ADVERTISING PLATFORM

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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This report is submitted in partial fulfillment of the requirements for the
Bachelor of Computer Science (Software Development) with Honours.

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
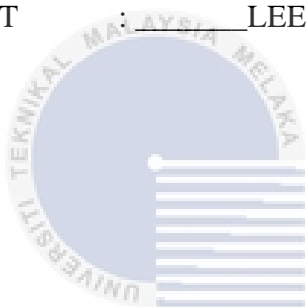UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2021

DECLARATION

I hereby declare that this project report entitled

[ADVERTISING PLATFORM]

is written by me and is my own effort and that no part has been plagiarized

without citations.

STUDENT   : _____LEE JONG FENG_____   Date : _30/8/2021_____

I hereby declare that I have read this project report and found

this project report is sufficient in term of the scope and quality for the award of

Bachelor of [Computer Science (Software Development)] with Honours.

SUPERVISOR   : _____ *Maslita* _____ Date : __30/8/2021_____
                        ([NAME OF THE SUPERVISOR])

ACKNOWLEDGEMENTS

Firstly, I would like to take this opportunity to declare and express my deepest appreciation to my supervisor, Ts. Maslita Binti Abd Aziz for spending her precious time to give her guidance and motivation throughout the completion of entire project. Under her supervision, I had learnt lot of valuable knowledge and ways to solve problems. Despite that, she is busy with her daily jobs and duties as a lecturer. However, she still willing to guide me along in this project. Therefore, I am here to show my beloved appreciation to her for guiding me with her patience and I feel grateful to have her as my supervisor in my final year project.

Besides, I would like to thank my caring course mates and friends who always spend their time to help me although they are busy with their own tasks too. Apart from that, I appreciate them for their assistant and sharing of good programming knowledge and ideas that help to complete my project when facing problems.

Finally, my deepest gratitude goes to my grandparents, Lee Ai Haw and Shu Tuang Eng for fully supporting me from mentally and financially throughout my studies in UTeM. Their endless support has extended courage for me to complete my degree life.

ABSTRACT

Due to the pandemic of COVID-19, most of the shops and business processes need to be stopped immediately to avoid the spreading of coronaviruses through physical contact. In case, most of the entrepreneur faced with the problems of insufficient funds to remain their business anymore. Again, online platform is quite important in case to move the business process remotely. Therefore, an advertising platform is necessary to help in cooling down the pandemic and promoting the business process of certain merchants if they wished to do so. Through the advertising of their business in the platform provided, merchants can sustain their business in the hardship period. However, there is seldom platform for them to advertise and invest at the same time to get their investment worth. Most of the platforms take care of their own profits instead of maximize the merchants benefits. Besides, consumers always leave bad impressions to advertisements because it tends to pop up when people watching movies or using applications. A proper solution is significant to resolve the image of advertising in the deepest of their mind. In case, an advertising platform is introduced and developed as a solution of the problems outlined. During the development, agile methodology has been used. By using the system developed, the profits of all parties, which are admin, merchants and consumers will be emphasized and covered where admin can earn from merchants subscriptions and merchants can get the attentions from consumers which make their investment comes true. In conclusion, the proposed system will resolve the problems faced by the merchants and it is vital especially this pandemic of COVID-19.

ABSTRAK

Disebabkan wabak COVID-19, kebanyakan kedai dan proses perniagaan terpaksa untuk dihentikan segera untuk mengelakkan penyebaran coronavirus melalui hubungan fizikal. Sekiranya, kebanyakan pengusaha telah menghadapi masalah kekurangan dana untuk meneruskan perniagaan mereka lagi. Selain itu, platform dalam talian menjadi peranan penting sekiranya dapat memindahkan proses perniagaan secara atas talian. Oleh itu, suatu platform periklanan diperlukan untuk membantu menenangkan wabak dan mempromosikan proses perniagaan peniaga tertentu jika mereka mahu melakukannya. Melalui pengiklanan perniagaan mereka di platform yang disediakan, pedagang dapat mempertahankan perniagaan mereka dalam masa kesulitan. Walau bagaimanapun, kekurangan platform untuk mereka beriklan dan melabur untuk mendapatkan nilai pelaburan mereka pada masa yang sama. Sebilangan platform hanya mengurus keuntungan mereka sendiri dan bukannya untuk memaksimumkan keuntungan peniaga. Di samping itu, pengguna selalu meninggalkan kesan buruk pada iklan kerana iklan akan muncul tiba-tiba ketika mereka menonton filem atau menggunakan aplikasi. Penyelesaian yang tepat adalah mustahak untuk menyelesaikan gambaran iklan dalam lubuk fikiran mereka. Oleh itu, platform periklanan diperkenalkan dan dikembangkan sebagai penyelesaian masalah. Semasa proses pengembangan, metodologi agile telah digunakan. Dengan menggunakan sistem yang diciptakan, keuntungan semua pihak, terutamanya admin, pedagang dan pengguna akan ditekankan dan dilindungi di mana admin dapat memperoleh langganan pedagang dan pedagang dapat mendapat perhatian dari pengguna yang membuat pelaburan mereka menjadi kenyataan. Kesimpulannya, sistem yang dicadangkan akan menyelesaikan masalah yang dihadapi oleh peniaga dan sangat penting terutama wabak COVID-19 ini.

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LIST OF ABBREVIATIONS

SDLC	**-**	**System Development Life Cycle**
DBLC	**-**	**Database Life Cycle**
ERD	**-**	**Entity Relationship Diagram**
SQL	**-**	**Structured Query Language**
DBMS	**-**	**Database Management System**
IDE	**-**	**Integrated Development Environment**
UML	**-**	**Unified Modelling Language**

LIST OF ATTACHMENTS

CHAPTER 1: INTRODUCTION

1.1   Introduction

Advertising is important in a business process because it helps introducing a new product, expansion of market, competes with other merchants, increases sales and etc (Chand, no date). It determines the image and way of life and it impacts our thinking and attitude towards world (Frolova, 2014). Therefore, advertising becomes the important part in marketing strategies because the market is controlled by consumers and merchandises have to persuade and attract consumers for selling their product. A good advertising process may yield better business process where merchants should take concern onto it (Rossler, 2017). However, the advertising process is not quite easy because the merchants need to select the proper media and do some planning, research and buying.

1.2   Problem Statement

Recent years, digital channels come in and allow human beings to connect, share and collaborate like never before and these channels defined a new marketing environment full of challenges (Elawadi, 2016). Select the platform to advertise is another major concern which may affect the worthiness of the payment paid to promote the business. Multiple platform available will request the merchants to pay a lot of fees to multiple platform which really costly and it requires feasibility studies on whether the advertisements posted on the social media comes with same business value. Most of the merchants will post some stories and upload to the social media, but these advertisements tend to be ignored by most of the social media users. Those users do not dislike advertisements, but they simply do not notice them or no interest

onto that (Hadija, Barnes and Hair, 2012). Someone who hate advertisement will add on some ads block extensions to block all of advertisements to enhance their using experiences onto social media (Willner, 2018). Hence, they need more attractive to catch their attentions onto these advertisements to realize the business value of the merchants. It's safe to bet the ad-to-sales ratio of major merchants have risen accordingly in the same period, and the rising cost of capturing consumer attention has driven smaller merchants without deep pockets (Thales S., 2015). Sometimes, the advertisements occurred are not related to a particular user, and once he needs to view some latest meals come out from food fast restaurants, he is unable to filter the advertisements available and only focus on his own interest. Another problem to discuss is the necessity of proper management onto the advertising process. The admins should be provided a proper management system for them to operate and do maintain and made the advertising process more flexible.

1.3   Objective

The objectives of this project are
- To design a solution to facilitate the merchants, admins and consumers
- To develop a web-based system as a platform for merchants and admins and a mobile application for consumers
- To test the system for efficiency and user satisfaction in term of usability by the merchants, admins and consumers

1.4   Scope

a) Target User

This project is target for admin, merchants and consumers. Admin and merchants will be using the web application developed to ease the management tasks whereas consumers will be using mobile application developed for convenience.

b) Operating System

Android and Windows are the operating system used for advertising platform. Android is a mobile operating system developed by Google to

be used for touchscreen devices. Nowadays, it powers the cellphones, tablets, watch, TV and etc. Android had maintained its popularity as leading mobile operating system with 71.93 percent in controlling the mobile market (S. O'Dea, 2021).

c) Modules to be developed

   - Upload new or edit and remove old advertisements

      Merchant is allowed to insert a new advertisement, edit or remove the existing advertisements.

   - Manage the payment plan

      Admin is allowed to manage the payment plan available for the merchants to make payment for subscription.

   - Manage the extended payment plan

      Admin is allowed to manage the extended payment plan available for the merchants to extend their current subscribed plan either in time or advertisement count.

   - Manage vouchers

      Merchant is allowed to offer vouchers for consumers to claim by using their collected coins.

   - Subscribe to merchant pages

      Consumer is allowed to subscribe to the merchant pages as they like.

   - Share advertisements

Consumer is allowed to share the advertisements to others by using the invitation link.

- Invite friends with referral code

Consumer is allowed to invite friends by using his referral code and earn points from that.

- Check-in

Consumer is allowed to check-in every day to earn coins which can be used to claim vouchers.

- Add advertisements to favorite

Consumer is allowed to like and add the advertisements to favorite for referencing.

d) Deliverable

The deliverables of this project are the literature review, project methodology, analysis, design, implementation, testing and finally the complete of Advertising Platform.

1.5 Project Significance

After the project implementation, the web-based system will provide a platform for merchants to promote their business needs and admin will be able to manage the entire platform in simple clicks. The wider view provided by web-based system enables the management process to be simpler for admin and merchants. From the point of view of consumers, they can watch the advertisements and win some coins rewards from the application offered. With that, it reveals the business value of the merchant to spend on advertising in the platform provided.

1.6   Expected Output

This advertising system is expected to provide the admins to manage the overall advertising system to make it more flexible. For admin management level, he can filter and only permits and approves the proper merchant page to be created and do some simple management onto the payment plan where the plan provided might be different depends on the current market trending and strategies. Besides, this developed platform is expected to catch the attention of the consumers in using the application frequently which encourages the worthiness of the merchants to promote their new goods or products in this platform. Not only that, consumers find it good in using the modules developed and hence reveals the business value to be developed.

1.7   Conclusion

This chapter includes the brief introduction to the proposed title of advertising platform and describes the problem statements and the objectives to be achieved. The basic design of the modules is roughly distributed in the project scope. The next chapter will mainly discussing the literature review of the entire trend of the advertising environment in real time applications. Besides, the suitable project methodology in the development process will be clarified in the next chapter too.

CHAPTER 2: LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1   Introduction

This chapter aims to discuss on the related works regarding researching onto types of advertising and how its popularity in few years. The literature will describe in details on the channels of advertising. It will act as the short conclusion onto the current trends of advertising nowadays and how advertising aids in promoting the businesses to the next level. Besides, the existing systems are studied and these founding are useful in developing the advertising platform.

2.2   Facts and findings

Facts findings are the process of collecting information related to a topic, or referring to the preliminary searches to understand a topic better (*What is fact-finding? Definition and examples - Market Business News*, 2021). It helps in deep investigation onto the topic by referring to the existing documents, researches and observations done by others previously. Some sampling techniques such as questionnaires or interviews are useful in gathering the user feedbacks and experiences in using related applications. Fact-findings can help in analyzing the direction to develop and implement the current existing system into further improvement. Section below describes the facts and findings related to this project.

2.2.1   Domain

Advertising consists of all activities which involved in presenting ideas and mindsets to an audience, either it can be a non-personal, sponsor identified, paid-for

message about a product or organization (ruchjain02, 2015). With advertising, modern business enterprises can expand their business values by introducing their new products or entering or lighting competition a new market. Traditionally, advertising can be done in print media, direct mail or some broadcast media such as radio or television (De Vries, Gensler and Leeflang, 2017). However, the evolution of Internet technology bring lots of available platform for the advertiser to promote their products and services through social medias. This can be known as digital marketing as well where people in this generation tends to engage more in social medias. No matter the advertising is in the form of digital or traditional, each medium has its own merits and demerit.

In term of traditional marketing, it may produce faster results if the advertisement is well placed to the target audience and some older generation still trust offline purchasing because of the high number of frauds that occur in online purchasing environment which cause people reluctant to trust the information displayed (Dania TODOR, 2016).

The advantages of digital advertising are because of its ease of understanding and its impactful. This is due to the prevalence of the TV commercial already becomes the daily routines for most people's day to live. Besides, it seems like these digital advertising can be kept as permanent where people can refer back the advertisements easily when it is necessary. The high adaptability of contents offers by digital advertising make the advertisements look more interesting and hence it attracts more people and hit the market values (Ma and Du, 2018).

2.2.2   Existing System

Till date, there are some advertising platforms available online can be used to explore your market values or post your advertisement. Some brief examples of existing systems in advertising domain are Admixer,Network and SmartHub. Admixer.Network is a comprehensive stack advertisement serving for large publishers and different types of advertisement networks. With Admixer.Network, users can create advertisements based on the campaign provided to target audience based on timeframe, devices, browsers or even countries and regions. Users are allowed to build their own DMP for behavioral targeting, age, gender and interests.

SmartHub is a hosted, maintained and market-ready technologies solution that enables rapid deployment of advertisements (*SmartHub Reviews 2021: Details, Pricing, & Features | G2*, 2021). It enables achieve control and transparency of media-trading and configures advanced trading rules to encourage a more profitable programmatic environment. Apart, users can adjust the media buying and selling according to the individuals needs which is a great feature embedded.

2.2.3   Technique

The main concern of the merchants or advertisers to upload and place the advertisements in a platform are the feedbacks from the consumers and the profit they might earned from that. Let's say if the platform does not have any points to attract the consumer, then the advertisements will not hit the market values brought. Therefore, the developed system will focus onto the user experiences. With the experiences, the developed system will introduce some features to attract the consumer's attractions in using this application which can hit the advertisers' expectations.

2.3   Project Methodology

Project methodology provides standard approach or guidelines to be used in implementing a project (*Project Management Methodology*, no date). It is important from the project initiation stage, planning, executing and the final closing stage. In this project, the project methodology includes the system development life cycle (SDLC) and database life cycle (DBLC). They aid in transform the ideas and opinions to be developed into modules of entire systems.

2.3.1   System Development Life Cycle

In this project, agile model is used as the SDLC model. It is a software development process framework which helps in responding to the unpredictable of software building process through incremental and iterative workloads (*Main Stages in Agile project*, no date). The agile iterative helps in short-time span project with minimal planning rather than spending long time to plan (Azmee, no date). With agile methodology, the overall project risks can be minimized and the project developed can be adopted more quickly.

The following illustration is a representation of the different phases of agile SDLC.
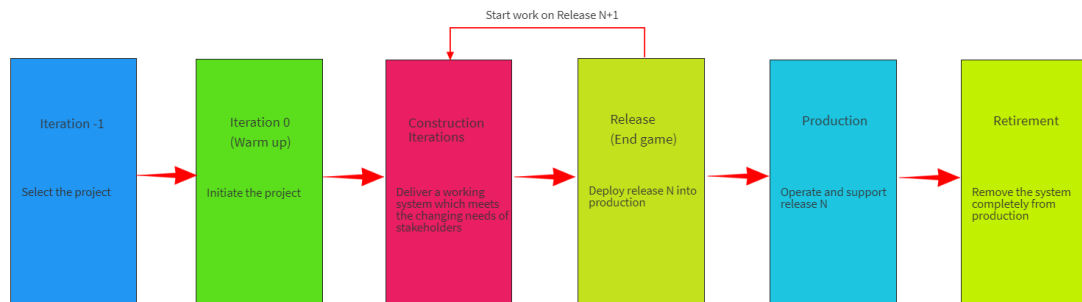
Figure 2.1: Agile Model (Azmee, no date)

There are six stages in agile SDLC which are iteration -1, iteration 0, construction iterations, release, production and retirement. The sequential stages and its activity are described below.

- Iteration -1: This phase will describe the startup of project by selecting the potential project. The initial vision is identified and the project feasibility are studied and conducted in this phase.

- Iteration 0: This phase will obtain funds and supports from stakeholders. This phase also predicts the potential requirements and architectures needed for setting up the development environment.

- Construction Iterations: This phase will deliver the developing systems to meet the requirements of stakeholders or clients. Usually, the system is deployed in this phase internally.

- Release: This phase will release the deployed system or software into production. This phase will also involve the final system testing and acceptance testing. The related documentations will be finalized within this phase too.

- Production: This phase will operate the system and potential defects are identified and discovered and recovered them for enhancing system.

- Retirement: This phase will remove the system completely from production and the final version is released to be used.

Agile SDLC consists of lots of methodologies. The methodology that I choose is Extreme programming (XP). XP aims to improve software quality and responsiveness for volatile requirements. There are five essential ways to improve the software project which are planning, managing, coding, designing and testing (Gaurav Kumar and Pradeep Kumar Bhatia, 2012).

In planning phase, the project is divided into iterations and for each iteration, planning is started to create release schedule for small changes. In term of managing, project velocity is measured and especially for teams, the problems will be fixed in stand up meeting. In coding phase, as name proposed, the code is written and those minimal planning documentation is transferring into physical codes. Next, the designing phase is to refactor the designing either the interface design or system design to test whether it is suitable to be used or implemented or not. The last phase in Extreme programming is testing. All of the codes written should be unit tested by the programmers and the result should be passed before integrating into larger scale of testing. Once all of the testing are passed, then the software product is readily to be produced.

2.3.2 Database Life Cycle

As similar as system development life cycle, database has its own life cycle too. Basically, database life cycle (DBLC) defines the stages involved in implementing a database from the stage of requirement analysis and ended up with monitoring and modifications. There five stages within the DBLC are briefly described.

- Requirement Analysis - Requirement analysis is the first and foremost stage to be done in DBLC. In this stage, the business process, rules and data need to be analyzed.

- Logical Design – Within this stage, the main deliverable is ERD diagram and the sample data and attributes needed in database should

be planned as well. The planning should include the tables, fields and their relationship.

- Physical Design – This stage involves the activities to maximize the database efficiency. Basically, it identifies the ways to raise the database performance by removing the redundant data and so on.

- Implementation – Within this stage, the design of ERD will be transform into the actual tables with relationship. This stage depends on the database management system (DBMS) choose and the programming language used to communicate with the database.

- Monitoring, Modification, and Maintenance – After the database is implemented, it should be monitored and maintained for ensuring it still can work properly. As long as there is a need for modification in database's tables, the data structure should be reviewed as well to avoid errors or exceptions which may disrupt the database.

2.4 Project Requirements

Project requirements are significant to ensure the success or completion of a project. It can be categorized into software requirement and hardware requirement.

2.4.1 Software Requirement

Table 2.1: List of Software

Android Studio	Integrated Development Environment (IDE) for developing mobile application in the Android operating system which consists of source code editor, automation tools and debugger.
Star UML	An open-source modelling tool that helps in modeling the UML diagram for software development purposes.

Visual Studio Code	A code editor developed by Microsoft to create and support the multiple programming languages development, syntax highlighting and code reformatting.
Postman	A scalable testing tool in developing Application Programming Interface (API). It helps in testing the server's request and response to communicate with each devices connected.
MongoDB Compass	A framework for connecting to MongoDB host where provides an interface to explore, analyze and make decisions about document querying, indexing and collection structuring.
Microsoft Word	A word processing and editing tool developed by Microsoft and included in Microsoft Office to properly document the reports and text files.

2.4.2   Hardware Requirement

Table 2.2: List of Hardware

Laptop	Laptop is required to develop this project.
Android mobile phone	Android mobile phone is used to run the mobile module of this project developed for testing purposes.
USB Cable	USB cable is used to connect android mobile phone to the laptop for installing the application developed to mobile.

2.4.3   Other Requirements

None

2.5   Project Schedule and Milestones

A Gantt chart is a project management tool assisting in the planning and scheduling of projects of all sizes, although they are particularly useful for simplifying complex projects. Table below shows the Gantt chart for this project.

Table 2.3: Gantt Chart

TASK	WEEK															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Planning • Proposal preparation • Define problem statement, objectives and scope • Discuss about current system. • Collect information from current system	▓	▓	▓			▓	▓			▓						
2. Design • Design interface • Design database • Design application • Create design specification			▓	▓	▓		▓		▓			▓				
3. Coding			▓		▓		▓	▓	▓	▓	▓	▓	▓			

• Integrate coding • Combine all module • Run coding • Perform initial testing			▓	▓	▓	▓	▓	▓	▓	▓			
4. Testing • Perform system testing. • Document issues found. • Correct issues found.			▓	▓	▓		▓		▓		▓	▓	▓

2.6 Conclusion

In conclusion, this chapter have done reviewing some researches and studies that have been completed by other researchers. The project methodologies, requirements and schedule are clearly defined as well. In next chapter, it will have the further describe about the analysis of the developed system of Advertising Platform.

CHAPTER 3: ANALYSIS

3.1   Introduction

This chapter aims to discuss on the analysis of current system and the proposed Advertising Platform. Some software diagrams such as flowchart and data flow diagram will be used in this chapter to illustrate the analysis and requirements of the system. This will give the clear analysis on the current system and what will be done by the proposed system.

3.2   Problem Analysis

In chapter 1.2, the problem statements for this project are described. As stated in the problem statements, there is lack of proper advertising platform for the merchants or advertisers to introduce or promote their products or services to the public. Some of the advertisers or small-scale merchants will post their advertisements onto the social medias such as Instagram, Facebook or TikTok but most of the people will ignore for the advertisements posted. This is because people tends to use social media to communicate or react with others stories and the occurrence of advertisements will cause bad user experiences. In long term, people will leave bad impressions onto any advertisement. With this kind of scenario, merchants or advertisers cannot gain their business value with the advertisements posted especially if they need to pay for that.

By observing the current advertising platform and condition, it does not really come with high business value for merchants to spend costs and upload their products or services provided in their business. Those platform just provide a space for them to promote but it does not guarantee to have views or likes from their targeted consumers.
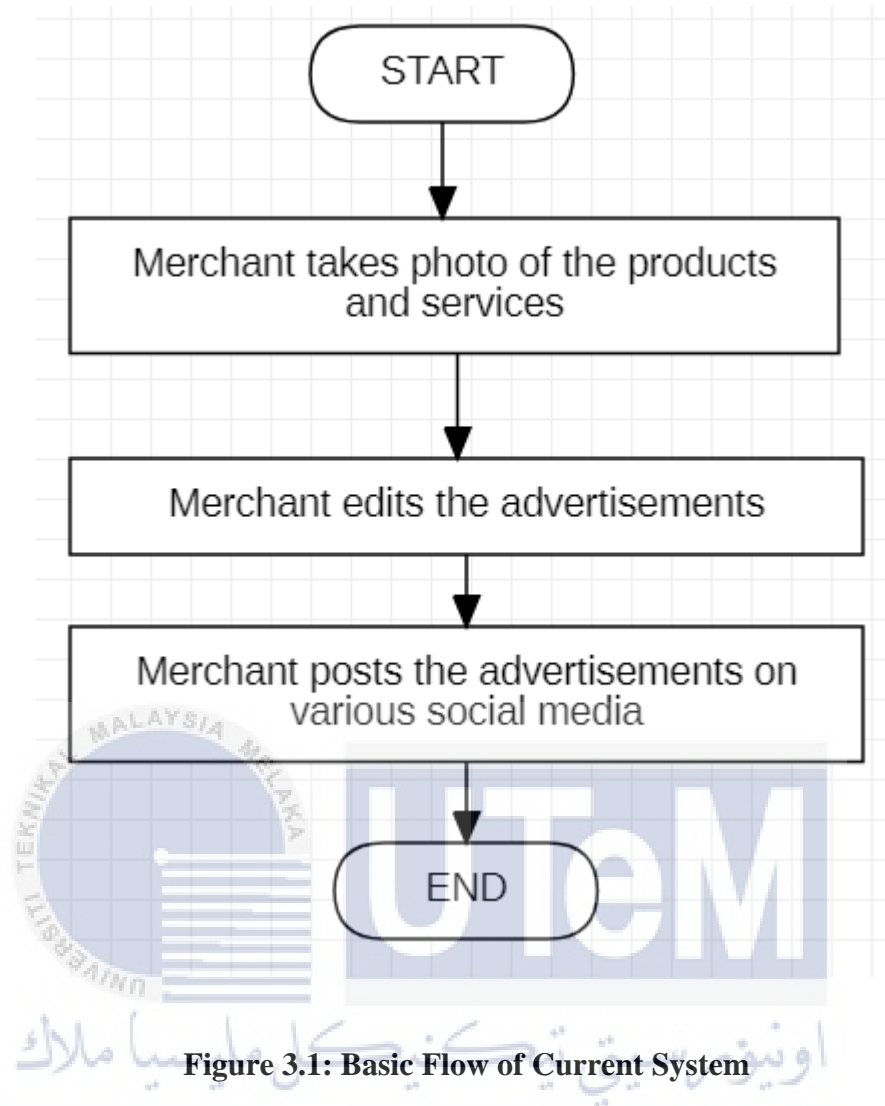
Figure 3.1: Basic Flow of Current System

Figure 3.1 above shows the basic flow of the current system. It is represented by using flowchart where the processes figured out are the necessary steps taken for promoting their products or services on social media.

3.3   Requirement Analysis

In a software project, analyzing and fulfilling the customer requirements has been recognized as a huge challenge among many others (Demirel and Das, 2018). Requirement analysis is necessary after elicitation of requirements. Through analyzing and certain refinement, the requirements gathered will be clearer from the perspective of system because the requirements acquired from stakeholders will be ambiguous because there will not be any specific IT term.

3.3.1 Data Requirement

In an advertising platform, there are some necessary data to be stored and used in the system for ensuring the correct flow.

Table 3.1: Admin Table

Column Name	Data Type	Data Description	Constraint
admin_id	String	Unique ID to identify each admin	Primary Key
admin_username	String	The username of the admin	
admin_phone	String	The phone of the admin	
admin_email	String	The email of the admin	
admin_password	String	The encrypted password of the admin	

Table 3.1 shows the data requirement for the admin table. Admin is the one who manage the entire Advertising Platform.

Table 3.2: Merchant Table

Column Name	Data Type	Data Description	Constraint
merchant_id	String	Unique ID to identify each merchant	Primary Key
merchant_username	String	The username of the merchant	
merchant_phone	String	The phone of the merchant	

merchant_email	String	The email of the merchant	
merchant_password	String	The encrypted password of the merchant	

Table 3.2 shows the data requirement for merchant table. Merchant is the one who registered in the web module and posted their advertisements in the Advertising Platform.

Table 3.3: Consumer Table

Column Name	Data Type	Data Description	Constraint
consumer_id	String	Unique ID to identify each consumer	Primary Key
consumer_username	String	The username of the consumer	
consumer _phone	String	The phone of the consumer	
consumer_email	String	The email of the consumer	
consumer_password	String	The encrypted password of the consumer	
consumer_coins	Integer	The coin amount of the consumer	

Table 3.3 shows the data requirement for consumer table. Consumer is the one who will be using the mobile module developed.

Table 3.4: Advertisement Table

Column Name	Data Type	Data Description	Constraint
advertisement_id	String	Unique ID to identify each advertisement	Primary Key
advertisement_title	String	The title of an advertisement	
advertisement_subtitle	String	The subtitle of an advertisement	
advertisement_description	String	The description of an advertisement	
advertisement_image	String	The image of the advertisement	
advertisement_uploaded	Boolean	The uploaded status of an advertisement	
merchant_id	String		Foreign Key: Merchant

Table 3.4 shows the data requirement for advertisement table. Advertisement is the main asset for the merchants and admin since the main business process of this project is covered on advertisement.

Table 3.5: Check-In Table

Column Name	Data Type	Data Description	Constraint

check_in_id	String	Unique ID to identify each consumer's check in	Primary Key
check_in_count	Integer	The cumulative count of check in	
consumer_id	String		Foreign Key: Consumer

Table 3.5 shows the data requirement for check-in table. Consumer is allowed to check-in every day to collect their coins for other purposes. Continuous check-in will gain more coins for consumers.

Table 3.6: Extended Plan Table

Column Name	Data Type	Data Description	Constraint
extended_plan_id	String	Unique ID to identify each extended plan	Primary Key
extended_plan_name	String	The name of the extended plan	
extended_plan_price	Double	The price of the extended plan allocated	
extended_plan_type	String	The type of the extended plan	

extended_plan_description	String	The description of the extended plan	
extended_plan_amount_offerred	Integer	The amount offered for the selected type	

Table 3.6 shows the data requirement for extended payment plan table. Extended payment plan is used for the merchants to customize their own payment plan subscribed.

Table 3.7: Favourite Table

Column Name	Data Type	Data Description	Constraint
favourite_id	String	Unique ID to identify each favorite for consumer	Primary Key
advertisement_id	String		Foreign Key: Advertisement
consumer_id	String		Foreign Key: Consumer

Table 3.7 shows the data requirement for favourite table. This table will store the advertisement id and consumer id once the consumer chooses to add an advertisement into his favourite.

Table 3.8: Invite Table

Column Name	Data Type	Data Description	Constraint
invite_id	String	Unique ID to identify each invitation done	Primary Key
invited_by	String	The person who invite the other consumer	Foreign Key: Consumer
invite	String	The person who has been invited	Foreign Key: Consumer

Table 3.8 shows the data requirement for invite table. This table will store the data of the person who make the invitation and also the one who has been invited.

Table 3.9: Merchant Subscription Table

Column Name	Data Type	Data Description	Constraint
merchant_subscription_id	String	Unique ID to identify each merchant subscription	Primary Key
merchant_id	String		Foreign Key: Merchant
consumer_id	String		Foreign Key: Consumer

Table 3.9 shows the data requirement for merchant subscription table. This table will record the data of consumer and the merchant subscribed by the consumer.

Table 3.10: Payment Plan Table

Column Name	Data Type	Data Description	Constraint
payment_plan_id	String	Unique ID to identify each payment plan	Primary Key
payment_plan_name	String	The name of the payment plan	
payment_plan_price	Double	The price of the payment plan	
payment_plan_description	String	The description of the payment plan	
payment_plan_duration	Integer	The duration of the payment plan offered	
payment_plan_advertisement	Integer	The number of advertisement offered	

Table 3.10 shows the data requirement for payment plan table. All of the payment plan inserted will be stored in this table.

Table 3.11: Payment Plan Subscription Table

Column Name	Data Type	Data Description	Constraint

subscription_id	String	Unique ID to identify each payment plan subscribed	Primary Key
paypal_payment_id	String	The unique ID for the payment ID returned by PayPal	
expired_date	Date	The date time of the subscription expired	
advertisement_count	Integer	The number of advertisement allowed	
merchant_id	String		Foreign Key: Merchant
plan_id	String		Foreign Key: Payment Plan

Table 3.11 shows the data requirement for payment plan subscription table. If the merchant subscribed to a payment plan, the subscription will be recorded in this table.

Table 3.12: Subscribe Merchant Table

Column Name	Data Type	Data Description	Constraint

Column Name	Data Type	Data Description	Constraint
subscribe_merchant_id	String	Unique ID to identify each subscription made from consumer to merchant	Primary Key
merchant_id	String		Foreign Key: Merchant
consumer_id	String		Foreign Key: Consumer

Table 3.12 shows the data requirement for subscribe merchant table. This table will record all of the consumer's subscription to a merchant page.

Table 3.13: Voucher Table

Column Name	Data Type	Data Description	Constraint
voucher_id	String	Unique ID to identify each voucher	Primary Key
voucher_name	String	The name of the voucher	
voucher_description	String	The description of the voucher	
voucher_coins	Integer	The number of coins allocated to redeem the voucher	

voucher_validity	Date	The validity of the voucher	
voucher_image	String	The image of the voucher	
voucher_quantity	Integer	The number of voucher offered	
voucher_status	String	The status of the voucher	
merchant_id	String		Foreign Key: Merchant

Table 3.13 shows the data requirement for voucher table. All of the voucher inserted by merchant will be recorded in this table.

Table 3.14: Voucher Consumer Table

Column Name	Data Type	Data Description	Constraint
voucher_consumer_id	String	Unique ID to identify each voucher redeemed by consumer	Primary Key
voucher_id	String		Foreign Key: Voucher
consumer_id	String		Foreign Key: Consumer

Table 3.14 shows the data requirement for voucher consumer table. This table takes record of every voucher redeemed by a consumer.

3.3.2 Functional Requirement

The functional requirement can be defined as the behavior of the proposed system and action specified for a system to perform without considering any physical constraints (Alsaleh and Haron, 2016). The functional requirements of the proposed system are listed below.

- The system should be able to allow admin to manage the payment plan for the merchants to subscribe.

- The system should be able to allow admin to manage the extended payment plan for merchants to customize their own plans.

- The system should be able to allow merchants to insert and upload their advertisements after they subscribe to the plan.

- The system should be able to allow merchants to offer their own vouchers to consumers after approval from system or admin.

- The system should be able to allow consumers to view the advertisements posted by merchants.

- The system should be able to allow consumers to subscribe to a particular merchant page.

- The system should be able to allow consumers to invite their friends by using referral codes.

- The system should be able to allow consumers to like the advertisements and add to the favorite.

- The system should be able to allow consumers to check in everyday to earn coins for redeeming vouchers.
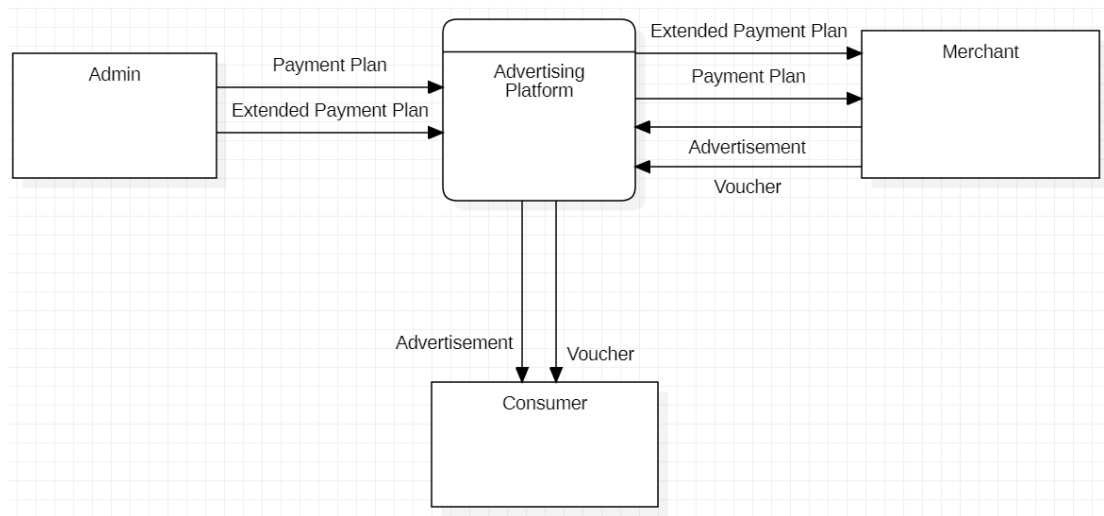
Figure 3.2: Zero-level Data Flow Diagram

Figure 3.2 shows the zero level of data flow diagram for Advertising Platform. In this data flow diagram, there are three target users which are exchanging data. Admin will insert payment plan and extended payment plan into the system to open for subscriptions from merchants where merchants will upload advertisement and offer vouchers for consumer to view and redeem it.

3.3.3 Non-functional Requirement

Non-functional requirements are referring to the quality requirements, represent software requirements that describe how the software should perform (Behutiye *et al.*, 2017). Some brief examples of non-functional requirements are listed below.

Table 3.15: Non-functional Requirement

Requirement	Description
Performance	Advertising platform should be able to load the page within 2 seconds.

Compatibility	Advertising platform web's module should be able to run in multiple platforms and same goes to mobile's module which can be operate in Android devices with API level 23 and above.
Usability	Advertising platform should make sure that the user interfaces are clean and the applications developed are easy to use.
Availability	Advertising platform should be available all day and all the time when it is needed.

3.3.4   Other Requirement

None

3.4   Conclusion

In conclusion, this chapter have analyzed the problems of current system and requirements of proposed system. In Chapter 4, it will illustrate the requirements collected and analyzed into models and diagrams.

CHAPTER 4: DESIGN

4.1   Introduction

This chapter aims to define the high-level design, system architecture including user interface and database design including the conceptual and the logical design. The result of the detailed design is shown in this chapter too. This chapter will implement the crucial of the software development process to transform conceptual design to logical and further to physical design. Data flow diagram is modelled to identify the file input or output, pseudocode and attached sample screen.

4.2   High-Level Design

High level design refers to the overall system design (Koopman, 2018). It includes the system architecture diagram, user interface design and database design of the Advertising Platform.

4.2.1   System Architecture

System architecture is referring to the ways to place all the software and system components onto the physical machines (Paganini, 2019). It is an abstraction layer onto the connection of the components to define how a system should behaves and looks like. Figure 4.1 illustrates the system architecture of Advertising Platform.
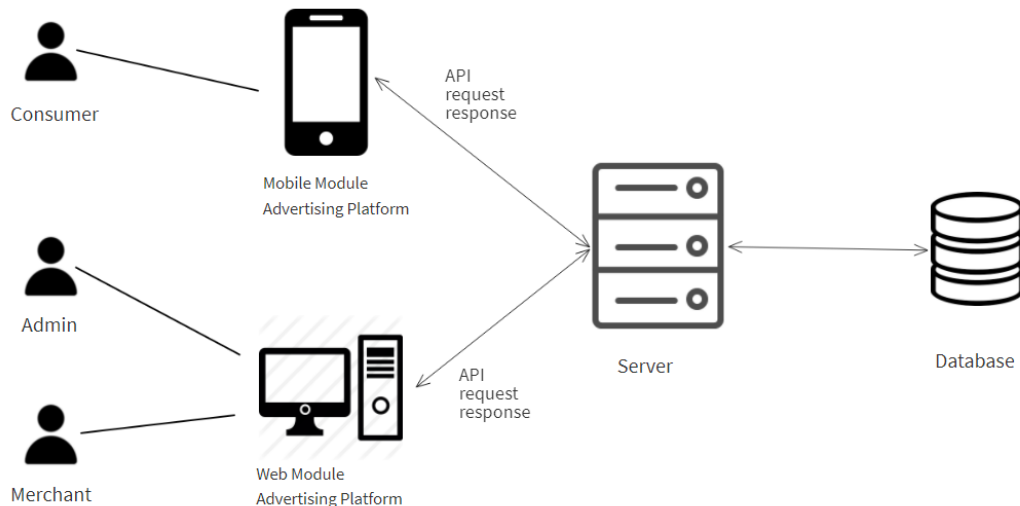
Figure 4.1: Advertising Platform Architecture Design

Figure 4.1 shows the architecture design of Advertising Platform. This kind of architecture can be known as server-client architecture. There are lot of advantages promoted by server client architecture where this architecture encourages integration of services, sharing resources among multiple platform and ease of maintenance (*Client Server Architecture Group Members*, no date). All of the target users, which are consumer, admin and merchant represents the client-side where they are using Advertising Platform of different module. Each of the request performed by the client-side will be sent to server in JavaScript Object Notation (JSON) form. Then, the server will handle the requests and return the response to the client-side for data sharing purposes. The communication performed through Application Programming Interface (API). Server which is the only channel to exchange the information with database.

4.2.2   User Interface Design

User interface design is the process for designers to plan and figure out the layout of the interfaces where user will be using no matter which module. Section below shows all of the user interface designs for Advertising Platform.

Figure 4.2: User Interface for Login Page

Figure 4.2 shows the user interface for login page. In login page, the user needs to enter the email and also the password in order to authenticate and login to the system. These two fields are required and incorrect inputs will prompt error messages.

Figure 4.3: User Interface for Admin Main Page

Figure 4.3 shows the main page after admin login. In this page, the basic admin information such as username, email and phone will be displayed here. There are some navigation for admin to update profile, change password as well as logout. The top navigation bar is also used to redirect admin to different management page.

Figure 4.4: User Interface of Update Profile

Figure 4.4 shows the user interface of update profile. Once the page is completely loaded, the current user information will be filled automatically in the fields. The user can reenter their username, email or phone to update it.

Figure 4.5: User Interface of Change Password

Figure 4.5 shows the user interface of change password. At here, user needs to enter the current password and enter twice for the new passwords as the confirmation. No matter if the old password is incorrect or the new password are not matched, then the change password operation will not be success.

Figure 4.6: User Interface of Insert Payment Plan

Figure 4.6 shows the user interface of inserting a new payment plan. Admin will enter the plan name, price, the plan description, the time duration for that plan and also the number of advertisement offered.

Figure 4.7: User Interface of View Payment Plan

Figure 4.7 shows the user interface of view payment plan. Admin can view all of the payment plan existed in the database. For those payment plan, admin can do the administrative tasks to update and delete it if necessary.

Figure 4.8: User Interface for View Voucher

Figure 4.8 shows the user interface for view voucher. The voucher will come out with three different status of Pending, Approved, Declined. Admin is able to change the voucher's status if necessary.

Figure 4.9: User Interface of Add Advertisement

Figure 4.9 shows the user interface of adding new advertisement. Merchant can add new advertisement by adding the title, subtitle, description and also the image of the advertisement.

Figure 4.10: User Interface of View Advertisement

Figure 4.10 shows the user interface of view advertisement. All of the advertisements inserted by the merchant login will be displayed. With that, merchant can just manage their own advertisements by either update it or delete it from the system.

Figure 4.11: User Interface of Add Voucher

Figure 4.11 shows the user interface of adding new voucher. In this page, merchant needs to enter the voucher name, description, coins, quantity and expired date as well. At last, merchant needs to upload the voucher image.

View Voucher

Voucher Image	Voucher Name	Voucher Description	Voucher Allocated Coins	Voucher Quantity	Voucher Valid Till	Voucher Status		
	Sunshine Voucher	cash voucher	200	99	1 Aug 2021	Approved	Update	Delete
	Pizzahut RM 5 Cash Voucher	You can get offer of RM 5	1000	60	1 Jul 2021	Approved	Update	Delete
	llaollao RM 10 cash voucher	You get RM 10	3000	40	30 Jun 2021	Approved	Update	Delete

Figure 4.12: User Interface of View Voucher

Figure 4.12 shows the user interface of view voucher. Merchant can view all of his vouchers and same goes to the management process of update and delete operation.

Subscribe Payment Plan

Plan Name	Price	Description	Duration	Advertisement Count	
Bombastic Weekly RM10	10	You can post 3 advertisements in the week	7	3	Subscribe
Bombastic Monthly RM35	35	You can post 7 advertisements in a month	30	7	Subscribe
Bombastic Yearly 300	300	You can upload 100 advertisements in one year	365	100	Subscribe

Figure 4.13: User Interface of Subscribe Payment Plan

Figure 4.13 shows the user interface of subscribe payment plan. Merchant can choose for the suitable payment plan available and subscribe it after finishing the PayPal payment gateway implemented.

4.2.3   Database Design

Database design is a necessary step to be implemented for creating and maintaining the business's data management system. There are three abstraction layers of database design which are conceptual, logical and physical database design. In the proposed system, the Database Management System (DBMS) chosen is MongoDB. MongoDB is a well-established, no relational DBMS which offering more flexibility and scalability (*Comparing the Differences - MongoDB vs MySQL | MongoDB*, no date). However, the database design no matter for each abstraction layer will quite similar as RDBMS which stands for relational DBMS (Shin *et al.*, 2017).

4.2.3.1 Conceptual Database Design

Conceptual database design is the process to draft the user's requirements into conceptual schema of database look. Conceptual schema does not intended to bring out the data storage structure, therefore UML conceptual data model can be used for both relational DBMS and non-relational DBMS. Figure 4.14 shows the conceptual database design for Advertising Platform.
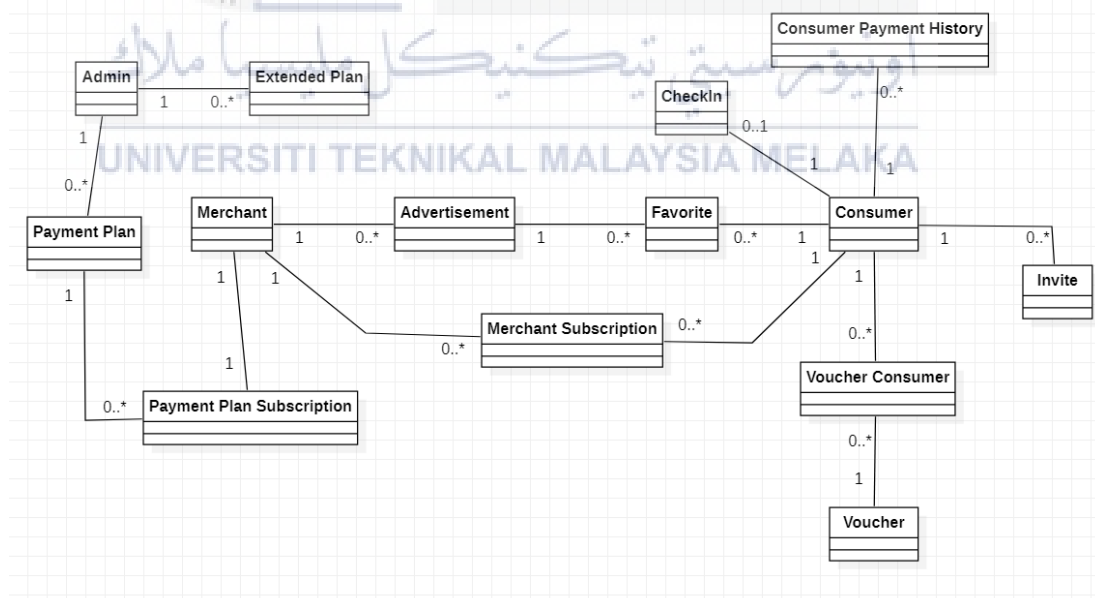
Figure 4.14: Conceptual Data Model for Advertising Platform

4.2.3.2 Logical Database Design

Logical database design is the continuity from the conceptual database design where the columns in documents will be attached to the collections. Some constraints will be identified as well such as primary key (PK) and foreign key (FK). Figure 4.15 shows the logical database design for Advertising Platform.
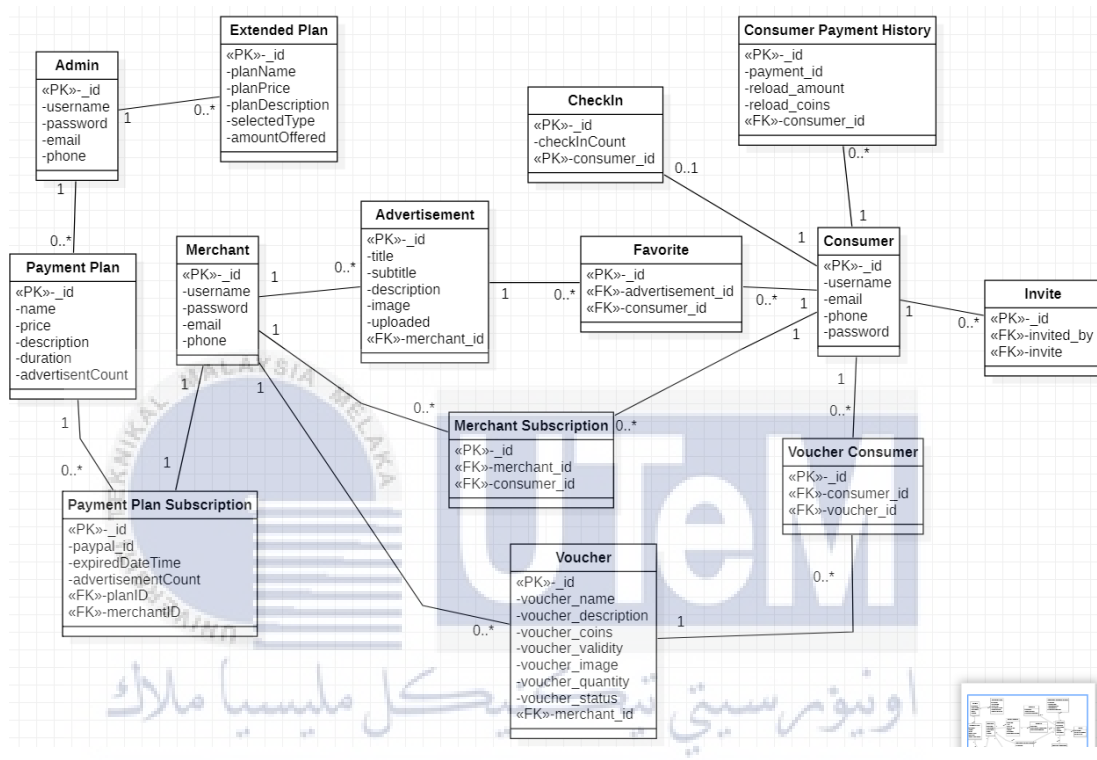
Figure 4.15: Logical Data Model for Advertising Platform

4.3   Detailed Design

After defining high-level design, next phase will be lower-level design which is known as detailed design(Anderson, no date). According to IEEE, detailed design phase will redefine and expand the preliminary design of a system component to extent design until it can be implemented into actual system (Ieee, 1990).

4.3.1   Data Flow Diagram

Data flow diagram is used to visualize the information flows within a system. It helps to show the scope and system boundaries and it acts as good communication tool for system analyst to represent ideas to others (*Visual Paradigm What is Data*

Flow Diagram (DFD)? How to Draw DFD?, 2012s). Figursssse 4.16 shows the data flow diagram for Advertising Platform.
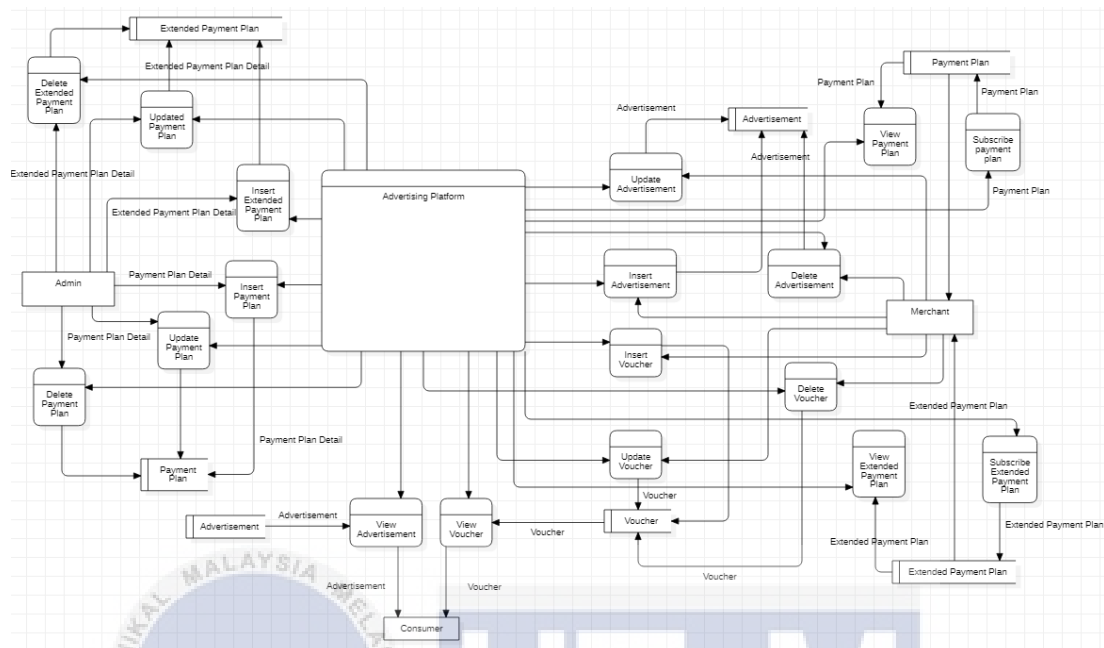
Figure 4.16: Detail Data Flow Diagram

Figure 4.16 shows the detail data flow diagram. This data flow diagram is the extension from the level zero data flow diagram as shown in Figure 3.2. Every external entity of voucher, advertisement, payment plan and extended payment plan has been distributed into the submodules of insert, delete and update. After all of the data done, the information updated will be stored into the collection of that particular management item. For the part of viewing the data, the data information will be retrieved from that particular data store and display it to the targeted user. The middleware of Advertising Platform acts as a data sharing center.

4.3.2 Physical Database Design

The physical database design stage should be implemented right after the logical database design. However, the physical database design for NoSQL is represented in the form of document data model. This is because the non-relational DBMS store the data in the form of documents within the collection. Figure 4.17 represents the document data model for Advertising Platform.
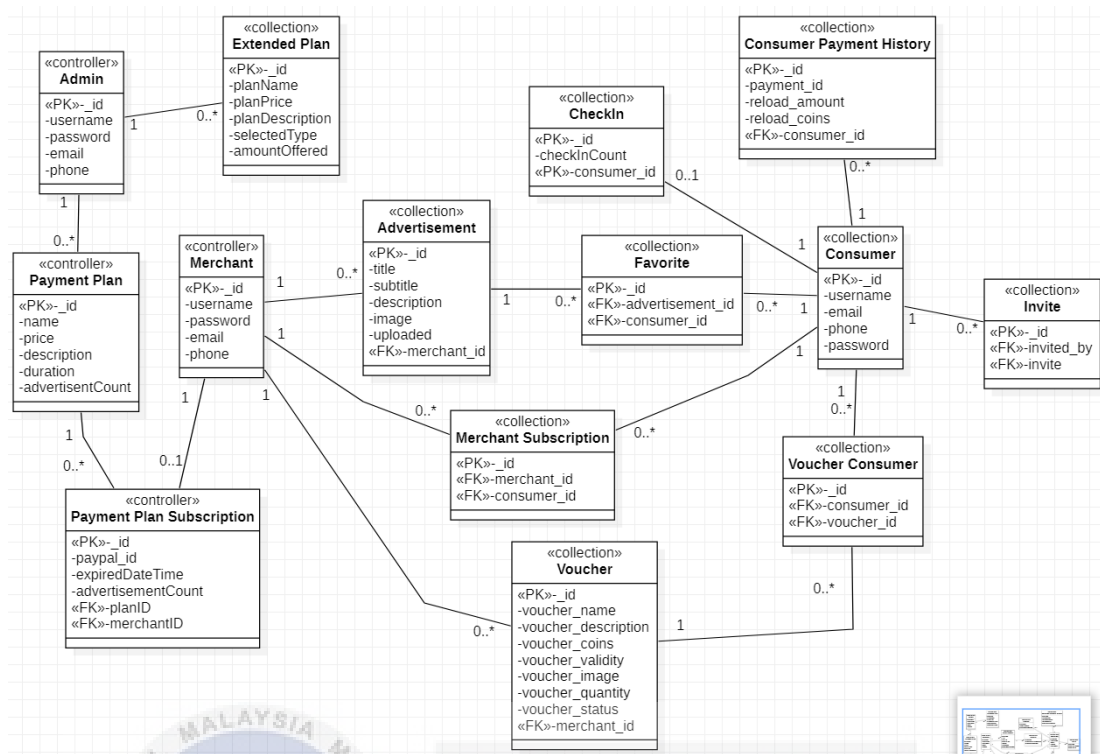
Figure 4.17: Document Data Model for Advertising Platform

4.4 Conclusion

In conclusion, Chapter 4 discussed all necessary diagrams design used to model the requirement analyzed. The design includes the architecture design, high-level design and detailed design of Advertising Platform. In next chapter, the implementation of the system will be discussed as the phase of the software development.

CHAPTER 5: IMPLEMENTATION

5.1   Introduction

This chapter describes all of the activities that will be involved in the implementation phase and also some configurations before move into testing phase.

5.2   Software Development Environment Setup

This project is built in two separate modules, one is web module and another one is mobile module. Both modules are using different configurations, therefore the setup environment will be different as well.
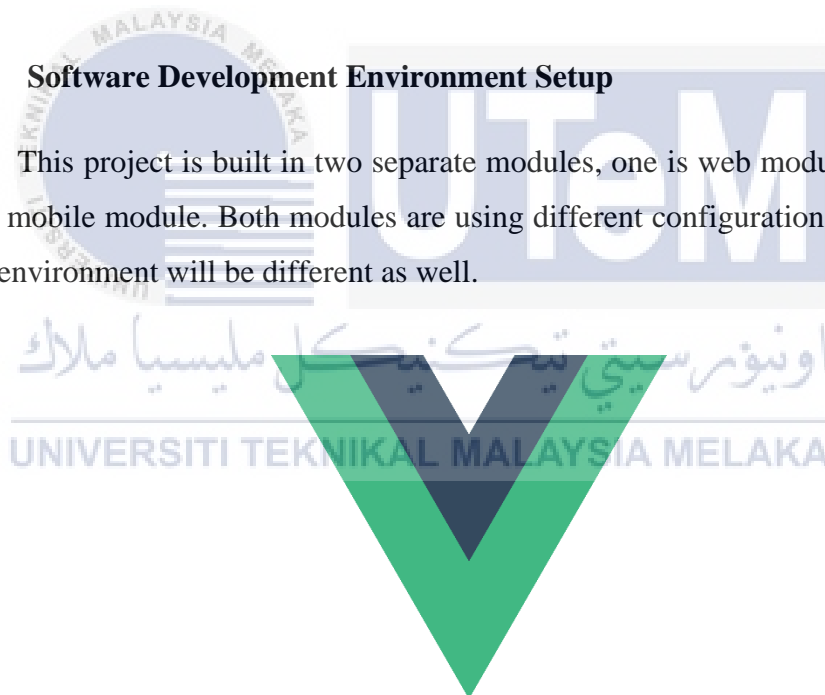
Figure 5.1: Logo of Vue.js

Figure 5.1 shows the logo of Vue.js. In order to run the client-side of web module, the front-end part, that is what users see, is built by using one of the JavaScript framework which is called as Vue.js. It is a progressive framework developed by a Google employee named Evan You for building user interfaces, which is focusing on view layer only. Therefore, it also provides some libraries for easily pickup and communicate with other libraries (Pšenák and Tibenský, 2020).

Figure 5.2: Logo of Node.js

Figure 5.2 shows the logo of Node.js. Node.js is a free open source server environment which used JavaScript as the scripting language. When we are developing web application, web server is necessary to exist for return the content to the client requesting for the page. Therefore, Node.js takes place as the web server for throwing the content back to the one who request for that. However, server is different from web server where server is used to listen to the requests made by the clients and hence returning the responses based on the requests made by clients over the network.
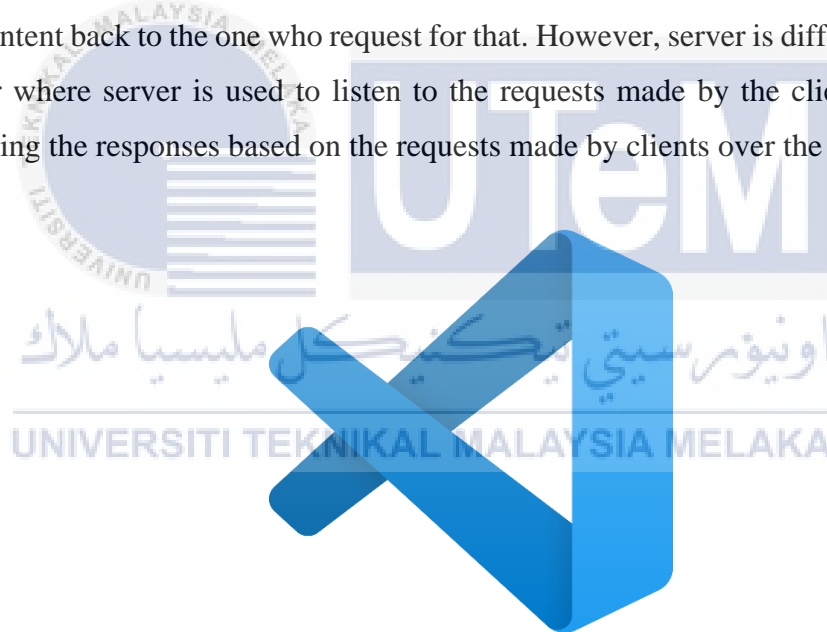
Figure 5.3: Logo for Visual Studio Code

Figure 5.3 shows the logo of visual studio code. Visual Studio Code is a code editor which is optimized for building multiple programming languages and providing certain debugging functionalities. It is developed by Microsoft with numerous of built-in extensions, plugins and the feature of Intelli-Sense which can use to detect the uncompleted code or incorrect syntax helps developers a lot in solving bugs and problems.

Figure 5.4: Logo for Android Studio

Figure 5.4 shows the logo of Android Studio. For the client-side of mobile module, the operating system chosen to be developed is Android OS. According to Statista, android maintained its leading position within the mobile operating system with the percentage as higher as 71.93%(S. O'Dea, 2021). Android Studio is a general and free tool developed by Google in 2013 for developers to provide an Integrated Development Environment (IDE) for Android developers. It helps to build the highest quality of code by using the built-in extensions and also the feature of IntelliJ IDEA software to pronoun the errors before running to test. Besides, Java is chosen as the programming language to code Android OS.

Figure 5.5: Logo for MongoDB

Figure 5.5 shows the logo for MongoDB. MongoDB is a document-oriented NoSQL database which supports high volume of data storage. All of the data is stored in the form of JSON format. The characteristic of MongoDB is the scalability and the flexibility provided for the developers for querying the indexed documents from the collections. Besides, it also provides enterprise-grade support and it supports multiple

programming languages to develop by using its external libraries imported. MongoDB is suitable to be chosen especially when the methodology used is rapid iterative development (*Why Use MongoDB & When to Use It? | MongoDB*, 2021).

For the environment architecture, Node.js and Vue.js will be run by using the laptop as the web module. Once the Node.js server is started, then it is ready to accept requests sent from the client-side either from the perspective of Vue.js or mobile Android application. However, Node.js will connect to MongoDB as long as the server is started. For the testing environment, the domain used is called as localhost which located at the port of 127.0.0.1. In case the Android debug environment is tested by using the emulator, or else the mobile used for testing and the device which run server should be connected to the same network for data sharing unless the server is uploaded to the domain web hosting.

5.3 Software Configuration Management

Software configuration management is a supporting software lifecycle where it will benefit onto the project management, the entire development process and further maintenance with assurance activities (R Champagne and A April, 2014). A formal definition from IEEE stated that it is the process of identifying and defining the software configuration items in the system, keeps on controlling the changes throughout the entire development lifecycle, recording and reporting the change requests, and verifying the completeness and correctness of the product developed (*Software Configuration Management Professor Hossein Saiedian EECS811: Software Project Management*, no date).

5.3.1 Configuration Environment Setup

After installing everything listed from Figure 5.1 to Figure 5.5, we need to configure the environment for the applications to run. First, create empty folder to locate the Node.js server environment. Node.js makes use of express to act as back-end server and the concept of router to act as web server. After that, Vue deployment server service can be started as well after the starting of Node.js server. For the part of Android application, as long as the USB debugging is enabled on the testing phone, then the installation of applications can be done. In case of MongoDB as the DBMS,

unlike MySQL, the collections can be created instantly using JavaScript and the flexibility provided ease the development tasks.

5.4 Version Control Procedure

In case of unpredictable condition to be occurred, the developed system will be backup from time to time. It is scheduled to back up the file daily by using a backup tool called FBackup. FBackup is free data backup software which also encourages the data security and protection. Besides, backup the folders in multiple locations either the physical storage or cloud services.

5.5 Implementation Status

Table 5.1: Progress of the development status

No.	Module Name	Description	Duration (days)
1	User authentication	This module will allow the all of the targeted users to login to the systems by using their own credentials.	3
2	Manage payment plan	This module will allow admin to manage the payment plan from the perspective of insertion, removing and updating the payment plan.	4
3	Manage extended payment plan	This module will allow admin to manage the extended payment plan from the perspective of insertion, removing and updating the payment plan.	2
4	Manage advertisement	This module will allow merchant to manage their advertisements from the	5

		perspective of insertion, removing and updating the advertisement.	
5	Manage voucher	This module will allow merchant to manage their vouchers from the perspective of insertion, removing and updating the voucher.	4
6	Subscribe Merchant	This module will allow consumer to subscribe to a particular merchant page.	5
7	Like and share advertisements	This module will allow consumer to like and share the advertisements	3
8	Invite friends	This module will allow consumers to invite their friends to the application.	3
9	Check-in	This module will allow consumers to check in to the system once per day.	3

5.6   Conclusion

In conclusion, this chapter shows the required software development environment setup, which means the necessary installation needed to be done and the software configuration management which consists of configuration environment setup, version control procedure, and the implementation status. In next chapter, the implemented system will be proceed to the testing phase.

CHAPTER 6: TESTING

6.1 Introduction

This chapter describes all of the activities that will be involved in the testing phase which are test plan, test strategy, test design and test results with analysis.

6.2 Test Plan

6.2.1 Test Organization

In general, there are two testers invited to test the system which is known as system testing. The system testing will be done through the test cases. The testers invited are my friends especially during this pandemic of COVID-19. There are total of two testers, which are Esther Chin Xin Rou and Elvis Ha Heng Siong. They will be testing together and hence there will be one test case result only.

6.2.2 Test Environment

The actual location for the testing process to be conducted is either my house or tester house depends on the situation. The system will be tested by using localhost to ease the testing process. All of the system configurations are preset as in Chapter 5.3, and the hardware used will be the laptop which is used to develop the system. Some fundamental training are provided for the testers to understand the basic flow of the system before performing testing onto the functionality of the system and whether the system performs as it should perform. When the testing process is ongoing, they will be guided if they faced some problems or misunderstanding.

6.2.3   Test Schedule

For the testers who conduct the system testing using localhost, they will be given a day to complete the system testing based on the test cases designed. They will be tested for one cycle in this phase.

6.3   Test Strategy

For the test strategy, black-box testing is chosen in this testing phase. Black-box testing is best suited and efficient for this scenario because it separated the user's perspective from the developer's perspective. Therefore, different perspectives might help to reveal the bugs and mistakes from the programs. With this scenario, tester can test the system easily because they do not need to fulfill themselves with the knowledge of system implementation, programming languages, or any other knowledge of computer science.

6.3.1   Classes of tests

There are several type of testing can be involved in a system. In our scenario, system testing will be significant and focused. For the system testing, the test cases are designed and planned to be used by the testers for comparing the expected output and the actual output to yield the test results.

6.4   Test Design

6.4.1   Test Description

As mentioned from the section above, type of testing been chosen is the system testing which focused on the system functionality and modules developed. For the system testing, test cases will be designed and the testers can follow the test cases steps by steps in testing phase.

Table 6.1: Test Case Table Template

Test Case Number	Test Scenario	Test Cases	Test Steps	Test Data	Expected Result	Actual Result	Pass/ Fail

Table 6.1 shows the template of table columns that will be used to design the test cases for system testing. Every test case will have a unique test case number to identify among test cases and the test scenario with the test cases within a test case will be stated in the table. Test step will be proper steps for testing certain test cases and test data will be the input that is required to fill in to conduct the testing. Before the testing is conducted, the expected result will be clarified first as how the system should behave and the actual result will be the actual output and behavior performed by the system. If the expected result and the actual result are similar, then the testers will fill in pass in the pass/fail column and if the results are differ, then the testers might discussed to make it fail based on how the results differ. The test cases designed and its results are appended in Appendix 1 to Appendix 4. In general, Appendix 1 is the test cases for the login and register functionalities for the web application, Appendix 2 is the test cases for the admin modules developed whereas Appendix 3 is the test cases for the merchants modules developed. Appendix 4 is the test cases of the mobile application developed for the consumers modules.

6.4.2   Test Data

For the test data to be used in system testing, they has been listed in the test case in Appendix 1 till Appendix 4. Within those appendixes, the column test data and detail test data can be found in the column of test data. Basically, the test data can be distributed into positive test data, where the data is what the system expected from the users, and the negative test data, where it is used to test the system behavior towards error handling and input validations onto those wrong inputs entered by the users deliberately.

6.5   Test Results and Analysis

For the test case results after the system testing done by the testers, refers to Appendix 1 until Appendix 4. Based on the last column which are Pass/Fail, we can see that the actual result will be matched with the expected result and hence all of the test cases passed. With that, it can be concluded that the system functions as how it is expected to be. However, there might be some errors that still need to be review or rediscover because currently the system is running in the environment of localhost, which is definitely not same with the domain hosting. Not only that, there is no system

which is error free, the passing of test cases do not guarantee that the system will be 100% errors and bugs free. However, the system passed all of the test cases and it can be summarized that the developed system is functioned properly to some extent.

6.6   Conclusion

In conclusion, this chapter has carried out the system testing through the test cases designed. Based on the result of the various test carried out, we can conclude that the system functionalities are behaving as how it should be after been tested by the testers.

CHAPTER 7: PROJECT CONCLUSION

7.1   Observation on Weaknesses and Strengths

The strengths of the proposed system is that the system can help the merchants to promote their goods or services through advertising in the system provided. This system acts as a platform for merchants to improve or enhance their sales through advertisements inserted to introduce those new products, services or promotions to attract the attentions of the consumers. The system also comes out with lot of features to attract consumers to use the application developed in order to maximize the benefits for merchants to invest in this advertising platform. Besides, admin can earn profits through the subscriptions made by merchants or coins reloaded by consumers in order to exchange some vouchers offered by merchants.

The weaknesses of the proposed system is that it comes with only single language, which is English for now. Another weaknesses is that this system will be used in Malaysia right now since it does not come out with the foreign country versions, especially their phone number. Apart, the system will run in localhost for now and only the users within the same network as the server running can access to the proposed system.

7.2   Proposition for Improvement

There are some suggestions which can improve the current proposed system to be better. The first aspect is that the system can support multiple language packs for different kind of users because it provides freedom for the users to choose the language. Besides, the only payment gateway implemented in the system is PayPal but

modern systems usually provides the users to pay with credit cards, debit cards, online banking or some other E-wallet such as Boost, Touch and Go and Maybank QR Pay. Apart from that, the advertisement comes with image or poster maybe insufficient to achieve the advertising to the next level, but maybe advertisement in the form of video may attract more consumers, therefore the system may introduced the video advertising for the improvement in future. Not only that, the proposed web application and mobile application can be publish to a domain hosting in order to enable users to access remotely. The only mobile application developed only supported for the Android mobile operating system which may come across with iOS operating system soon.

7.3   Project Contribution

This project will make contribution towards the advertising domain where it provides a platform for the targeted users to earn profits and their benefits. With that, the admin can earn profits through the merchants to publish their advertisements through the subscriptions plan and consumers when they reloaded some coins to their accounts. Other than that, it helps to promote the business process of the merchants especially when they are making some limited editions or promotions to attract the attentions of the consumers. For the consumers, they will be able to view the advertisements when they are intended to do so and they can earn coins when they checked in everyday which can be used to redeem vouchers offered by certain merchants.

7.4   Conclusion

In conclusion, the advertising platform fulfilled the objectives stated, therefore the system purposes are achieved. The proposed system used the programming languages of JavaScript with the framework of Node.js as the backend server and Vue.js as the frontend of web application whereas Java will be used to develop mobile application in Android operating system environment. With the assistance of my friends and supervision from my supervisor, I completed the development of the system.

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APPENDICES

Appendix 1

Test Case Number	Test Scenario	Test Cases	Test Steps	Test Data	Expected Result	Actual Result	Pass /Fail
AP-W1	Verify the navigation button	Navigation button bring user to corresponding page	1. Click the navigation button		Redirect user to corresponding page	Redirect user to corresponding page	Pass
AP-W2	Verify Username in Register page	Username cannot be left empty	1. Do not enter value in username field 2. Click Sign up button		System shows an error message and prompt the user to enter username	System shows an error message and prompt the user to enter username	Pass
		Username cannot be more than 15 characters	1. Enter 16 characters in username field	aaaaaaaaaaaaaaaa	System shows the error message of maximum 15 characters	System shows the error message of maximum 15 characters	Pass
		Username cannot be less than 3 characters	1. Enter 2 characters in username field	aa	System shows the error message of minimum 3 character	System shows the error message of minimum 3 character	Pass

		Username must be within 3-15 characters	1. Enter random character from length of 3 to 15	1. Lee 2. Jong 3. leejongfeng	System accepts the username input	System accepts the username input	Pass
	Verify email field in Register page	Email cannot be left empty	1. Do not enter value in email field 2. Click Sign up button		System shows an error message and prompt the user to enter email	System shows an error message and prompt the user to enter email	Pass
		Email cannot be invalid format	1. Enter invalid email in email field	1. lee98 2. lee98@	System shows an error message and prompt the user to enter valid email	System shows an error message and prompt the user to enter valid email	Pass
		Email must be unique	1. Enter an existing email account	1. leejongfeng98 @gmail.com	System shows an error message and prompts the user to enter different email address	System shows an error message and prompts the user to enter different email address	Pass
		Email must be valid format	1. Enter valid email in email field	1. leejongfeng98 @gmail.com 2. b031810220@ student.utem. edu.my	System accepts the email input	System accepts the email input	Pass

	Verify Password field in Register Page	Password cannot be left empty	1. Do not enter a value in password field 2. Click Sign up button		System shows an error message and prompt the user to enter password	System shows an error message and prompt the user to enter password	Pass
		Password cannot be less than 8 characters	1. Enter 7 characters in password field	bbbbbbb	System shows the error message of minimum 8 characters	System shows the error message of minimum 8 characters	Pass
		Password cannot be more than 15 characters	1. Enter 16 characters in password field	aaaaaaaaaaaaaaaa	System shows the error message of maximum 15 characters	System shows the error message of maximum 15 characters	Pass
		Password should be 8-15 characters	1. Enter 8-15 characters randomly in password field	1.aaa980616 2.aaaaaaa981207	System accepts the password input	System accepts the password input	Pass
	Verify Confirm Password field in Register page	Confirm Password cannot be left empty	1. Do not enter a value in confirm password field 2. Click Sign up button		System shows an error message and prompt the user to enter confirm password	System shows an error message and prompt the user to enter confirm password	Pass
		Confirm Password must be similar to password field	1. Enter different value for password and confirm password field	1. Password: 12345678 Confirm Password: 123456789	System shows an error message and prompts the user to enter match password	System shows an error message and prompts the user to enter match password	Pass

	Verify Phone field in Register Page	Phone cannot be left empty	1. Do not enter a value in phone field		System shows an error message and prompts the user to enter phone number	System shows an error message and prompts the user to enter phone number	Pass
		Phone must be all number	1. Enter alphabet or symbols in phone field	1. QWERT 2. !@#$	System shows an error message and promppts the user to enter number only	System shows an error message and promppts the user to enter number only	Pass
		Phone must be at least 10 numbers	1. Enter number with length of 9	1. 012345678	System shows an error message and prompts the user to enter minimum 10 numbers	System shows an error message and prompts the user to enter minimum 10 numbers	Pass
		Phone must be at most 11 numbers	1. Enter number with length of 12	1. 012345678912	System shows an error message and prompts the user to enter maximum 11 numbers	System shows an error message and prompts the user to enter maximum 11 numbers	Pass
		Phone must be unique	1. Enter an existing phone	1. 0168762137	System shows an error message and prompts the user to enter another phone	System shows an error message and prompts the user to enter another phone	Pass
	Verify Profile Image field	Profile Image field can only accept image file type	1. Upload a pdf document 2. Click Sign up button	1. abc.pdf	System reject the file uploaded and prompts the user to upload an image	System reject the file uploaded and prompts the user to upload an image	Pass

AP-W3	Verify email field in Login page	Email cannot be left empty	1. Do not enter a value in email field 2. Click Login		System shows an error message and prompts the user to enter an email	System shows an error message and prompts the user to enter an email	Pass
		Email cannot be invalid format	1. Enter invalid email in email field	1. lee98 2. lee98@	System shows an error message and prompt the user to enter valid email	System shows an error message and prompt the user to enter valid email	Pass
		Email must be valid format	1. Enter valid email in email field	1. leejongfeng98@gmail.com 2. b031810220@student.utem.edu.my	System accepts the email input	System accepts the email input	Pass
	Verify Password field in Login Page	Password field must not be left empty	1. Do not enter a value in password field 2. Click Sign up button		System shows an error message and prompts the user to enter password	System shows an error message and prompts the user to enter password	Pass
		Password cannot be less than 8 characters	1. Enter 7 characters in password field	bbbbbbb	System shows the error message of minimum 8 characters	System shows the error message of minimum 8 characters	Pass
		Password cannot be more than 15 characters	1. Enter 16 characters in password field	aaaaaaaaaaaaaaaa	System shows the error message of maximum 15 characters	System shows the error message of maximum 15 characters	Pass

		Password should be 8-15 characters	1. Enter 8-15 characters randomly in password field	1.aaa980616 2.aaaaaaa981207	System accepts the password input	System accepts the password input	Pass
AP-W4	Verify Register function	All valid data should come out with success registration	1. Enter valid data in all required field. 2. Press "Register" button		System displays the success message	System displays the success message	Pass
	Verify Login function	Incorrect combination of email and password cannot login to the system	1. Enter wrong email or password to test the login functionality. 2. Press "Login" button	1. Wrong email with correct password 2. Wrong password with correct email 3. Wrong email with wrong password	System displays error message and prompts the admin to relogin	System displays error message and prompts the admin to relogin	Pass
		Correct combination of email and password should login to the system	1. Enter correct email and password. 2. Press "Login" button	1. Correct email with correct password	System redirects the user to the page	System redirects the user to the page	Pass
	Verify Logout function	System should be able to logout	1. Click "Log out" button in Homepage.		System logouts the user from system	System logouts the user from system	Pass

		user from the system					

Appendix 2

AP-W5	Verify View Payment Plan	All existing payment plans should be displayed	1. Admin moves cursor to Payment Plan 2. Admin clicks View		System redirects the admin to view the payment plan page and data displayed correctly	System redirects the admin to view the payment plan page and data displayed correctly	Pass
	Verify Insert Payment Plan	Plan name cannot be left empty	1. Do not enter any value in Plan name field 2. Click Insert button		System displays an error message and prompts the admin to enter plan name	System displays an error message and prompts the admin to enter plan name	Pass
		Plan name cannot be exceed 50 characters	1. Enter 51 characters in Plan name field	HaloWorldThisIs TestingPayment PlanName WhichMoreTh an50Characters	System displays an error message and prompts the admin to enter maximum 50 characters	System displays an error message and prompts the admin to enter maximum 50 characters	Pass
		Plan price cannot be left empty	1. Do not enter any value in Plan price field		System displays an error message and prompts the admin to enter plan price	System displays an error message and prompts the admin to enter plan price	Pass

		2. Click Insert button					
		Plan price cannot be more than two decimal places	1. Enter number with more than 2 decimal places in Plan price field 2. Click Insert button	1) 133.999 2) 167.999	System displays an error message and prompts the admin to enter maximum 2 decimal places	System displays an error message and prompts the admin to enter maximum 2 decimal places	Pass
		Plan price should only accept number	1. Enter characters or symbols in Plan price field	!@#$%^&	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass
		Plan price should be at least 0	1. Enter number which is negative value.	1) -1 2) -999.98	System displays an error message and prompts the admin to enter number greater than zero	System displays an error message and prompts the admin to enter number greater than zero	Pass
		Plan description should not be left empty	1. Do not enter any value in Plan Description field 2. Press Insert button		System displays an error message and prompts the admin to enter plan description	System displays an error message and prompts the admin to enter plan description	Pass

		Plan description should not be greater than 100 characters	1. Enter 101 characters in Plan Description field.	jdhfsdhfjkhjkfhj kfhsjkfhsdfjkshd fsjdkfhsdjkfhsdfj sdhfjksdfhsdjkfh sdkjfhsdjfkhsdfj ksdhfjksdhfjsdkh fsdkwewewewe wewe3w432343 2432432sadaewf dfsd	System displays an error message and prompts the admin to enter plan description with maximum length of 100	System displays an error message and prompts the admin to enter plan description with maximum length of 100	Pass
		Plan duration field should not be left empty	1. Do not enter any value in plan duration field. 2. Press Insert button.		System displays an error message and prompts the admin to enter plan duration	System displays an error message and prompts the admin to enter plan duration	Pass
		Plan duration field should contain number only	1. Enter symbol or letter in Plan duration field.	1) !@#^&* 2) wqreuyukeyf	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass
		Plan duration field should contain number greater than zero	1. Enter negative value in Plan duration field.	1) -5	System displays an error message and prompts the admin to enter positive value	System displays an error message and prompts the admin to enter positive value	Pass

		Plan advertisement count field should not be left empty	1. Do not enter any value in plan advertisement count field. 2. Press Insert button.		System displays an error message and prompts the admin to enter plan advertisement count field	System displays an error message and prompts the admin to enter plan advertisement count field	Pass
		Plan advertisement count field should contain number only	1. Enter symbol or letter in Plan advertisement count field.	1) @#$% 2) wejh	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass
		Plan advertisement count field should contain number greater than zero	1. Enter negative value in Plan advertisement count field.	1) -190	System displays an error message and prompts the admin to enter positive value	System displays an error message and prompts the admin to enter positive value	Pass
		Insert of new payment plan with all valid data should be success	1. Enter data with correct format for each required field. 2. Press Insert button		System displays the success message	System displays the success message	Pass

	Verify Update Payment Plan	Plan name cannot be left empty	1. Do not enter any value in Plan name field 2. Click Update button		System displays an error message and prompts the admin to enter plan name	System displays an error message and prompts the admin to enter plan name	Pass
		Plan name cannot be exceed 50 characters	1. Enter 51 characters in Plan name field	HaloWorldThisIs TestingPayment Pl anNameWhichMo o reThan50Cha racters	System displays an error message and prompts the admin to enter maximum 50 characters	System displays an error message and prompts the admin to enter maximum 50 characters	Pass
		Plan price cannot be left empty	1. Do not enter any value in Plan price field 2. Click Update button		System displays an error message and prompts the admin to enter plan price	System displays an error message and prompts the admin to enter plan price	Pass
		Plan price cannot be more than two decimal places	1. Enter number with more than 2 decimal places in Plan price field 2. Click Update button	1) 133.999 2) 167.999	System displays an error message and prompts the admin to enter maximum 2 decimal places	System displays an error message and prompts the admin to enter maximum 2 decimal places	Pass

		Plan price should only accept number	1. Enter characters or symbols in Plan price field	!@#$%^&	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass
		Plan price should be at least 0	1. Enter number which is negative value.	1) -1 2) -999.98	System displays an error message and prompts the admin to enter number greater than zero	System displays an error message and prompts the admin to enter number greater than zero	Pass
		Plan description should not be left empty	1. Do not enter any value in Plan Description field 2. Press Update button		System displays an error message and prompts the admin to enter plan description	System displays an error message and prompts the admin to enter plan description	Pass
		Plan description should not be greater than 100 characters	1. Enter 101 characters in Plan Description field.	jdhfsdhfjkhjkfhj kfh sjkfhsdfjkshdfsjd kf hsdjkfhsdfjsdhfj ksd fhsdjkfhsdkjfhsd jfk hsdfjksdhfjksdhf jsd	System displays an error message and prompts the admin to enter plan description with maximum length of 100	System displays an error message and prompts the admin to enter plan description with maximum length of 100	Pass

				khfsdkwewewewe wewe3w432343 24 32432sadaewfdf sd			
		Plan duration field should not be left empty	1. Do not enter any value in plan duration field. 2. Press Update button.		System displays an error message and prompts the admin to enter plan duration	System displays an error message and prompts the admin to enter plan duration	Pass
		Plan duration field should contain number only	1. Enter symbol or letter in Plan duration field.	1) !@#^&* 2) wqreuyukeyf	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass
		Plan duration field should contain number greater than zero	1. Enter negative value in Plan duration field.	1) -5	System displays an error message and prompts the admin to enter positive value	System displays an error message and prompts the admin to enter positive value	Pass

		Plan advertisement count field should not be left empty	1. Do not enter any value in plan advertisement count field. 2. Press Update button.		System displays an error message and prompts the admin to enter plan advertisement count field	System displays an error message and prompts the admin to enter plan advertisement count field	Pass
		Plan advertisement count field should contain number only	1. Enter symbol or letter in Plan advertisement count field.	1) @#$% 2) wejh	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass
		Plan advertisement count field should contain number greater than zero	1. Enter negative value in Plan advertisement count field.	1) -190	System displays an error message and prompts the admin to enter positive value	System displays an error message and prompts the admin to enter positive value	Pass
		Update of payment plan should work with all data with correct format	1. Enter data with correct format for each required field. 2. Press Update button		System displays the success message	System displays the success message	Pass

	Verify Delete Payment Plan	System should make confirmation with admin	1. Press Delete button on any payment plan displayed		System displays the confirmation message and once admin clicks OK, the payment plan is removed and if admin clicks Cancel, the payment plan still exists.	System displays the confirmation message and once admin clicks OK, the payment plan is removed and if admin clicks Cancel, the payment plan still exists.	Pass
AP-W6	Verify View Extended Payment Plan	All existing extended payment plans should be displayed	1. Admin moves cursor to Extended Payment Plan 2. Admin clicks View		System redirects the admin to view extended payment plan page and data displayed correctly	System redirects the admin to view extended payment plan page and data displayed correctly	Pass
	Verify Insert Extended Payment Plan	Plan name cannot be left empty	1. Do not enter any value in Plan name field 2. Click Insert button		System displays an error message and prompts the admin to enter extended plan name	System displays an error message and prompts the admin to enter extended plan name	Pass

		Plan name cannot be exceed 50 characters	1. Enter 51 characters in Plan name field	HaloWorldThis IsTestingPaym entPlanName WhichMoreTh an50Characters	System displays an error message and prompts the admin to enter maximum 50 characters	System displays an error message and prompts the admin to enter maximum 50 characters	Pass
		Plan price cannot be left empty	1. Do not enter any value in Plan price field 2. Click Insert button		System displays an error message and prompts the admin to enter plan price	System displays an error message and prompts the admin to enter plan price	Pass
		Plan price cannot be more than two decimal places	1. Enter number with more than 2 decimal places in Plan price field 2. Click Insert button	1) 133.999 2) 167.999	System displays an error message and prompts the admin to enter maximum 2 decimal places	System displays an error message and prompts the admin to enter maximum 2 decimal places	Pass
		Plan price should only accept number	1. Enter characters or symbols in Plan price field	!@#$%^&	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass
		Plan price should be at least 0	1. Enter number which is negative value.	1) -1 2) -999.98	System displays an error message and prompts the admin	System displays an error message and prompts the admin	Pass

					to enter number greater than zero	to enter number greater than zero	
		Plan Type should not be left unchosen	1. Do not choose Plan Type available. 2. Press Insert button.		System displays an error message and prompts the admin to choose a plan type to continue	System displays an error message and prompts the admin to choose a plan type to continue	Pass
		Plan description should not be left empty	1. Do not enter any value in Plan Description field 2. Press Insert button		System displays an error message and prompts the admin to enter plan description	System displays an error message and prompts the admin to enter plan description	Pass
		Plan description should not be greater than 100 characters	1. Enter 101 characters in Plan Description field.	jdhfsdhfjkhjkfhj kfhsjkfhsdfjksh dfsjdkfhsdjkfhs dfjsdhfjksdfhsd jkfhsdkjfhsdjfkh sdfjksdhfjksdhfj sdkhfsdkwewe wewewewe3w 43234324324 32sadaewfdfsd	System displays an error message and prompts the admin to enter plan description with maximum length of 100	System displays an error message and prompts the admin to enter plan description with maximum length of 100	Pass

		Plan amount offered field should not be left empty	1. Do not enter any value in plan amount offered field. 2. Press Insert button.		System displays an error message and prompts the admin to enter plan amount offered	System displays an error message and prompts the admin to enter plan amount offered	Pass
		Plan amount offered field should contain number only	1. Enter symbol or letter in Plan amount offered field.	1) !@#^&* 2) wqreuyukeyf	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass
		Plan amount offered field should contain number greater than zero	1. Enter negative value in Plan amount offered field.	1) -5	System displays an error message and prompts the admin to enter positive value	System displays an error message and prompts the admin to enter positive value	Pass
	Verify Update Extended Payment Plan	Plan name cannot be left empty	1. Do not enter any value in Plan name field 2. Click Update button		System displays an error message and prompts the admin to enter plan name	System displays an error message and prompts the admin to enter plan name	Pass

		Plan name cannot be exceed 50 characters	1. Enter 51 characters in Plan name field	HaloWorldThis IsTestingPa ymentPla nNameWh ichMoreTh an50Chara cters	System displays an error message and prompts the admin to enter maximum 50 characters	System displays an error message and prompts the admin to enter maximum 50 characters	Pass
		Plan price cannot be left empty	1. Do not enter any value in Plan price field 2. Click Update button		System displays an error message and prompts the admin to enter plan price	System displays an error message and prompts the admin to enter plan price	Pass
		Plan price cannot be more than two decimal places	1. Enter number with more than 2 decimal places in Plan price field 2. Click Update button	1) 133.999 2) 167.999	System displays an error message and prompts the admin to enter maximum 2 decimal places	System displays an error message and prompts the admin to enter maximum 2 decimal places	Pass
		Plan price should only accept number	1. Enter characters or symbols in Plan price field	!@#$%^&	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass

		Plan price should be at least 0	1. Enter number which is negative value.	1) -1 2) -999.98	System displays an error message and prompts the admin to enter number greater than zero	System displays an error message and prompts the admin to enter number greater than zero	Pass
		Plan amount offered field should not be left empty	1. Do not enter any value in plan amount offered field. 2. Press Update button.		System displays an error message and prompts the admin to enter plan amount offered	System displays an error message and prompts the admin to enter plan amount offered	Pass
		Plan amount offered field should contain number only	1. Enter symbol or letter in Plan amount offered field.	1) !@#^&* 2) wqreuyukeyf	System displays an error message and prompts the admin to enter number only	System displays an error message and prompts the admin to enter number only	Pass
		Plan amount offered field should contain number greater than zero	1. Enter negative value in Plan amount offered field.	1) -5	System displays an error message and prompts the admin to enter positive value	System displays an error message and prompts the admin to enter positive value	Pass

	Verify Delete Extended Payment Plan	System should make confirmation with admin	1. Press Delete button on any extended payment plan displayed		System displays the confirmation message and once admin clicks OK, the payment plan is removed and if admin clicks Cancel, the payment plan still exists.	System displays the confirmation message and once admin clicks OK, the payment plan is removed and if admin clicks Cancel, the payment plan still exists.	Pass
AP-W7	Verify View Voucher	System should be able to display all of vouchers	1. Admin moves the cursor to voucher. 2. Admin presses View button		System displays all of the vouchers available	System displays all of the vouchers available	Pass
	Verify Approve Voucher Function	All pending or declined voucher is able to be approved by admin	1. Admin chooses one of the pending or declined voucher 2. Press Approve button		System displays success message onto the approval of the voucher	System displays success message onto the approval of the voucher	Pass

	Verify Decline Voucher Function	All pending or approved voucher is able to be declined by admin	1. Admin chooses one of the pending or approved voucher 2. Press Decline button		System displays success message onto the decline of the voucher	System displays success message onto the decline of the voucher	Pass
AP-W8	Verify View Sales Today	Admin will be able to view the sales today	1. Admin clicks 'View Sales' button from Home. 2. Click "Check" button under section of View Total Sales Today		System displays the total sales of that day in the form of total amount and table	System displays the total sales of that day in the form of total amount and table	Pass
	Verify View Sales By Date	Admin will be able to view the sales of a particular date	1. Admin clicks 'View Sales' button from Home. 2. Under section of View Sales By Date, admin selects a date from the calendar		System displays the total sales of that particular date in form of amount and table	System displays the total sales of that particular date in form of amount and table	Pass

			and click "Check" button				
	Verify View Sales By Month	Admin will be able to view the total sales of selected month	1. Admin clicks 'View Sales' button from Home. 2. Under section of View Total Sales By Month, admin selects a month from the calendar and click "Check" button		System displays the total sales of that particular month in form of table, amount and graph	System displays the total sales of that particular month in form of table, amount and graph	Pass

	Verify View Sales By Year	Admin will be able to view the total sales of selected year	1. Admin clicks 'View Sales' button from Home. 2. Under section of View Total Sales By Year, admin selects a year and click "Check" button		System displays the total sales of that year in form of amount, table and graph	System displays the total sales of that year in form of amount, table and graph	Pass
AP-W9	Verify Update Profile Function	Username cannot be left empty	1. Do not enter value in username field 2. Click Update button		System shows an error message and prompt the user to enter username	System shows an error message and prompt the user to enter username	Pass
		Username cannot be more than 15 characters	1. Enter 16 characters in username field	aaaaaaaaaa aaaaaa	System shows the error message of maximum 15 characters	System shows the error message of maximum 15 characters	Pass
		Username cannot be less than 3 characters	1. Enter 2 characters in username field	aa	System shows the error message of	System shows the error message of	Pass

					minimum 3 character	minimum 3 character	
		Username must be within 3-15 characters	1. Enter random character from length of 3 to 15	1. Lee 2. Jong 3. leejongfeng	System accepts the username input	System accepts the username input	Pass
		Email cannot be left empty	1. Do not enter value in email field 2. Click Update button		System shows an error message and prompt the user to enter email	System shows an error message and prompt the user to enter email	Pass
		Email cannot be invalid format	1. Enter invalid email in email field	1. lee98 2. lee98@	System shows an error message and prompt the user to enter valid email	System shows an error message and prompt the user to enter valid email	Pass
		Email must be unique	1. Enter an existing email account	1. leejongfeng98 @gmail.com	System shows an error message and prompts the user to enter different email address	System shows an error message and prompts the user to enter different email address	Pass

		Email must be valid format	1. Enter valid email in email field	1. leejongfeng98@gmail.com 2. b031810220@student.utem.edu.my	System accepts the email input	System accepts the email input	Pass
		Phone cannot be left empty	1. Do not enter a value in phone field		System shows an error message and prompts the user to enter phone number	System shows an error message and prompts the user to enter phone number	Pass
		Phone must be all number	1. Enter alphabet or symbols in phone field	1. QWERT 2. !@#$	System shows an error message and promppts the user to enter number only	System shows an error message and promppts the user to enter number only	Pass
		Phone must be at least 10 numbers	1. Enter number with length of 9	1. 012345678	System shows an error message and prompts the user to enter minimum 10 numbers	System shows an error message and prompts the user to enter minimum 10 numbers	Pass
		Phone must be at most 11 numbers	1. Enter number with length of 12	1. 012345678912	System shows an error message and prompts the user to	System shows an error message and prompts the user to	Pass

					enter maximum 11 numbers	enter maximum 11 numbers	
		Phone must be unique	1. Enter an existing phone	1. 0168762137	System shows an error message and prompts the user to enter another phone	System shows an error message and prompts the user to enter another phone	Pass
	Verify Profile Image field	Profile Image field can only accept image file type	1. Upload a pdf document 2. Click Sign up button	1. abc.pdf	System reject the file uploaded and prompts the user to upload an image	System reject the file uploaded and prompts the user to upload an image	Pass
AP-W10	Verify Change Password Function	Old password cannot be left empty	1. Do not enter value in old password field. 2. Click "Update Password" field		System shows an error message and prompts the user to enter old password	System shows an error message and prompts the user to enter old password	Pass
		Old password cannot be less than 8 characters	1. Enter 7 characters in old password field	bbbbbbb	System shows the error message of minimum 8 characters	System shows the error message of minimum 8 characters	Pass

		Old password cannot be more than 15 characters	1. Enter 16 characters in old password field	aaaaaaaaa aaaaaaa	System shows the error message of maximum 15 characters	System shows the error message of maximum 15 characters	Pass
		Old password should be 8-15 characters	1. Enter 8-15 characters randomly in old password field	1.aaa980616 2.aaaaaaa981207	System accepts the old password input	System accepts the old password input	Pass
		New password cannot be left empty	1. Do not enter value in new password field. 2. Click "Update Password" field		System shows an error message and prompts the user to enter new password	System shows an error message and prompts the user to enter new password	Pass
		New password cannot be less than 8 characters	1. Enter 7 characters in new password field	bbbbbbb	System shows the error message of minimum 8 characters	System shows the error message of minimum 8 characters	Pass
		New password cannot be more than 15 characters	1. Enter 16 characters in new password field	aaaaaaaa aaaaaaaa	System shows the error message of maximum 15 characters	System shows the error message of maximum 15 characters	Pass
		New password should be 8-15 characters	1. Enter 8-15 characters	1.aaa980616 2.aaaaaaa981207	System accepts the new password input	System accepts the new password input	Pass

		randomly in new password field				
		Confirm Password cannot be left empty	1. Do not enter a value in confirm password field 2. Click Sign up button		System shows an error message and prompt the user to enter confirm password	System shows an error message and prompt the user to enter confirm password	Pass
		Confirm Password must be similar to new password field	1. Enter different value for new password and confirm password field	1. New Password: 12345678 Confirm Password: 123456789	System shows an error message and prompts the user to enter match new password	System shows an error message and prompts the user to enter match new password	Pass

Appendix 3

Test Case Number	Test Scenario	Test Cases	Test Ste[s	Test Data	Expected Result	Actual Result	Pass/ Fail
AP-W11	Verify View Advertisement	All existing advertisements will be displayed	1. Merchant moves cursor to Advertisement 2. Merchant clicks View		System redirects the merchant to view the advertisement page and data displayed correctly	System redirects the merchant to view the advertisement page and data displayed correctly	Pass
	Verify Insert Advertisement	Advertisement title cannot be left empty	1. Do not enter value in advertisement title 2. Press "Insert" button		System displays error message and prompts the merchants to enter advertisement title	System displays error message and prompts the merchants to enter advertisement title	Pass

		Advertisement title cannot be more than 50 characters	1. Enter 51 characters in advertisement title 2. Press "Insert" button	aaaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa	System displays error message and prompts the merchants to enter advertisement title with maximum 50 characters	System displays error message and prompts the merchants to enter advertisement title with maximum 50 characters	Pass
		Advertisement subtitle cannot be left empty	1. Do not enter value in advertisement subtitle 2. Press "Insert" button		System displays error message and prompts the merchants to enter advertisement subtitle	System displays error message and prompts the merchants to enter advertisement subtitle	Pass
		Advertisement subtitle cannot be more than 50 characters	1. Enter 51 characters in advertisement subtitle 2. Press "Insert" button	aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaa	System displays error message and prompts the merchants to enter advertisement subtitle with maximum 50 characters	System displays error message and prompts the merchants to enter advertisement subtitle with maximum 50 characters	Pass

		Advertisement description cannot be left empty	1. Do not enter value in advertisement description 2. Press "Insert" button		System displays error message and prompts the merchants to enter advertisement description	System displays error message and prompts the merchants to enter advertisement description	Pass
		Advertisement description cannot be more than 100 characters	1. Enter 51 characters in advertisement description 2. Press "Insert" button	aaaaaaaaaa aaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaa	System displays error message and prompts the merchants to enter advertisement description with maximum 100 characters	System displays error message and prompts the merchants to enter advertisement description with maximum 100 characters	Pass
		Advertisement poster cannot be left empty	1. Do not choose any file upload. 2. Press "Insert" button		System displays error message and prompts the merchants to enter advertisement poster	System displays error message and prompts the merchants to enter advertisement poster	Pass

		Advertisement poster field can only accept image filetype	1. Upload file type of pdf or document. 2. Press "Insert" button	1. a.pdf 2. b.docx 3. c.xslx	System displays error message and prompts the merchants to upload advertisement poster with image filetype	System displays error message and prompts the merchants to upload advertisement poster with image filetype	Pass
	Verify Update Advertisement	Advertisement title cannot be left empty	1. Do not enter value in advertisement title 2. Press "Update" button		System displays error message and prompts the merchants to enter advertisement title	System displays error message and prompts the merchants to enter advertisement title	Pass
		Advertisement title cannot be more than 50 characters	1. Enter 51 characters in advertisement title 2. Press "Update" button	aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	System displays error message and prompts the merchants to enter advertisement title with maximum 50 characters	System displays error message and prompts the merchants to enter advertisement title with maximum 50 characters	Pass

		Advertisement subtitle cannot be left empty	1. Do not enter value in advertisement subtitle 2. Press "Update" button		System displays error message and prompts the merchants to enter advertisement subtitle	System displays error message and prompts the merchants to enter advertisement subtitle	Pass
		Advertisement subtitle cannot be more than 50 characters	1. Enter 51 characters in advertisement subtitle 2. Press "Update" button	aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaa aaaaaaaaa aaaaaaaaaaa aaaaaa	System displays error message and prompts the merchants to enter advertisement subtitle with maximum 50 characters	System displays error message and prompts the merchants to enter advertisement subtitle with maximum 50 characters	Pass
		Advertisement description cannot be left empty	1. Do not enter value in advertisement description 2. Press "Update" button		System displays error message and prompts the merchants to enter advertisement description	System displays error message and prompts the merchants to enter advertisement description	Pass

		Advertisement description cannot be more than 100 characters	1. Enter 51 characters in advertisement description 2. Press "Update" button	aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa	System displays error message and prompts the merchants to enter advertisement description with maximum 100 characters	System displays error message and prompts the merchants to enter advertisement description with maximum 100 characters	Pass
		Advertisement poster cannot be left empty	1. Do not choose any file upload. 2. Press "Update" button		System displays error message and prompts the merchants to enter advertisement poster	System displays error message and prompts the merchants to enter advertisement poster	Pass
		Advertisement poster field can only accept image filetype	1. Upload file type of pdf or document. 2. Press "Update" button	1. a.pdf 2. b.docx 3. c.xslx	System displays error message and prompts the merchants to upload advertisement	System displays error message and prompts the merchants to upload advertisement	Pass

					poster with image filetype	poster with image filetype	
	Verify Delete Advertisement	System should make confirmation with merchants	1. Press Delete button on any advertisement displayed		System displays the confirmation message and once merchants clicks OK, the advertisement is removed and if merchants clicks Cancel, the advertisement still exists.	System displays the confirmation message and once merchants clicks OK, the advertisement is removed and if merchants clicks Cancel, the advertisement still exists.	Pass
AP-W12	Verify View Voucher	All existing vouchers will be displayed	1. Merchant moves cursor to Voucher 2. Merchant clicks View		System redirects the merchant to view the vocuher page and data displayed correctly	System redirects the merchant to view the voucher page and data displayed correctly	Pass

	Verify Insert Voucher	Voucher name should not be left empty	1. Do not enter value in voucher name field 2. Press "Insert" button		System displays error message and prompts the merchants to enter voucher name	System displays error message and prompts the merchants to enter voucher name	Pass
		Voucher name cannot be more than 50 characters	1. Enter 51 characters in voucher name 2. Press "Insert" button	aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaa	System displays error message and prompts the merchants to enter voucher name with maximum 50 characters	System displays error message and prompts the merchants to enter voucher name with maximum 50 characters	Pass
		Voucher description cannot be left empty	1. Do not enter value in voucher description field 2. Press "Insert" button		System displays error message and prompts the merchants to enter voucher description	System displays error message and prompts the merchants to enter voucher description	Pass

		Voucher description cannot be more than 100 characters	1. Enter 101 characters in voucher description 2. Press "Insert" button	aaaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaaa aaaaaaaaaaa	System displays error message and prompts the merchants to enter voucher description with maximum 100 characters	System displays error message and prompts the merchants to enter voucher description with maximum 100 characters	Pass
		Voucher coin cannot be left empty	1. Do not enter value in voucher coin field 2. Press "Insert" button		System displays error message and prompts the merchants to enter voucher coin	System displays error message and prompts the merchants to enter voucher coin	Pass
		Voucher coin can only be number	1. Enter symbol or letter in voucher coin field.	1. asdfg 2. !@#$%	System displays error message and prompts the merchants to enter voucher coin with number only	System displays error message and prompts the merchants to enter voucher coin with number only	Pass

		Voucher coin cannot be less than zero	1. Enter negative value in voucher coin field.	-5	System displays error message and prompts the merchants to enter voucher coin with positive value only	System displays error message and prompts the merchants to enter voucher coin with positive value only	Pass
		Voucher quantity cannot be left empty	1. Do not enter value in voucher quantity field 2. Press "Insert" button		System displays error message and prompts the merchants to enter voucher quantity	System displays error message and prompts the merchants to enter voucher quantity	Pass
		Voucher quantity can only be number	1. Enter symbol or letter in voucher quantity field.	1. asdfg 2. !@#$%	System displays error message and prompts the merchants to enter voucher quantity with number only	System displays error message and prompts the merchants to enter voucher quantity with number only	Pass
		Voucher quantity cannot be less than zero	1. Enter negative value in voucher quantity field.	-5	System displays error message and prompts the merchants to enter voucher quantity with positive value only	System displays error message and prompts the merchants to enter voucher quantity with positive value only	Pass

		Voucher image cannot be left empty	1. Do not upload file in voucher image field 2. Press "Insert" button		System displays error message and prompts the merchants to upload voucher poster with image filetype	System displays error message and prompts the merchants to upload voucher poster with image filetype	Pass
		Voucher image field can only accept image file type	1. Upload a pdf document 2. Click Sign up button	1. abc.pdf	System reject the file uploaded and prompts the user to upload an image	System reject the file uploaded and prompts the user to upload an image	Pass
	Verify Update Voucher	Voucher name should not be left empty	1. Do not enter value in voucher name field 2. Press "Update" button		System displays error message and prompts the merchants to enter voucher name	System displays error message and prompts the merchants to enter voucher name	Pass
		Voucher name cannot be more than 50 characters	1. Enter 51 characters in voucher name 2. Press "Update" button	aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaa	System displays error message and prompts the merchants to enter voucher name with maximum 50 characters	System displays error message and prompts the merchants to enter voucher name with maximum 50 characters	Pass

		Voucher description cannot be left empty	1. Do not enter value in voucher description field 2. Press "Update" button		System displays error message and prompts the merchants to enter voucher description	System displays error message and prompts the merchants to enter voucher description	Pass
		Voucher description cannot be more than 100 characters	1. Enter 101 characters in voucher description 2. Press "Update" button	aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa	System displays error message and prompts the merchants to enter voucher description with maximum 100 characters	System displays error message and prompts the merchants to enter voucher description with maximum 100 characters	Pass
		Voucher coin cannot be left empty	1. Do not enter value in voucher coin field 2. Press "Update" button		System displays error message and prompts the merchants to enter voucher coin	System displays error message and prompts the merchants to enter voucher coin	Pass

		Voucher coin can only be number	1. Enter symbol or letter in voucher coin field.	1. asdfg 2. !@#$%	System displays error message and prompts the merchants to enter voucher coin with number only	System displays error message and prompts the merchants to enter voucher coin with number only	Pass
		Voucher coin cannot be less than zero	1. Enter negative value in voucher coin field.	-5	System displays error message and prompts the merchants to enter voucher coin with positive value only	System displays error message and prompts the merchants to enter voucher coin with positive value only	Pass
		Voucher quantity cannot be left empty	1. Do not enter value in voucher quantity field 2. Press "Update" button		System displays error message and prompts the merchants to enter voucher quantity	System displays error message and prompts the merchants to enter voucher quantity	Pass
		Voucher quantity can only be number	1. Enter symbol or letter in voucher quantity field.	1. asdfg 2. !@#$%	System displays error message and prompts the merchants to enter voucher quantity with number only	System displays error message and prompts the merchants to enter voucher quantity with number only	Pass

		Voucher quantity cannot be less than zero	1. Enter negative value in voucher quantity field.	-5	System displays error message and prompts the merchants to enter voucher quantity with positive value only	System displays error message and prompts the merchants to enter voucher quantity with positive value only	Pass
		Voucher image cannot be left empty	1. Do not upload file in voucher image field 2. Press "Update" button		System displays error message and prompts the merchants to upload voucher poster with image filetype	System displays error message and prompts the merchants to upload voucher poster with image filetype	Pass
		Voucher image field can only accept image file type	1. Upload a pdf document 2. Click Sign up button	1. abc.pdf	System reject the file uploaded and prompts the user to upload an image	System reject the file uploaded and prompts the user to upload an image	Pass

	Verify Delete Voucher	System should make confirmation with merchants	1. Press Delete button on any voucher displayed		System displays the confirmation message and once merchants clicks OK, the voucher is removed and if merchants clicks Cancel, the voucher still exists.	System displays the confirmation message and once merchants clicks OK, the voucher is removed and if merchants clicks Cancel, the voucher still exists.	Pass
AP-W13	Verify Subscribe Plan Function	Merchants should be able to subscribe to a payment plan after payment is done	1. Choose a payment plan to subscribe 2. Pay using PayPal		System displays the success message when the payment is done and the subscription is renewed.	System displays the success message when the payment is done and the subscription is renewed.	Pass
	Verify Extend Subscribe Plan Function	Merchants should be able to extend the subscription made	1. Choose an extended payment plan. 2. Pay using PayPal		System displays the success message when the payment is done and the subscription is renewed.	System displays the success message when the payment is done and the subscription is renewed.	Pass

AP-W14	Verify View Payment History Function	Merchants should be able to view the payment made	1. Click "Payment History" button on Home page.		System displays the payment history made sort by timestamps in table form correctly.	System displays the payment history made sort by timestamps in table form correctly.	Pass

Appendix 4

Test Case Number	Test Scenario	Test Cases	Test Steps	Test Data	Expected Result	Actual Result	Pass /Fail
AP-M1	Verify Sign up Function	Username cannot be left empty	1. Do not enter value in Username field 2. Press "Register" button		System displays error message and prompts the consumer to enter the username	System displays error message and prompts the consumer to enter the username	Pass
		Username cannot exceed 15 characters	1. Enter 16 characters in Username field 2. Press "Register" button		System displays error message and prompts the consumer to enter the username of maximum 15 characters	System displays error message and prompts the consumer to enter the username of maximum 15 characters	Pass
		Email cannot be left empty	1. Do not enter value in Email field 2. Press "Register" button		System displays error message and prompts the consumer to enter the email	System displays error message and prompts the consumer to enter the email	Pass

		Empty cannot be invalid format	1. Enter invalid email format in Email field. 2. Press "Register" button	1. 123@@ 2. lee@gmail	System displays error message and prompts the consumer to enter the email with correct format	System displays error message and prompts the consumer to enter the email with correct format	Pass
		Email can only accept valid format	1. Enter valid email format in Email field. 2. Press "Register" button	1. lee12@gmail.com	System accepts the user input	System accepts the user input	Pass
		Phone cannot be left empty	1. Do not enter value in Phone field. 2. Press "Register" button		System displays error message and prompts the consumer to enter the phone	System displays error message and prompts the consumer to enter the phone	Pass
		Phone number can only be within 10 or 11 characters	1. Enter phone with 9 character and 12 character. 2. Press "Register" button	1. 012345678 2. 012345678977	System displays the error message of invalid phone	System displays the error message of invalid phone	Pass
		Password cannot be left empty	1. Do not enter value in Password field.		System displays error message and prompts the	System displays error message and prompts the	Pass

			2. Press "Register" button		consumer to enter the password	consumer to enter the password	
		Password must be at least 8 characters	1. Enter password with 7 characters and below. 2. Press "Register" button	1. 1234567 2. 123456	System displays error message and prompts the consumer to enter password with minimum 8 characters	System displays error message and prompts the consumer to enter password with minimum 8 characters	Pass
		Confirm Password cannot be left empty	1. Do not enter value in Confirm Password field. 2. Press "Register" button		System displays error message and prompts the consumer to enter the confirm password	System displays error message and prompts the consumer to enter the confirm password	Pass
		Confirm Password must match the Password field	1. Enter different password and confirm password. 2. Press "Register" button	1. Password: 12345678 Confirm Password: 123456789	System displays error message and prompts the consumer to enter same password combination	System displays error message and prompts the consumer to enter same password combination	Pass

	Verify Login function	Email cannot be left empty	1. Do not enter value in Email field 2. Press "Login" button		System displays error message and prompts the consumer to enter the email	System displays error message and prompts the consumer to enter the email	Pass
		Empty cannot be invalid format	1. Enter invalid email format in Email field. 2. Press "Login" button	1. 123@@ 2. lee@gmail	System displays error message and prompts the consumer to enter the email with correct format	System displays error message and prompts the consumer to enter the email with correct format	Pass
		Email can only accept valid format	1. Enter valid email format in Email field. 2. Press "Login" button	1. lee12@gmail.com	System accepts the user input	System accepts the user input	Pass
		Password cannot be left empty	1. Do not enter value in Password field. 2. Press "Register" button		System displays error message and prompts the consumer to enter the password	System displays error message and prompts the consumer to enter the password	Pass

		Password must be at least 8 characters	1. Enter password with 7 characters and below. 2. Press "Register" button	1. 1234567 2. 123456	System displays error message and prompts the consumer to enter password with minimum 8 characters	System displays error message and prompts the consumer to enter password with minimum 8 characters	Pass
AP-M2	Verify View Advertisement Function	Consumer should be able to view the advertisements			System displays the advertisements available in consumer main page.	System displays the advertisements available in consumer main page.	Pass
	Verify Like function	Consumer should be able to like the advertisement	1. Choose one of the unliked advertisements from the list. 2. Press "Like" icon.		System changes the color of likes icon into red to indicate the advertisement is liked by consumer	System changes the color of likes icon into red to indicate the advertisement is liked by consumer	Pass

		Consumer should be able to unlike the advertisement	1. Choose one of the liked advertisements from the list. 2. Press "Like" icon.		System changes the color of likes icon into grey to indicate the advertisement is unliked by consumer	System changes the color of likes icon into grey to indicate the advertisement is unliked by consumer	Pass
	Verify Share Function	Consumer should be able to share the advertisement	1. Choose one of the advertisement 2. Press "Share" icon		System redirects the consumer to select the medium he/she wants to share	System redirects the consumer to select the medium he/she wants to share	Pass
	Verify Search Function	Consumer should be able to search the advertisements or merchants	1. Press "Search" icon 2. Enter the search term 3. Press "Search" button	1. merchant. 2. KFC	System displays the related result of advertisements and merchants name which matched the search term	System displays the related result of advertisements and merchants name which matched the search term	Pass

AP-M3	Verify My Profile Function	All of the profile information is displayed correctly	1. Press "Me". 2. Press "My Profile".		System displays the profile information correctly	System displays the profile information correctly	Pass
		Username cannot be left empty when updating profile	1. Do not enter value in Username field 2. Press "OK" icon		System displays the error message and prompts the consumer to enter username	System displays the error message and prompts the consumer to enter username	Pass
		Username cannot exceed 15 characters when updating profile	1. Enter 16 characters in Username field 2. Press "OK" icon		System displays error message and prompts the consumer to enter the username of maximum 15 characters	System displays error message and prompts the consumer to enter the username of maximum 15 characters	Pass
		Phone cannot be left empty	1. Do not enter value in Phone field. 2. Press "Register" button		System displays error message and prompts the consumer to enter the phone	System displays error message and prompts the consumer to enter the phone	Pass

		Phone number can only be within 10 or 11 characters	1. Enter phone with 9 character and 12 character. 2. Press "Register" button	1. 012345678 2. 012345678977	System displays the error message of invalid phone	System displays the error message of invalid phone	Pass
		Email cannot be left empty	1. Do not enter value in Email field 2. Press "OK" icon		System displays error message and prompts the consumer to enter the email	System displays error message and prompts the consumer to enter the email	Pass
		Empty cannot be invalid format	1. Enter invalid email format in Email field. 2. Press "OK" icon	1. 123@@ 2. lee@gmail	System displays error message and prompts the consumer to enter the email with correct format	System displays error message and prompts the consumer to enter the email with correct format	Pass
		Email can only accept valid format	1. Enter valid email format in Email field. 2. Press "OK" icon	1. lee12@gmail.com	System accepts the user input	System accepts the user input	Pass

	Verify Change Password function	Old password cannot be left empty	1. Do not enter value in old password field. 2. Click "Change Password" button		System shows an error message and prompts the user to enter old password	System shows an error message and prompts the user to enter old password	Pass
		Old password cannot be less than 8 characters	1. Enter 7 characters in old password field	bbbbbbb	System shows the error message of minimum 8 characters	System shows the error message of minimum 8 characters	Pass
		Old password cannot be more than 15 characters	1. Enter 16 characters in old password field	aaaaaaaaa aaaaaaa	System shows the error message of maximum 15 characters	System shows the error message of maximum 15 characters	Pass
		Old password should be 8-15 characters	1. Enter 8-15 characters randomly in old password field	1.aaa980616 2.aaaaaaa981207	System accepts the old password input	System accepts the old password input	Pass
		New password cannot be left empty	1. Do not enter value in new password field. 2. Click "Change Password" button		System shows an error message and prompts the user to enter new password	System shows an error message and prompts the user to enter new password	Pass

		New password cannot be less than 8 characters	1. Enter 7 characters in new password field	bbbbbbb	System shows the error message of minimum 8 characters	System shows the error message of minimum 8 characters	Pass
		New password cannot be more than 15 characters	1. Enter 16 characters in new password field	aaaaaaaa aaaaaaaa	System shows the error message of maximum 15 characters	System shows the error message of maximum 15 characters	Pass
		New password should be 8-15 characters	1. Enter 8-15 characters randomly in new password field	1.aaa980616 2.aaaaaaa981207	System accepts the new password input	System accepts the new password input	Pass
		Confirm Password cannot be left empty	1. Do not enter a value in confirm password field 2. Click "Change Password" button		System shows an error message and prompt the user to enter confirm password	System shows an error message and prompt the user to enter confirm password	Pass
		Confirm Password must be similar to new password field	1. Enter different value for new password and confirm password field	1. New Password: 12345678 Confirm Password: 123456789	System shows an error message and prompts the user to enter match new password	System shows an error message and prompts the user to enter match new password	Pass

AP-M4	Verify My Subscription Function	Consumer should be able to view the merchants subscribed in a list	1. Click "Me" navigation button 2. Click "My Subscription" button		System displays a list of subscribed merchants in a list	System displays a list of subscribed merchants in a list	Pass
		Consumer should be able to subscribe merchant and view their advertisement posted	1. Click one of the subscribed merchant		System will help consumer subscribe to merchant by pressing subscribed button and all of the advertisements posted by that particular merchant will be displayed	System will help consumer subscribe to merchant by pressing subscribed button and all of the advertisements posted by that particular merchant will be displayed	Pass
		Consumer should be able to unsubscribe merchant	1. Click one of the subscribed merchant 2. Press "Subscribed" button		System will help consumer unsubscribe merchant	System will help consumer unsubscribe merchant	Pass

AP-M5	Verify Invite Friends Function	Consumer should be able enter referral code for the first time only	1. Press Referral code 2. Enter the referral code 3. Press "OK" button		System will validate the referral code and if it is usable, the system displays success message or else error message	System will validate the referral code and if it is usable, the system displays success message or else error message	Pass
	Verify Check In Function	Consumer should be able to check in once per day	1. Press "Check In" button		System will help consumer to check in and check in button is no longer clickable	System will help consumer to check in and check in button is no longer clickable	Pass
	Verify My Voucher function	Consumer should be able to view all of the available voucher	1. Press "My Voucher"		System will display the list of vouchers of the particular consumer and related information	System will display the list of vouchers of the particular consumer and related information	Pass

	Verify My Favourites function	Consumer should be able to view all of the liked advertisements	1. Press "My Favourites"		System will displays the list of liked advertisements by that particular consumer	System will displays the list of liked advertisements by that particular consumer	Pass
AP-M6	Verify Contact Us function	Consumer should be able to make a call to customer services	1. Press "Call us"		System will redirect consumer to calling page with phone number ready	System will redirect consumer to calling page with phone number ready	Pass
		Consumer should be able to make find the address of company	1. Press "Find us"		System will open the map and guide the direction based on consumer's current location	System will open the map and guide the direction based on consumer's current location	Pass
		Consumer should be able to email customer service	1. Press "Email us"		System will redirect to email page with sender and receiver ready	System will redirect to email page with sender and receiver ready	Pass

AP-M7	Verify Logout function	Consumer should be able to logout from the system	1. Press "logout"		System redirects the consumer to login page	System redirects the consumer to login page	Pass