

NATUREL KISS ONLINE SHOPPING  
(NKOS)

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NATUREL KISS ONLINE SHOPPING (NKOS)

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## ABSTRACT

Naturel Kiss is a well-established beauty products company which has received numerous accolades locally and internationally. According to the founder, Naturel Kiss' objectives are to offer Malaysian women with skincare and cosmetic products that are safer, non-toxic, and based on natural local and imported ingredients as best as possible. These products can be purchased via distributors and agents throughout Peninsular Malaysia, Sabah and Sarawak. In addition, these products can also be purchased online through the company's official website. However, Naturel Kiss is lacking of a mobile application platform that allows the customers to purchase the products at anytime, anywhere with the help of internet. Therefore, Naturel Kiss Online Shopping (NKOS) mobile application is developed to improve the efficiency of Naturel Kiss e-commerce system which later having both web-based and mobile-based online shopping platforms. Naturel Kiss Online Shopping (NKOS) mobile application is developed to facilitate the sale and purchase of users at the tips of their fingers. The objectives of this project are to design a beauty product online shopping mobile application, to develop a prototype for the Naturel Kiss Online Shopping (NKOS) system and to validate the Naturel Kiss Online Shopping (NKOS) prototype as a mobile-based system. This project is developed using the Android Studio software, laptop and Java programming language by using the methodology of Rapid Application Development (RAD). There are four phases in RAD model, which are Requirements Planning, User Design, Construction and Cutover. After developing the system, client will be involved in the User Acceptance Test (UAT) to ensure that the system is functioning according to the requirements without any bugs or errors. The User Acceptance Test (UAT) will prove that the system has fulfilled its objectives and able to solve the problem encountered previously. Hence, as a result from the development, a mobile-based online shopping application is developed and all of the features are functioning properly according to the requirements.

## ABSTRAK

*Naturel Kiss* ialah sebuah syarikat produk kecantikan yang terkenal dan telah banyak menerima penghargaan di dalam mahupun di luar negara. Menurut pengasasnya, objektif *Naturel Kiss* adalah untuk menawarkan wanita Malaysia dengan produk penjagaan kulit dan kosmetik yang lebih selamat, tidak bertoksik, serta berdasarkan ramuan tempatan dan bahan semulajadi yang terbaik. Produk ini boleh dibeli melalui pengedar dan ejen di seluruh Semenanjung Malaysia, Sabah dan Sarawak. Di samping itu, produk ini juga boleh dibeli secara dalam talian melalui laman web rasmi syarikat tersebut. Walaubagaimanapun, *Naturel Kiss* tidak mempunyai sebarang platform aplikasi mudah alih yang membolehkan pelanggan membeli produk pada bila-bila masa, di mana sahaja dengan adanya internet. Oleh itu, aplikasi mudah alih *Naturel Kiss Online Shopping* (NKOS) ini dibangunkan untuk meningkatkan kecekapan sistem e-dagang *Naturel Kiss* yang akan datang mempunyai kedua-dua platform membeli-belah iaitu berasaskan web dan juga mudah alih. Aplikasi mudah alih *Naturel Kiss Online Shopping* (NKOS) ini dibangunkan untuk memudahkan penjualan dan pembelian pengguna di hujung jari mereka. Objektif projek ini adalah untuk merekabentuk aplikasi mudah alih bagi tujuan pembelian produk kecantikan secara dalam talian, untuk membangunkan prototaip bagi sistem *Naturel Kiss Online Shopping* (NKOS) dan untuk mengesahkan bahawa prototaip *Naturel Kiss Online Shopping* (NKOS) adalah sebagai sistem yang berasaskan mudah alih. Projek ini dibangunkan menggunakan perisian Android Studio, komputer riba dan bahasa pengaturcaraan Java dengan menggunakan kaedah *Rapid Application Development* (RAD). Terdapat empat fasa dalam model RAD, iaitu Perancangan Keperluan, Reka Bentuk Pengguna, Pembinaan dan Pematangan. Selepas system dibangunkan, pelanggan akan terlibat dalam Ujian Penerimaan Pengguna (UAT) untuk memastikan bahawa sistem dapat berfungsi mengikut keperluan tanpa sebarang kesalahan atau kesilapan. Ujian Penerimaan Pengguna (UAT) akan membuktikan bahawa sistem telah memenuhi objektifnya dan dapat menyelesaikan masalah yang dihadapi sebelumnya. Oleh itu, hasil daripada pembangunan tersebut, sebuah aplikasi mudah alih bagi tujuan membeli-belah secara dalam talian telah dibangunkan dan semua ciri berfungsi dengan baik seperti yang dikehendaki.



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## LIST OF ABBREVIATION

NKOS	-	Naturel Kiss Online Shopping
B2B	-	Business to Business
B2C	-	Business to Consumers
HTTP	-	HyperText Transfer Protocol
XML	-	Extensible Markup Language
UML	-	Unified Modeling Language
CSS	-	Cascading Style Sheets
SDLC	-	Software Development Life Cycle
RAD	-	Rapid Application Development
GUI	-	Graphical User Interface
UAT	-	User Acceptance Test
JAD	-	Join Application Design
CASE	-	Computer-Aided Software Engineering
HP	-	Hawlett-Packard
AMD	-	Advanced Micro Devices
RAM	-	Random Access Memory
ROM	-	Read-Only Memory
REST	-	Representational State Transfer
API	-	Application programming interface

# CHAPTER 1

## INTRODUCTION

### 1.1 BACKGROUND

Online shopping is a sort of electronic correspondences innovation that is utilized at the phase of requesting, offering, and/or payment, which is otherwise called as 'E-commerce'. This E-commerce is normally being directed between the clients and the organizations. Other than that, the exchange can likewise be led among companies and public administrations. E-commerce is also the online monetary exchanges process that is overseen by individuals and organizations. The key parts of E-commerce are generally separated by electronic commerce between businesses (B2B), between consumers and businesses (B2C) and between consumers. .

The matter of E-commerce which is also significant to E-retailing has been characterized as the sale of products by means of the web or other electronic channels, either for individual or for household use by the purchasers. The process of performing the E-commerce exchange by the clients include viewing the goods and services, adding the products into cart and conducting the checkout process which results in the approval or rejection of the payment. From the point of view of an E-commerce organization, it can sell the goods or services to any part of the world with the assistance of the Internet. It implies that the area isn't constrained to specific zones like a physical retail location.

Likewise, a small and growing organization can likewise take place in the market. This implies that in an E-commerce business, small and medium ventures can lead the business and become similarly focused to the bigger ones. This is because it enables them to withstand the difficulties and to snatch the odds by picking up a bigger client and can be opened all day, every day under negligible supervision. E-commerce does not just build the brilliant open door for the vender, yet it likewise expands the purchasing opportunities for the buyer. They can consider various items from a multi-scope of decisions which are more extensive than traditional business.

## **1.2 PROBLEM STATEMENT**

Malaysia has a high rate of E-commerce utilization with an exceptional number of 15.3 million online customers (50 percent of the population) as of July 2018 with 62 percent of mobile users utilizes their gadgets to shop online. Online customers are with the range of products, the price advantages and the product reviews. Interestingly, Malaysian customers usually seek for convenience, free delivering, and promotions offered by the online stores.

In Malaysia, Fashion and Beauty is among the main three most purchased categories of items. There are a lot of online shopping platforms for beauty items which are made predominantly dependent on social media, for example, Instagram, Facebook, Twitter and Whatsapp. However, Naturel Kiss, a local beauty company is lacking of the mobile application platform for the customers to purchase the beauty products. The beauty products are only available to be purchased through the official website. The aim is to provide the ease of use for the customers to purchase the Naturel Kiss beauty products at anytime wherever there is an internet connection.

Therefore, there is a significant need to have an online shopping mobile application to enhance and ease the sales and purchase of the Naturel Kiss beauty products.

## **1.3 OBJECTIVE**

The objectives of this project are:

- i. To design a beauty product online shopping mobile application.
- ii. To develop a prototype for the Naturel Kiss Online Shopping (NKOS) system.
- iii. To validate the Naturel Kiss Online Shopping (NKOS) prototype as a mobile-based system.

## 1.4 SCOPE

The scopes of this project which include:

- i. User:
  - a. The system is used by customer (registered) and admin of Naturel Kiss Online Shopping (NKOS).
- ii. Client:
  - a. Naturel Kiss.
- iii. Functions:
  - a. User Login: Login is the function for the customer and admin as the authorized users to use the system.
  - b. User Registration: Registration is the function for guest to become an authorized customer in order to have full access to the system.
  - c. View Profile Details: This function allows the customer to view their profile details.
  - d. Edit Profile Details: This function allows the customer to edit their profile details.
  - e. View Products Details: This function allows the users to view the products available.
  - f. Search Products: This function allows the customers to search for the desired products.
  - g. Add Product to Cart: This function allows the customer to add the desired products to cart.
  - h. View Products in Cart: This function allows the customer to view the products that have been added to the cart.
  - i. Delete Products in Cart: This function allows the customer to delete products in the cart.
  - j. Checkout: This function allows the customer to pay for the products meanwhile bank will validate and approve the transaction.



## **1.5 REPORT ORGANIZATION**

This report comprises of five parts which are Chapter 1, Chapter 2, Chapter 3, Chapter 4 and Chapter 5. Chapter 1 briefly clarifies about the introduction of the project. The introduction clarifies about the background, problem statement, objective, scope, and report organization. The issue is distinguished and briefly discussed in the problem statement which adds to the improvement of Naturel Kiss Online Shopping (NKOS).

Chapter 2 clarifies on the literature review. It starts with the introduction which incorporates the background study of the project, the techniques that are reasonable to be implemented and the sources of references. Chapter 3 clarifies on the methodology of the project. The methodology which incorporates chosen phases of development will be expressed and clarified throughout the chapter. The development process will be outlined in a Gantt chart.

Chapter 4 clarifies on the execution, testing and the discussion of the outcome. It gives the clarification with respect to the implementation of the system according to the requirement. This chapter then provides and clarifies about the test cases led on the system to ensure that the five systems prerequisites are checked and approved to avoid any mistakes from happening by acquiring the test outcomes.

Last but not least, Chapter 5 discusses about the project conclusion. This chapter summarizes the procedure that has been conducted throughout the development of the project. It likewise incorporates the research constraints, clarification on the constraints and the conceivable future work of the model system.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION ON NKOS**

NKOS is a mobile-based system that provides management features for the end-user to conduct the sales and purchases of the products. The customer and admin of the system get full access into the system by signing in with a legitimate username and password.

NKOS enables the customer to view, search and buy the ideal items. The admin can view, search, add, update and delete the products. NKOS additionally provides the payment management features where customers can buy the ideal items through gateway.

In NKOS, customer's billing are generated in the system which incorporate the summary of the product details, the item quantity and the total cost of the items after the payment has been affirmed.

#### **2.2 TYPE OF MANAGEMENT SYSTEM**

A management system is a sorted out structure that are intended to deal with an association's methodology and procedures to guarantee that an association can satisfy all tasks required in order to accomplish its objectives and to persistently improved. A decent management system can assist an organization to increase the effectiveness of its operations, deal with the risks meanwhile advancing partner certainty (BSI, 2018). In fact, management systems allow companies to adapt with the challenges by conducting best practices. This will increase the user's satisfaction when the end products are competent to be produced according to the requirements needed. There are many types of management system which include standalone, web-based and mobile-based.

### **2.2.1 Standalone System**

A standalone system is essentially a framework where a gadget or system can play out its capacity without the need of another gadget, computer, or connection (Hope, 2017). Standalone system does not really require a network connection to function as it can work offline. Standalone system can also be considered as a system that is installed on each client system. For instance, for an office which contains 35 systems, it is necessary to install a standalone application on each of the systems. However, the data can also be stored in the system if a central server is available in the office. By doing so, it will provide a connection for each of the application to connect to which allows all the 35 systems to get up-to-date-data in real time on the application (Dangwal, 2017).

Furthermore, standalone system also refers to a device that does not need any other devices to perform its functionalities as it is considered as “self-contained” (Beal, 2018). For instance, a fax machine is considered as a standalone gadget as it does not require a modem, printer, computer, or some other gadgets to play out its functionalities. However, a printer is not considered as a standalone device because it needs to be connected to a computer in order to be functioning.

The benefit of utilizing a standalone system is damage control. For instance, if anything goes wrong, it will only affect the standalone system. This is due to the fact that a standalone system does not affect other devices. When using a device with a network connection, someone may consume a lot from the connection by watching movies or playing games causing other people using the same network to experience a slower computer performance. Other than that, a standalone system emphasizes on simplicity due to the fact that less expertise is needed to manage a standalone system.

The hindrance of utilizing a standalone system is that it may consume a lot of time to install a standalone system as it should be installed each one in turn. Other than that, a standalone system may cause the user to use up too much of the storage space causing problems to occur on the network.

### **2.2.2 Web-Based System**

A web-based system grants the access to a software system by utilizing an internet connection on a computer (DSHS, 2017). A web-based system is usually being considered as a web-based application in which any application that can be granted over a network connection by using HTTP. Apart from that, a web-based application usually runs by using a web browser (Techopedia, 2018). For instance, web-based applications include from the range of light applications like online file converter, Flash games, online games to more complex web-based applications such as online spreadsheet. To develop a web-based system, it needs a competent understanding in the latest technologies and tools such as UML, Java, XML and databases.

The benefit of using a web-based system is that it provides a quick development cycles. This is because web-based languages like HTML, Javascript and CSS takes quicker time to code as it is easier to understand in which results in a quicker development of the system. Other than that, a web-based system is easier to monitor. The system needs to be installed only on the server causing less effort needed for maintaining and updating the system as it very well may be performed straightforwardly on the server.

The hindrance of a web-based system is that it is too reliable on the internet. This is because in order to be granted on a web-based system, an established internet connection is needed. Otherwise, the system will not be loaded. The connection of the internet is limited at certain places causing the end-user to not have the access to the system or application.

### **2.2.3 Mobile-Based System**

A mobile-based system is usually considered as mobile application in which a software program that is built up specifically to be utilized on small, wireless computing gadgets, which include smart phones and tablets, and not on laptop or personal computers (Rouse, Mobile App, 2013). The development of a mobile application is usually decided on which Operating System the program will be installed. For instance, either Google's Android or Apple's iOS, or both.

This indicates that a mobile application can be placed into two categories which are native and hybrid. A native application defines a software program that is developed to be specifically utilized on a specific gadget or platform (Rouse & Gillis, Native App, 2018). There are two major mobile Operating Systems which are Android and iOS produced by Google and Apple respectively. The codes for native applications are written specifically to be used on the device and their Operating System. For instance, the developers for iOS application use the programming language of Objective-C or Swift to write the codes meanwhile Java is the commonly used programming language to build an Android-native program.

Other than that, a hybrid application usually combines the elements of both native and web applications (Rouse, Hybrid Application (Hybrid App), 2011). Hybrid application is able to function in conditions where the device is connected to the internet or vice versa. It also features the browser that is embedded in the framework to improve the user access to the dynamic online content.

The advantage of mobile-based system is portability. The mobile-based application can run in any portable devices which include smart phone and tablet. It is not limited to only certain platforms only. It performs on many Operating System platforms such as BlackBerryOS, iOS, Android and Windows. Other than that, mobile-based application has only a single codebase which indicates that the system is easier to be maintained and updated which contradicts with standalone and web-based system that consume a huge amount of time for the maintenance and update purposes.

The disadvantage of mobile-based system includes the limitation of storage. This is due to the fact that most of mobile devices have lower storage capacity as compared to a laptop or personal computers. Other than that, the mobile-based application needs to be continuously upgraded in order to cope with current updates and fresh contents in which consume time and resources.

## 2.3 EXAMPLE OF BEAUTY ONLINE SHOPPING SYSTEM

### 2.3.1 Sephora

Sephora is a visionary beauty-retail idea established in France by Dominique Mandonnaud in 1970. Sephora's novel, open-sell condition includes a consistently expanding measure of great and developing brands over a wide scope of item categories including skincare, cosmetics, scent, body and hair care, in addition Sephora's very own private mark.

Sephora allows the customers to view, search and purchase the desired products available that cover from the head to the toe. The customer is allowed to purchase more than a single item in one transaction. The payment can be made through gateway and the customer can select to either log in/sign up to the system or he/she can perform checkout as a guest in which the customer does not have to register as a member. The overall system is user-friendly as it is easy to navigate from one page to the other. Figure 2.1 shows the interface of the Sephora mobile application.

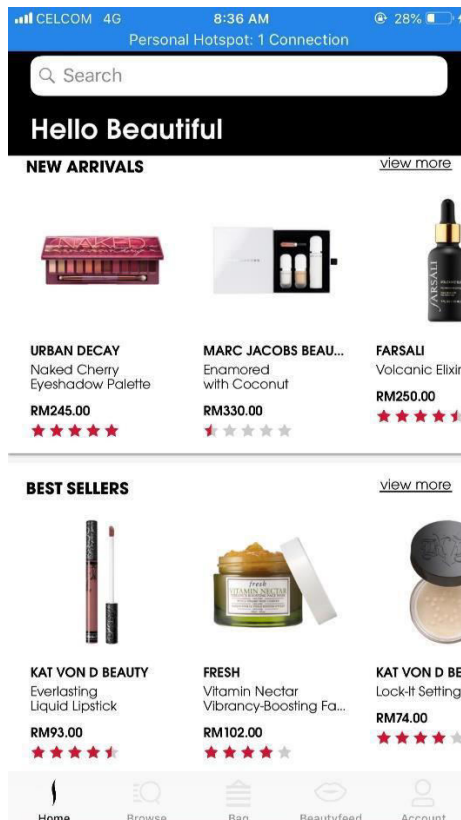


Figure 2.1 Sephora Mobile Application

### 2.3.2 Hermo

Hermo was made explicitly for beauty fans who love shopping online. Excellence sweethearts would now be able to browse a wide scope of items, find precisely what they need with complete details on the items, purchase the items effortlessly, and still get an abnormal state of administration from the friendly group behind Hermo.

Not to mention all the great discounts, coupon codes, promotions and free delivering that you can't discover anyplace else. At Hermo, we esteem our client's online shopping experience and intend to make your Malaysia online shopping experience better with the best and most recent in skin care and cosmetics items.

Hermo provides an additional feature in which customers can view the testimonial review from other customers who have been using the products. However, customers will have to create an account and become the member before proceeding on the payment through gateway. Figure 2.2 shows the interface of the Hermo mobile application.

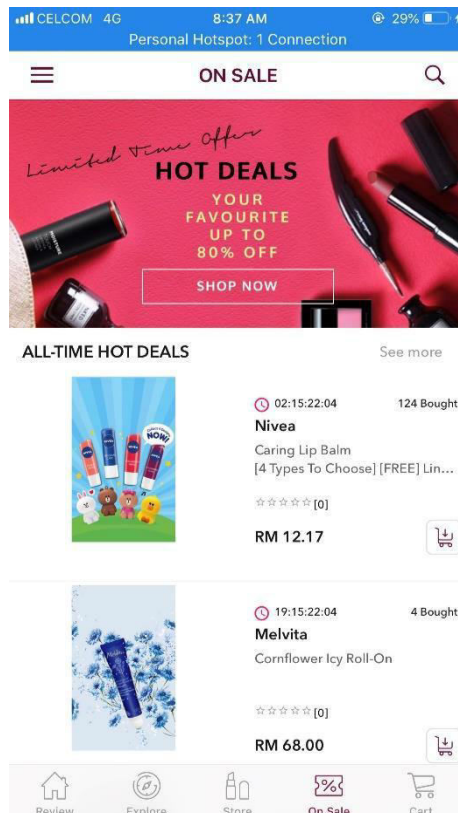


Figure 2.2 Hermo Mobile Application

### 2.3.3 Althea

Althea speaks to the excellence of Korea and conveys true K- beauty products to the world. Established in June 2015, Althea was expected to connect K- beauty and Southeast Asia. Despite the expanding prevalence of K- beauty products on the planet, there was not a one- stop shopping goal where everybody and anybody on the planet could appreciate legitimate K- beauty items at a sensible cost, similarly as Korean customers do in Korea.

Althea sorts the products into several categories which increases the user productivity. It also allows the customers to search for the desired product. However, in order to purchase the products, customer must sign up and become a member to proceed with the payment by using gateway. Figure 2.3 shows the interface of the Althea mobile application.

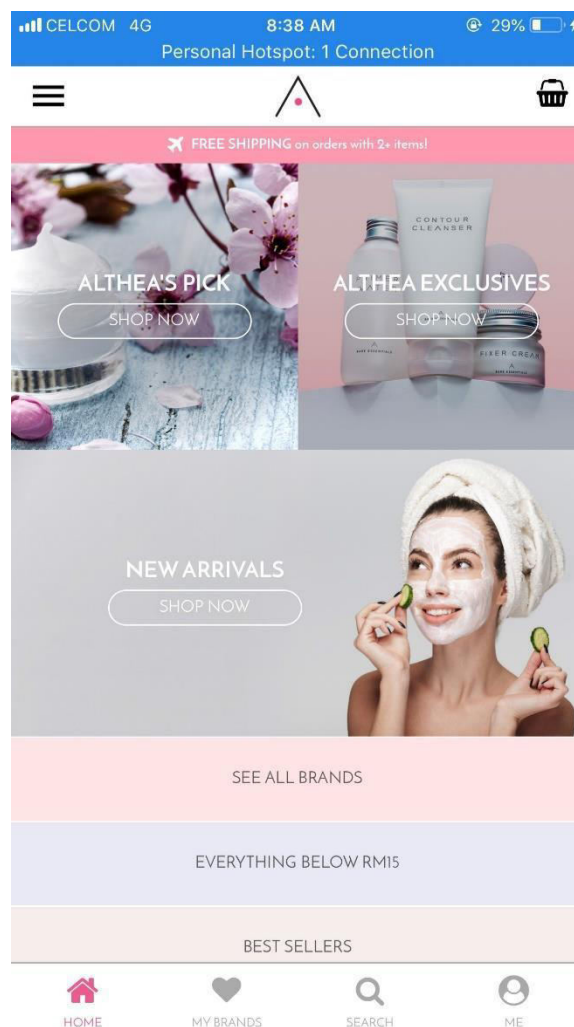


Figure 2.3 Althea Mobile Application



## 2.4 COMPARING THE EXISTING SYSTEMS

Table 2.1 distinguishes the comparison between Sephora, Hermo and Althea Online Shopping Mobile Application.

Table 2.1 Comparison between existing systems

<b>Aspect</b>	<b>Sephora</b>	<b>Hermo</b>	<b>Althea</b>
Deployment	Mobile-based, web-based	Mobile-based, web-based	Mobile-based, web-based
Specific Function Available	<ol style="list-style-type: none"> <li>1. Login</li> <li>2. Register account</li> <li>3. User profile</li> <li>4. Add to cart</li> <li>5. Search for products</li> <li>6. Add to wish list</li> <li>7. Beauty feed</li> <li>8. Payment through gateway</li> </ol>	<ol style="list-style-type: none"> <li>1. Login</li> <li>2. Register account</li> <li>3. Search for products</li> <li>4. Add to wish list</li> <li>5. Add to cart</li> <li>6. Testimonial review</li> <li>7. User profile</li> <li>8. Payment through gateway</li> </ol>	<ol style="list-style-type: none"> <li>1. Login</li> <li>2. Register account</li> <li>3. Add to cart</li> <li>4. Search for products</li> <li>5. Add to wish list</li> <li>6. Beauty feed</li> <li>7. User profile</li> <li>8. Payment through gateway</li> </ol>
Supported Operating System	Windows, Mac OS, Android, iOS	Windows, Mac OS, Android, iOS	Windows, Mac OS, Android, iOS

Table 2.2 shows the advantage of each existing system, Sephora, Hermo and Althea Online Shopping Mobile Application.

Table 2.2 Advantage of the existing systems

<b>Aspect</b>	<b>Sephora</b>	<b>Hermo</b>	<b>Althea</b>
Advantage	<ol style="list-style-type: none"> <li>1. Multi-user web or PC and mobile-based system</li> <li>2. Simple integration: connecting patients through Gmail and can be accessed anywhere</li> <li>3. Personal data is always secured and backed-up</li> <li>4. Has upgrade software or hardware</li> <li>5. Accessible for a range of devices</li> <li>6. Easy to install</li> <li>7. Easy payment method through gateway</li> </ol>	<ol style="list-style-type: none"> <li>1. Multi-user web or PC and mobile-based system</li> <li>2. Simple integration: connecting patients through Facebook and can be accessed anywhere</li> <li>3. Personal data is always secured and backed-up</li> <li>4. Has upgrade software or hardware</li> <li>5. Accessible for a range of devices</li> <li>6. Easy to install</li> <li>7. Easy payment method through gateway</li> <li>8. Additional function of testimonial review</li> </ol>	<ol style="list-style-type: none"> <li>1. Multi-user web or PC and mobile-based system</li> <li>2. Simple integration: connecting patients through Gmail and Facebook</li> <li>3. Can be accessed anywhere</li> <li>4. Personal data is always secured and backed-up</li> <li>5. Has upgrade software or hardware</li> <li>6. Accessible for a range of devices</li> <li>7. Easy to install</li> <li>8. Easy payment method through gateway</li> </ol>

Table 2.3 shows the disadvantage of each existing system, Sephora, Hermo and Althea Online Shopping Mobile Application.

Table 2.3 Disadvantage of the existing systems

<b>Aspect</b>	<b>Sephora</b>	<b>Hermo</b>	<b>Althea</b>
Disadvantage	<ol style="list-style-type: none"> <li>1. Not everyone has a Gmail account</li> <li>2. No real-time chat with the seller</li> <li>3. Internet is required</li> <li>4. No testimonial review</li> </ol>	<ol style="list-style-type: none"> <li>1. No real-time chat with the seller</li> <li>2. Not everyone has a Facebook account</li> <li>3. Internet is required</li> </ol>	<ol style="list-style-type: none"> <li>1. Internet is required</li> <li>2. No testimonial review</li> <li>3. No real-time chat with the seller</li> <li>4. Only focused on Korean beauty products</li> </ol>

## **2.5 CONCLUSION**

Online shopping management system provides customers and admin management functions for them to manage the sales. Most of the online shopping management systems accessible in market give operational capacities, for example, user account, product list, add to cart, add to wish list, payment gateway and generate receipt. Apart from that, online shopping management systems these days are created to be either a web-based, standalone or mobile-based system. As for Naturel Kiss Online Shopping (NKOS) system, it is decided to be a mobile-based system since it is more user-friendly and almost every online shopping enthusiast owns a smart phone nowadays. Plus, all of the information and the database of the system are stored in the server which results in no limitation of storage size. Taking everything into account, the system is most reasonable to be a developed as a mobile-based application.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

In order to guarantee that the product can be created within the financial limit and time limitation, a great software development methodology is required. There are different sort of software methodology, which has its own focal points and burdens. Throughout this chapter, a few techniques used to develop the Naturel Kiss Online Shopping (NKOS) are examined, alongside the requirements of the system and how it was utilized on the development of the system.

For the most part, methodology is a specific arrangement of principles, thoughts, or techniques that are significant (Merriam-Webster, 2018). In software engineering, methodology is an architecture that is utilized to plan, structure, and control the development procedure of an information system and it is known as software development methodology. For instance, the software development methodology is separated into a few phases that contain explicit exercises to actualize better planning and management. These stages can likewise be considered as the Software Development Life Cycle (SDLC).

There are numerous kinds of methodologies that are generally utilized in the development of software and each of the methodologies has developed to adapt to current innovations. Each of the methodologies has their very own qualities and weaknesses. The sorts of methodologies incorporate Waterfall, Prototyping, Incremental, Agile and some more. Every methodology is not the same as the others due to the system needs and its intricacy. Rapid Application Development (RAD) methodology is selected to develop the Naturel Kiss Online Shopping (NKOS) system as it is competent with the system's necessities.

## **3.2 METHODOLOGY**

This part will briefly discuss about the Rapid Application Development (RAD) model and its phases. The phases include requirement planning phase, user design phase, construction phase and cutover phase.

### **3.2.1 Discussion on Rapid Application Development (RAD)**

Rapid Application Development (RAD) is a software development methodology that focuses on rapid prototyping and application development to guarantee quicker product conveyance (Powell-Morse, 2016). In contrast to traditional waterfall development, RAD focuses on iterative development process otherwise called as agile development. In other word, Rapid Application Development (RAD) is an option in contrast to the classic waterfall model that focuses on building up a software system in brief time limit. Rapid Application Development (RAD) organizes more on the development contrasted with the planning of the tasks.

In RAD, the capacities and parts of the system are set up in parallel as models. The developments are conveyed, time- boxed and after that assembled into a working model (Shah and Dhiman, 2016). Thus, it will convey the complete item in a quicker manner. This conforms to the main objective of actualizing Rapid Application Development (RAD) into the development process of a system which goes for quicker development and conveyance of a top notch system at a moderately minimal effort through the iterative process.

The advantages of using the RAD model include reducing the development time. This is due to the fact that RAD should be utilized when there exists a demand to develop a system that can be integrated within 2-3 months of time (Shah & Dhiman, 2016). Other than that, the RAD model also reduces the risks as the integration process of the system has been conducted from the very beginning resulting in a lot of integration issues to be solved.

There are four phases in RAD model, which are Requirements Planning, User Design, Construction and Cutover. Figure 3.1 shows the phases in RAD model.



briefly discuss about the selected management system alongside the correlation, benefit and detriments between the existing systems.

### 3.2.1.2 User Design Phase

User Design is a constant intuitive procedure that enables users to comprehend, adjust, and in the end support a working model of the system that addresses their issues. During this phase, the requirements from the requirements planning phase are transferred into drawings in order to provide higher understandings. The illustrations and important diagrams are obtained to represent all the system processes, inputs, and outputs. The details of the User Design phase are depicted in the Software Requirement Specification and the Software Design Document in the Appendix B and C, respectively. Figure 3.2 shows the Context Diagram of Naturel Kiss Online Shopping (NKOS) containing an outline of the entire system architecture.

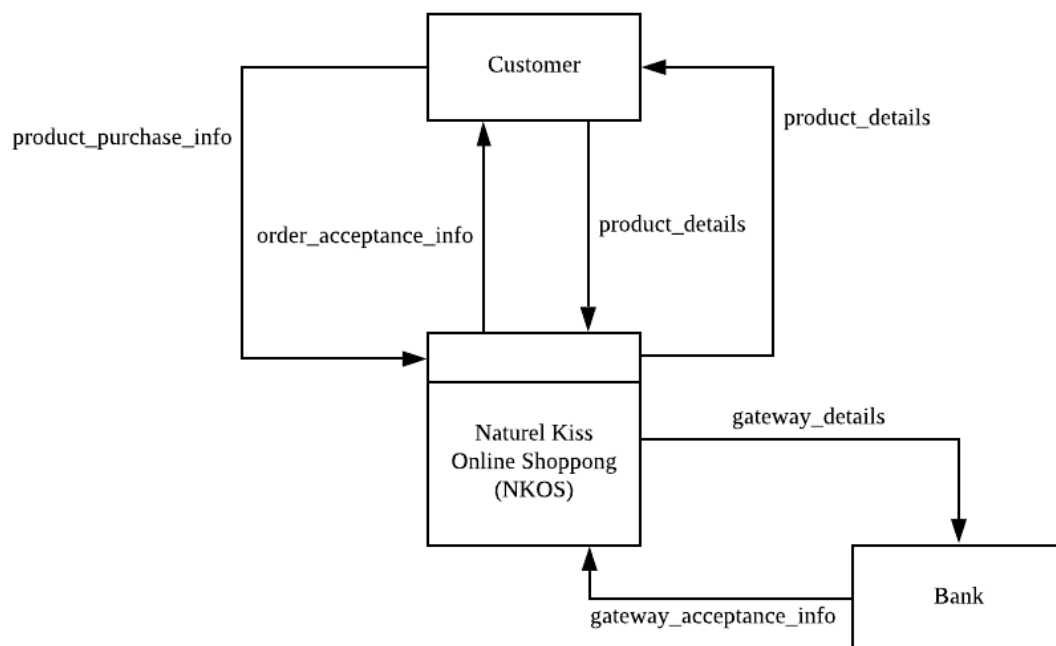


Figure 3.2 Context Diagram of Naturel Kiss Online Shopping (NKOS)

Figure 3.3 shows the Use Case diagram of Naturel Kiss Online Shopping (NKOS) that contains an overview of the actors and the use cases involved in the development of the system.

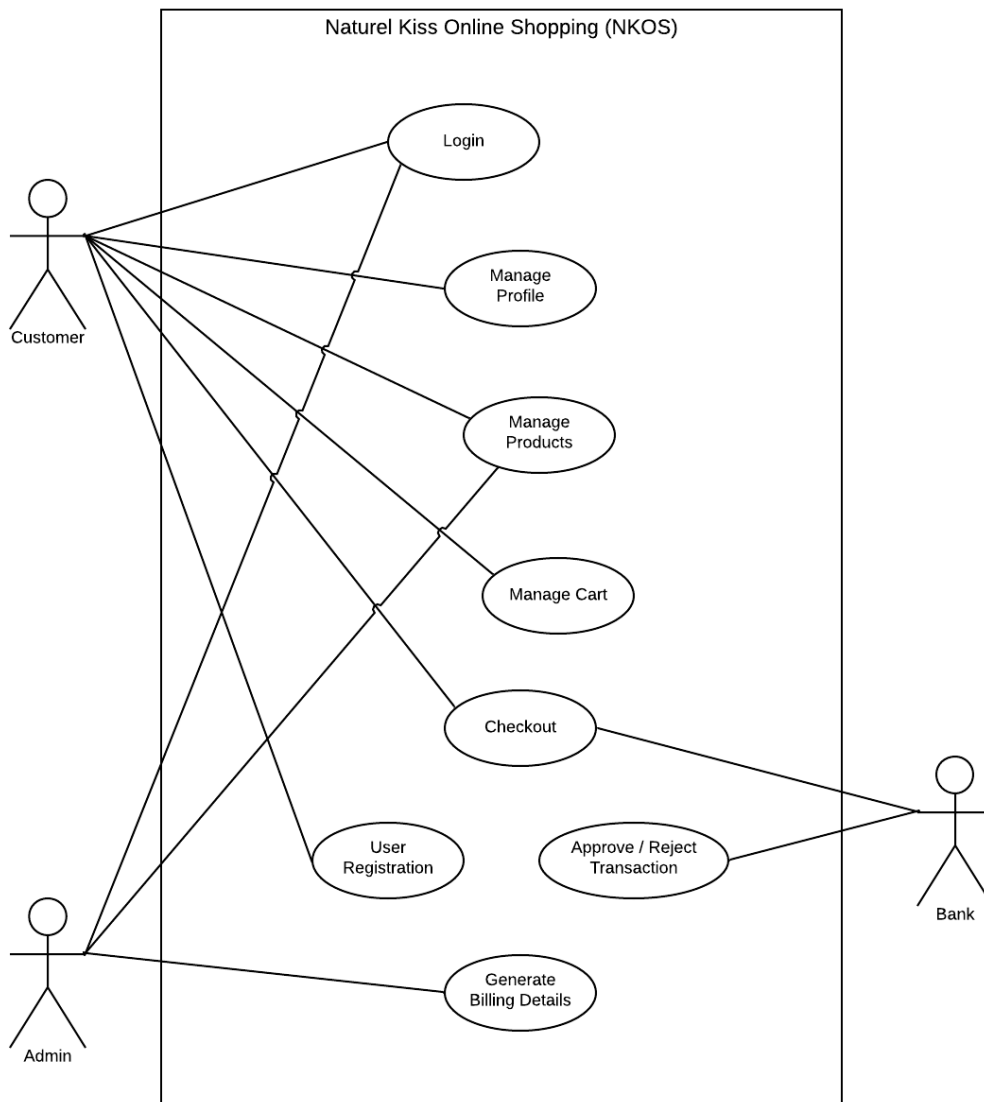


Figure 3.3 Use Case Diagram of Naturel Kiss Online Shopping (NKOS)

From Figure 3.3, we can see that the Naturel Kiss Online Shopping (NKOS) interacts with three actors, which are the customer, admin and bank. There are eight use cases involved in the system which are user login, manage profile, manage products, manage cart, checkout, user registration, generate billing details, and approve/reject transaction.

Figure 3.4 shows the Dialog diagram of Naturel Kiss Online Shopping (NKOS) that contains a storyboard of the succession for android application.



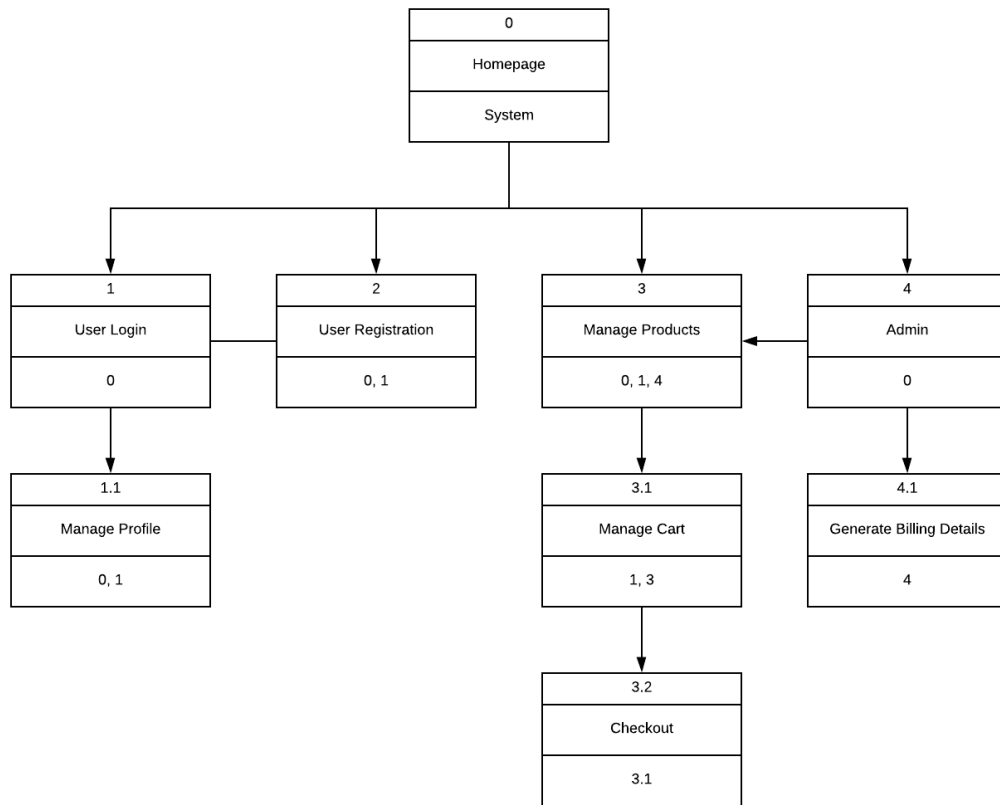


Figure 3.4 Dialog Diagram of Naturel Kiss Online Shopping (NKOS)

From Figure 3.4, the Naturel Kiss Online Shopping (NKOS) will have four main functionalities. The first main function is User Login in which a user can get a full access to the system as a registered customer. The second main function is User Registration in which the user can sign up to become a member. The third main function is Manage Products. From the Manage Products function, the customer can manage the cart and purchase the products by performing checkout. The admin of the system will be responsible to manage the products and generate billing details.

### 3.2.1.3 Construction Phase

During this phase, the participation of end users continue welcomed. A model of the system is constructed and examined by the end user. The users are allowed to give constructive criticisms and suggestions to improve the prototype before the end product is obtained.

The tasks performed during the construction phase of the project are:

- i. System development: Java programming language is chosen for the system development. The UI structure and database are created utilizing Java and Firebase NoSQL, respectively.
- ii. System testing: Testing is directed once the system is actualized to decide if the system meets the necessity from the client and the objectives of the project.
- iii. Test data is created and the system is documented: The testing report is produced to distinguish the area which is affected.

During the construction phase, the graphical UI (GUI) is proposed and intended to the customer. The details of the design are portrayed in the Software Design Document in Appendix C. Moreover, the testing of the system is portrayed further in the User Acceptance Test (UAT) document that can be obtained in Appendix D.

#### **3.2.1.4 Cutover Phase**

This is the final phase of the development process. It comprises of user training activities in which exhibit how the system works. The training activities are the coherence from the materials created during the construction phase. Truth be told, the imperfection and defect of the system will be identified and being taken into improvement. Accordingly, the finished system will be installed after being tested and approved.

The method utilized in the development of the system is Rapid Application Development (RAD). This method is normally being utilized to direct a quick system development and at the same time, figured out how to convey a top notch product with a generally low investment cost. Throughout the development process utilizing the Rapid Application Development (RAD) method, the techniques utilized alongside RAD is the Joint Application Design (JAD) and Computer Aided Software Engineering (CASE) tools. Joint Application Design (JAD) is a client necessities elicitation process that includes the system proprietor and end users in the structure and development of an application through a succession of cooperative workshops called JAD sessions (Guizzo, 2006). In this project, the system proprietor is Dr. Siti Hamidah, the Founder of Naturel Kiss and the end users of the system incorporate customer and admin.

Other than that, a Computer Aided Software Engineering (CASE) is an instrument that gives computerized assistance to software development (Thibodeau and Meecham, 2018). The utilization of CASE helps the development of Naturel Kiss Online Shopping (NKOS) to be finished inside a brief timeframe under a low utilization of expenses. The computerized assistance helps in standardizing the notations and diagrams of the system.

### 3.3 HARDWARE AND SOFTWARE REQUIREMENT

This section will discuss the use of hardware and software needed during the development of Naturel Kiss Online Shopping (NKOS). It will cover from the Planning Phase until Cutover Phase.

#### 3.3.1 Hardware Requirement

Table 3.1 shows the list of hardware that is used in the development process of Naturel Kiss Online Shopping (NKOS).

Table 3.1 Hardware requirement

<b>Hardware</b>	<b>Specification</b>	<b>Purpose</b>	<b>Quantity</b>
Laptop	HP 14-bs537TU 14.0' AMD A8-7410 APU with AMD Radeon R5 Graphics, 2.20GHz with 6GB RAM.	To prepare the report and to develop the Naturel Kiss Online Shopping (NKOS).	1
Mobile phone	Vivo Y55s Quad- core 1.4 GHz Cortex-A53, 16GB ROM, 2GB RAM	To test the system.	1
USB Cable	Remax 1M	To connect the mobile phone and the laptop for application testing.	1

### 3.3.2 Software Requirement

Table 3.2 shows the list of software that is used in the development process of Naturel Kiss Online Shopping (NKOS).

Table 3.2 Software requirement

<b>Software</b>	<b>Purpose</b>
Android Studio	To develop the mobile application system.
Google Chrome	The web browser used to access the internet in order to find the information related to the project.
Microsoft Windows 10 (x64) OS	The platform to run the application request for the documentation and development.
Microsoft Visio Professional 2016	To create the use case diagram, context diagram, sequence diagram and dialog diagram.
Microsoft Office Word 2013	To write the document of the project.
Microsoft Project 2016	To create the Gantt Chart.

### 3.4 GANTT CHART

The project is partitioned into two sessions which are PSM1 and PSM2. The requirement planning and user design phases are as of now being finished during the first session (PSM1) based on the Rapid Application Development (RAD) model. In the interim, the construction and cutover phases will be finished amid the second session (PSM2). The project has begun from 12th September 2018 and is relied upon to finish on 6th May 2019. The details of the project course of events are attached in Appendix A.

### 3.5 TESTING PLAN

This section portrays the testing plan proposed for the system. The testing plan for the system is directed by the use case intended for the system. The testing is led dependent on the test cases. The test cases are planned dependent on the system test process in which the majority of the interaction components of the system are incorporated. Any issues or blunders happened amid the testing procedure are recorded in the test cases for further correction. The test cases of the system are documented as follows in terms of event, test data, expected result, actual result, pass/fail and comment.

The event depicts the expected situation that will be led by the user. The test data portrays the action needed to be taken by the user in order to deliver the outcome, meanwhile the expected result depicts what the system will resemble when a test data is gathered. The expected result and the actual result ought to be indistinguishable. In any case, if the outcomes acquired are not indistinguishable, the defect will be written down in the comment section just as the pass/fail column.

The following is an example of a test case for the system. The details of the test plan are depicted in the User Acceptance Test (UAT) which can be referred in Appendix D. Table 3.3 below demonstrates the example of testing a function of the system that is further depicted in the user acceptance test.

Table 3.3 Example Login Use Case of Naturel Kiss Online Shopping (NKOS)

	<b>Event</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass / Fail</b>	<b>Comment</b>
1.	Login with valid phone number and password	Enter phone number and password	System will allow the user to access the home page of the system based on the user type either Customer or Admin			
2.	Login with invalid phone number and valid password	Enter invalid phone number and valid password	System will notify that the phone number entered does not exist in the system			

### **3.6 CONCLUSION**

Based on specific advantages that Rapid Application Development (RAD) methodology offers, it is truly appropriate to be utilized for the Naturel Kiss Online Shopping (NKOS) system development since it offers an adaptable and versatile procedure. By utilizing RAD, any progressions done to the system can be tracked and updated now and again. Aside from that, the development process utilizing this methodology is pertinent for a small system that requires a concise developing time. In order to construct the system effectively, the best software and hardware are utilized throughout the development process. The determination of hardware and software is significant in order to meet the all of the necessities.

## **CHAPTER 4**

### **IMPLEMENTATION, TESTING AND RESULT DISCUSSION**

#### **4.1 INTRODUCTION**

This chapter discusses about the implementation of Naturel Kiss Online Shopping system. Throughout the implementation process, all errands beginning from system construction until test generation is planned and carried out. The tasks for developing NKOS begins with redesigning the GUI from the proposed fundamental design in order to make it more user-friendly and efficient contrasted with other online shopping mobile applications. After redesigning process is done, NKOS functions are built. At that point, after the construction phase is done, the system is tested. Throughout the testing phase, test data of NKOS and system records is generated and completed. The tests are being directed on NKOS to confirm the functions are effectively constructed and to discover any mistake that may happen in the system.

#### **4.2 IMPLEMENTATION**

This section portrays the specific implementation requirements and procedures of NKOS. All of the processes engaged with the system development and how it was developed are recorded and depicted. The system implementation starts by setting up the system into development environment, develops system functionality and pursued by setting up the system into a client-server based framework.

##### **4.2.1 Development Environment**

In order to begin developing NKOS, the computer is setup to turn into the localhost server. With respect to this project, Firebase localhost is selected as the server. Firebase provides a real-time database and backend as a service. The service serves application developers an API that enables application information to be synchronized crosswise over customers and stored in Firebase's cloud. The REST API utilizes the Server-Sent Events

protocol, which is an API for making HTTP connections for getting push notifications from a server. Developers utilizing the real-time database able to secure their information by utilizing the organization's server-side-authorized security rules which is made to be the most appropriate module to turn into the database server for the system. Figure 4.1 demonstrates the interface of the server.

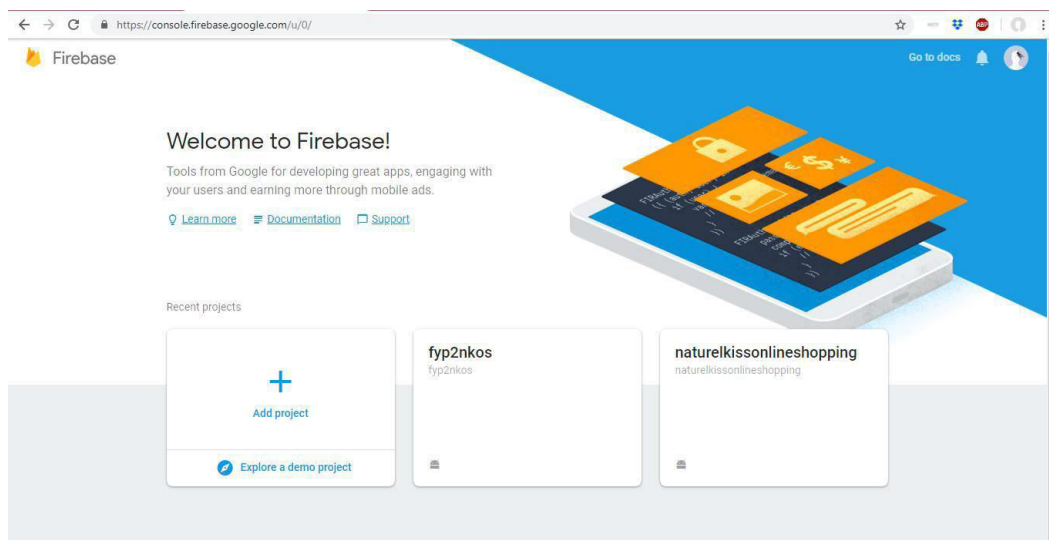


Figure 4.1 Firebase Interface

Firebase real-time database must be set up in order to run the server. The implementation of Firebase must be included in the build gradle of the Android Studio. Figure 4.2 shows the implementation of Firebase in the build gradle.

```
dependencies {
    implementation fileTree(dir: 'libs', include: ['*.jar'])
    implementation 'com.android.support:appcompat-v7:27.1.1'
    implementation 'com.android.support.constraint:constraint-layout:1.1.3'
    implementation 'com.google.firebase:firebase-core:11.8.0'
    implementation 'com.google.firebase:firebase-database:11.8.0'
    implementation 'com.google.firebase:firebase-storage:11.8.0'
    implementation 'com.firebaseui:firebase-ui-database:3.2.2'
    implementation 'com.squareup.picasso:picasso:2.71828'
    implementation 'com.github.rey5137:material:1.2.5'
    implementation 'com.android.support:cardview-v7:27.1.1'
    implementation 'com.android.support:recyclerview-v7:27.1.1'
    implementation 'io.paperdb:paperdb:2.6'
    implementation 'com.android.support:design:27.1.1'
    implementation 'de.hdodenhof:circleimageview:2.2.0'
    implementation 'com.theartofdev.edmodo:android-image-cropper:2.7.+@'
    implementation 'com.cepheuen.elegant-number-button:lib:1.0.2'
    implementation 'com.paypal.sdk:paypal-android-sdk:2.15.3'
    testImplementation 'junit:junit:4.12'
    androidTestImplementation 'com.android.support.test:runner:1.0.2'
    androidTestImplementation 'com.android.support.test.espresso:espresso-core:3.0.2'
}

apply plugin: 'com.google.gms.google-services'
```

Figure 4.2 Firebase Implementation in Build Gradle



As for the system database, in order to store the data from the system, Firebase is selected as the database server of the system. Figure 4.3 shows the database of Firebase.

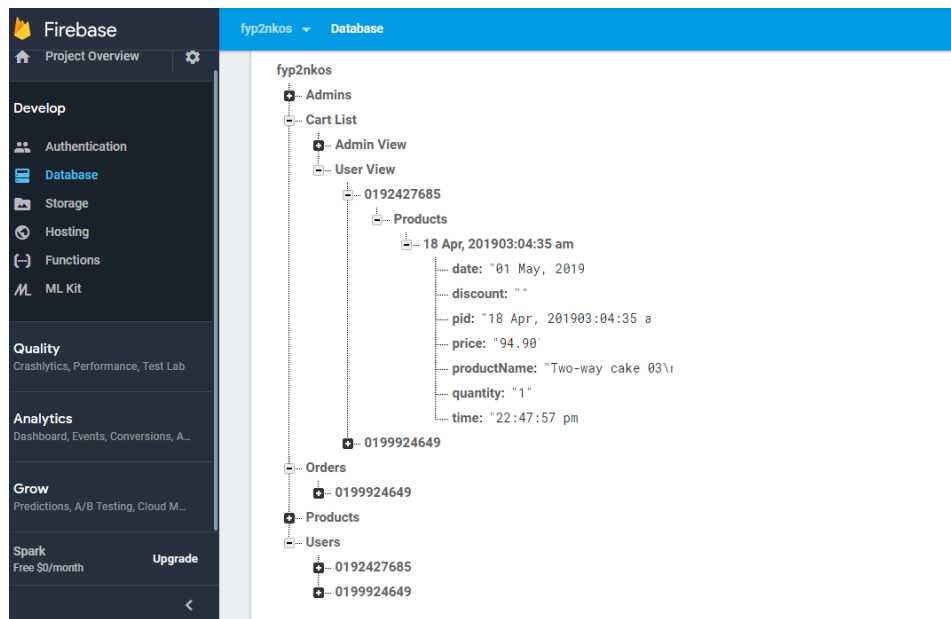


Figure 4.3 Firebase Database

Figure 4.3 demonstrates the Firebase working condition where the database for the system is made. The database name and tables are structured here. To make connection between the system and database, database query is utilized for select, insert, update, delete, search information into and from the database. Figure 4.4 beneath shows one of the query examples utilized in creating database connection of the system.

```
private void ValidatePhoneNumber(final String username, final String phonenumber, final String password) {
    final DatabaseReference RootRef;

    RootRef = FirebaseDatabase.getInstance().getReference();

    RootRef.addListenerForSingleValueEvent(new ValueEventListener() {
        @Override
        public void onDataChange(@NonNull DataSnapshot dataSnapshot) {
            if (!(dataSnapshot.child("Users").child(phonenumber).exists())) {
                HashMap<String, Object> userDataMap = new HashMap<>();
                userDataMap.put("phone number", phonenumber);
                userDataMap.put("username", username);
                userDataMap.put("password", password);

                RootRef.child("Users").child(phonenumber).updateChildren(userDataMap)
                    .addOnCompleteListener(new OnCompleteListener<Void>() {
                        @Override
                        public void onComplete(@NonNull Task<Void> task) {
                            if (task.isSuccessful()) {
                                Toast.makeText(getApplicationContext(), "Your account has been successfully registered.", Toast.LENGTH_SHORT)
                                    .show();
                                loadingBar.dismiss();

                                Intent intent = new Intent(getApplicationContext(), LoginActivity.class);
                                startActivity(intent);
                            } else {
                                loadingBar.dismiss();
                                Toast.makeText(getApplicationContext(), "ERROR. Please try again.", Toast.LENGTH_SHORT).show();
                            }
                        }
                    });
            }
        }
    });
}
```

Figure 4.4 Database Query for Insert

Figure 4.4 portrays some of database query utilized in the system to insert customer's information into the database for registration purposes.

In order to build the system, an open source mobile application editor is utilized for the system development. The development process begins from the GUI plan until the construction of the system functionality. Android Studio is selected because it gives a genuine emulator to picture how the system would function. Figure 4.5 demonstrates the interface for Android Studio.

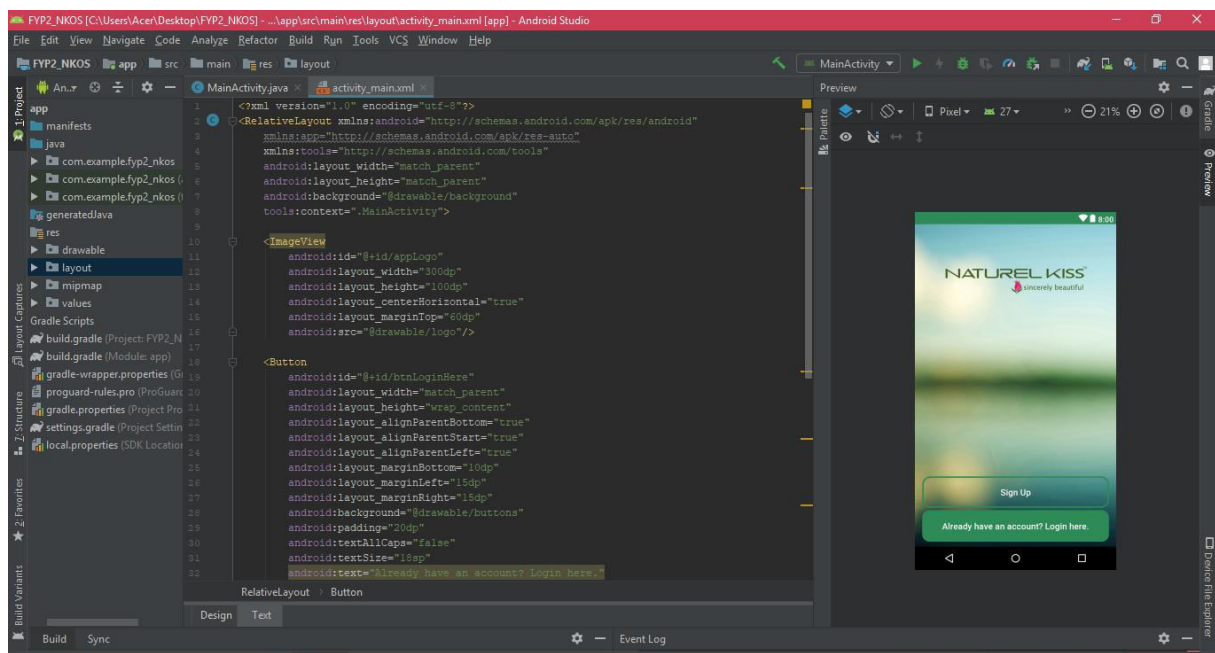


Figure 4.5 Interface of Android Studio

Figure 4.5 above demonstrates the interface of Android Studio amid the code construction for the system. Android Studio makes the procedure simpler since it utilizes diverse colors for various sort of code definition.

The interface structure of the system is created utilizing XML language. Extensible Markup Language is a markup language that characterizes a set of principles for encoding records in a format that is both comprehensible and machine-discernible. The code for the interface design is available inside the Android Studio which made is more efficient by simply calling out the functions. Figure 4.6 demonstrates the XML code utilized for constructing the main screen of the system.

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/background"
    tools:context=".MainActivity">

    <ImageView
        android:id="@+id/appLogo"
        android:layout_width="300dp"
        android:layout_height="100dp"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="60dp"
        android:src="@drawable/logo"/>

    <Button
        android:id="@+id/btnLoginHere"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignParentBottom="true"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_marginBottom="10dp"
        android:layout_marginLeft="15dp"
        android:layout_marginRight="15dp"
        android:background="@drawable/buttons"
        android:padding="20dp"
        android:textAllCaps="false"
        android:textSize="18sp"
        android:text="Already have an account? Login here."/>
</RelativeLayout>
```

Figure 4.6 XML Code

Next, system functionalities of NKOS are created utilizing a scripting language, java. Java is a broadly useful computer-programming language that is simultaneous, class-based, object-oriented, and explicitly intended to have as few implementation dependencies as could reasonably be expected. It is supposed to endorse application developers to "write once, run anywhere" (WORA), implying that compiled Java code can keep running on all platforms that support Java without the requirement for recompilation. Figure 4.7 shows some portion of the Java code utilized in the framework.

```
1 package com.example.fyp2_nkos;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     Button btnLogin, btnSignUp;
8
9     @Override
10    protected void onCreate(Bundle savedInstanceState) {
11        super.onCreate(savedInstanceState);
12        setContentView(R.layout.activity_main);
13
14        btnLogin = (Button) findViewById(R.id.btnLogin);
15        btnSignUp = (Button) findViewById(R.id.btnSignUp);
16
17        btnLogin.setOnClickListener((view) -> {
18            Intent intent = new Intent( packageContext: MainActivity.this, LoginActivity.class);
19            startActivity(intent);
20        });
21
22        btnSignUp.setOnClickListener((view) -> {
23            Intent intent = new Intent( packageContext: MainActivity.this, RegisterActivity.class);
24            startActivity(intent);
25        });
26    }
27 }
```

Figure 4.7 Java Code

## 4.2.2 System Functionality

This section examines on the system functionality of NKOS and how the framework connects with the user. This section will underscore on the GUI of the system since GUI is as significant as the collaboration between the client and the system. The GUI of the system initially ought to be basic yet easy to use and straightforward. The details of the interface are depicted in the Software Design Document (SDD) which can be referred in Appendix C.

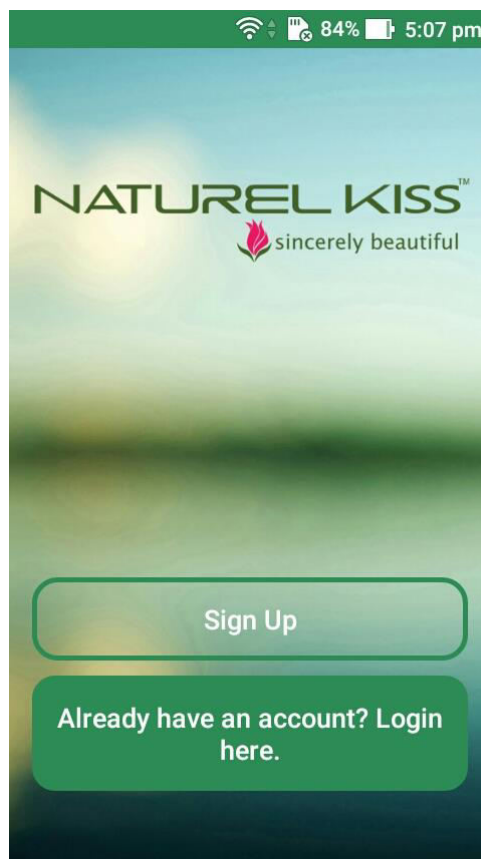


Figure 4.8 Main Interface of NKOS

Figure 4.8 above shows the Main Interface of NKOS. Unregistered user needs to sign up to the system by clicking on the “Sign Up” button meanwhile registered customer can proceed to click on the “Login” button.

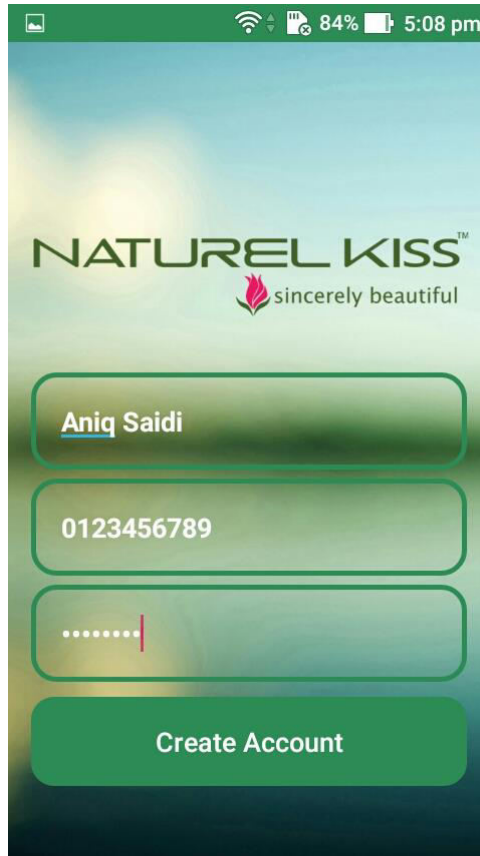


Figure 4.9 Registration Interface

Figure 4.9 above shows the Registration Interface for customer to create an account and become a member. User will have to insert the username, phone number and password in order to create an account.

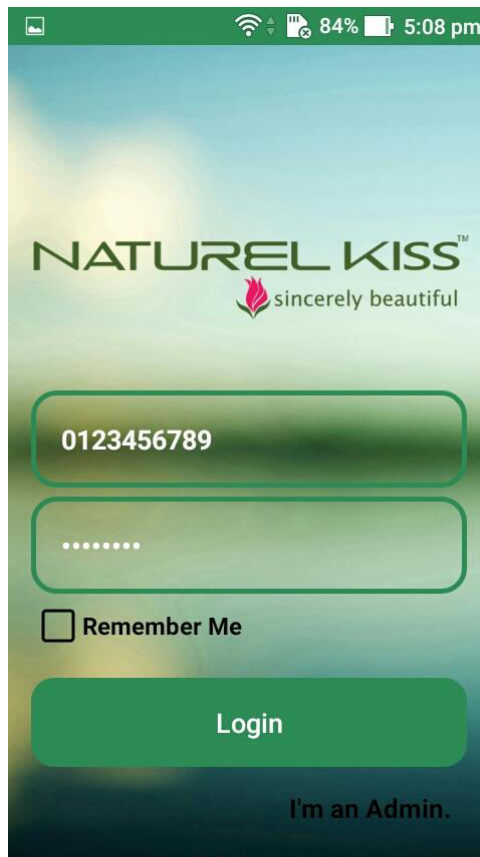


Figure 4.10 Login Interface

Figure 4.9 shows the Login Interface of NKOS. The user that has already registered to the system is only allowed to login into the system by entering valid phone number and a matched password that have been registered previously. Admin will have to click on the “I’m an Admin.” in order to login.



Figure 4.11 Home Interface

Figure 4.11 shows the Home Interface for the customer after the customer has successfully logged in. The interface will display the list of products available. Customer can scroll up and down to view the products list.

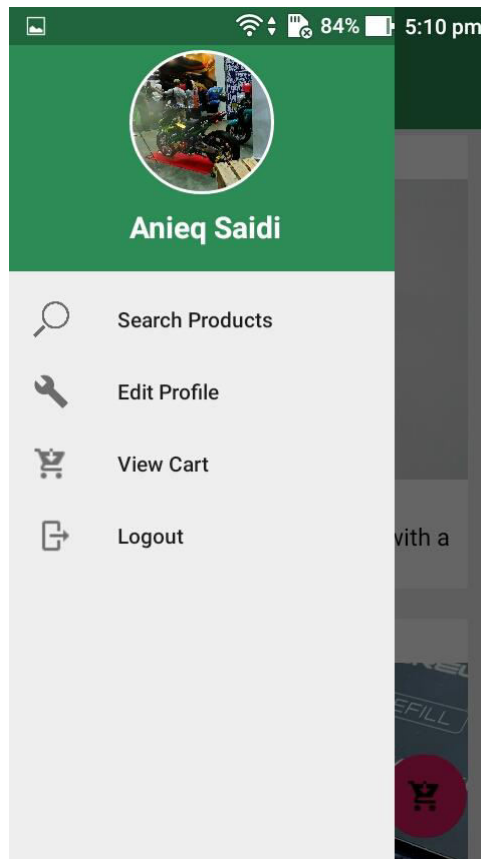


Figure 4.12 User Menu Interface

Figure 4.12 shows the User Menu Interface of the current online user. The profile image and the user name will be displayed. The menu will navigate the user to search for products, edit profile, view cart, or logout from the system.



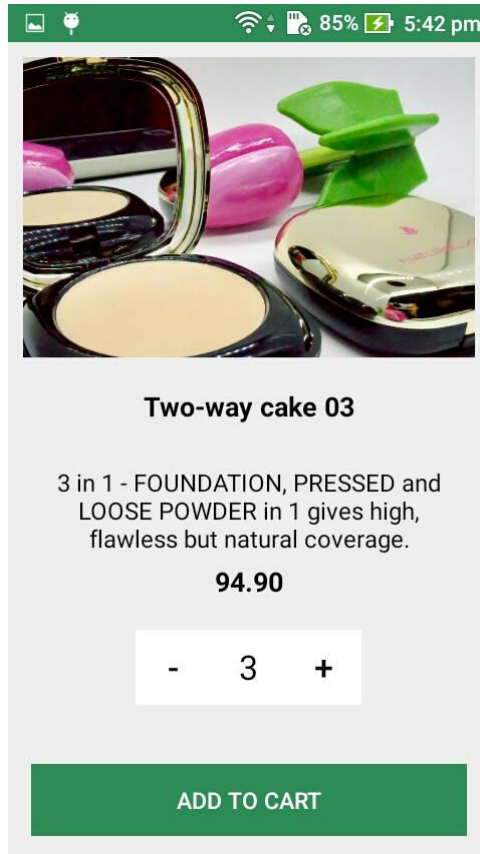


Figure 4.13 Product Details Interface

Figure 4.13 shows the Product Details Interface that will display the product information once the customer clicks on any of the products from the Home Interface. The customer can select the product then add the chosen product to the cart along with the quantity needed.

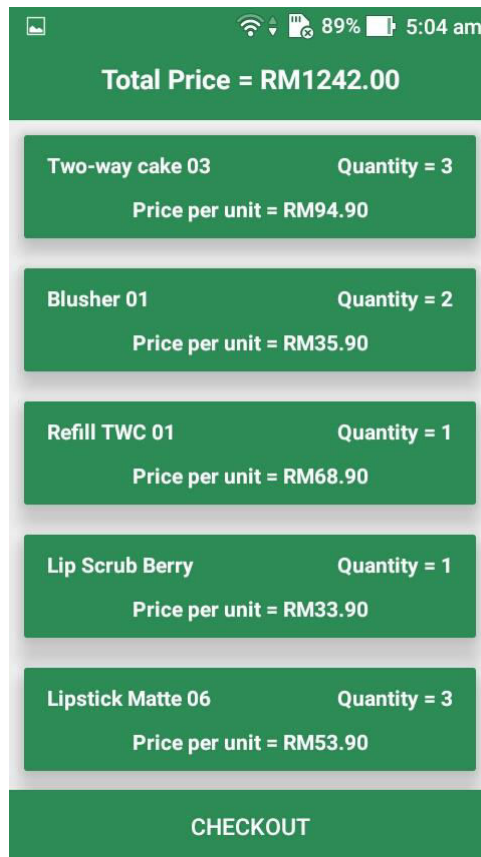


Figure 4.14 Cart List Interface

Figure 4.14 shows the list of products in the Cart List Interface. Customer is able to edit the quantity of the product or delete the product from the Cart List Interface by simply clicking on any of the product details. The customer may proceed to check out the products by clicking on the “Checkout” button.

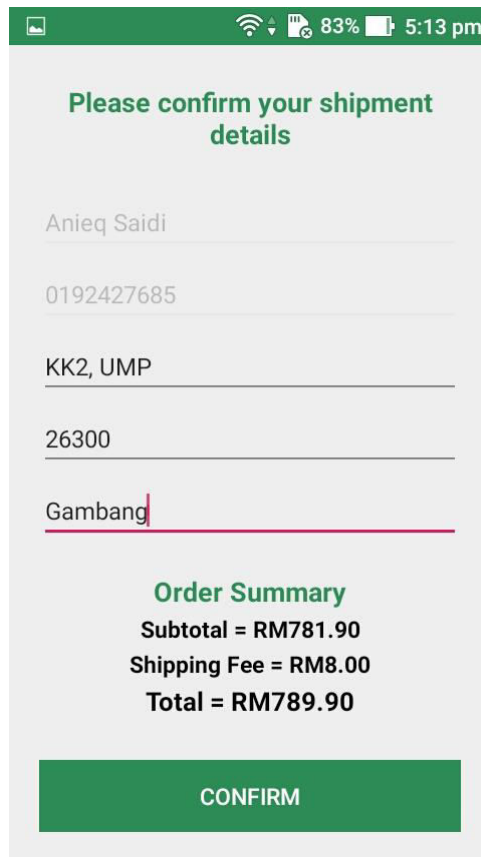


Figure 4.15 Shipment Details Interface

Figure 4.15 shows the Shipment Details Interface of NKOS that displays the shipping address of the customer. The customer may proceed with the displayed address or a new address specifically for the shipping purposes. The order summary is also displayed to the customer and the customer may proceed to the payment by clicking the “Confirm” button.

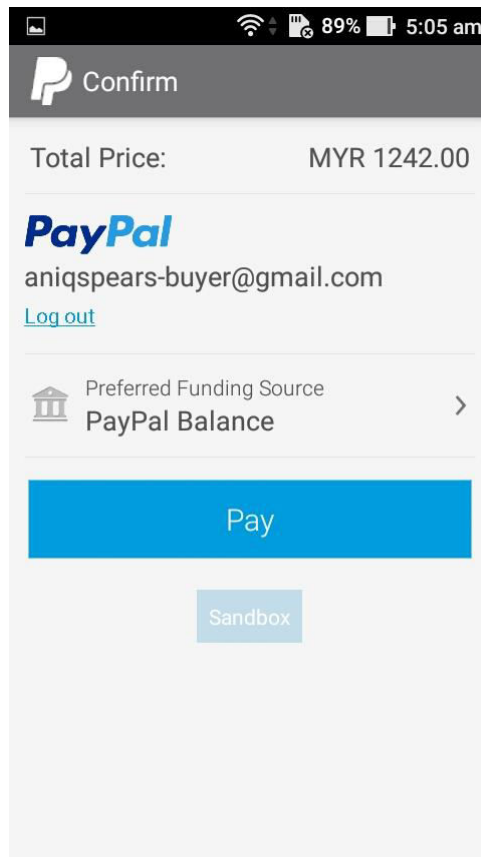


Figure 4.16 Payment Gateway Interface

Figure 4.16 shows the Payment Gateway Interface of the NKOS. The customer needs to sign-in to the payment gateway account in order to proceed. The total amount of the order will be deducted from the customer's balance in the payment gateway.



Figure 4.17 Receipts Interface

Figure 4.17 shows the Receipts Interface of NKOS once the customer has successfully paid for the order. The receipts show the details of the order such as the reference number, the total amount paid and the list of products ordered.

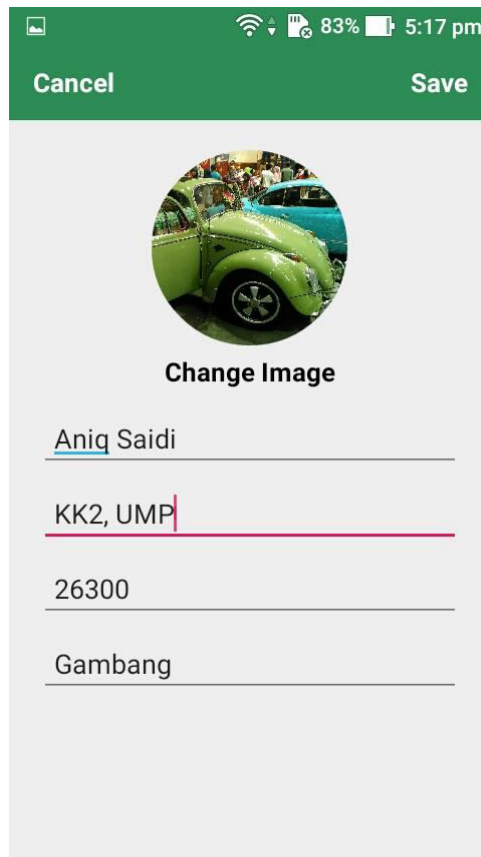


Figure 4.18 Edit Profile Interface

Figure 4.18 shows the Edit Profile Interface of NKOS. Customer can change the profile picture by clicking on the “Change Image” and the system will allow the user to choose a picture from the mobile phone’s gallery. The customer can also change the profile information then click on the “Save” button and the system will update the customer’s information in the database.

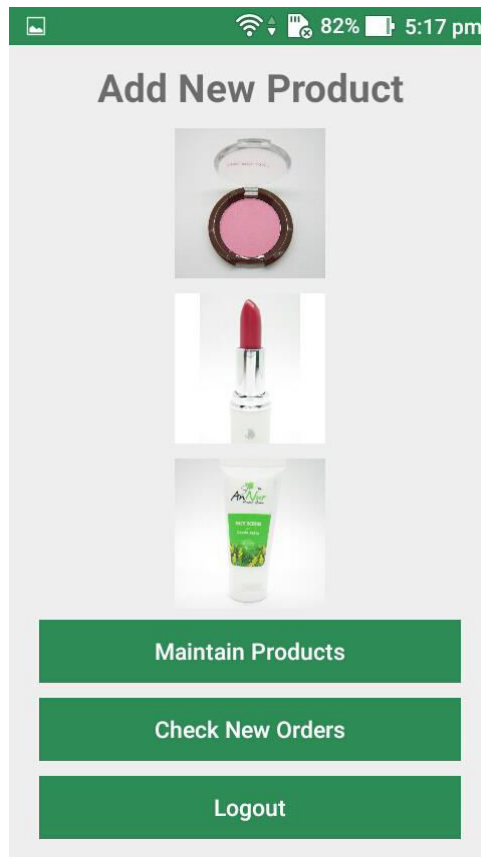


Figure 4.19 Admin Home Interface

Figure 4.19 shows the Admin Home Interface after the admin has successfully logged in to the system. It allows admin to add new products, maintain existing products and check new orders .

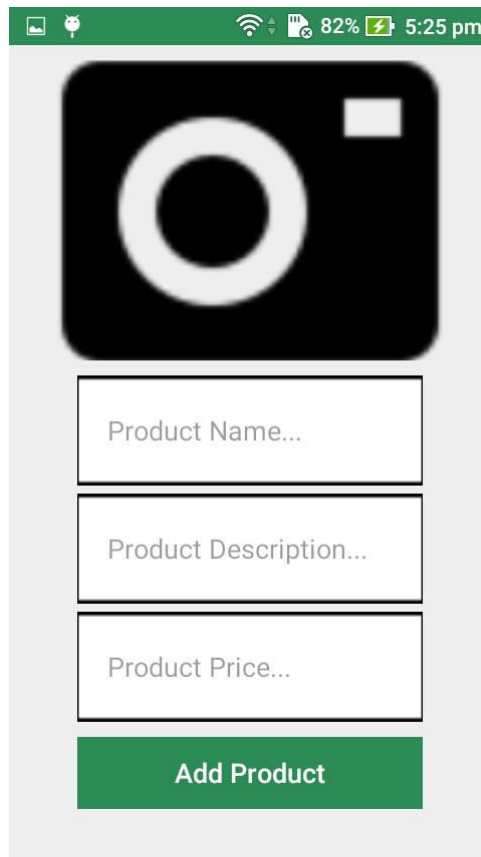


Figure 4.20 Admin Add New Product Interface

Figure 4.20 shows the Admin Add New Product Interface which allows the admin to add new products to the system. The admin needs to select the product image, enter the product name, product description and the product price. The admin then clicks on the “Add Product” and the system will add the new product to the database and display it to the customer.





Figure 4.21 Admin Maintain Product Interface

Figure 4.21 shows the Admin Maintain Product Interface which allows the user to update the product information. The admin then clicks on the “Apply Changes” button and the product information will be updated. The admin can also delete the product from the system by clicking on the “Delete Product” button.



Figure 4.22 Admin Check New Orders Interface

Figure 4.22 shows the Admin Check New Orders Interface which allows the admin to check the list of orders that has been successfully paid by the customer. The admin can view the list of products in each order by clicking on the “View Products” button.

### 4.3 TESTING AND RESULT DISCUSSION

NKOS is developed by utilizing java and associated with the Firebase real-time database. Throughout the entire process, testing is one of the basic yet crucial stages in the system development. Testing is carried out after the usage stage is finished. The principle testing stresses on the system is the black box which is a technique for programming testing that looks at the usefulness of an application without peering into its inward structures or functions. Black box testing is more probable portraying what the framework does contrasted with white box testing in which worries on the inner program structure.

### **4.3.1 Functional Testing**

Functional testing is a software testing process that is utilized in programming improvement where the system is confirmed to guarantee that it complies with all functionality being indicated inside functional requirements. It is not quite the same as system testing in which it approves the system against the system prerequisites.

As indicated by a recent documented report by Info-Tech, six sorts of functional testing can be utilized to guarantee the nature of the framework. Those tests are unit testing, system testing, integration testing and acceptance testing. Unit testing is the way toward testing every unit of code in a solitary segment. This type of testing is conducted by the developer as the model is being created (Group, 2008). In NKOS framework, the testing done is concentrating on the usefulness of the objects or techniques.

System testing is the place where components in the framework are incorporated and afterward the framework is examined in general. In NKOS system, the testing done is concentrating on testing component interactions. Integration testing tests the associations between the incorporated components. At the end of the day, integration testing is carried out after incorporating at least two distinct components together. Acceptance testing is carried out after the system testing has redressed all or a portion of the defects or errors and is conveyed to the customer which is the Naturel Kiss Malaysia. For NKOS system, the testing is done by the beauty product enthusiasts and stakeholders.

## **CHAPTER 5**

### **CONCLUSION AND FUTURE WORK**

#### **5.1 INTRODUCTION**

The Naturel Kiss Online Shopping (NKOS) is developed to improve the usability of the Naturel Kiss customers by providing a mobile-based application which allows the customers to purchase the beauty products provided by the Naturel Kiss at anytime wherever there is an internet connection. The system is developed to overcome the issue that the beauty products are only available to be purchased through the official website which is due to the lack of the mobile application platform provided for the customers to purchase the beauty products. The functions of the NKOS include user login, user registration, view profile details, edit profile details, view products list, add products, delete products, update products info, search products, add product to cart, view products in cart, delete products in cart, checkout, and generate billing details.

#### **5.2 RESEARCH CONSTRAINT**

##### **5.2.1 Development Constraint**

The constraint that is constraint amid the development period of the Naturel Kiss Online Shopping (NKOS) is time. Additional time is required in order to build up a more efficient and robust framework that may lead the system to be more complex and marketable.

##### **5.2.2 System Constraint**

The constraints of the system include:

- i. Platform: The system can only run on android which means that the system does not support iOS, Windows or any other operating systems.

- ii. Language: The system fully uses English language to communicate between the functions and the users. The users may not find it difficult to understand the system because it uses only simple English language.
- iii. Payment: The payment only provides the gateway to PayPal services.

### **5.3 FUTURE WORK**

As for now, Naturel Kiss Online Shopping (NKOS) may not be perfect but it fulfills the basic functionalities that are needed for an online shopping mobile-based application. A future work needs to be done in order to make the system more robust and competent to be marketed. The system is suggested to include the real-time chatting functionality in which will increase the usability of the customers. Besides, a future plan on adding the agent as the user to facilitate the shipping purposes will increase the efficiency of the application. Therefore, an improved version of the system which is NKOS 2.0 will be developed in the future.

## REFERENCES

Beal, V. (2018). Stand-alone. Didapatkan dari webopedia:

<https://www.webopedia.com/author/Vangie-Beal>

BSI. (2018). What is a Management System? Didapatkan dari bsi.:

<https://www.bsigroup.com/en-AU/About-BSI/FAQs/What-is-a-Management-System/>

Dangwal, H. (2017, Jan 29). What is a standalone application? Didapatkan dari Quora:

<https://www.quora.com/What-is-a-standalone-application>

DSHS. (2017). What is a web-based system? Didapatkan dari Washington State Department of Social and Health Services: <https://www.dshs.wa.gov/faq/what-web-based-system>

Guizzo, E. (2006, May). Joint Application Design. Didapatkan dari Chambers :

[http://www.chambers.com.au/glossary/joint\\_application\\_design.php](http://www.chambers.com.au/glossary/joint_application_design.php)

Hope, C. (2017, 10 17). Standalone. Didapatkan dari Computer Hope:

<https://www.computerhope.com/jargon/s/standalo.htm>

Merriam-Webster. (2018). Methodology. Didapatkan dari Merriam-Webster:

<https://www.merriam-webster.com/dictionary/methodology>

Powell-Morse, A. (2016, November 23). Rapid Application Development (RAD): What Is It And How Do You Use It? Didapatkan dari Airbrake:

<https://airbrake.io/blog/sdlc/rapid-application-development>

Rouse, M. (2011, July). Hybrid Application (Hybrid App). Didapatkan dari SearchSoftwareQuality:

<https://searchsoftwarequality.techtarget.com/definition/hybrid-application-hybrid-app>

Rouse, M. (2013, December). Mobile App. Didapatkan dari WhatIs.com:

<https://whatis.techtarget.com/definition/mobile-app>

Rouse, M., & Gillis, A. (2018, March). Native App. Didapatkan dari SearchSoftwareQuality:  
<https://searchsoftwarequality.techtarget.com/definition/native-application-native-app>

Shah, M. D., & Dhiman, C. (2016). Software Process Models Outline. IRACST –  
International Journal of Computer Science and Information Technology & Security  
(IJCSITS), 128-129.

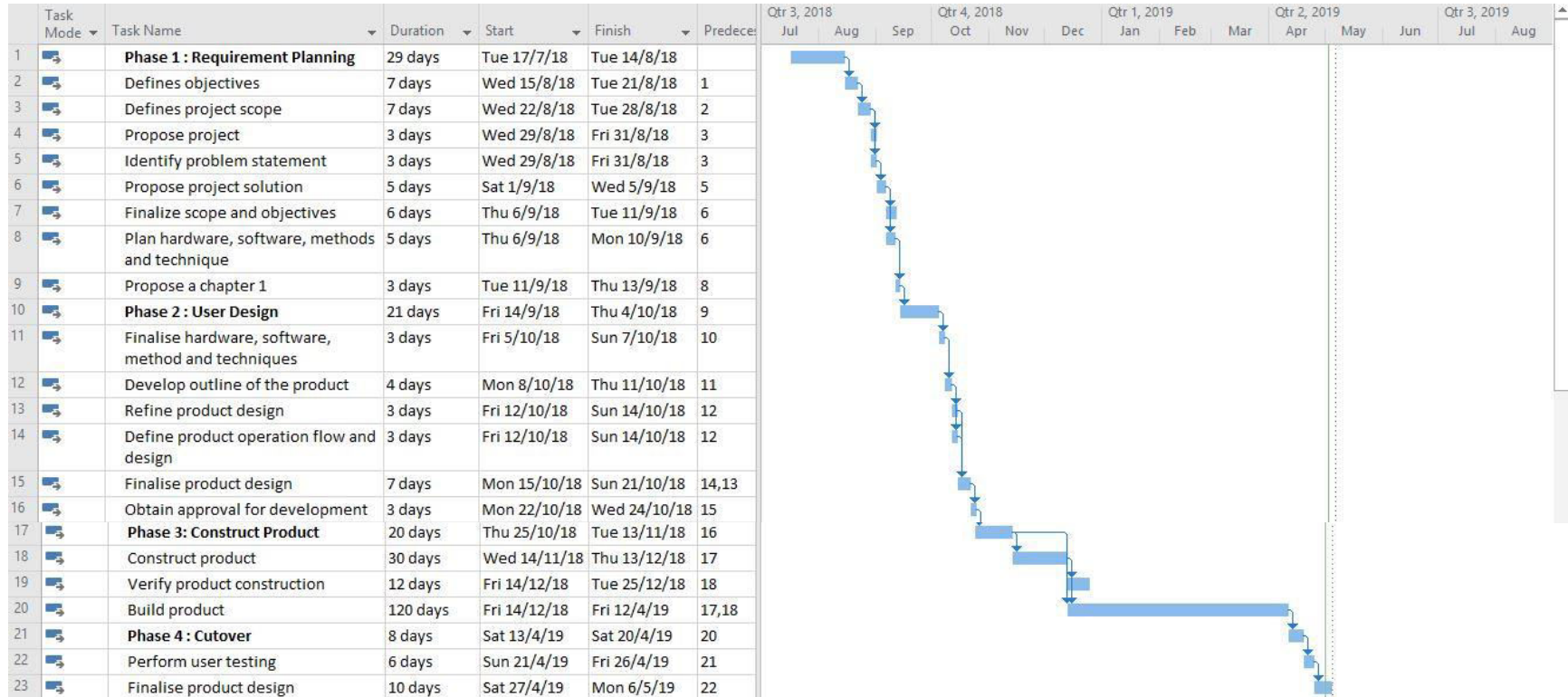
Techopedia. (2018). Web-Based Application. Didapatkan dari Techopedia:  
<https://www.techopedia.com/definition/26002/web-based-application>

Thibodeau, P., & Meecham, B. (2018, October). Computer-aided Software Engineering  
(CASE). Didapatkan dari SearchERP:  
<https://searcherp.techtarget.com/definition/CASE-computer-aided-software-engineering>

## **APPENDICES**



## APPENDIX A: GANTT CHART



Version

1

NATUREL KISS ONLINE SHOPPING (NKOS)

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Faculty of Computer Systems & Software  
Engineering (FSKKP)

# Software Requirement Specification (SRS)

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## 1.0 FUNCTION

There are seven modules with 11 functions for the Naturel Kiss Online Shopping (NKOS) system. Each of the function is performed by the authorized users with permission. The functions will be generated by using Java programming language and the data will be called by using Firebase NoSQL. Table 1.0 shows the modules which contain the functions that are performed by the users along with the description of the functions.

Table 1.0 Functions of Naturel Kiss Online Shopping (NKOS)

<b>Modules</b>	<b>Function</b>	<b>User</b>	<b>Description</b>
User Login	User Login	Customer	Login is the function for the customer as the authorized users to use the system.
User Registration	User Registration	Unregistered Customer	Registration is the function for unregistered customer to become an authorized customer to use the full features of the system.
Manage Profile	View Profile Details	Customer	This function allows the customer to view his/her profile details.
	Edit Profile Details	Customer	This function allows the customer to edit his/her profile details.
Manage Products	View Products List	Customer	This function allows the users to view the products available.
	Search Products	Customer	This function allows the users to search for the desired products.
	Add Product to Cart	Customer	This function allows the customer to add the desired products to the cart list.
Manage Cart	View Products in Cart	Customer	This function allows the customer to view the products that have been added into the cart list.
	Edit Products in Cart	Customer	This function allows the customer to edit the products quantity in the cart list.
	Delete Products in Cart	Customer	This function allows the customer to delete the products from the cart list.
Checkout	Checkout	<ul style="list-style-type: none"> <li>• Customer</li> <li>• Bank</li> </ul>	This function allows the customer to pay for the products meanwhile the bank will validate and approve the transaction.

## 2.0 DATA FLOW DIAGRAM (DFD) LEVEL 0

This section describes the data flow diagram level 0 of Naturel Kiss Online Shopping (NKOS) system. There are three entities involved which are Customer, Admin and Bank. This system contains 11 functions that can be performed by the two entities with seven tables of database. The data flow diagram level 0 of Naturel Kiss Online Shopping (NKOS) is shown in the Figure 2.0 below.

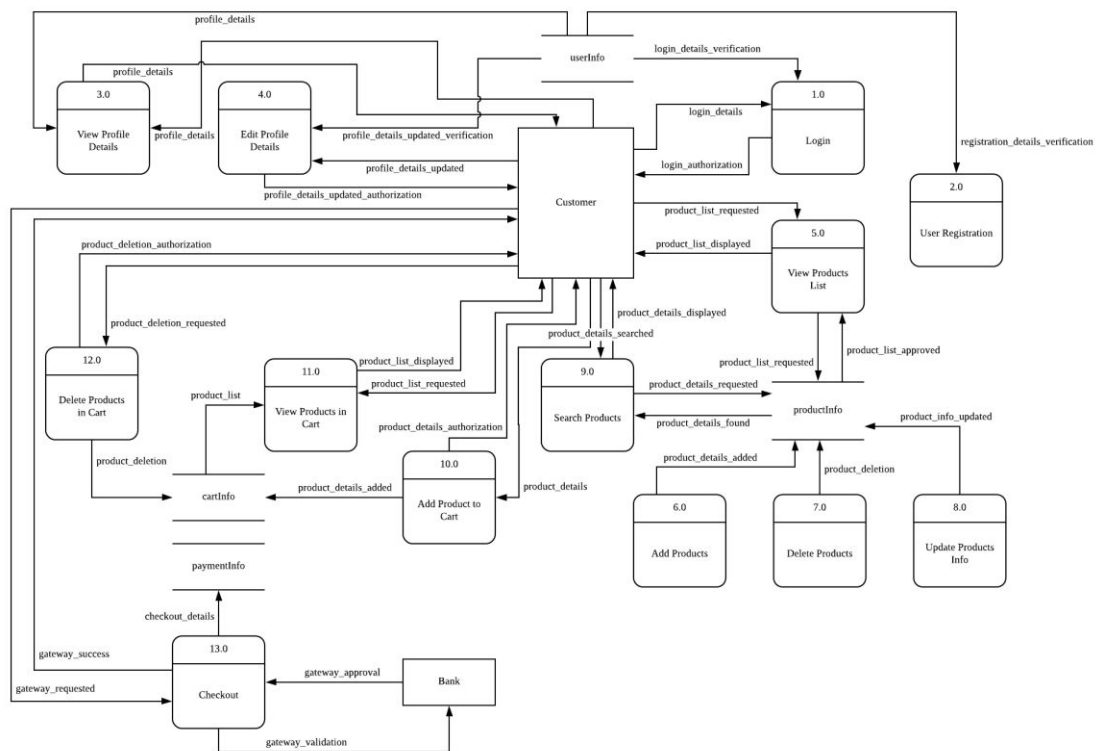


Figure 2.0 DFD Level 0 of Naturel Kiss Online Shopping (NKOS)

### 3.0 DATA FLOW DIAGRAM (DFD) LEVEL 1

This section describes the data flow diagram level 1 of Naturel Kiss Online Shopping (NKOS). The data flow diagram shows the details flow of the data going through the system for each function. The Naturel Kiss Online Shopping (NKOS) system has 11 functions with seven tables of database. The data flow diagrams for level 1 are shown in the figures below.

#### 3.1 DFD Level 1 of User Login

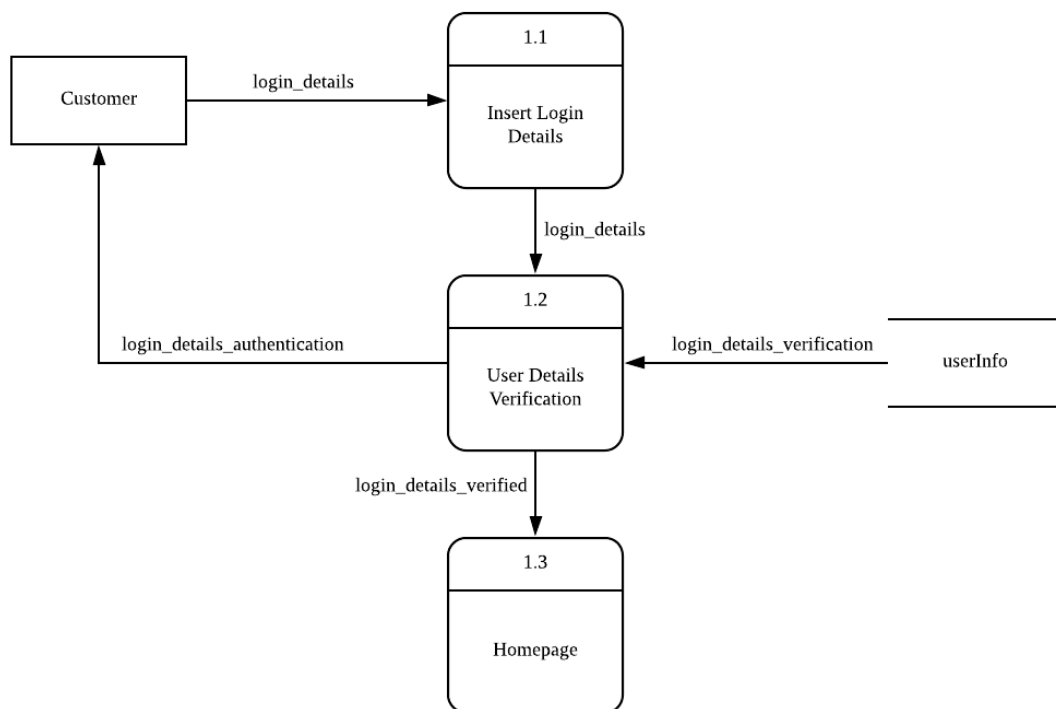


Figure 3.1 DFD Level 1 of User Login

### 3.2 DFD Level 1 of User Registration

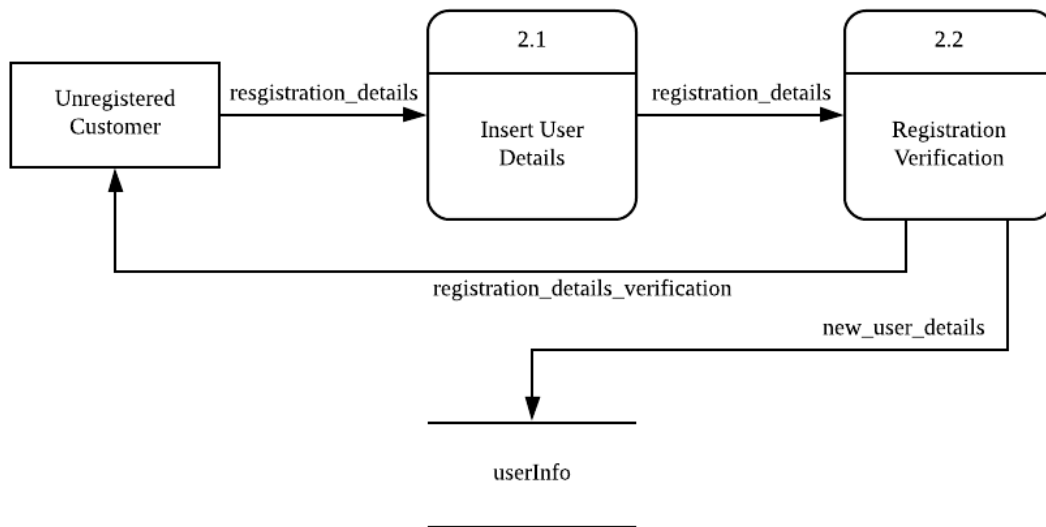


Figure 3.2 DFD Level 1 of User Registration

### 3.3 DFD Level 1 of View Profile Details

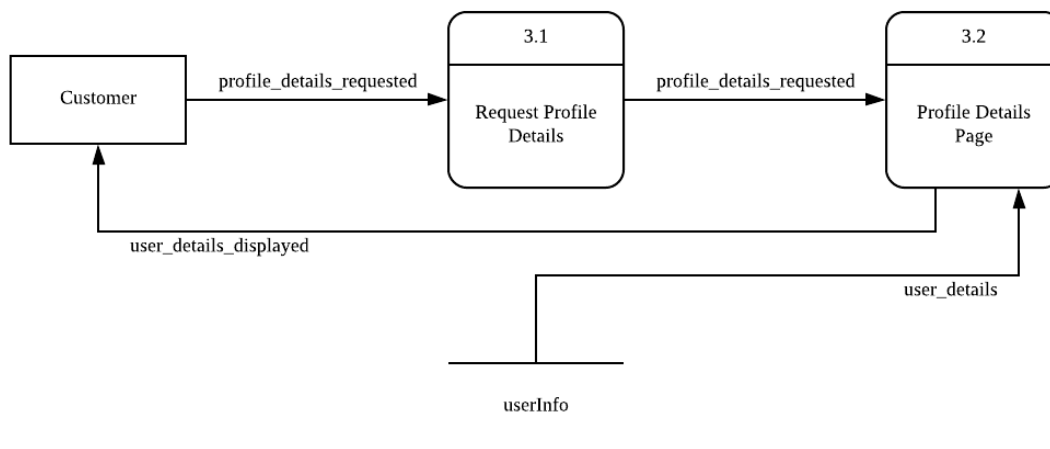


Figure 3.3 DFD Level 1 of View Profile Details

### 3.4 DFD Level 1 of Edit Profile Details

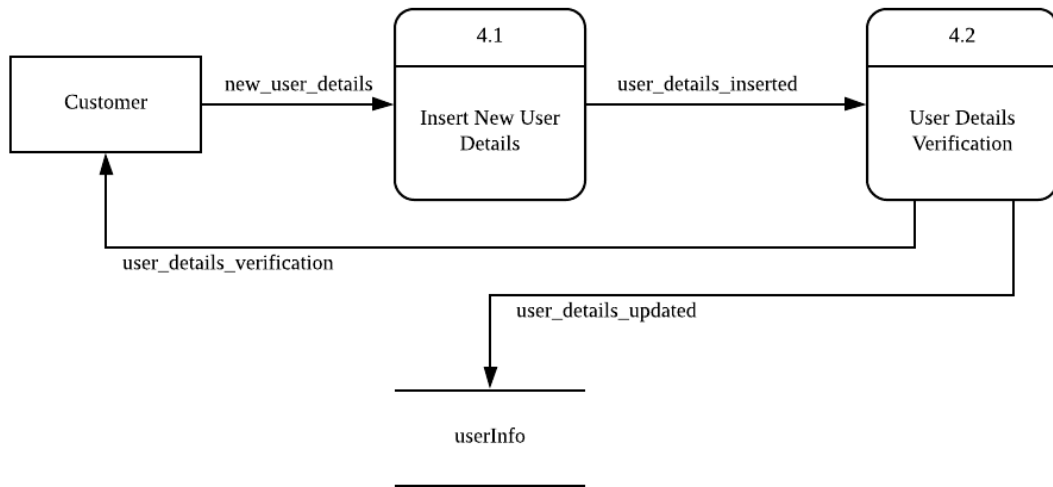


Figure 3.4 DFD Level 1 of Edit Profile Details

### 3.5 DFD Level 1 of View Products List

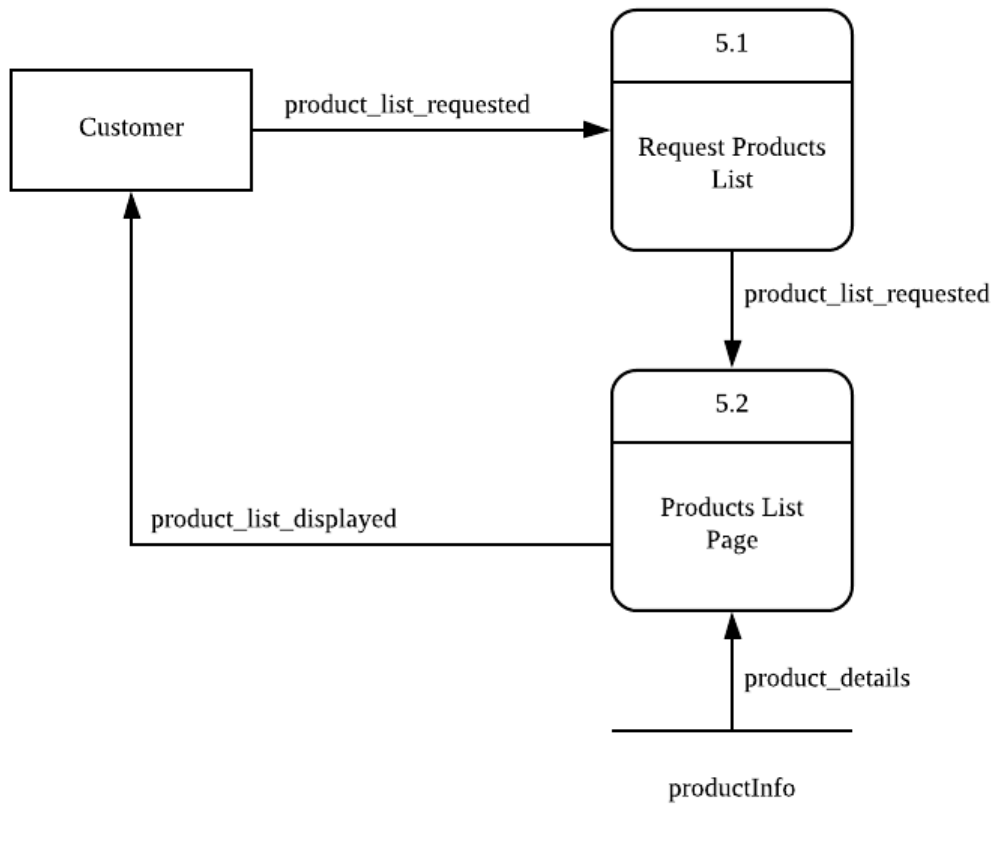


Figure 3.5 DFD Level 1 of View Products List



### 3.6 DFD Level 1 of Search Products

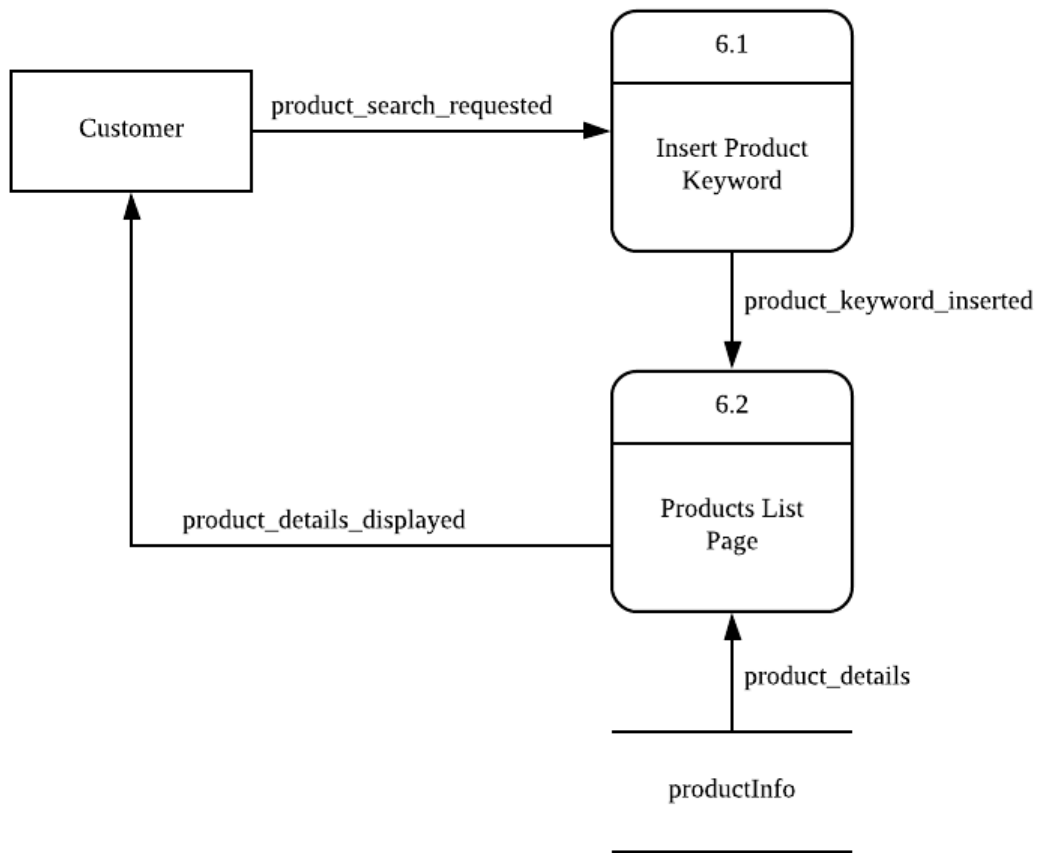


Figure 3.6 DFD Level 1 of Search Products

### 3.7 DFD Level 1 of Add Products to Cart

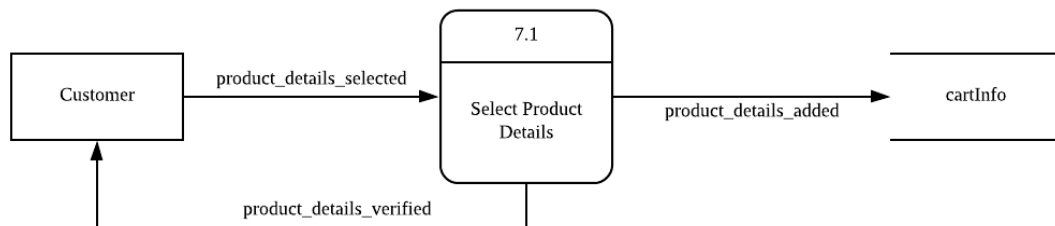


Figure 3.7 DFD Level 1 of Add Products to Cart

### 3.8 DFD Level 1 of View Products in Cart

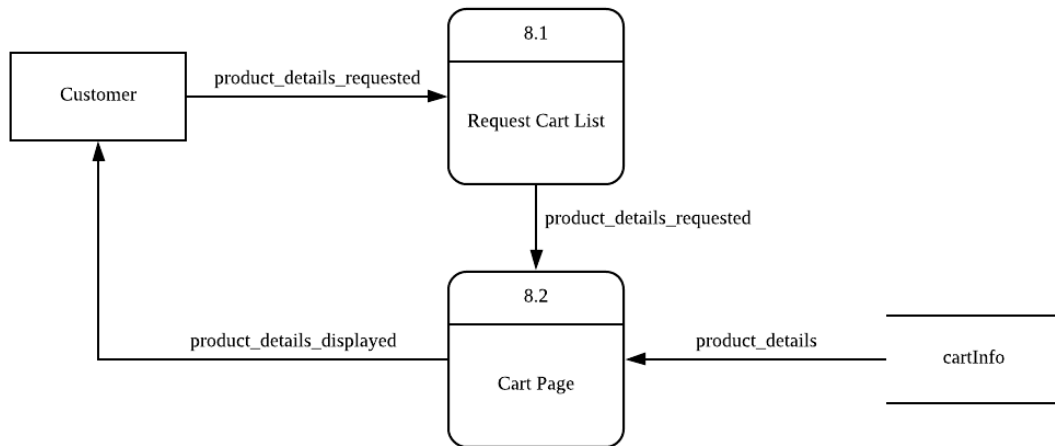


Figure 3.8 DFD Level 1 of View Products in Cart

### 3.9 DFD Level 1 of Edit Products in Cart

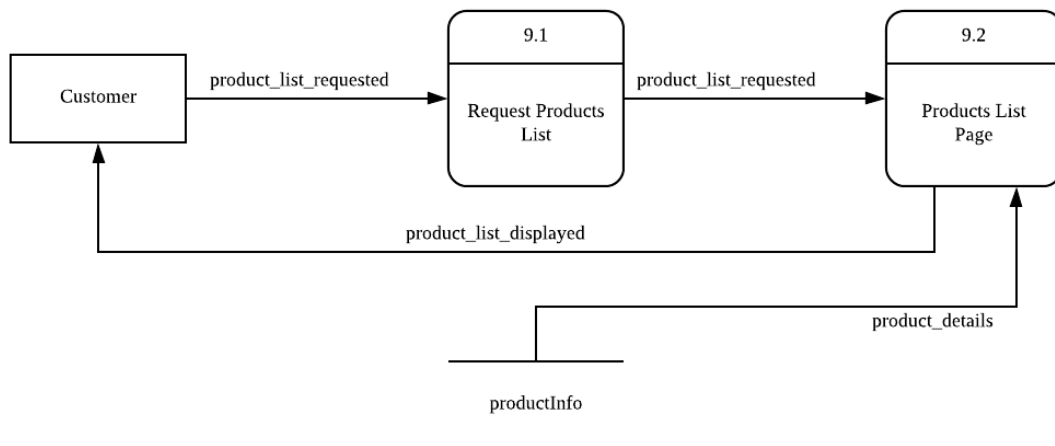


Figure 3.9 DFD Level 1 of Edit Products in Cart

### 3.10 DFD Level 1 of Delete Products in Cart

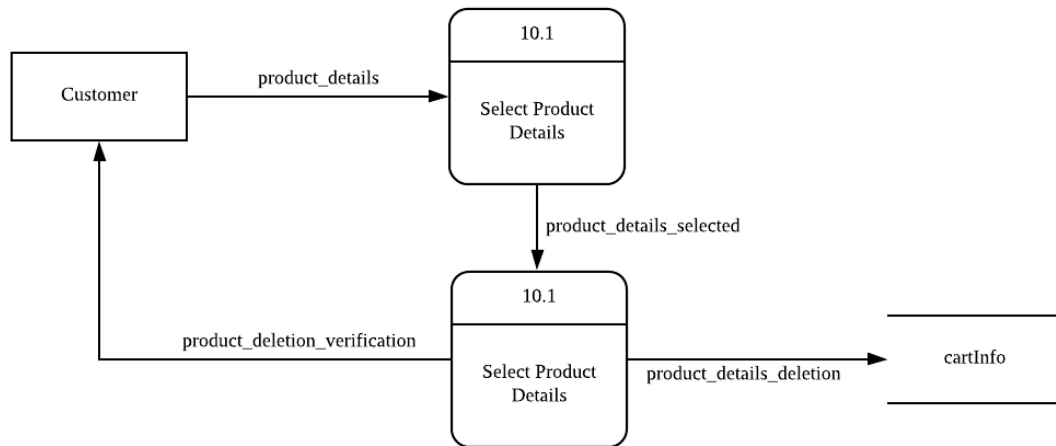


Figure 3.10 DFD Level 1 of Delete Products in Cart

### 3.11 DFD Level 1 of Checkout

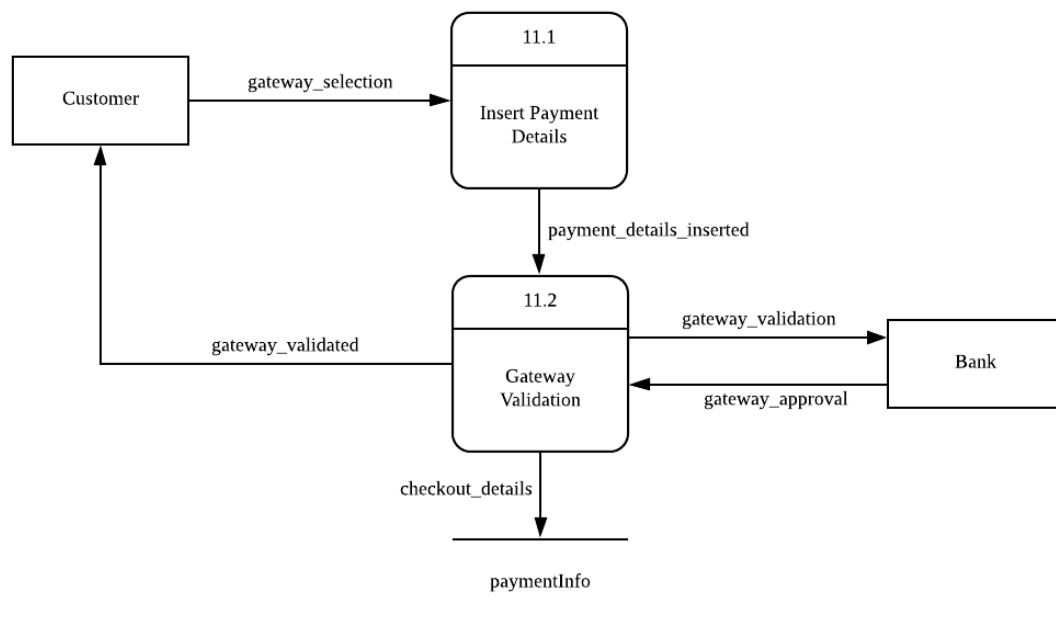


Figure 3.11 DFD Level 1 of Checkout

## **4.0 STRUCTURED ENGLISH**

This section describes the Structured English algorithm of Naturel Kiss Online Shopping (NKOS) system. This system has 11 functions with seven tables of database. The Structured English algorithm is shown as follows.

### **4.1 Function: User Login**

BEGIN

Read phone number, password

Check phone number, password in userInfo table from database

If the user exists, then redirect to homepage

Else display error message “invalid phone number / password”

END

### **4.2 Function: User Registration**

BEGIN

Read name, password, phone number

If the information given surpassed the verification, then add new user to the userInfo table in the database

Else display error message “the input is incorrect”

END

### **4.3 Function: View Profile Details**

BEGIN

If user clicks on “Profile” button, then display the information of user retrieved from userInfo table from database

Else display the homepage

END

#### **4.4 Function: Edit Profile Details**

BEGIN

If user clicks on “Edit Details” button on Profile page, then display the information of user retrieved from userInfo table in database

Read name, address, postcode, city

If the information updated surpassed the verification, then update the user information into the userInfo table in the database

Else display error message “the input is incorrect”

END

#### **4.5 Function: View Products List**

BEGIN

Display the list of products from productInfo table in database at homepage

END

#### **4.6 Function: Search Products**

BEGIN

Read keyword

If the keyword matches the product name in the productInfo table from the database, then display the list of product containing the keyword

Else display error message “no product found”

END

#### **4.7 Function: Add Product to Cart**

BEGIN

If customer selects the product, then add the product details to the cartInfo table in the database

Else display the list of products from the productInfo table in the database at homepage

END

#### **4.8 Function: View Product in Cart**

BEGIN

If customer selects the “Cart” button and no record is found in the cartInfo table in the database, display “no product added yet”

Else display the list of products in the cart retrieved from the cartInfo table in the database

END

#### **4.9 Function: Edit Products in Cart**

BEGIN

If customer selects the product in the cart list, then display the product information from productInfo table in database

Else display the list of products in the cart

END

#### **4.10 Function: Delete Products in Cart**

BEGIN

If the customer selects the product to be deleted from the cart, then remove the product details from the cartInfo table in the database

Else display the list of products in the cart retrieved from the cartInfo table in the database

END

#### **4.11 Function: Checkout**

BEGIN

If the customer clicks on the “Checkout” button, then display the gateway page Read payment type

If the payment details entered surpassed the verification, then the bank will proceed with the validation process

If the payment is approved by the bank, then add the payment type into the paymentInfo table in the database and display “successful”

Else display error message “payment unsuccessful”

END

## 5.0 ENTITY RELATIONSHIP DIAGRAM (ERD) DIAGRAM

This section shows the entity relationship data of the Naturel Kiss Online Shopping (NKO) system which includes seven tables of database. Figure 5.0 shows the relationship between the database tables.

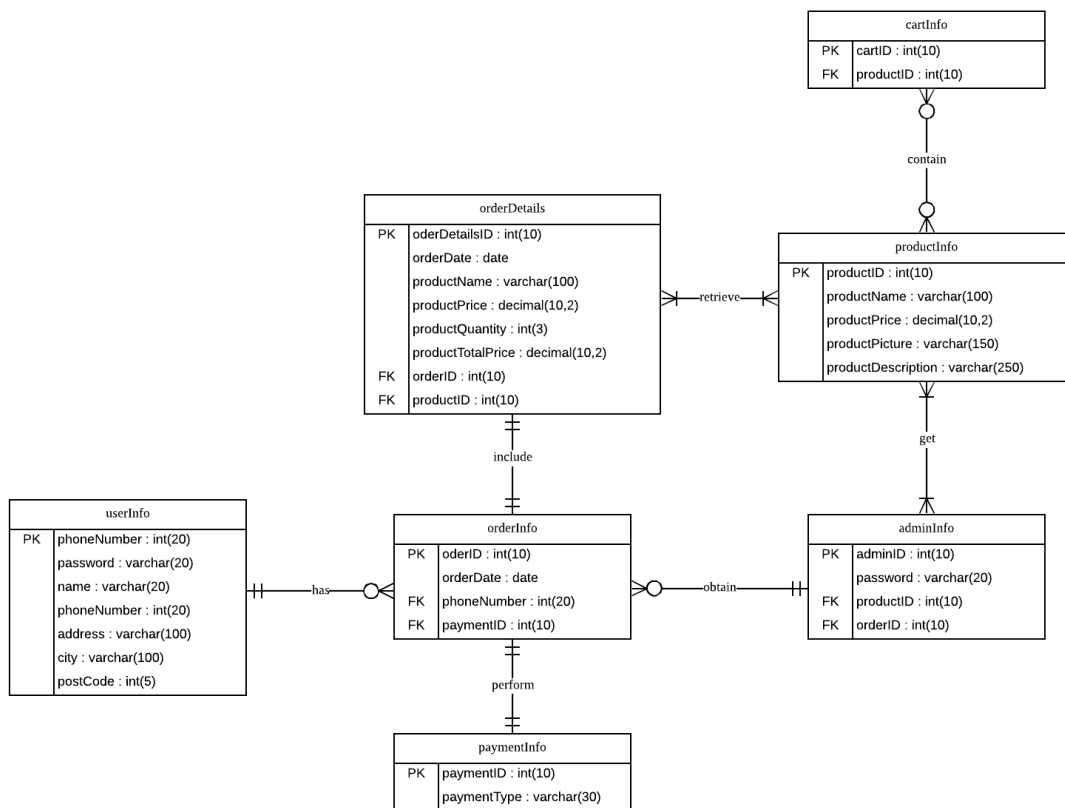


Figure 5.0 ERD Diagram of Naturel Kiss Online Shopping (NKOS)



## 6.0 SYSTEM REQUIREMENT APPROVAL

	Name	Date
Verified by: <hr/> DEVELOPER	MUHAMMAD AMRUN ANIQ BIN MOHAMED SAIDI	
Approved by: <hr/> CLIENT		

**Version**

**1**

NATUREL KISS ONLINE SHOPPING (NKOS)

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Faculty of Computer Systems & Software  
Engineering (FSKKP)

Software

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## 1.0 DATA DICTIONARY

This section describes the data dictionary for the database tables of Naturel Kiss Online Shopping (NKOS) system. There are seven tables of database involved in the system. The data dictionary is described as follows.

### 1.1 Table: USERINFO

Table 1.1 shows the data dictionary for USERINFO table of Naturel Kiss Online Shopping (NKOS).

Table 1.1 Data dictionary for USERINFO table

Field Name	Description	Data Type	Constraint
phoneNumber	The phone number of the user.	Int(20)	Primary Key
password	Authentication method to give access for the user to the system.	Nvarchar(20)	
name	The name of the user.	Nvarchar(20)	
address	The address of where the user stays.	Nvarchar(100)	
postcode	The postcode of the address.	Int(5)	
city	The city of the address location.	Nvarchar(100)	

### 1.2 Table: ORDERINFO

Table 1.2 shows the data dictionary for ORDERINFO table of Naturel Kiss Online Shopping (NKOS).

Table 1.2 Data dictionary for ORDERINFO table

Field Name	Description	Data Type	Constraint
orderID	Unique ID of the order.	Nvarchar(30)	Primary Key
orderDate	The date of when the order is made.	Date	
phoneNumber	The phone number of the user.	Int(20)	Foreign Key
paymentID	Unique ID of the payment made.	Nvarchar(30)	Foreign Key

### 1.3 Table: ORDERDETAILS

Table 1.3 shows the data dictionary for ORDERDETAILS table of Naturel Kiss Online Shopping (NKOS).

Table 1.3 Data dictionary for ORDERDETAILS table

<b>Field Name</b>	<b>Description</b>	<b>Data Type</b>	<b>Constraint</b>
orderDetailsID	Unique ID of the order details.	Nvarchar(30)	Primary Key
orderDate	The date of when the order is made.	Date	
productPrice	The price of the product.	Decimal(10,2)	
productQuantity	The quantity of the product.	Int(3)	
productTotalPrice	The total price of the product.	Decimal(10,2)	
orderID	Unique ID of the order.	Int(10)	Foreign Key
productID	Unique ID of the product.	Int(10)	Foreign Key

### 1.4 Table: PRODUCTINFO

Table 1.4 shows the data dictionary for PRODUCTINFO table of Naturel Kiss Online Shopping (NKOS).

Table 1.4 Data dictionary for PRODUCTINFO table

<b>Field Name</b>	<b>Description</b>	<b>Data Type</b>	<b>Constraint</b>
productID	Unique ID of the product.	Nvarchar(30)	Primary Key
productName	The name of the product.	Nvarchar(100)	
productPrice	The price of the product.	Decimal(10,2)	
productPicture	The picture of the product.	Nvarchar(150)	
productDescription	The description of the product.	Nvarchar(250)	

### 1.5 Table: CARTINFO

Table 1.5 shows the data dictionary for CARTINFO table of Naturel Kiss Online Shopping (NKOS).

Table 1.5 Data dictionary for CARTINFO table

<b>Field Name</b>	<b>Description</b>	<b>Data Type</b>	<b>Constraint</b>
cartID	Unique ID of the cart.	Nvarchar(30)	Primary Key
productID	Unique ID of the product.	Nvarchar(30)	

## 1.6 Table: PAYMENTINFO

Table 1.6 shows the data dictionary for PAYMENTINFO table of Naturel Kiss Online Shopping (NKOS).

Table 1.6 Data dictionary for PAYMENTINFO table

<b>Field Name</b>	<b>Description</b>	<b>Data Type</b>	<b>Constraint</b>
paymentID	Unique ID of the payment.	Nvarchar(30)	Primary Key
paymentType	The type of payment used.	Nvarchar(30)	

## 1.7 Table: ADMININFO

Table 1.7 shows the data dictionary for ADMININFO table of Naturel Kiss Online Shopping (NKOS).

Table 1.7 Data dictionary for ADMININFO table

<b>Field Name</b>	<b>Description</b>	<b>Data Type</b>	<b>Constraint</b>
adminID	Unique ID of the admin.	Int(15)	Primary Key
password	Authentication method to give the admin access to the system.	Nvarchar(20)	
productID	Unique ID of the product.	Nvarchar(30)	Foreign Key
orderID	Unique ID of the order.	Nvarchar(30)	Foreign Key

## 2.0 USER INTERFACE

This section describes the Graphical User Interface (GUI) of Naturel Kiss Online Shopping (NKOS). The user interfaces are shown as follows.

### 2.1 Interface for Main Screen

This interface provides the option for the user to login for registered customer or sign up for unregistered customer.

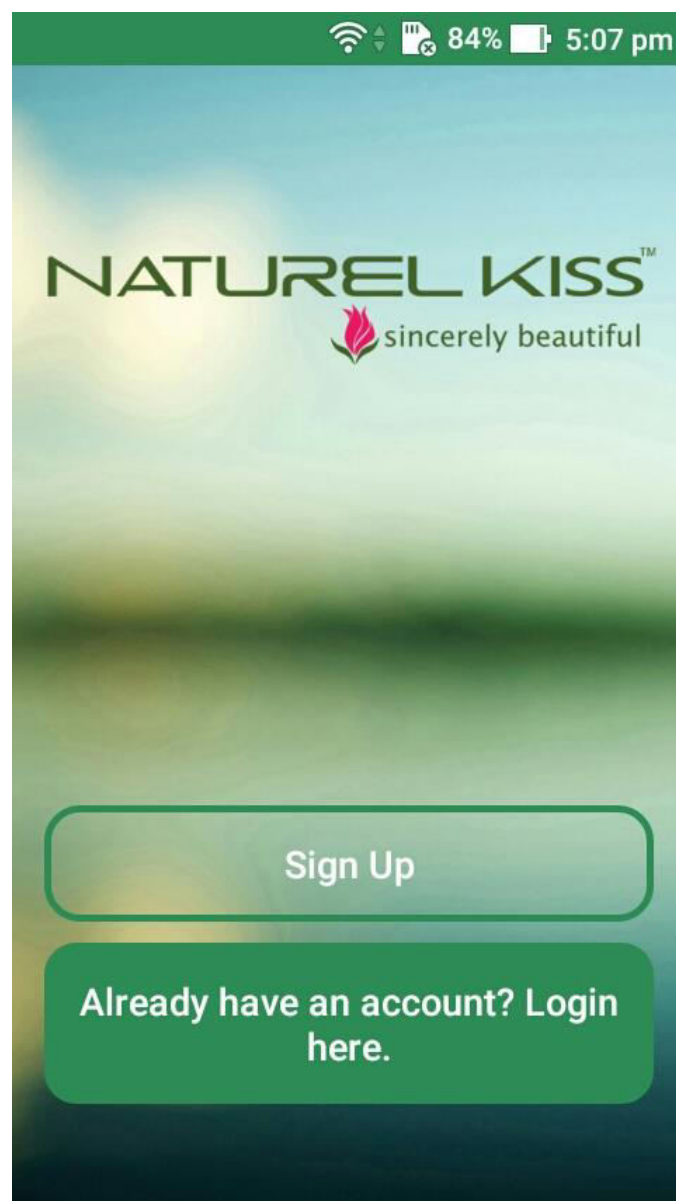


Figure 2.1 Interface for Main Screen

## 2.2 Interface for Register

This interface allows the guest and agent to register as an authorized customer and agent of Naturel Kiss Online Shopping (NKOS).



The image shows a mobile application registration screen for Naturel Kiss. At the top, there is a status bar with a camera icon, Wi-Fi signal, cellular signal, 84% battery, and the time 5:08 pm. The main background is a soft-focus image of a sunset or sunrise over water. The brand name 'NATUREL KISS' is displayed in a dark green, serif font, with a small pink flower icon to the right of the word 'KISS'. Below the brand name is the tagline 'sincerely beautiful' in a smaller, lowercase font. There are three rounded rectangular input fields stacked vertically. The first field contains the text 'Aniq Saidi'. The second field contains the text '0123456789'. The third field contains seven dots and a vertical red line, indicating a password field. At the bottom of the screen is a large, solid green button with the text 'Create Account' in white.

Figure 2.2 Interface for Register



### 2.3 Interface for Login

This interface allows the customer and agent to have authorized access to use the full features of the application.



Figure 2.3 Interface for Login

## 2.4 Interface for Home

This interface allows the customer and admin to view the list of products as the start up as they successfully login to the system. Customer can scroll up and down to view the products list.

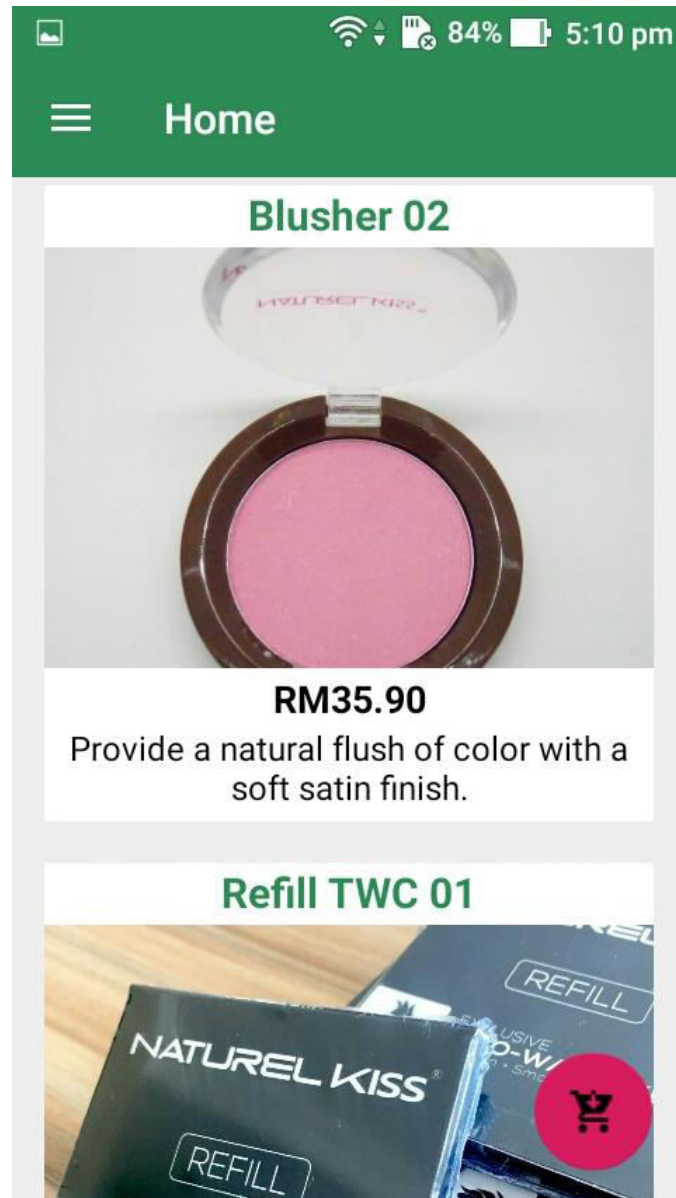


Figure 2.4 Interface for Home

## 2.5 Interface for User Menu

This interface displays the profile image and the name of current online customer. The menu can navigate the user to search for products, edit profile, view cart, or logout from the system.

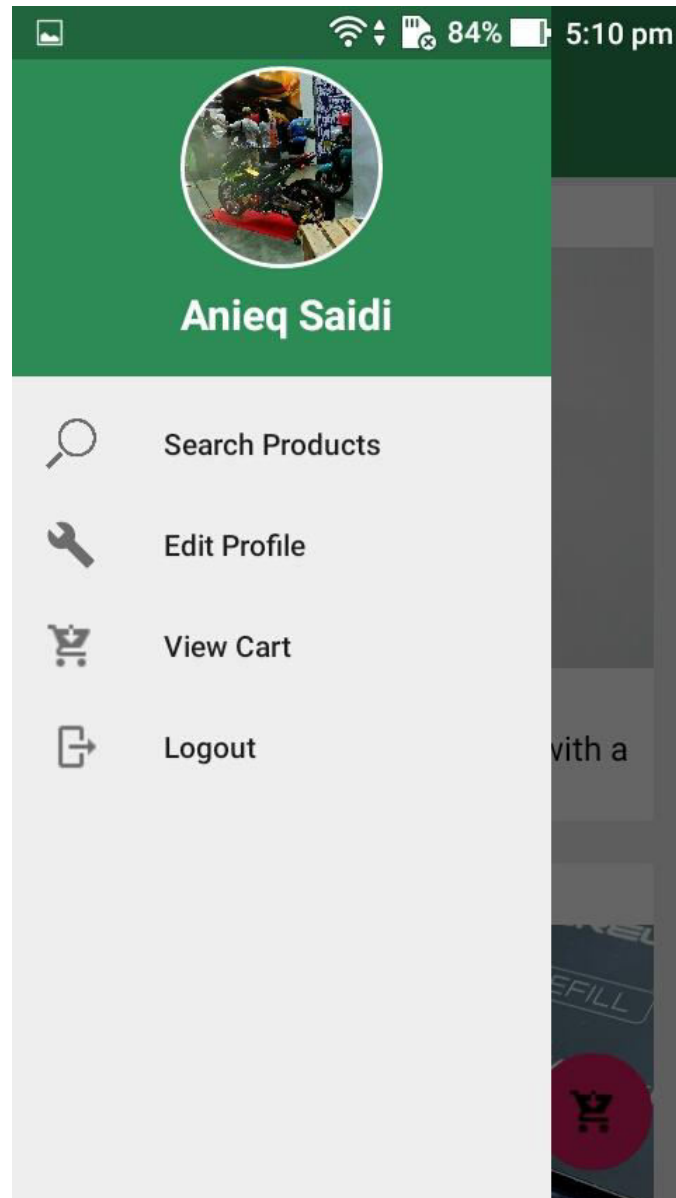


Figure 2.5 Interface for User Menu

## 2.6 Interface for Product Details

This interface displays the product information once the customer clicks on any of the products from the Home Interface. The customer can select the product then add the chosen product to the cart along with the quantity needed.

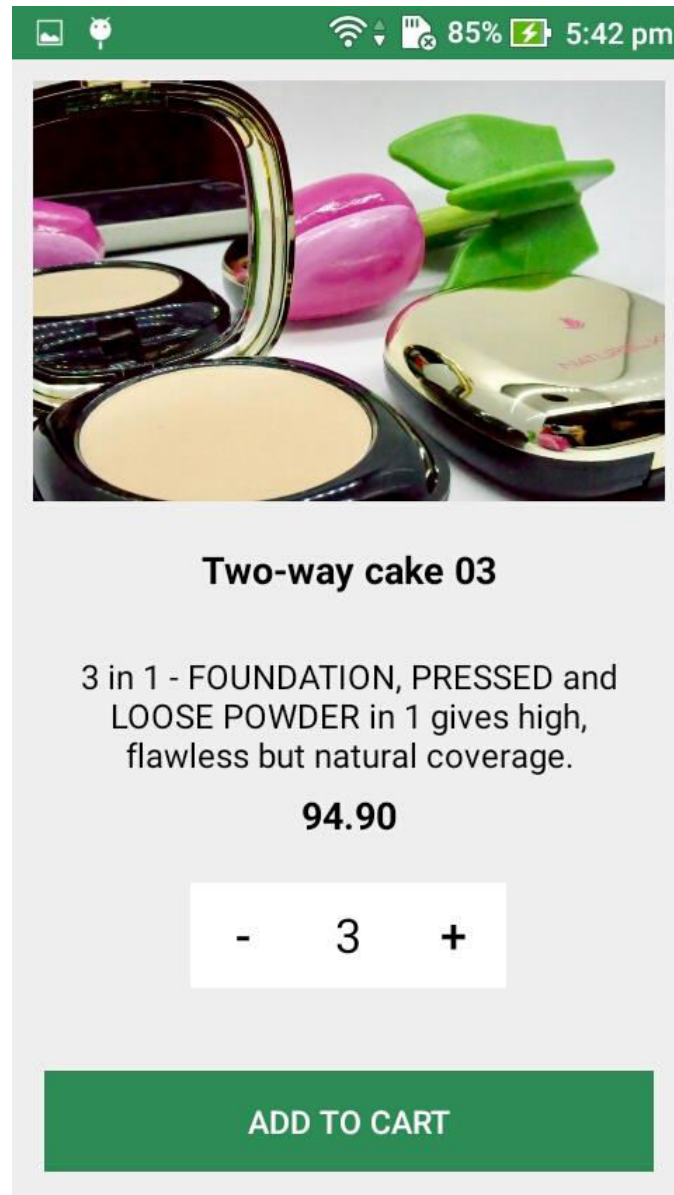


Figure 2.6 Interface for Product Details

## 2.7 Interface for Cart List

This interface displays the list of products. Customer is able to edit the quantity of the product or delete the product from the Cart List Interface by simply clicking on any of the product details. The customer may proceed to check out the products by clicking on the “Checkout” button.

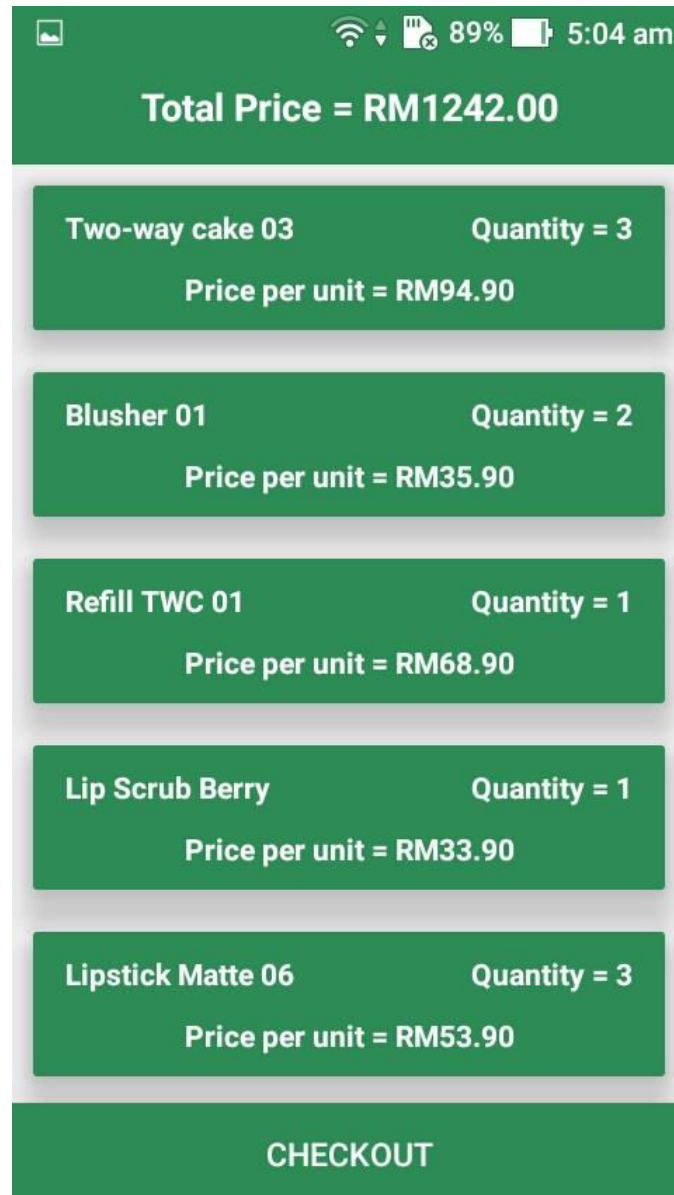


Figure 2.7 Interface for Cart List

## 2.8 Interface for Shipment Details

This interface displays the shipping address of the customer. The customer may proceed with the displayed address or a new address specifically for the shipping purposes. The order summary is also displayed to the customer and the customer may proceed to the payment by clicking the “Confirm” button.

**Please confirm your shipment details**

Anieq Saidi

0192427685

KK2, UMP

26300

Gambang

**Order Summary**  
Subtotal = RM781.90  
Shipping Fee = RM8.00  
Total = RM789.90

**CONFIRM**

Figure 2.8 Interface for Shipment Details

## 2.9 Interface for Payment Gateway

This interface displays the Payment Gateway Interface of the NKOS. The customer needs to sign-in to the payment gateway account in order to proceed. The total amount of the order will be deducted from the customer's balance in the payment gateway.

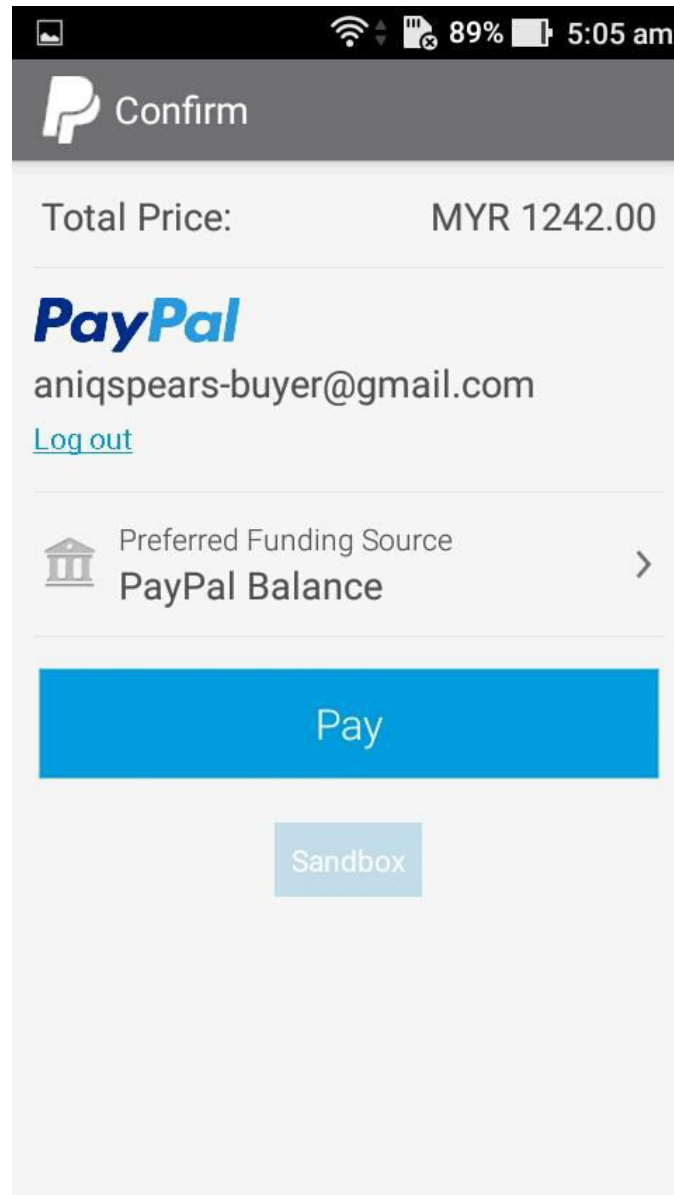


Figure 2.9 Interface for Payment Gateway

## 2.10 Interface for Receipts

This interface displays the Receipts Interface of NKOS once the customer has successfully paid for the order. The receipts show the details of the order such as the reference number, the total amount paid and the list of products ordered.

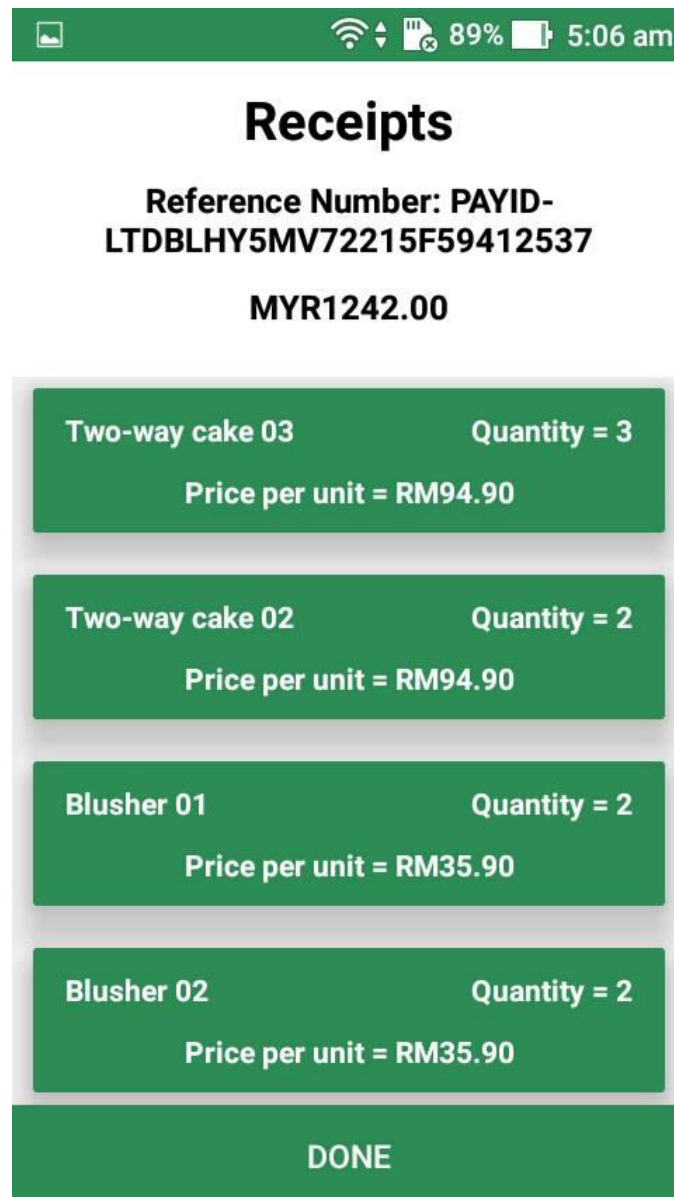


Figure 2.10 Interface for Receipts



## 2.11 Interface for Edit Profile

This interface displays the customer's details. Customer can change the profile picture by clicking on the "Change Image" and the system will allow the user to choose a picture from the mobile phone's gallery. The customer can also change the profile information then click on the "Save" button and the system will update the customer's information in the database.

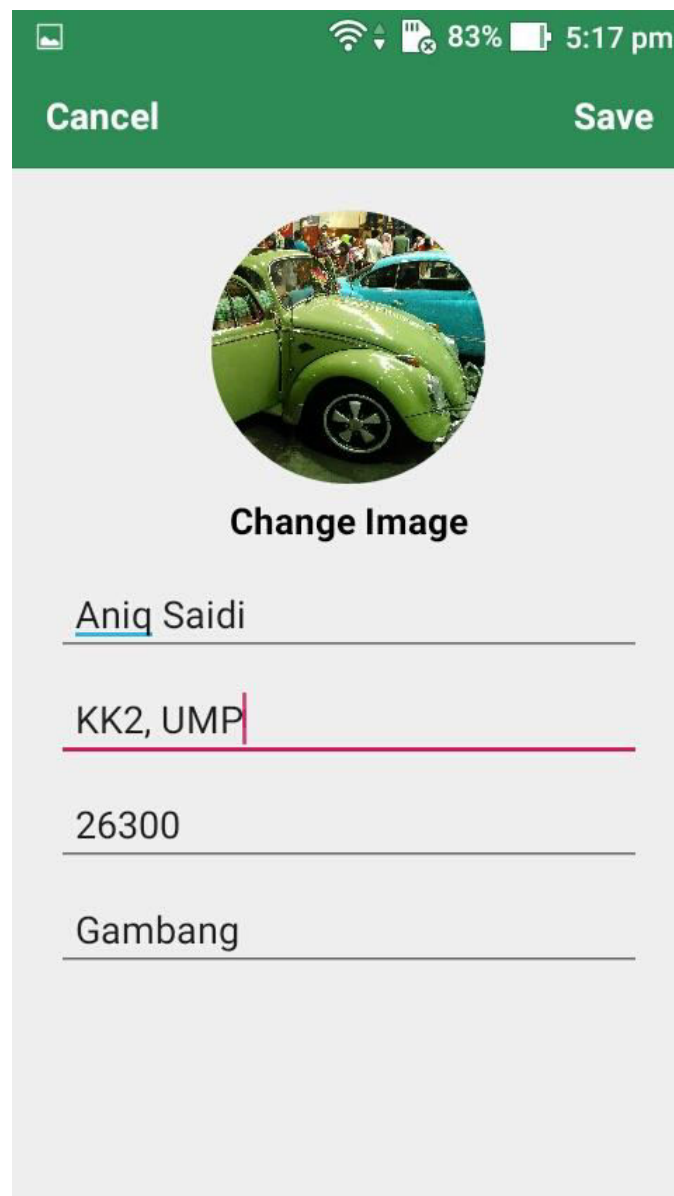


Figure 2.11 Interface for Edit Profile

## 2.12 Interface for Admin Home

This interface shows the home page after the admin has successfully logged in to the system. It allows admin to add new products, maintain existing products and check new orders .

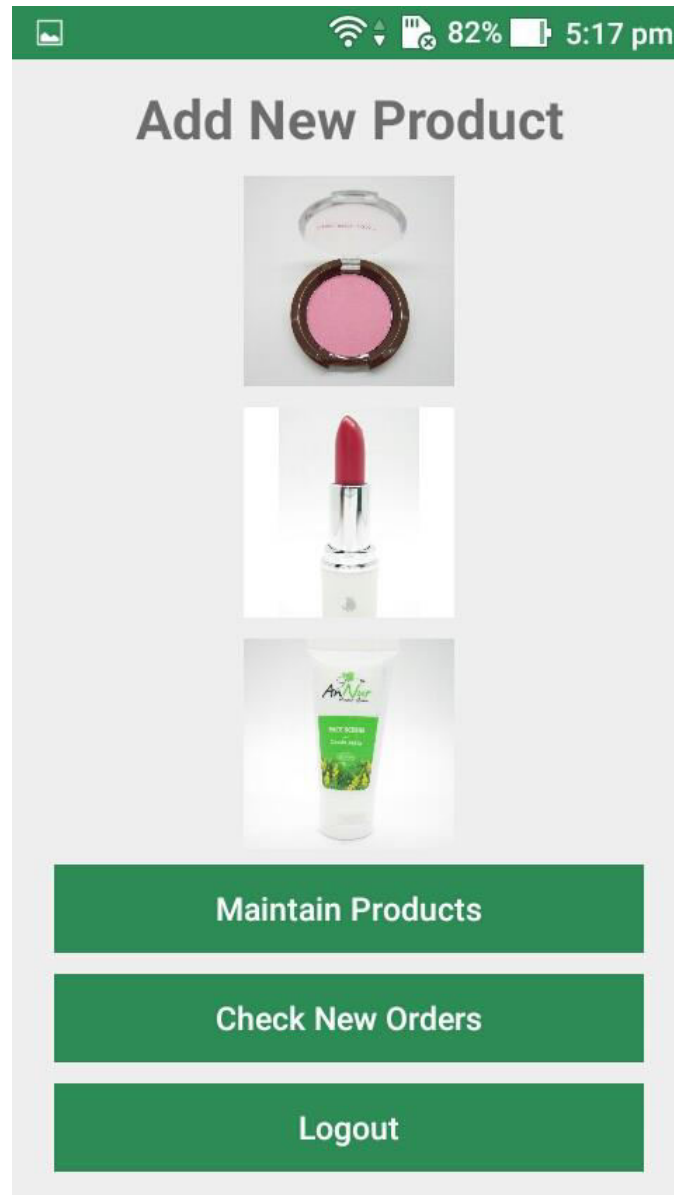


Figure 2.12 Interface for Admin Home

### 2.13 Interface for Admin Add New Product

This interface allows the admin to add new products to the system. The admin needs to select the product image, enter the product name, product description and the product price. The admin then clicks on the “Add Product” and the system will add the new product to the database and display it to the customer.

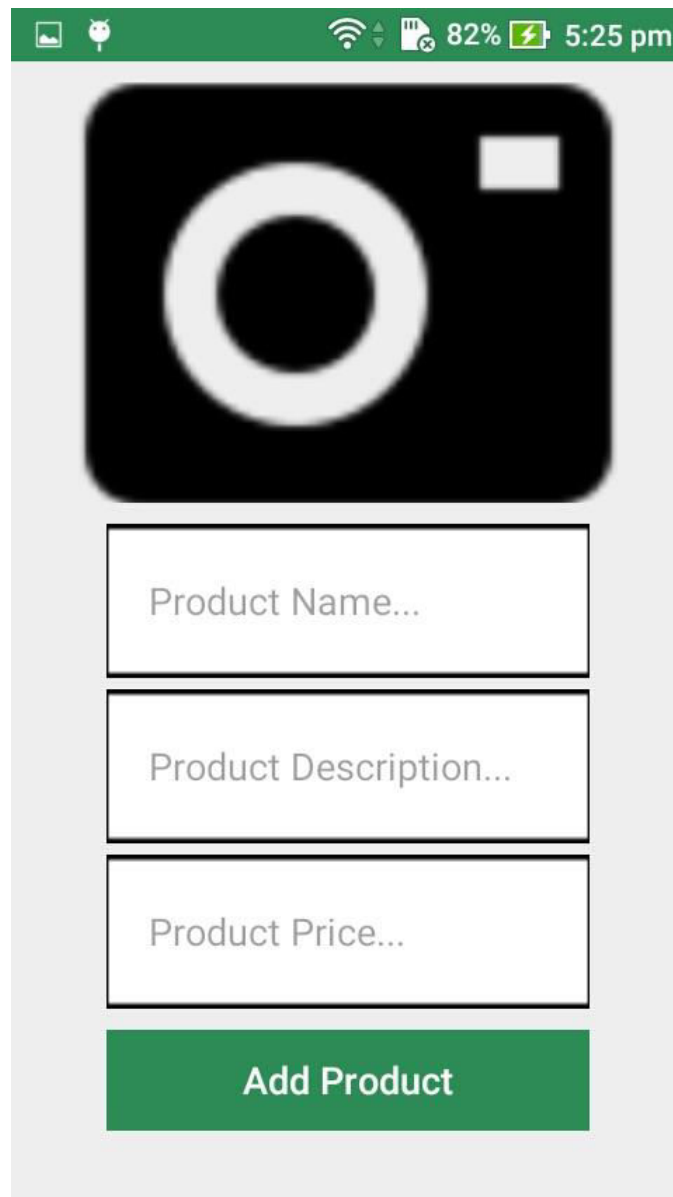


Figure 2.13 Interface for Admin Add New Product

## 2.14 Interface for Admin Maintain Product

This interface allows the user to update the product information. The admin then clicks on the “Apply Changes” button and the product information will be updated. The admin can also delete the product from the system by clicking on the “Delete Product” button.

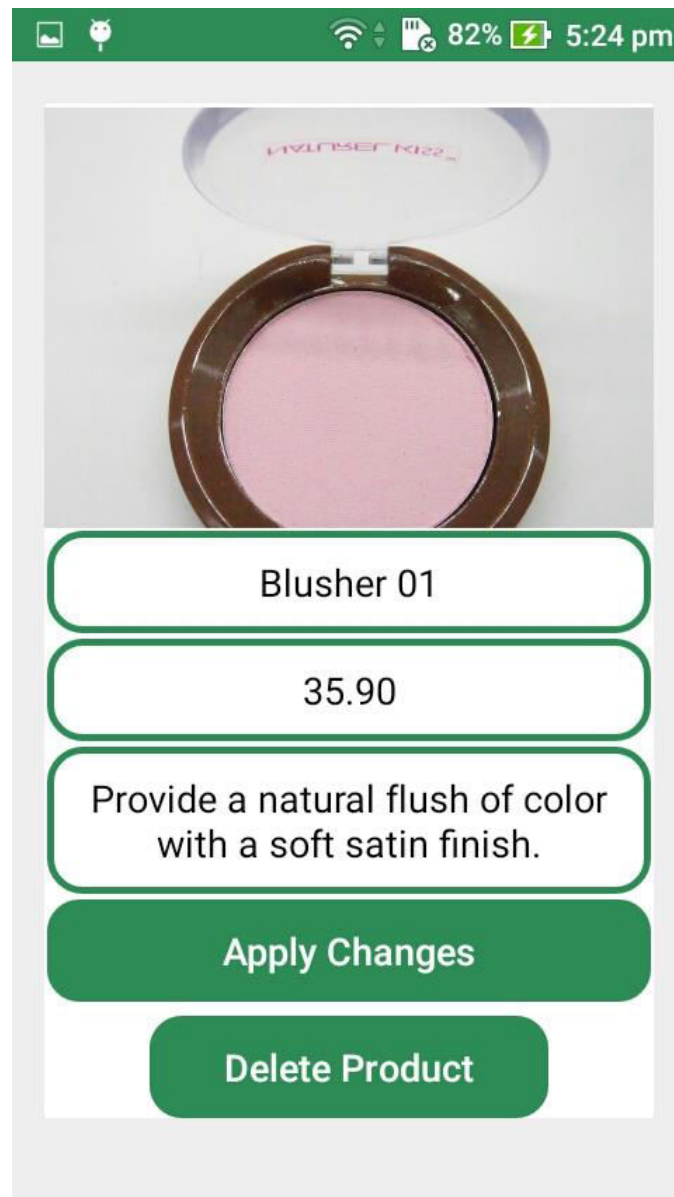


Figure 2.14 Interface for Admin Maintain Product

## 2.15 Interface for Admin Check New Orders

This interface allows the admin to check the list of orders that has been successfully paid by the customer. The admin can view the list of products in each order by clicking on the “View Products” button.

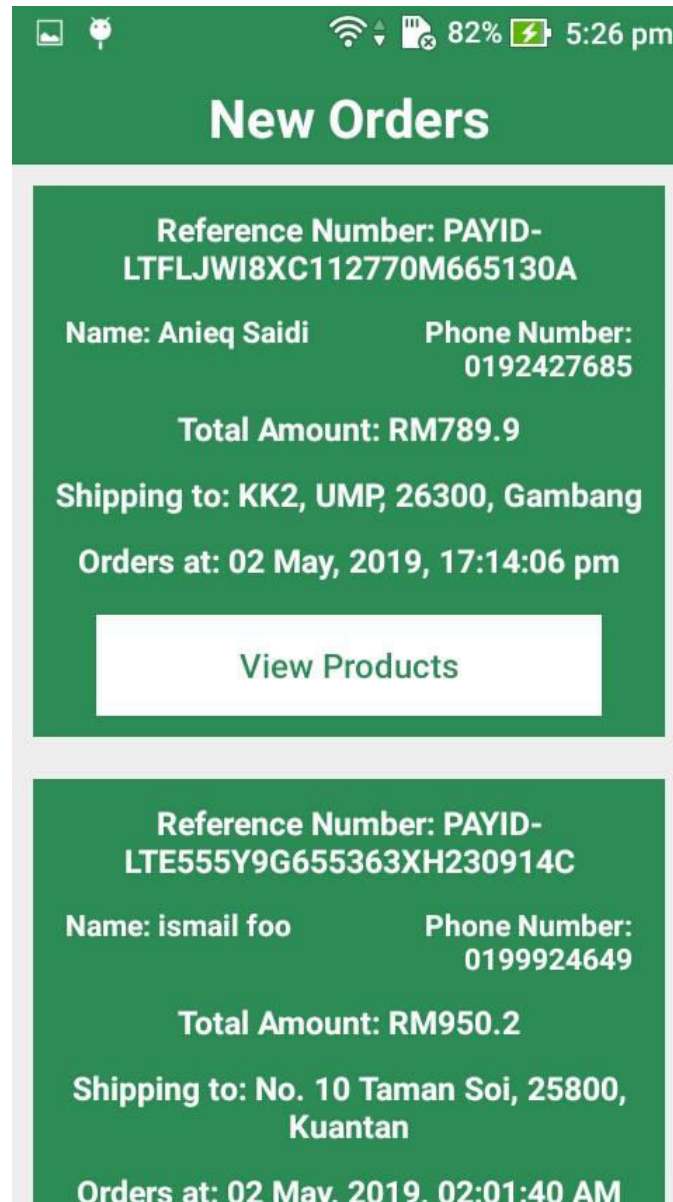


Figure 2.15 Interface for Admin Check New Orders

### 3.0 SYSTEM REQUIREMENT APPROVAL

	Name	Date
Verified by: <hr/> DEVELOPER	MUHAMMAD AMRUN ANIQ BIN MOHAMED SAIDI	
Approved by: <hr/> CLIENT		

**Version**

**1**

**NATUREL KISS ONLINE SHOPPING (NKOS)**

---

**Faculty of Computer Systems & Software  
Engineering (FSKKP)**

**User Acceptance  
Test (UAT)**

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## 1.0 TESTING REPORT

This section discusses about the User Acceptance Test (UAT) process for the Naturel Kiss Online Shopping (NKOS) system. Functional testing is the testing process that is used for the testing in order to ensure that it conforms to all functionality being specified within functional requirements. Functional testing is composed of few testing types which are unit testing, system testing, integration testing and acceptance testing.

As for the acceptance testing, the system is being tested by the user according to the test cases designed. The test cases designed are based on the system test process in which all component interactions of the system are included. Any errors or problems occur during testing are noted in the test cases for system correction. The test cases of the system are as follows.

Table 1.1 Use Case Testing

<b>Event</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass / Fail</b>	<b>Comment</b>
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Table 1.2 Use Case Login

	<b>Event</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass / Fail</b>	<b>Comment</b>
1.	Login with valid phone number and password	Enter phone number and password	System will allow the user to access the home page of the system based on the user type either Customer or Admin		Pass	
2.	Login with invalid phone number and valid password	Enter invalid phone number and valid password	System will notify that the phone number entered does not exist in the system		Pass	
3.	Login with valid phone number and invalid password	Enter valid phone number and invalid password	System will notify that the password entered is incorrect		Pass	
4.	Login with invalid phone number and password	Enter invalid phone number and password	System will notify that the phone number entered does not exist in the system		Pass	

Table 1.3 Use Case Registration

	<b>Event</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass / Fail</b>	<b>Comment</b>
1.	Create account	Enter name, phone number and password	System will register the user and store the information into the database		Pass	

Table 1.4 Use Case Manage Profile

	<b>Event</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass / Fail</b>	<b>Comment</b>
1.	View profile information	Click on “Edit Profile”	System will list out the user’s information		Pass	
2.	Change profile picture	Click on “Change Image”	System will send user to the phone gallery and allow user to choose and crop the selected picture		Pass	
3.	Change profile picture	Click on “Update”	System will store the new profile picture in the database and display it to the user		Pass	
4.	Change name	Enter name and click on “Update”	System will update the user name in the database		Pass	
5.	Add address for first time user	Enter address and click on “Update”	System will store the address in the database		Pass	
6.	Change address	Enter new address and click on “Update”	System will update the new address in the database		Pass	
7.	Add postcode for first time user	Enter postcode and click on “Update”	System will store the postcode in the database		Pass	
8.	Change postcode	Enter new postcode and click on “Update”	System will update the new postcode in the database		Pass	
9.	Add city for first time user	Enter city and click on “Update”	System will store the city in the database		Pass	
10.	Change city	Enter new city and click on “Update”	System will update the new city in the database		Pass	

Table 1.5 Use Case Manage Products

<b>Event</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass / Fail</b>	<b>Comment</b>
1. View product list	Scroll on the home page for the list of products	System will display the product list		Pass	
2. Add products	Select product image, enter product name, price, description and click on the “Add Product” button	System will store the new product information into the database		Pass	
3. Delete products	Select the product from the product list and click on “Delete Product” button	System will remove the product information from the database		Pass	
4. Update product info	Select the product from the product list and enter the new name, price, description and click on the “Apply Changes” button	System will update the new product information into the database		Pass	
5. Search product	Enter product name	System will list out the product		Pass	
6. Add product to cart	Click on the product from the product list, select the quantity needed and click on the “Add to Cart” button	System will store the product in the database and display the product in the cart page		Pass	

Table 1.6 Use Case Manage Cart

<b>Event</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass / Fail</b>	<b>Comment</b>
1. View products in cart	Click on the "View Cart" icon	System will display the list of products and the information in the cart		Pass	
2. Delete products in cart	Select the product and click on the "Delete Item"	System will remove the product information from the cart database		Pass	
3. Edit product	Select the product and click on the "Edit Item"	System will display the product details and user select the new quantity of the product		Pass	

Table 1.7 Use Case Checkout

<b>Event</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass / Fail</b>	<b>Comment</b>
1. Checkout	Clicks on the "Checkout" button	System will send the user to the shipping details information page		Pass	
2. Edit shipment details	Enter the shipping address, postcode, city and click on the "Confirm" button	System send the user to the payment gateway page		Pass	

Table 1.8 Use Case Generate Billing Details

<b>Event</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Pass / Fail</b>	<b>Comment</b>
1. Generate	Generate the billing details	System will generate the billing details when the payment is successful		Pass	

## 2.0 SYSTEM TESTING APPROVAL

	Name	Date
<b>Verified by:</b> <hr/> Developer	MUHAMMAD AMRUN ANIQ BIN MOHAMED SAIDI	
<b>Verified by:</b> <hr/> Client		