

## Optimization Of Information Systems for Resource Management in Mosques

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### Abstract

*This study seeks to enhance the information system for resource management at Masjid Al-Qomar by implementing an application focused on financial and activity management. The applied research method is descriptive, applying an object-oriented system development approach (Object-Oriented Analysis and Design, OOAD). The developed system focuses on two main aspects: recording and reporting donations, including zakat and other financial activities, and managing schedules and communication with congregants.*

*The research findings demonstrate that the suggested information system streamlines financial recording and reporting processes, improves transparency in fund utilization, and aids in financial reporting. This technology enhances the mosque's administrative efficiency through features including automated recording, readily available financial reports, and integrated activity schedule management. Furthermore, it guarantees that activity information is available to all congregants, including those not regularly attend the mosque, via an integrated platform and efficient communication tools.*

*This research concludes that the effective implementation of an information system can augment financial transparency, promote operational efficiency, and elevate congregant participation. This study advocates for the ongoing enhancement and upkeep of the system to guarantee its performance aligns with the mosque's and its users' requirements.*

**Keywords :** Mosque Information System, Resource Management, Financial Management, Activity Schedule, OOAD

### INTRODUCTION

The mosque is a pivotal focus for religious and social activity throughout the neighborhood, significantly impacting individuals' lives. (Jaya, 2022) As an entity that accepts contributions from members and coordinates diverse activities, proficient and effective administration is essential for the seamless operation of all initiatives and the optimal utilization of resources. Masjid Al-Qomar presently encounters numerous substantial obstacles in administrating its resources and operations.

#### Information System

An information system is the deployment of information and communication technology frameworks established by commercial enterprises. Support for information systems in

the 21st century is essential due to the advent of significant transformations. (Mahendra et al., 2020) These modifications have situated the worldwide economy within the fourth wave, identified as the creative economy (Nasution & Hasan, 2022; Perdana, 2024).

#### Optimization

Optimizing information systems in the contemporary corporate environment is essential for firms aiming to improve their operational efficiency and effectiveness. (Mokodenseho et al., 2024; Yuli indah sari & Bin Mislan Cokrohadisumarto, 2024) Diverse methodologies, including process automation, data analytics, and the utilization of machine learning algorithms, enhance workflow efficiency and augment decision-making. (Chen

et al., 2020; Khan et al., 2020) By implementing these sophisticated approaches, firms can eliminate redundancies, decrease costs, and optimize resource utilization. (AB. MUIN et al., 2024; Xiang et al., 2021)

Furthermore, executing optimization techniques necessitates thoroughly comprehending the technology and the organization's specific requirements. Aligning optimization efforts with business objectives facilitates a targeted strategy, allowing firms to attain quantifiable results. Consistent evaluations and modifications of optimization strategies are crucial to accommodate evolving market dynamics and technical progress, guaranteeing information systems' continued relevance and efficacy.

Moreover, cultivating a culture of perpetual enhancement is essential for effective optimization. Positive feedback from users and stakeholders can yield valuable insights that guide subsequent improvements. By emphasizing continuous training and development in optimization techniques, organizations can enable their workers to utilize technology efficiently, improving productivity and fostering creativity in their operations. This comprehensive optimization approach enhances system performance and contributes to the organization's success.

A primary issue is that the financial and operational management systems are being executed manually. Notifications concerning events, details on donation contributions, and transaction documentation depend on conventional techniques such as vocal announcements, brochures, or pamphlets. This method typically fails to engage the entire congregation, particularly those who seldom

attend the mosque. Furthermore, the human documentation of contribution transactions and activities is susceptible to errors and data loss, thus compromising transparency and accuracy in financial reporting.

To tackle these difficulties, technology-based solutions are required to improve resource and activity management at Masjid Al-Qomar. This study seeks to create an information system application that combines mosque financial management and activity management functionalities. The system will be developed using the Object-Oriented Analysis and Design (OOAD) methodology, which will facilitate a more organized and effective application development process.

## **METHOD**

This study utilizes a descriptive research design to investigate the optimization of information systems for resource management at Masjid Al-Qomar. The research employs the Object-Oriented Analysis and Design (OOAD) methodology, commencing with collecting requirements via interviews and surveys conducted with mosque administrators and worshippers. This phase is essential for discerning their financial and activity management requirements. The system design entails the creation of use case diagrams, class diagrams, and sequence diagrams to depict essential capabilities, including donation recording and scheduling management. The implementation phase emphasizes the creation of an intuitive application that is accessible to all stakeholders.

Qualitative and quantitative data collection approaches are utilized to assess the efficacy of the newly built system. Feedback is obtained via

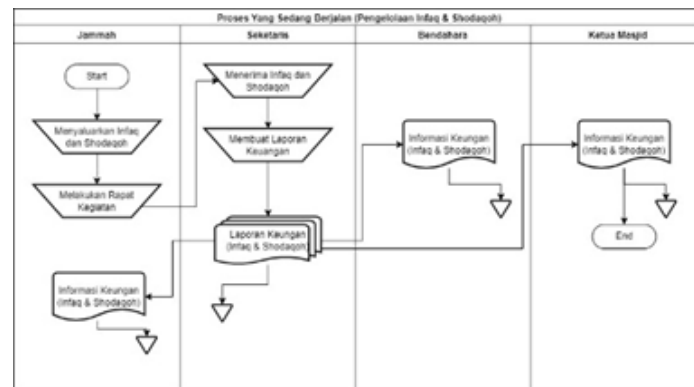
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focus group talks and usability testing with mosque personnel and attendees, providing insights into user experiences and expectations. Furthermore, critical performance indicators are assessed, including the duration of financial reporting and user engagement metrics, both before and after deployment. The results will yield conclusions and recommendations for continuous improvements, ensuring that the

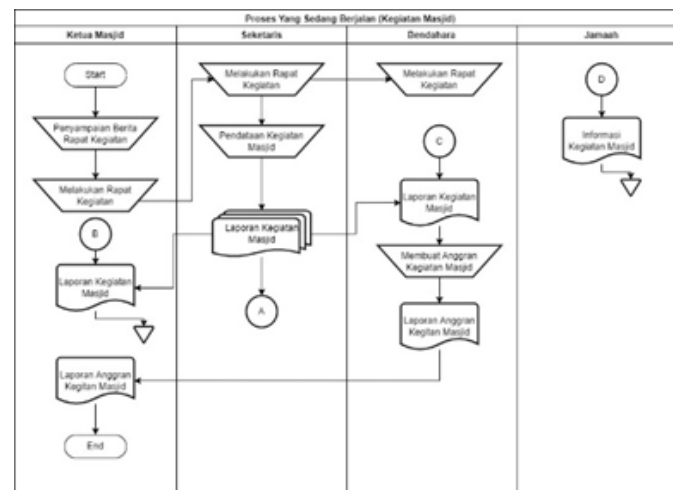
information system fulfills the operational requirements of the mosque while also fostering financial transparency and enhancing congregant engagement successfully.

## RESULT AND DISCUSSION

### Current System Analysis

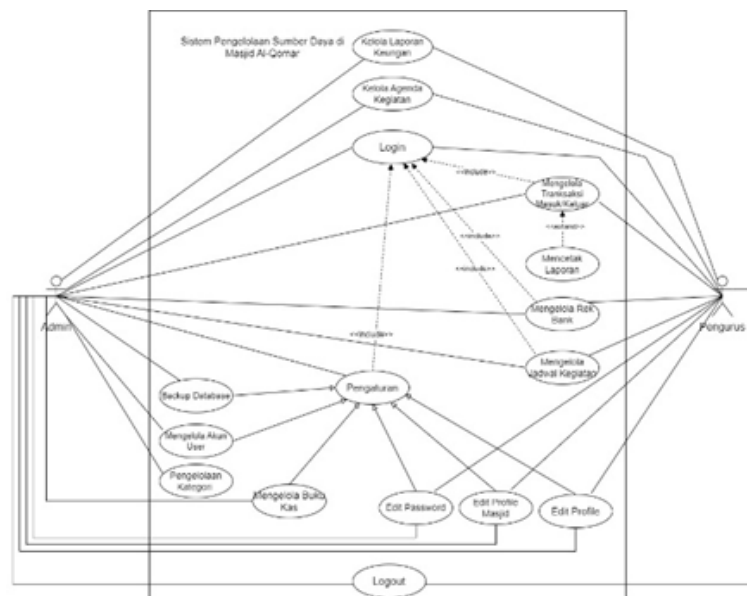


**Figure 1. The Ongoing Infaq and Shodaqoh Management Process**



**Figure 2. Ongoing Mosque Activity Management Process.**

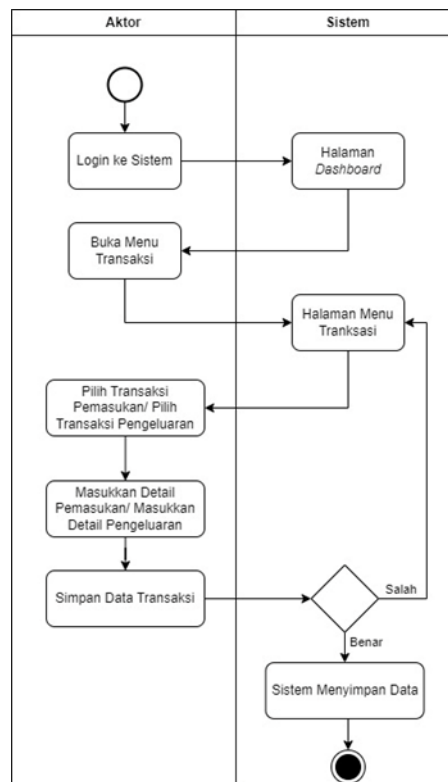
### New System Proposal



**Figure 3. Usecase diagram**

**Table 1. Scenario Table**

Aktor	Deskripsi	Hak Akses
<b>Admin</b>	Pengelola sistem yang memiliki wewenang penuh dalam konfigurasi dan pengelolaan sistem informasi.	<ul style="list-style-type: none"> <li>- Manajemen Pengguna: Menambahkan, menghapus, dan mengubah data pengguna.</li> <li>- Manajemen Data Kas: Mengelola dan memverifikasi pencatatan donasi dan pengeluaran.</li> <li>- Manajemen Kegiatan: Menambahkan, mengubah, dan menghapus informasi kegiatan.</li> <li>- Laporan: Mengakses dan menghasilkan laporan keuangan dan kegiatan.</li> <li>- Pengaturan Sistem: Mengkonfigurasi pengaturan sistem dan akses.</li> </ul>
<b>Pengurus</b>	Anggota pengurus masjid yang bertanggung jawab atas operasional harian dan pengelolaan kegiatan.	<ul style="list-style-type: none"> <li>- Pencatatan Donasi: Memasukkan dan memperbarui data donasi.</li> <li>- Pencatatan Pengeluaran: Memasukkan dan memperbarui data pengeluaran.</li> <li>- Pengelolaan Kegiatan: Menambah, mengubah, dan menghapus kegiatan masjid.</li> <li>- Laporan Kegiatan: Mengakses laporan kegiatan.</li> <li>- Pengumuman Kegiatan: Membuat dan mengelola pengumuman kegiatan.</li> </ul>



**Figure 4. Activity diagram**

## System Design



Figure 5. Database Design

The interface design shows a dashboard for transaction management. It includes a navigation bar with links: Admin, Kegiatan Rutin (Berisi update saldo), Beranda Publik, Transaksi, Rekening Bank, Pengajian, Laporan, Pengumuman, and Logout. The main content area is titled 'Daftar Transaksi' and contains a table with columns: #, TANGGAL, DESKRIPSI TRANSAKSI, JUMLAH, and PILIHAN. The table shows a single transaction on July 28th (Ahad) for a donation to Palestine. Below the table, there are summary rows for Saldo Awal, Total Pemasukan, Total Pengeluaran, and Saldo Akhir, all showing zero values. The interface also includes search and filter options for transactions.

Figure 6. Interface Design

## System Implementation

The implementation phase of the system entails detailing the application system to confirm its readiness for operation.



Figure 7. Login Page View

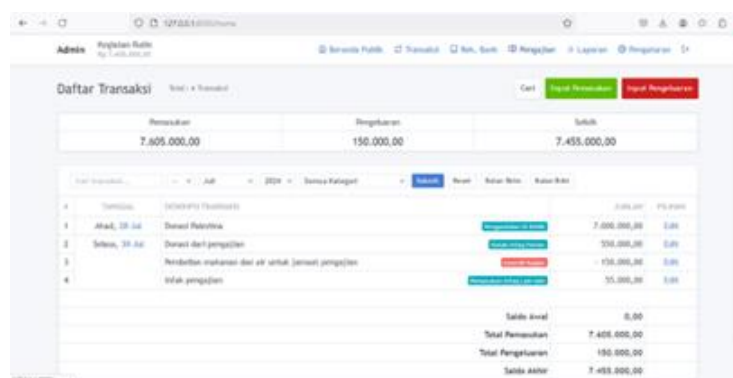


Figure 8. Transaction Page View

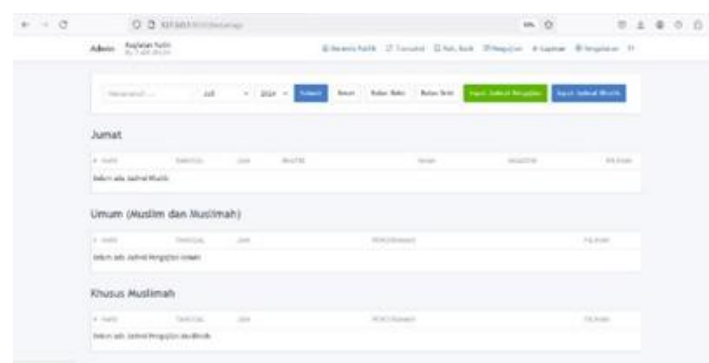


Figure 9. Activity Page View

## CONCLUSION

The findings of this study underscore the efficacy of the proposed information system in improving financial management at the mosque. The system offers a comprehensive tool for documenting and

reporting donations, zakat, and other financial transactions, guaranteeing that financial data is precisely collected in real time via automation. Furthermore, overseeing the mosque's activity plans and enhancing contact with attendees is

essential. The integrated platform facilitates the efficient distribution of information concerning schedules and announcements, guaranteeing that all congregants, including irregular attendees, receive the most current updates on mosque operations.

Multiple recommendations for future researchers arise from the data. Based on this research, it is recommended that supplementary elements absent from the website be integrated to improve its functionality. Moreover, forthcoming development initiatives must emphasize enhancing the system's security to safeguard critical information. Finally, there is a proposal to extend this decision assistance system into a mobile application, enhancing its accessibility and user-friendliness for the congregation.

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