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Application for Promotion of Micro, Small and Medium Enterprise Activities in Increasing Student Business Creativity Using Digital Technology

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ABSTRACT

This research aims to develop a digital technology-based promotion application aimed at improving students' ability to promote MSME products. This application is expected to provide innovative solutions in increasing the visibility and sales of MSMEs managed by students, by providing features that support promotional activities effectively. The data collection method is carried out through field research, interviews, and direct observation. The results of the study show that this application has great potential in supporting promotional efforts and improving students' digital skills, which in turn can have a positive impact on the local and national economy.

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INTRODUCTION

One of the aspects of human life that is undergoing the fastest transformation is the business world. If in the past businesses operated from door to door, traders sold in the market, opened shops and offered face-to-face. Although this method is still used by people, the era of industry 4.0 and society 5.0 has emerged and all aspects of life must follow it, including business. Due to the fact that humans are economic and social beings, business and humans cannot be separated from each other (Arrizal & Sofyantoro, 2020). Businesses are starting to use information and telecommunications technology to conduct, support and support their operations. Businesses must adapt to the rapid digital transformation. Large companies have enough resources to cope with the changing business patterns that lead to digitalization. However, this digitalization will require a lot of preparation for MSMEs (Padilah et al., 2021).

Micro, Small and Medium Enterprises (MSMEs) play an important role in the Indonesian economy. MSMEs not only provide jobs for the community, but also contribute significantly to the National Gross Domestic Product (GDP) (Firdausya & Ompusunggu, 2023). Small businesses are important to study because they have a crucial role in economic growth on a national and regional scale. Almost 90% of the total businesses in the world are contributions from MSMEs (Parinduri, 2023). However, many MSMEs still face various challenges, especially in terms of promotion and marketing of the products produced. Digital technology, with a variety of platforms and devices available, offers a potential solution to increase the visibility and competitiveness of MSMEs in an increasingly competitive market.

In today's digital era, promotion through digital technology has become a very important need for MSMEs. Digital technology allows for more effective, efficient, and wider customer outreach than conventional methods (Alia Akhmad et al., 2022). Therefore, it is important for MSMEs to adopt digital technology in their promotional strategies. However, many MSMEs, especially those run by students or as beginners, still have difficulty in utilizing digital technology optimally (Zakaria Priyo Utomo et al., 2023).

Students, as a generation that is more familiar with digital technology, have great potential to become agents of change in encouraging technology adoption among MSMEs (Yuniarthe et al., 2022). In addition, student involvement in MSME promotion can also increase their creativity and innovation, as well as provide valuable experience in entrepreneurship. Reliance on manual processes in conventional promotions tends to take a lot of time and effort (Ramadani et al., 2023). Manual processes are also not always guaranteed, especially in achieving the appropriate target market (Firdausya & Ompusunggu, 2023).

In carrying out product promotion, SMK Imelda MSMEs still use conventional methods that have a very limited target market coverage. Limited information accessibility is also an obstacle, especially when students

face difficulties in obtaining product information due to the scarcity or limitation of available information. Manual processes do not support mobility and timely availability of information (Irawan et al., 2024). One way to overcome this problem is to use digital applications to encourage MSME activities. Digital applications can provide students with an easy-to-use platform to learn and be creative in the business field, while helping MSMEs in promoting their products better.

METHOD

This study uses *a mixed-method* approach. The stages of the research carried out are as follows:

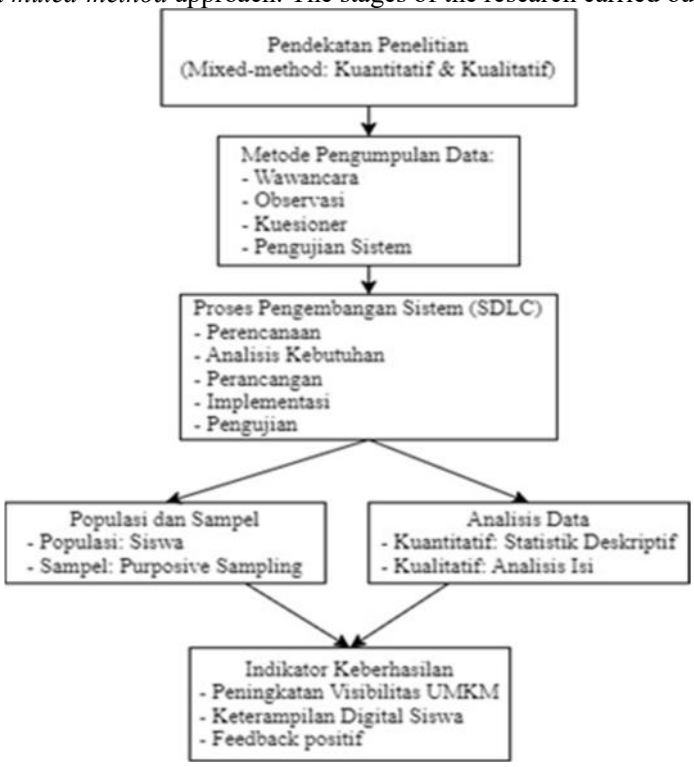

Figure 1. Research Outline

The research method diagram above illustrates the research flow that starts with *a mixed-method* approach (quantitative and qualitative), which is the basis for determining data collection techniques such as interviews, observations, questionnaires, and system testing. The data obtained is used in the SDLC-based system development process, including planning, needs analysis, design, implementation, and testing. The study involved the student population, with a purposive sample for the application trial. The results of the study were analyzed using descriptive statistics for quantitative data and content analysis for qualitative data. All of these steps are directed to achieve success indicators in the form of increased visibility of MSMEs, students' digital skills, and feedback from users. This flow shows the integrative relationship between each stage to achieve the research objectives.

RESULTS AND DISCUSSION

Result

Data Processing Procedure

Data processing procedures are a series of steps taken to collect, process, analyze, and present data so that it can be used for decision-making or other purposes. The current data processing procedure can be seen in the following figure 2.

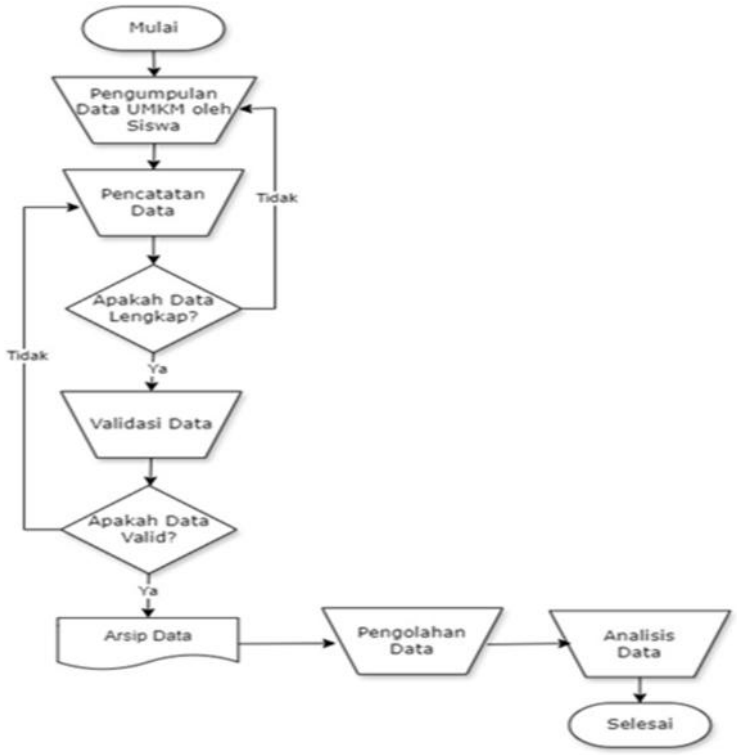

Figure 2. Data Processing Procedure

Flow of Information (*flow of document*)

The flow of information (Flow of Document) in MSMEs students of SMK Imelda is as follows:

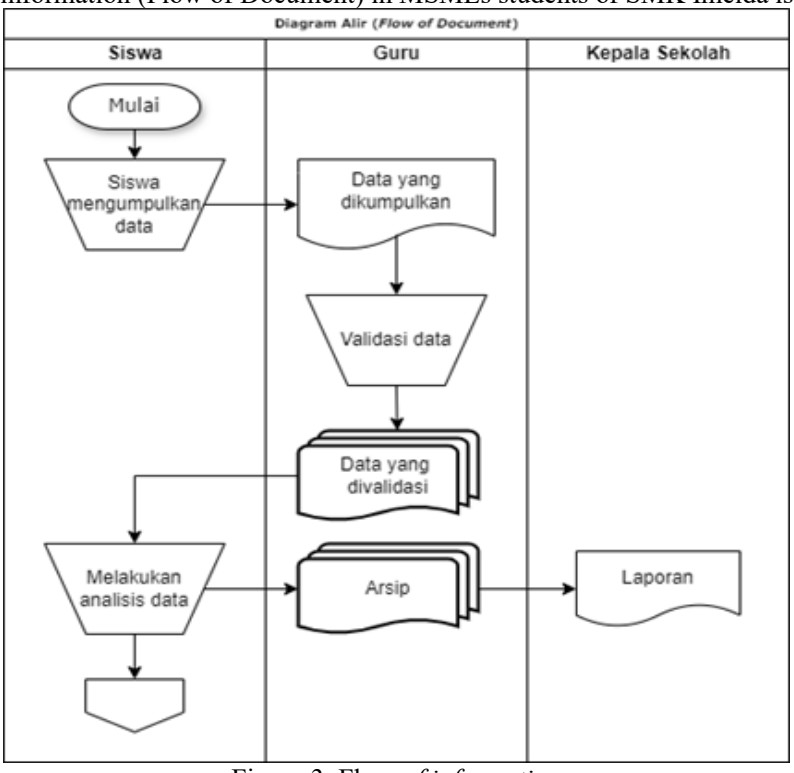

Figure 3. Flow *of information*

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Discussion

System Flowchart

The proposed sietm flowchart is as follows:

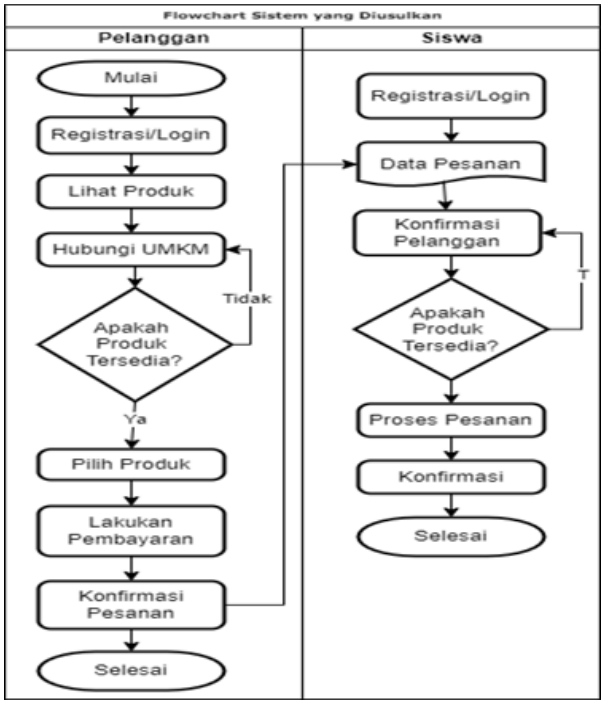

Figure 4. *Proposed system* flowchart

New System Review

The main features of the system are as follows:

1. User management, this feature allows users to register, log in, and manage the information of each account. The system also stores user data that is necessary for other activities such as ordering and payment.
2. Order management, customers can create orders through an easy-to-use interface. The system will record the order details, process them, and update the order status according to developments (for example, when payment has been received).
3. Payment processing, this system supports secure electronic payments. After the customer makes a payment, the system verifies and records the payment, and then updates the status of the customer's order.
4. Product management, admins have full control to add, update, or remove products in the catalog. Product information that is always updated will help customers in choosing and buying products that suit their needs.

Data Flow Diagram System

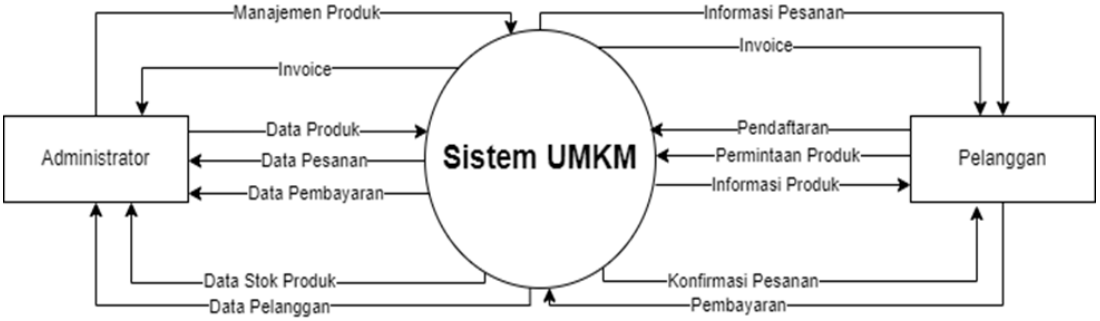

Figure 5. Proposed system context diagram

Figure 5 is a diagram of the proposed DFD 0 system context. As for the context diagram, there are two entities, namely administrators as system managers and customers as system users. The input from the administrator entity is to input product data into the system and manage products at all times, while the output from the system includes product stock data, customer data, payment data, and customer order data. In customer entities that are input to the system, including customers register, make product requests and make payments, while those that are the output of the system to customer entities include order information, invoices, available product information and confirmation of orders that have been made.

DFD Level 1

Based on the context diagram in figure 4.10, DFD Level one will be designed as follows.

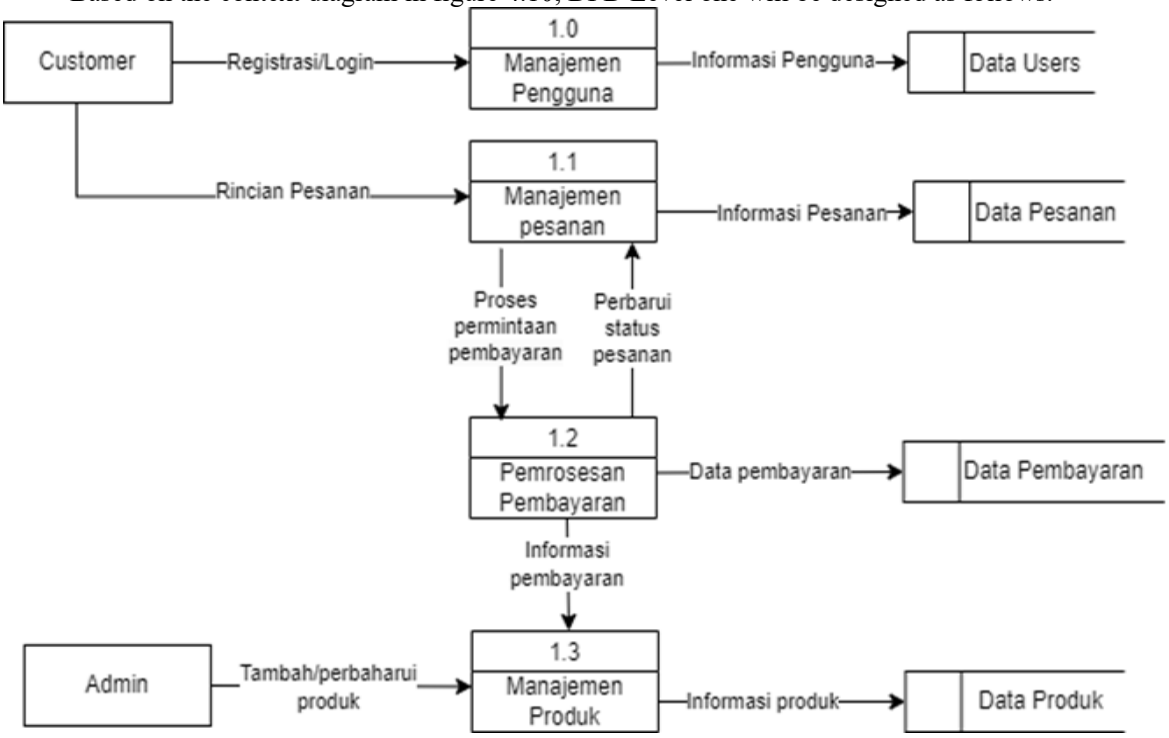

Figure 6. DFD Level 1 customer interaction process

The process starts from the customer registering or logging in to access the system. This process generates user information that is stored in the user data. After logging in, customers can place an order. This order information is passed on to the order management process. Process 1.0 manages user information, such as user registration and authentication. User information obtained from the registration or login process is stored in the user data. Process 1.1 is responsible for the management of customer orders. The details of orders made by the customer will be processed in this process, and information related to the order is stored in the order data. Once the order is placed, the system will process the payment request and update the order status. Process 1.2 order processed, this process handles the payment process. The resulting payment data will be stored in the payment record. Payment information is also sent back to the order management process to update the order status once payment has been received. Process 1.3 is managed by the Admin, who is responsible for adding or updating products in the system. Product information is stored in the product data. This process ensures that product data is always *up-to-date* and in accordance with the catalog available to customers. While the add/update product flow, the Admin has the authority to add or update products through the product management process.

Proposed System Entity Relationship Diagram (ERD)

The ERD in the system to be proposed is as follows:

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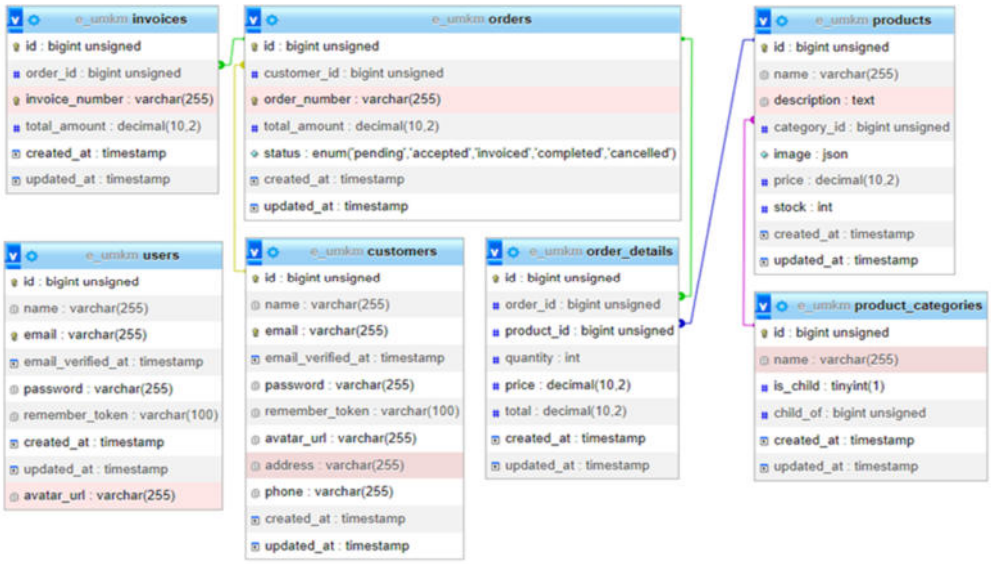

Figure 7. Proposed ERD

Figure 7 is the relationship between entities in the proposed system, it can be seen in the figure that each entity has a relationship whose purpose is to minimize errors when adding, changing and deleting the database system. The relationship between each of these entities is as follows:

1. Orders and customers: Each order placed in the system is associated with a customer. This means that each entry in the orders table has a reference to the customer who made the order.
2. *Orders* and Invoices: Every order that has been created and confirmed will have an invoice. The invoices table associates each invoice with the relevant order.
3. *Orders* and order details: Each order consists of one or more products. Details regarding what products were ordered and how much was stored in the order details table (*order_details*). Each order detail is associated with one specific order.
4. Order *details* and *products*: Each entry in the order details table is related to a specific product that is stored in the products table. It shows what products are ordered and in what quantities.
5. *Products* and Product categories: Each product is associated with a specific category. These categories help group similar products for easier management and search.
6. Users: The user entity represents the admin or administrator of the system.

System Implementation

Customer Login Form

The design of the *user interface* of the customer login page can be seen in the following figure 8.

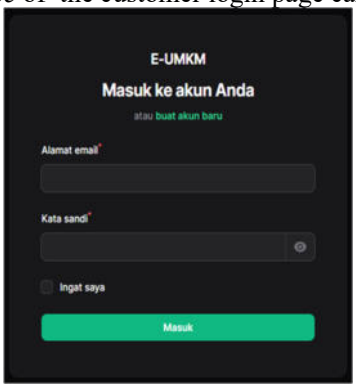

Figure 8. Customer login form

Figure 8 shows the design of the login page on the customer side. In the design, there are several parts, namely the header is listed as a title and a link to create a new account if you have never created an account before. Then there is an email address and password label, each of which has an input, in addition there is a remember me (or *Remember me*) check list to allow users to stay logged *in* on the device or browser used. Next, there is a *button* that functions as a button when the correct email address and password will enter the system, but if it is incorrect, it will display *an error* message.

Customer registration form

The user interface design of the customer register page can be seen in the following figure 9.

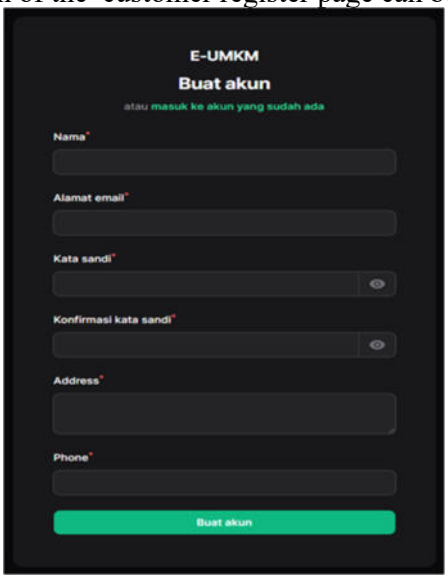

Figure 9. Customer registration form

Figure 9 is the design of the *user interface* page of the customer register on the proposed system. On the proposed customer register page, there are several inputs including customer name input, customer email, password, password confirmation, address and phone number. All of these inputs must be filled in by the customer.

Form dashboard customer

The design of the *user interface* of the customer dashboard page can be seen in the following figure 10.

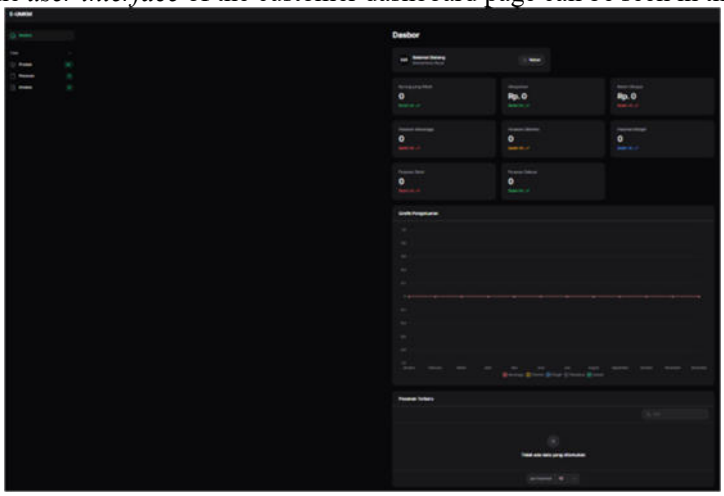

Figure 10. Form dashboard customer

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Figure 10 is the design of the customer dashboard page after successfully entering the username and password correctly. On the design seen on the left there are several menu navigations including store dropdown menus, products, orders and invoices. Meanwhile, on the application body page, there is information such as the number of items that have been purchased, the number of goods whose payment has been completed, the number of products that have not been paid, the number of pending orders, the number of orders that have been received, the number of orders billed, the number of canceled orders, and the number of orders that have been completed. Then to make it easier for users to know the production in a month there is a production graph. Finally, in the section there is a list of newly made orders along with searches.

Order form

The design of the user interface of the order page can be seen in the following figure 11.

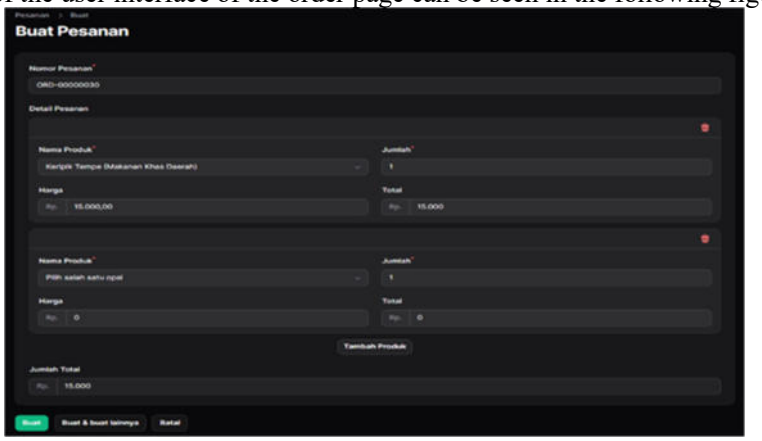

Figure 11. Order form

Figure 11 is the page for creating a new order. On the page there is several pieces of information including the order number, choosing the product name and the input of the amount, price and total columns. There is a button to add other products if needed and the total number of purchases of some items. Finally, there are three buttons, namely the create button to create an order, create and create others to create the entire order, and the cancel button to cancel the order process.

Form Invoice

The design of the *user interface* of the invoice page can be seen in the following figure 12.

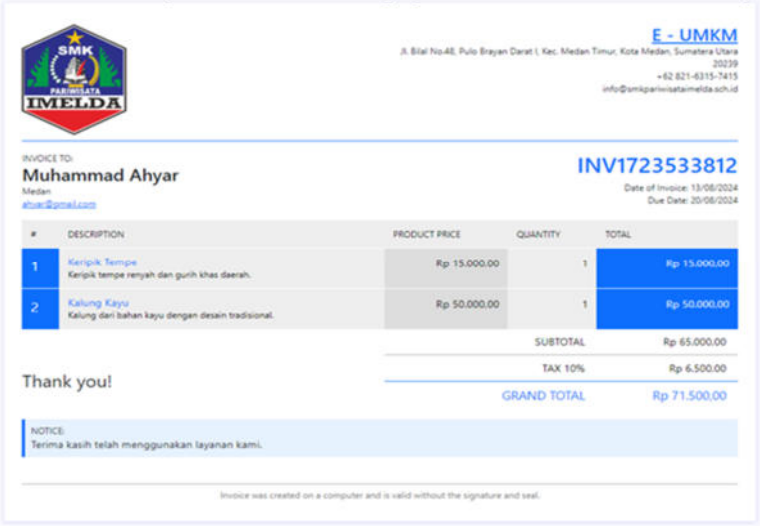

Figure 12. Form invoice

Figure 12 is an invoice design page for customers, while on the invoice page there is some information including the header there is a logo and address of SMK Pariwisata Imelda Medan, there is a customer's name and email address, invoice number and invoice date made. There is a table that contains several product information including description, product price, product price per *quity* and total. At the bottom of the table there is information on the sub-total payment plus 10% (ten percent) tax then the grand total that must be paid.

System home form

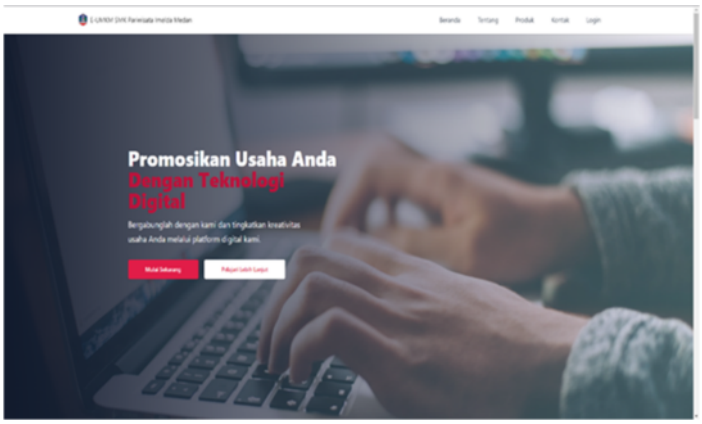

Figure 13. Main page form

The interface design in figure 13 is designed to provide clear and concise information to users about how E-MSMEs can help businesses managed by students. Each section contains a short description that comes with a *call-to-action* (CTA) button to encourage visitors to take the next action, whether to learn more, sign up, or get started right away. Simple navigation and a clear content structure make it easy for visitors to navigate and understand the benefits offered by the system to be designed.

CONCLUSION

Based on the results of research and development carried out, this digital technology-based MSME promotion application has proven to be effective in increasing the visibility and sales of MSME products managed by students of SMK Pariwisata Imelda. This app not only helps in the promotional aspect but also plays a role in improving students' creativity and digital skills. Thus, this application can be considered a useful tool in supporting the development of MSMEs and improving student competence in the field of digital technology.

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