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KZ-PROFESI: DEVELOPMENT OF PROFESSION ZAKAT CALCULATING APPLICATION FEATURES AND SERVICES

Eni Zulfa Hidayah[1], Zainur Rozikin[2], Maulida Dwi Agustiningsih[3]*, Fahrobby Adnan[4]
Faculty of Ushuluddin Adab and Humaniora, UIN Kiai Haji Achmad Siddiq Jember[123], Faculty of Computer Science, University of Jember[4]
**maulidadwia@uinkhas.ac.id*

Abstract - *Indonesia has a huge potential for zakat, given that the majority of its population is Muslim. This potential comes from various types of zakat, such as zakat fitrah, zakat maal, professional zakat, and infaq and sadaqah. This research aims to develop professional zakat application features and services that can help people understand and calculate the amount of professional zakat. The research uses the 4D approach: Define, Design, Develop, and Disseminate. The user needs definition phase is carried out through a literature review. Before the application development, design is conducted using Use Case diagrams and Flow screen diagrams. The application is developed using Kodular and implemented on Android smartphones. Testing is performed using black box testing for functional and System Usability Scale (SUS) testing for non-functional requirements. The functional testing results show that the application's primary function successfully calculates professional zakat. The results of the non-functional testing using SUS indicate that the application is categorized as good.*

Keyword: *Zakat, Professional Zakat, Application, Service, System Usability Scale*

Abstrak - *Indonesia memiliki potensi zakat yang sangat besar, mengingat mayoritas penduduknya beragama Islam. Potensi ini berasal dari berbagai jenis zakat, seperti zakat fitrah, zakat maal, zakat profesi, serta infaq dan sedekah. Penelitian ini bertujuan untuk mengembangkan fitur dan layanan aplikasi zakat profesi yang dapat membantu masyarakat dalam memahami dan menghitung besaran zakat profesi. Penelitian menggunakan pendekatan 4D: Define, Design, Develop, dan Disseminate. Tahap pendefinisian kebutuhan pengguna dilakukan dengan studi literatur. Sebelum pembuatan aplikasi, dilakukan desain menggunakan diagram Usecase dan Flowscreen. Pengembangan aplikasi menggunakan Kodular dan diimplementasikan pada smartphone Android. Pengujian dilakukan dengan menggunakan pengujian black box untuk kebutuhan fungsional dan pengujian System Usability Scale (SUS) untuk kebutuhan non fungsional. Hasil pengujian fungsional menunjukkan bahwa fungsi utama aplikasi telah berhasil menghitung zakat profesi. Hasil pengujian non fungsional menggunakan SUS menunjukkan bahwa aplikasi termasuk dalam kategori baik.*

Kata kunci: *Zakat, Zakat Profesi, Aplikasi, Servis, System Usability Scale*

A. INTRODUCTION

The global economy has yet to recover fully and experienced many turbulent challenges, especially after COVID19 pandemic. Prolonged global challenges have led to increased debt vulnerability and hindered the path to recovery, impacting vulnerable groups in society, especially in low-income and developing countries. According to the most recent World Bank predictions, the global economy will remain fragile this year and in 2024, with a danger of a severe downturn. According to the base case, global growth would gradually increase to 2.4 per cent in 2024 after slowing from 3.1 per cent in 2022 to 2.1 per cent in 2023 (World Bank, 2023).

Zakat potentially creates many funds that can later be manifested to increase economic growth and people's welfare. Zakat funds can strengthen the economic independence of the Muslim community (Amanda et al., 2021; Pristi & Setiawan, 2019). Zakat is an absolute thing and should be fulfilled by every Muslim. Allah Almighty has established zakat as part of the pillars of Islam (Safitri et al., 2022; Hafidhuddin, 2002). The definition of profession itself can be interpreted as a professional business, work, or provision of services (Hafidhuddin, 2002).

Indonesia has enormous zakat potential, but the zakat funds that have been collected have yet to be comparable to the existing potential (Nugroho & Nurkhin, 2019). BAZNAS data shows that in 2020 the collection of zakat infaq and alms was as much as 3%, and 2021 3.67% (BAZNAS, 2023). One sign of the lack of understanding of Muslims about zakat can be observed through the high number and level of poverty in the Islamic community, especially among Muslims in Indonesia. The issue that still needs attention among Muslims is the obligation to pay profession zakat.

Theoretically, zakat is divided into two things: zakat fitrah and zakat mal. All previous Muslim communities apply these two types of zakat to this day, where they are very careful in taking the law, using books by classical scholars as a reference. However, in the contemporary era, the law will change along with social changes in terms of economics as well as the new law of the zakat profession. If in the time of the Prophet, it was called zakat mal, in this contemporary era, it is called zakat profession. The absence of any work or profession at the time of the Prophet and the mujtahid imams in the past makes zakat a profession not very well known or foreign in the classical books of jurisprudence and Sunnah. The condition led to differences of opinion among scholars about the zakat profession (Subekti et al., 2022).

The research refers to contemporary jurisprudence scholars, Shaykh Yusuf al Qardhawi, related to profession zakat law. In his opinion, Shaykh Yusuf Al Qaradawi refers to the opinion of Muhammad Al Ghazali in his book entitled Ghazali in the book Islam wa al-Audza' al-Iqtishadiyyah. In his book, it is stated that the foundation for the determination of zakat in Islam is only capital, increasing, decreasing, or fixed after the passage of a year. Ghazali concluded that a person who has an income not less than the income of a farmer who finds a zakat obligation, then that person must issue a zakat equal to the farmer's zakat without considering the capital conditions and requirements. Therefore, some professions such as entrepreneurs, employees, workers, advocates, doctors, and others must issue zakat from their income (Qaradawi et al., 2007).

Some Indonesian Muslim communities still do not know about profession zakat, so a lack of understanding will lead to unconsciousness to issue zakat (Nugraha & Zen, 2020). Meanwhile, understanding zakat is one of the determinants for someone to pay zakat (Kasri & Yuniar, 2021; Rokhman, 2022). Many civil servants in the government with actual income still meet the requirements to carry out profession zakat but have not fulfilled the obligation of profession zakat (Nugroho & Nurkhin, 2019). Moreover, zakat obligations for the community are still not fully understood, despite the efforts made by zakat management organizations in both the District Baznas (Anwar et al., 2019). It is necessary to provide adequate information about Zakat to the community (Cokrohadisumarto et al., 2019).

Mobile device applications help humans work in many aspects, including the zakat profession in Indonesia (Malhotra et al., 2020; Ninglasari & Muhammad, 2021). The condition is supported by the penetration rate of internet users reaching 210,026,769 people out of a total population of 272,682,600 people in Indonesia in 2021. Furthermore, the most used devices were mobile phones or tablets, reaching 89.03% (APJII, 2022). With a few billion devices already, the Android ecosystem is expanding (Gao et al., 2021). The development of new mobile technologies has accelerated the mobile application market's growth. Android OS is the most extensively used, well-liked, and user-friendly mobile platform (Sarkar et al., 2019). Android is a mobile-based operating system widely used today, mainly on smartphones or tablets. Android is an open-source operating system, which is a system with open sources that allows users to develop openly. An open-source operating system provides an excellent opportunity for application developers. Android is an alternative operating system that supports free applications that can be downloaded via the Google Play Store (Cholid & Ambarwati, 2021).

Some online applications offer a zakat payment feature (Ferdana et al., 2022; Hidayat & Mukhlisin, 2020). However, there are limitations to existing applications. Based on the study of existing mobile applications, including those found in the Google Play store, there are two similar applications. The first application is called "Kalkulator Zakat Profesi". The application "Kalkulator Zakat Profesi" only uses rice as the nisab (Media, 2023). The second application is called "HITUNG ZAKAT PROFESIKU". This application uses gold as the nisab, but the explanation of profession zakat and its legal basis is incomplete (OnAplikasiDEV, 2023). The research aims to build applications, features, and services of the KZ-Profesi, profession zakat calculator application. KZ-Profession application developed using gold and rice as nisab. All workers can use the benefits obtained from application development research to calculate the ratio. In addition, there is a comprehensive explanation of profession zakat and its legal basis.

Reviewing based on the background that states the importance of zakat potential, which is a potential and effective forum for building social welfare centered on the healthy economic growth of the people. Zakat management is operated professionly, well, and trustfully. Moreover, zakat potentially creates many funds that can later be manifested to increase economic growth and

people's welfare. The research question is how to make features and services of the profession zakat application that can help the public to calculate the ratio.

B. METHOD

This study uses the 4D model development approach: Define, Design, Develop, and Disseminate. Previous research developed e-modules using Kodular choices to adapt 4D model development: Define, Design, Develop, and Disseminate (Syarlisjiswan et al., 2021). At the definition stage, an analysis of the functional and non-functional requirements of prospective application users is carried out. In addition, a literature review was carried out at the initial definition stage. The initial literature review aims to dig from various sources such as books, reports, journals, previous research, and articles to explore and identify applications with features or services related to calculating profession zakat on the Google Play Store. Then identify the features or services related to profession zakat in the current era. The next step is to analyze the features of zakat. The primary data source used is data that is directly related to the research object, official links to features and services from Zakat calculator service providers in mobile device applications. In addition, secondary data sources were obtained from various sources such as journals, books, reports, articles, previous research, and application user testimonials. The applications selected for analysis are applications that are widely used or downloaded by Indonesian people. One indicator is the number of downloads on application platforms such as the Google Play Store. At the design stage, a flow screen design is carried out.

X = Sum of the points for all odd-numbered questions – 5

Y = 25 – Sum of the points for all even-numbered questions

SUS Score = (X + Y) x 2.5

Table 1. Interpretation of System Usability Scale (SUS) Score

SUS Score	Adjective Rating	Grade
> 80.3	A	Excellent
68 – 80.3	B	Good
68	C	Okay
51 – 68	D	Poor
< 51	F	Awful

Source: (UIUX Trend, 2023)

The mobile application development stage uses Kodular. The final step before dissemination is application testing. Application testing is carried out in 2 stages: functional and non-functional. Functional testing uses black box testing, while non-functional testing is carried out by testing usability. Black box testing aims to test the functional specifications of the software (Pallas,

2021). Usability testing uses System Usability Scale (SUS). SUS is often utilized to assess usability, including mobile applications (Kaya et al., 2019; Vlachogianni & Tselios, 2022). The SUS consists of 10 questions with Likert scale scores ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (Pal & Vanijja, 2020). How to calculate SUS is shown in formula (1). Interpretation of the sus score is shown in Table 1. The dissemination stage is carried out with profession Zakat application users.

C. RESULTS AND DISCUSSION

The results of this study consist of 4 approaches: Define, Design, Develop, and Disseminate

Define

Zakat Profession

Profession zakat is defined as zakat that must be paid by a worker who gets the money. There are two types: first, work done by people independently without relying on others, such as lawyers and tailors (Sariningsih, 2019). Second, jobs whose existence depends on others, whether from public companies or salaried individuals such as civil servants or private employees. Yusuf al-Qaradawi classifies these two types of income as mal mustafad (income of property), i.e. property acquired in the manner permitted by Islam. According to this professor from al-Azhar University, income from professions should be given zakat if they have had a full year and sufficient nisab. Although no proposition in profession zakat directly explains this, the sharia in profession zakat is based on the interpretation of Allah's word in Surah Baqarah verse 267:

يَاأَيُّهَا ٱلَّذِيْنَ ءَامَنُوْا أَنْفِقُوْا مِنْ طَيِّبَاتِ مَا كَسَبْتُمْ وَمِمَّا أَخْرَجْنَا لَكُمْ مِنَ ٱلْأَرْضِ

It means: "O men of faith, (spend in the way of Allah) some of the fruits of your good works and some of what We bring out of the earth for you..." (QS Al Baqarah [2]: 267).

In verse, the vocabulary is still general, but interpreters interpret it based on expanding the meaning of statements and using analogies. The obligation to pay zakat is based on the general content of the meaning of the Qur'an in verse 267 of Surat "Baqarah" (LPMQ, 2022). It is based on several types of transactions or property that must be paid zakat, including industrial property, silver and gold, livestock and agricultural products, included in the category of profession zakat (Manadinews, 2022).

Calculation of Profession Zakat

As a country with the world's largest Muslim population, the issue of income zakat cannot be separated from the social life of Indonesian citizens. The potential zakat income can be a source of state finance. Zakat's income results from the ijtihad of contemporary scholars initially unknown in the Islamic treasury. Income in the form of wealth is categorized as sourced from qiyas for similarities. There are characteristics of zakat assets that already exist, namely the form of assets received as income in the form of money in the ratio of 520 kilograms of rice in *qiyas* with agricultural zakat, on the other hand, the ratio of 85 grams of gold to qiyas-kan with gold zakat of 2.5% (Renata & Afrimaigus, 2022).

According to Shaykh Yusuf Qardhawi, in his book fiqh zakat, in the chapter on profession zakat and income, it is explained about the methods of generating zakat income: gross expenditure results in gross income zakat, meaning income zakat, which reaches the nisab of 85 grams of gold in a year's amount, is issued

2.5% immediately when received before anything is deducted. So, if the income or honorarium and other income in a month reaches 2-million-rupiah x 12 months = 24 million, 2.5% of the 2 million is paid each month = 50 thousand directly or paid at the end of the year = 600 thousand. The formula sourced from the hadith narrated by Imam Al-Bukhari from Hakim bin Hizam if the Prophet SAW said: "And it is very good that zakat is excluded from excess needs" (Muchlis, 2018).

Mobile Application

One of the fastest-growing areas of computing is mobile computing. The mobile application development course includes interdisciplinary correlations between conventional computer science, including software development, web programming, data security, human-computer interaction, and network interaction (Nurbekova et al., 2020).

Mobile software like such as mobile application has been displacing conventional desktop software to help residents of our digital era in an ever-increasing range of activities (Gao et al., 2021). Mobile applications are generally managed based on mobile operating systems, for example, store (Apple app), store (Google Play), store (Windows Phone), and world (Blackberry App) (Ronaldo & Ardoni, 2020).

Due to the widespread use of mobile applications nowadays, the number of users of mobile apps has significantly expanded. Web, native, and hybrid are the three primary types of mobile application development. Native mobile apps are installed through application stores like the Apple Store and Google Play Store. Native mobile apps are designed specifically for the platform, allowing one to take full advantage of the device's future potential. A second web-based mobile application runs on a web server and can be accessed from a mobile phone via a web browser. Web apps run on various mobile operating systems and don't require device-specific hardware. Hybrid mobile applications are a mix of web and native solutions. The core product of hybrid applications is created using web technologies such as JavaScript, HTML, and CSS (Rajasekaran & Jagatheesan, 2021).

Kodular

The Android operating system is a significant platform today that offers a flexible way to create creative third-party applications. Due to its flexibility, the Android operating system has become popular among developers. Running on the Linux kernel, Android is an open-source operating system. Android architecture consists of application layer, app framework layer, android runtime layer, and Linux kernel (Sarkar et al., 2019).

Applications developed on Android certainly require appropriate application developer tools (Rismayanti et al., 2022). Previous research developed e-modules using Kodular choices to adapt 4D model development: Define, Design, Develop, and Disseminate (Syarlisjiswan et al., 2021). Kodular is a website that provides tools for creating Android applications with the concept of drag-drop block programming, similar to MIT App Inventor (Cholid & Ambarwati, 2021). Kodular was created on top of the MIT App Inventor open-source project. Kodular allows developers to create Android apps using a block-type editor easily (Junnovate, 2020). Even though MIT App Inventor

can still be used to create an application based on the Android operating system, Kodular offers many features and tools compared to MIT App Inventor (Ronaldo & Ardoni, 2020). Kodular is used in this research as a tool for creating applications because Using a visual programming language makes App Inventor simple (Shanmugam, 2019).

Design

At the design stage, the results of functional requirements are described using use cases. The Figure 1 shows the use case of the KZ-Profession application. Application users can view zakat information, view information on rice or gold prices, calculate profession zakat, view application information, and exit the application.

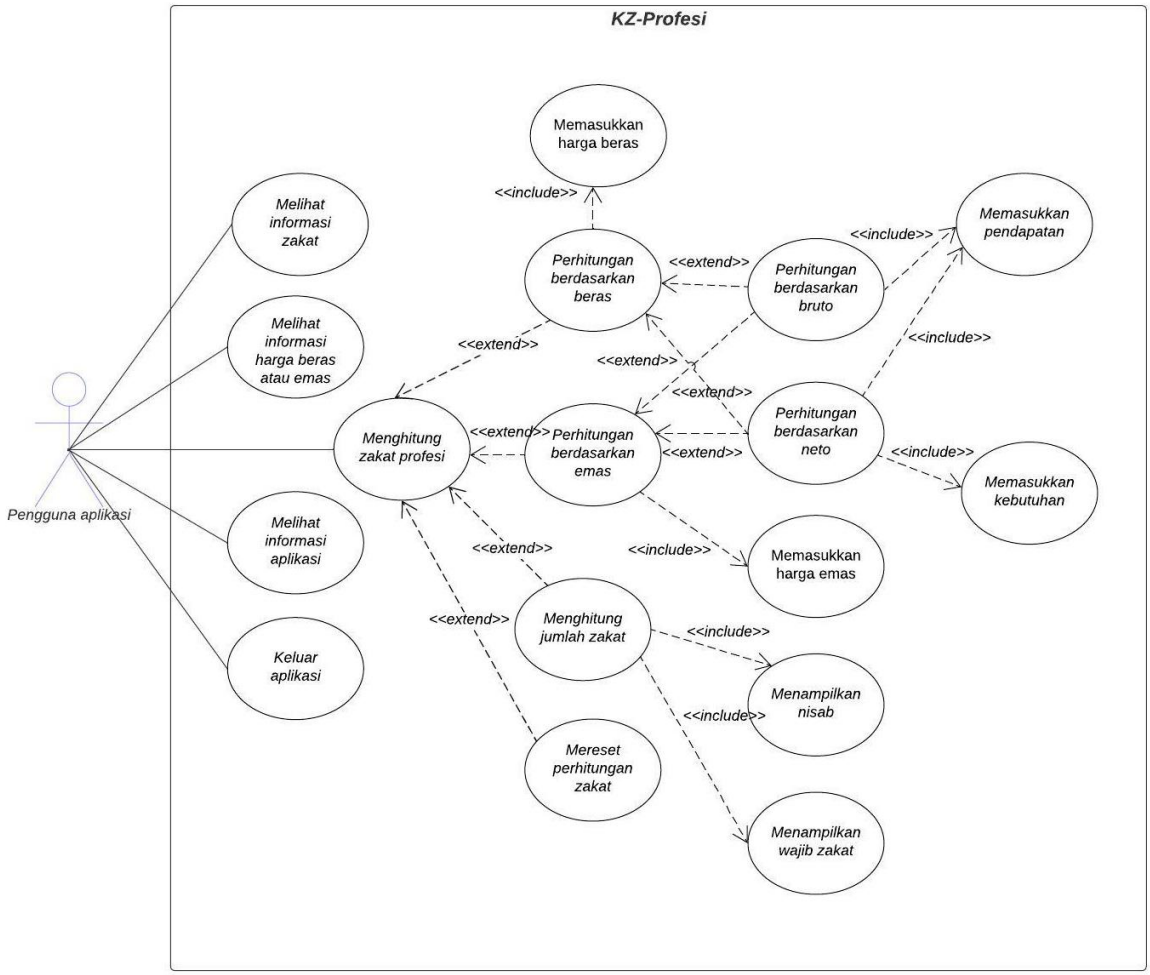


Figure 1. Use Case Diagram

Before building the application, a screenflow design is carried out in this stage. Screenflow, shown in Figure 2, is a flow or process flow for using a website or application that aims to make it easier for users to understand the flow of a website or application. In addition, screen flow can help users to achieve their goals (Rahmah et al., 2022). Screenflow is described through the tasks

performed while using a website or application. The picture shows the screenflow of the KZ-Profession application. Screenflow is used to view the screen flow provided by the application, from opening the application to closing or exiting the application. The KZ-Profession application screenflow starts from the splash screen until the user exits the application.

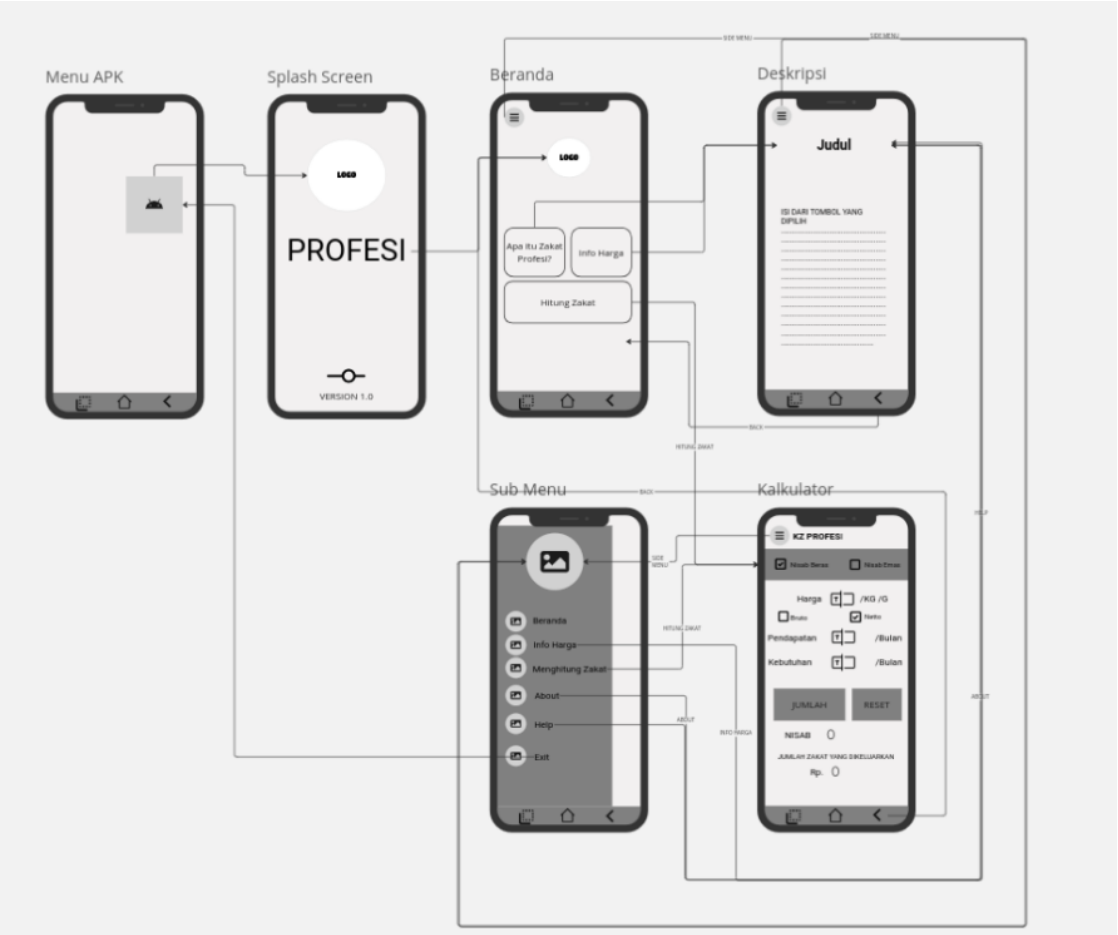


Figure 2. Screenflow

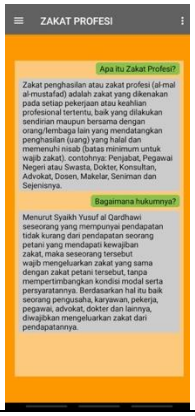
Develop

Developing the KZ-Profession application at the development stage using Kodular. The picture shows the process of developing the KZ-Profession application using Kodular. The apps in Kodular are constructed using various Components, each of which serves a particular function. Utilizing Blocks, the Component's behaviour is set up (Junnovate, 2023). KZ-Profession application development uses Kodular designs and blocks. Kodular Design is used to design the application interface. At the same time, Kodular blocks include logic or programming. The images and logos used in the KZ-Profession application are self-generated. The zakat calculation formula chosen in the literature study is included in the Kodular block.

Black Box Testing

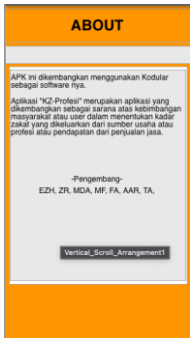
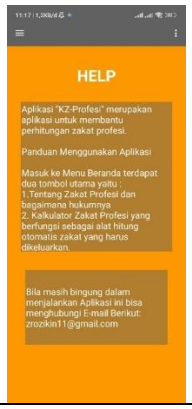
The results of the black box testing are shown in Table 2.

Table 2. Black Box Testing

Scenario	Test Case	Expectation	Result
When the app is opened for the first time, it shows a splash screen.	The user touches the KS-Profesi application icon. The app opens by displaying the splash screen.	The application displays the KZ-Profesi logo and name on the splash screen, which only runs for a few seconds.	Valid 
After displaying the splash screen, then the home menu is displayed.	After displaying the splash screen, the application displays the home page automatically.	In the home menu, users can find details about profession zakat and the legal basis for profession zakat, then information on gold and rice prices that apply in the community and the button options to calculate zakat.	Valid 
When the user selects the side menu, the application will display the menu on the left slide.	On the home menu, the user selects the side menu in the upper left corner The app displays a side menu	On the side menu, options for price information, calculating zakat, about the application, help, and exit are displayed.	Valid 
When the user selects the menu "What is Profession Zakat?" on the home menu, the application displays a screen about Zakat	Users can select the menu "What is Profession Zakat?" on the home menu The application displays information about Zakat	Users can find a brief and detailed description of profession zakat along with the basic laws of profession zakat.	Valid 

When the user selects the "Info Harga" menu on the side menu or home, the application will display the "Info Harga" page	The user selects the "Info Harga" menu on the home menu, or Users can choose the "Info Harga" menu on the side menu The application displays price info.	The application displays a price info page to view the prices of rice and gold that apply in the community.	Valid 
When the user selects the "Info Harga" menu on the side menu or home, the application will display the "Info Harga" page	The user selects the "Info Harga" menu on the home menu, or Users can choose the "Info Harga" menu on the side menu The application displays price info.	The application displays a price info page to view the prices of rice and gold that apply in the community.	Valid 
When the user selects the "Hitung Zakat" menu and selects the calculation of zakat (gross) based on the price of rice, the application displays a page for calculating zakat (gross) based on the calculation of the price of rice. Users can find out the amount of zakat issued after the user presses the "Jumlah" button.	Users can choose the zakat benchmark rice. Users enter the price per kilo of rice common in the community. Users can choose "Gross or Gross Income" as a reference for calculation. Users enter the nominal income per month. Click the "amount" button to calculate nisab (the minimum limit of a person's wealth required to pay zakat). After the nisab results come out, the amount of zakat that must be spent will automatically appear because the income is more than nisab. If it is less, a notification will appear "You are not obliged to zakat because you have not fulfilled nisab".	The application displays a screen to calculate zakat. Users can enter rice prices and income. The application displays a button to calculate zakat and a reset button to recalculate.	Valid 

When the user selects the "Hitung Zakat" menu and selects the calculation of zakat (net) based on the price of rice, the application displays a page for calculating zakat (net) based on the calculation of the price of rice. Users can find out the amount of zakat issued after the user presses the "Jumlah" button.	Users can choose the zakat benchmark rice. Users enter the price per kilo of rice common in the community. Users can choose "net/net income" as a reference for calculation. Users enter the nominal income per month. Users enter the nominal monthly needs. Click the "amount" button to calculate nisab (the minimum limit of a person's wealth required to pay zakat). After the nisab results come out, the amount of zakat that must be spent will automatically appear because the income is more than nisab. If it is less, a notification will appear "You are not obliged to zakat because you have not fulfilled nisab".	The application displays a screen to calculate zakat. Users can enter rice prices, income, and need. The application displays a button to calculate zakat and a reset button to recalculate.	Valid 
When the user selects the "Hitung Zakat" menu and selects the calculation of zakat (gross) based on the price of gold, the application displays a page for calculating zakat (gross) based on the calculation of the price of gold. Users can find out the amount of zakat issued after the user presses the "Jumlah" button.	Users can choose the zakat benchmark gold. Users enter the price per gram of gold common in the community. Users can choose "Gross or Gross Income" as a reference for calculation. Users enter the nominal income per month. Click the "amount" button to calculate nisab (the minimum limit of a person's wealth required to pay zakat). After the nisab results come out, the amount of zakat that must be spent will automatically appear because the income is more than nisab. If it is less, a notification will appear "You are not obliged to zakat because you have not fulfilled nisab".	The application displays a screen to calculate zakat. Users can enter rice prices and income. The application displays a button to calculate zakat and a reset button to recalculate.	Valid 
When the user selects the "Hitung Zakat" menu and selects the calculation of zakat	Users can choose the zakat benchmark gold.	The application displays a screen to calculate zakat. Users can enter rice prices, income, and	Valid

(net) based on the price of gold, the application displays a page for calculating zakat (net) based on the calculation of the price of gold. Users can find out the amount of zakat issued after the user presses the "Jumlah" button.	Users enter the price per gram of gold which is common in the community. Users can choose "net or net income" as a reference for calculation. Users enter the nominal income per month. Users enter the nominal monthly needs. Click the "amount" button to calculate nisab (the minimum wealth limit of a person required to pay zakat). After the nisab results come out, the amount of zakat that must be spent will automatically appear because the income is more than nisab. If it is less, a notification will appear "You are not obliged to zakat because you have not fulfilled nisab".	need. The application displays a button to calculate zakat and a reset button to recalculate.	
When the user selects the "About" menu, the application displays a screen about the KZ-Profesi application.	Users can select the menu "About" on the home menu The application displays information about the application	The application displays about the application: version, developer, about KZ-Profesi.	Valid 
When the user selects the "Help" menu, the application displays a tutorial screen for using the application.	Users can select the menu "Help" on the home menu The application displays information about the guide using the application	The application displays a tutorial on how to use the KZ-Profesi application	Valid 

Usability Testing

The selected non-functional test is usability testing. Testing was carried out for three days in June 2023 on application users. The user tests the application and then fills out a SUS questionnaire. The test was carried out in six rooms. The total number of respondents was 116 people. However, one room could not do the trials due to electrical problems. The entire valid data is 96 respondents. Usability test results show the number 70.13. Based on the Table 1, 70.13 indicates that the application has a grade of B which means good.

Disseminate

At the dissemination stage, the KZ-Profession application is ready to be implemented for users. The first stage is to register the application to Direktorat Jenderal Kekayaan Intelektual (DJKI) Kementerian Hukum dan Hak Asasi Manusia. The second stage is to socialize the application offline to users in a small scope. The next step is to upload the KZ-Profession application to the Google Play Store. The purpose of uploading an application on the Google Play Store is so Indonesian people can download, install, and use the KZ-Profession application.

D. CONCLUSION

Zakat potentially creates many funds that can later be manifested to increase economic growth and people's welfare. The KZ-Profession application comprises several features and services of the profession Zakat application that can help the public calculate the ratio. The analysis results of the functional requirements of the KZ-Profession application are that the application can provide information about zakat, the application can provide information related to rice and gold prices, and the application provides a profession zakat calculator. The KZ-Profession application was successfully developed using Kodular and exported into an application that can be installed on an Android mobile phone. Testing is carried out twice, testing of functional requirements and non-functional requirements. Functional requirements testing is carried out using black box testing. At the same time, non-functional testing uses SUS calculations. The functional testing results show that the application's main function has successfully calculated zakat profession. Furthermore, the application successfully shows zakat information, rice or gold price information, and application information, and users can exit the application. The calculation of the zakat profession can be counted both gross and net based on the price of rice or gold. The results of non-functional testing using SUS show that the application is included in category B, good.

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