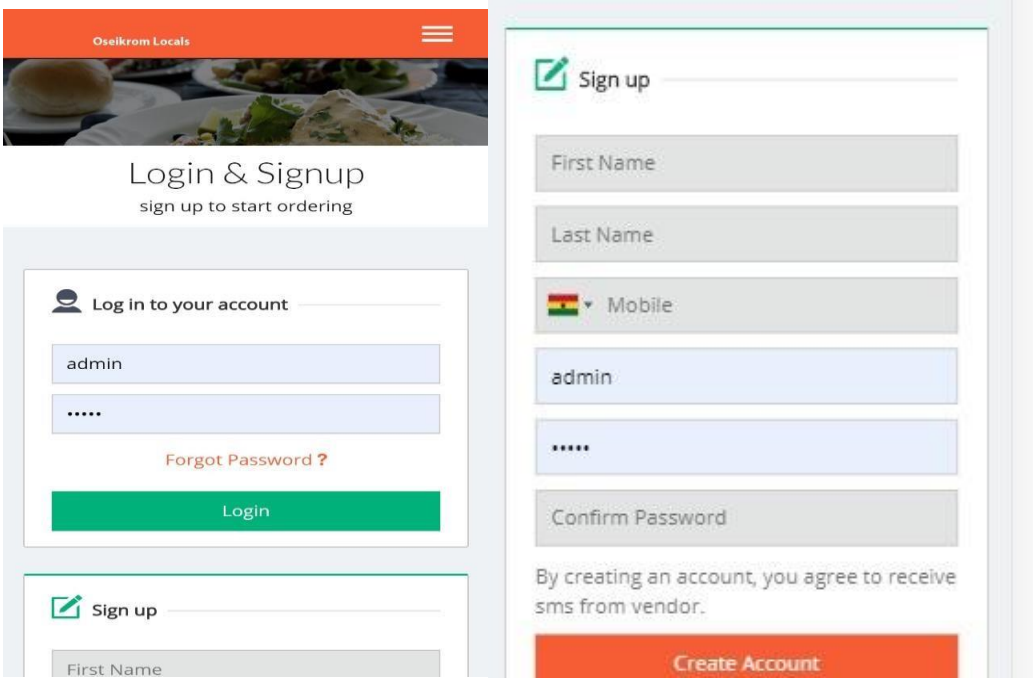


Figure 15: Login page and Registration page

4.4.6 Search Results

Search result allows users to search for their preferred restaurant, food and locations which they which to visit for their local dishes. This function makes it easy for customers to search for food which they wish to eat and restaurants which sells such food requested.

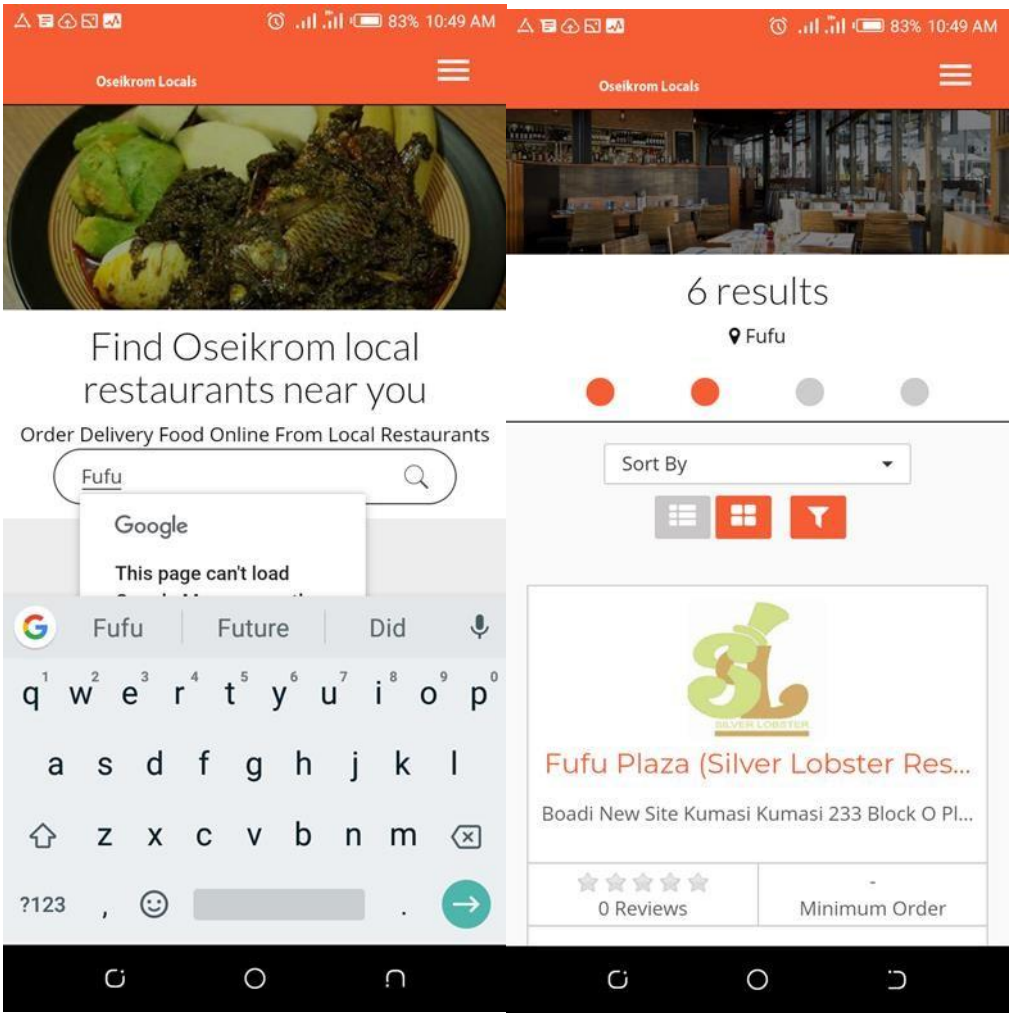


Figure 16: Search Results

4. 4.7 Show Nearby Food Page

Nearby food – this function makes it possible for customers to search for nearby food around their based location, which makes it easy when you just want restaurant which are closer or nearby your current location.

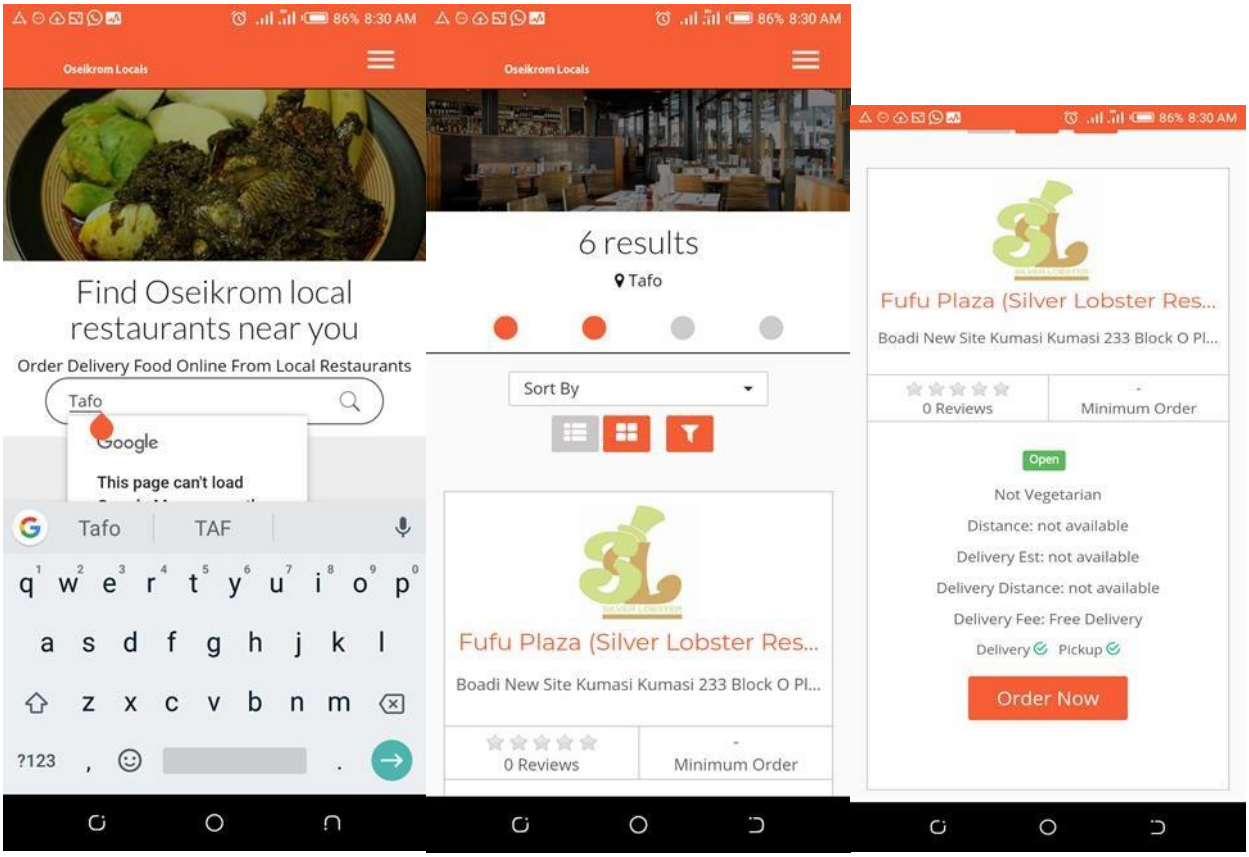


Figure 17: Show nearby Food interface

4.4.8 Food Display/Prices Page

Food displayed, this function allows users to view different food available at a restaurant of their choice. This section of the app allows users to check for available foods within a restaurant,

included prices they are sold at. This section is very important as it allows users to make their choice based on the food and the price that are affordable to them.

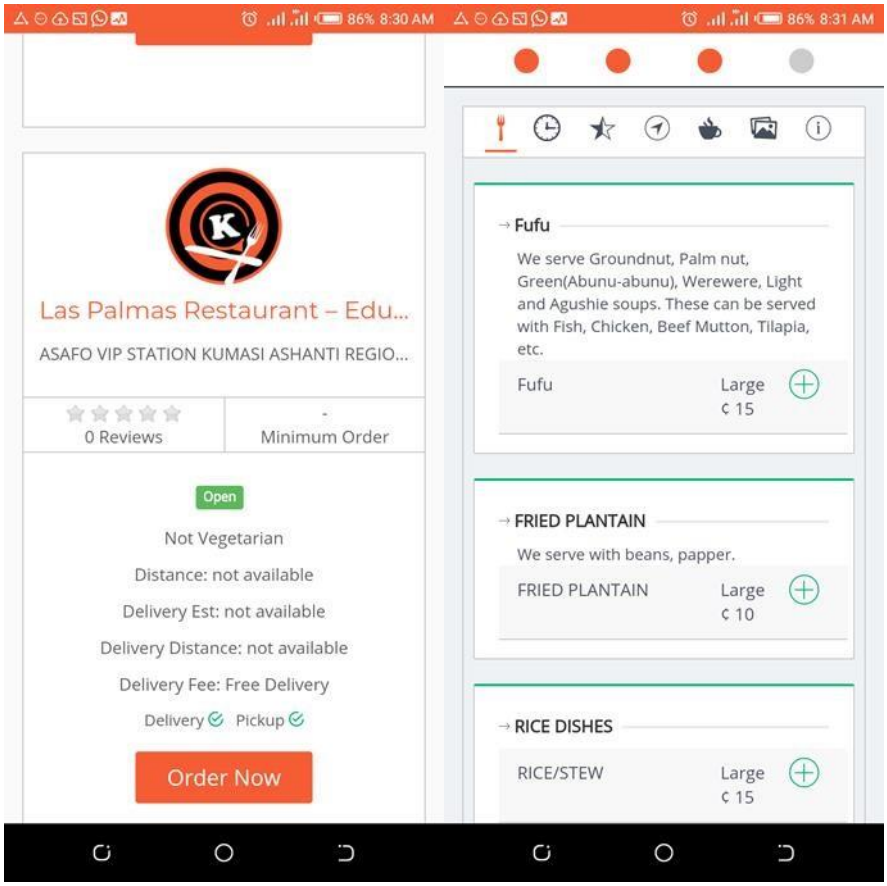


Figure 18: Food display/Prices page

4. 4.9 Opening Hours

Opening hours, this function provides users with information on when their choice of restaurant is opened. This will ensure that customers are aware of when their choice of restaurant are opened and closed to avoid any misunderstanding and disappointments.

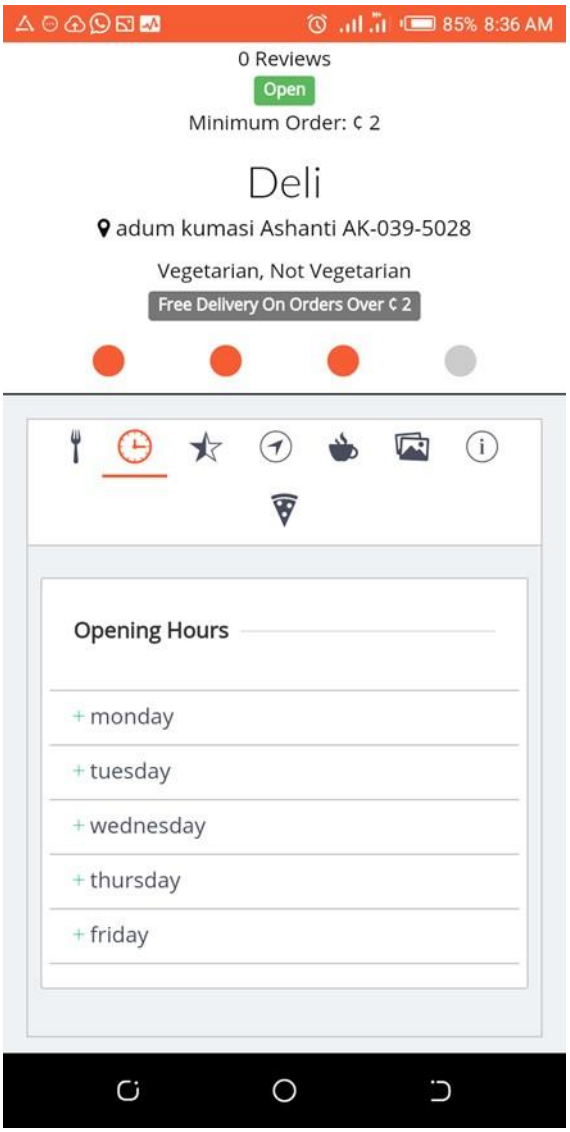


Figure 19: Opening Hours

4.4.10 Write A Review Page

Write a review allows users to write reviews concerning their customer service experience. This feature allows user to view reviews of restaurant written by various customers. This is an effective tool as it can be used by the merchant as their market research to better their customer services experience.

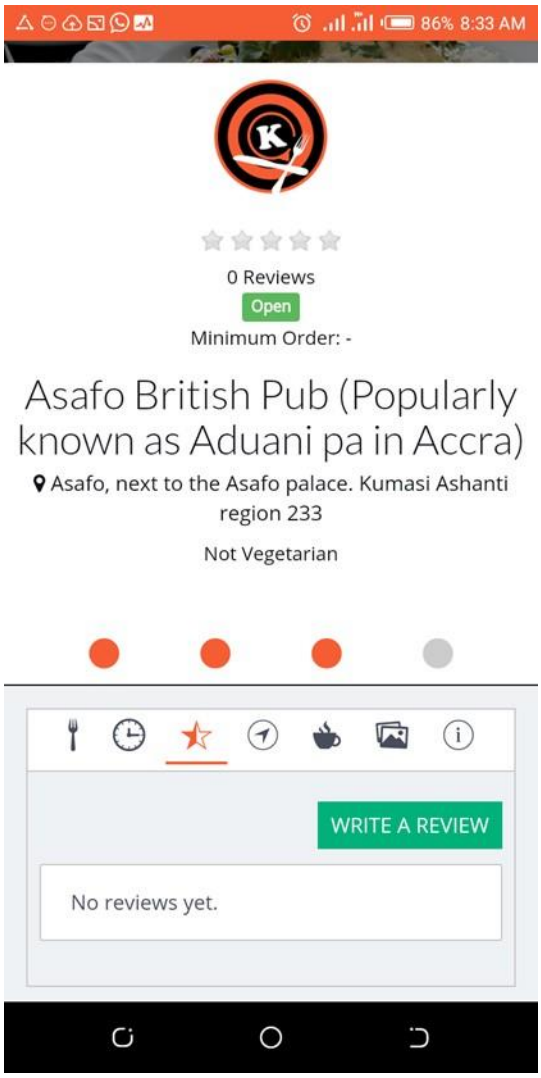


Figure 20: Write a Review page

4.4.11 Location (Map) Page

Location (MAP) – the function allows users to be able to locate the where about of a restaurant (restaurant-based location), the client or the customer is able to view the location or the route to a restaurant from preferred source with the assistance of Google API. This function can be located either in the Maps application or in the internet browser as indicated by the clients' decision and location

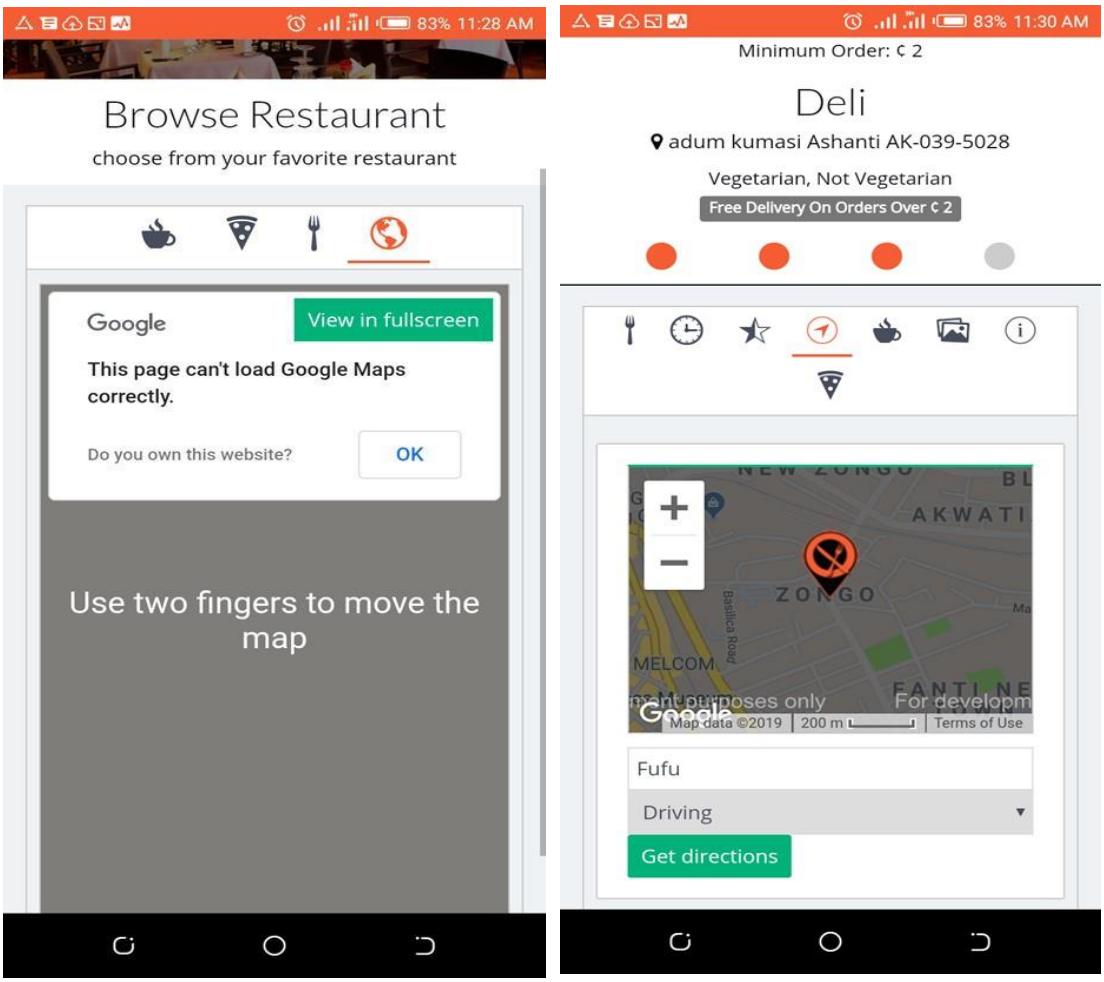


Figure 21: location (map) page

4.4.12 Booking Page

Booking. this function allows users to make reservation for tables and food preferred. This would allow customers to book tables without worrying about whether tables would be available at their choice of restaurant

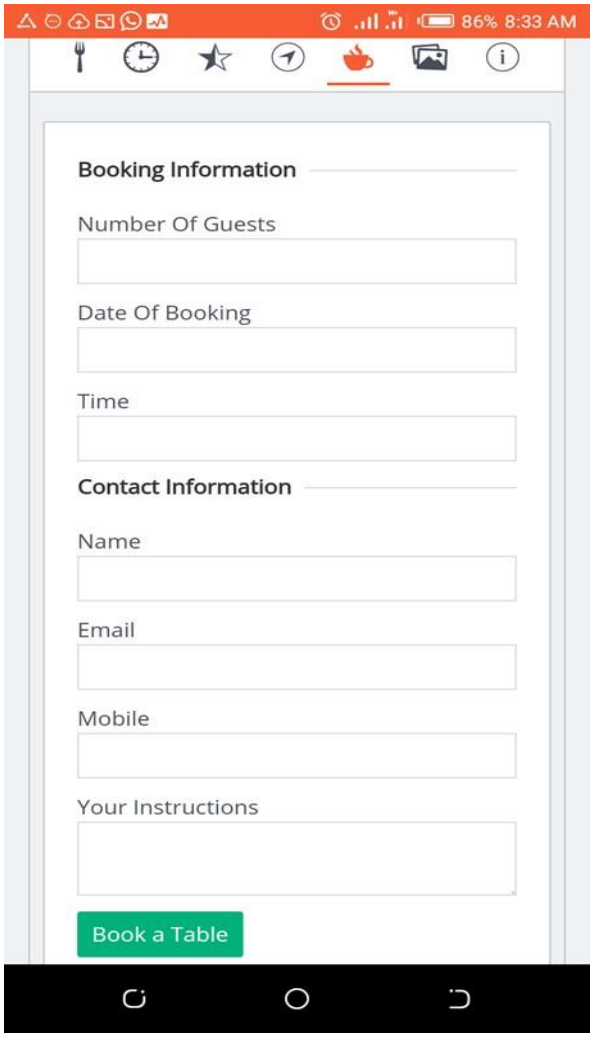


Figure 22: Booking Page

4.4.13 Gallery Display Page

Gallery Displays, allows users to view images of food provided by their preferred restaurant.

This function would allow a merchant to sell off its restaurant.

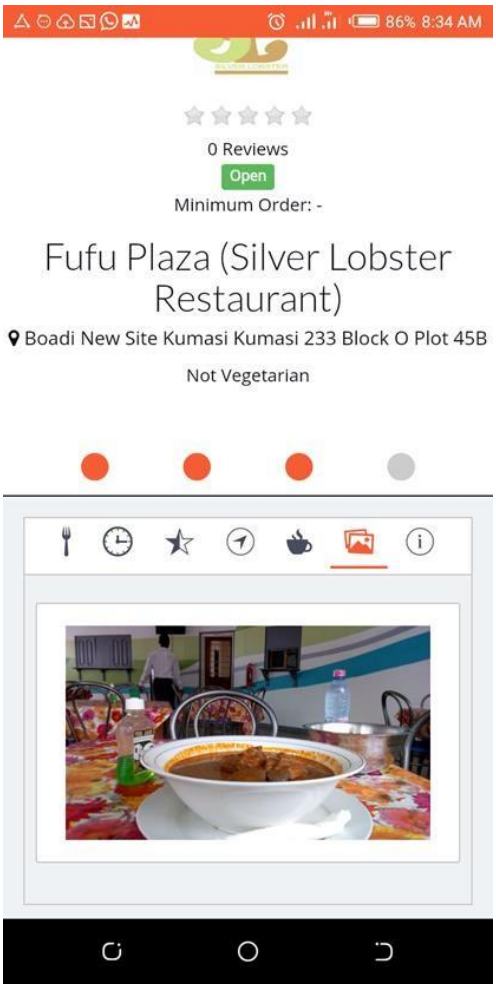


Figure 23: Gallery Display Page

4.4.14 Cart (Checkout Page)

Cart (Checkout) – this allow users to order their food and make payment. When an item has been selected a customer can look at the item in the shopping basket, by following this procedure; by tapping on Shopping Cart image at the highest point of the page. The page will permit the user to view and access his/her basket to view items currently in the cart, quantity and price. The user clicks the “checkout” for his credentials to be verified and the order placed. Function such as deliver options are provided for customers to choose their delivery type the date.

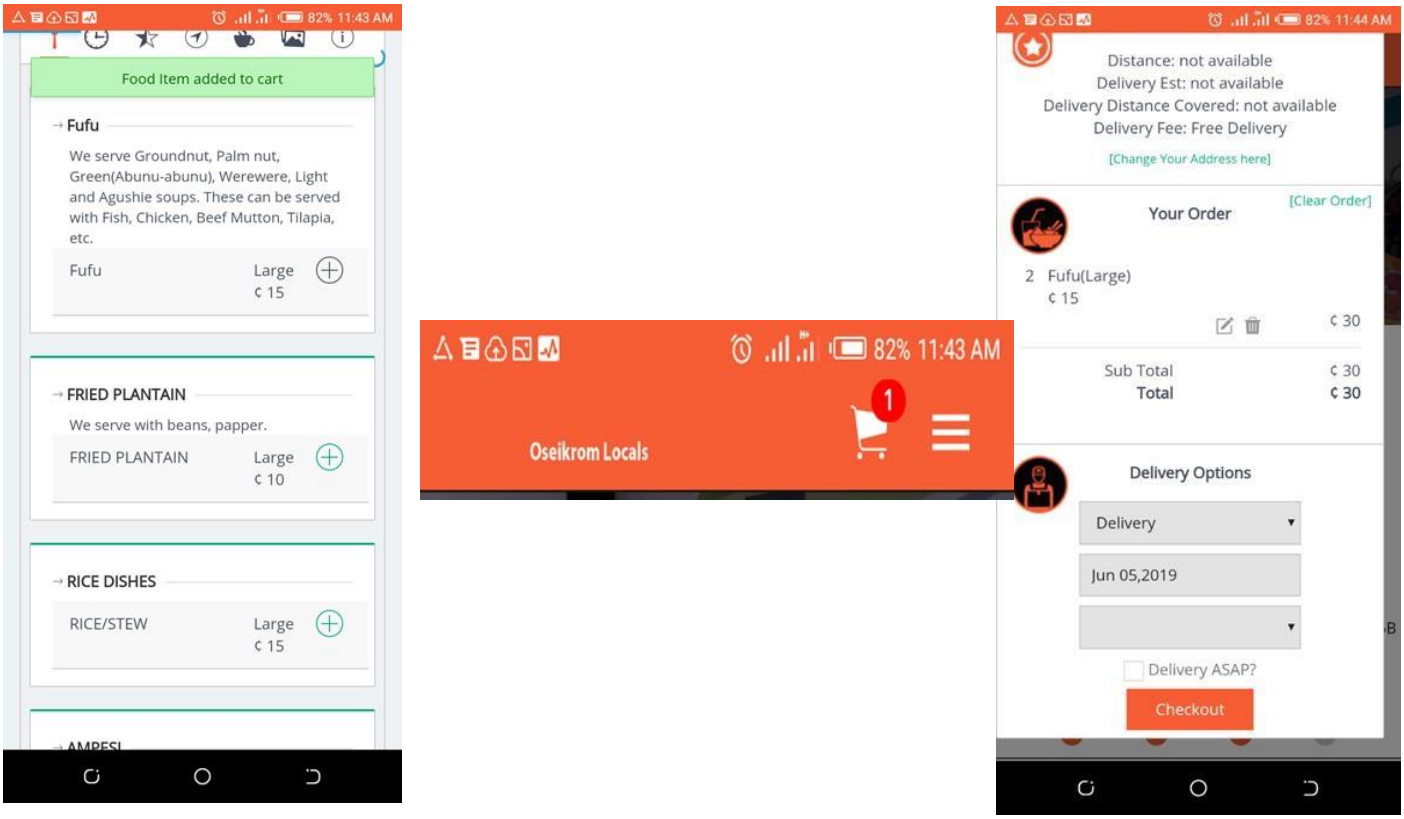
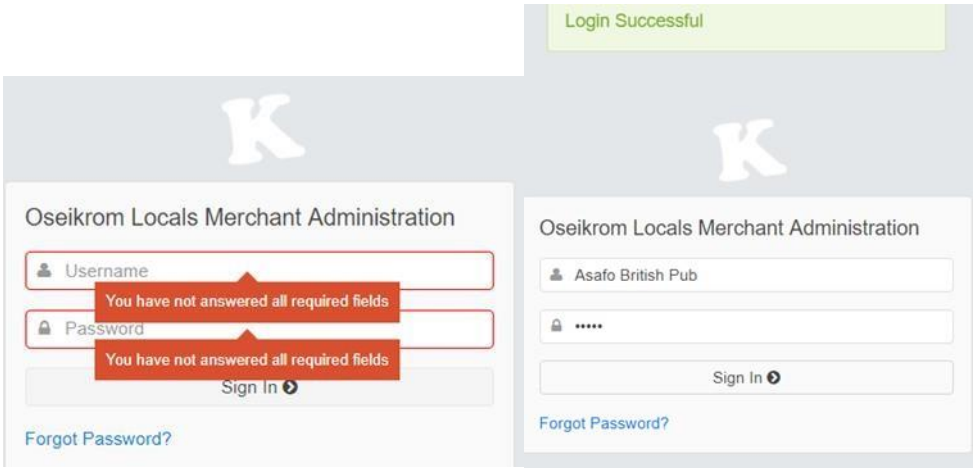


Figure 24: Cart (Checkout Page)

4.4.15 Merchant Interface



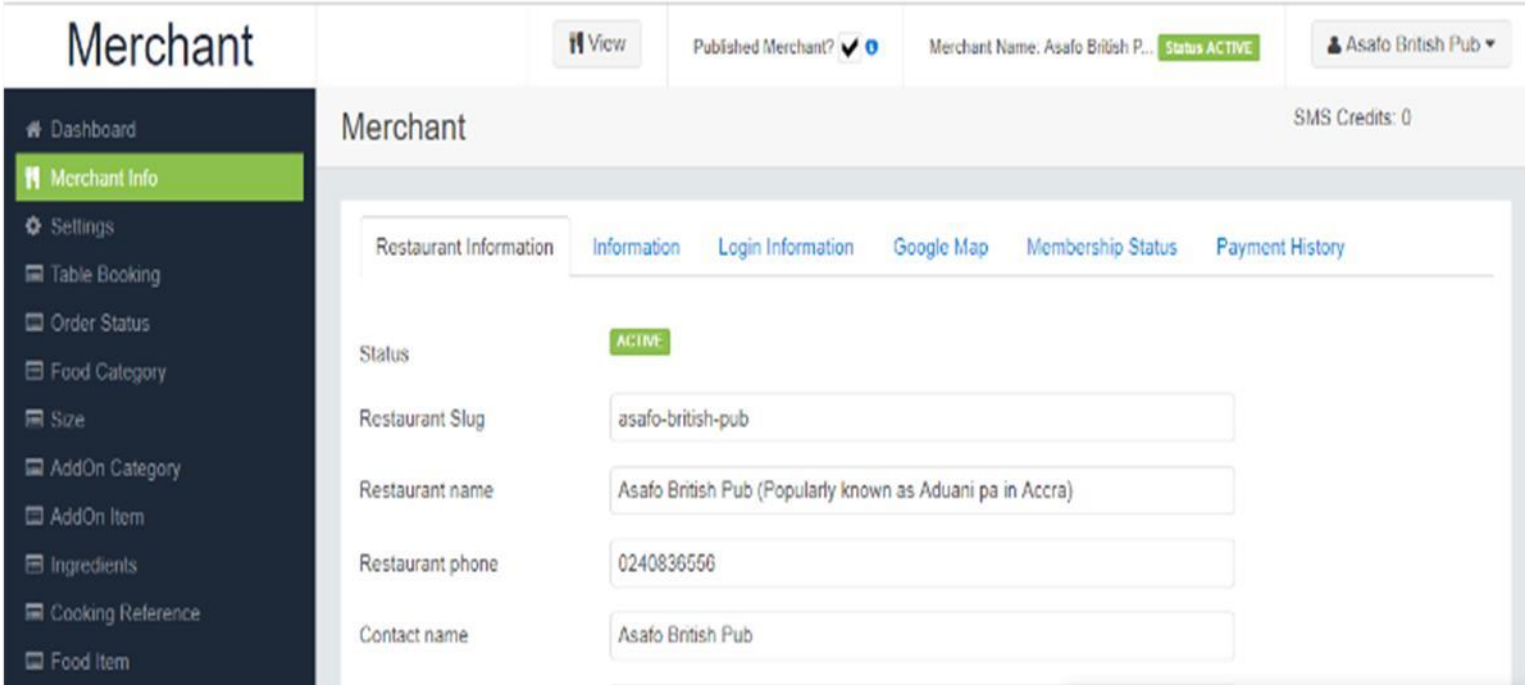
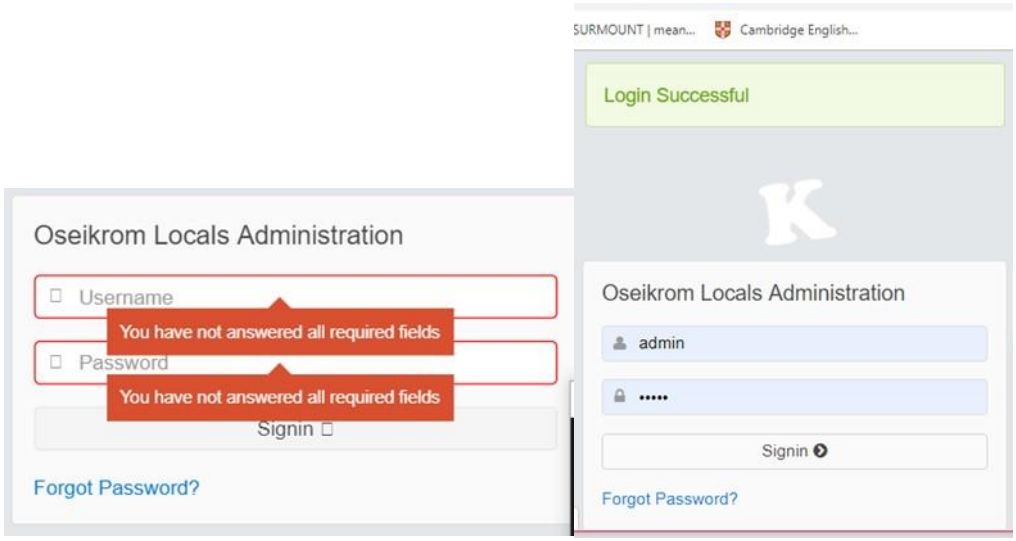


Figure 25: Merchant Interface

4.4.16 Administrator Interface



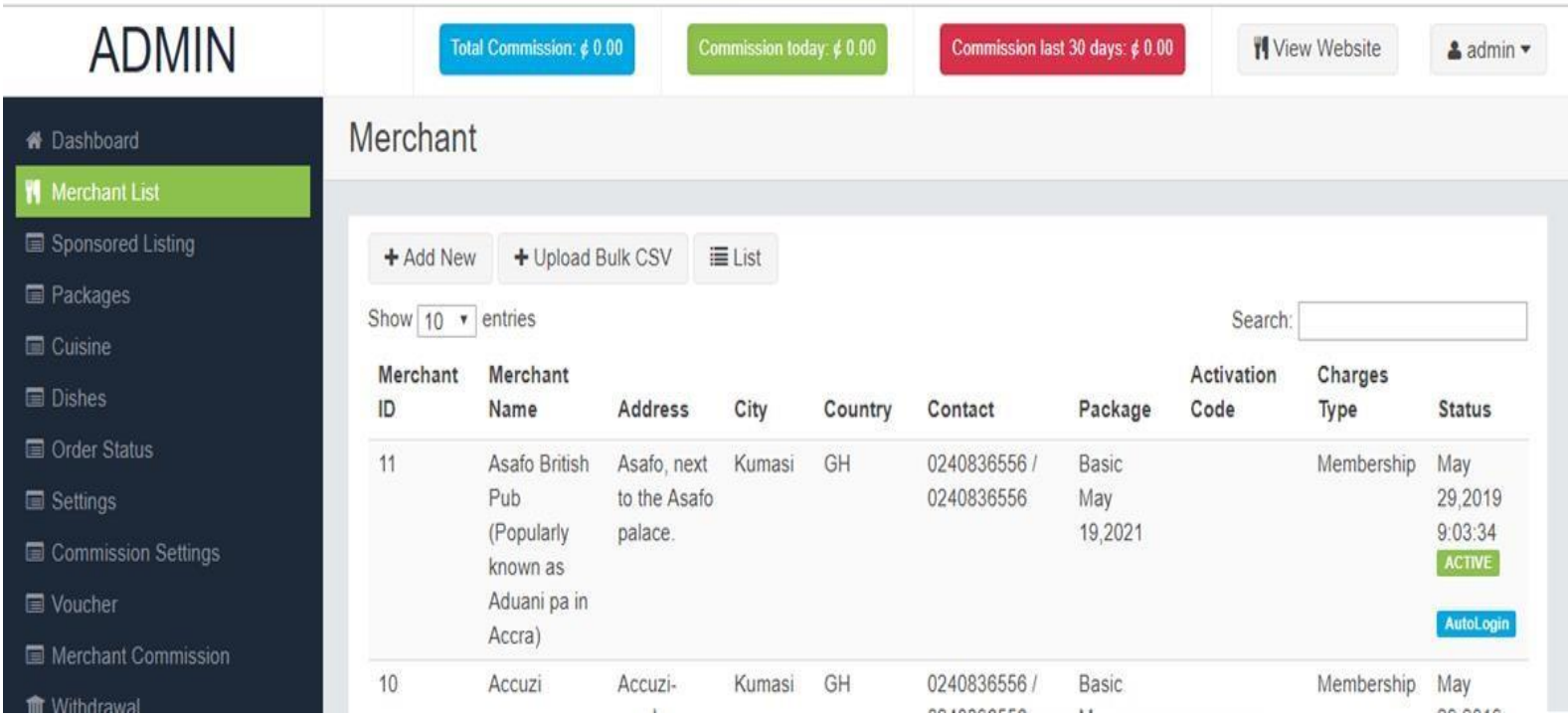


Figure 26: Administrator Interface

4.5 Testing Case and Results

Testing is approved when the system has been developed to authenticate or verify that system meets users' requirements and the aims and objectives of the system. The test case and results of the different type of testing would be accessible and discussed in the following section. In the testing phase, we tested each phase after each milestone, but final testing was done at the implementation stage to ascertain whether the software meets the specified objectives. Testing was done to meet the following objectives;

1. Help people locate and get directions to popular local food restaurants in the Kumasi Metropolis using GPRS in their smartphone.
2. Enable people order and take delivery of local foods using their smartphones.
3. Enable people make reservations at local foods restaurants using smartphones.
4. Enable local restaurants the privilege to sign up and register their restaurants; to allow customers gain access to their services and possible purchase their food
5. Enable people write reviews and read reviews of other users on a local restaurant.

By the above Figures, the application has been able to achieve its specific objectives. The interaction design of this project furthermore, highlights of the mobile application improvement have be clarified by the screen captures of the versatile application in Chapter four .The testing criteria above have been implemented into the system, which can be testified by the screen captures of the mobile application Chapter four.

CHAPTER FIVE
CONCLUSION AND RECOMMENDATION

Introduction

This section draws an interpretation to the investigation and appropriate suggestions. This encompasses the summary, recommendation, limitations and the future studies that the team intends to be accomplished for a later version of the software.

5.1 Summary of Results

This project plans to give a stage which permits its customers or clients' to be able to get location-based direction to local food restaurants within Kumasi metropolis, order and make reservations of foods sold at these restaurants. Consumers of this application will be allowed to create accounts that will give users an easy to use crossing point that would be able to get locations of local food restaurants, order for food or make reservations of their favorite food when necessary.

Crowdsourcing is second-hand to save the cuisine surveys from customers, so clients can share their sustenance experience by means of an audit with everybody and the area-based administration used to interface clients who are close to one another and ready to discover what is the well-known of least expensive food in the zone preferred. The task is arranged into three sections which are the client side (the customer side), merchant side and administrator side. Based on the effective interaction design of this project and feature of this mobile application are explained in Chapter four by screenshots.

5.2 Conclusion

In conclusion, the mobile application developed allow users to locate different types of restaurant through the use of a GPS. Through this application users can choose prominent, least expensive and latest or closest neighborhood food restaurants within Kumasi metropolis. The application can be expended on the off chance that the application client based keeps on extending to different zones, this versatile application will most likely give data about eating outlets outside Kumasi metropolis.

5.3 Future work and Recommendation

For future improvement, the accompanying work will be actualized for future productions of the product:

1. To be able to search for different eating outlet or restaurant at other location and not just in Kumasi.
2. To be able to save a food preferred in a wish list.
3. The application would be joined with social mass media such as Twitter, Facebook etc., to assist customers when ordering local foods in a nearby food outlet or restaurant.
4. The application can be created in another stage, for example, the IOS, this would allow clients using IOS to have access to this application and this would help target wider audience.

5. An additional feature such as bar can be added to show the most prescribed things, this would rely upon the quantity of time a thing has been obtained by a customers or a user's. customers of this system can be able to view the items that has been shopped or most frequent items purchased and make recommendations to available to them.
6. Distribution Interfaces: Add a distribution interface to the system to help streamline the work of the delivery system.

5.4 Limitation of the system

1. Time: Due to time bound of two semesters we were unable to extend features requested by some users of Oseikrom Locals.

2. Financial Constraints: Oseikrom Locals is limited to basic functionalities. Most of the features in Oseikrom locals App such as GPS should have been extended to premium versions to enhance the functionalities of Oseikrom locals.

3. Nearby Function: implementation of nearby restaurants was not properly implemented as needed. Unable to show nearby restaurants.

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APPENDIX

Program Codes

FOR THE FRONT –END, we declared the following:

```
<div class="uk-width-1">
<a href="<?php echo Yii::app()->request->baseUrl;
?>/merchant/AddOnCategory/Do/Add" class="uk-button"><i class="fa fa-plus"></i>
<?php echo Yii::t("default","Add New")?></a>
<a href="<?php echo Yii::app()->request->baseUrl; ?>/merchant/AddOnCategory"
class="uk-button"><i class="fa fa-list"></i> <?php echo
Yii::t("default","List")?></a>
<a href="<?php echo Yii::app()->request->baseUrl;
?>/merchant/AddOnCategory?Do/Sort" class="uk-button"><i class="fa fa-sort-
alphaasc"></i> <?php echo Yii::t("default","Sort")?></a>
</div>
<div class="spacer"></div>
<div id="error-message-wrapper"></div>
<form class="uk-form uk-form-horizontal forms" id="forms">
<?php echo CHtml::hiddenField('action','addAddOnCategory')?>
<?php echo CHtml::hiddenField('id',isset($_GET['id'])?$_GET['id']:"");?>
<?php if (!isset($_GET['id'])):?>
```

```
<?php echo CHtml::hiddenField("redirect",Yii::app()->request-
>baseUrl."/merchant/AddOnCategory/Do/Add")?>
<?php endif;?> <?php  if (isset($_GET['id'])){ if (!$data=Yii::app()-
>functions->getAddonCategory2($_GET['id'])){ echo "<div
class=\"uk-alert uk-alert-danger\">".
Yii::t("default","Sorry but we cannot find what you are looking for."."</div>"; return
;
}
}
?>
```

AT THE BACK END, we declare the following:

```
class AdminController extends CController
{  public
$layout='admin_tpl';
public $crumbsTitle='';
/*public function
accessRules()

{               }  public
function filters()
{
 }  */  public function
beforeAction($action)
```

```
 {
$action_name= $action->id ;
$accept_controller=array('login','ajax');  if(!Yii::app()->functions-
>isAdminLogin() )
 {  if
(!in_array($action_name,$accept_controller)){
if ( Yii::app()->functions->has_session){
$message_out=t("You were logout because someone login with your account");
$this->redirect(array('admin/login/?message='.urlencode($message_out)));
 } else $this->redirect(array('admin/login'));
 }
 $aa_access=Yii::app()->functions->AAccess();
$menu_list=Yii::app()->functions->AAmenuList();
if (in_array($action_name,(array)$menu_list)){

 if (!in_array($action_name,(array)$aa_access)){
 //dump($_SESSION['kr_user']);
$this->redirect(Yii::app()->createUrl('/admin/noaccess'))
 }
}       return true;
```

GPS CODING

```
<div class="box-grey rounded" style="margin-top:0;">
  <div id="merchant-map"></div>

  <div class="row top10 direction-action">
    <div class="col-md-6 border">        <?php echo CHtml::textField('origin',
isset($_SESSION['kr_search_address'])?$_SESSION['kr_search_address']:"
      ,array('class'=>'grey-inputs'))?>
    </div>
    <div class="col-md-3 border">
       <?php echo CHtml::dropDownList('travel_mode',",
       Yii::app()->functions->travelMmode()
       ,array('class'=>'grey-inputs'))?>
    </div>
    <div class="col-md-3 border">        <input
type="button"         class="get_direction_btn green-button
inline rounded"         value="<?php echo t("Get
directions")?>">
    </div>
  </div> <!--row-->

</div> <!--box-grey-->
```

```
<div class="direction_output" id="direction_output"></div>
```