

**Marketing and Promotion Based On Selected Criteria System**

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A REPORT

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## DECLARATION OF ORIGINALITY

I declare that this report entitled "**MARKETING AND PROMOTION BASED ON SELECTED CRITERIA SYSTEM**" is my own work except as cited in the references. The report has not been accepted for any degree and is not being submitted concurrently in candidature for any degree or other award.

Signature : \_\_\_\_\_

Name : \_\_\_\_\_

Date : \_\_\_\_\_

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## **Abstract**

This project is a marketing and promotion system that design for academic and also marketing purpose. It provide student with new concept and design of the system. Since ecommerce now is very common to all people, therefore some implementation has been done in this project. From the design point of view, all the ecommerce can only do online sales. Therefore implementation to this is to make it work offline which is the point of sales system. By combining the ecommerce and also point of sales, the user can do sales online and also offline. All of the products are synchronized, so the users no need to worries about the arrangement of stock. The tools that used in this project is WordPress. There are several tools to design this project like Magento and the WordPress is used because it has a better security and it is more flexible compare to others website builder. For example, when we change our website design in WordPress, it does not affect the store and report of the system and not affecting our normal usage. Consumer behavior, sales promotion strategy and some similar system has been reviewed. By understanding the consumer buying behavior, we can know about how the buyers thinks, how they feel and do their decision. Promotion strategy is used to make the item sell in a better way by targeting the consumer behavior. By doing promotion can improve our skill to persuade consumer to purchase our product. Lastly, a suitable marketing system will be designed. Examples include the combination of ecommerce and point of sales, a follow up email that will keep follow up all consumers. The output material of the project will be a marketing website that include frontend and backend.

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## **Chapter 1: Introduction**

### **1.1 Motivation and Problem Statement**

In the existing system, the company do not know their consumer buying trend and their buying behaviour. Company sales do not increase or increase very slow. Marketers will feel their customer is getting away from them. I would like to improve the customer tracking system. **Company needs a solution that is able to provide details on the buying trends of the customer as well as the customer behaviour to boost sales.**

Besides that, company does not have a proper way to track sales of the customer. Most of the company just keep track on the totals sales and accidently ignore the important part. Company also should keep track of the sales on the hot item and also the item that is not saleable. This also make the company having over stock of some product and many product cannot be sale before it expired date. I would like this solve this issue to improve the company sales. **Company prefer to have a system that is able to track sales based on criteria like branch total sales, hot item, and also the item that is not saleable.**

Since there is a promotion, if the consumer do not know about it then it is a failure. Consumer does not know when the particular item or the item they like is having promotion. **There is no common platform to help the consumer to track the items of their interest on sales promotion.** I would like to improve the current promotion system.

### **1.2 Background**

What is promotion? Why it is important in the marketing? Promotion is a way to inform and persuade the consumer to purchase a product. If a product is failed to inform, persuade or give any information to consumer during promotion, it consider as a failure of the marketers. To make a promotion successful, the marketer should first collect information from the consumer. By knowing their buying trend, company can target the consumer for the right promotion item.

Besides that, company also should keep track on their sales so that they can make promotion on the item that is not sellable. Promotion also can be done by knowing the consumer behaviour. The more u knows about your customer, the easier for you to sell your product. Promotion can be done with certain technique. When doing promotion, it is a challenge for the marketer to

know whether they are familiar with the channel of promotion and how they aware of their brand.

Marketers also should know the motive of consumer shopping. Currently there are many apps that can allow the marketers do promotion but they just allow to key in the promotion date. A marketing and promotion system is design to allow the marketer to more easily to track their sales and do promotion effectively.

### 1.3 Project Objective

- 1) Build a database to store customer information like the details of purchasing behaviour. The more information collected from a customer, the easier for the company to spot opportunities to sell them new product.
- 2) System that is able to provide an interface to keep track of sales of item breakdown based on criteria like daily sales, monthly sales and item.
- 3) System to match item of interest, items on promotion, item that are popular and other related criteria.

### 1.4 Proposed Solutions

This marketing and promotion system is use to improve the tracking sales and also the promotion system. The system **allows the company to store more information about the consumer like customer buying trend and customer behaviour**. After getting the information, the company can know the customer purchase trend and also their behaviour.

The system also **allow to track sales base on criteria like branch total sales, hot item and item that not saleable**. For example, the company will do promotion on the branch with the lowest sales to boost up the sales of that particular branch. Promotion of item also can target on particular consumer.

For example, if a consumer always purchases NIKE brand shoes, then when NIKE do promotion then this consumer will get the promotion details. Rather than doing promotion blindly, this system **allow user to get their interested product detail when that particular product have promotion**. This also can boost up the sales of the company because the user usually will purchase the item of their interest when there is a promotion.

### 1.5 Project Scope

The scope for this project is to develop a better marketing and promotion system that focus on the manufacture and the public community. Public community are able to get the information about the promotion item of their interest while the manufacture sector can have a better tracking customer and promotion system.

### 1.6 Contributions

The marketing and promotion system have the better customer tracking and promotion system compare to the existing system. Company can track customer purchasing trend and also their behaviour in order to do the promotion effectively. Besides that, the promotion is allow to do based on daily sales, hot item and also the item that is not saleable. Company also can save a lot of cost by doing promotion effectively and also can boost up the sales. Consumer also can retrieve their interested item when the item is on promotion. This is better than receive all the promotion detail without doing analysis just simply delivers the message. User can save the time by going to the particular super market just to getting the information of the promotion items. The system can be uses on web and also mobile. The design of the mobile is been different from the web and has been improved.

## **Chapter 2: Literature Review**

### **2.1 Consumer Behaviour**

#### **Introduction**

Consumer behaviour has helps the marketer to understand how consumer feel, think and select from the different, for example products and brand. This has always become the great interest to the marketers. There are several factors that influence the consumer buying behaviour such as cultural, social, personal and psychological factors. Most of these factors are uncontrollable but need to be considered while trying to understand the behaviour of the consumers. Consumer is the study of “the processes involved when individuals or group select, purchase, use, or dispose of products, services, ideas, or experiences to satisfy needs and desires” (Solomon 1995, 7). The term “consumer” refers to the patterns of total purchasing which include the pre- purchase and post-purchase. Pre-purchase consist of the growing awareness of a need or want. Besides that, it also searches for the evaluation of information of the product and brand. Post-purchase include the reduction of anxiety and evaluation of the purchased item which follow the purchase of the expensive and less bought items.

#### **2.1.1 Consumer Personality Factors**

Innovativeness and the risk aversion is two main factors that influencing the consumers to make decision. From (Donthu and Gilliland, 1996), it mention that risk aversion is the measure of how much the consumer need to be sure about what they are buying. The consumer with high risk averse need to be very sure about what they are buying while the consumer with less risk averse can tolerate some risk in their purchase. For the innovativeness, it is a global measure which capture the degree to which consumer are willing to take chances and experiment with new ways of doing things (Donthu and Gilliland, 1996).

#### **2.1.2 Consumer Perception Factors**

An individual select data or information from the environment and then organize it and get the meaning from it is called perception which is also a mental process.

- Perceived fit

- An attitudinal measure about how appropriate a certain channel of distribution of a product.
- Was found more important than consumer preferences.
- Quality
  - Consumer will pay the price if the products have quality.
- Packaging
  - A product needs to draw attention of the customer through the package
  - Establishes a direct link with consumer at the point of purchase.
  - Can change the consumer perception about the brand.

### 2.1.3 Promotion

Every promotion has its own characteristic. There is still a very big challenge that faced by the company which is hold and increase their market share and value. There are certain techniques to do promotion which will be discussed on below.

- Familiarity with a channel
  - A general experience of the consumer that purchasing a product through a channel. For example, catalog or internet.
  - Consumer can reduce anxiety in purchasing the product if they are accustomed to using the channel.
- Brand Awareness
  - Brand Awareness surpasses all the steps in the purchasing process
  - Brand attitude can't be performed unless the consumer is aware of it.
- Family influence
  - Family has carry out a big influence on the behaviour of its member.
  - Parents always influence their children.
  - Sibling efforts also may carry out the influence.
- Shopping Motives
  - Defined consumer what they want and needs from which shop.
  - Consist of two groups of motives, functional and non-functional.
  - Functional motives are associated with place, time and possession needs.
  - It also refers to the channel of choice.

- Non- functional is the motives that related to social and emotional reasons for patronage.
- Example of functional motive is price comparison, while non-functional motive is recreation.

From the paper “Consumer Buying Behaviour” by Manali Khaniwale, it shows that there are also other factors that affecting the consumer purchasing behaviour.

The diagram below show that the relationship between consumer purchasing behaviour and several factors.

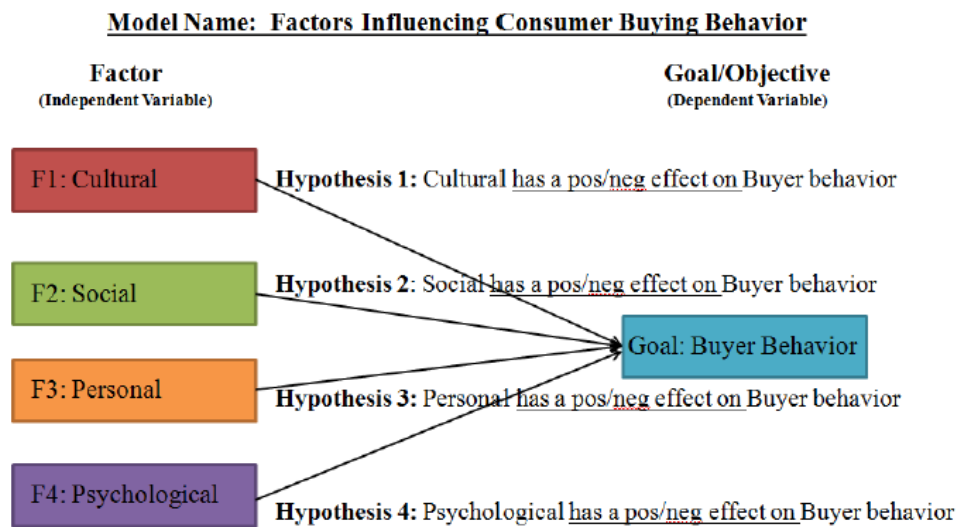


Figure 2.3.1.1 Factor Influencing Consumer Buying Behaviour

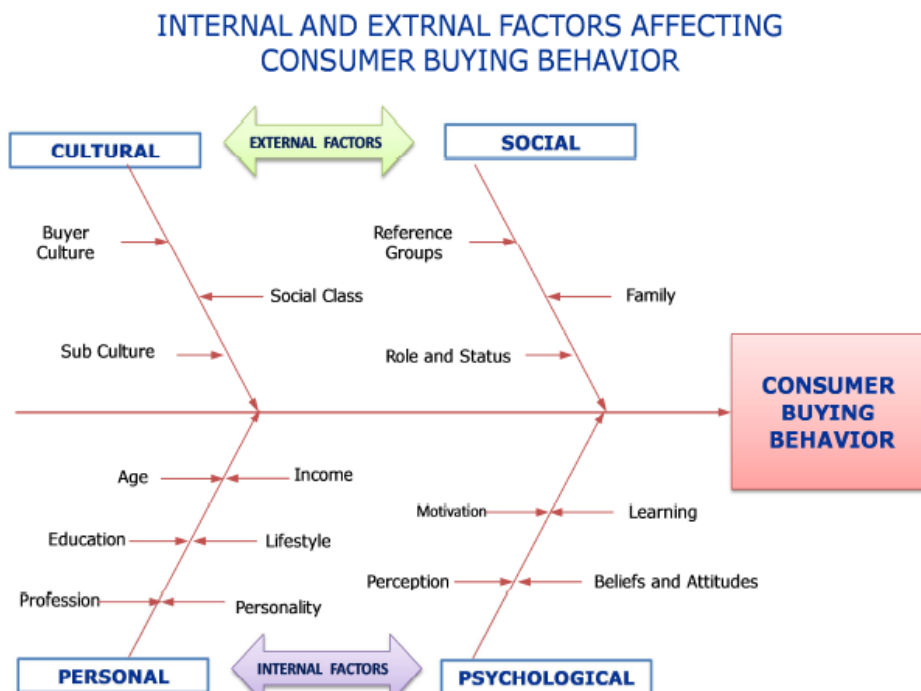


Figure 2.3.1.2 Internal and External Factors affecting consumer buying behaviour



The diagrams 2.3.1.1 and diagram 2.3.1.2 had showed 4 factors that will affect the consumer buying behaviour which is culture, society, personal and also psychological. These factors also classifies into 2 groups which is internal and external.

Consumer behaviour is the concept which answer the question what, why, how, when, and where when they are buying any product. The consumer will find the answer for what to buy, why to buy, when to buy, how to buy and where to buy.

External class means the cultural and social, while the internal class means the personal and psychological.

#### 2.1.4 External Factors

##### 1. Cultural Factors

- Consist of 3 types which is buyer cultural, subcultural and social class.
- Buyer cultural
  - This refers to the entire way of life of a group of people in a particular society.
  - Cultural also included the thoughts, behaviour, practices, believes, lifestyle and many more.
  - Different consumer from different culture will have different view about a product.
  - For example, western outfit is not accepted in Indian culture.
- Subculture
  - Subculture refers to the group of people who have common experiences and situations.
- Social class
  - Every culture has some division on the class based on factors like income, profession and education.
  - Consumer from the same social class will mostly have the common interest and behaviour.

##### 2. Social Factors

- 3 important social factors which is reference group, family, role and status.
- The purchase of a consumer will having the impact on the persons perceived relationships with and also influences the social norms of that person.
- For example, housewife purchase behaviour will influence the children education, health and husband status.
- Reference Group
  - Reference group are refers to the group who compare against to evaluate self's of the group achievement.

- For example, a male student studying in a university is the part of the male student group in that university.
- Family
  - Individual or the family's purchase has a great influence on the preferences and opinion of the family member.
- Role and status
  - Role individuals perform and the status they have in a particular group determine their position in that group, so as a consumer, they will choose to use and select the goods so that can suite their position.

### 2.1.5 Internal Factors

#### 1. Personal Factors

- Has been influence by personal characteristic such as age, education, profession, income, personality and lifestyle.
- Age
  - At every stage, the consumer requires different needs.
  - For example, a child at 10 years old will buy sweets very often but a 70 years old man will not buying sweet very often.
- Education
  - Level of education will determine the consumer behaviour.
  - The consumer with higher education will purchase item more wisely.
  - For example, a doctor may incline more towards the healthy food as they know the advantage of it.
- Profession
  - Consumer occupation will give impact to him on the buying decision.
  - The consumer will select the item which suite their profession.
  - For example, a teacher purchase more book to educate their student.
- Income
  - Economic condition of a consumer influence on the price range of the product they buying.
  - Consumer with better economic condition may purchase premium products.
- Personalities
  - Different consumer have different personalities so that they will purchase the item that suite their personalities.
- Lifestyle
  - Lifestyle is more concrete than personalities because lifestyle describes a person's pattern of living, interests, and opinion.

#### 2. Psychological Factors

- Psychological factors that affect consumer behaviour are perception, motivation, learning and also beliefs & attitude.
  
- Perception
  - A process by who finds, analyse and conclude their inner and outer information about the product.
  - Two consumers who exposed to the same marketing communication will have different perception towards the same product.
- Motivation
  - Define as the inner driving force that orients consumer activities towards the achievement of the aim.
  - Each consumer has many reasons to purchase a product.
- Learning
  - Consumer will learn from the past experience and current observation.
  - Consumer will make use of their past experience before making any decision.
  - For example, consumer bought a product A, after they use the product A, they found out that product A is bad. Then the consumer has observes the result and learn from it and never buy product A anymore.
- Beliefs and Attitudes
  - The feelings and thought that strongly believes to be true is called beliefs.
  - Attitude is the individual positive or negative evaluation toward something.
  - Consumer will have different feeling and attitudes toward a product.
  - The marketers are trying to change the beliefs and the attitude of the consumer so that they can be more competitive.

After I read these two papers, I have some opinion about the consumer purchasing behaviour. Nowadays, I think that the consumer purchase item just based on the price. Most of them do not care about the quality of the item. They will purchase it as long as the item is cheap. From the first paper, it has mention about the promotion. Consumer nowadays also will purchase more when there is a promotion. This is because they can get the item with a cheaper price. There are also some exceptions where the consumer is really need the item but cannot wait anymore. On the second paper, it has mention about the income and lifestyle of the consumer. These categories of people with high income will purchase a more expensive item to suite their lifestyle. For example, they won't go to buy a normal brand shoes while it doing promotion, on the other hand when the NIKE and ADDIDAS do promotion, they are willing to buy it. I also very agree that the writer has mention family as one of the factors that affect consumer buying behaviour. This is because the children will always follow what their parents do. For example, the children parents like to read book, mostly their children also like to read book because influence by their parents, so their family will purchase more book.

## Conclusion

Study of consumer behaviour is important in the marketing field. Consumer behaviour is also a form of basis marketing strategies. By studying consumer behaviour, we can learn and know about how the buyers think, what are their feeling, how they do their decision. The promotion, internal and external factors have influence the consumer which impacts their purchasing. By knowing these factors, the marketers can know better about the consumer purchasing motive and frequency of the particular product and this also allow them to improve their product or services.

## **2.2 Sales Promotion Strategies**

### **Introduction**

Promotion consists of 4 types of elements which are advertising, personal selling, sales promotion and also publicity. Promotion is compulsory to be a supporting component in the marketing. To effectively support the marketing, the promotion decision must be integrated and also co-ordinated with the product or brand.

- Advertising is to give out the information through paid media where the source is the sponsoring organization.
- Personal selling gives out information through face to face, contact between the sponsoring organizations. Similar to advertising the source also is the sponsoring organization.
- Sales promotion gives out information through different activities other than personal selling, advertising and publicity. It simulates the consumer purchasing.
- Publicity give out information that not directly paid by an organization and the source is not the organization.

### **2.2.1 Advertising**

The meaning of advertising is “to announce publicly” according to the dictionary. Advertising is a mass communication that having a purpose to persuade the consumer to buy a products. This is also to maximizing the company’s profits.

There are several element of advertising:

- Mass communication that reach large group of consumers.
- The message is not delivered by an actual person and also not delivered to a specific person.
- Advertising also makes mass production available.
- To make sure that the advertiser of a long period of business life with beneficial sales. This is also called commercial communication.
- Can be economical, for example keep the cost per message low.
- The advertiser can post him name to his advertisement. This allows him to publicizing his identities.

Example of advertising:

- Message on newspaper, radio, television.
- Attract consumer through display material (motion picture, store signs)

### 2.2.2 Sales Promotion

Sales promotions make the personal selling and advertising become more effective. Sales promotions have different collection of incentive tools. It is a short term designed to stimulate a greater and quicker purchase of a particular product by consumer. The effort of sales promotion is to motivate, persuade and remind the consumer about the benefit of the goods that are offer.

According to W.J. Stanton, those marketing activities that is other than personal selling, advertising and publicity are intended to stimulate customer requirement and improve the performance of the sellers.

From the marketer's perspective, sales promotion can be serves as three necessary roles which are to inform, persuades and remind the prospective of the consumer. If a product or a brand that do not get attention from the consumer, it consider as a failure. To solve this problem, a producer is needed to inform all consumers about their business product. If a particular product or brand is not informs to the consumers, it will become a failure brand or product even it is a very useful product.

The second role is persuasion. The competition among different industries gives a huge pressure on the promotion of the sellers. This is because consumers have many choices to choose from a particular product because it has many brands. If the particular brand fails to persuade consumer, then they will lose their customer. For the luxury product, the industry can persuade consumer on the benefit of the product due to some luxury product is expensive. As a simple conclusion on here, persuasion is very important for a product to be sale.

The third role is the reminder. Consumer needed to be reminds about the availability of a product. In the market, everyday have many message to attract new customer to introduce to their new product. In marketing, an industry must always remind customer about their brand and product since there are many new brand and product are produced so that the consumer will retain a place for the brand in their mind.

### 2.2.3 Type of promotion

1. Promotion directed at consumers.
2. Promotion directed at dealers and distributors.

### 2.2.4 Promotion directed at consumers

There are many consumer promotion tools. Here I will discuss a few of them.

- Samples
  - A free trial product to consumers.

- Can be delivered in many ways such as picked up in store, attach to another product etc.
- Most effective way to introduce new product.
- Coupons
  - Allow consumer to save some money on the purchased product.
  - Also can be delivered in many ways such as mailed, attach to other products etc.
  - Effective in promote sales of a mature brand.
- Price Packs
  - Allow consumer to save the regular price of a product.
  - For example buy 1 free 1.
  - Consumer able to get 2 same product just by paying 1 product price
  - More effective than coupon.
  - Have a limitation which is only effective on short terms sales.
- Premiums or Gifts
  - Offer low cost or free item to consumer who purchase a particular item.
  - Some package itself may be a reusable container and may serve as premium.
  - For example ice cream, the container can be reuse.
- Free Trials
  - Invite consumer to try the product without paying it cost and in hope that they will purchase it.
  - For example, 3D television. Consumers are invited to try the 3D effect of the television without paying any cost. The marketer hope the consumer will purchase it after trying its effect.
- Product Warranties
  - An important tool to increase the sales of the product.
  - Consumers are willing to purchase the product if it is given warranties.
  - The qualities of the product also need to be good.
- Product Demonstrations
  - Particular product is being shown in action.
  - Consumer can see the usage of the product in live.
  - Can increase the confident of the consumer towards the product.
  - For example, a modern grinder is demonstrate by the workers to the consumer to show that its speciality compare to others grinder.

#### 2.2.5 Promotion directed at dealers and distributors

- Trade promotion able to persuade the retailer to carry the brand.
- Trade promotions enable the retailer to promote the brand through several ways such as display, price reduction etc.
- Trade promotion allows the retailer to push the product.
- There are many trade promotion tools and few of them are discuss below.



- Price-Off
  - A technique that offers a price which is straight discount off the list price on each case purchased.
  - This is to encourage the dealers to purchase a large quantity.
  - The more the dealer purchase the price will be reduces until a limit.
  - The dealers can use these allowances for price reductions.
- Allowance
  - If the retailers is agree to feature the manufacture product, the manufacture may offer an allowance to them.
- Free Goods
  - Manufacture can offer some free goods which are not include in the item purchase to the retailer who bought a certain quantity of that particular item.
  - For example, the booster pack of a trading card games if bought a box of it will get a promo card that is special compare to others.
- Specialty Advertising Items
  - Offer special items to the retailers that carry the company's name.
  - For example pen, note book, mini calendar etc.

#### 2.2.6 Sales Promotion Strategies & Practices

As discuss above, sales promotion is an important strategy in marketing. Here will discuss what a sales promotion should involve.

- Objective
  - Every sales promotion should have an objective.
  - Should determine what task should be accomplished and the buyer response.
  - How to inform, persuade and remind the consumers.
  - For a better improvement, instead of just inform the consumers, on the other way try to persuade them to purchase the product.
- Communication
  - Should attract attention from consumer.
  - If the communication is not done effectively, the sales promotion will be wasted.
  - For example, the price does not mention clearly, term and condition not stated clearly.
  - Purpose of the communication is to persuade the potential consumer to purchase the product.

In my opinion, promotion that directed to consumer is the most effective mode of the sales promotion. This is because there is a clear objective in here which is to persuade the consumer to purchase the item. Different manufacture can use different ways to persuade the consumer. Compare to the promotion that directed to the dealers, promotion that directed to consumer are easier to success since if the consumer only buy one of the item it also called successful promote. Compare to the retailers, if fail to persuade the retailers to purchase a large amount then the promotion is wasted. Compare to retailers, consumer are easier to promote. For example, the manufacture can use the package to attract the consumer to purchase the item, but for the retailer they not only see the package design. For me, packaging is also a very important strategy in the promotion. This is because item that fail on packaging will loss the consumer attention towards that item. Besides that, packaging also carries the selling message and information about that product. Package can be done in different ways, for example shape, size, color and is it able to be reuse.

The below table shows the major sales promotion devices that grouped by Target Audience.

<b>Business users or Households</b>	<b>Middlemen and their Sales Forces</b>
Coupons	Free goods
Cash rebates	Advertising allowances
Premiums (Gifts)	Contests for sales people
Free samples	Product demonstrations
Contests	Trade shows
Point of purchase displays	Exhibitions
Product demonstrations	Advertising specialties
Trade shows and exhibitions	Point-of-purchase displays
Advertising specialties	Training sales forces

Table 2.2.6.1 Major sales promotion devices

### Conclusion

The study had showed the effectiveness and different type of the promotion strategies. Sales promotion is the most effective way to increase the sales in business in marketing. By doing promotion, the manufacture can learn how to persuade consumer, the way to inform consumer about new product and also how to remind them about the current brand and product. By mastering the sales promotion strategies which is advertising, personal selling, sales promotion and publicity, the manufacture can increase their sales effectively.

## 2.3 Similar System

- 2.3.1 COKOPOS

Home / Customers

Your IP Address 175.145.247.229 ( Last login at: 17/08/2016 15:13 IP: 115.164.82.178)

If you find any error/bug, please email to support@cokopos.com with details.

**Customers**

Please use the table below to navigate or filter the results. You can download the table as excel and pdf.

Show 10 Search

	Company	Name	Email Address	Phone	City	Customer Group	VAT Number	Award Points	Actions
<input type="checkbox"/>	UTAR	TAN AH KAU	tanahkau@hotmail.com	01234567890	Kampar	New Customer (+10)		100	
<input type="checkbox"/>	Walk-in Customer	Walk-in Customer	support@cokopos.com	0123456789	City	General		0	
<input type="checkbox"/>	[Company]	[Name]	[Email Address]	[Phone]	[City]	[Customer Gro	[VAT Number]	[Award Points]	Actions

Showing 1 to 2 of 2 entries

< Previous 1 Next >

© 2016 COKOPOS (v3.0.1.13)

Home / Suppliers

Your IP Address 175.145.247.229 ( Last login at: 17/08/2016 15:13 IP: 115.164.82.178)

If you find any error/bug, please email to support@cokopos.com with details.

**Suppliers**

Please use the table below to navigate or filter the results. You can download the table as excel and pdf.

Show 10 Search

	Company	Name	Email Address	Phone	City	Country	VAT Number	Actions
<input type="checkbox"/>	Supplier Company Name	Supplier	support@cokopos.com	0123456789	City			
<input type="checkbox"/>	[Company]	[Name]	[Email Address]	[Phone]	[City]	[Country]	[VAT Number]	Actions

Showing 1 to 1 of 1 entries

< Previous 1 Next >

© 2016 COKOPOS (v3.0.1.13)

Home / Products / Add Product

Your IP Address 175.145.247.229 ( Last login at: 17/08/2016 15:13 IP: 115.164.82.178)

If you find any error/bug, please email to support@cokopos.com with details.

**Add Product**

Please fill in the information below. The field labels marked with \* are required input fields.

**Product Type \***

Standard  
Standard  
Combo  
Digital  
Service

**Warehouse Quantity**

Warehouse 1 Quantity Warehouse 2 Quantity

This product has multiple variants e.g. Multiple Sizes and/or Colors

You can scan your barcode scanner too

**Barcode Symbology \***

Code128

**Category \***

Select Category

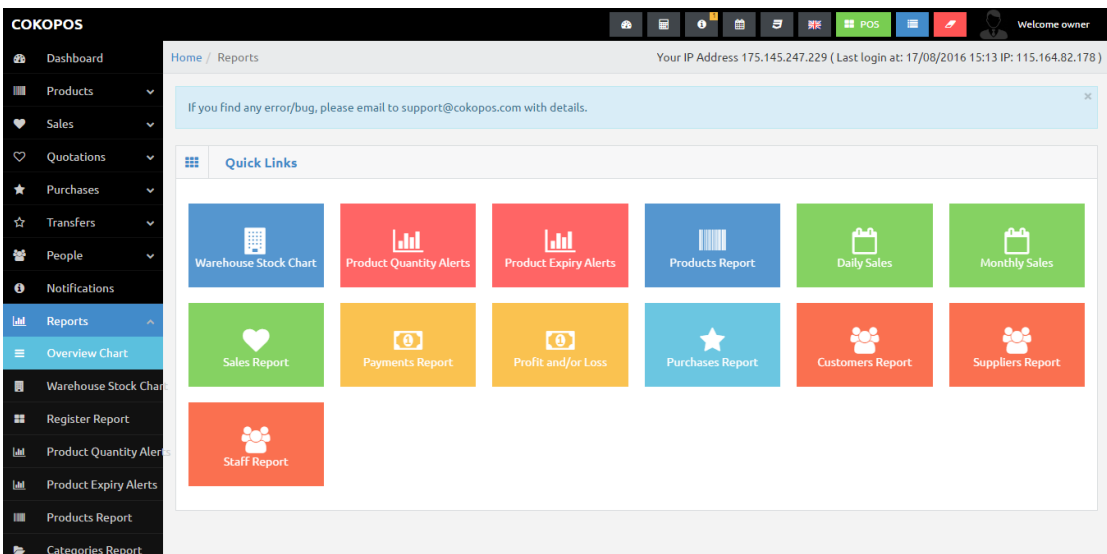
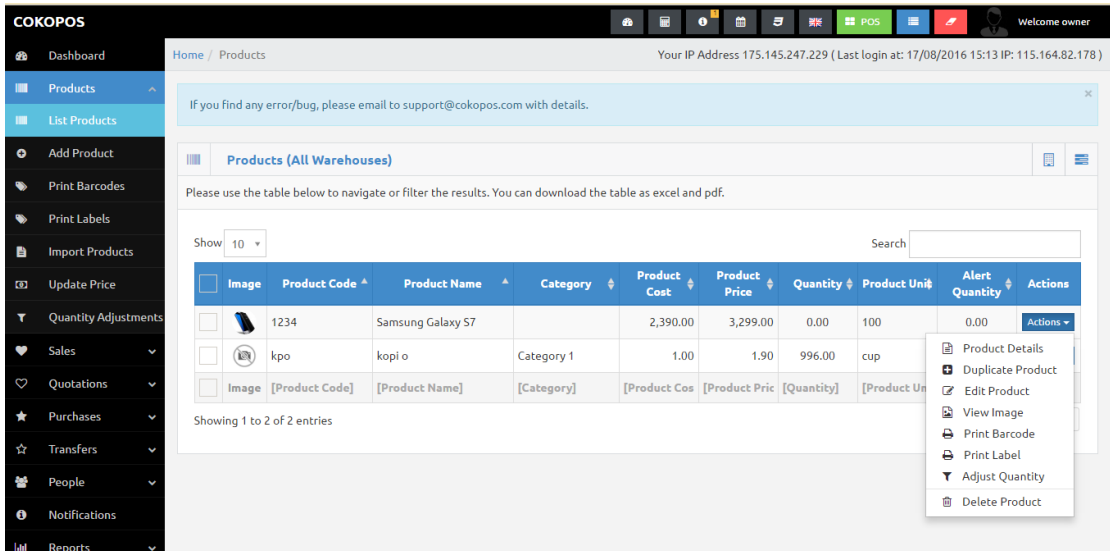
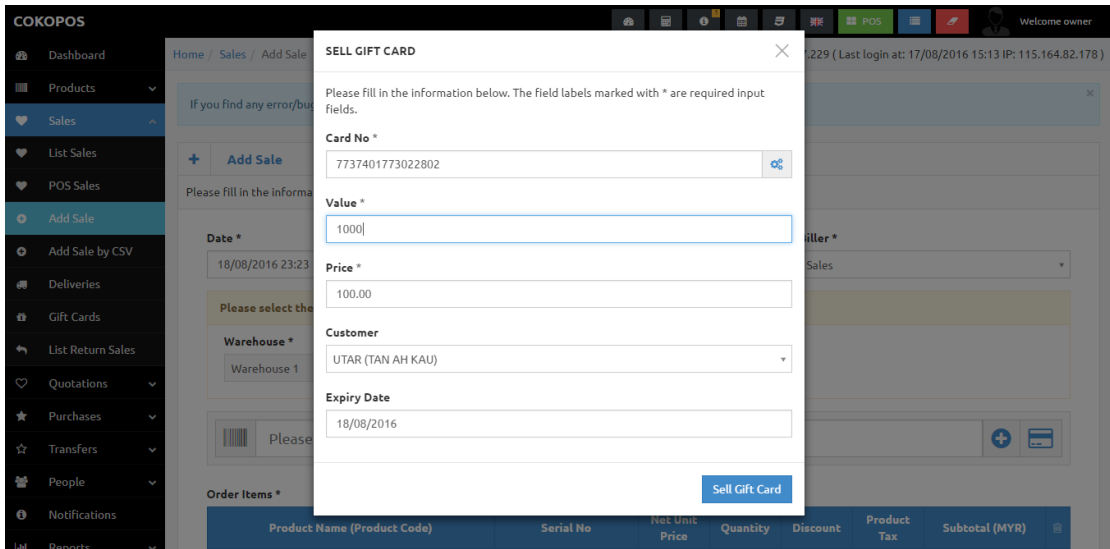


Figure 2.3.1.1.1 Screenshot of COKOPOS

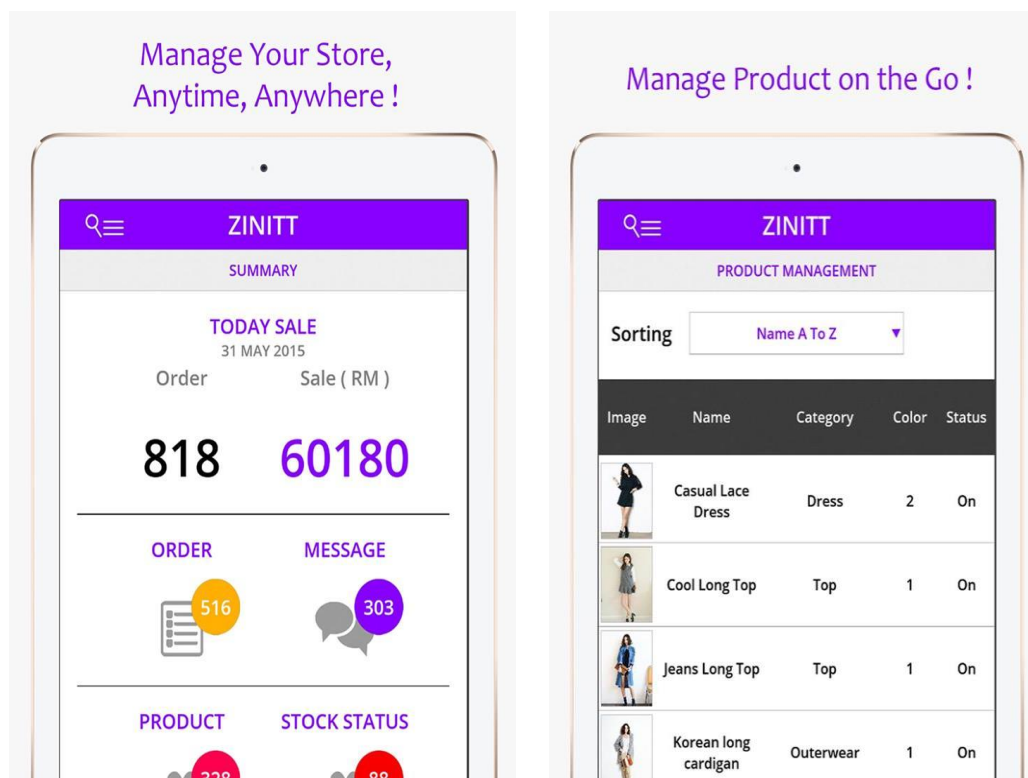
### 2.3.1.1 System Description

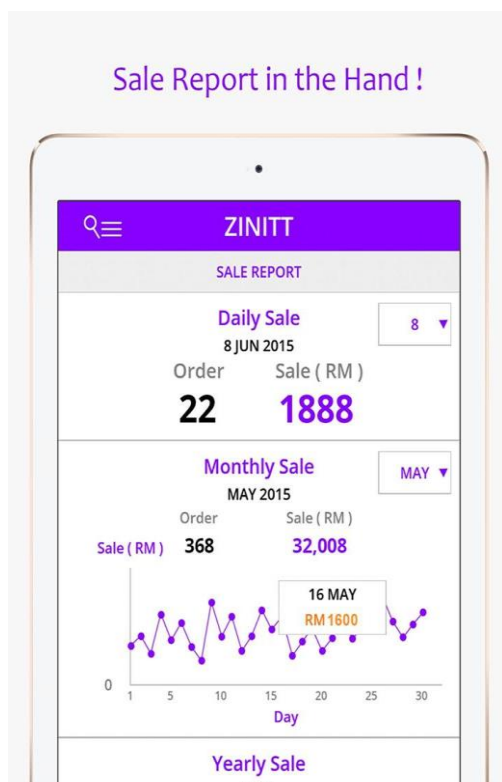
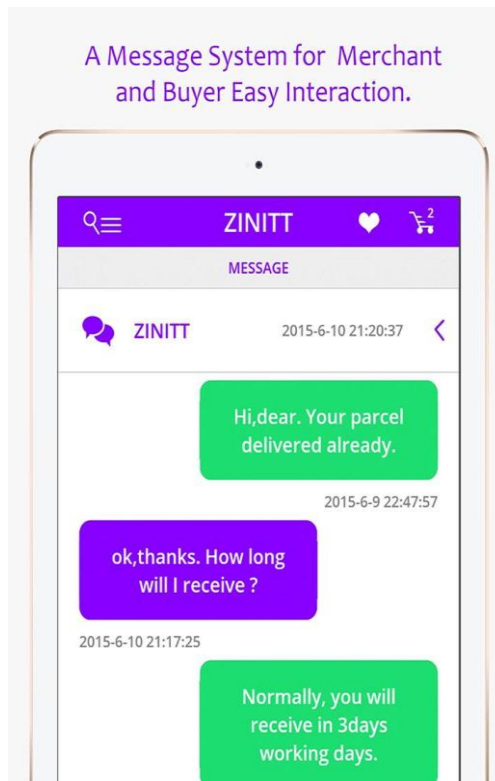
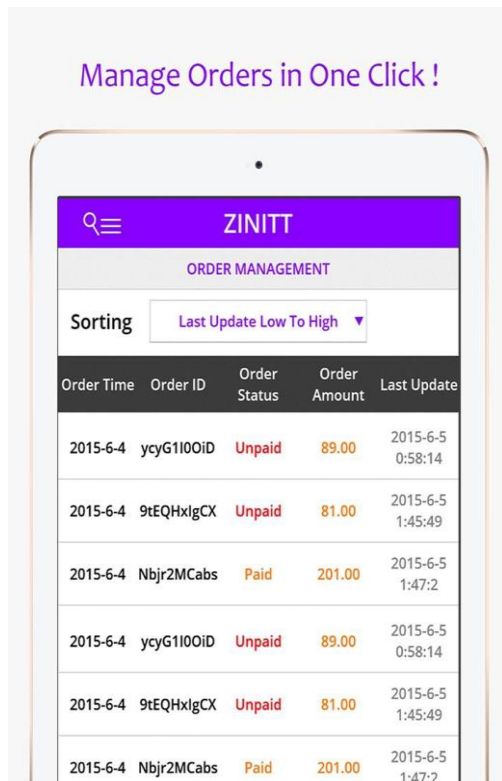
- COKOPOS is a system that gives powerful tools to manage and grow the business.
- All transaction and business data is synced and stored in cloud
- Security improve due to data store in cloud

### 2.3.1.2 Features

- Allow user to add products, customers and also suppliers.
- Enable user to perform bulk buy.
- Selling gift card as a promotion strategy.
- Allow user to check all kind of report, for example products report, daily sales, monthly sales, sales report and etc.
- Smart sorting allows user find the function quickly.
- Able to generate bar code and labels.

- 2.3.2 Zinitt App Manager





ZINITT

PRODUCT MANAGEMENT

< Back Add New Color

Elasticity : Non Elastic

Price : 25.00

On Sales : x

Promotion Price : 25.00

Promotion Date Start (yyyy-mm-dd) : 2016 JUN 16

Promotion Time Start (hh-mm-ss) : 20 20 35

Promotion Date End (yyyy-mm-dd) : 2016 JUN 16

Promotion Time End (hh-mm-ss) : 20 20 35

Material : slg

Figure 2.3.2.1.1 Screen shot of Zinitt App Manager

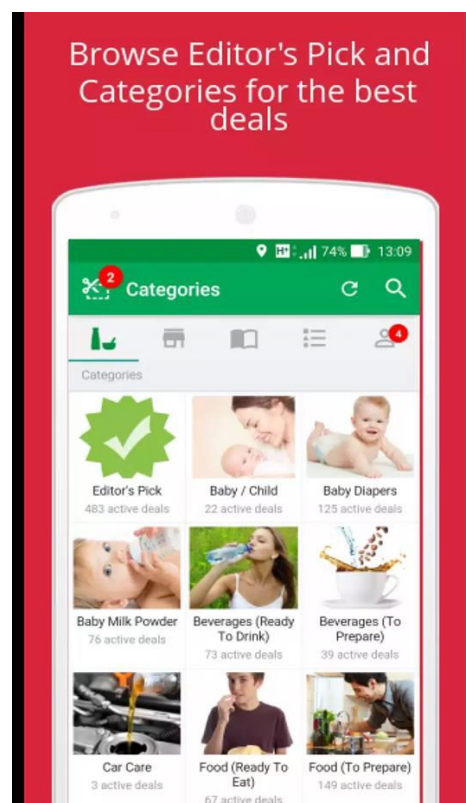
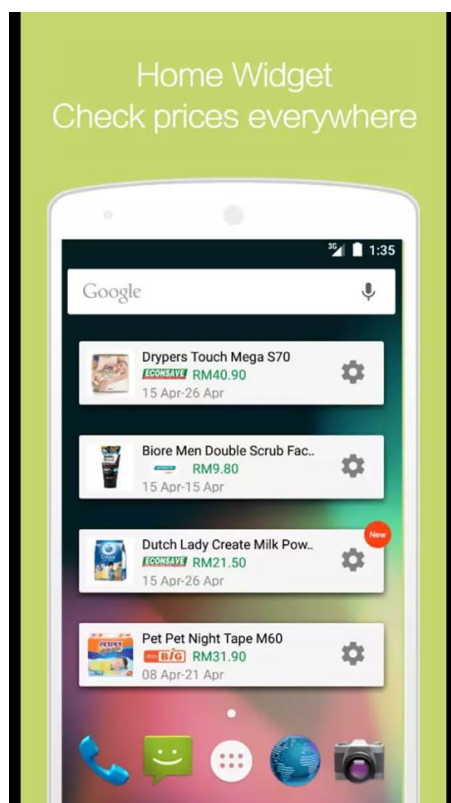
### 2.3.2.1 System Descriptions

- Zinitt App Manager is an free apps that design special for Zinitt merchants which act as the mobile backend system.
- Easy to manage shop anytime, anywhere.
- Able to manage order, inventory, adjust inventory quantity, add new products, track sales, manage messages and also manage customer.

### 2.3.2.2 Features

- Can view daily orders, monthly order and sales.
- Enable user to track sales trend and compare business result among day, week and month.
- Allow to set promotion date, time, pricing for sales product.
- Able to create new product and apply stock control
- Able to review customer detail, ordered product, total purchase and transaction.
- Having message system to enable user to interact with each other.
- Able to customize products category.

- ### 2.3.3 SmartShopper Malaysia



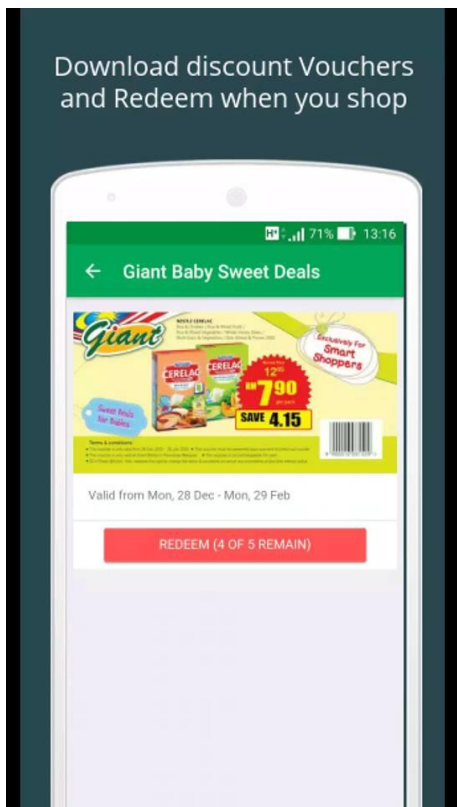
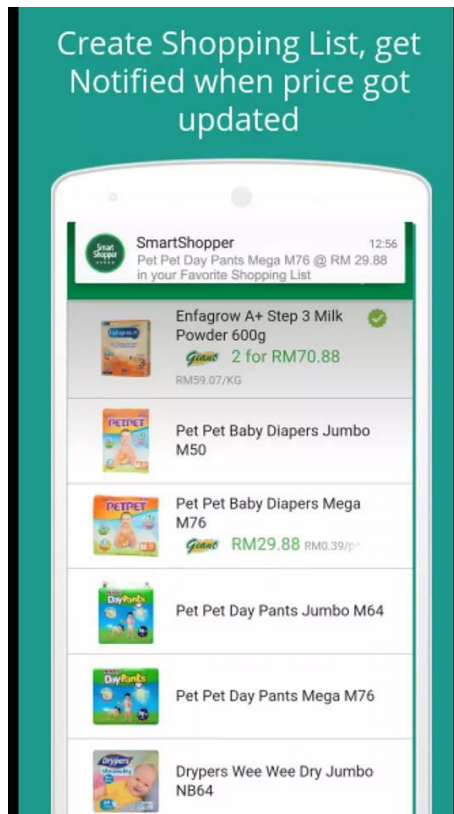
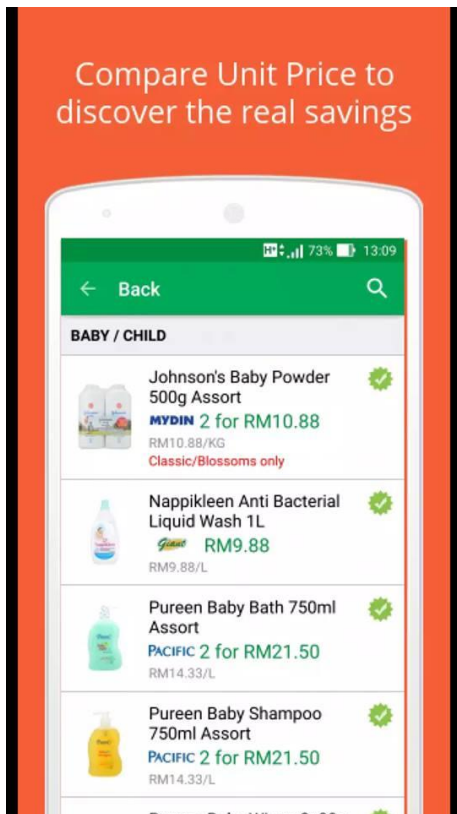


Figure 2.3.3.1.1 Screenshot of SmartShopper



### 2.3.3.1 System Description

- A grocery price, deals, shopping and promotion comparison application.
- Able to know which retailers have the best price.
- Give user the greatest saving.

### 2.3.3.2 Features

- Able to tracks sales from giant, tesco, aeon and many other supermarket sales.
- Discover all nearby retailers that is most convenient to user.
- Able to navigate with map apps.
- All price and information are verified and uploaded on time.
- Able to receive voucher from supermarket.
- Smart sorting allow user easier to find the product.
- Able to do price comparison with all supermarkets.
- Able to keep track favourite product.

## 2.4 Comparison of similar system

### 2.4.1 System Comparison

	COKOPOS	Zinitt	SmartShopper Malaysia
Able to track customer details	y	y	
Able to add sales product	y	y	
Able to perform bulk buy	y		
Able to key in promotion details		y	
Allow user to view promotion items			y
Keep track of customer	y	y	
Able to track sales and stock	y	y	y
Able to customize product	y	y	y
Able to receive promotion			y
Discover nearby retailers			y
Platform	WEB	IOS(MOBILE)	ANDROID(MOBILE)

\*y – YES

Table 2.4.1.1 Table of comparison similar system

### 2.4.2 Criteria Explanation

Criteria	Elaboration
Able to track customer details	The user are able to track their customer detail through the customer tracking
Able to add sales product	System allow user to add the product to product list and also the sales
Able to perform bulk buy	Allow user to buy in a large amount with cheaper price
Able to key in promotion details	Allow user to key in the promotion duration and details
Allow user to view promotion items	Allow user to view which item is on promotion
Keep track of customer	Allow user to review the detail of the customer
Able to track sales and stock	Able to remind user which stock is almost finish and also track the total sales of it
Able to customize product	System will customize all product with same type together
Able to receive promotion	System will remind user about the promotion details
Discover nearby retailers	Able to track which retailers is nearby
Platform	The system is in web and also mobile platform

Table 2.4.2.1 Table of Criteria Explanation

### 2.4.3 Comparison Analysis

COKOPOS is a web based application that having features that track customer detail, add sales & product and also perform bulk buy but they don't have the feature of promotion. Users from COKOPOS able to keep track on their customer purchase detail at any place because it is a web application that using the cloud storage. User also can choose to buy a product in large quantity to get a cheaper price in this system. COKOPOS also can keep track of the daily sales, monthly sales and also the sales record and produce an overview graph.

Zinitt is a mobile apps that slightly different from COKOPOS. The special feature in Zinitt compare to COKOPOS is Zinitt allow user to key in the promotion detail for the particular item which COKOPOS cannot do it. Zinitt allow user to key in the start date, time start, end date and end time of the promotion. Unfortunately Zinitt does not allow user to perform a bulk buy, even a user buy a large quantity of a particular item, the price also count from each item even there is a promotion. Besides that, Zinitt also have the special function that is message to the customer, this also one kind of customer keep tracking technique.

SmartShopper is also a mobile apps that is more different from the previous system. SmartShopper does not have the function like keep track of customer sales and track of sales. SmartShopper is more on the listing the price and showing the promotion item. This apps allow user to shop smartly, it allow user to compare price between several super markets. It also can get the promotion voucher from any super market. SmartShopper can also categorise the item according to the requirement. By using this app, user no need go to the particular super market also can know what item is doing promotion.

## Chapter3: System Design

### 3.1 Activity Diagram

#### Front End

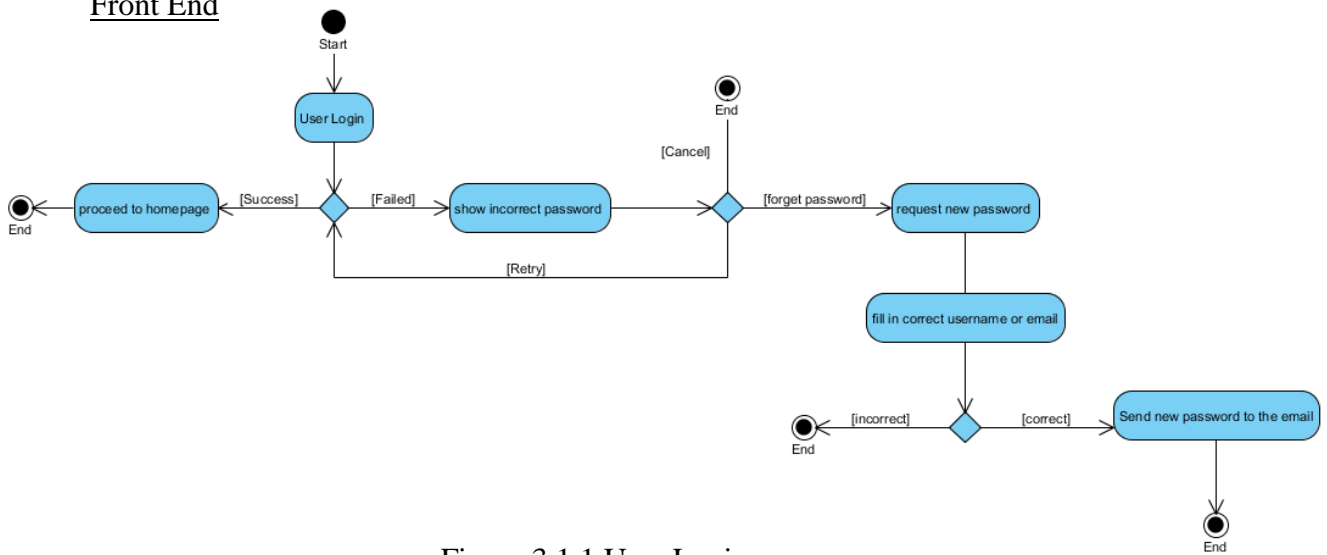


Figure 3.1.1 User Login

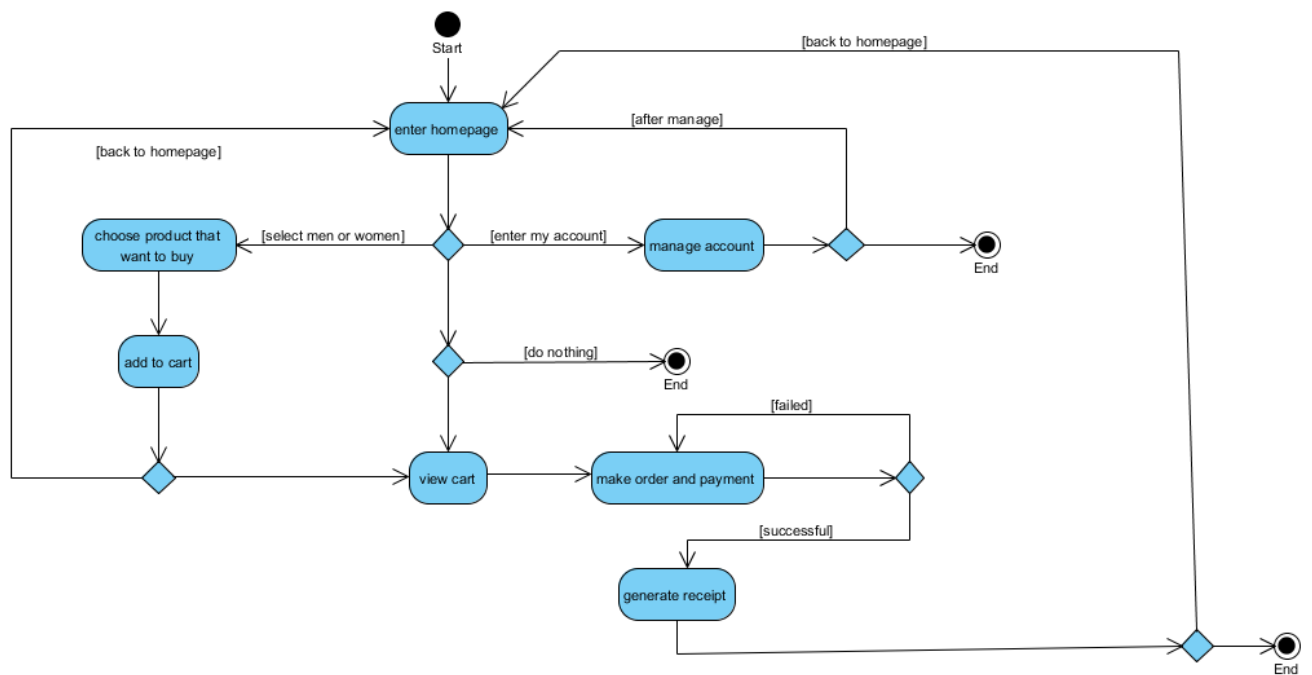


Figure 3.1.2 Frontend System Flow

## Back End

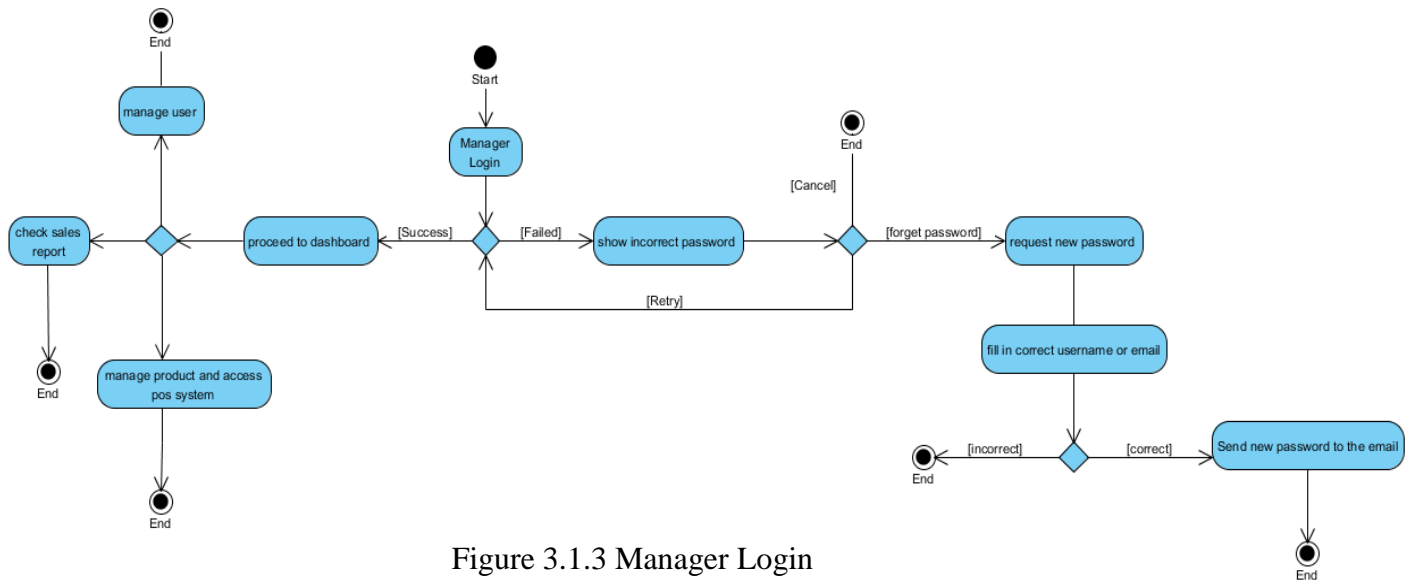


Figure 3.1.3 Manager Login

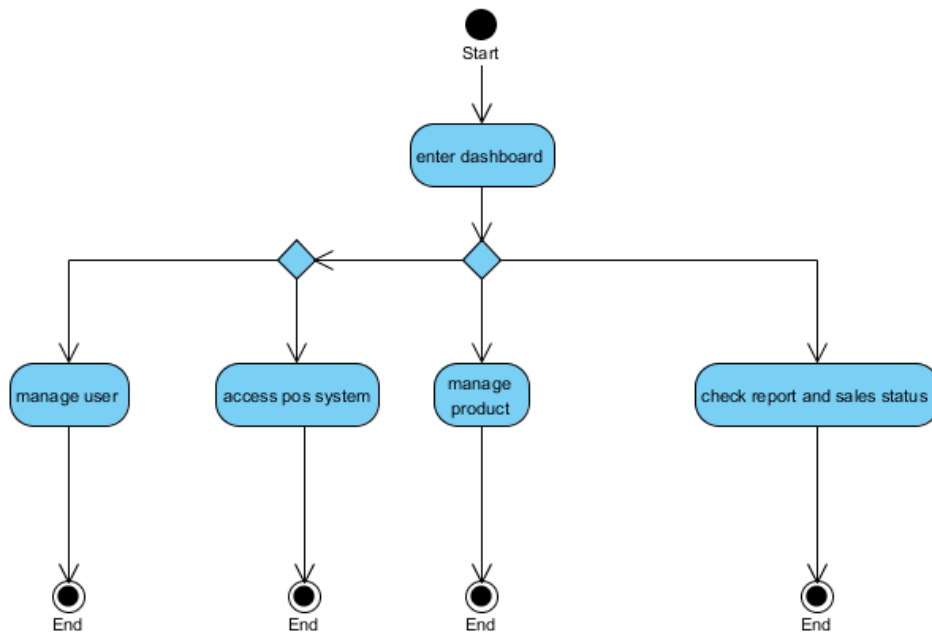


Figure 3.1.4 Overall Backend system flow

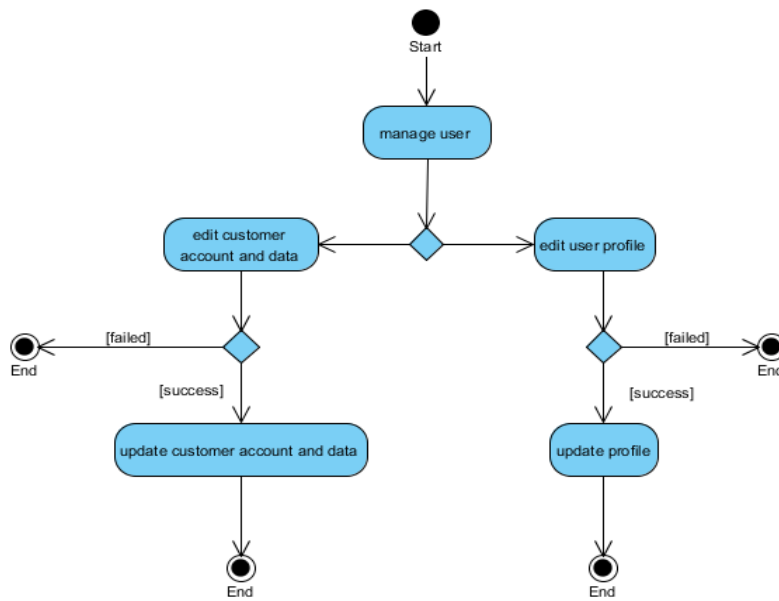


Figure 3.1.5 Manage User

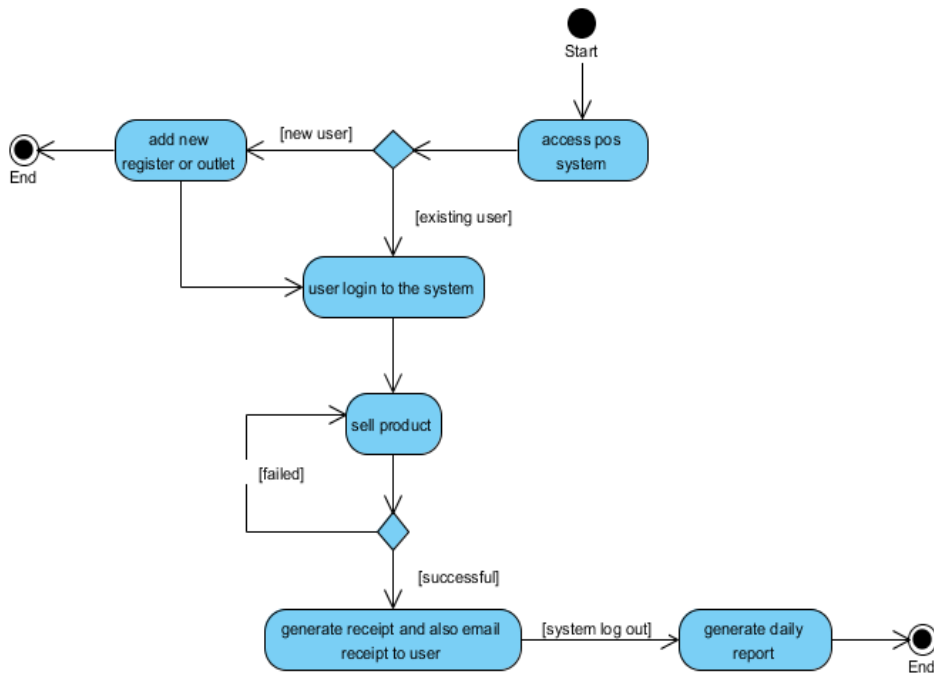


Figure 3.1.6 Access POS system

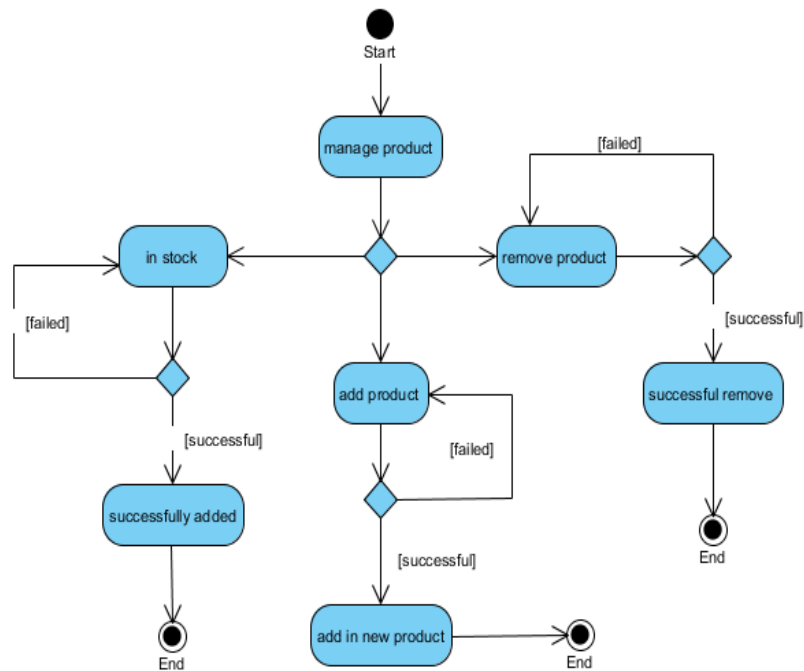


Figure 3.1.7 Manage Product

### 3.2 Database and Installation method

The website part of the project is written using PHP. The database technology that has been use is MySQL.

In the mobile part, it is written in java language to create a web view to display the content in the web.

The website is host using Linux server so that we can access to the website everywhere.

To install the mobile part to the phone, the method use will be the debug modes in android studio by connect the android phone and the computer via usb cable. Another method is just copy the apk file and paste inside the phone and install directly in the phone.

## Chapter 4: Method/Technology Involved

### 4.1 Methodology

This project will adopt the **Rapid Prototyping methodology** as the software development methodology. It is more suitable for this project compare to others methodologies.

For mobile application and also web, delivering a trial working prototype with potential users at an early stage allows confidence to invest in ideas. It can increase user involvement in the product even before the implementation. In this methodology, prototypes are required to complete in period of time. After gathering the information, the design phase is started to process in order to create a prototype. The initial prototype is keep going repeatedly when the design phase is needed from the review of users. After that, it is going to implementation phase which is to develop and evaluate the product after reviewing the prototype. The prototype also can step back to the design phase repeatedly so that it can presented to users for reviews and continue to develop the product.

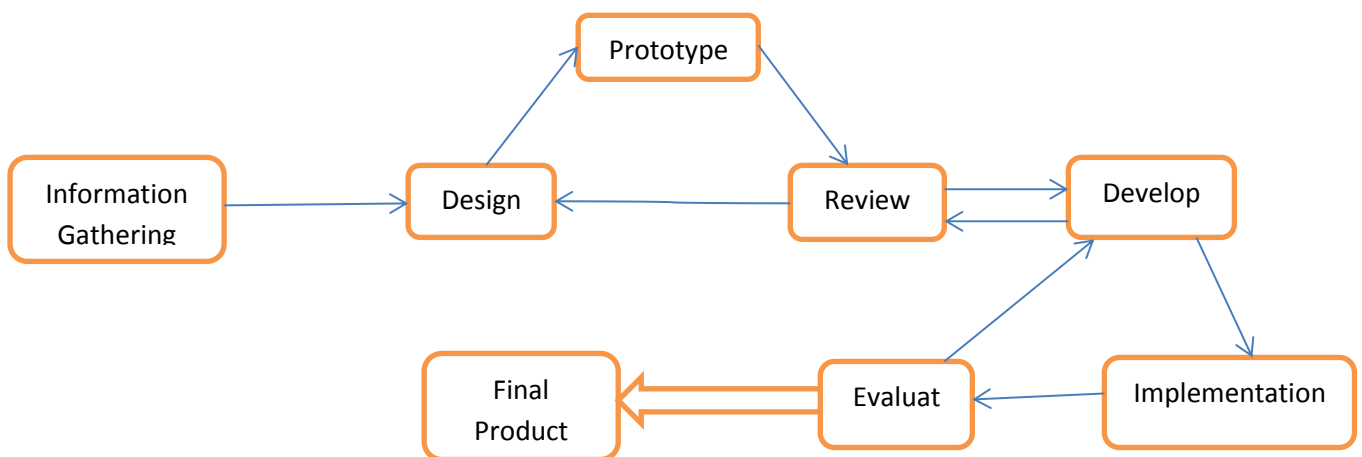


Figure 4.1.1 Flow of the Rapid Prototyping methodology

#### 4.1.2 General Work Procedures

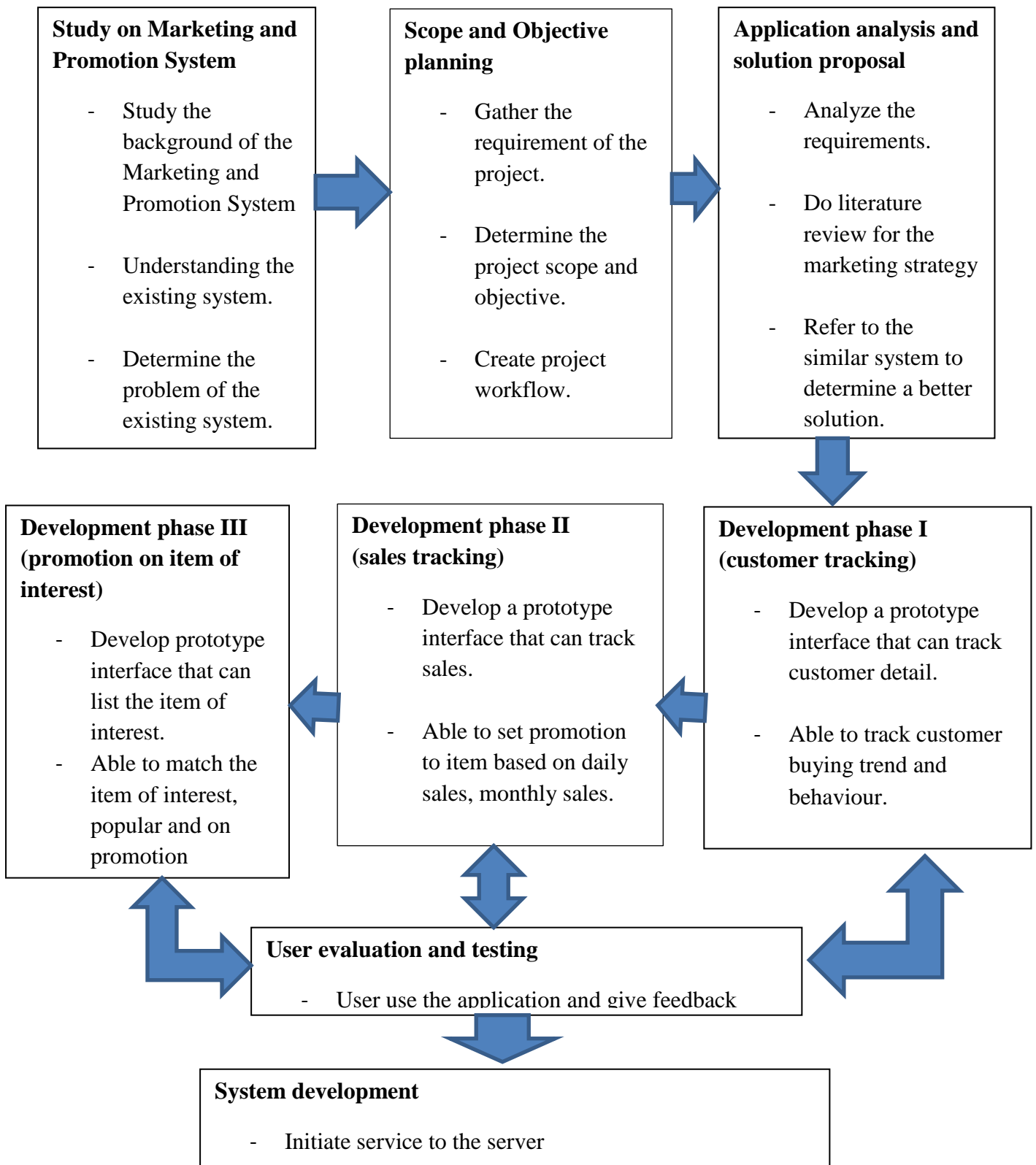


Figure 4.1.2.1 Work flow diagram of the Rapid prototyping methodologies



### 4.1.3 Work Procedure Elaboration

Before planning phase, some research is conducted on the existing marketing and promotion system which include the understanding of the marketing strategy that uses on the promotion and define the consumer behaviour. The purpose of the system is well-understand. The problem statement is constructed after identify the problem in existing system.

In the planning phase, the requirement of the project is collected from user's behaviour. The project scope is created based on user requirement. The project objectives and project contributions are derived from project scope. Then the methodology for this project and the workflow are discussed.

During analysis and design phase, some existing mobile apps and website that fit the project scope are reviewed. There are some strength and also limitation from each other. The results of analysing on each system are tabulated in a comparison table. The problem solution is proposed based on the problem statement which is constructed before planning phase.

There are 3 phase existed in development phase. The purpose of first phase is to develop a prototype interface that can track customer details. Users are able to track their customer details, buying trend and also behaviour after development phase. Second development phase is to develop a prototype interface that can track sales. User can track sales and able to set the promotion based on daily sales, monthly sales. The third phase is to develop a prototype interface that can list the interested item for the user. The system will detect the interested item for the user based on their buying trend. The promotion also will be set to the user based on their buying trend and behaviour.

The prototype is delivered to the user for the evaluation and feedbacks at the end of every development phase. The prototype will return to the previous phase if another adjustment is needed. The prototype could deliver repeatedly to users until there are nothing changes on the requirement or the constraint of development phase is solved.

## 4.2 Software and Hardware Requirements

### 4.2.1 Software Requirements

#### Android Studio

A development of software that is used to develop and debug the mobile application

#### HTML5

Use to develop a web page.

### 4.2.2 Hardware Requirements

#### Computer

System type: Laptop

Processor: 2.6GHz Intel Core I5

Installed memory: 8GB DDR3

#### Smartphone

A 16GB Samsung Galaxy Note3 Neo running Android version 5.1.1 is used to test the application functionality and actual performance.

### 4.3 Gantt Chart

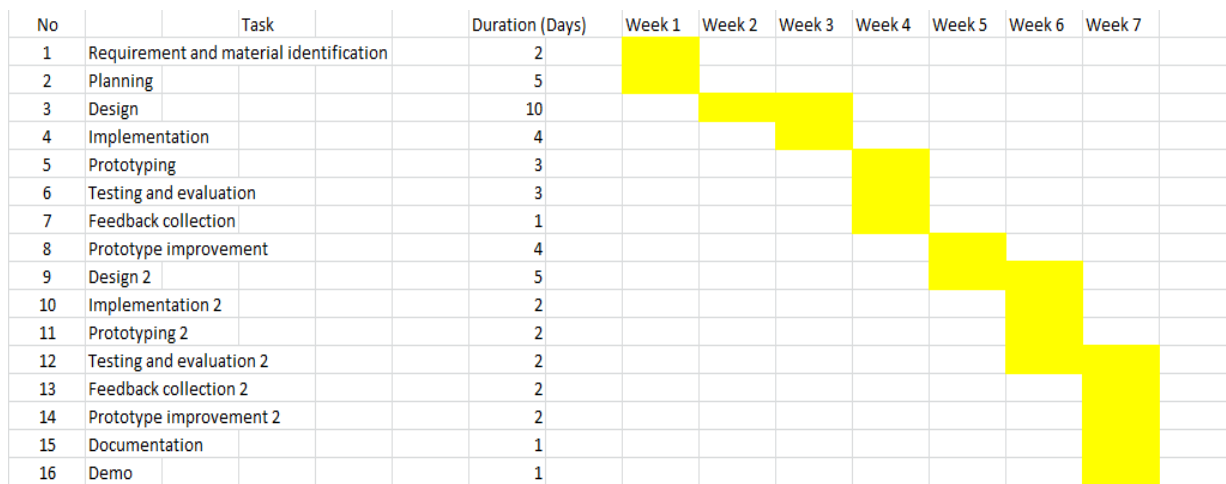


Figure 4.3.1 Gantt chart FYP1

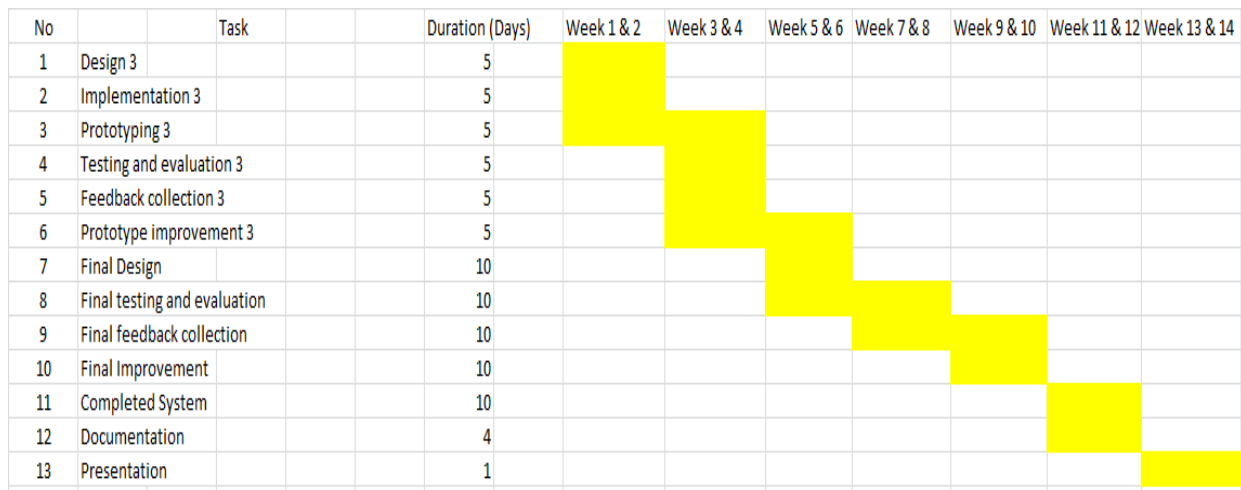


Figure 4.3.2 Planning for FYP2

## 4.4 Use Case Diagram

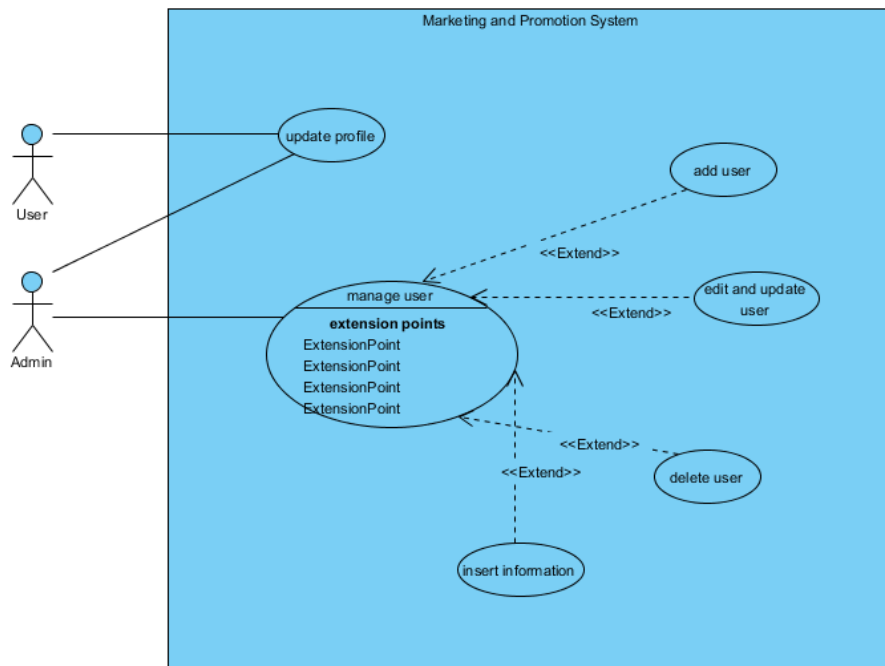


Diagram 4.4.1 Profile use case

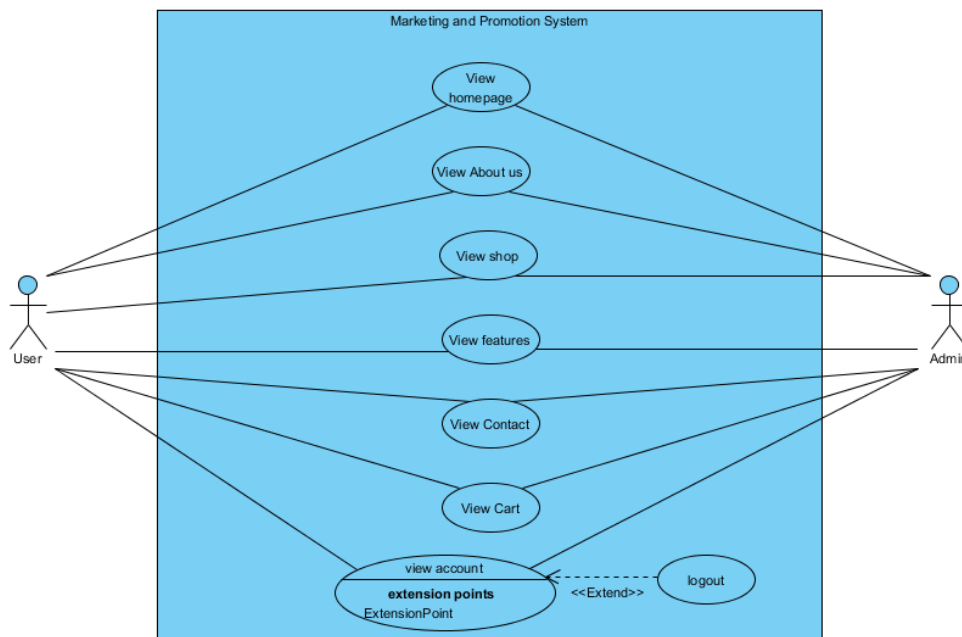


Diagram 4.4.2 Frontend use case

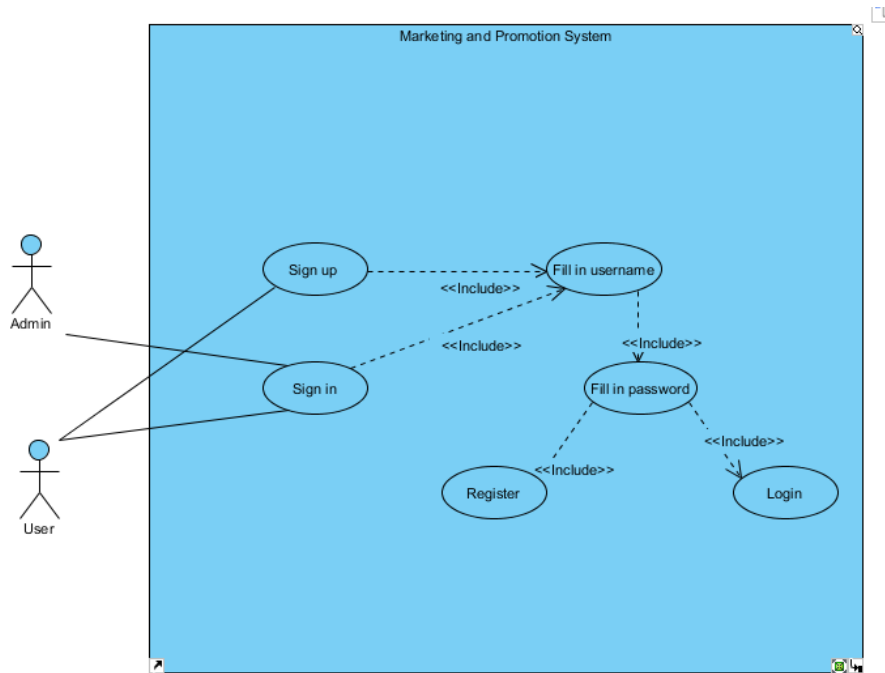


Diagram 4.4.3 Sign in and Sign up use case

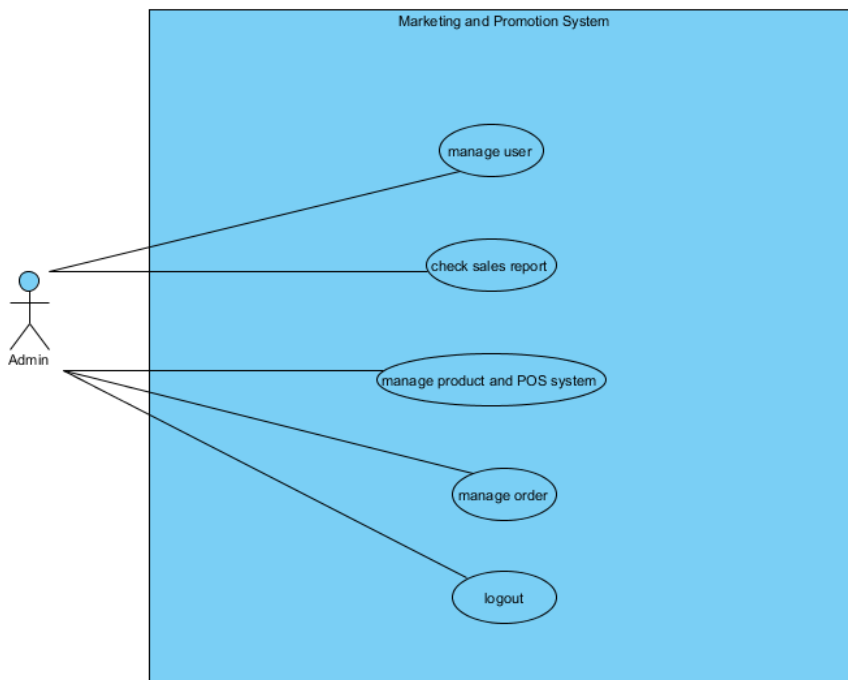


Diagram 4.4.4 Backend use case

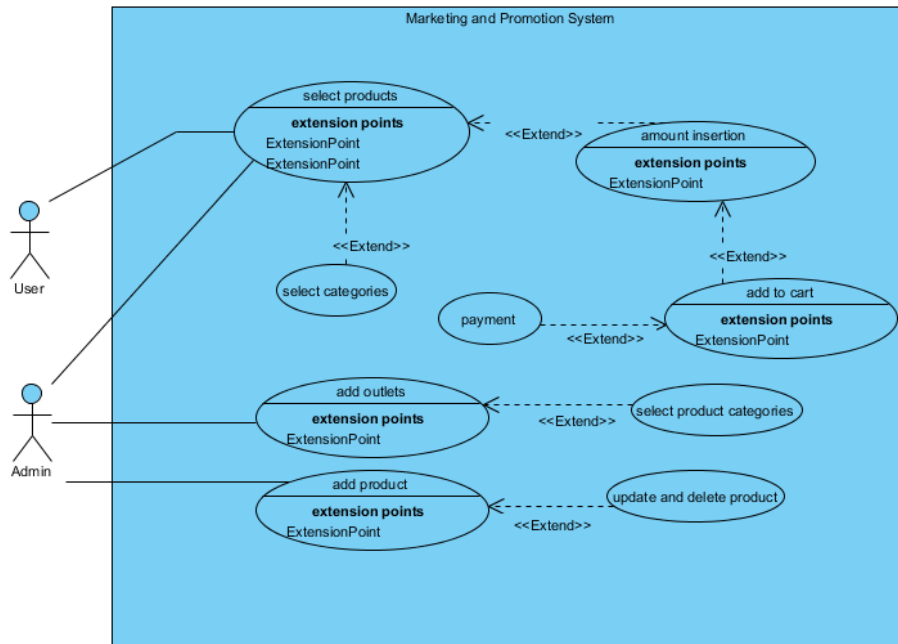


Diagram 4.4.5 Shop use case

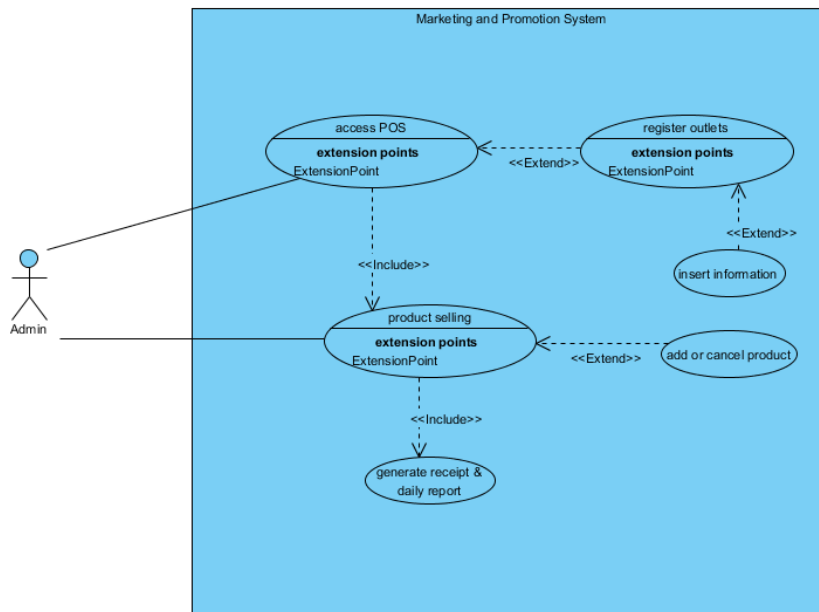


Diagram 4.4.6 POS use case

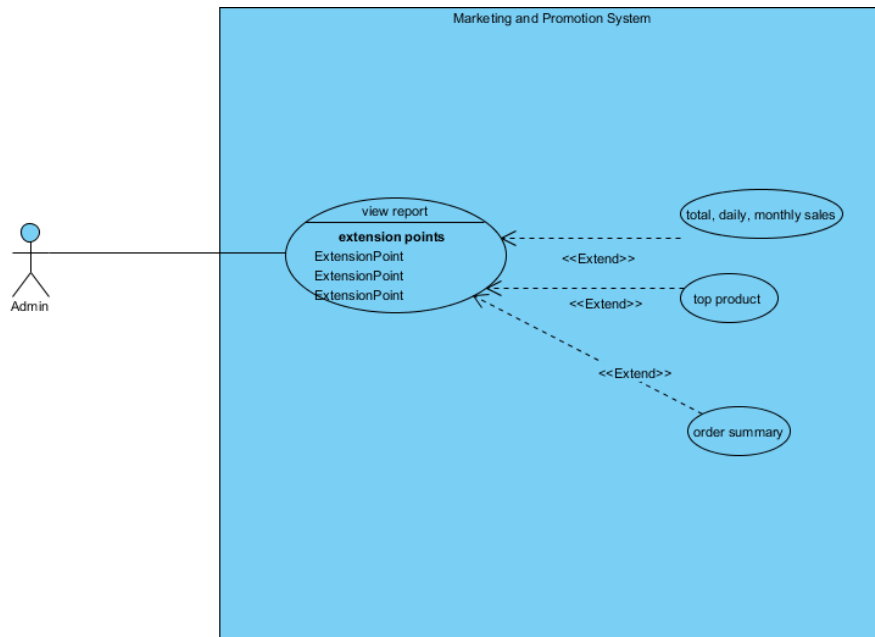


Diagram 4.4.7 Report use case

#### **4.5 Specific Requirement**

Use Case Id	UC001	Version	1.0
Feature	F001 Sign up		
Purpose	To allow user to create a account.		
Actor	User		
Trigger	When user press “Register”.		
Precondition	program is running		
Scenario Name	Step	Action	
Main Flow	1	User enter username.	
	2	User enter email.	
	3	User enter password.	
	4	User press “Register” button.	
	5	System verify entered username, email and password format.	
	6	System store account username and password and create a new empty user profile in database.	
Alternative Flow	3.1	Wrong email or password format.	
Rules	<ul style="list-style-type: none"> <li>I. Email field must be a email format.</li> <li>II. Password security cannot be low.</li> <li>III. Cannot use simple password like “1234567890”.</li> </ul>		
Author	Choo Min Jun		

Table 4.5.1 Use case specification for sign up



Use Case Id	UC002	Version	1.0
Feature	F002 Sign in		
Purpose	To allow user to sign in and access the system.		
Actor	User		
Trigger	When user press “Login”.		
Precondition	program is running		
Scenario Name	Step	Action	
Main Flow	1	User enter username.	
	2	User enter password.	
	3	User press “Login” button.	
	4	System grant the access to the user.	
Alternative Flow	1.1	Wrong username or password format.	
Rules	-		
Author	Choo Min Jun		

Table 4.5.2 Use case specification for sign in

Use Case Id	UC003	Version	1.0
Feature	F003 Shop		
Purpose	To allow user purchase item.		
Actor	User		
Trigger	When user press “Shop” after login.		
Precondition	program is running		
Scenario Name	Step	Action	
Main Flow	1	User select the product.	
	2	User enter the quantity.	
	3	User click add to cart.	
	4	User click on view cart to go payment.	
	5	System verify the product quantity.	
	6	System will update the cart.	
Alternative Flow	2.1	Wrong quantity.	
Rules	I. User must enter quantity where the quantity < in stock quantity.		
Author	Choo Min Jun		

Table 4.5.3 Use case specification for shop

Use Case Id	UC004	Version	1.0
Feature	F004 Profile		
Purpose	To allow user to manage profile.		
Actor	User		
Trigger	When user press “My Account” after login.		
Precondition	program is running		
Scenario Name	Step	Action	
Main Flow	1	User select the account details.	
	2	User enter the first name and last time.	
	3	User enter new email address.	
	4	User enter new password.	
	5	System verify the the info enter by user.	
	6	System will update the user profile.	
Alternative Flow	4.1	Password and confirm password not matching.	
Rules	I. Password cannot be simple.		
Author	Choo Min Jun		

Table 4.5.4 Use case specification for profile

Use Case Id	UC005	Version	1.0
Feature	F005 Customer		
Purpose	To allow admin manage customer.		
Actor	Admin		
Trigger	When user press “Customer” after login to backend.		
Precondition	program is running		
Scenario Name	Step	Action	
Main Flow	1	Admin select which customer to edit.	
	2	Admin can edit basic info about customer.	
	3	Admin can change role of the customer.	
	4	After edit click “Update” button.	
	5	System verify the info.	
	6	System will update the customer.	
Alternative Flow	2.1	Wrong info provide.	
Rules	-		
Author	Choo Min Jun		

Table 4.5.5 Use case specification for Customer

Use Case Id	UC006	Version	1.0
Feature	F005 Product		
Purpose	To allow admin manage product.		
Actor	Admin		
Trigger	When user press “Product” after login to backend.		
Precondition	program is running		
Scenario Name	Step	Action	
Main Flow	1	Admin select which product to edit.	
	2	Admin can edit basic info about product.	
	3	Admin can remove a product.	
	4	After edit click “Update” button.	
	5	System verify the info.	
	6	System will update the product.	
Alternative Flow	2.1	Wrong info provide.	
Rules	-		
Author	Choo Min Jun		

Table 4.5.6 Use case specification for Product

Use Case Id	UC007	Version	1.0
Feature	F005 Order		
Purpose	To allow admin manage order.		
Actor	Admin		
Trigger	When user press “Order” after login to backend.		
Precondition	program is running		
Scenario Name	Step	Action	
Main Flow	1	Admin need to approve the order.	
	2	Admin can add order.	
	3	Admin can remove order.	
	4	Admin can view customer buying trend.	
	5	System verify the info.	
	6	System will update the order.	
Alternative Flow	2.1	Wrong info provide.	
Rules	-		
Author	Choo Min Jun		

Table 4.5.7 Use case specification for Order

Use Case Id	UC008	Version	1.0
Feature	F008 POS system		
Purpose	To allow admin access pos system.		
Actor	Admin		
Trigger	When user press “POS” after login to backend.		
Precondition	program is running		
Scenario Name	Step	Action	
Main Flow	1	Admin need to choose outlet.	
	2	Admin register outlet if there is no outlet.	
	3	Admin can start selling items.	
	4	System will generate order.	
	5	System update the database each times a order is finish.	
	6	System will generate a daily report when the outlet is close.	
Alternative Flow	3.1	Quantity < item in stock.	
Rules	I. Each admin can only register to 1 outlet.		
Author	Choo Min Jun		

Table 4.5.8 Use case specification for POS

Use Case Id	UC009	Version	1.0
Feature	F008 Reporting system		
Purpose	To allow admin view report.		
Actor	Admin		
Trigger	When user press “Reporting” after login to backend.		
Precondition	program is running		
Scenario Name	Step	Action	
Main Flow	1	Admin can view different type of report.	
	2	Admin can view top selling product.	
	3	Admin can view top selling categories.	
	4	Admin can view top customer.	
	5	Admin can do promotion base on all the report.	
Alternative Flow			
Rules			
Author	Choo Min Jun		

Table 4.5.9 Use case specification for Reporting

## 4.6 Implementation and Testing

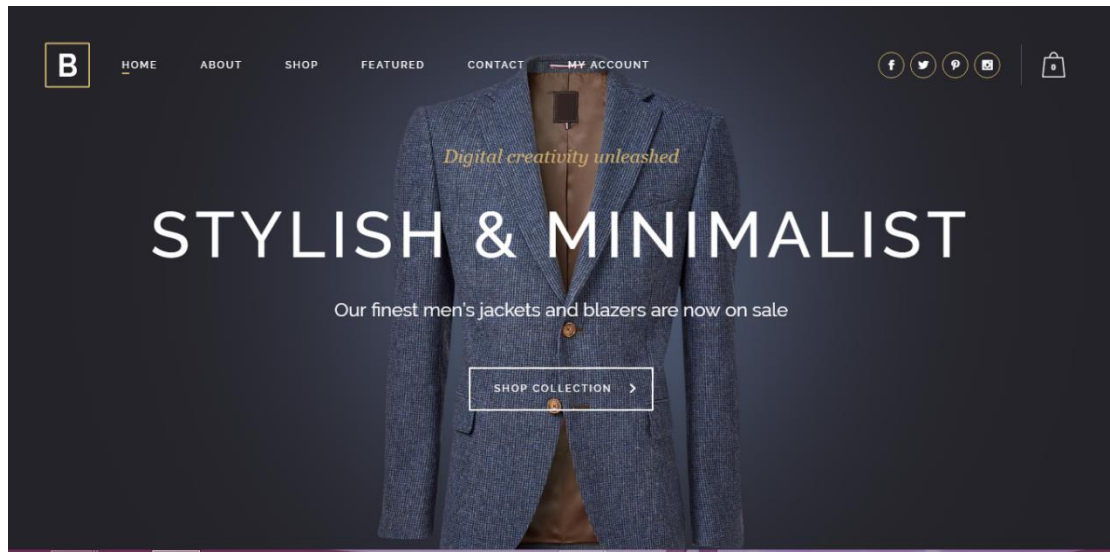


Diagram 4.6.1 Front end design

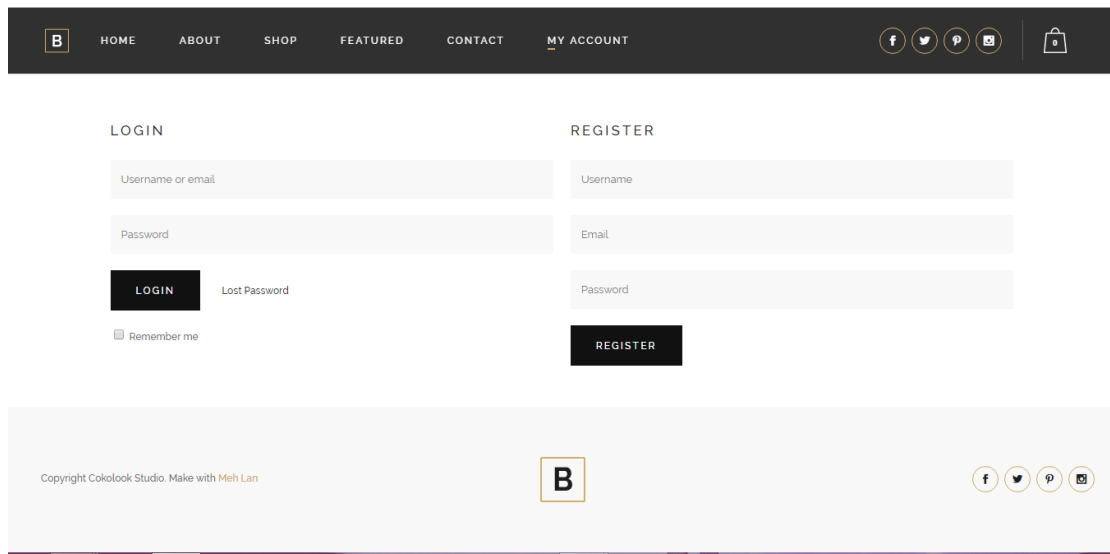


Diagram 4.6.2 My account

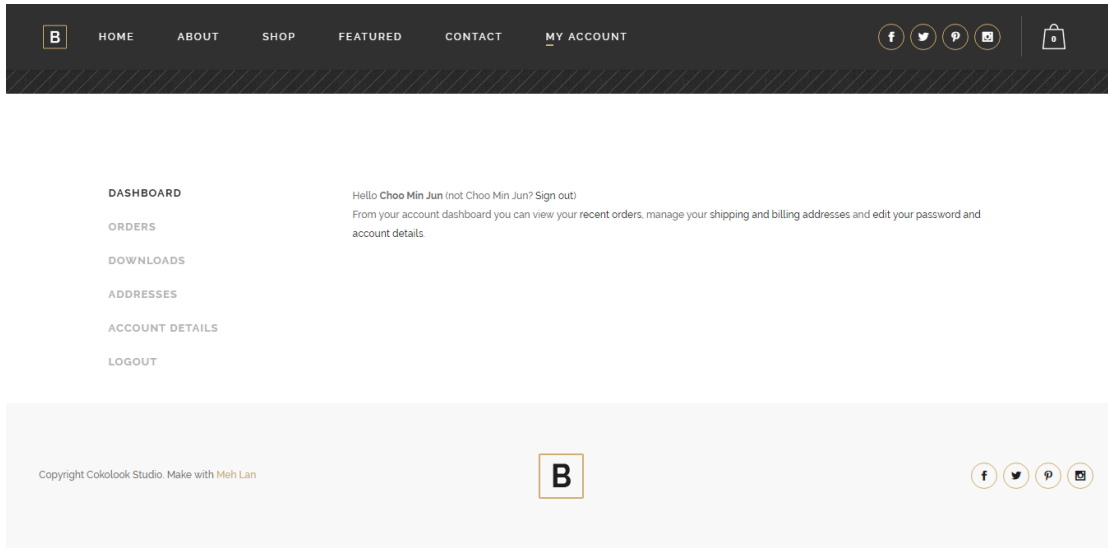


Diagram 4.6.3 Login Success

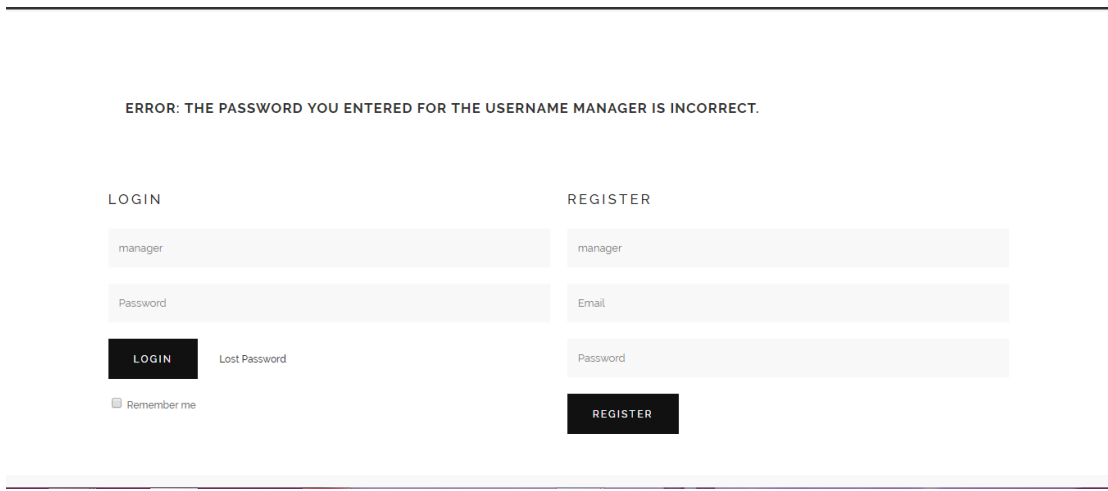


Diagram 4.6.4 Login Fail

Diagram 4.6.5 Edit account

Diagram 4.6.6 Edit success

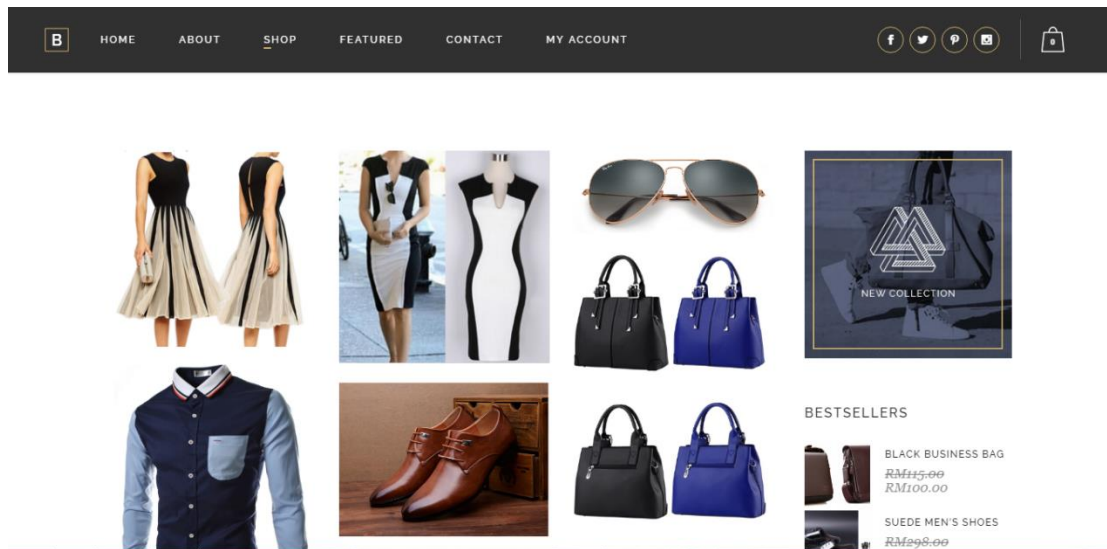


Diagram 4.6.7 Shop

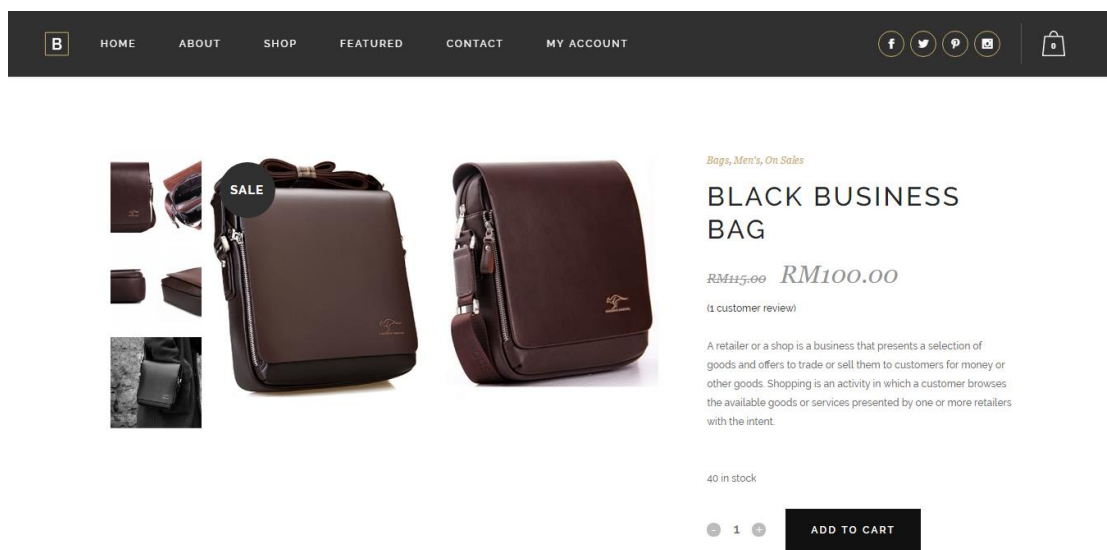


Diagram 4.6.8 Select item



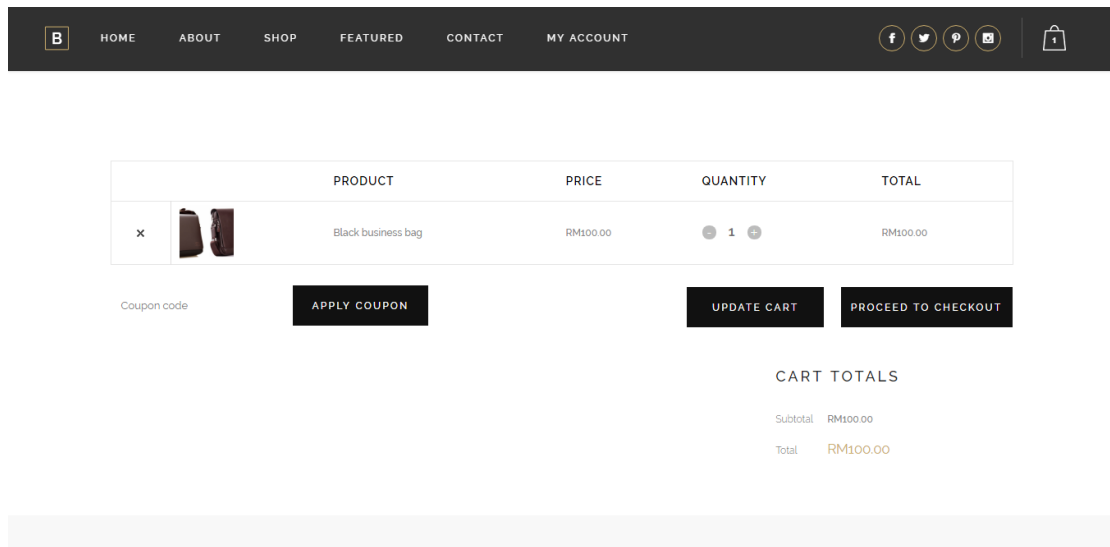


Diagram 4.6.9 Cart

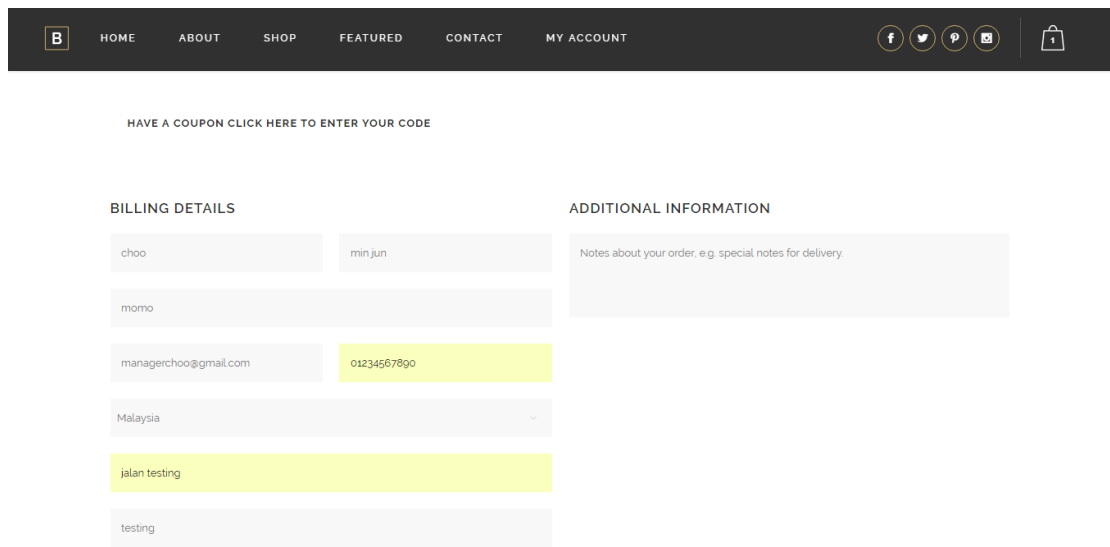


Diagram 4.6.10 Checkout(1)

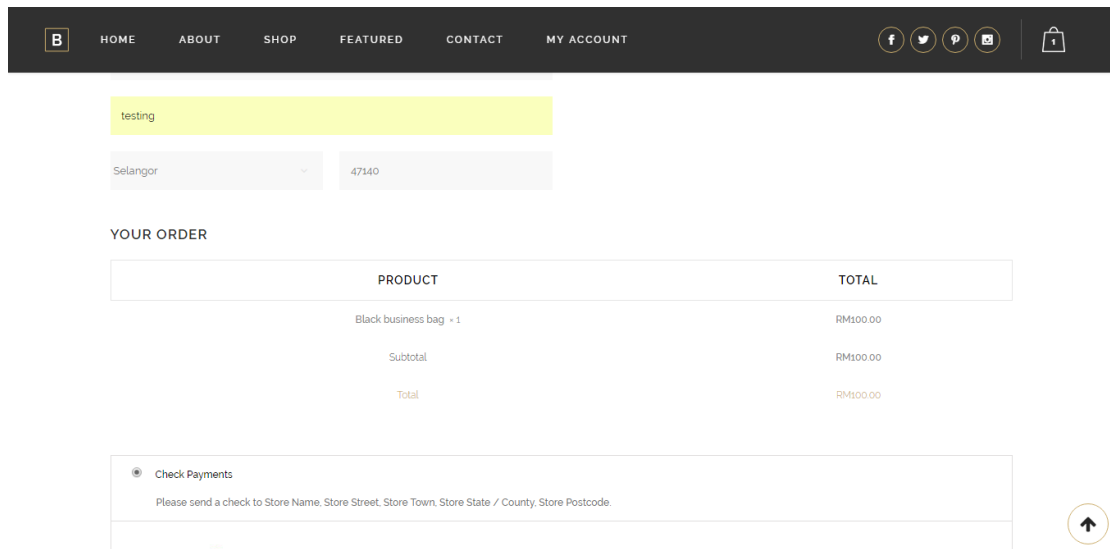


Diagram 4.6.11 Checkout(2)

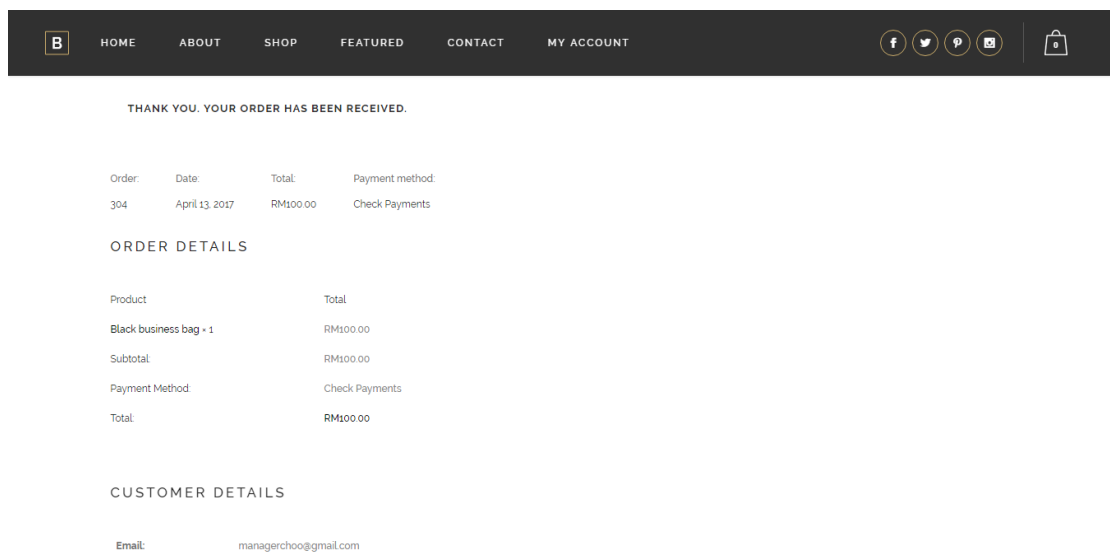
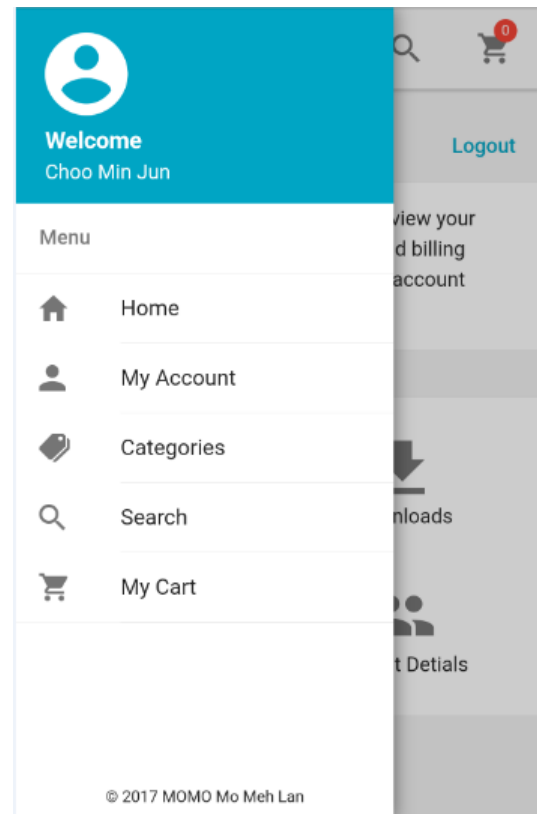
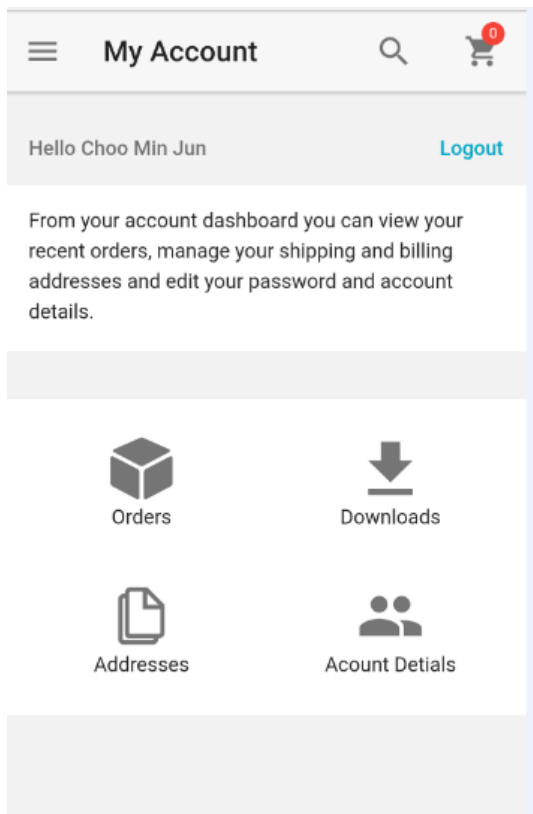
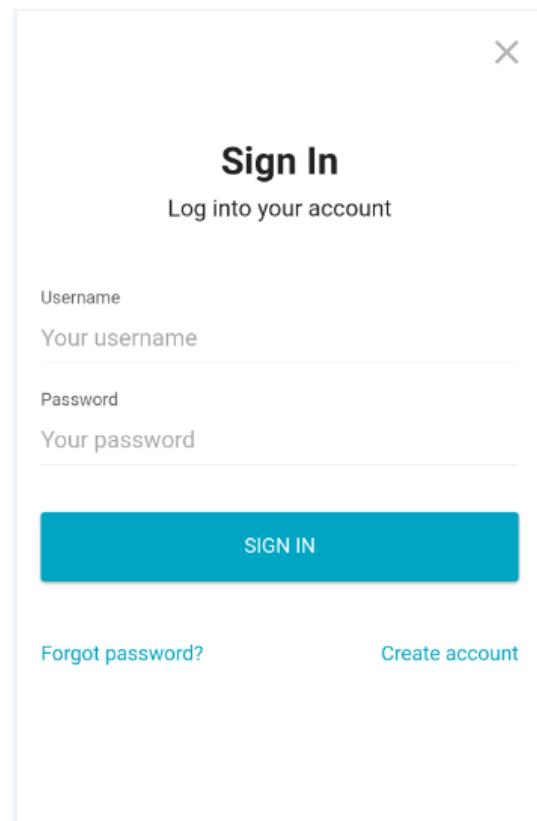
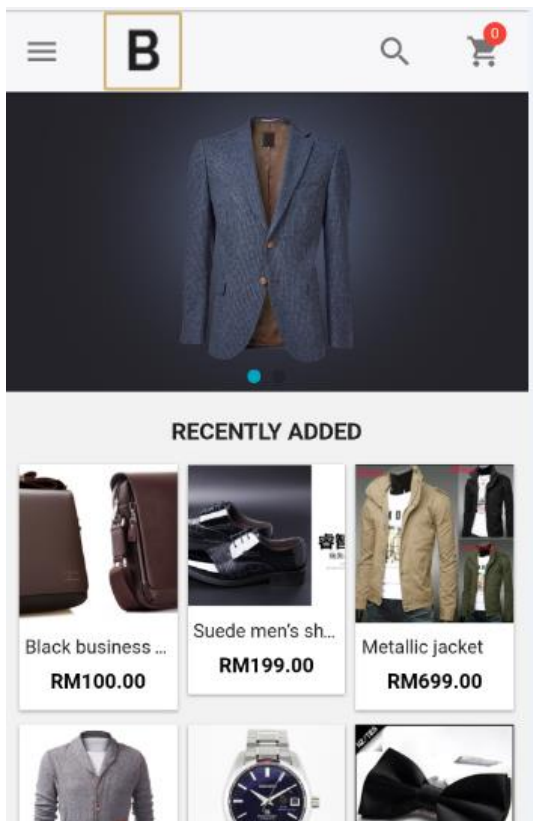
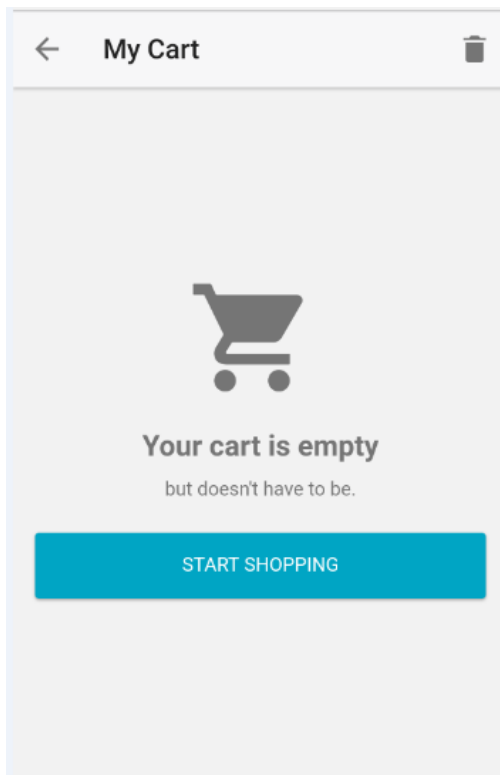
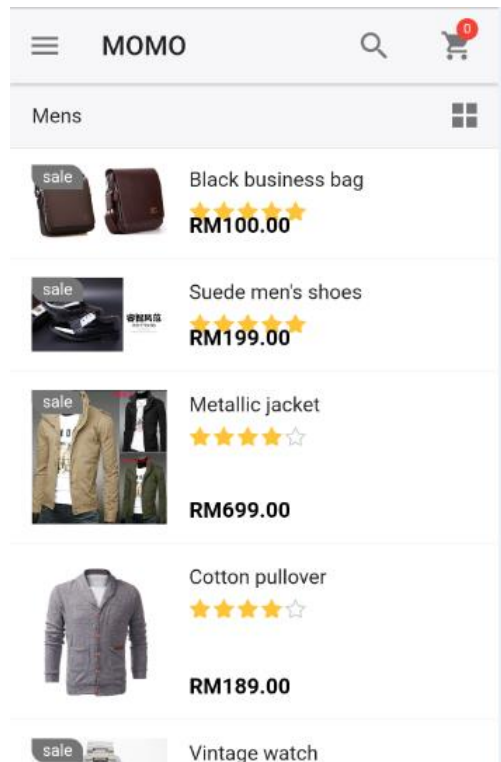
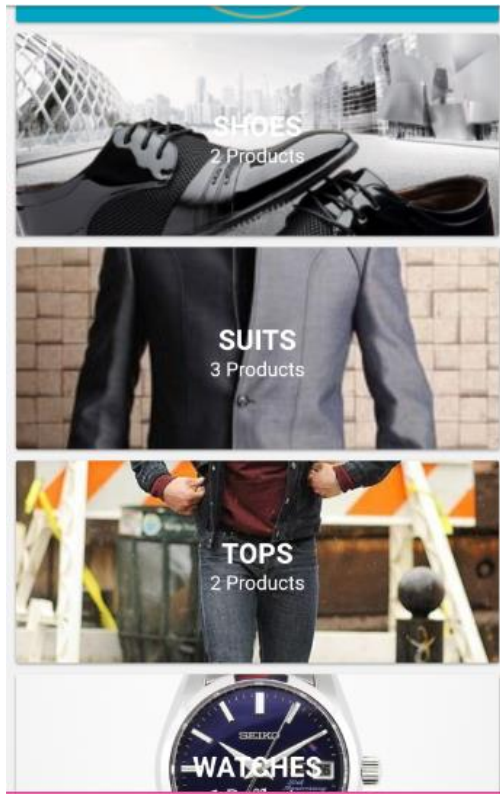
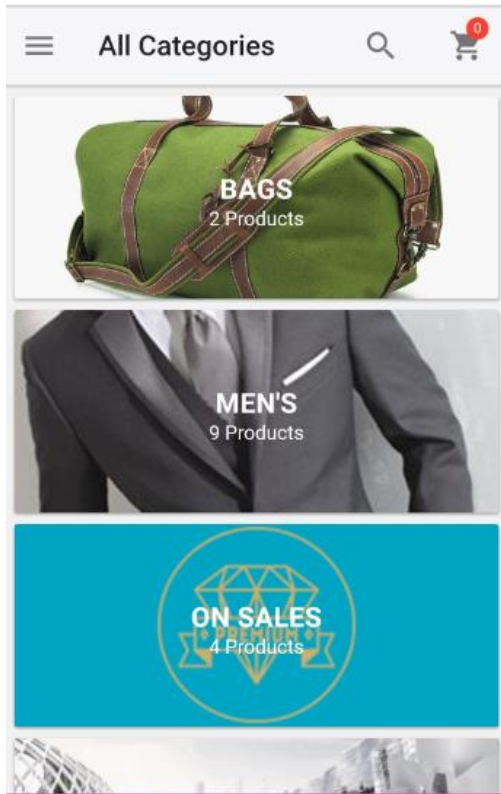


Diagram 4.6.12 Checkout Success

## Mobile View Design





## Backend

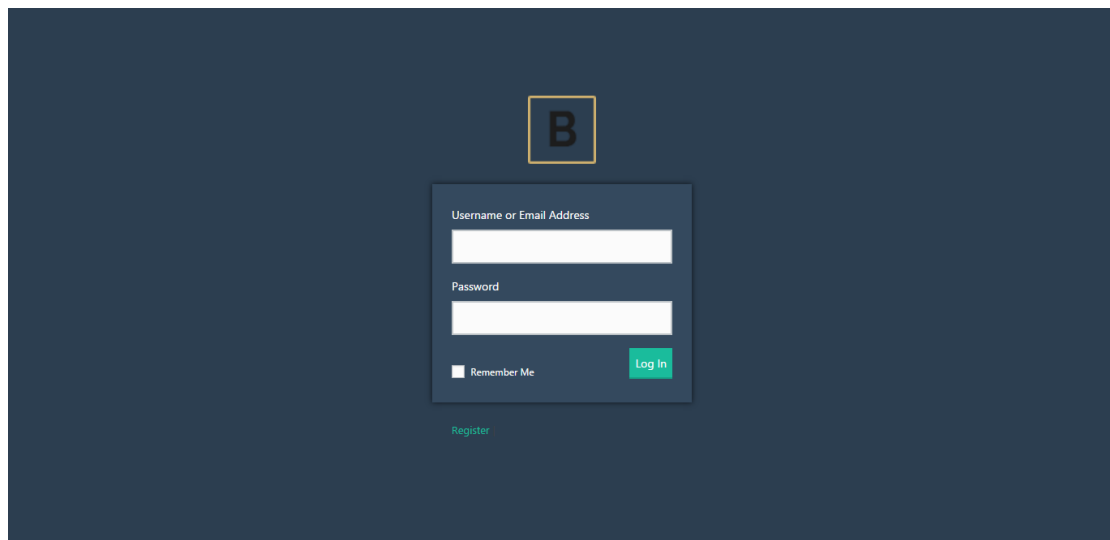


Diagram 4.6.13 Admin Login page

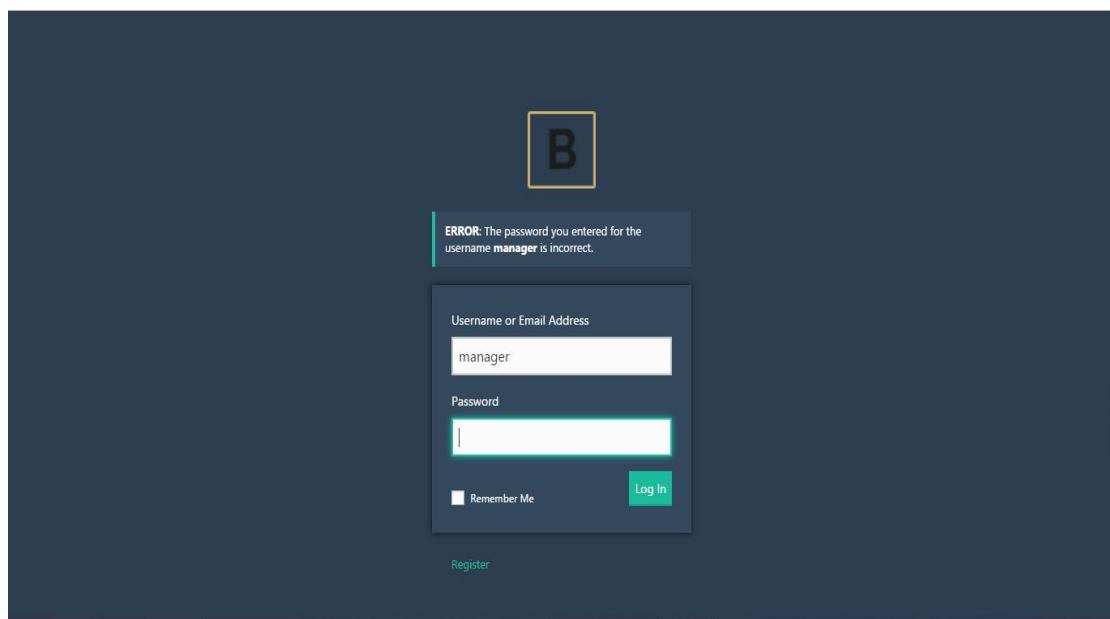


Diagram 4.6.14 Admin Login fail



Diagram 4.6.15 Admin dashboard

The screenshot shows the 'Customers' page in the admin dashboard. It features a table with the following columns: ID, Login, Name, Surname, Role(s), Notes, Address (billing), Phone, Email, Total spent, #Order, First order date, and Last order date. The table contains five rows of customer data.

ID	Login	Name	Surname	Role(s)	Notes	Address (billing)	Phone	Email	Total spent	#Order	First order date	Last order date
9	manager	Choo	Min Jun	POS Manager		choo min jun, jalan testing, 47140, testing, Selangor, Malaysia	01234567890	managerchoo@gmail.com	100	1	2017-04-13 18:33:02	2017-04-13 18:33:02
8	mimi			Customer		mi mi, asdf, 12344, asd, Kedah, Malaysia	1234567890	mimi@gmail.com	48976	3	2017-03-25 14:58:36	2017-03-25 14:58:36
7	tester1			Customer		testing 123, dadadasdadad, 47140, asdad, Selangor, Malaysia	1234567890	tester1@hotmail.com	37535	3	2017-03-17 14:28:05	2017-03-17 14:28:05
6	abcd			Customer				abcd@hotmail.com	0	0	No orders	No orders
5	abc			Customer				abc@hotmail.com	0	0	No orders	No orders

Diagram 4.6.16 Customer page

Name	SKU	Stock	Price	Categories	Tags	Product Grid	Date	Who bought it?
Black business bag	73253-55	In stock (39)	RM444.60 RM110.00	Bags, Men's, On Sales	bags, business, men's	Published	2016/07/11	
Suede men's shoes	73253-55	In stock (30)	RM229.80 RM19.90	Men's, On Sales, Shoes	business, men's, shoes	Published	2016/07/11	
Metallic jacket	73253-55	In stock (40)	RM74.90 RM69.90	Men's, On Sales, Tops	casual, men's, smart, tops	Published	2016/07/11	
Cotton pullover	73253-55	Out of stock (0)	RM18.90	Men's, Tops	jacket, men's, smart, suits	Published	2016/07/11	
Vintage watch	73253-55	In stock (2)	RM447.60 RM39.90	Men's, On Sales, Watches	business, men's, watches	Published	2016/07/11	
Striped bow ties	73253-55	In stock	RM98.00	Men's, Suits	business, men's, suits	Published	2016/07/11	

Diagram 4.6.17 Product page

Order	Purchased	Ship to	Date	Total	Actions	Customer details
#304 by Choo Min Jun managerchoo@gmail.com	1 item	choo min Jun, momo, jalan testing, testing, testing, Selangor, 47140	2017/04/13	RM100.00 Via Check Payments		
#236 by Mimi mimi@gmail.com	20 items	mi mi, mimi sdn bhd, asdf, asd, asd, Kedah, 12344	2017/03/25	RM33,800.00 Via Check Payments		
#235 by Mimi mimi@gmail.com	24 items	mi mi, mimi sdn bhd, asdf, asd, asd, Kedah, 12344	2017/03/25	RM10,223.00 Via Check Payments		
#234 by Mimi mimi@gmail.com	13 items	mi mi, mimi sdn bhd, asdf, asd, asd, Kedah, 12344	2017/03/25	RM4,953.00 Via Check Payments		
#231 by Tester1 tester1@hotmail.com	40 items	-	2017/03/17	RM14,908.00 Via Cash on Delivery		

Diagram 4.6.18 Order page

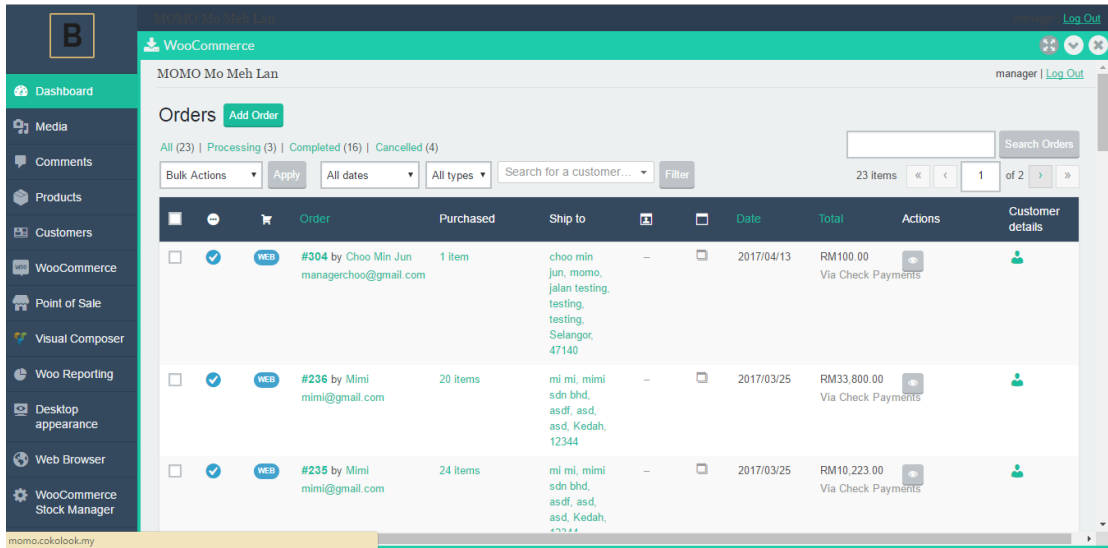


Diagram 4.6.19 Order success

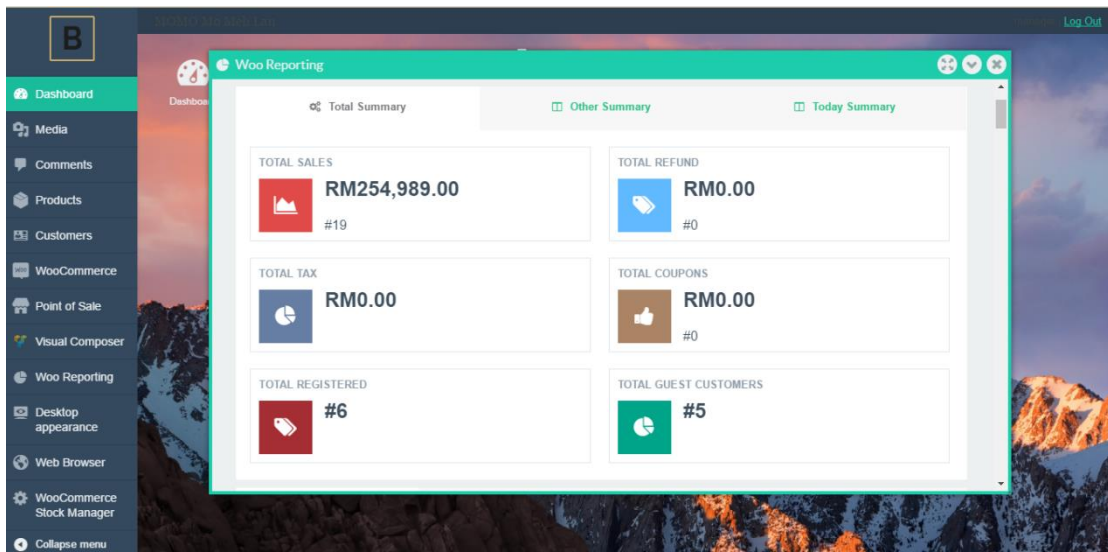


Diagram 4.6.20 Report page 1



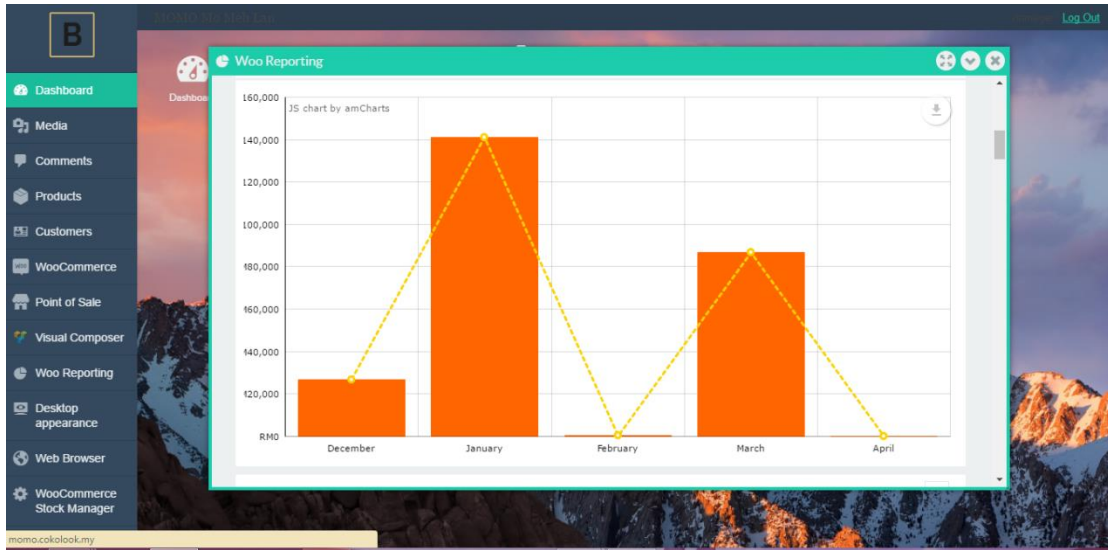


Diagram 4.6.21 Report page 2

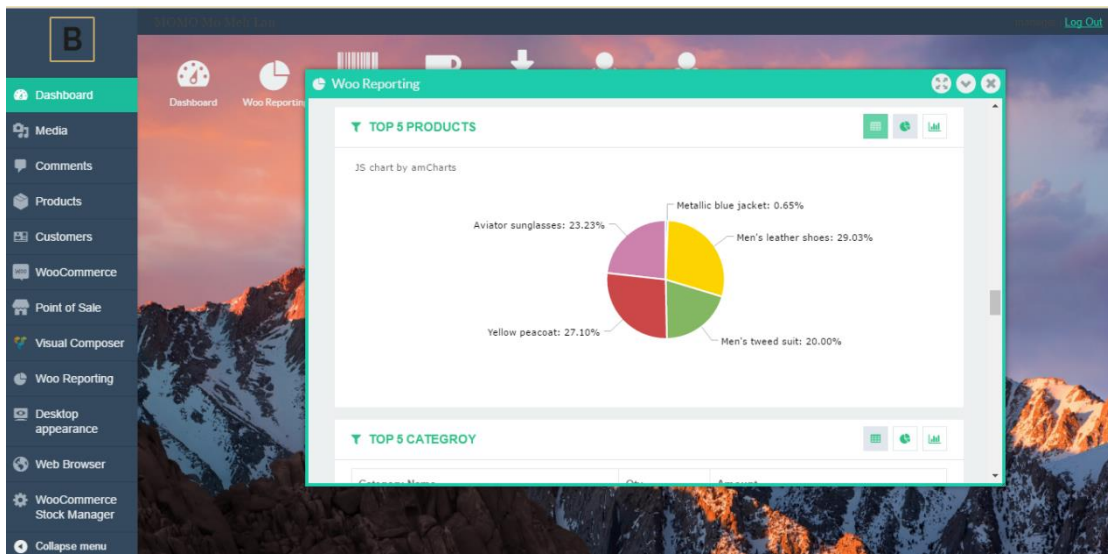


Diagram 4.6.22 Report page 3

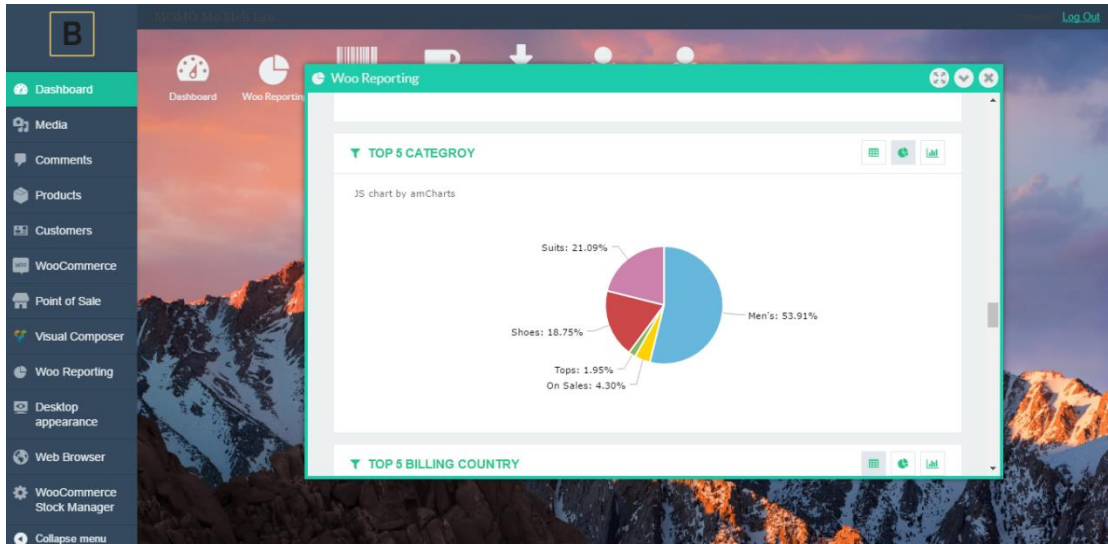


Diagram 4.6.23 Report page 4

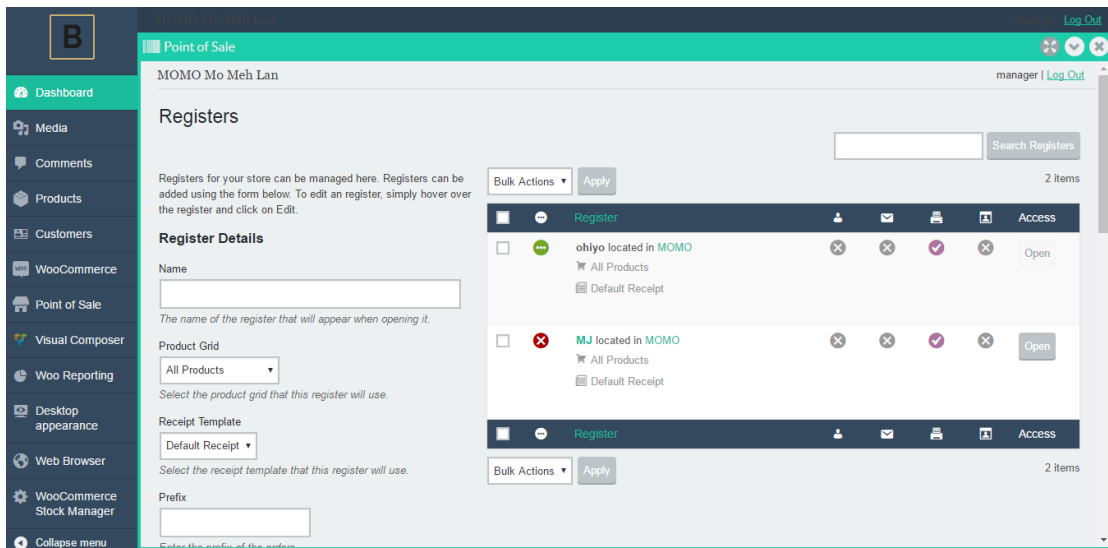


Diagram 4.6.24 POS enter page

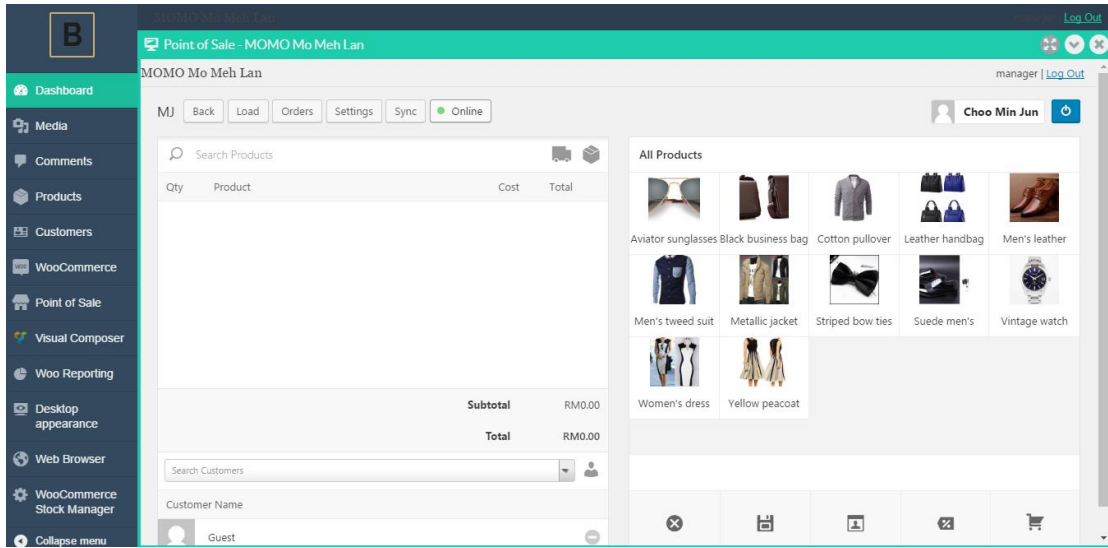


Diagram 4.6.25 POS interface

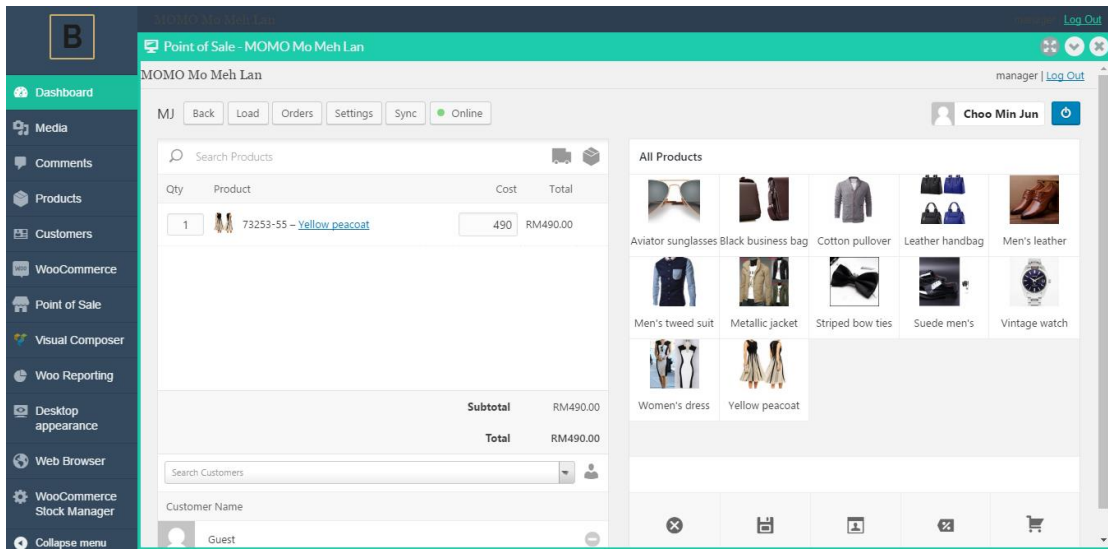


Diagram 4.6.26 Select item

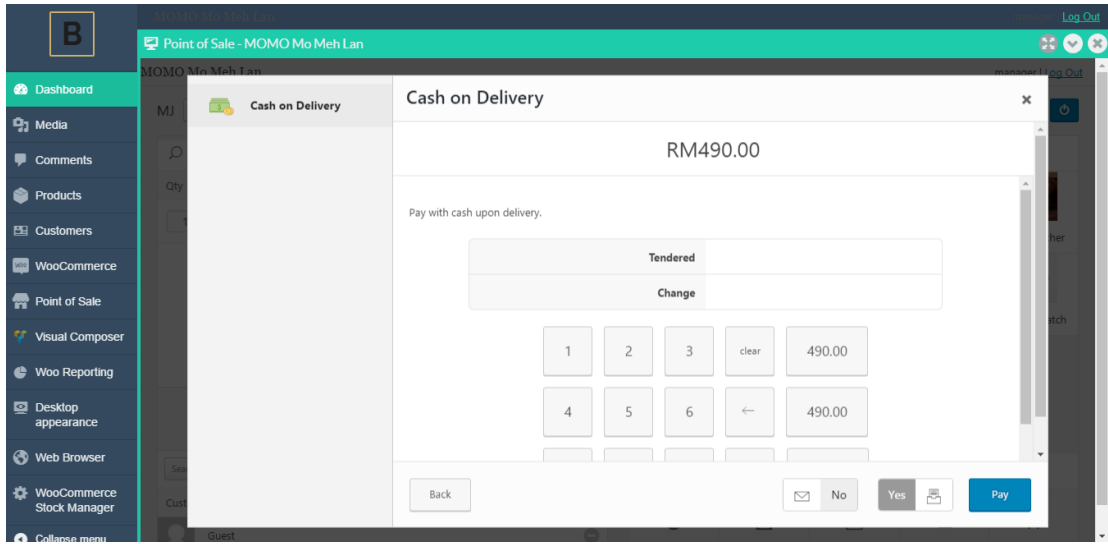


Diagram 4.6.27 enter amount

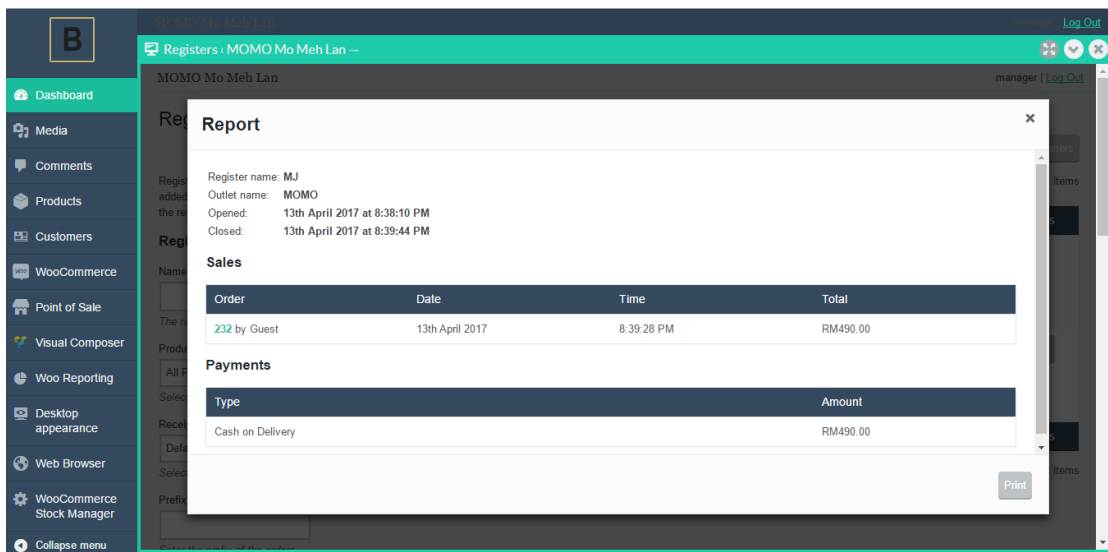


Diagram 4.6.13 Generate daily report

### Implementation Issue and Challenge

The most difficult issue on the implementation are the plugin of the web are not easy to find. All the plugin need to be tested inorder to choose the most suitable one for the system. Some of the plugin may cause other function crush. There are also some very useful plugin but require to purchase with large amount of money. In android studio part, there are some coding that not support by new version of android studio.

## **Chapter 5: Conclusion**

### **5.1 Conclusion**

As a conclusion, the system I developed now has covers all of the problem statement and achieved all objectives. The problem statement that has covered was the company needs a solution that is able to provide details on the buying trends of the customer as well as the customer behaviour to boost sales and the company prefer to have a system that is able to track sales based on criteria like branch total sales, hot item and also the item that is not saleable. The solution was like build a database that allows company to store more information about consumer like their buying trend, and allow the system to tracks sales base on criteria. The last problem statement has been done also which is consumer needed a common platform to help them to track the items of their interest on sales promotion. The solution was builds a mobile app that allow the user to views all the items that are on promotion. These 3 objectives have been achieved and finalized, but there is still have spaces for the improvement.

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