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# INTEGRATING SOCIAL NETWORKING AND CULINARY EXPLORATION: DESIGNING A 'SOCIAL MEDIA FOR RECIPES' MOBILE APPLICATION USING FIGMA IN AN EDUCATIONAL CONTEXT

**Abstrak**
Aplikasi mobile telah merevolusi banyak aspek kehidupan modern, termasuk komunikasi, berbagi, dan pembelajaran. Menyadari konvergensi antara media sosial dan minat kuliner, makalah ini menyajikan pengembangan desain aplikasi mobile yang berjudul "Social Media for Recipes" menggunakan Figma. Platform ini bertujuan untuk mengintegrasikan fitur jaringan sosial dengan eksplorasi kuliner sesuai dengan kebutuhan yang berkembang dari para pecinta kuliner. Melalui pendekatan terstruktur berdasarkan Waterfall Software Development Life Cycle (SDLC), penelitian ini berfokus pada analisis kebutuhan dan desain. Desain aplikasi ini mengutamakan desain yang berpusat pada pengguna, inovasi, dan kepatuhan terhadap metodologi pengembangan yang kuat. Hasil utama termasuk aplikasi resep yang dirancang menggunakan Figma. Arah masa depan memerlukan pengembangan, implementasi, perbaikan berkelanjutan, dan perluasan fungsionalitas untuk memenuhi ekspektasi pengguna yang terus berkembang.
**Kata Kunci:** Aplikasi Mobile; Media Sosial; Eksplorasi Kuliner; Desain; Figma.

**Abstract**
Mobile applications have revolutionized many aspects of modern life, including communication, sharing, and learning. Recognizing the convergence of social media and culinary interests, this paper presents the development of a mobile application design entitled "Social Media for Recipes" using Figma. This platform aims to integrate social networking features with culinary exploration following the growing needs of culinary lovers. Through a structured approach based on the Waterfall Software Development Life Cycle (SDLC), research focuses on requirements analysis and design. The app's design prioritizes user-centered design, innovation, and adherence to a robust development methodology. Key deliverables include a recipe app designed using Figma. Future directions require development, implementation, continuous improvement, and expansion of functionality to meet evolving user expectations.
**Keywords:** Mobile Applications; Social Media; Culinary Exploration; Design; Figma.

## INTRODUCTION

Mobile applications have completely changed the way we communicate, share, and learn in the modern digital age (Fawzi & Subriadi, 2023). Given the increasing prevalence of social media platforms and the growing interest in food discovery, there is a singular chance to combine two domains into one cutting-edge platform. This article describes an innovative project in the field of mobile application development that focuses on the creation and use of a brand-new app called "Social Media for Recipes (Sun et al., 2020)." The way people interact with culinary experiences has changed because of the widespread use of cell phones. There is an innate urge to interact, exchange, and learn new recipes, whether one is an amateur chef looking for inspiration or an experienced chef eager to present their masterpieces (Blanke et al., 2021). Nevertheless, specialized features catered to the particular requirements of food fans are

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sometimes absent from popular social networking platforms. As a result, there is an overwhelming need for a specialized platform that combines social networking (Rachmat, 2008) features with an emphasis on food discovery. Apart from prioritizing the needs and preferences of users, "Social Media for Recipes" or Recipe App also demonstrates a dedication to creativity and flexibility. We want to ensure that our application stays at the forefront of culinary innovation by incorporating cutting-edge technology like machine learning algorithms, and real-time collaboration capabilities through constant iteration and improvement. We aim to redefine the landscape of culinary engagement in the digital age by pushing the limits of conventional recipe-sharing platforms and embracing an experimentation and discovery culture. To sum up, this article describes a novel project in the field of designing mobile applications, with an emphasis on the creation of a ground-breaking platform called "Social Media for Recipes." by skillfully steadfastly adhering to user-centric design principles, we want to produce a revolutionary experience that surpasses the traditional limitations of recipe-sharing platforms.

**Mobile Application**

Mobile applications are software specifically designed to run on mobile devices such as smartphones and tablets. The main difference between mobile apps and desktop apps is their smaller size and more responsive design for smaller screens (Azzahra et al., 2023). Mobile applications can be divided into two main types, native applications and web-based applications. Native apps are designed specifically for a particular platform, such as iOS for iPhone and iPad, or Android for devices running the Android operating system. Native applications are developed using programming languages specific to the intended platform, such as Swift or Objective-C for iOS, and Java or Kotlin for Android. On the other hand, web-based applications can be accessed via a web browser on a mobile device. They do not need to be downloaded and installed separately and are generally easier to develop and update. Web-based applications use web technologies such as HTML, CSS, and JavaScript, and can run on multiple platforms with little or no modification.

**UI/UX Design**

User Interface (UI) is often referred to as Human Computer Interaction (HCI), where every aspect is interrelated. In general, UI uses a graphic display that directly interacts with the user and is part of the computer and software that humans can perceive through sight, hearing, touch or understanding (Ratnasari et al., 2024). UI is a tool used by designers to create interfaces on software or computerized devices. The main focus is to create an attractive appearance and style so that users can easily and pleasantly interact with the technology. UI includes various types of interfaces, including voice-controlled ones, and its purpose is to bridge users with computer technology. Thus, the role of UI becomes increasingly important in this era of continuously developing technology. UI is also knowledge about the graphical layout of a web or application with its scope of buttons that can be clicked by users, text, images, text entry fields, and all items that users will interact with (Defriani et al., 2022). UX (User experience) is a design used to increase user satisfaction in using a website through comfort, smoothness, usability and enjoyment in the interaction between the user and the products offered. UX has the function of making e-commerce websites easier and less confusing for users. UX can be interpreted as all elements of a website which include structure, arrangement, and ease of moving from one page to another. UX is used as an umbrella term that considers all people's interactions with a product and includes the thoughts, feelings and perceptions that result from those interactions (Ebel et al., 2021).

**Figma**

Figma is a design tool that is usually used to create the appearance of mobile applications, desktops, websites and so on. Figma can be used on Windows, Linux or Mac operating systems by connecting to the internet. Figma has the advantage that more than one person can do the same work together, even in different places. This can be said to be group work and because of the capabilities of the Figma application, this application is the choice of many UI/UX designers to create website or application prototypes quickly and effectively (Al-Faruq et al., 2022). Figma is a design tool that is changing the way we work, bringing powerful workflows to a wide range of content creators. Figma offers solutions for a wide range of design needs, suitable for both individuals and teams in large or small companies. Thanks to this innovative approach, Figma has gained global popularity among designers (Ratnasari et al., 2024)".

## METHODOLOGY

This research project aims to design a mobile application named "Social Media for Recipes" using Figma. This application will allow users to discover, share, and interact with recipes in a social media-like environment. The research methodology employed for this project will follow a structured approach based on the Waterfall Software Development Life Cycle (SDLC). The requirements analysis for the application will be derived from observations of similar existing applications in the market. The requirements for the "Social Media for Recipes" application will be identified through the observation and analysis of existing applications that serve similar purposes. This will involve:

1. Conducting a thorough review and analysis of existing social media platforms and recipe-sharing applications.
2. Identifying common features, functionalities, and user interactions present in these applications.
3. Surveying potential target users to gather insights into their expectations, needs, and preferences regarding a recipe-sharing social media platform.

### Design Phase

The design phase will involve translating the requirements gathered during the analysis phase into a comprehensive design for the "Social Media for Recipes" application. This will include: Creating mockups of the user interface based on the identified requirements and best practices in mobile app design. Defining the overall architecture and navigation flow of the application. Identifying and selecting appropriate design patterns and components offered by the Flutter (Grigore, 2019) framework to implement the desired functionalities.

## RESULTS AND DISCUSSION

In this research, we will use the Waterfall SDLC which started from the analysis until the testing process. For the details of each process, it will be described below.

### User requirements Recipe App

The Recipe app has two user roles, namely the user to view recipes and also the user to upload recipes. Users are required to log in with their account to be able to upload their recipes. Recipe app can display "popular" recipes. Recipe app has a "favorites" feature that allows users to save their favorite recipes.

### Design

Entity Relationship Diagram

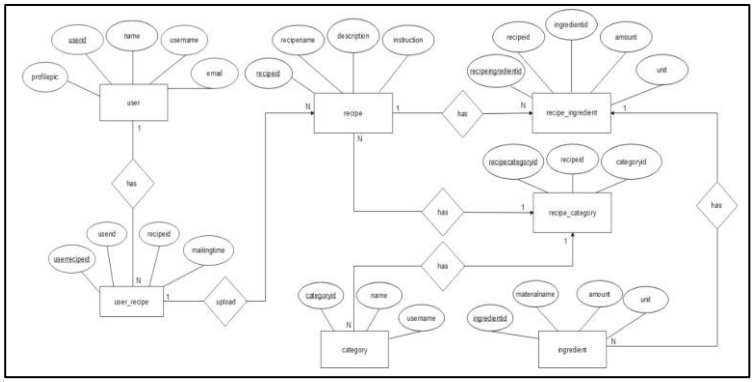


Figure 1. Entity Relationship Diagram of Recipe App

The following are the relationship names of these tables in the ERD and their cardinalities:

Table 1. Entity – Attribute Detail

| Entity | Attributes |
|---|---|
| Users | a. UserID (Primary Key)<br>b. Nama (Name)<br>c. Username<br>d. Email (Unique)<br>e. Password |

| | |
|---|---|
| | f. ProfilePic (Profile Picture) |
| Recipe | a. RecipeID (Primary Key)<br>b. NamaResep (Recipe Name)<br>c. Deskripsi (Description)<br>d. Instruksi (Instructions) |
| Ingredient | a. IngredientID (Primary Key)<br>b. NamaBahan (Ingredient Name)<br>c. Jumlah (Quantity)<br>d. Satuan (Unit) |
| Category | a. CategoryID (Primary Key)<br>b. Nama Kategori (Category Name)<br>c. Deskripsi (Description) |
| User – Recipe (User_Recipe) | a. UserRecipeID (Primary Key)<br>b. UserID (Foreign Key referencing User.UserID)<br>c. RecipeID (Foreign Key referencing Recipe.RecipeID)<br>d. WaktuMembuat (Timestamp for Time of Creation) |
| Recipe – Ingredient (Recipe_Ingredient) | a. UserRecipeID (Primary Key)<br>b. UserID (Foreign Key referencing User.UserID)<br>c. RecipeID (Foreign Key referencing Recipe.RecipeID)<br>d. WaktuMembuat (Timestamp for Time of Creation) |
| Recipe – Category (Recipe_Category) | a. RecipeCategoryID (Primary Key)<br>b. RecipeID (Foreign Key referencing Recipe.RecipeID)<br>c. CategoryID (Foreign Key referencing Category.CategoryID) |

Table 2. Relation – Cardinality Detail

| **Relation** | **Cardinality** |
|---|---|
| User Table (User) and User and Recipe Relationship Table (User_Recipe) | a. Each user can have many user-recipe relationships (1:N)<br>b. Each user-recipe relationship belongs to only one user (N:1) |
| Recipe Table (Recipe) and Recipe and Ingredient Relationship Table (Recipe_Ingredient) | a. Each recipe can contain many recipe-ingredient relationships (1:N)<br>b. Each recipe-ingredient relationship contains only one recipe (N:1) |
| Recipe Table (Recipe) and Recipe and Category Relationship Table (Recipe_Category) | a. Each recipe can belong to many recipe-category relationships (1:N)<br>b. Each recipe-category relationship includes only one recipe (N:1) |
| User and Recipe Relationship Table (User_Recipe) and Recipe Table (Recipe) | a. Each user can upload multiple recipes (1:N)<br>b. Each recipe is owned by only one user (N:1) |
| Category Table (Category) and Recipe and Category Relationship Table (Recipe_Category) | a. Each category can belong to many recipe-category relationships (N:1)<br>b. Each recipe-category relationship includes only one category (1:1) |
| Ingredient Table and Recipe and Ingredient | a. Each ingredient can be needed for |

| | |
|---|---|
| Relationship Table (Recipe_Ingredient) | many recipe-ingredient relationships (N:1)<br>b. Each recipe-ingredient relationship requires only one ingredient (1:1) |

Diagram Context

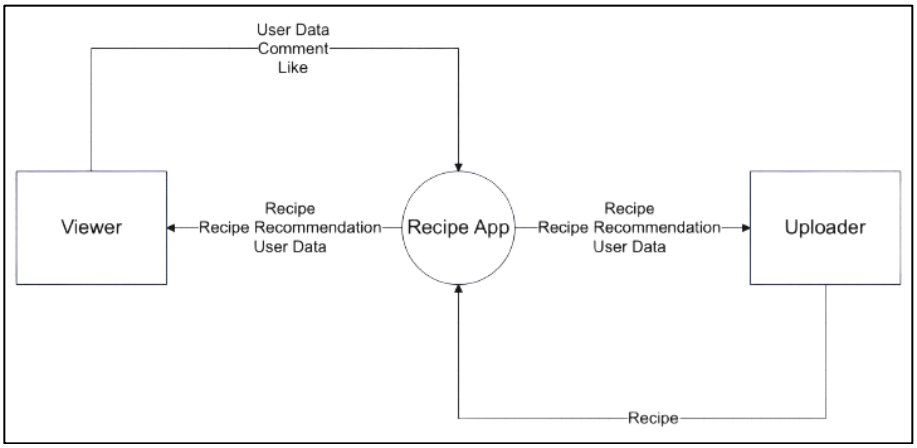


Figure 2. Diagram Context Recipe App

Based on the Context Diagram or Data Flow Diagram Level 0 from the Recipe App, there are several data flows. The user adds 'user data' to be able to access the application, then the Uploader adds 'recipe data' to the system and then it becomes a 'recipe list' which the Viewer can see, if the Viewer has seen the 'recipe list' then the Viewer can provide feedback in the form of likes or comments to the recipe that has been entered by the Uploader.

Physical Data Model

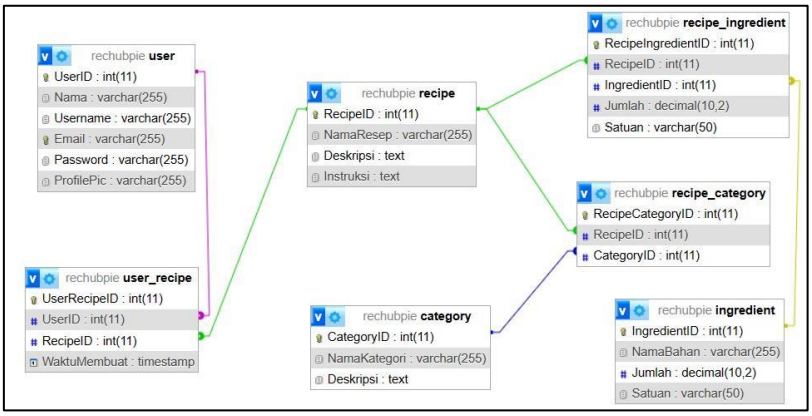


Figure 2. Physical Data Model Recipe App

Based on the physical data model in Figure 3, here are the details for each table

Table 3. Physical Data Model Detail

| Table | Columns |
|---|---|
| User | a. `UserID`: Primary key to identify a user.<br>b. `Nama`: User name.<br>c. `Username`: Unique username.<br>d. `Email`: Unique user email address.<br>e. `Password`: User password.<br>f. `ProfilePic`: The path or URL of the user's profile picture. |
| Recipe | a. `RecipeID`: Primary key for recipe |

| | |
|---|---|
| | identification.<br>b. `NamaResep`: The name of the recipe.<br>c. `Deskripsi`: Recipe description.<br>d. `Instruksi`: Step by step recipe instructions. |
| Ingredient | a. `IngredientID`: Primary key for ingredient identification.<br>b. `NamaBahan`: Name of the material.<br>c. `Jumlah`: The amount of ingredients with two decimal digits.<br>d. `Satuan`: Units for the amount of ingredients. |
| Category | a. `CategoryID`: Primary key for category identification.<br>b. `NamaKategori`: Category name.<br>c. `Deskripsi`: Category description. |
| User – Recipe (User_Recipe) | a. `UserRecipeID`: Primary key for relationship identification.<br>b. `UserID`: Foreign key that refers to the UserID in the User table.<br>c. `RecipeID`: Foreign key that refers to Recipes in the Recipe table.<br>d. `WaktuMembuat`: Relationship creation time. |
| Recipe – Ingredient (Recipe_Ingredient) | a. `RecipeIngredientID`: Primary key for relationship identification.<br>b. `RecipeID`: Foreign key that refers to the RecipeID in the Recipe table.<br>c. `IngredientID`: Foreign key that refers to the IngredientID in the Ingredient table.<br>d. `Jumlah`: The number of ingredients in the recipe.<br>e. `Satuan`: Units for the amount of ingredients. |
| Recipe – Category (Recipe_Category) | a. `RecipeCategoryID`: Primary key for relationship identification.<br>b. `RecipeID`: Foreign key that refers to the RecipeID in the Recipe table.<br>c. `CategoryID`: Foreign key that refers to the CategoryID in the Category table |

The Main Page serves as the initial screen of the application, offering users two options: "Sign Up" to create a new account or "Login" for existing users to proceed further into the app. Once logged in, users are greeted by the Home Page, which is the central hub of the Recipe application. This page features a list of food recipes presented in both slide and list formats, with a dedicated section showcasing popular recipes with the most likes. Users can also search for specific recipes using the 'search' feature. To access the application, the Login Page allows users to enter their registered email and password, with additional options to recover a forgotten password or navigate to the registration page. New users can create an account on the Register Page by inputting their name, email, password, and confirming the password. If they already have an account, they can quickly switch to the login process. Upon selecting a recipe, the Recipe Page displays a detailed view that includes a photo of the dish, a list of ingredients, step-by-step instructions, and the total cooking time. Users can save, share, or mark their favorite recipes directly from this page. For those who wish to contribute, the Upload Page enables users to add new food or drink recipes, which will then be available for others to view and try. The

Favorite Page conveniently organizes the recipes that users have liked, allowing for easy access to their preferred dishes. The Settings Page provides various options, such as viewing profile information (username, email), adjusting the appearance of the app, reviewing the Privacy Policy, and learning more about the platform through the About section. Additional functionalities include changing the registered email, securely logging out, or deleting the account along with its associated data.

## CONCLUSIONS

The design development of the Recipe App is a significant achievement that brings together mobile technology (Vassilev, 2021), culinary experiences, and social networks (Rogers, 1995). The most important results of the project can be summarized as follows, integration of social and culinary experiences. A unique platform design has been created by seamlessly integrating social media functionality into the culinary field. Users can easily share their cooking experiences, discover new recipes, and join a vibrant food community that caters to the specific needs and interests of food lovers. The robust foundation of your application is due to a structured waterfall software development life cycle (Jones and McLean, 1970). Accurate execution of requirements analysis, design, and development phases ensures a clear understanding of user needs and a systematic approach that enables efficient implementation. A comprehensive analysis of the existing platform played an important role in adapting the application (Yin, 2018) to different user requirements. By identifying common characteristics and understanding user expectations. Although great successes have been achieved, continuous improvement remains essential (Umar & Ko, 2022). Future directions could include implementing, deploying, and expanding the app's functionality, integrating advanced machine-learning capabilities for personalized recommendations, and improving collaboration elements.

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