Co-Value: Jurnal Ekonomi, Koperasi & Kewirausahaan
Volume 15, Nomor 6, November 2024
p-ISSN: 2086-3306 e-ISSN: 2809-8862

QR Code Labeling Design for Fixed Asset Management in Accounting Information System PT. Cipta Jaya Perkasa

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Abstract

In an increasingly competitive world of work, the balance between work demands and employees' personal lives is an important issue that affects job satisfaction and productivity. The purpose of this research is to design a fixed asset accounting information system application using QR codes to facilitate inventory in bookkeeping. It can store more comprehensive data, on fixed asset data accurately in recording in each entity. The research method applied is the software development method using Prototyping, where the software creation process will be carried out module by module with testing, starting from tagging, and creating a unique QR code for each fixed asset in each existing entity. The result study results indicate that using technology can make it easier to record assets by simply scanning the QR Code label, which is attached to each asset. So that the process of recording or managing assets can run accurately and quickly. The output of the research is the creation of a web and mobile application to manage asset information systems by utilizing QR Code technology. The implication of this research is for companies to develop wellbeing programs that not only focus on stress reduction but also pay attention to the need for work-life balance. This research also contributes to the development of HR management theory in the context of employee welfare management in modern industries.

Keywords: web application, QR code, accounting information system

INTRODUCTION

The idea of this research started from the difficulty of companies to track the location of fixed assets, which are used together between company entities. Fixed assets used in remote locations are often not tracked directly if the fixed assets are not reported directly by the last user. Efforts to record fixed assets by providing unique QR codes and geolocations that can be read with a smartphone camera, making it easier to track (Fatrianisa et al., 2013; Hasransyah et al., 2017).

Fixed asset management is a critical component of the efficiency of organizations around the world, especially in industries that have extensive physical assets such as manufacturing, logistics, and large-scale service sectors. (Afrody et al., 2023; Isal et al., 2023; Kusumastuti et al., 2019). Globally, the need for effective asset tracking is increasing due to errors in asset placement and depreciation that can lead to significant financial inefficiencies. (Fonna, 2019). With the advancement of digital technology, organizations are now turning to digital asset management systems, which leverage QR code technology to improve data accuracy and simplify the process of tracking and managing assets. The implementation of such a system is crucial in the face of global economic challenges, where inaccuracies in asset tracking can lead to large financial losses and decreased operational efficiency. (Payamta, 2023).

Updating the fixed asset management system which is usually only done manually, by recording the purchase of fixed assets (Adhi Surya Utama et al., 2024; Ardiyanto & Prismana, 2022; Balqis & Arnes, 2024). The new thing studied in this case is the tagging process using a QR code, which contains more complete data from the asset, without opening the existing manual records, it can be read directly at that time, for the fixed asset data. Moreover, the design of this application will be integrated with the design of the fixed asset accounting information system application, as a whole company by separating based on asset ownership, it can even be calculated for the economic life of each asset, in connection with depreciation costs which are non-cash costs but their recording is very important for the company's fiscal reporting (Pangaila et al., 2022; Sujatmiko & Suyatno, 2021).

The company that is a vendor of BUMN, in this case, PT. Cipta Jaya Perkasa which is always audited every year by the BUMN itself. Therefore, financial reports must be managed accurately, quickly, and systematically based on financial accounting standards. Financial reports based on financial accounting standards will provide good and efficient information to internal and external parties of the company. One of the contents of significant financial report information is fixed assets. Correct disclosure of fixed assets will affect depreciation costs, calculation of the economic life of fixed assets, minimizing loss rates, rejuvenation of fixed assets, allocation of capital in purchasing fixed assets, and integration into the asset system. PT. Cipta Jaya Perkasisas an oil distributor to the public. PT. Cipta Jaya Perkasa is a company that is a vendor of PT. Pertamina Geothermal to support construction activities in several existing projects. This is what causes asset management control in fixed assets to experience obstacles existence of assets that are unclear because many are moved for each different project. Not to mention the placement of assets, in one office with the recording of two different entities. Therefore, good asset management is needed so that all assets can be recorded, recorded, and stored. In accordance with the correct asset ownership so that there is no misinterpretation, which greatly affects the information needs of stakeholders (Kapoh et al., 2016; Lumunon et al., 2018).

With the increasing demands for accuracy in financial reporting and compliance, this research is especially urgent for companies looking to modernize their asset management practices. With increasingly stringent regulations related to asset reporting and audits being conducted more frequently, companies are under pressure to adopt systems that ensure data integrity. The implementation of a QR code-based asset management system can drastically reduce errors and improve the efficiency of fixed asset management, meeting the needs both in terms of regulation and

The main objective of the study is to design and implement a fixed asset management system that utilizes QR code technology for accurate and efficient asset tracking. The system will improve the accuracy of data in asset records, simplify the inventory process, and improve access to asset information in real time across multiple locations.

The results of this study offer significant benefits for industries that manage a large number of fixed assets. By implementing this QR code-based system, companies can reduce asset losses, simplify the audit process, and improve data reliability in financial

reporting. Additionally, the system's real-time tracking capabilities support better decision-making, operational efficiency, and regulatory compliance, creating a more robust infrastructure for asset management.

RESEARCH METHODS

The research method applied will begin with the accounting process stage, where the process will be preceded by collecting fixed asset data and verifying fixed asset information. If it is in accordance with the financial report. Furthermore, in terms of informatics techniques, the system will be created for the needs of tracking and checking the condition of fixed assets in terms of ownership, to the economic life of the asset. In this case, accounting information system software will be created, which can store asset lists, which are accessed with QR codes on commonly used gadgets, such as cellphones or tablets. Software development is carried out by Prototyping, where the software creation process will be carried out module by module with testing, then combined with other modules and tested, until the refinement stage. In general, the stages in this study will go through the following processes: 1) Planning stage, at this stage, the process of collecting fixed asset data and verifying fixed asset data in the company will be carried out. Initial system modeling will begin at this stage. 2) The implementation stage includes: system analysis, system design, coding, prototyping, implementation, and Maintenance

RESULTS AND DISCUSSION

QR Code as a Labeling Technique

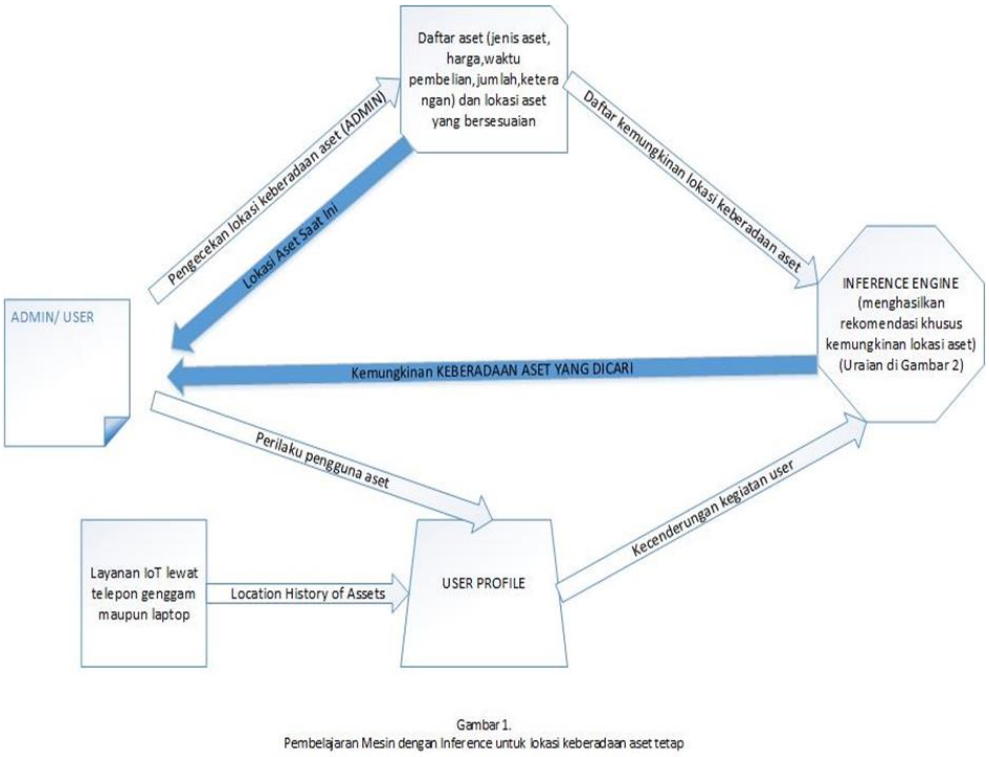
QR Code is a development of the traditional barcode in the form of lines with different heights and thicknesses. QR Code has several advantages, compared to the bar codes that have been used previously. Some of the advantages of QR Code, compared to ordinary barcodes include:

1. Can store all data, encrypted or not, in just one symbol.
2. QR Code can save its code information data up to 1/10 of ordinary barcodes.
3. QR Code can be read from all directions at a planar angle.

Figure 1. QR Code

Figure 1 application process with inference for the location of fixed assets that are in accordance with this study, then the admin will be able to find out the location of the

asset, based on inference or trends, which occurred previously which have been stored in the database, in this case, converted into a dataset. The list of assets and the corresponding asset locations, become the initial input targets of the user and the admin is where the fixed assets are located when input. Furthermore, a lesson-learned dataset will be formed for the location of fixed assets relative to one of the jobs carried out by the company, which in this case has many entities. The formation of this lesson-learned dataset is the result of processing the input of fixed asset location data relative to the work input by the user by applying QR and IoT technology. User behavior and types of activities, relative to fixed assets and jobs are also analyzed, so that the lesson-learned dataset is ready to use. The lesson learned that is formed will be run in the inference engine software or inference machine, so that recommendations for the location of the fixed assets in question are obtained (Aliman, 2021; Gandhi et al., 2021). The method run in the inference machine is the Modified Markov Model Predictor which is a combination branching algorithm, which is explained in Figure 2.



Gambar 1.
Pembelajaran Mesin dengan Inference untuk lokasi keberadaan aset tetap

Figure 2. Machine Learning with Inference For Fixed Asset Existence

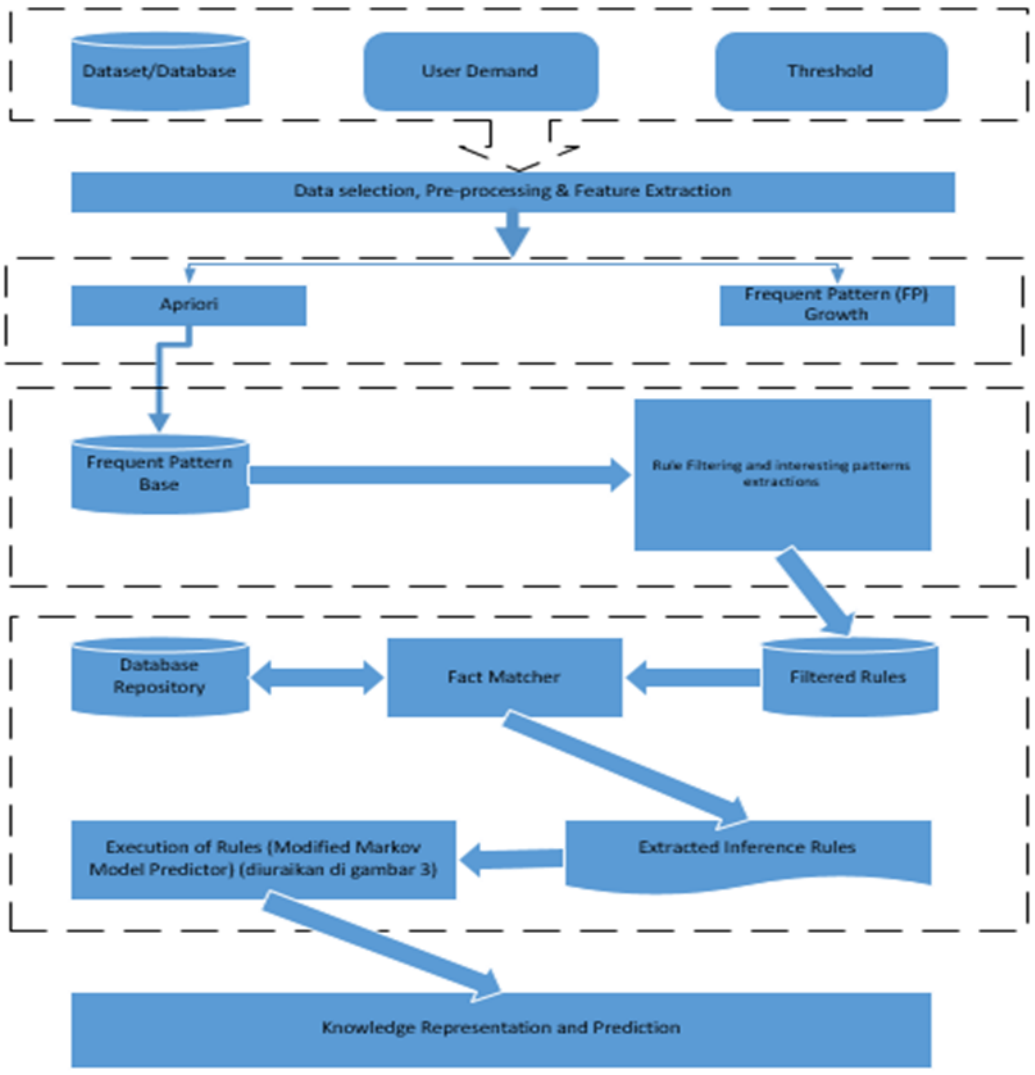


Figure 3. Predictor Model and Explanation of Activity Monitoring with QR Code

1. Login Menu

The login screen will appear when opening the application. This login method is designed to protect the security and privacy of user data, so that only authorized users can enter the system. After entering the correct username and password, the system will verify the information. If the verification is successful, the user will be directed to the application homepage.

2. Home Menu

Users will find a display that is specifically designed to present various data information related to the assets they wish to research, such as land, buildings, and motor vehicles. With this clear layout, users can easily manage and access the information they need, according to their needs. With this display, users can easily obtain and assess all important information about fixed assets. This system is intended to reduce the time

required to search for specific data so that users can quickly obtain a comprehensive picture of the state and condition of their assets.

3. Scan Menu

This scan menu is designed to facilitate the identification and verification of assets efficiently. This scanning process will display a display of data related to the asset, allowing the necessary information to be accessed and managed more effectively. In this way, users will be able to view detailed information, regarding the current status and other important details, related to the intended asset. This technology makes asset management more transparent and efficient. Implementing an integrated scanning process with a complete data display is an important step towards improving operational efficiency, and overall asset management, allowing users to focus on more important strategic tasks.

4. Data Menu/ Asset Information

In this menu there will be an asset description form, which functions to find out the status of work equipment, there are several options in this form, including: fixed assets exist and function, fixed assets exist and function, but are not used, total fixed assets are damaged, fixed assets proposed to be deleted, fixed assets are lost/destroyed, fixed assets have moved location, and fixed assets have moved location. Users are required to select one of the available options according to the condition of the asset (Gandhi et al., 2021).

In addition, there is a location form used, to find out where the asset is located, there is a description that can be filled in by the user, with the name of the equipment or the brand of the equipment. Although this QR Code system has only just been implemented, it is expected to provide considerable benefits for employees, in terms of controlling the work equipment they have. The monitoring process was previously carried out manually, so it was time-consuming and prone to human error. However, employees can easily scan the QR code on each work equipment using their smartphones. This procedure provides fast and precise access to information about the condition, location, and operating status of the equipment. This approach is expected to increase the effectiveness and efficiency of staff work as a whole. Employees can focus more on completing subsequent tasks more smoothly and efficiently with the implementation of a faster and easier monitoring process. They no longer have to deal with time-consuming and error-prone manual recording but can rely on a more reliable and accurate digital system (Oktarino et al., 2024).

QR Code technology also allows staff to detect and resolve issues with work equipment. For example, if a piece of equipment breaks down, or moves around without notice, scanning the QR Code can immediately identify this information, and take appropriate action. This ensures that all work equipment is always ready to use. QR Codes also allow for more cost-effective management by allowing for planned maintenance, which is less expensive than emergency repairs, or the purchase of new equipment. In addition, QR Codes increase the security and safety of equipment by allowing any changes in location, or condition to be known and dealt with quickly.

CONCLUSION

The application of QR Code Labeling Techniques in the Management Information System can facilitate the identification of Inventory items in the field, where time efficiency is found, effectiveness in terms of accuracy in fixed asset management in the company increases, and asset security can help prevent loss of sets or theft of assets in every asset transfer that can be monitored and recorded. Utilization of an integrated system between databases, geolocation, and company inventory systems will facilitate the company's asset inventory process. In addition, development with minimalist techniques is very helpful when instant application development is needed with concise and functional results.

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