

Islamic Philanthropy-Based Fintech: Design Of Stock Waqf Simulation Software

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Abstract

Waqf, as a form of Islamic philanthropy, has strong potential in Indonesia. Indonesia's predominantly Muslim population and the generous character of the Muslim community offer great opportunities for the development of waqf. One of the latest developments in waqf is stock waqf, which operates in the Islamic capital market as a product of Islamic philanthropy. Among university students, stock waqf literacy is still low, although the current generation is very familiar with digital technology. Therefore, the development of a stock waqf application as an educational tool can be a solution to improve students' understanding of stock waqf. The purpose of this research is to develop a stock waqf simulation system through fintech technology to improve literacy among students. The results of the development of the stock waqf simulation system have gone through various stages, including needs analysis, design, implementation, and testing. The test results show that this software fulfils the needs well, with the validity of the test reaching 100%. This shows that the stock waqf simulation system has been successfully created and can be used to provide an understanding of stock waqf simulation

Keywords: waqf; stock waqf; philanthropy; fintech

Introduction

The first strong potential of waqf in Indonesia is due to Indonesia's Muslim-majority population, known as generous Muslims. The second potential is the development of waqf regulations where waqf has its own law, Law No.41/2004 on Waqf. The third potential in waqf is the variety of waqf found in Indonesia, such as land waqf, cash waqf, and several studies have examined the potential of these varieties of waqf.

The latest variety of waqf is stock waqf, which operates in the Islamic capital market as one of the products of Islamic philanthropy. At the Capital Market Summit & Expo held on 26 April 2019 in Surabaya, the Indonesia Stock Exchange introduced the stock waqf programme. Share waqf can provide great potential in the development of waqf in Indonesia, due to the increasing number of investors every year.

Data from the Indonesian Central Securities Depository as of February 2022 shows that there has been an increase in the number of investors in Indonesia, namely:

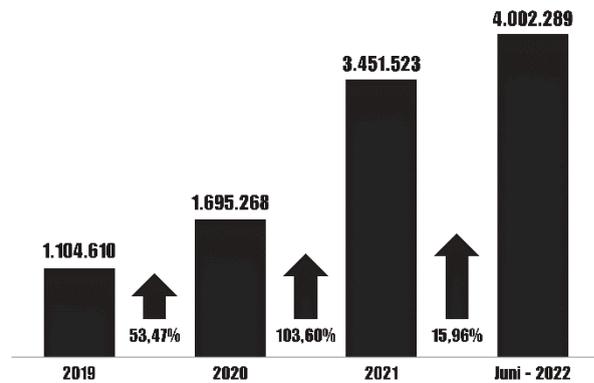


Figure 1 stock investor data

If based on the age range of investors in Indonesia, 59.72% of the number of investors have an age range of ≤ 30 years, 21.92% are 31-40 years old, 10.53% are 41-50 years old, 5.08% are 51-60 years old and 2.75% are >60 years old. The increase in the number of investors from 2021 to 2022 is 15.96%. At the end of 2021, there were 3,451,513 people who had become investors and increased until at the end of June 2022 there were 4,002,289 investors. The increase in the number is of course one of the proofs of the proximity of the community to financial technology.

The next potential of waqf is that the utilisation of technology has also been carried out by the Directorate of Zakat Empowerment and waqf, which can be seen in the following figure:

Further waqf potential through the use of technology has also been carried out by the Directorate of Zakat Empowerment and waqf, namely through waqf collection can be done by bank transfer, fintech payment, E-money, crowdfunding, marketing, campaigns and donations through social media. In governance, waqf management utilises technology with the SIWAK application which functions as a waqf database, an internal information system for nazir and blockchain waqf. The development of waqf assets is carried out through real time data on the economic value of waqf assets, business patterns appearing on the nazir business web and the development of waqf assets whose progress appears in the media. Meanwhile, the distribution of waqf for mauquf alaih is carried out by creating a mauquf alaih database system and integrating the NIK data of waqif, nazir and mauquf alaih.

However, these potentials are not accompanied by an increase in waqf literacy in Indonesia. Meanwhile, literacy is one of the prioritised issues in improving waqf development (Arief et al., 2021).

Table 1
Waqf Literacy Index Score in Indonesia

o	Dimensions/variables	Score	Category
	Basic understanding of waqf	57.67	Low
	Advanced understanding of waqf	37.97	Low
	Zakat Literacy index	50.48	Low

Source: Indonesian Waqf Board

The waqf literacy index was also carried out by several researchers, namely Muthiah, et al (Muthiah et al., 2021), Aqidatul Izzah Machmud, et al (Machmud & Suryaningsih, 2020), Astika Rahmah Ghanny and Nur Fatwa (Rahmah Ghanny & Fatwa, 2021) the results of these three studies show that the level of zakat literacy is still low, Muhammad Nur Afif Afandi (Afandi; et al., 2022) the results show that the level of waqf literacy is in the middle category with a literacy index of 76.89%, and Rodame Monitorir Napitupulu's research (Napitupulu et al., 2021) shows the result that the level of waqf literacy is high. This literacy index research was conducted on waqf or cash waqf. And this literacy index has not been carried out on waqf shares.

Based on initial observations of students of the Faculty of Economics and Islamic Business, only 2 out of 10 students are familiar with stock waqf. Stock Waqf literacy can be introduced through the use of digital technology to students, because this generation is a generation that is close to digital technology. The development of the stock waqf application can be used as a strategy, solution and effort to support, help introduce and increase understanding to students as stock waqf nadzirs or as stock waqf endowers, and as support for the Zakat and Waqf Management study programme.

Currently, the number of investors in Bengkulu Province reaches 41,000 people (Ni'amillah Sari, BEI KP Bengkulu), and as many as 2500 people have registered their share accounts through FAC Sekuritas (Yeni Sartika, FAC Bengkulu). The number of FAC Sekuritas investors in Bengkulu Province is 2500 investors, consisting of various groups including UIN Fatmawati Sukarno Bengkulu students consisting of 1800 people (Yeni Sartika, FAC Bengkulu). The increase in the number of investors is not proportional to the increase in the number of investors who utilise fintech services in the field of Crowdfunding philanthropy through this Islamic capital market product.

The realm of education is an area that carries out the process of transforming knowledge with various strategies and ways of teaching. The education system when the internet did not exist was carried out by modelling conventional lectures. Media and technology developed rapidly in the internet era. As a means of learning, these two things are used for educational strategies and models or better known as learning media. So it is seen as the importance of simulation software to increase student literacy in the field of fintech, especially fintech waqf shares, and facilitate educators in transferring knowledge.

The development of fintech in the field of Islamic economics has been widely carried out, for example the development of Mudharabah financing information systems (RUssi et al., 2021), Murabahabah Financing Information System, 2021), Web-based Murabahah Financing Information System (Rahardi & Azima, 2019), Web-based Cash waqf Information system (Pramesti & Persada, 2022), Waqf Asset Management Geographic Information System (Fahmi, Amiq & Sugiarto, 2012), Integrated Zakat Infaq Sedekah Information System (Syaifullah & Idrus, 2019), a system that uses Google Maps and is designed to bring together muzakki and mustahik (Sahrial, 2018), and others. This fintech development is carried out at certain financial institutions rather than universities with the aim of increasing literacy through the development of fintech simulations.

The Stock Waqf Platform or stock waqf service by utilising fintech has also been provided by 6 Securities Companies out of 14 AB SOTS Securities Companies, namely: MNC Sekuritas, BNI Sekuritas, Indopremier Sekuritas, Philip Sekuritas, Henan Putihrai Sekuritas, Panin Sekuritas. However, the fintech that has been provided is provided by securities for waqifs, there is no fintech that supports the improvement of stock waqf literacy for students in the form of simulations.

Increasing literacy is very important for students, increasing literacy in the field of stock waqf through fintech software simulations not only has an impact on increasing student religiosity through awareness of waqf but also increasing literacy (Isabela & Umam, 2020), if literacy in philanthropic products in the capital market increases, of course financial inclusion in the capital market will also increase (Prasetyo, 2019), so that it also has an impact on improving the Indonesian economy (Selasi & Muzayyanah, 2020). Based on this background, researchers will conduct research related to "Islamic Philanthropy-Based Fintech: Design of a Stock Waqf Simulation Application System"

Method

This research is composed of several stages in accordance with the waterfall model used, namely the first literature study is the initial step by researching sources that are used as a foundation to support the preparation of reports and as a reference in system development. Second, requirements engineering is a method of analysing the needs used, namely the use case diagram. Third software design, namely software designed through several stages including sequence diagram design, program code design, and interface design. Fourth Implementation, is the procedure for implementing software based on the analysis and design process that has been carried out. Fifth testing in this case the test used is validation testing in a black-box approach. The validation testing technique will perform a test on a case contained in the use case by paying attention to the input and output of the programme is appropriate. Sixth, conclusions and suggestions in this case the conclusion will be drawn when the previous stages have been completed such as system design, implementation, and testing. The last stage that will be carried out from this research, making suggestions aims to improve problems during research and in report writing. which is illustrated with the following diagram

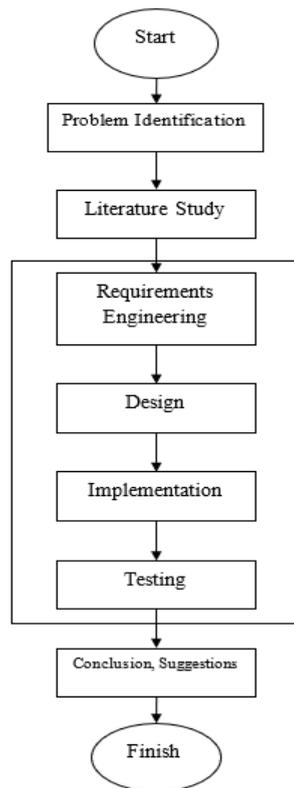


Figure 2 Research steps

Results

Improving waqf literacy, especially stock waqf, is a necessity among educators, so researchers designed a simulation application to be useful in improving literacy among students. this application the author names "WASAM". the steps taken in making the application and the appearance of the application are presented in the description below, This process has the aim of knowing the needs needed for the system and determining the actors / users who interact with the system. The actors who interact with the system directly are students as waqifs who will endow the shares they own. The following is a list of requirements specifications that have been determined:

Table 2
Specification of software requirements

No	Use Case	System Requirement
1.	Login	The system provides a login process into the system.
2.	View the transaction panel	The system is able to display the transaction menu to buy or sell shares
3.	View the Portfolio panel	The system is able to display the user's stock portfolio
4.	Melihat panel wakaf	View the endowment panel

No	Use Case	System Requirement
5.	Purchase shares	The system is able to run the stock purchase process
6.	Conduct share sales	The system is able to run the stock sale process
7.	Confirmation of share purchase	The system is able to show the confirmation process to reconfirm the share purchase
8.	Share sale confirmation	The system is able to show the confirmation process to reconfirm the sale of shares
9.	Performing stock waqf	The system is able to process waqf shares
10.	Logout	The system provides a logout process from the system

Discussions

The design is based on the results of the needs analysis. The several stages in this process include; sequence diagram modelling, program code design, and interface design. Sequence diagram modelling describes the achievement of system requirements through the stages of the process to be carried out. The results of making use cases will become objects in the sequence. Program code is designed to explain the design of the system that will be made later. Finally, the interface design will be the basis for the interface that will be made later.

Implementation of The following is an interface that has been created based on the previous design.

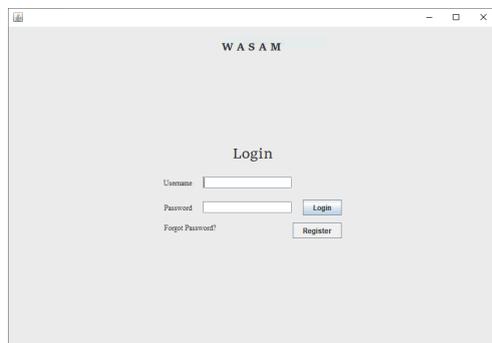


Figure 3 initial view of the application

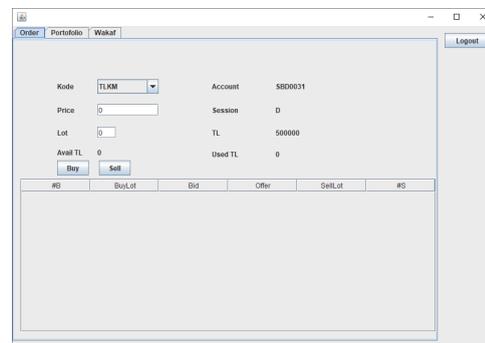


Figure 4 When buying shares

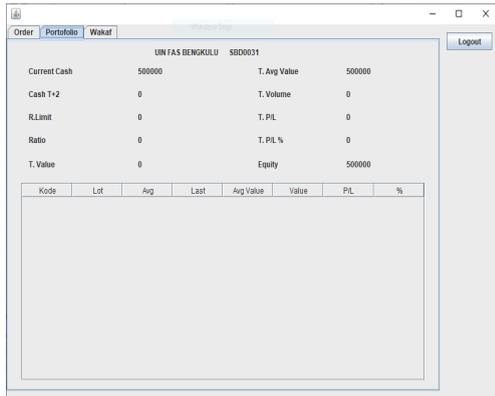


Figure 5 Investor balance

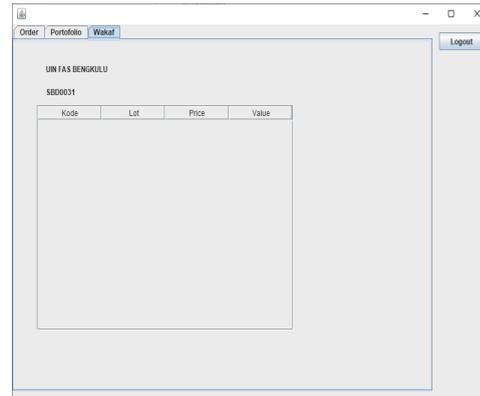


Figure 6 When donating shares

Tests were conducted using validation testing in a black-box approach. Test cases are performed on several use cases by ensuring that the input will produce the appropriate output. Here is one of the tests in the scenario when buying shares.

Table 3
Make a Stock Purchase

Actor	User
Objective	Make a transaction to buy shares
Pre-Condition	User has logged in
Main Flow	<ol style="list-style-type: none"> 1. Select the Order tab 2. Display the transaction page 3. Select the stock code to buy 4. Fill in the share price 5. Fill in the number of lots of shares to buy 6. Pressing the buy button
Alternative Flow	<ol style="list-style-type: none"> 6.1 If the buy button is selected without filling in the stock price field, the system displays the message "Enter Price". 6.2 If the buy button is selected without filling in the stock lot field, the system displays the message "Enter lot". 6.3 If the buy button is selected without filling in the stock and stock lot fields, the system displays the message "Price or lot cannot be empty!". 6.4 If the buy button is selected and the price of the purchased shares exceeds the balance, the system will display the message "Insufficient Balance".
Post Condition	The system redirects to the share purchase confirmation page

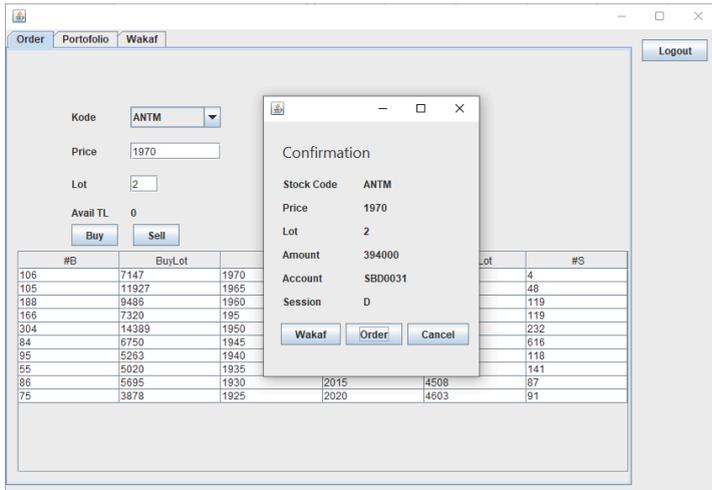


Figure 7 Results when Purchasing Shares

Alternatives when the procedure performed is not appropriate

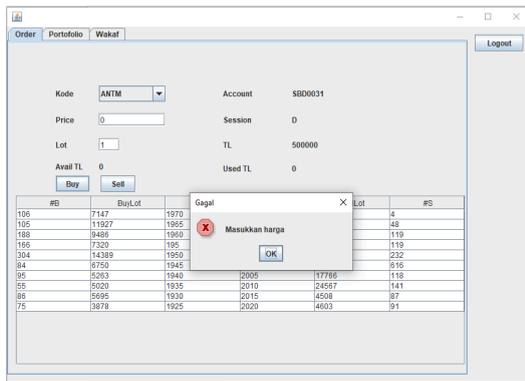


Figure 8 Buying Shares Without Filling in the Share Price

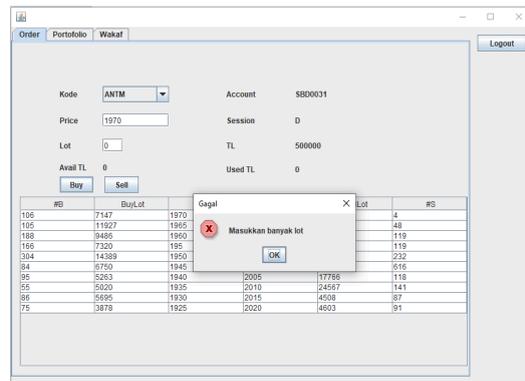


Figure 9 Buying Shares Without Loading Many Lots of Shares

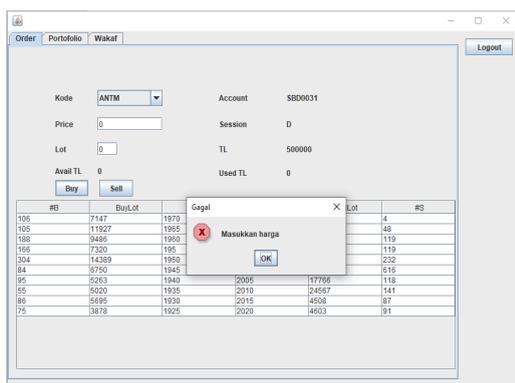


Figure 10 Buying Shares Without Filling Many Lots

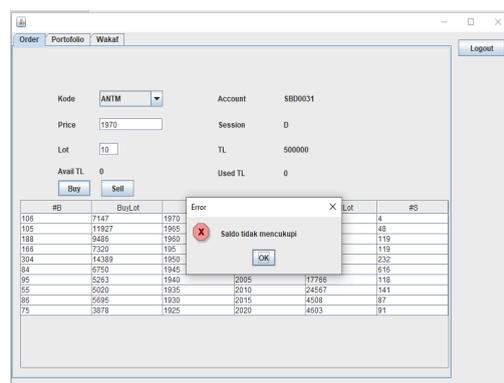


Figure 11 Buying Shares with Total Purchases Exceeding the Balance

Conclusion

Based on the design that has been done, it can be concluded that, the design stage of the waqf stock simulation software goes through the architecture design stage which consists of designing sequence diagrams, program code, and interfaces. Testing has been carried out by applying validation testing to requirements using black box testing with scenario-based testing techniques. Based on the tests carried out on all scenarios, the validity of the software is 100% valid. Based on the testing carried out on the entire scenario, the validity of the software is 100% valid. effectiveness testing of applications that have been designed can be done in the next research.

References

- Afandi;, M. N. A., Dinurri'anah;, U., & Pusparini, M. D. (2022). Analisis Tingkat Literasi Wakaf Uang Civitas Akademika Universitas Islam Indonesia. *At-Thullab Jurnal: Mahasiswa Studi Islam*, 4(2), 1194.
- Arief, S., Mahfudz, A. A., Fasa, M. I., Wibisono, V. F., & Afifah, A. N. (2021). Increasing the Productivity of Waqf Land in Indonesia: Issues and Solutions. *ZISWAF: Jurnal Zakat Dan Wakaf*, 10(2), 139–154.
- BWI. “Laporan Indeks Literasi Wakaf Nasional 2020” (2020): 1–13. <http://jurnal.untad.ac.id/jurnal/index.php/kovalen/article/view/6719>.
- Fahmi, Amiq, E., & Sugiarto. (2012). Aplikasi Sistem Informasi Geografis Manajemen Aset Wakaf. *Pros Iding SNATIF Ke -2 Tahun 2015*, 102(4), 10.
- Isabela, & Umam, M. (2020). Optimalisasi Fintech di Sektor Filantropi Islam untuk Pengembangan ZISWAF. *EKOSIANA: Jurnal Ekonomi Syariah*, 7(2), 75–85.
- Machmud, A. I., & Suryaningsih, S. A. (2020). Analisis Tingkat Literasi Wakaf Uang Mahasiswa Fakultas Ekonomi Universitas Negeri Surabaya. *Jurnal Ekonomika Dan Bisnis Islam*, 3(3), 165–179. <https://doi.org/10.26740/jekobi.v3n3.p165-179>
- Muthiah, Baga, L. M., & Saptono, I. T. (2021). Cash Waqf Literacy Index and Determinants of Public Intention to Pay Cash Waqf. *International Journal of Research and Review*, 8(12), 249–259. <https://doi.org/10.52403/ijrr.20211231>
- Napitupulu, Monitorir, R., Harahap, H. H., May, A., & Simamora, S. (2021). Waqf Literacy of Generation Z in Indonesia. *Review of Islamic Economics and Finance (RIEF)*, 4, 9–17.
- Pramesti, R. P., & Persada, A. G. (2022). *PERANCANGAN SISTEM INFORMASI WAKAF UANG BERBASIS WEBSITE (STUDI KASUS : LEMBAGA WAKAF UANG UNISIA)*. 7, 248–257.
- Prasetyo, A. (2019). Wakaf Saham Dalam Meningkatkan Investasi Saham Syariah Di Indonesia. *Majalah Ekonomi*, 24(2), 204–210. <https://doi.org/10.36456/majeko.vol24.no2.a2066>
- Rahardi, A., & Azima, muhammad F. (2019). Rancang Bangun Sistem Informasi Pelayanan Pembiayaan Murabahah Berbasis Web. *Ijccs*, x, No.x(x), 1–5.
- Rahmah Ghanny, A., & Fatwa, N. (2021). Indeks Literasi Wakaf Generasi Milenial. *Jurnal Tabarru': Islamic Banking and Finance*, 4(1), 253–262.

- [https://doi.org/10.25299/jtb.2021.vol4\(1\).6884](https://doi.org/10.25299/jtb.2021.vol4(1).6884)
- RUsdi, I., Mulyani, A. S., & Arfina, K. (2021). RANCANG BANGUN SISTEM INFORMASI PEMBIAYAAN MUDHARABAH PADA KOPERASI JASA KEUANGAN SYARIAH BERKAH MADANI. *Jurnal AKRAB JUARA*, 6(2).
- Sahrial, R. (2018). Rancang Bangun Sistem Informasi Zakat Infaq Shodaqoh Menggunakan Metodologi Extreme Programming. *Jurnal Buana Informatika*, 9(1), 31–42. <https://doi.org/10.24002/jbi.v9i1.1666>
- Selasi, D., & Muzayyanah, M. (2020). Wakaf Saham Sebagai Alternatif Wakaf Produktif Pada Perkembangan Ekonomi Syariah di Indonesia. *TAWAZUN : Journal of Sharia Economic Law*, 3(2), 155. <https://doi.org/10.21043/tawazun.v3i2.7932>
- Syaifullah, H., & Idrus, A. (2019). Inovasi Pelayanan Wakaf Produktif Era Digital: Studi Kasus Di Yayasan Wakaf Bani Umar 2018. In *ZISWAF : Jurnal Zakat dan Wakaf* (Vol. 6, Issue 2). <https://doi.org/10.21043/ziswaf.v6i2.6415>