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Implementation of the RAD Method to Build Catering Application Android-based

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Abstract: With the rise of culinary businesses that sell food and beverages at this time, business actors must be ready to compete to win and retain their customers so that their business can survive. Ara Catering is one of the culinary business actors in Rantauprapat City which focuses on the food and beverage ordering business. The ordering process applied by Ara Catering is still conventional, where customers come directly to the business location or place an order by telephone. The conventional model turned out to cause problems, including errors in ordering and ordering notes that had piled up. Therefore, a solution must be found to overcome this problem. Based on these problems, this study aims to build an android-based catering ordering application. The method applied in this research is the Rapid Application Development (RAD) method in which the process stages include: requirements planning, user design, and implementation. After the design and implementation have been carried out, the results show that the RAD method can be applied in building an Android-based catering application quickly and effectively. The conclusion drawn from this research is that to build an android-based catering application using the RAD method, the phases of the method must be carried out thoroughly. Hopefully the results of this research can make a positive contribution to Ara Catering in developing its business.

Keywords: Android, Application; Catering; Order; RAD.

INTRODUCTION

Utilization of information technology as a tool, can facilitate human work to achieve a goal. One of the uses is the use of smartphone-based applications. Currently, the number of smartphone users in Indonesia has reached 96% (Rosyadi, Amrullah, Marcus, & Affandi, 2020). The biggest reason Indonesian people use smartphones is for internet use in messaging applications and social media (Agustyani & Santoso, 2019).

The use of smartphone applications for culinary purposes is also being loved, this happens because many culinary businesses are already using application-based food ordering applications, making it easier for consumers to place orders without the need to come directly to the stall or restaurant (Imron, Palandi, & Maulidi, 2018). One type of culinary business that still survives today is the catering business. Catering is a business that provides food orders, both in the form of heavy meals and snacks, according to consumer demand, for one meal or a fixed subscription (Arridwan, Yabes, & Firmansyah, n.d.).

Ara Catering is a business engaged in the culinary field that sells various types of food. Ara Catering started as a small business in 2010 which is located at Jl. Siringo-ringo, Rantauprapat, Labuhanbatu Regency, North Sumatra. In conveying menu information and the ordering process is still conventional, either through direct orders by customers who come to the house or make orders by telephone or whatsapp. The ordering process is not effective because it requires more time, cost, and effort. In addition, the conventional catering ordering process often results in errors in ordering because there is no order priority scale and the accumulation of order notes (Zuhdi, Tolle, & Ananta, 2019). To overcome these problems, one way is to create an android-based catering application, which allows buyers to view menu types and place orders through the application quickly and effectively.

Research related to the manufacture of Android-based catering applications has been carried out by a number of previous researchers. In developing an android-based catering ordering application in Sumbawa, Rodianto and Safitri applied the waterfall method (Rodianto & Safitri, 2018). Malik and Rosalina have developed an android-based traditional food ordering system by applying the Haversine Formula and Waterall methods (Malik & Rosalina, 2019). The system development method using the waterfall was also carried out by

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Hadisaputra, et al, in making an Android-based food ordering application at a cake shop (Hadisaputra, Agitha, & Albar, 2020).

This study aims to develop an android-based food ordering application for the Ara Catering business. The software development method used is Rapid Application Development (RAD). The reason for choosing this method is because the RAD method is very suitable for application development models that do not take much time (Saraswati, Wardani, Maswari, & Muku, 2021). RAD is also a method developed to overcome the weaknesses of the Waterfall method (Sani & Kurniawan, 2019). The formulation of the problem in this research is how to develop an android-based catering application by applying the Rapid Application Development method.

LITERATURE REVIEW

Android is a Linux-based operating system that provides an open source platform, making it easier for developers to develop applications (Gusman, Sonatha, & Azmi, 2018). The android operating system is specifically designed for smartphone-based mobile devices (Nadapdap & Purba, 2020). Besides being applied as an operating system, the application of Android also includes middleware and applications (Baso, Rindengan, & Sengkey, 2020).

Rapid Application Development (RAD) is a software development methodology that focuses on brief software development phases. Usually an application is built within a minimum of 6 months, with the RAD method it can be completed within 1 to 3 months (Triana, Gunawan, Prasetyo, & Pangestu, 2020). RAD has three stages, namely: Requirement Planning, User Design, and Implementation (Utami, Sastra, & Wiharta, 2021). Requirement planning is a phase where users are directly involved in application development (Saraswati et al., 2021). User design is a phase used to design and improve systems (workshops) (Baso et al., 2020). While implementation is the phase where the programmer develops a design that has been agreed with the user by conducting several tests on the application whether there are bugs or errors (Triana et al., 2020).

METHOD

The system development method used to create this application is Rapid Application Development which is illustrated through the stages in Figure 1 below.

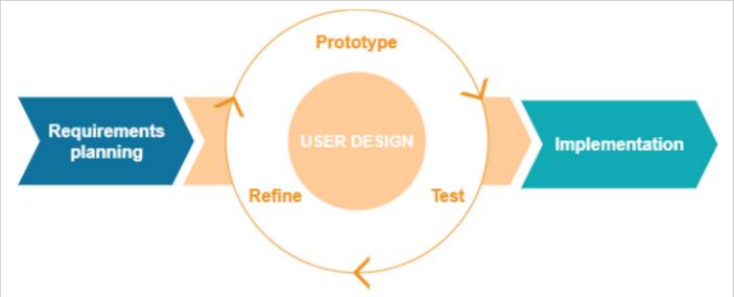

Fig.1 RAD Model Stages (Utami et al., 2021)

Requirements planning

At this stage, data was collected through interviews and literature studies. All information will be extracted as much as possible from Ara Catering.

User Design

Stages of system design for solutions to existing problems using system modeling tools such as data flow diagrams (data flow diagrams), entity relationship diagrams (entity relationship diagrams) and data structures and discussions. In this application, an ordering process will be made that can help customers and produce an order report output.

Implementation

At this stage, the program code is written by translating the design into a language that can be recognized by the computer. This stage is a real stage in working on a system.

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RESULT

After designing the system, the results are discussed in this section. In this application, before logging in, customers must register first by pressing the register button in the application. After successful registration, customers can login by entering their username and password. After successful login, the customer will be directed to the home page to see what products or menus are available at Ara Catering. After making a choice, the customer can order the product and then put it in the order cart. In this section, customers can delete cart contents or make additions and subtractions to cart contents. After setting the order option, the customer can place an order with Ara Catering. After the order is confirmed, the customer can make a payment so that the order is quickly processed by Ara Catering. Customers can also get a history of orders that have been made previously. Then, after completing the payment, the customer can logout from the application.

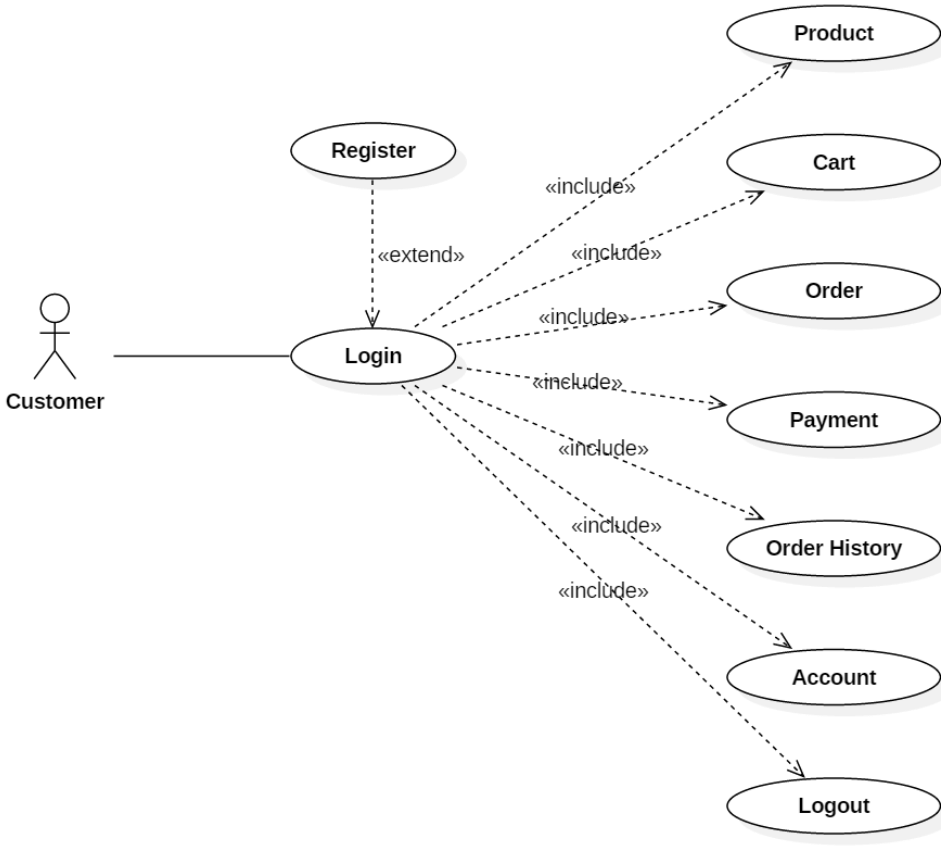

Fig 2. Use Case Diagram of Customer

In this application, Admin can also login before entering the home page. Admin fills in the login form by entering the username and password, then goes to the home page. In the product menu, Admin can see all the products that have been entered. Admin can also access product data by adding, deleting and changing the product menu. On the order page, admins can see information on orders that have been entered, admins can choose whether the order is accepted or rejected. On the report page, admins can view sales reports which are the history of customer orders. The activity diagram of the admin order data can be seen in Figure 3 below.

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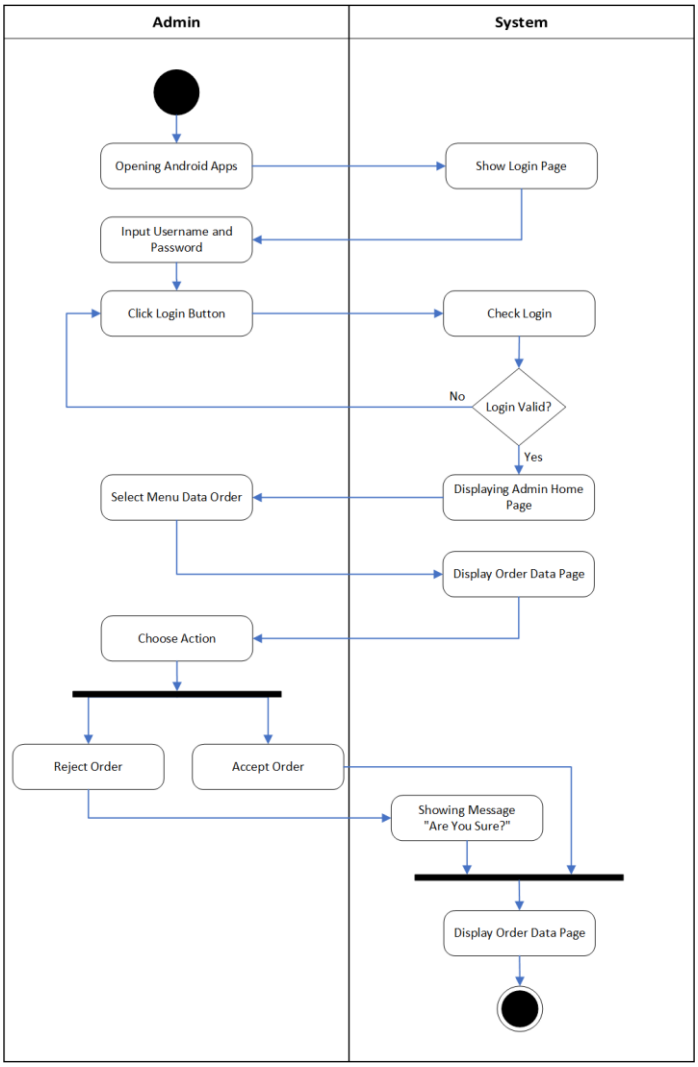

Fig 3. Order Diagram Activity of Admin

The database structure of the application is shown in Figure 4 below. The database in this application uses five interrelated tables. The table consists of: tb_users which is a table that holds the identity of the user, be it Admin or customer, which consists of 10 attributes. tb_product is a table where the food and beverage menu will be stored. tb_category which is a table of food and beverage menu categories. tb_order is a table that holds everything related to catering orders. tb_cart is a table where catering orders are accommodated before payment is made.

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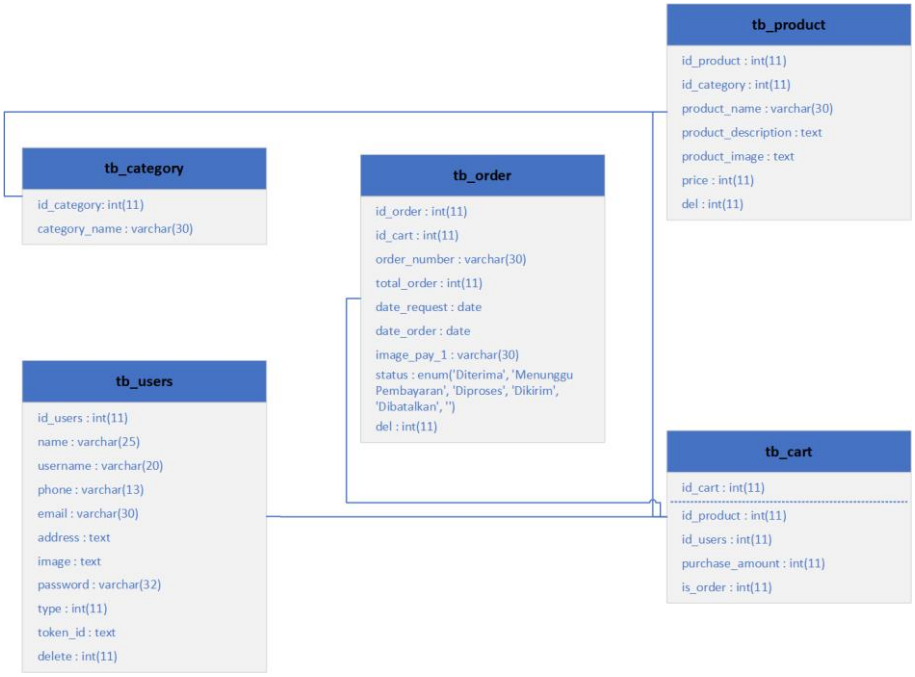

Fig 4. ERD Diagram Application

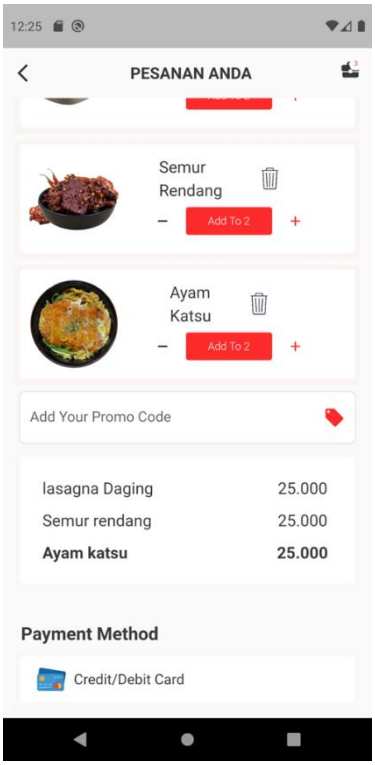

Fig 5. Order Page

Figure 5 shows the application display from the catering order page. After the customer places an order for the catering menu and before making a payment, the application will display order history data that has been made by the customer, all of which can be recorded by the system when the customer places an order, if the customer wants to see product details, press the order item you want to view.

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CONCLUSION

After designing and implementing the system, the result is that an android-based catering application can be developed by applying the Rapid Application Development method. The conclusion of this research is to be able to develop an android-based catering application by applying the Rapid Application Development method, three stages must be carried out, namely, system requirements analysis, system design, and system implementation.

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