A Study of Using Information System to Enhance Second-Hand Game Disc Purchasing, Selling, Rent, and Exchange Management

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Abstract

The Second-Hand Game Disc Purchasing, Selling, Rent, and Exchange Management System (GameTrade) is designed on web-based system and provides a marketing website to administer all transaction into a well-organised system. The system focuses on small or medium enterprise. To increase the efficiency of the system, customer can search the product by typing the first character in the "search bar", the system will search all the related product automatically. After that, user search the product they wanted, they can add the product to the shopping cart and checkout them after checking the total price and quantity by using the payment system. Besides that, customer can also add their product details and the product situation to sell their product to another user by using the User Sales System. The Rental System and Exchange System are also provided for the user can let their product become a product which can be rent and exchange to another user through this website. The product brands and categories control can only access by administrator through the Administrator to make sure that nobody can make trouble on the website filtering system. The Report System generates the total sales report to provide the sales detail for the seller user. This final report covers all project development stage which includes problem research, legality issue, planning, design, development technology, implementation, evaluation and conclusion phase.

Keyword: Second-Hand Game Disc Purchasing, Selling, Rent, and Exchange Management System, website application

1. Introduction

In this high technology era, everyone is living in convenient and rapid development era, high-tech tools are always accompanying us in all of the time. This phenomenon already makes the modern people lazy to go out, this is because the rise of the online shopping system is already helping nowadays people to buy things by using the website. Online shopping website is becoming most popular website in the network likes Taobao, Lazada, Amazon and so on to let the user visit the online store or open an online store on the website.

In this era, every product is rising prices even though it is a food, it must also have risen price with many factors in world trade market likes GST, tariff tax, material tax or other factors. Therefore, the prices of the game disc market are also raising prices at on market, this situation causes many gamers can't buy the game disc when the price of game disc is already over their budget. So, that is the reason that we start

our project to let them can use the lowest price to buy, rent the game disc they want by using our website.

Our project title is Game Trade – Second-Hand Game Disc Purchasing, Selling, Rent, and Exchange Management System, which is developed for all the gamer having a platform to buy, sell, rent and exchange their game disc with other user. The user can be a buyer, seller or both of them and they will reduce the time for finding each other when using our website. The buyer can buy the used game disc by lower prices, rent or exchange the game disc from another seller through this website. The seller also can sell, rent and exchange their second-hand game disc through this website by uploads the product details into website.

2. System Analysis

2.1 Current System Analysis

The BestBuy is a website which is helping people in purchasing and selling tablets, phone, iPods and video games in this website. (BestBuy, 2018). This website works on a dual identity concept because the user can be a buyer, seller or both of them when using this website.

People need to register or login into the website with the complete and real personal detail when using this website. When you are buyer, you can find a quality, second-hand game with a great price on this website, after that BestBuy will track your shipment and keeps you updated through email. If there's a problem, they're here to set right things with a full refund to the buyer. When you are seller, you need to type out what you're selling into the search bar on the website and select your item from the drop-down options. It's free to list, no need to upload a photo or length descriptions to write. When your item sold, they will send you a BestBuy shipping kit, complete with a pre-paid label. Place your item inside and put the package in your outgoing mail. Your shipment is fully insured and tracked every step of the way. Last, the proceeds are deposited into your BestBuy account 3 days after delivery to your buyer. Use the cash on the BestBuy, withdraw it to your bank account (free), select Bitcoin as your payment method (free), or get a paper check mailed to you ($2.00 fee). (BestBuy, 2018)

This website requires network connection and location services. This website also uses, a web service to retrieve data and information from Web servers. This website is using following tool or technique MySQL, PHP, Web service and JavaScript. Therefore, in my project I may use the same technology to improve the features.

2.1.1 Disadvantage of current system

- Waste time find some game discs which their want.
- Waste money to buy some game discs with expensive prices.
- Waste product because it does not provide any rent and exchange services for the used game disc.

3. Definition of New System

3.1 The advantages of new system

Compare to the older system, this new system provides a clear flowchart process to solve these common problems. The main function focus on customer difference order which is sales, buy, exchange and rent order to satisfy the user's needs.

Furthermore, other function of the system includes the management of customer, and the sales to record order details. Besides that, the system also includes the report system. This system surely will help the administrator to manage the daily routine of the company.

3.2 System Objective

- To make user easier to buy, sell, rent and exchange second-hand game
- To decrease the cost of the buying game disc
- To reuse the used game disc

3.3 System Architecture and functionality

This system contains two roles: administrator and customer.

Administrator

- Modify product brands details
- Modify product categories details
- View, search, delete customer information
- View order details

Customer

- Register an account
- Place an order
- Make payment
- View order status
- Modify personal information
- Modify address book
- Modify product details
- Place exchange request
- Place rent request
- Update exchange request status
- Update rent request status
- View the sales report.
- View the buyer information

3.4 System Technical Characteristic
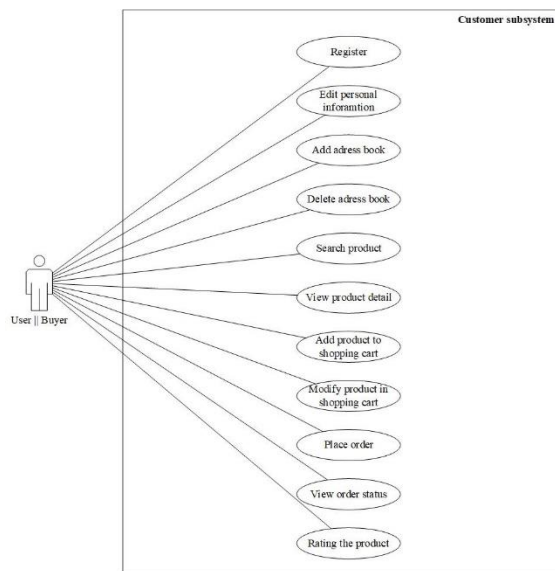
Figure 3.4.1 The UML Use case diagram of Customer Subsystem

Figure 3.4.1 is the UML use case diagram of Customer Subsystem. The system can be accessed by the customer after them register as a user. Customer has the right to add, delete and edit their user data. Besides that, customer also can search the product they want and view the product details. If they find the wish product, they can add to the shopping cart and modify the product in shopping no matter they want to remove or add amount of product they want buy. After they confirm the shopping cart status, they can place order to the admin and then they can view the order status after place the order. After our employee deliver the product to the customer, customer also can provide their opinion to us by rating the

product they buy. We will be received they feedback through this rating system.
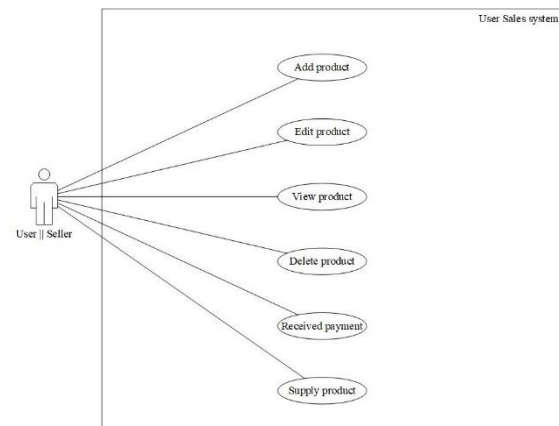
Figure 3.4.2 The UML Use case diagram of User Sales System

Figure 3.4.2 is the UML use case diagram of User Sales System. The system can be accessed by the seller user after them register as a user. Seller user has the right to add, delete and edit their product details and also can search their product through this system. After our administrator employee received the sales order and the payment from the buyer user, administrator will collect the commission from that and make payment to the seller user. Seller user can view the sales report to know that their product has been sold and the payment will direct be paid into their PayPal account by the administrator after collect the commission.
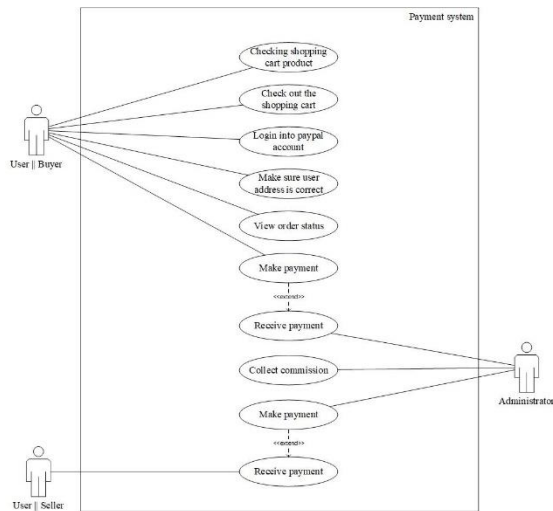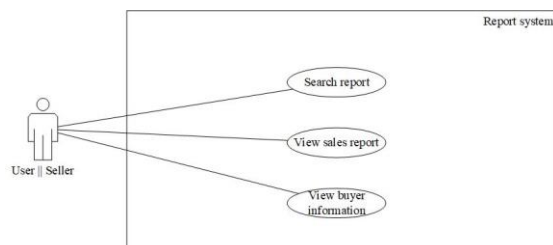
Figure 3.4.3 The UML Use case diagram of Exchange System

Figure 3.4.3 is the UML use case diagram of Exchange System. The system can be accessed by the customer after them register as a user. Customer has the right to modify their product details. Besides that, customer also can search their product and set up their product status to exchange status if they want to exchange their product with us. They can place the exchange request to another user by select the exchange option in operation field, after that select the product which can be exchange. After user B who is having the exchange product received the request from the user A, user B will decide accept or decline the request based on their mind. If request has been accepted by user B, they can to supply the product to the user A and also received from the user A.
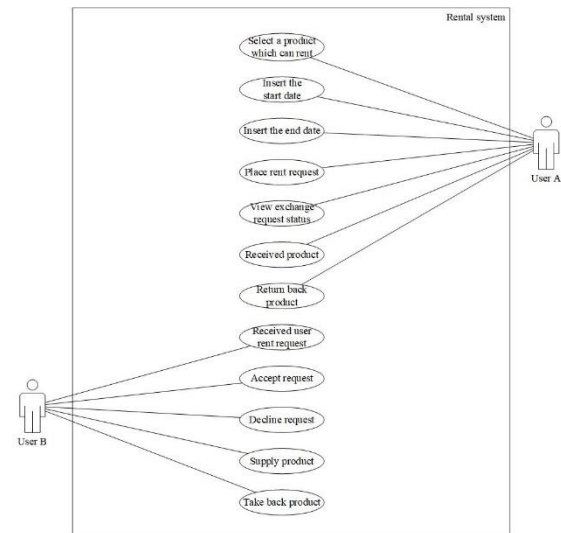
Figure 3.4.4 The UML Use case diagram of Rental System

Figure 3.4.4 is the UML use case diagram of Rental System. The system can be accessed by the customer after them register as a user. Besides that, they can place the rental request to the user B by select the product which can be rent, after than insert the start date and end date before place the request. After user B received the request from the user A, user B will decide accept or decline the request based on their mind. If request has been accepted by user B, they can rent the product to the user A and also will take back from the user A after the end date.

Figure 3.4.5 The UML Use case diagram of Payment System

Figure 3.4.5 is the UML use case diagram of Payment System. The system can be accessed by the customer after them add a product into the shopping cart. After that they can make payment by check out the shopping cart after they check the product status in the shopping cart. After that, they need to login their PayPal account to make payment to us. After the payment has been made, the product will be supply by the seller to the buyer in the shortest time after the admin collect the commission from the buyer and make payment to the seller.

Figure 3.4.6 The UML Use case diagram of Report System

Figure 3.4.6 is the UML use case diagram of Report System. Report System can only be accessed by seller user when they search the report which they wanted. Seller user has the authority to view all the sales report to know that they product has been sold or not. Beside that, they can also view the buyer information by using this system.

Figure 3.4.7 The UML Use case diagram of Administrator System

Figure 3.4.7 is the UML use case diagram of Administrator System. All admin control can only be accessed by administrator. Administrator has the authority to add, delete, and edit the category, brand, and user details through this system. Administrator also can view the order which is place by the buyer user in this system.

4. Sample of System
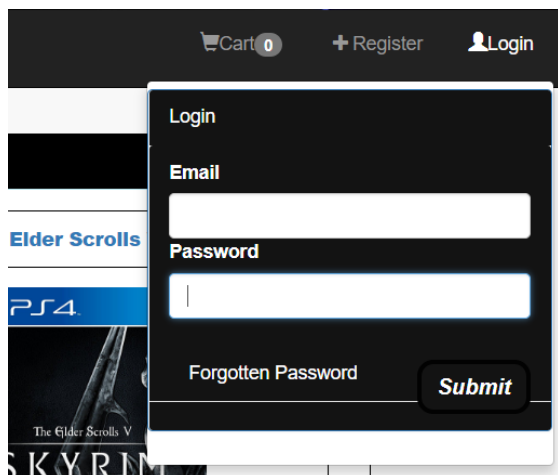
Figure 4.1: User Login Page

Figure 4.1 is the login page of the customer subsystem. Without entering the correct username and password, user cannot enter to the system and it will pop out a notification to user to enter the correct username or password. So, the tester customer account is giving below:

Customer Email:
customer@customer.com

Customer Password: **customer01**
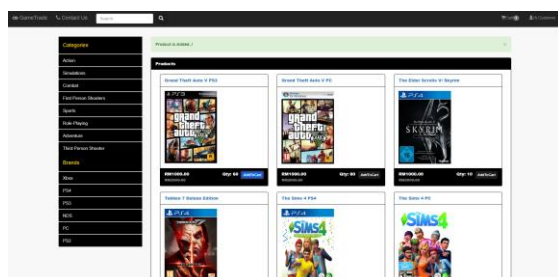
Figure 4.2: Add Shopping Cart

Figure 4.2 is the main page of the customer subsystem. User can add the product they want by click the button add cart in each bottom of product picture. If the product is added successfully, the message will display to inform the user. Also, if the product is added already, the message also will display to inform that the product is already added.
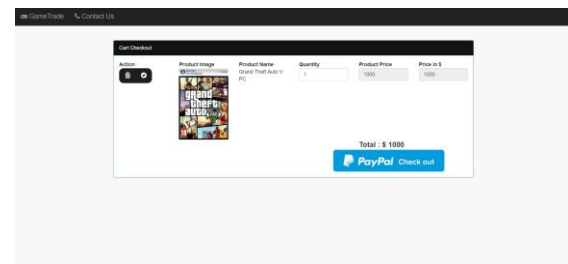
Figure 4.3: Check Shopping Cart

Figure 4.3 is the page for the customer check out their product. User can check out the shopping cart to make sure that product is add in right quantity and also can confirm each product single price and total price.
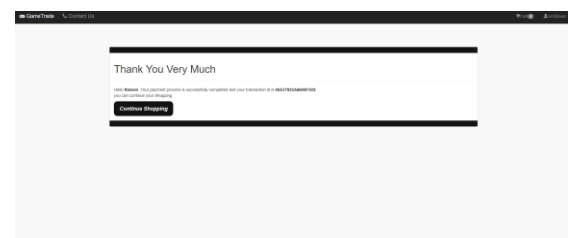
Figure 4.4: Payment Success Page

Figure 4.4 is the page for the customer after they successful make the payment. User can check out their transaction id to make sure their order is right.
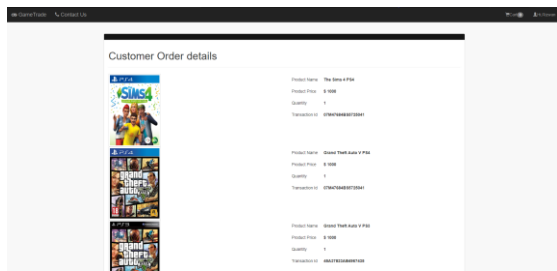
Figure 4.5: Customer Order Details Page

Figure 4.5 is the page for the customer after they successful make the payment, they can check the order details in this page. This page is including the all order details example is the product name, quantity, price and the transaction id.
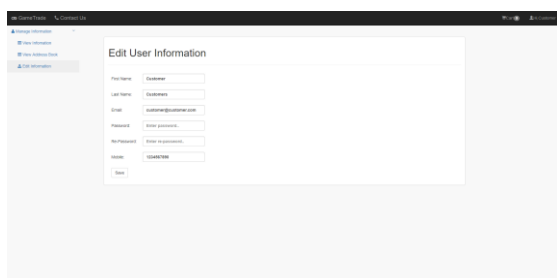

Figure 4.6: Edit User Information

Figure 4.6 is the page for the customer edit their information if there is any changing. User can edit their information based on their previous information to make sure that user will not insert wrong data.
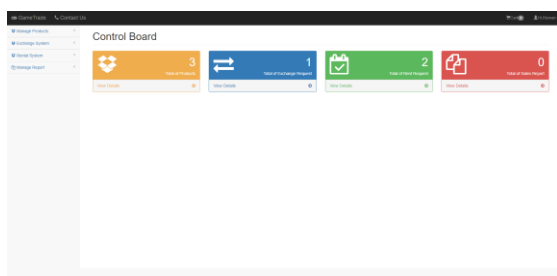
Figure 4.7: User Control Page

Figure 4.7 is the page for the customer view the total of product, received rent and exchange request and view the total of sales report.
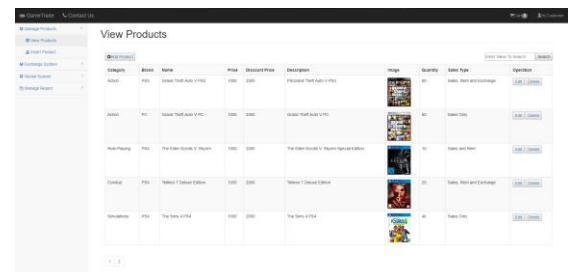
Figure 4.8: View Personal Product

Figure 4.8 is the page for the customer view, add, edit and delete their own product details.
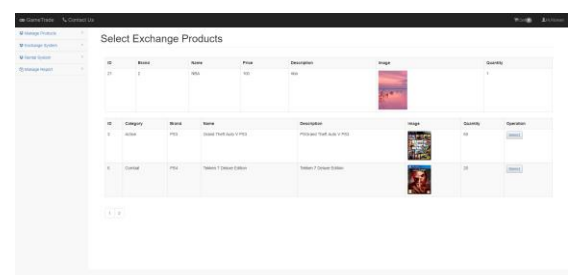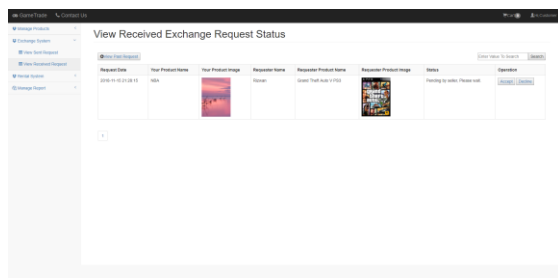

Figure 4.9: Place Exchange Request

Figure 4.9 is the page for the customer can place the exchange request by click the exchange in your product control page, after that selected a product which can be rent in this page, in final the exchange request will be created.
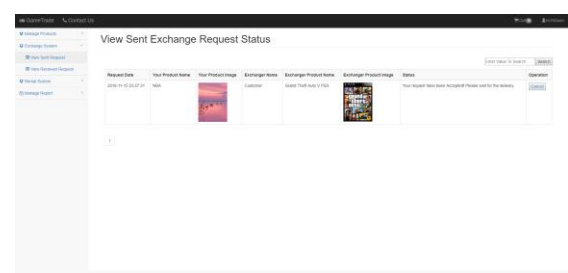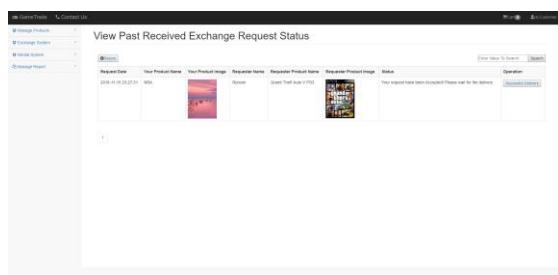
Figure 4.10: View Sent Exchange Request

Figure 4.10 is the page for the customer view the sent exchange request to make sure that the request is already send to the exchanger, also user can cancel their request by using this page function.


Figure 4.11: View Received Exchange Request

Figure 4.11 is the page for the exchanger view the exchange request to make sure that they can make the decision on that request based on their mind.
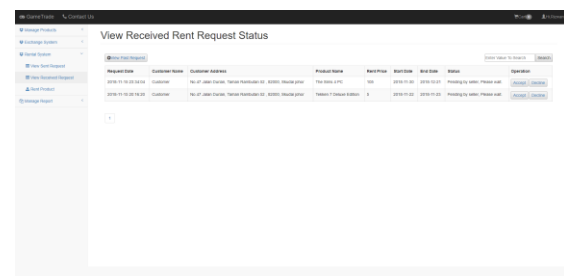

Figure 4.12: View Past Received Exchange Request

Figure 4.12 is the page for the exchanger view the past exchange request to make sure that they can make the edit the request status to successful delivery on that request based on their mind.
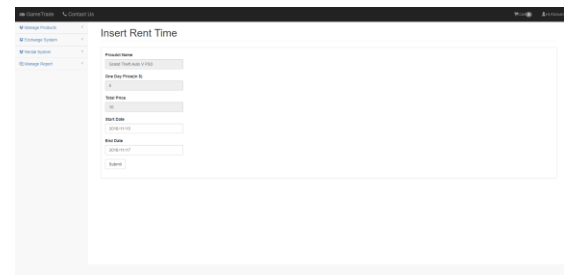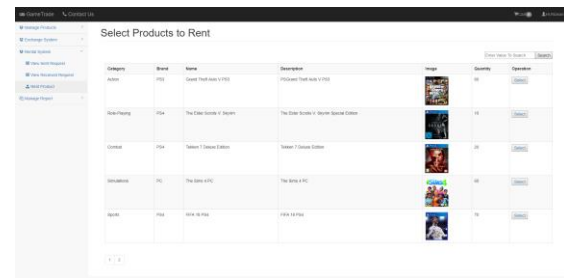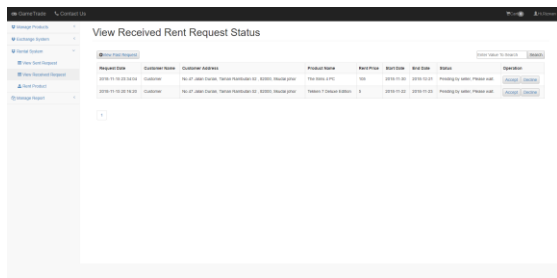

Figure 4.13: Place Rent Request

Figure 4.13 is the page for the customer can place the rent request by selected a product which can be rent in this page, after that user need to insert the start date and end date, the total price will automatic calculate based on the product rent price per one day. Finally, the rent request will be place after these processes.
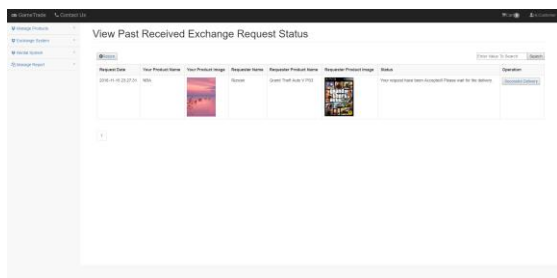

Figure 4.14: View Sent Rent Request

Figure 4.14 is the page for the customer view the sent rent request to make sure that the request is already send to the renter, also user can cancel their request by using this page function.

Figure 4.15: View Received Rent Request

Figure 4.15 is the page for the renter view the rent request to make sure that they can make the decision on that request based on their mind.

Figure 4.16: View Past Received Rent Request

Figure 4.16 is the page for the renter view the past rent request to make sure that they can make the edit the request status to successful delivery on that request based on their mind.
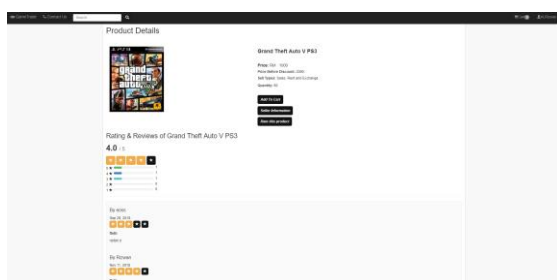
Figure 4.17: Rating and Feedback Page

Figure 4.17 is the page for the customer rating and provide the feedback for the product which is already bought it from this website.


Figure 4.18: Admin Login Page

Figure 4.18 is the login page of the second-hand game disc purchasing, selling, rent, and exchange management. Without entering the correct username and password, user cannot enter to the system and it will pop out a notification to user to enter the correct username or password. So, the tester admin account is giving below:

http://localhost/Project/admin/index.php
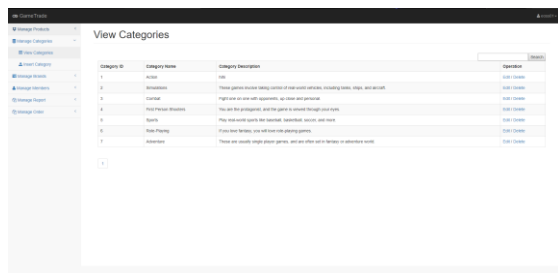
Admin Email: **admin@admin.com**

Admin Password: **admin**
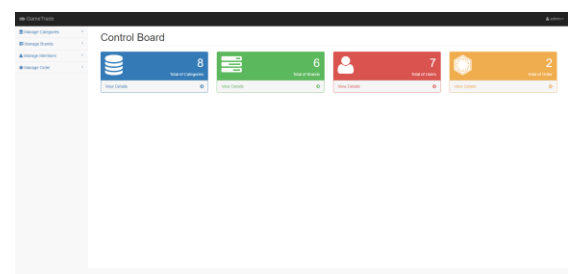
**Figure 4.19: Admin Control Board**

Figure 4.19 is the page for the admin control the all the product, categories, brands, report, order and request by using

this page which is calculate the total amount of these things.

Figure 4.20: View and Modify Categories

Figure 4.20 is the page for the admin view, add, edit and delete the product categories to make sure that the product is always be classification by these categories.
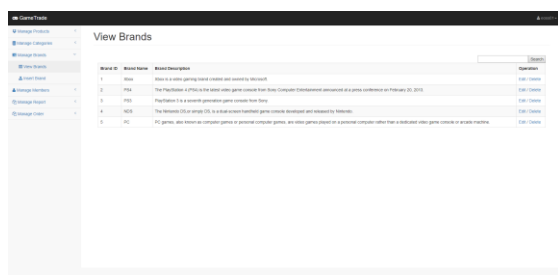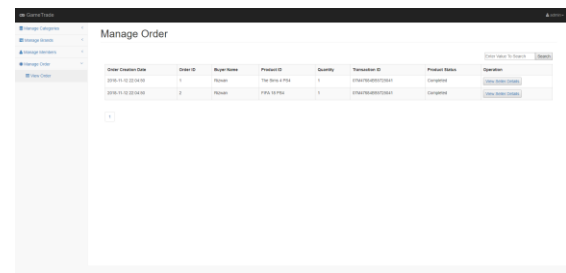

Figure 4.21: View and Modify Brands

Figure 4.21 is the page for the admin view, add, edit and delete the product brands to make sure that the product is always be classification by these brands.
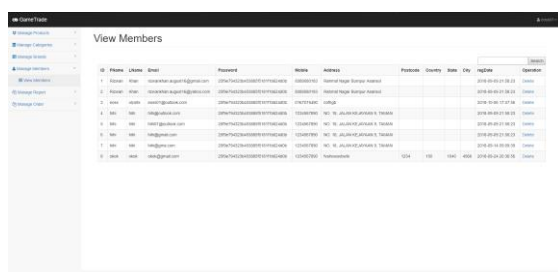
Figure 4.22: View Member Details

Figure 4.22 is the page for the admin view and delete the member.

Figure 4.23: View Sales Order

Figure 4.23 is the page for the admin view and record of sales report, admin also can view the seller information by using this page

5. Conclusion & Recommendation

Second-Hand Game Disc Purchasing, Selling, Rent, and Exchange Management System is developed for all the gamer having a platform to buy, sell, rent and exchange their game disc with other user. This system helps companies keep on update the status of their product category and product details. This system is a medium project which included web-based application. This is the first time we developed web-based management system in this project semester. During this project semester, we spent almost one months to do research about the background of our topics. After the research we spent one month to draw the diagram of our system in order to make us easier to create the website. After

that, we spent about one months to complete the web-based which is main focused of our project. Throughout the process, we realized that a good time management and stakeholder's management are very important in order to accomplish our research.

Last but not least, we feel satisfied to have the chance to this Game which may help the user find the product they wanted. This project provides us a great learning opportunity and experience to improve our development and programming skills. This is also the first product we implement our software engineering, software testing and software quality knowledge. Throughout the development process, it makes us become more knowledgeable and confidence to face any other challenge in future.

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