

Design Get up E-commerce based Marketplace Sale Chips Web Based In Padang City

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Abstract: This web-based e-commerce is designed to help chip manufacturers sell their products and make it easier for consumers to get chips through internet technology. The web design method uses the prototype method starting with conducting needs analysis, interface design and programming and utilizing PHP programming as a programming language, MySQL as a database, XAMPP as a server and the CodeIgniter framework version 4. Chips are a food that is much loved by people of all ages. This has caused many people to start a business selling chips, ranging from home industries to larger production. However, not a few of the chip entrepreneurs have difficulty managing the sale of their chip products to chip consumers such as students, workers and the general public. This is also a result of the outbreak of the Covid-19 virus which is experienced globally, including Indonesia, making it difficult for chip manufacturers to market their products and manage their sales. On the chip consumer side, they also find it difficult to get chips amidst pandemic conditions and busy activity. The difficulties of chip manufacturers and chip consumers can be overcome by developing a system in the form of e-commerce that can be accessed by chip consumers by adapting internet technology. The results of this design produce a web-based e-commerce selling chips by taking a case study in the chips business in Padang City, West Sumatra Province.

Keywords: E-Commerce; Chips Sale; Prototypes; PHP; MySQL; XAMPP; CodeIgniter

INTRODUCTION

Technological developments are developing so rapidly, especially during the industrial revolution 4.0. Currently, almost everyone is doing everything in their interests to involve technological developments, be it in home life, education, health, business and others. One of the positive impacts of current technological developments is increasing business competition by implementing electronic commerce (e-commerce) (Pinarria et al., 2021). E-commerce is a platform that provides a place to process buying and selling transactions online. E-commerce makes it easy for everyone to buy or sell without having to meet face to face. When the corona virus spread, all entrepreneurs and small companies had difficulty adapting during a pandemic that required everyone to comply with health protocols. And many companies try to protect employees from losing their jobs (Dwijayanti & Pramesti, 2020). This requires entrepreneurs, especially food businesses, to adjust to technological developments, namely e-commerce, to increase sales, which previously experienced a decline due to the pandemic. E-commerce has been adapted by various types of business activities, one of which is in the food business.

Chips are a delicious snack eaten as a side dish or snack while watching TV and other leisure activities. There are many types of chips that exist today. Starting from the original chips to those that have a variety of flavors. The chips business is one of the sales of chips which is quite well known among students or office workers. However, the sales process is still manual, namely by visiting consumers and entrusting products to shops or food stores. The types of chips offered include Balado chips, Malaysian chips, onion chips, peas, sweet potato sticks, and others. Therefore, various types of businesses that are currently developing are required to be able to adapt to the rapid development of technology. Therefore, based on previous research (Aulia & Efrizon, 2018) e-commerce technology in the form of a website was built to overcome the problem that the design of e-commerce to be built is based on a sales website by applying the concept of business to consumer (B2C) in the business of selling chips, where there will be several sellers of agricultural products who are chip supplier businesses who can also sell agricultural products in the e-commerce that will be built. The purpose of this study is to produce an e-commerce design and build an e-commerce-based website that can help chip business management in the chip business in the city area. The e-commerce that was built applies the PHP programming

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language adapted to the MVC (Model, View, Controller) technique and uses the CodeIgniter framework as the system program framework to be built.

LITERATURE REVIEW

Systems are the result of the interaction of components or elements that are interconnected in order to provide a flow of information, materials, or energy. While information is data that is processed into information in the form of facts or useful values. This means that there is a process of converting data into information: input-process-output (Sri Wahyuni dkk , 2019).

With the information system, communication is not limited to distance and time, making it easier to control or manage all fields and can help make decisions based on reports from data processing (Saufitro et al., 2018) .

According to Peter Carey (2021), *e-commerce (electronic commerce)* is a term used to denote commercial (usually contractual) transactions involving two or more people using information technology known as the Internet (Carey, 2001) .Sales is an activity to meet needs so it has an important role (Anam & Rani, 2021) . Sales is a science and art that can influence someone to be willing to buy goods or services offered by sellers(Jaya, 2019). Method *prototype* is a model of the development process that has been designed by explicit for accommodate something product for grow and change that makes it possible development device soft the more complete (Pressman, 2015).

Unified Modeling Language is a visual modeling method used in designing and building object-oriented software. UML is a creation standard or a kind of blueprint that contains the business process of creating classes in a particular language(M Teguh Prihandoyo, 2018). *Context* diagram is a representation pattern that is used to identify the interaction of the information system with the environment in which it is located. The pattern of drawing a context diagram always includes the process of describing the input/output relationship between the system and its environment (Muliadi et al., 2020) .*Use cases* describe the interaction between one or more actors and the created information system (Qomaruddin et al., 2017) . *Use case* diagram is one of the diagrams used to model the system. Activity diagrams describe *workflows* or activities in a system or business process. Activity diagrams represent process flows, they can be used to describe existing business processes as well as new (proposed) business processes (Laudon, nd) .

HTML (*Hyper Text Markup Language*) is a *markup language internet (web)* in the form of codes and symbols that are entered into a *file* that is directed to be displayed *on the website* (Ferdika et al., 2017) .PHP (*Hypertext Preprocessor*) is a web-based programming language. Therefore, PHP is a programming language used to build *websites* . PHP is a programming language that can run on the server side, or often called the *Server Side Language*(Teknologi et al., 2020).

MySQL is software for managing databases (*database management system*) or DBMS that uses standard SQL (*Structured Query Language*) commands (Ferdika et al., 2017) .XAMPP acts as a standalone server (localhost) consisting of Apache HTTP Server services that can display dynamic web pages. MySQL database and its translation language written in the PHP programming language. XAMPP represents four operating systems namely Apache, Mysql, PHP, and Perl. This program is available under GNU and is free (Sarwindah, 2018) . The CodeIgniter PHP framework utilizes a Model, View, Controller (MVC) model to create websites using PHP.

METHOD

This study uses the prototype method in building E-Commerce to make it easier for customers and chip sellers to transact. According to Pressman (2012) in (Fenando, 2020) building E-Commerce software has several system stages starting from the process of communicating with users. The stages in the prototype method can be seen in the figure 1 below:

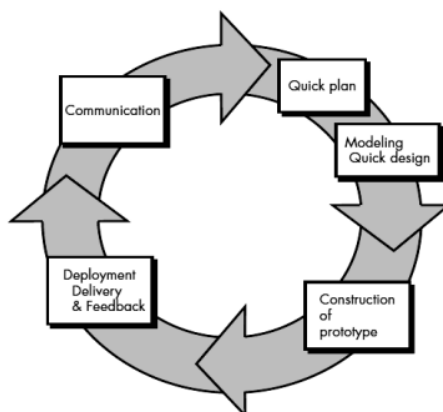


Fig 1. Stages in the Prototype Method

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In Fig 1. above is the flow of system development, the following is an explanation of the stages contained in the prototype method:

- a. Initial communication was carried out by involving chip shop owners in Padang City. At the initial communication stage it is used to define a system to provide initial prototypes to chip shop owners.
- b. At this planning stage, an initial plan will be drawn up in making an initial prototype which is used as an initial description for the chip shop owner. This initial prototype is still incomplete, however, from this initial prototype, as many user needs as possible can be found. The next iteration stage at this stage is a brief planning to produce a prototype that fits user needs.
- c. At this stage, the flow modeling and design of the E-Commerce system will be presented briefly. The focus of this model is to provide an overview of the flow and software that can be seen by the chip shop owner.
- d. Formation of the initial prototype will be carried out quickly which is used to provide an initial description of the E-Commerce system. The initial prototype certainly does not have a perfect function and the features provided are incomplete. The prototype in the next iteration will be even better and in accordance with the needs of chip shop owners in Padang City and their customers.
- e. Prototype submission will be carried out to get feedback from chip shop owners in Padang City. Evaluation of the prototype will continue to be carried out at each iteration.

The system analysis consists of the analysis of the current system and the analysis of the proposed system. Analyzing the running system can help in getting an overview of the running system and clarify how the system works. System design is done by modeling the application or system that is being built to overcome the problems that occur in the system that is running. The system design for this system uses UML (*Unified Modeling Language*).

- a. Context Diagram Design

Based on analysis, the context diagram can be described as shown below:

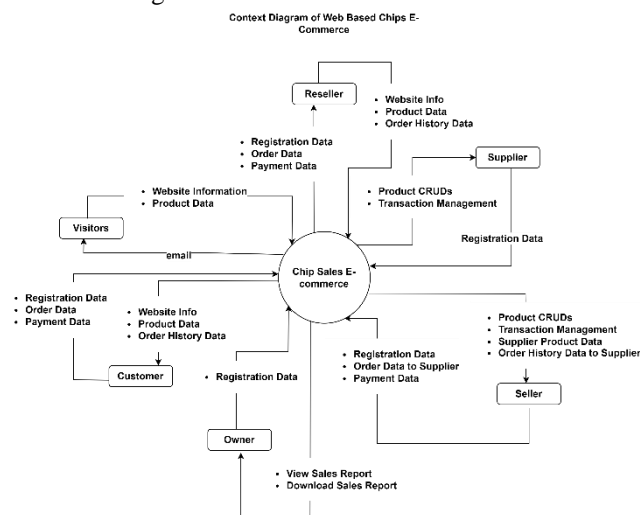


Fig 2. Context Diagram Diagrams

In Fig 2 above is a context diagram of a web-based chip sales e-commerce system. The diagram above describes the input and output of each user to the system.

- b. Use Case Diagram Design

The following is the design of the proposed use case diagram for web-based chip sales e-commerce in the city of Padang.

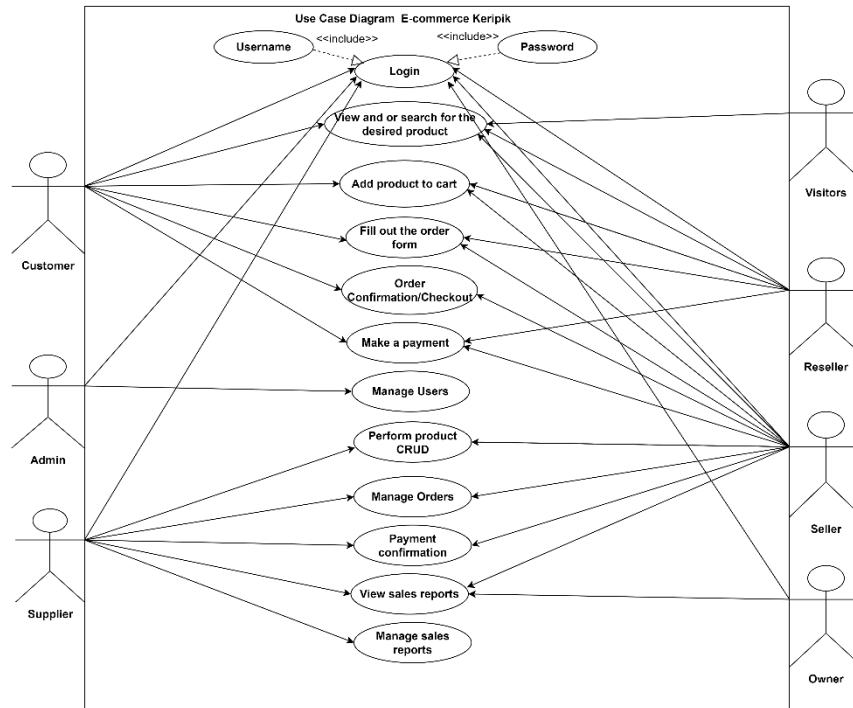


Fig 2. Use Case Diagrams

Fig 3. illustrates the flow of the system from the actors involved in the system. For example, a visitor to an unregistered system cannot order chips. Visitors can only view product lists and product details. Diagram diatas menunjukkan tugas dan kewenangan yang dapat dilakukan setiap *user*.

c. *Activity Diagram Design*

The translation into the form of an algorithm for each process that occurs in the system is modeled with an *activity diagram*. The following is an *activity diagram* for the proposed system for web-based chip sales *e-commerce in the city of Padang*.

The following is an activity diagram that shows the user registers process to the system.

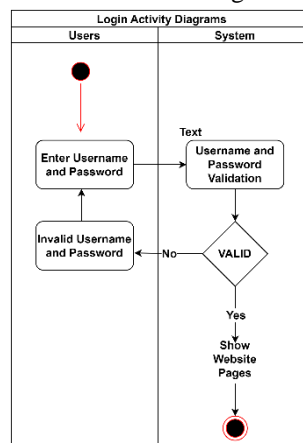


Fig 4. Activity Diagram Registers

Based on the registration activity diagram in Fig 4. it can be seen that the user selects the registration form, then the system displays the registration form, then the user fills out the registration form, then the system (admin) receives the registration data, then the user enters the username and password for the login process and if the username and the password entered is correct then the system will display the website page.

The following is an activity diagram that shows the user login process to the system.

*name of corresponding author



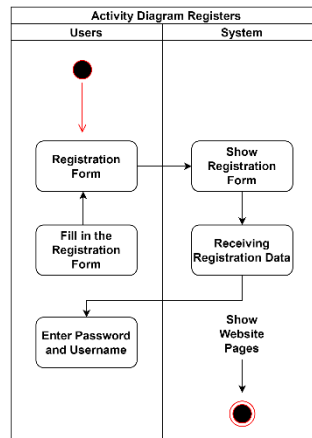


Fig 5. Activity Diagram Registers

Based on the login activity diagram in Fig 5. It can be seen that the user starts by entering a username and password then the system will validate the username and password that has been entered, then the system will validate the input from the user, if the input is valid then the system will display the website page, If the input is invalid, the system will return the username and password input form and display an error message in the form of the wrong username or password entered.

The following is an activity diagram that shows the process of creating, updating, and deleting products by sellers against the system.

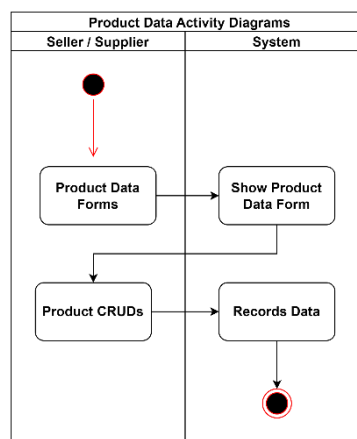


Fig 6. Product Data Activity Diagram

Based on the product data activity diagram in Fig 6. It can be seen that the supplier/seller can choose the product data form, then the system will display the product data form, then the seller/supplier can do product CRUD (Create, Update and Delete) and then the system will record product data that has been carried out by the seller/supplier so that the product entered will appear on the product page.

The following is an activity diagram that shows the process of ordering products by customers against the system.

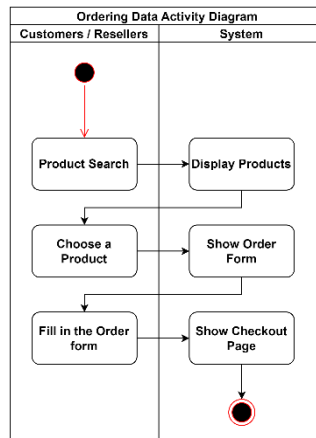


Fig 7. Activity Diagram Ordering

Based on the product ordering activity diagram in Fig 7. It can be seen that after the customer or reseller searches for products, the system displays the product, then the customer or reseller selects the desired product and puts it in the basket, then the system displays an order form, then the customer or reseller fills in an order form that contains data related to the order such as the destination address, and displays the total expenditure and the amount of shipping to be paid, so that the customer or reseller can then place an order.

The following is an activity diagram that shows the user's transaction (checkout) process to the system.

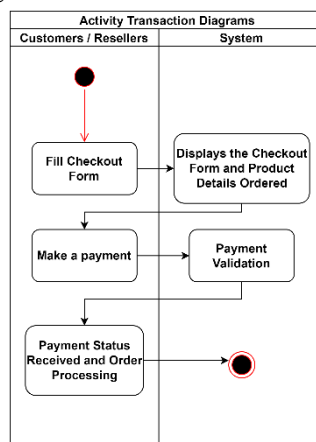


Fig 8. Activity Diagram Transactions

Based on the transaction activity diagram in Fig 8. it can be seen that the customer starts by selecting a payment method, then the system will display a choice of payment method, then the customer makes a payment, then the system will validate the payment, after that the customer gets proof of payment.

ERD

In designing this system using ERD (Entity Relationship Diagram) which is used to model data structures and relationships between data, because it is more flexible and can describe complex systems in a simple way. The ERD of this system is shown in the following figure

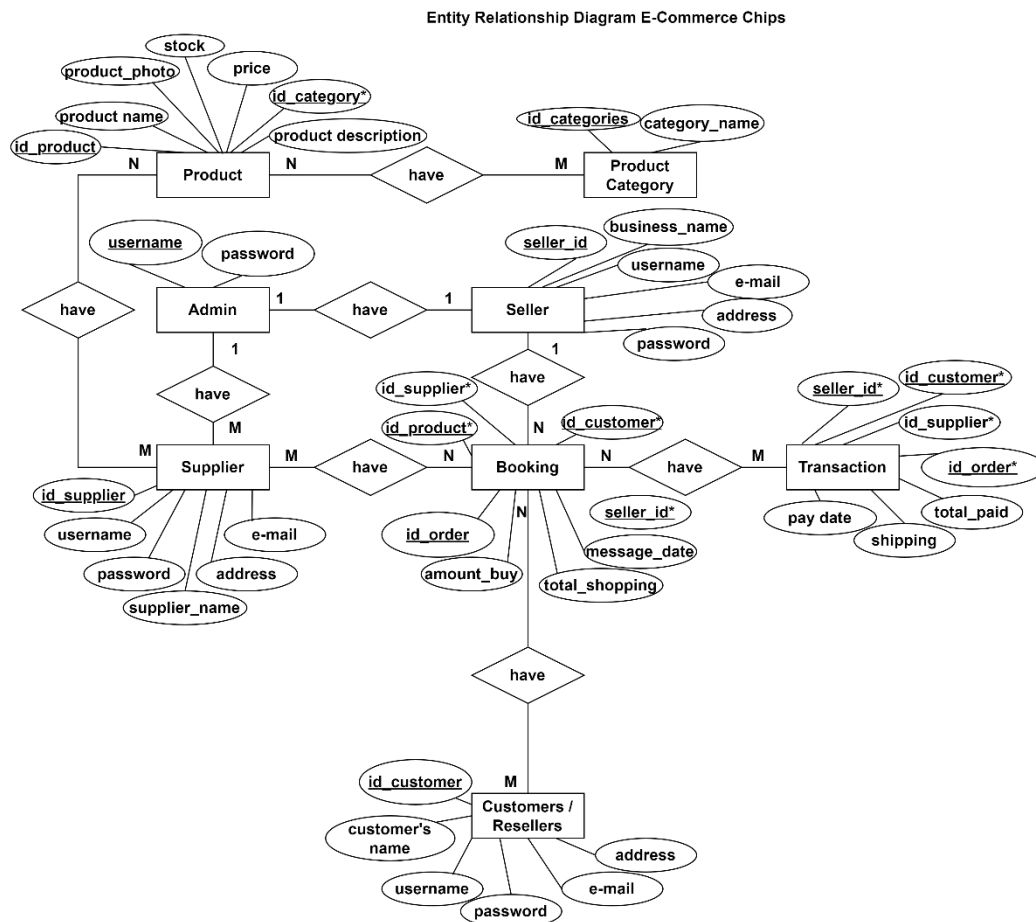


Fig 9. Entity Relationship Diagram

Fig 9. above is an entity relation diagram design for the e-commerce system for selling chips that was built. In the database design above there are 8 entities namely admin entities, sellers, suppliers, customers, resellers, products, product categories, orders and transactions where each entity has several attributes.

RESULT

Interface implementation after going through the process of system analysis and design, the designs have been created and converted into program code to produce a system in the form of *e-commerce*. Based on the analysis and design of the system, an *e-commerce* web-based sales of chips was built in the city of Padang.

Visitor Interface Implementation

Below is an implementation of the visitor interface in *e-commerce* sale chips:

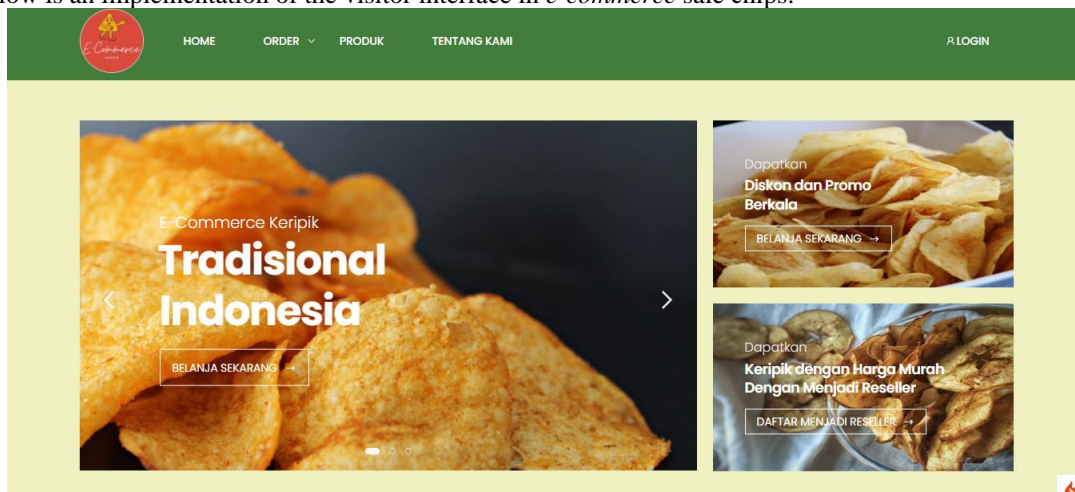


Fig 10. Visitor Page

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Login Interface Implementation

Below is an implementation of the interface for the *login page* on *e-commerce sale chips* :

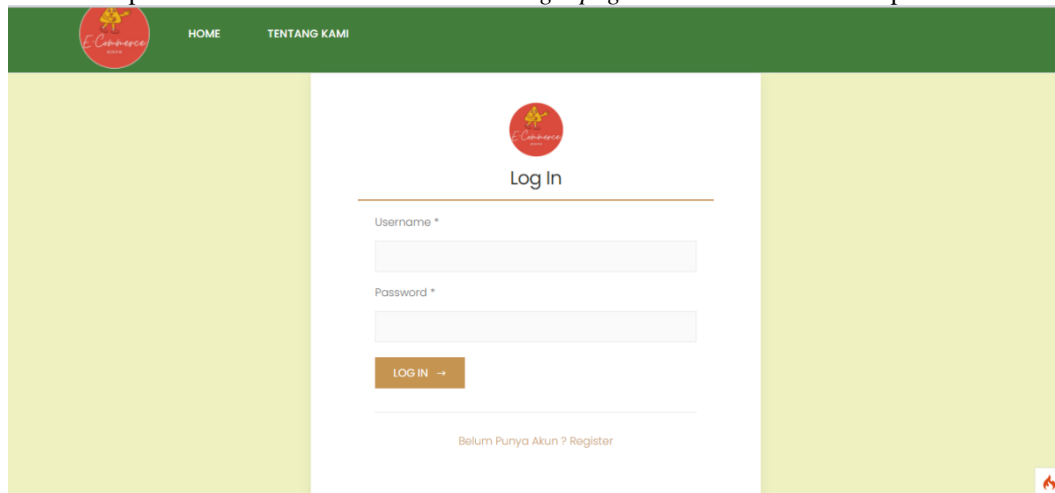


Fig 11. Login Page

Customer and Reseller Dashboard Interface Implementation

Below is the implementation of the customer *dashboard page interface* in *e-commerce sale chips* :

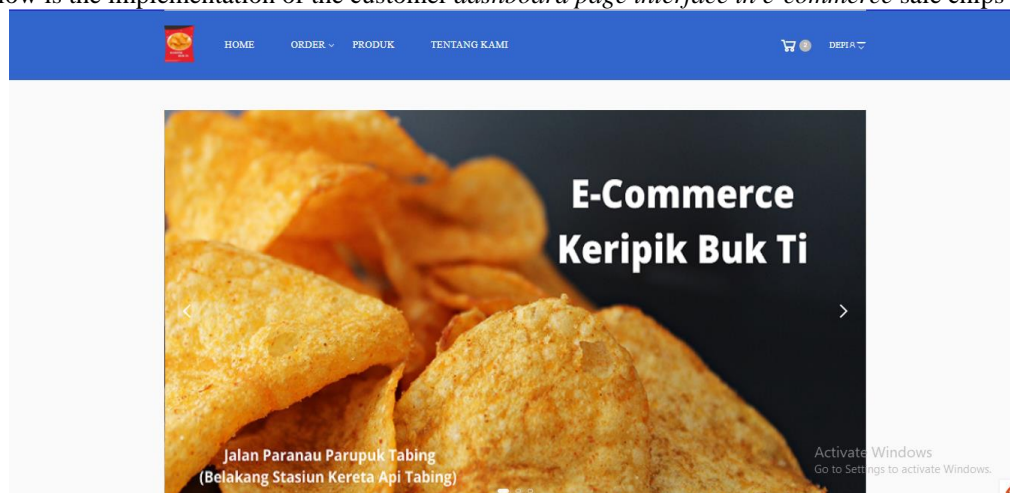


Fig 12. Customer Dashboard Page

Implementation of the Chips Product Ordering Interface

Below is the implementation of the chip product ordering page interface on *e-commerce chips sale* :

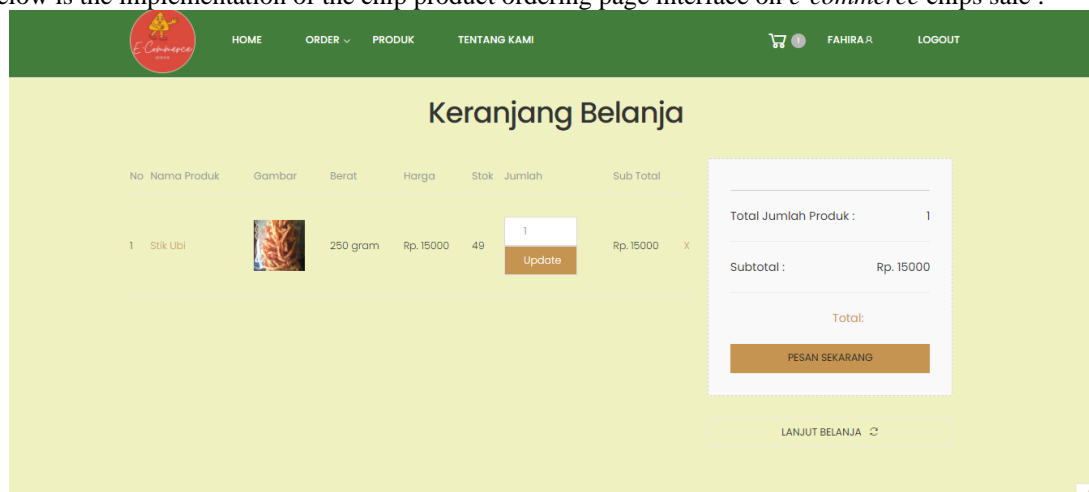


Fig 13. Chips Order Page

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Implementation of Customer and Reseller Checkout Interface

Below is an implementation of the customer *checkout interface* in *e-commerce* sale chips:

Fig 14. Checkout page

Seller Dashboard Interface Implementation

Below is the implementation of the seller *dashboard interface* in *e-commerce* sale chips :



Fig 15. Seller Dashboard Page

Seller's Product Input Interface Implementation

Below is the implementation of the chip product CRUD interface in *e-commerce* sale chips :

No	Nama Produk	Harga Produk	Kategori	Berat	Stok	Deskripsi	Foto Produk	Aksi
1	Keripik Pisang Original	Rp. 10000	1	250 gram	100 pcs	Keripik pisang original		
2	Keripik Kaca Pedas	Rp. 15000	1	250 gram	100 pcs	Keripik kaca		
3	Keripik kentang balado	Rp. 20000	1	250 gram	100 pcs	Keripik kentang		

Fig 16. Chips Product CRUD Page

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Order List Interface Implementation

Below is an implementation of the chip order list page interface in *e-commerce* chips sale :

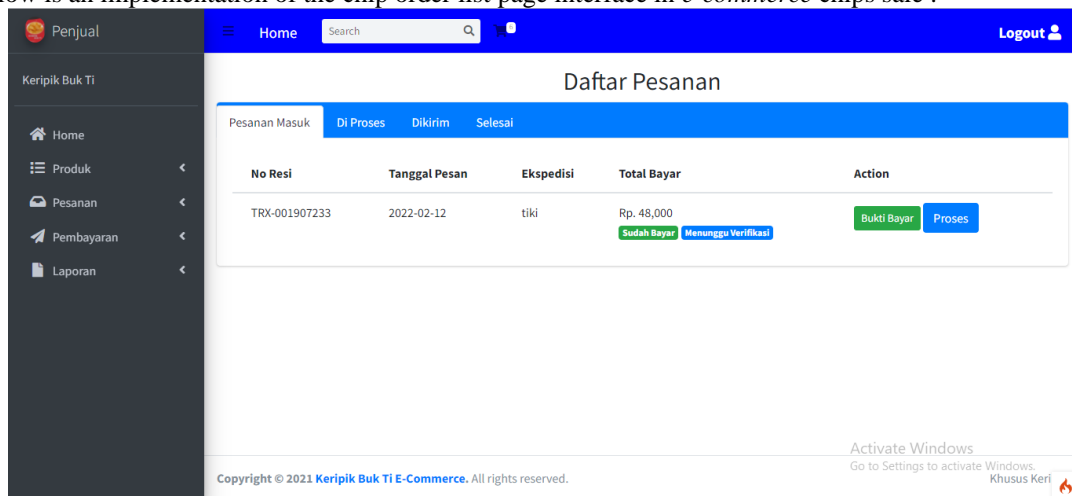


Fig 17. Order List Page

Sales Report Interface Implementation

Below is an implementation of the chip sales report page interface on chip *e-commerce* :

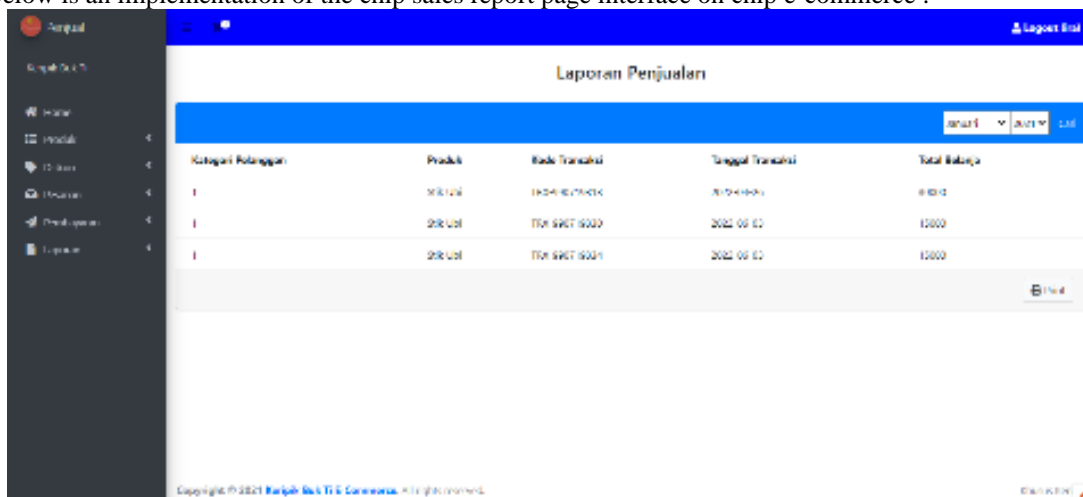


Fig 18. Sales Report Page

Implementation of the Product Ordering Interface by the Seller to the Supplier

Below is the implementation of the farm product order page interface on the chip's *e-commerce* :

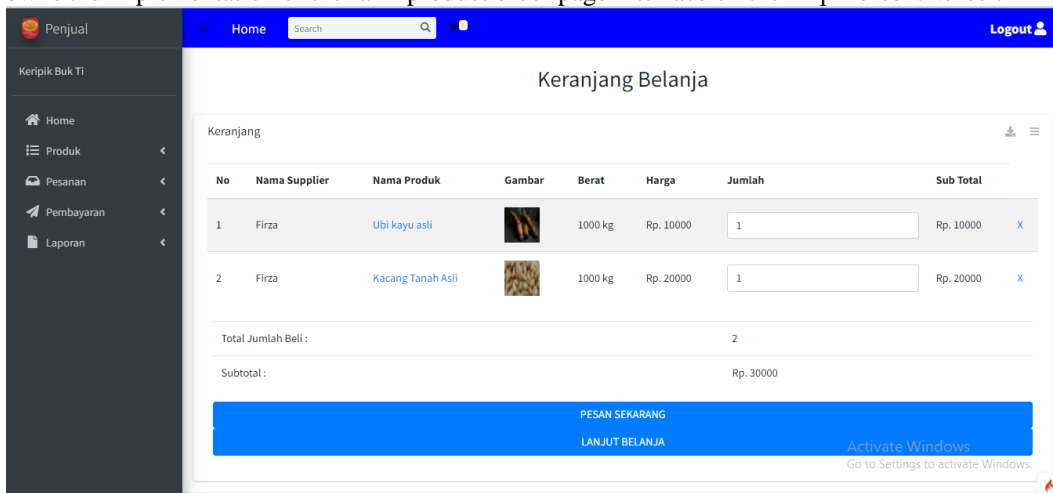


Fig 19. Seller's Product Order Page

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Seller Checkout Interface Implementation

Below is an implementation of the seller's checkout page interface on e-commerce chips:

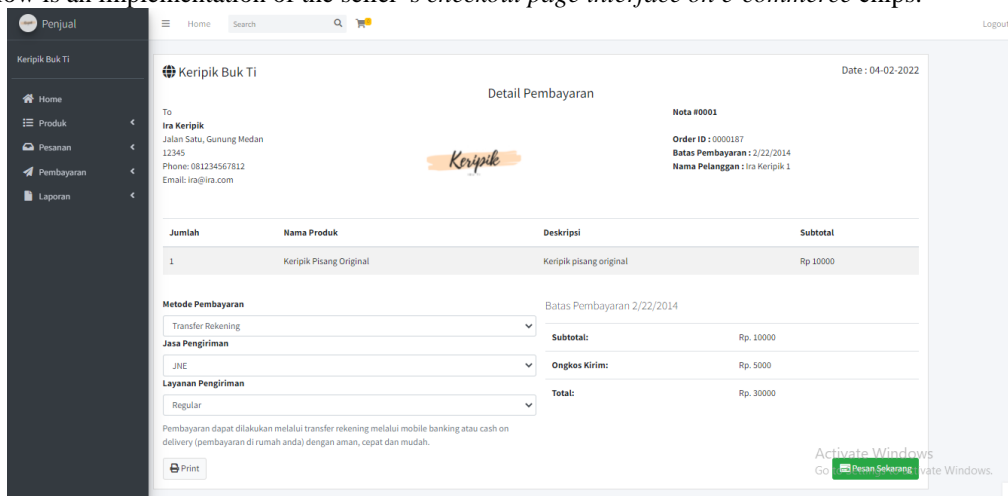


Fig 20 . Seller Checkout Page

Supplier Dashboard Interface Implementation

Below is the implementation of the supplier dashboard page interface on e-commerce evidence chips:



Fig 21. Supplier Dashboard Page

DISCUSSION

Utilization of computerized technology for managing and recording sales of chip products by chip manufacturers can facilitate the management of chip order data by consumers to chip manufacturers. In addition, it also makes it easier for sellers and admins to store data in a more computerized manner. Sellers and admins also no longer have difficulty tracking order data that has been made and calculating profit turnover for each sale. With the existence of web-based e-commerce sales, sales management can be more effective and organized. This condition is in line with previous research(Aulia & Efrizon, 2018).

CONCLUSION

Web-based Chip Sales e-commerce in Padang City uses the PHP & MySQL programming language that has been developed. This e-commerce can manage sales and purchases of chip products, namely managing products, placing orders, checkout processes to managing sales reports. With this E-commerce , the sale of chips and agricultural products becomes easier and more efficient.

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