Waterfall Model Application In Development Dorm Student Information Management System West Kutai

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Abstract— **This study aims to design an information system up by applying the waterfall method in the case of dormitory management West Kutai district in the city of Samarinda. The method used is the System Development Life Cycle (SDLC) with the waterfall model of system development tools that Flow Of Document (FOD), Data Flow Diagrams (DFD) and designs testing done by Black Box Testing and Web-based applications. The results of this study are based Web Design and Application of a Management Information System Dormitory West Kutai regency in Samarinda**

Keywords: Information Systems, Waterfall, Management Dormitory

I. INTRODUCTION

West Kutai regency student dormitory is a temporary shelter in West Kutai students completing studies at various universities in several cities including Samarinda. This hostel is a district government representatives. West Kutai in Samarinda, as well as the owner and manager of the hostel.

In particular dormitory management activities related to the administration of the hostel members include members of the selection and data collection and reporting dorm-reporting to the government district. West Kutai. During the handling of the administration of the hostel management system is implemented with a simple spreadsheet applications and some activities are still done manually such as recording in the general ledger, the search is done by looking back to the general ledger and reporting back to the computer input

This problem gives an idea to design a data management information system dorm members.

II. SCOPE OF RESEARCH

The scope of the issues to be discussed are
1. Applications built can be accessed by multiple users (multiuser) ie managers, members of the hostel, the government district. West Kutai and the general public.
2. Methods to develop a system that is Waterfall.
3. Web-based applications are built.

III. WATERFALL MODEL

Waterfall model (waterfall) is a one-way model that starts from the preparation stage to the treatment, and this is the model used by the authors to analyze the system that will be done (Pressman, 2002).
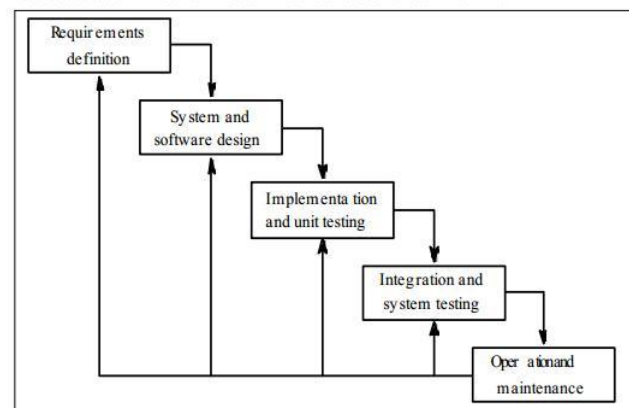

Figure 1. The waterfall development model

A. Requirement Analysis / Needs Analysis

The whole system needs should be obtained in this phase , including the expected utility apliaksi user and system limitations . This information can usually be obtained through interviews , surveys or discussions . The information is analyzed to obtain user documentation needs to be used at a later stage .

B. System Design

This stage is done before coding . This stage aims to provide an overview of what should be done and how it looks . This stage helps in specifying hardware and system requirements as well as defining the overall system architecture .

C . Implementation

In this stage of programming . Software development is broken down into small modules which will be incorporated in the next phase . Also in this stage also carried out checks on the module are made , whether it meets the desired function or no

D . Integration & Testing

In this stage, the incorporation of modules that have been made and testing is done to determine whether the software has been made in accordance with the design and there are errors or not .

E . Operation & Maintenance

This is the latest stage in the waterfall model . Software that has been so run down and do maintenance . Maintenance included in fix errors that are not found in the previous step . Improvement implementation and enhancement services system unit system as new needs .

IV. ANALYSIS

A. Users will be involved in a system built hostels such as business , local government , the community members and the general boarding with appropriate access rights and duties of each function .

B. Application systems are built to support features such as :
   1.. Profile information such as dormitories, galleries, news, announcements and articles about boarding and registration of candidates for the dorm .
   2. Pages for managing the hostel as the selection of data members and new member announcements, search, additional data and reporting

C. Managed data include
   1. Member Data dorm, dorm Inventory Data, Data dorm rooms, the data fee every dorm
   2. Transactional
      Data occupant dorm rooms and events

D. The system is currently applied (Figure 2) is
   1. Members submit data to the administration of the dorm and made a recording of the data report submitted to the members of the dorm chairmen and government district. Kubar
   2. Each member pays dues are recorded by the dorm administration and the results reported to the dorm chairman and the district government. Kubar
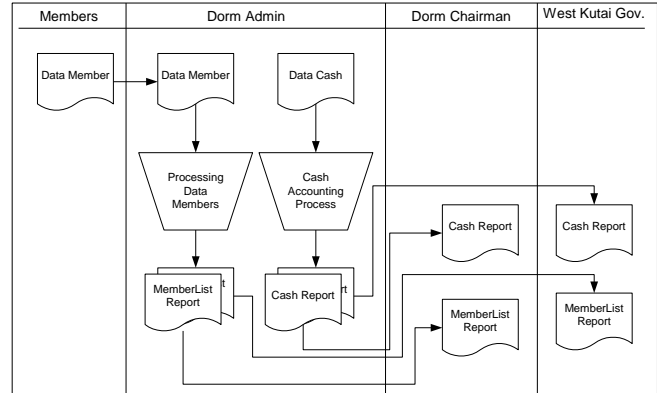

Figure 2. The system is currently applied

V. DESIGN SYSTEM / APPLICATIONS

A. Flow of Document

Flow of documents in the system designed involving entities remain members, administration student dormitories, dormitory chairman and district governments. Kubar. Improvement of the existing system :
1. Computer usage and database members, dues, inventory and transactions
2. The addition of some process of reporting to the government district. Kubar
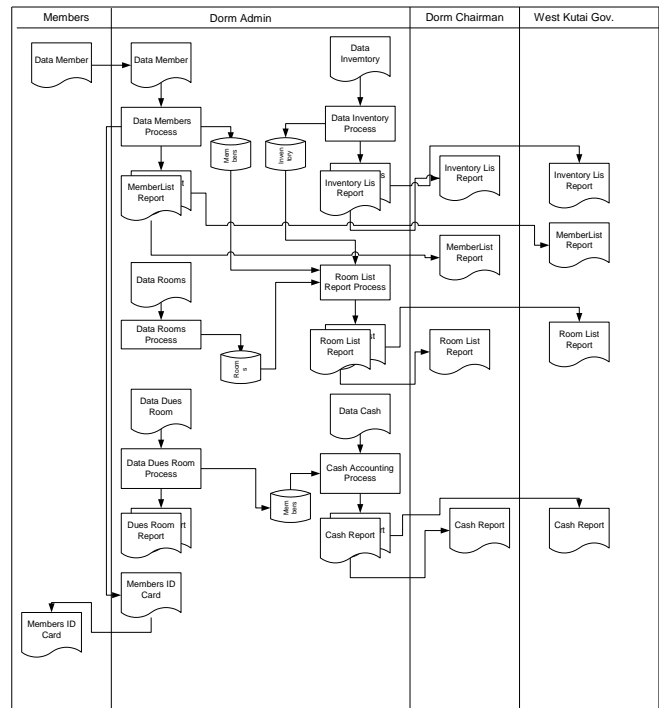
Figure 3 shows design the flow of document system

Figure 3. FOD System

B. Context Diagram

Context diagram shows the relationships between entities in the system, the flow of data in and out of the system is built. Figure 4 shows the system context diagram
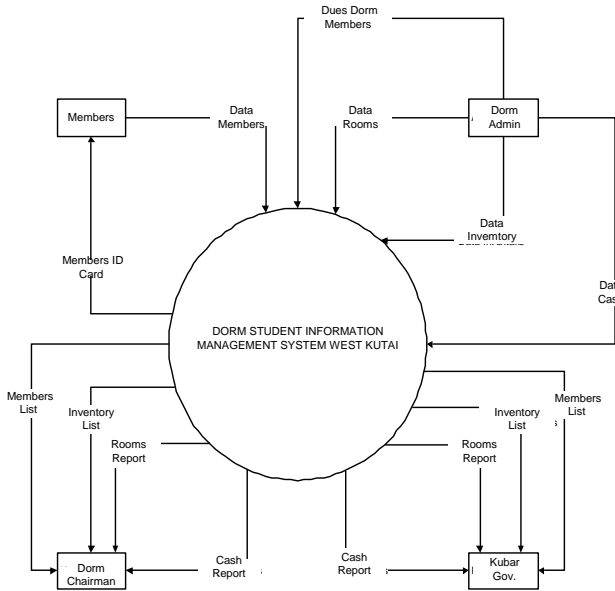

Figure 4. Context Diagram

C. Data Flow Diagrams (DFD) Level 0

DFD Level 0 is a detail from the context diagram which describes the process (figure 5)

1. Members of the data collection process
2. Inventory data collection process
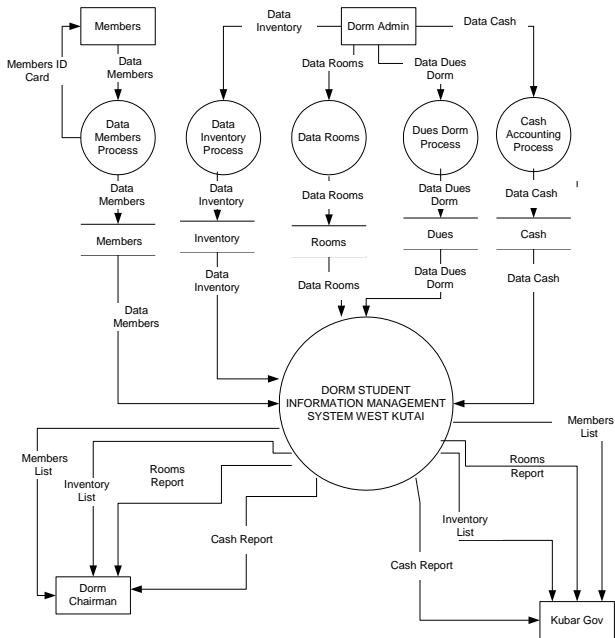3. Room data collection process
4. Dues collection process and Cash accounting process

Figure 5. DFD Level 0

D. DFD Level 1 Card Members and Members List

At Level 1 occurs several processes related to members of the data collection process, making a membership ID Card and report member list (Figure 6)
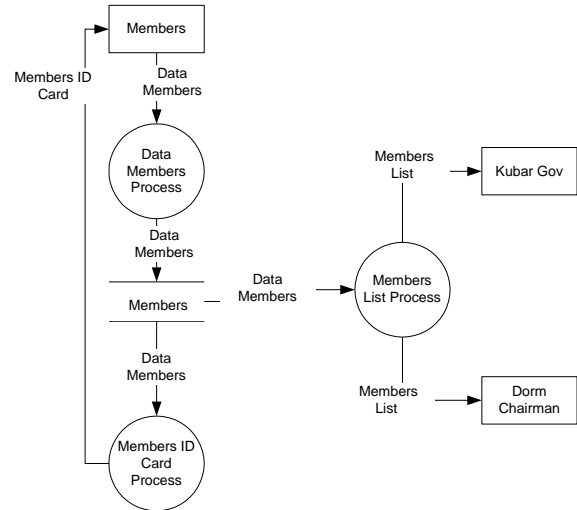

Figure 6. DFD Level 1 Card Members and Members List

E. DFD Level 1 Preparation Inventory List

At Level 1 DFD also includes the process of making an inventory list (Figure 7)

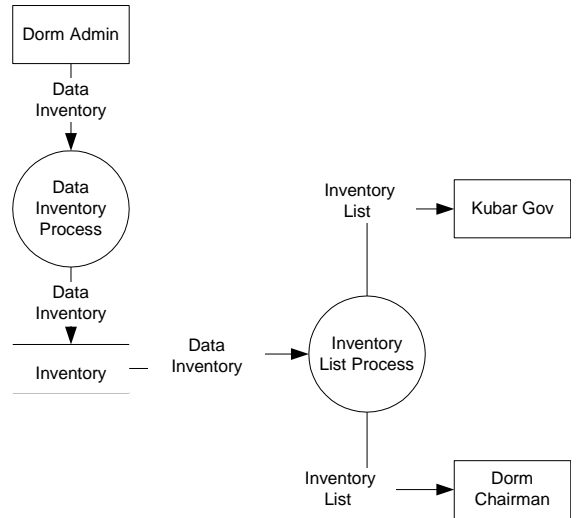

Figure 7. DFD Level 1 Preparation Inventory List

F. DFD Level 1 Room Reporting

At Level 1 DFD also includes reporting process room (figure 8). Entities involved in this level are members, administration and student dorms results are reported to the government Kubar and dorm chairman
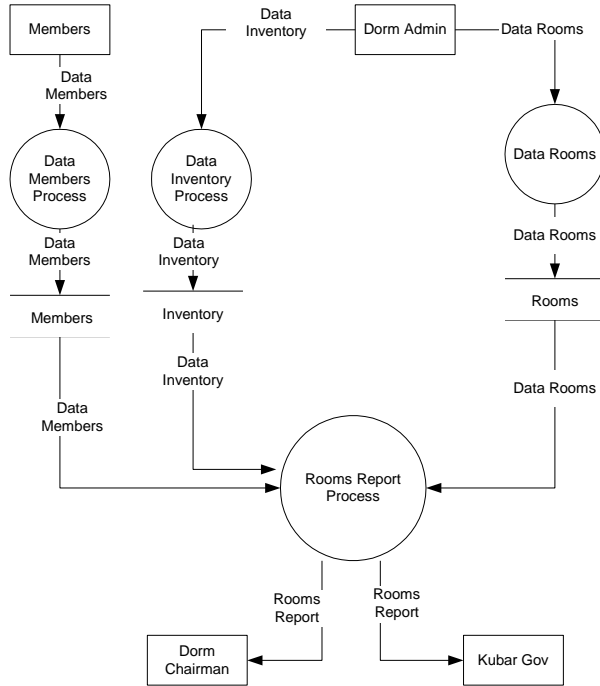
Figure 8. DFD Level 1 Room Reporting

7. Level 1 DFD of Cash Reporting

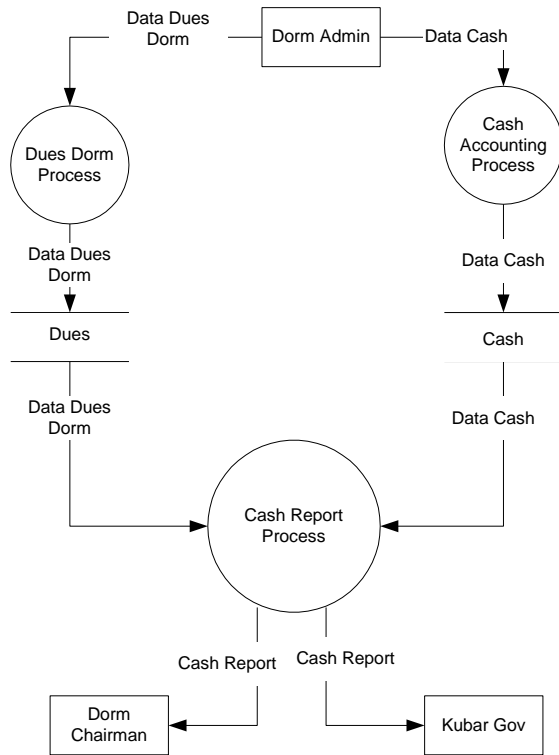At Level 1 DFD also includes cash reporting process (Figure 9)

Figure 9. Level 1 DFD of Cash Reporting

8. Site Map

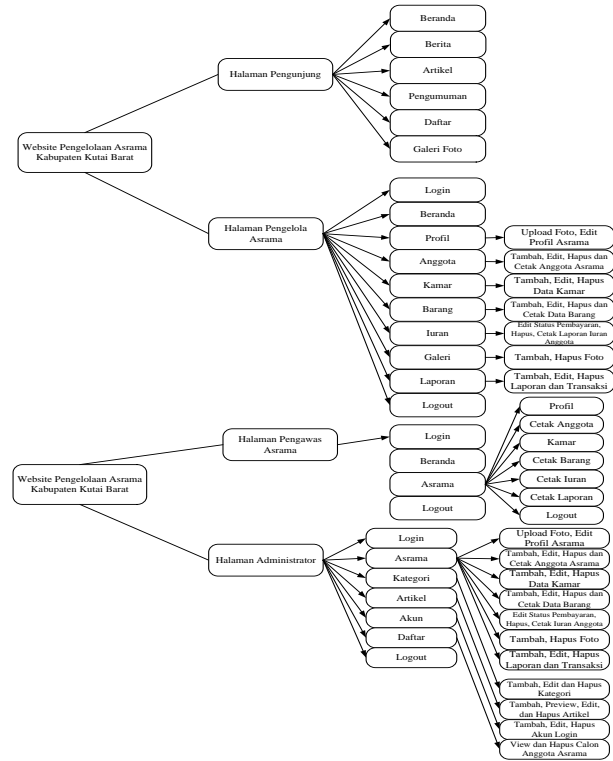Figure 10 is a design system is built sidemap

Figure 10. Sitemap

VI. IMPLEMENTATION

Figure 11,12,13,14, and 15 is the result of making application for a system built
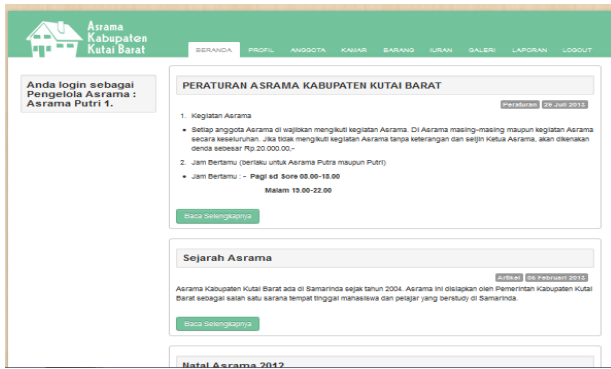

Figure 11. Visitors page

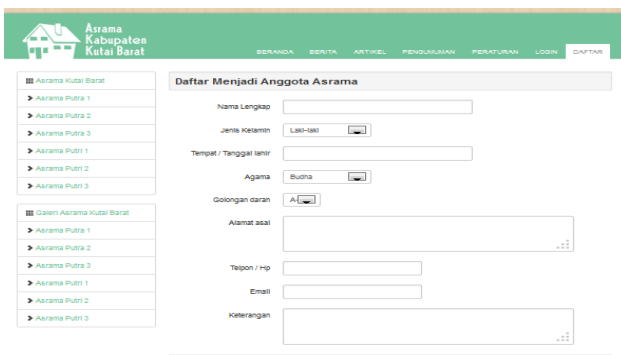Figure 12. Student Dormitory Management page

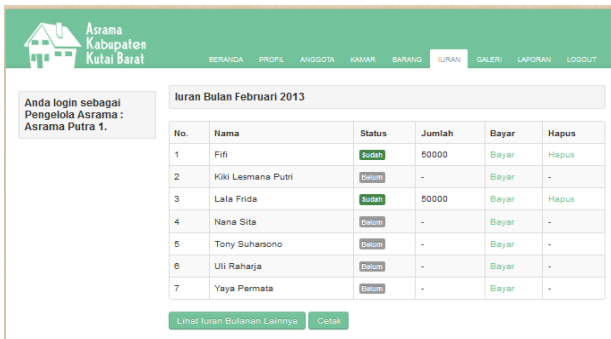Figure 13. Member Registration page
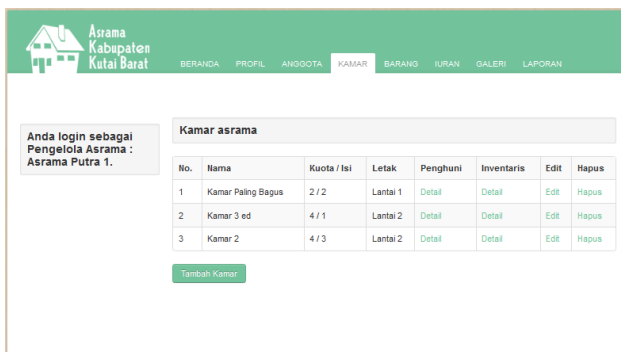

Figure 14. Dues page members

Figure 15. Members Rooms page

Figure 16 List of Members

VII. TESTING

By using Black box testing, performed by providing input to multiple pages like pages dorm members, registration pages, page sharing room members and reports performed 10 times each page, then get all the results page to function properly in accordance with design already be made

VIII. CONCLUSION

1. With Waterfall models can be made Data Management Information System Design Dormitory West Kutai
2. Management Information System Data Dormitory West Kutai District can improve Web-based data management system manual boarding of a computer-based system to be accessed by multiple users

IX. ADVICE

1. The system can be upgraded to a Web-based selection system, so the registration, the selection and announcement done online, so that prospective students can be directly enrolled as a member of the hostel
2. Development of security systems for system

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