

INVENTORY INFORMATION SYSTEM ON WELDING TECHNIQUES WORKSHOP

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Abstract In managing laboratory equipment at SMK Negeri 1 Gunungputri, they still use manual methods and the toolman or head of the workshop does not collect data continuously, causing data and goods in the field to be incompatible, then there is no inventory number that causes lost items cannot be identified, therefore needed an Information System Inventory of Welding Engineering Workshop. This system uses the System Development Life Cycle method with Object Oriented Design modeling, with an Information System Inventory Workshop Welding Techniques can make it easier to identify every item in the field, reduce errors in terms of storage of goods, search for data and can facilitate the search for goods, especially in the Engineering workshop Welding.

Keywords: information systems; inventory; classification engineering workshop; system life cycle development.

1. INTRODUCTION

Today the application of information systems in a government or private agency is needed because of the very rapid development of technology requires an agency to obtain information more quickly and accurately. Information systems that support the performance of an agency will be implemented well and can handle a variety of data processing using information technology. State Vocational School 1 Gunungputri with 5 majors owned namely Industrial Chemistry (KI), Metal Instrumentation (ILG), Industrial Electronics (EI), Welding Engineering (TL), and Software Engineering (RPL) is one of the educational institutions responsible for creating human resources who have the ability, skills and expertise, so that graduates can develop abilities when involved in the world of work.

From each department, each has a laboratory / workshop as well as goods or equipment used for lab work and for laboratory / workshop management which still needs to be managed properly to support the smooth running of the practicum. Goods management is carried out through inventory of goods by giving the item code number to facilitate the introduction of recording of goods, and control of goods. The item code is a sign that indicates ownership of the goods.

With the background presented above, problems can be formulated in SMK Negeri 1 Gunungputri related to laboratory / workshop inventory items, namely how to facilitate laboratory administration / welding engineering workshops for data collection of inventory items at SMK Negeri 1 Gunungputri and how to facilitate toolmen for monitor borrowed goods. In a previous study conducted by Hendy Dwi Nugroho (2018), a thesis majoring in Informatics Engineering, Faculty of Engineering, Yogyakarta State University entitled Development of Information Systems for Inventory of Goods Based on Websites in SMK Piri 2 Yogyakarta can be concluded that the inventory information system of this item aims to facilitate management goods in SMK PIRI 2 Yogyakarta.

In that case, as explained above, the purpose of this research is to develop a loan function of goods in the form of an item loan data form and build an inventory of information systems at Welding

Engineering Workshop as big data of Welding Engineering workshop equipment at SMK Negeri 1 Gunungputri.

2. THEORETICAL BASIS

2.1. Understanding Information Systems

The system is an order (integration) consisting of a number of functional components (with a unit of function / special task) that are interconnected and collectively aiming to fulfill a particular process or job. Information is data that has been processed / processed so that it has meaning or useful benefits. Information is also data that has been formed into a format that has meaning and is useful for humans. Another opinion also says that information as data that has been organized into a form that suits the needs of someone in an organization or company.

Information systems can be defined technically as a unit of interconnected components that collect (or get back), process, store and distribute information to support decision making and control within an organization. Information systems are also a combination of humans, data, processes, networks, hardware, and software that intends to be processed and produce information that has value to humans. Management information systems are computerized information systems that work because of the interaction between humans and computers.

2.2. Definition of Inventory

Inventory of goods is the activity of carrying out the administration, organization, regulation, recording and registration of inventory / ownership rights. While the list of inventory / ownership items is a valuable document that shows a number of items belonging to the organization and is controlled by the leadership of the organization that is in the moving and non-movable subdivisions. The existence of a complete, regular and ongoing inventory list in all sub sections of the organization has a function in order to bring order to the administration of goods / property rights; registration, control and supervision of all property rights; efforts to make maximum use of every item / property in expediting the achievement of organizational goals and objectives; and support the implementation of organization.

2.3. Item Code Number

Each type of item must have an item code number to facilitate the introduction of recording of goods, and control of goods. The item code is a sign that indicates ownership of the goods. The item code number is obtained from the classification and numbering process of the goods classification. The goal to be achieved in the classification of goods is that there is a fairly easy and efficient way to record and search for certain items, both physically and through a list of records or in people's memories.

3. RESEARCH METHODOLOGY

3.1. Materials and Research Methods

3.1.1. Material

The material used in this study uses data obtained from the Welding Engineering Workshop at SMK Negeri 1 Gunungputri.

3.1.2. Method of collecting data

There are three methods of collecting data in qualitative research with a case study approach, namely:

- Observation, which is obtaining data by making direct observations at the Welding Engineering Workshop at SMK Negeri 1 Gunungputri.
- Interview, i.e. collecting data by conducting direct interviews with the Head of Welding Engineering Workshop at SMK Negeri 1 Gunungputri and the Head of Welding Engineering Study Program at SMK Negeri 1 Gunungputri regarding the inventory of equipment inventory and the grouping of tools according to the type of tool and its use
- Literature studies, namely searching, reading, studying literature books related to research

4. RESULTS AND DISCUSSION

The system is built using UML (Unified Modeling Language. UML) design is a visual modeling method for object-oriented system design tools, or UML definition, which is a language that has become a standard in visualization, design and documentation of software systems.

- Use case is a technique used in the development of a software or information system to capture the functional needs of the system in question, Usecase explains the interactions that occur between the 'actor' initiator of the interaction of the system itself with the existing system, a usecase is represented by a sequence of steps simple one. Figure 1 is the Usecase Diagram of Inventory Data [5].



Figure 1. Usecase Diagram of Information System Inventory of Welding Engineering Workshop

- Activity Diagrams are graphical representations of all stages of the workflow. In UML modeling, this diagram can be used to explain business processes and operational workflows step by step from the components of a system [6]. Activity diagram in this inventory system can be seen in Figure 2.

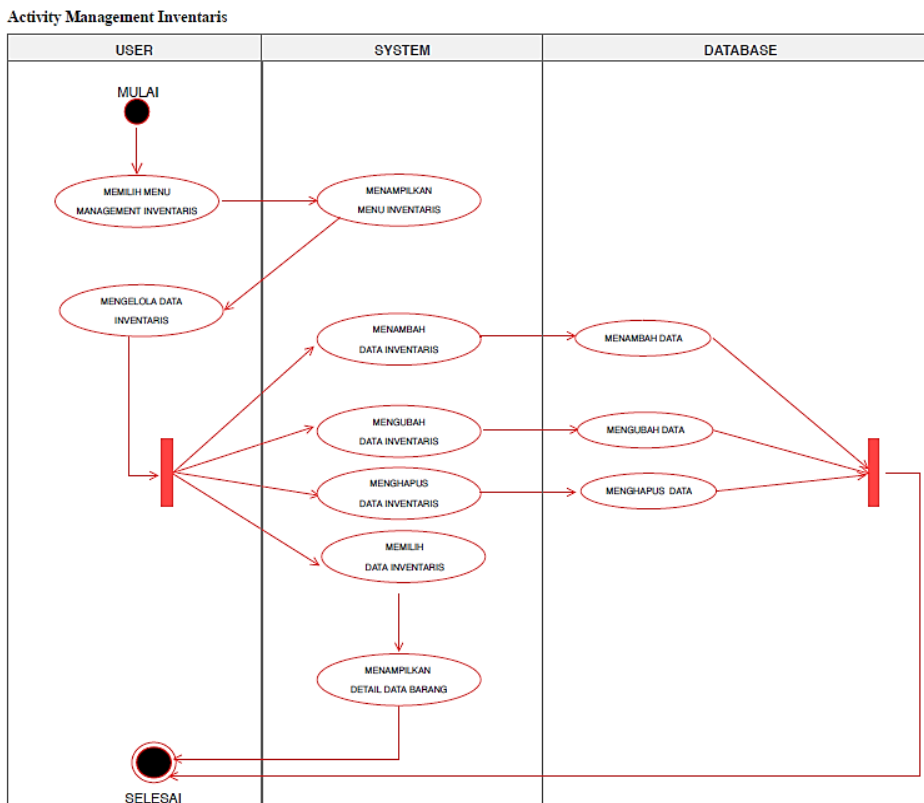


Figure 2. Inventory Management Activity Diagram

- *Activity diagram for lending and printing the form for borrowing goods overall, the toolman opens the system for borrowing goods and fills out the form for borrowing goods according to the items to be borrowed. The activity diagram for borrowing goods is shown in Figure 3.*

Activity Mencetak Data Peminjaman Keseluruhan

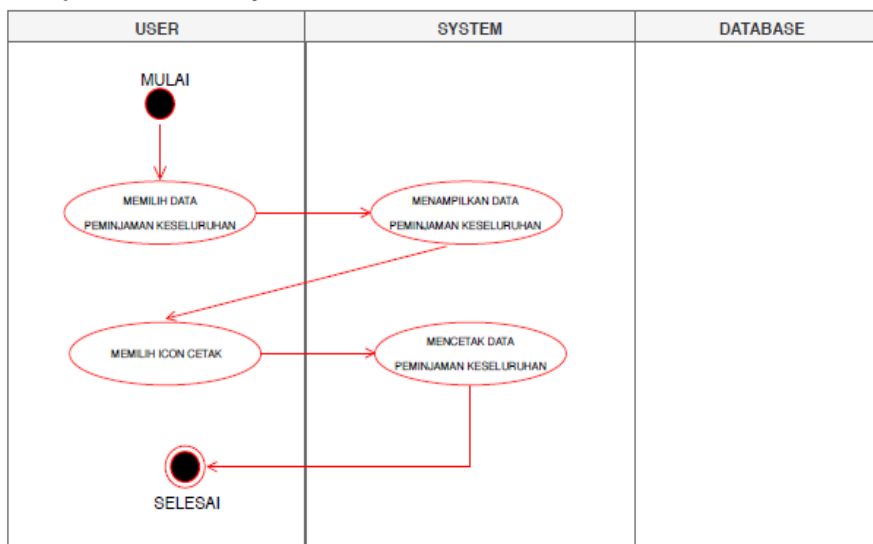


Figure 3. Loan Activity Diagram and Print Loan Form for Entire Goods.

Login Page Interface

The login page interface is the login page used to enter the user page.

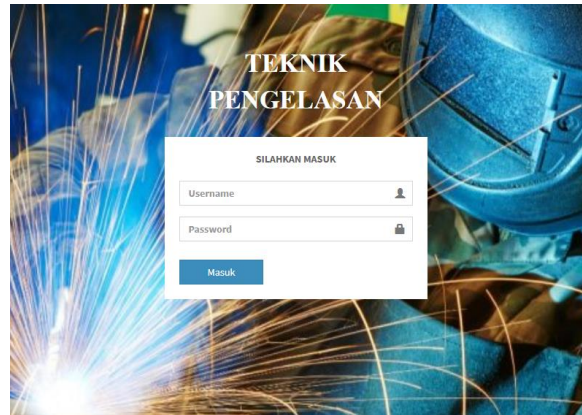


Figure 3. Login Page Interface

Interface of Entire Inventory Data Pages

The overall inventory data page interface is for viewing all inventory data that has been inputted by an admin that is specific to the user.

The screenshot shows a web interface titled "Data Inventaris". At the top left, it says "Show 10 entries". On the top right, there is a search bar. Below this is a table with the following columns: No, Kode Barang, Nama Barang, Kondisi, Lokasi, Status, and Keterangan. The table contains 10 rows of data. At the bottom left, it says "Showing 1 to 10 of 10 entries". At the bottom right, there are "Previous", "1", and "Next" buttons.

No	Kode Barang	Nama Barang	Kondisi	Lokasi	Status	Keterangan
1	123-ABA	Gerinda tangan 12	baik	BENGKEL BAWAH	Ada	Baik baik
2	12-156-457	Gerinda 22	baik	BENGKEL BAWAH	Ada	Kondisi Baru/tersegit
3	LIS-11	Las Listrik 1	baik	BENGKEL ATAS	Ada	OK
4	12-156-457	Las Listrik 1	baik	BENGKEL ATAS	Ada	hati hati dalam pemakaian
5	12-156-457	Las Listrik 2	rusak ringan	BENGKEL ATAS	Ada	-
6	12-156-457	Las Listrik 3	baik	BENGKEL ATAS	Ada	hati hati dalam pemakaian
7	13-156-457	LG MIG 1	baik	BENGKEL ATAS	Ada	-
8	1-156-457	Inverter 1	baik	BENGKEL ATAS	Ada	-
9	16-156-457	AC 1	baik	BENGKEL ATAS	Ada	-
10	17-156-457	Welding helmet	baik	BENGKEL ATAS	Ada	-

Figure 4. Overall Inventory Data Page Interface

Admin Navigation Menu Page Interface

The admin page interface is for navigating user management menus, inventory management, and lending data.

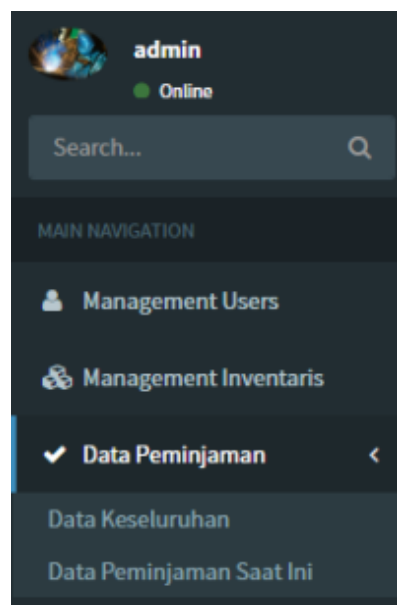


Figure 5. Admin Navigation Menu Page Interface

Inventory Management Page Interface

The user management navigation menu page interface is a navigation menu that is used to add and delete application users.

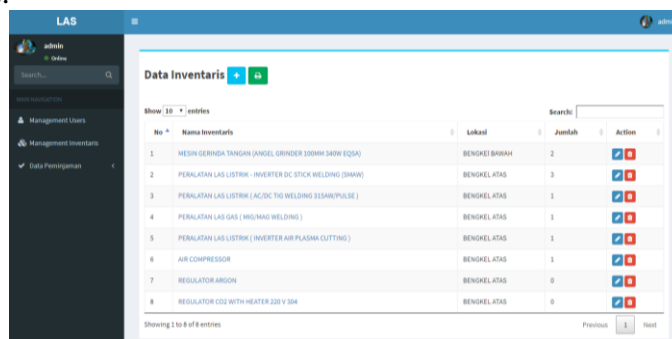


Figure 6. Inventory Management Page Interface

Page Interface Navigation Management Inventory

The inventory management navigation menu page interface is a menu used to add, delete, and change inventory data. As for this menu, it is possible to print an entire inventory data report.

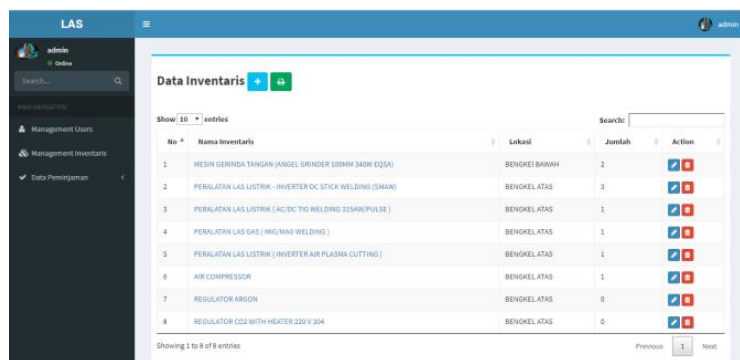


Figure 7. Interface page of Inventory Management Navigation Menu

User Interface Menu Navigation Management

The user management navigation menu page interface is a navigation menu that is used to add and delete application users. Figure 8 shows the management user interface page.

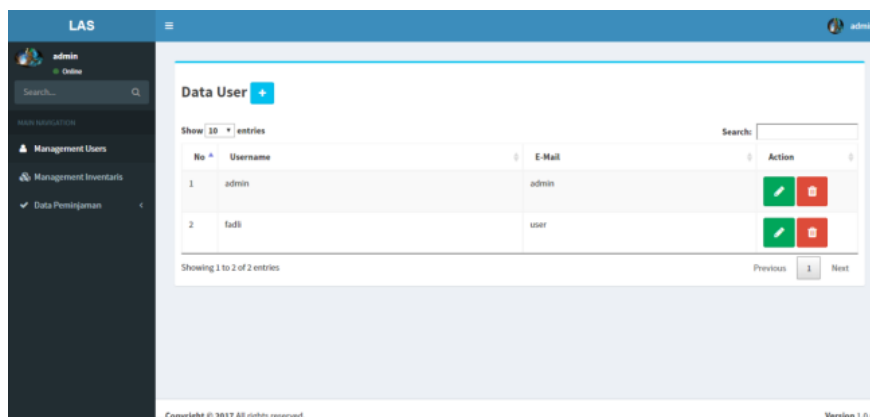


Figure 8. Interface page of the User Management Navigation Menu

Interface of Goods Loan Form Page

The loan-to-goods form interface is used to borrow goods that are filled in by the toolman. In Figure 9.

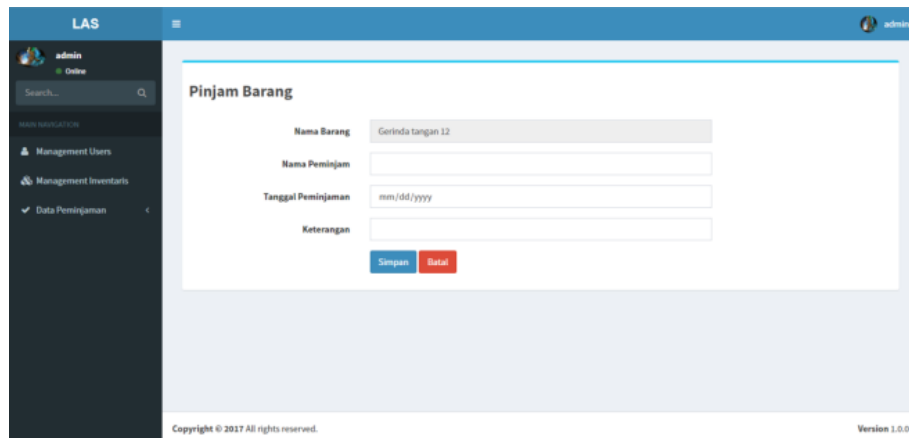


Figure 9. Interface of Goods Lending Form Page

5. CONCLUSION

Based on the results of research and analysis conducted related to the creation of an inventory information system in welding engineering workshops conducted at SMK Negeri 1 Gunungputri, it can be concluded that the Inventory Data Application has been successfully made, with the following modules:

- Results of web-based system analysis obtained such as analysis of functional requirements, non-functional needs, and user needs.
- The results of the system design in the form of usecase diagrams and activity diagrams that show the workflow sub system and a picture of the system interface.
- The final result of this research is to create a computer-based inventory system that can help the Gunungputri Vocational Technique 1 Welding Engineering study program in managing inventory items, and control of items borrowed at the SMK Negeri 1 Gunungputri Welding Engineering Workshop.

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