

# Model Design of Accounting Information Systems for Village Owned Enterprises (BUMDes)

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**Abstract.** Village-Owned Enterprises as a benchmark for the pillars of the village economy in Indonesia today, in the Era of the Industrial Revolution 4.0 have used technology to run their businesses to win digital competition. However, today's village-owned companies not only require improvements and preparations in terms of technology, but for village-owned companies that have responsibilities and performance that need to be made in an accounting information system that is in accordance with the accounting standards required. Based on this discourse, the writer has the goal of creating an Accounting Information System Design Model for Village-Owned Enterprises that can become a potential village-owned company as a Human Technology in winning the Digital Competition. The research method used is a qualitative research method with descriptive methods and research methods, which are supported to obtain valid data with related parties as managers and development of accounting information systems from Village-Owned Enterprises, data collection techniques used are interviews, observation and interaction. As a result of the Accounting Information System Design Model for Village-Owned Enterprises as human technology to obtain digital competition can understand the business process of Village-Owned Enterprises and optimize existing infrastructure through the Village-Owned Business by design Use Case Diagram, Activity Diagram and Entity Relationship Diagram. Meanwhile, to find out tangible assets and intangible assets consisting of human resource competencies owned by Pagerwangi Village, liabilities, equity, revenue, cost and expense, can be seen from accounting cycle at Financial Statement in the accounting information system for village-owned companies. The result from Financial statement are Activities Statement, Statement of Financial Position, and Cash Flow Statement.

## 1. Introduction

Village-Owned Enterprises (BUMDes) are companies managed by village communities and their management is separate from the village government. The establishment of BUMDes aims to explore and optimize the potential of village entrepreneurs [1]. The purpose of using BUMDes is to improve the economic welfare of the villagers through the development of economic ventures. Establishment of BUMDes is intended to encourage / accommodate all activities to increase community income, both developing according to local customs / culture, as well as economic activities proposed to be managed by the community [2]. This study uses an analysis unit at the Pagerwangi Village Owned Enterprise. Pagerwangi Village-Owned Enterprises began to be pioneered in 2019, engaged in the trade of household industrial goods in Pagerwangi Village, such as: Kicimpring, Sumpiah and others. As a unit under the auspices of the BUMDes, Pagerwangi Village must also pay attention to aspects of



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public accountability, so that the BUMDes Pagerwangi becomes the preferred village unit and is able to build village communities. Pagerwangi BUMDes became the main program of Pagerwangi village in 2019. To achieve success in its application Village-Owned Enterprises (BUMDes) use the Accounting Information System for making financial reports which are often referred to as AIS.

AIS as a system that collects, processes, groups, and makes information in a report [3]. Romney, Steinbart, Mula, McNamara, and Tonkin [4] argues that AIS is a system for collecting, recording, stocking, and accounting data processes to supply information for decision making. Accounting information systems (AIS) are recognized as effective tools for handling exterior and interior changes [5]. In order for potential to be developed to minimize losses and optimize profits, it is necessary to equate strong resources, systems and policies that keep BUMDes on track. However, AIS itself is difficult to achieve without effective and strategic management performance. AIS will depend on management planning for operations which is very important for the efficiency of the accounting information system [5] and AIS compatibility. This study aims to design a model of accounting information systems in BUMDes to get digital competition. Based on this problem we plan to make "**Model Design Of Accounting Information Systems For Village Owned Enterprises (BUMDes)**".

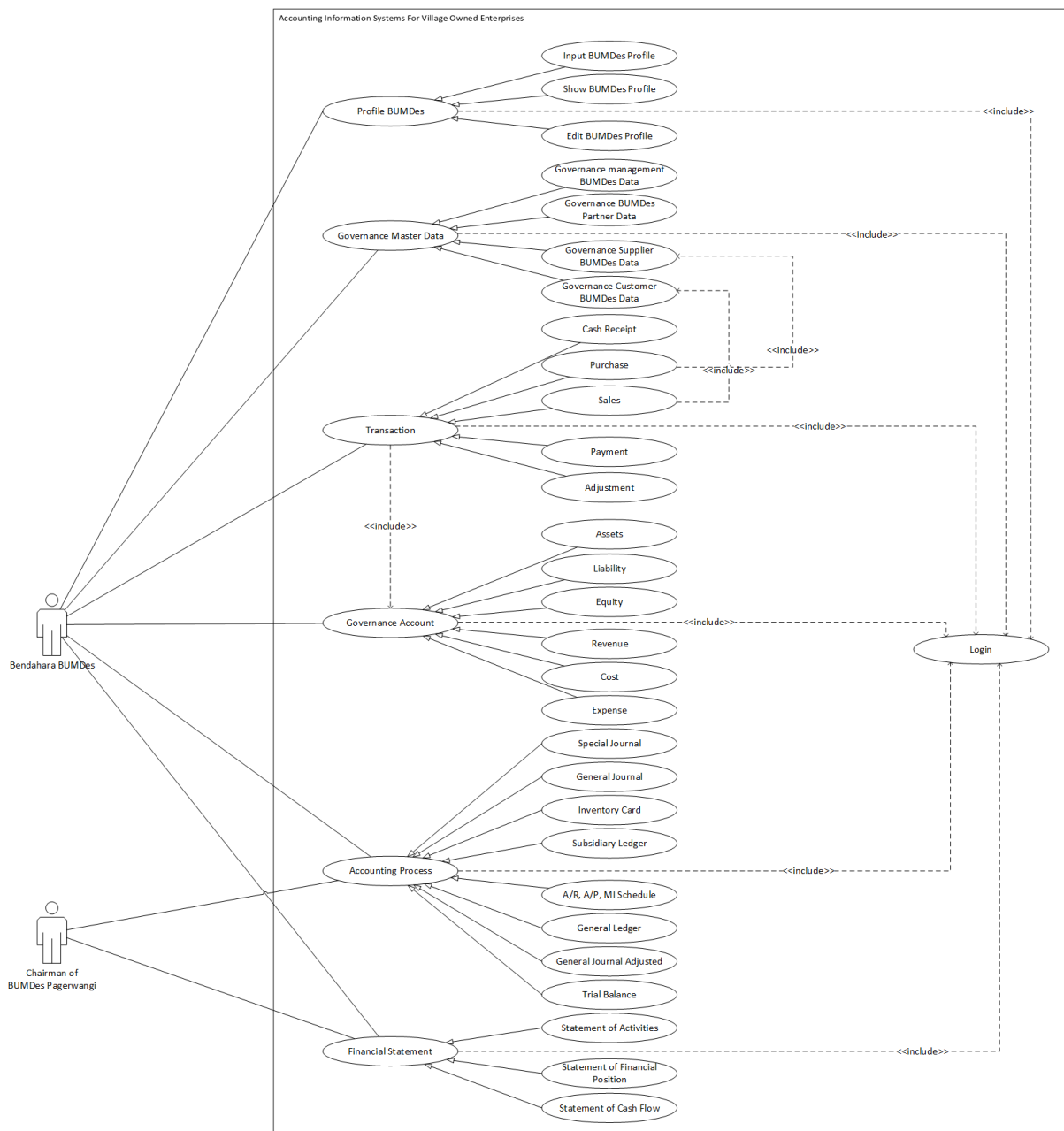
## 2. Method

The research method used is a qualitative research method with descriptive methods and research methods, which are supported to obtain valid data with related parties as managers and development of accounting information systems from Village-Owned Enterprises, data collection techniques used are interviews, observation and interaction [6]. The definition of research methods according to Albi Anggito and Johan Setiawan in a book entitled qualitative research methodology explains that: "... qualitative research is the collection of data in a natural setting with the intention of interpreting phenomena that occur where the researcher is a key instrument, sampling data sources is carried out. Purposively and snowbaally, collection techniques with triangulation (combined), data analysis is inductive / qualitative, and qualitative research results emphasize more on meaning than generalization "[6]. After validating the data in the field, the researchers compared it with supporting documents. The data analysis technique used in this study uses an interactive model of data analysis for Miles and Huberman [7] which includes data reduction, data display, and drawing conclusions / verification. The object of research used in this study is the management of BUMDes potential as the responsibility of village economic pillars. Data collection techniques used were interviews with the Village Head, BUMDes Head, and the Pagerwangi Village Household Industry Group, the primary data used were documents and records from Pagerwangi Village, while secondary data came from literary journals, government regulations and laws.

## 3. Results and Discussion

Use cases are an important part of UML being a coherent story about system's behavior. They are used for documenting system requirements. They may also be used for communication both between various participants in a software project, i.e. system developers, its future users and owners [8]. Figure 1. shows the use case diagram design that aims to capture the dynamic aspects of the accounting information system created. The use case diagram is used to collect system requirements including internal and external influences. These requirements are mostly design requirements. So when a system is analyzed to gather functionality, use cases are prepared and actors are identified.

Now when the initial task is complete, the use case diagram is modeled to present an external appearance [9].



**Figure 1.** Use Case Diagram

One of the important modeling artifacts used in UML, is the Activity Diagrams (referred as UML AD) that are used to model sequence of actions as part of the process flow. It is used to model sequence of actions to capture the process flow actions and its results. It focuses on the work performed in the implementation of an operation (a method), and the activities in a use case instance or in an object [10]. Figure 2 shows the design of activity diagrams to show the processes that occur in the system created. activity diagram is a behavior diagram that illustrates the internal behavior of various program operations with the help of nodes and edges, activity diagrams are used in various domains to represent workflows [11]. Entity Relationship Diagram (ERD) (See Figure 3).

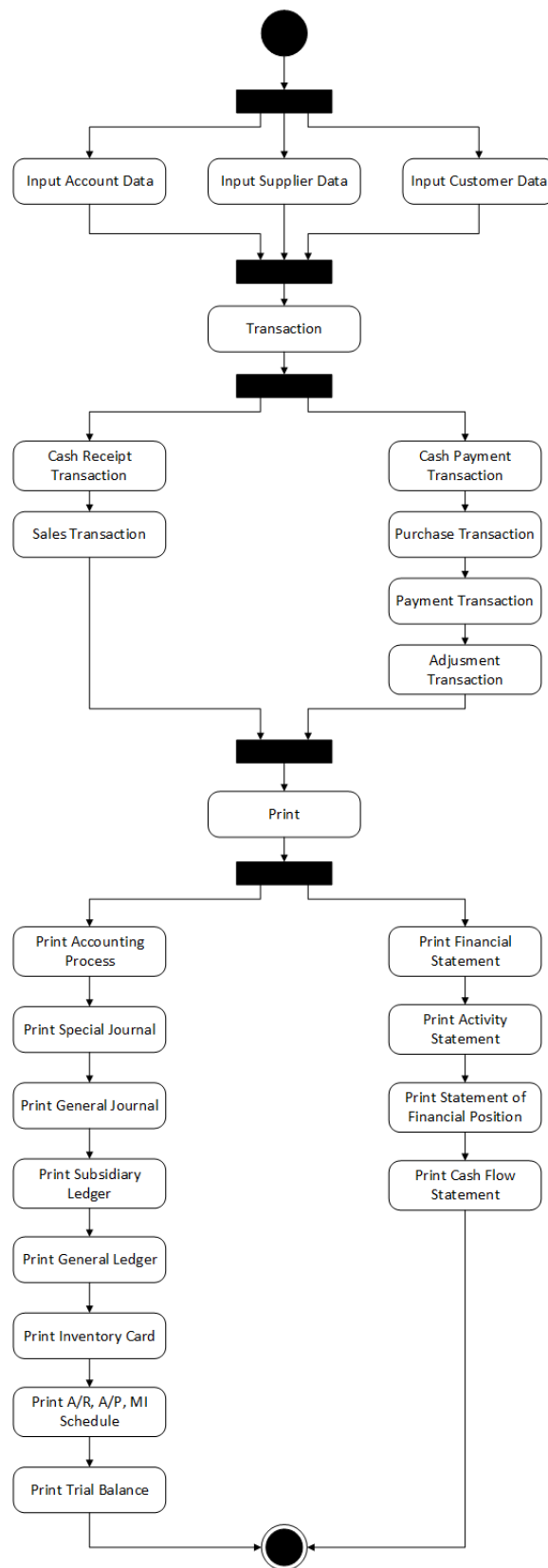
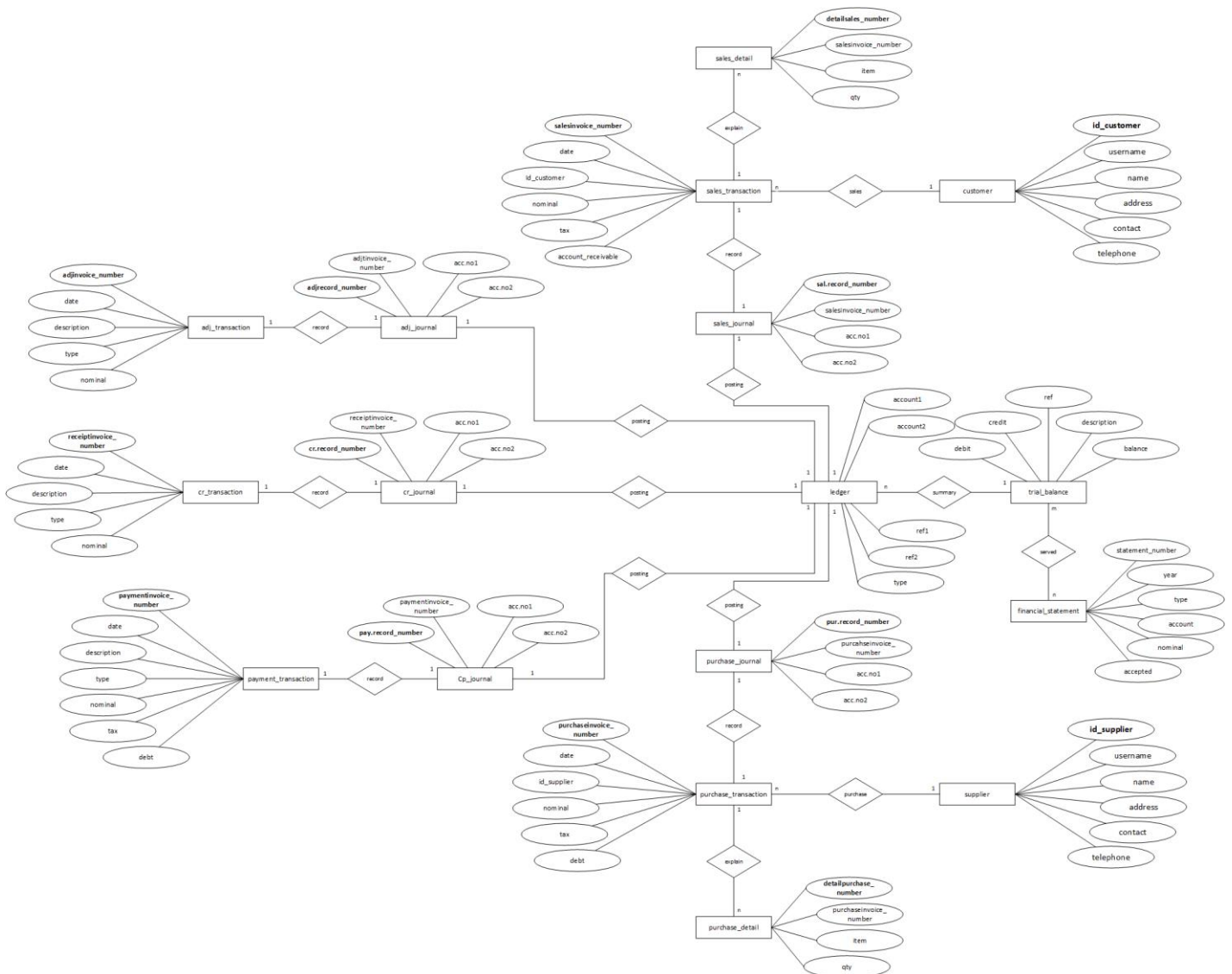
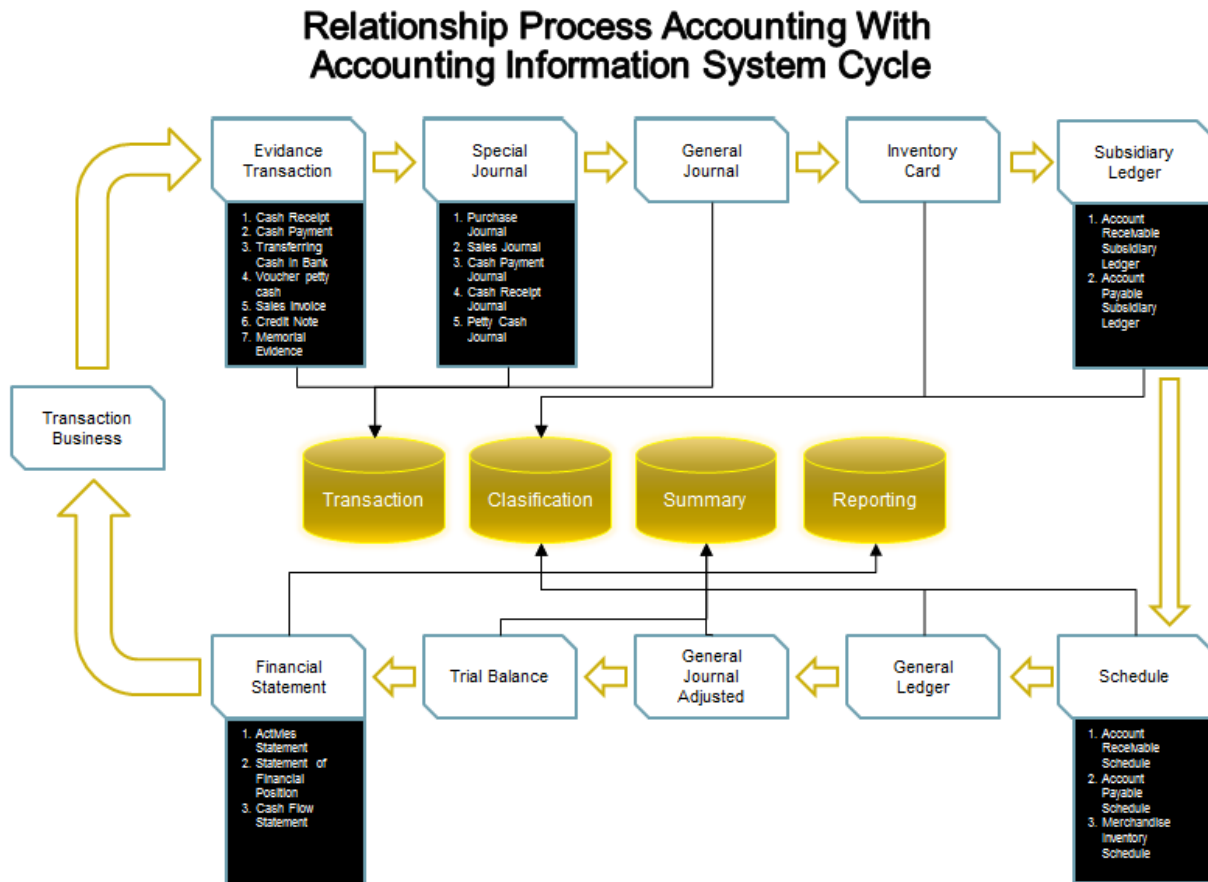


Figure 2. Activity Diagram



**Figure 3.** Entity Relationship Diagram (ERD)

The ER diagram is an analyst's tool to diagram the data to be stored in an information system. The ER diagram is a semantic data modeling tool that is used to accomplish the goal of abstractly describing or portraying data. Abstractly described data is called a conceptual model [12]. Figure 3. illustrates the design of entity relationship diagram (ERD), this diagram is made to show the relationship between business entities involved in the system. ERD has been widely used in structured analysis and conceptual modeling. The ER approach is easy to understand, powerful for modeling real-world problems and ready to be translated into database schemes [13]. Accounting Information System Design (See Figure 4).



**Figure 4.** Accounting Information System Design

Figure 4. illustrates the relationship that occurs in the accounting information system of village-owned enterprises which is made with an accounting cycle in accordance with accounting standards applicable to BUMDes. The figure shows the accounting process until the financial statements that are used to support the BUMDes chairman make the right decisions about finance and economic steps that need to be improved [14]. The accounting standard used is International Financial Report Standard for Good Corporate Governance in Small Medium Enterprises.

#### 4. Conclusion

This study aims to design a model of accounting information systems for Village-Owned Enterprises as Human Technology Now to Get Digital Competition. The research method used is a qualitative research method with descriptive methods and research methods, which are supported to obtain valid data with related parties as managers and development of accounting information systems from Village-Owned Enterprises, data collection techniques used are interviews, observation and interaction. The results and discussion of this research are information system design using use case diagrams, activity diagrams and accounting information system designs which are used to support the BUMDes chairman in making the right decisions about finance and economic steps that need to be improved.

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