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Application for Recording Marriage2 Events at KUA: Design and Implementation Using Visual Studio 2012 and MySQL

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Abstract

In the management of data recording marriage events at the KUA (the Office of Religious Affairs) is still manual and has not utilized information technology to the fullest. The process of inputting, managing and storing data on recording marriage events only utilizes Microsoft Office applications and there is even some data that is written manually so that the process of presenting reports for recording marriage events is still relatively slow and inefficient, there are often errors and loss of data which results in the KUA having to search for data again. To overcome this problem, an application design is carried out that can speed up the process of recording marriage events at the KUA. Design and Implementation was using Visual Studio 2012 and MySQL as a database processing place. The application designed to support the process of recording marriage events more effectively and efficiently.

Keywords: *Visual Studio 2012, Mysql, Nikah Event Recording Application, Religious Affairs Office*

1. Introduction

The KUA has a strategic role in managing the administration and recording of marriage events as part of public services[1], [2]. Marriage registration is a state obligation that aims to provide formal legality to married couples and become the legal basis for various administrative purposes[3]. However, many KUAs still use manual methods in recording marriage data, which often causes various obstacles such as delays, recording errors, and difficulties in archiving[4], [5]. In the digital era, the utilization of information technology is an effective solution in improving the efficiency and accuracy of administrative services[6]. By utilizing technology-based applications, KUAs can manage marriage event data more systematically, quickly, and safely[7], [8]. Visual Studio 2012 as a desktop application development platform and MySQL as a database offer reliability in managing large and structured data [9].

This study aims to design and implement a desktop-based marriage event recording application, utilizing Visual Studio 2012 and MySQL [10]. This application is expected to assist the KUA in managing marriage partner data, printing administrative documents, and generating reports more efficiently. In addition, this system is designed to minimize the risk of data errors and facilitate access to information in public services. This research focuses on the process of designing, developing, and testing the application to ensure that the system meets the operational needs of the KUA. Thus, it is expected that this

application can be an innovative solution in supporting the modernization of KUA services and improving the quality of services to the community [11].

2. Method

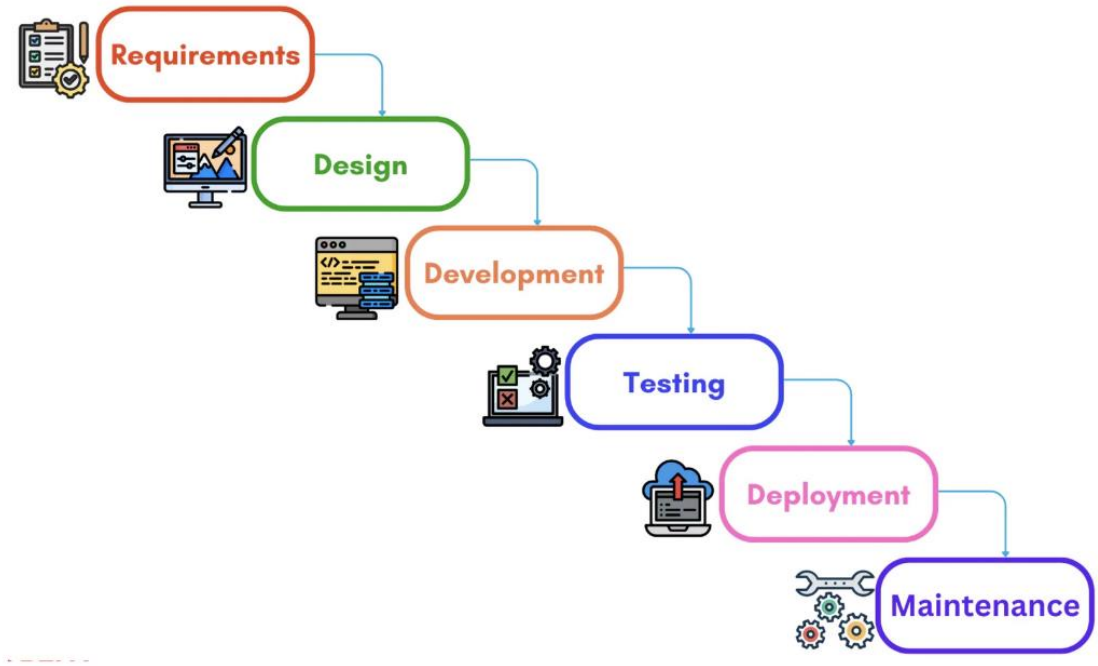

Figure *1.* SDLC Waterfall Model

2.1 System Development Method

In developing this system, researchers used the SDLC (Software Development Life Cycle) model. System Development Life Cycle (SDLC) is the process of making and changing systems and the models and methodologies used to develop a system[12]. SDLC is also a pattern used to develop software systems, which consists of stages including planning, analysis, design, implementation, testing and maintenance [13]. The SDLC model used in this research is the Waterfall model. Where the development of this system starts from analyzing needs, designing systems, writing program code, testing programs, and implementing and maintaining programs[14]. The following is an overview of the SDLC model used by the author:

2.2. Desain System

By starting the design, namely problem identification, problem analysis, and determining the objectives and development of the system, it will be used as a reference in processing data into the forms of information needed by users.

2.3. Context Diagram (CD)

Context diagram (CD) is the highest level in the data flow diagram and contains only one process that shows the system. The context diagram begins with the depiction of terminators, data flow, storage control flow and one process that shows the whole In the design of this marriage event recording application, the admin enters the registration data which is then followed by determining the marriage schedule and the last is the making of the marriage certificate. After that, the admin usually makes a monthly report which will be submitted to the leadership at the end of each month."[5]

2.4. Data Flow Diagram (DFD)

The Data Flow Diagram (DFD) of the design of this marriage event recording application starts with data input on the registration form whose data is stored in the

registration table. Next is the selection of a marriage schedule whose data is stored in the marriage schedule table. After registration and schedule selection, the admin directly processes the marriage certificate whose data is stored in the marriage certificate table. The following is a description of the Data Flow Diagram (DFD) of the design of the marriage event recording application[15]:

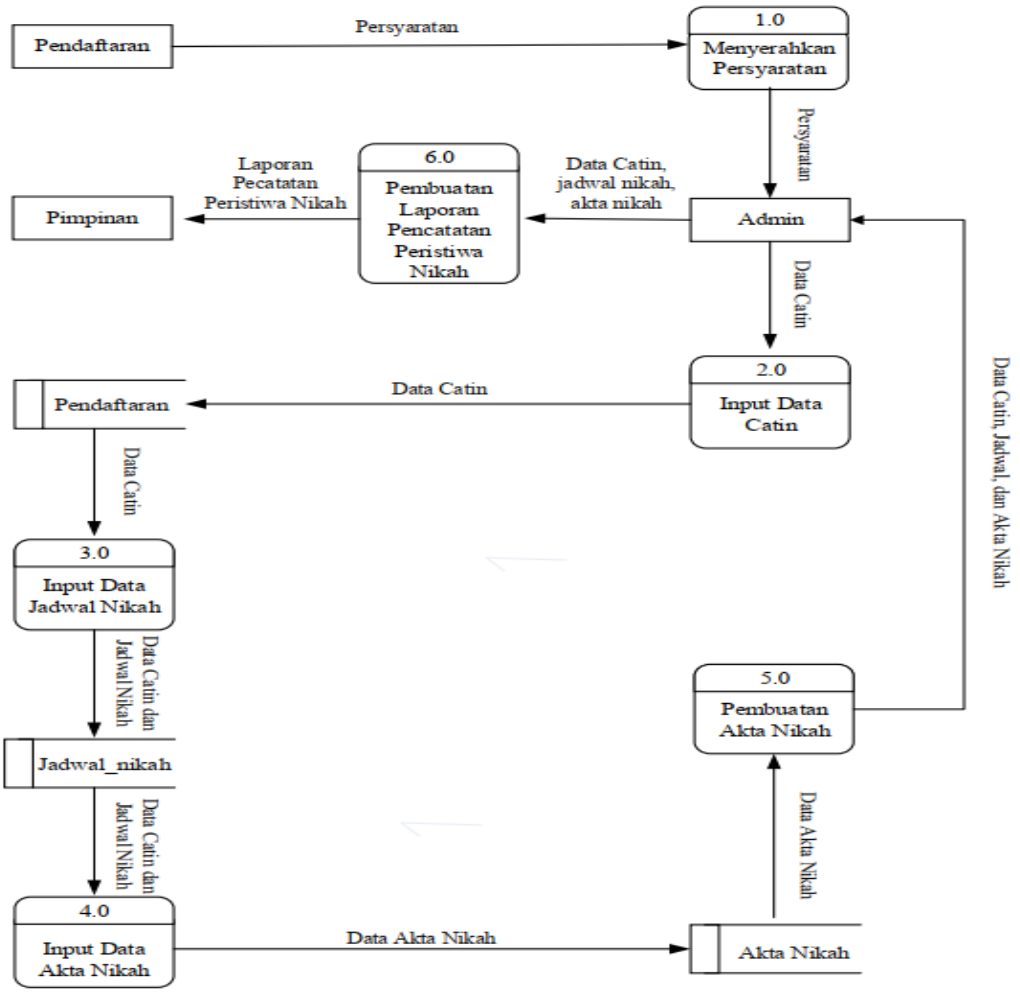

Figure 2. Data Flow Diagram

2.5. Entity Relantionship Diagram (ERD)

The Entity Relationship Diagram (ERD) of this marriage event recording application design uses a database with the name dbkua which has 4 (four) tables. Each table consists of several fields including the registration table consisting of 13 (thirteen) fields which are data from prospective brides and marriage guardians, then the marriage schedule table consists of 6 (six) fields, and the marriage certificate table consists of 7 (seven) fields. The Entity Relationship Diagram (ERD) description of the design of the marriage event recording application is as follows:

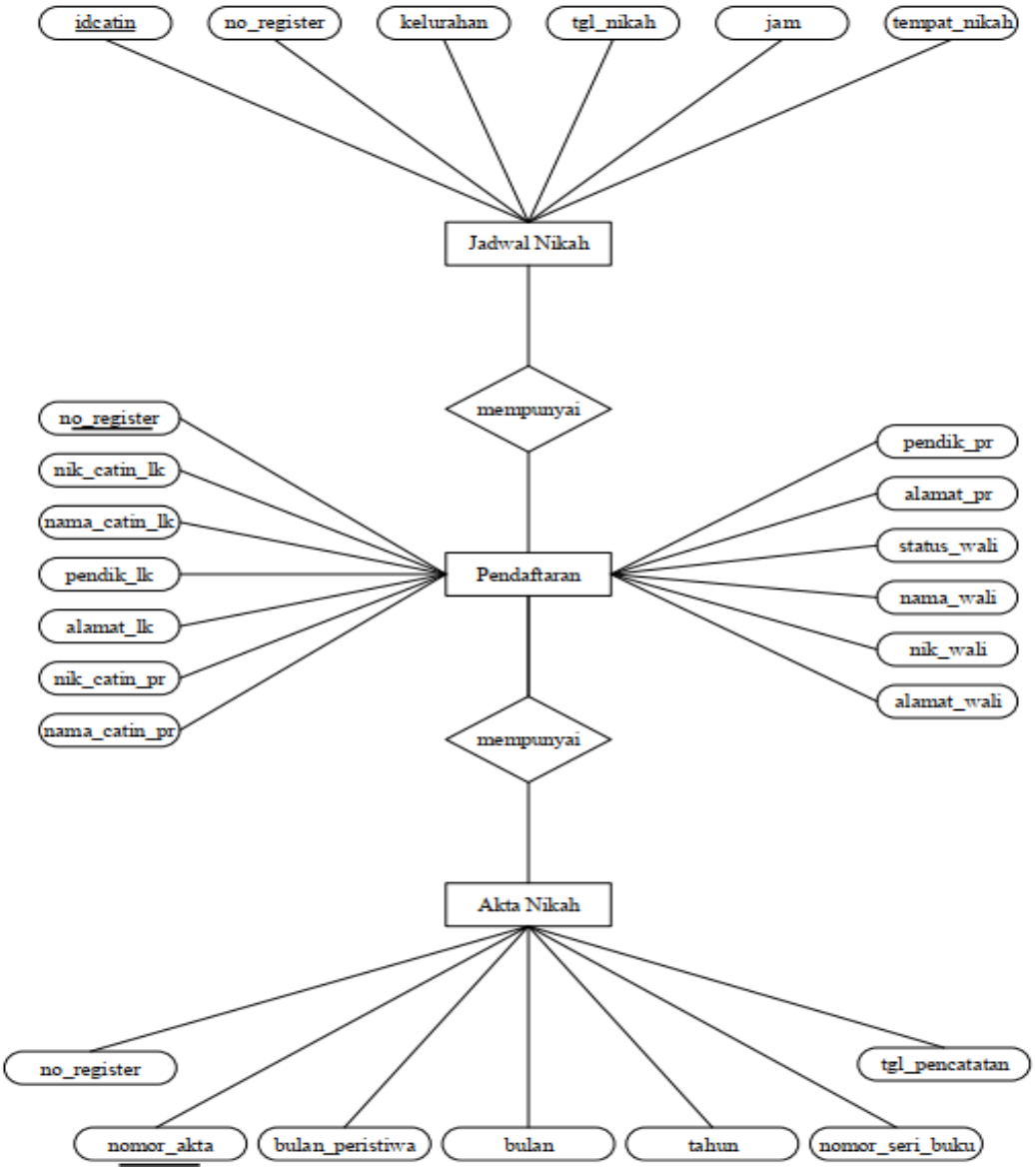

Figure *3.* Entity Relationship Diagram (ERD)

2.6. Flowchart

The flowchart for designing the application for recording marriage events starts from the beginning, then the admin logs in, after successfully logging in the admin will be directed to the main menu page. In the main menu section there is a sub menu where the admin can input registration data, determine the schedule, and create a marriage certificate, this step is repeated every time the application is run. The following is a flowchart description of the design of the marriage event recording application [11]:

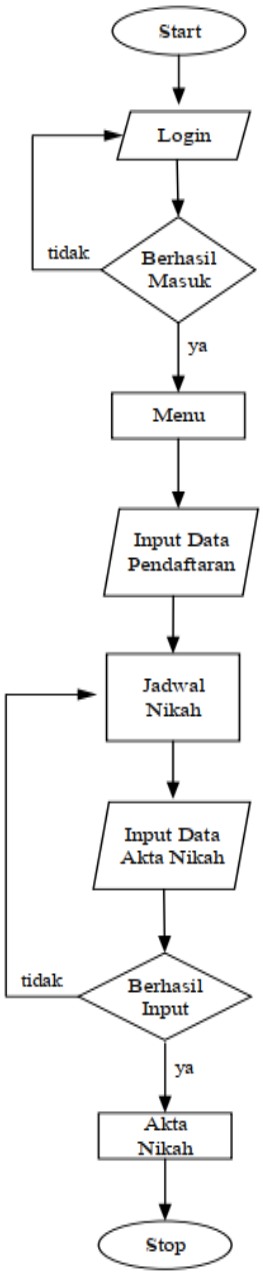

Figure 4. Flowchart

3. Results and Discussion

After carrying out the application design stage, this chapter will discuss the results and discussion which includes design implementation, testing, and analysis results. The design of this application is made using Visual Studio 2012 and MySQL as a database storage. The database used is named dbkua. In this application, the data inputted is based on data that has been obtained directly from employees of the Office of Religious Affairs in processing and obtaining data on the Registration of Nikah Events.

In this section, several views of the application that has been built are presented. The appearance of this application page is made inseparable from the interface design that has been designed previously.

3.1. Main Menu Form

The main menu form is the main page of the application, on the menu form a MenuStrip is provided which contains the admin login tab, registration, marriage schedule, marriage certificate and report which when clicked will direct the admin to the intended tab form. The following is a view of the main menu form:

Figure 5. Main Menu

3.2. Form Login

The login form is the page used for login. To start using the application, the user or admin must login by entering the correct username and password. When the Login button is executed, the system will validate the username and password which, if appropriate, will appear on the administration menu page. Conversely, if the username and password entered are incorrect, the system will provide a notification that the admin failed to log in. The following is a view of the Login Form.

Figure 6. Login Menu

3.3. Registration Form

The registration form is the bride and groom data input form. The data inputted includes the nik of the bride and groom, name, latest education and address as well as the status of the guardian, nik, name and address of the guardian. The following is a view of the registration menu form:

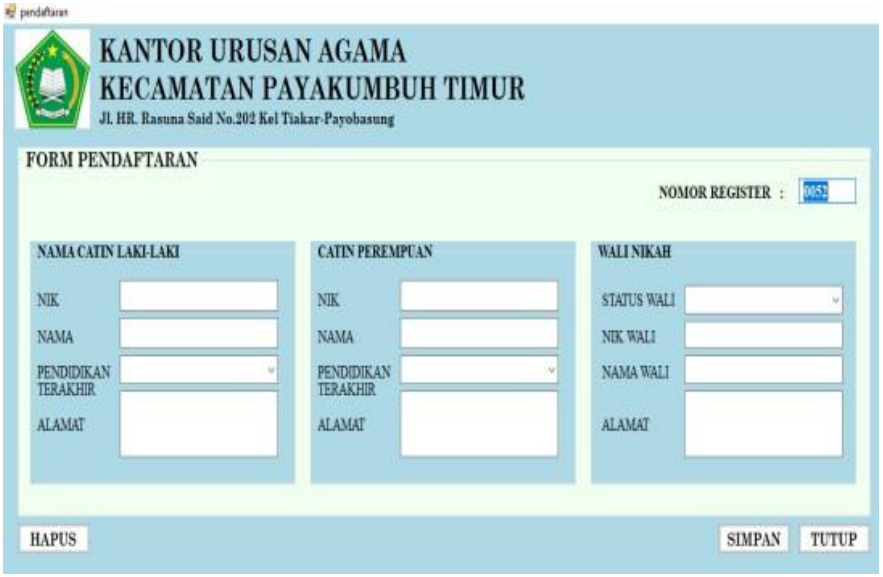

Figure 7. Registration Menu

3.4. Marriage Schedule Form

After the admin enters the bride and groom data, the next step is to determine the marriage schedule for the bride and groom. The data inputted on the marriage schedule form is by calling the register number from the registration table which will bring up the names of the prospective bride and groom in the textbox, then the admin can directly input the village, date of marriage, time, and place of marriage. The display of the marriage schedule form is as follows:

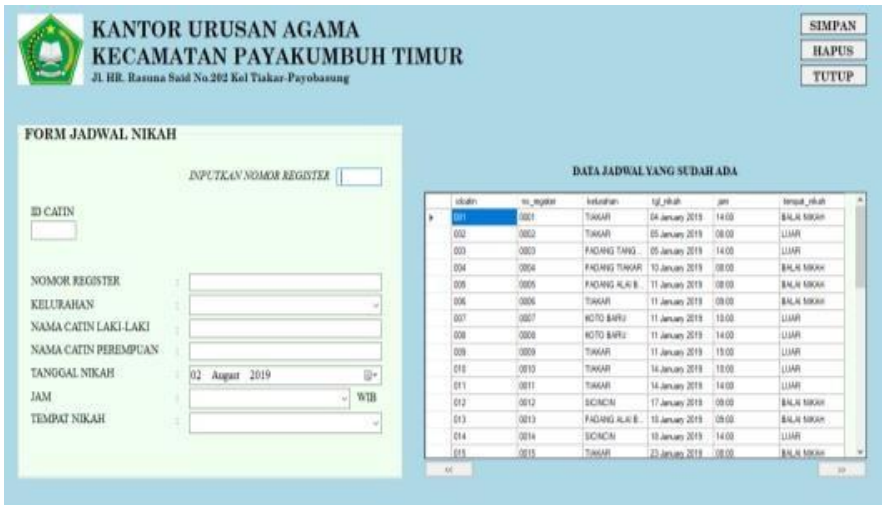

Figure 8. Marriage Schedule Menu

3.5. Marriage Certificate Form

The marriage certificate form is the last form of the marriage event recording input process. In this form the admin again calls the register number in the registration table

which will bring up the names of the bride and groom then the deed number will appear automatically, and the admin can input the serial number of the marriage book and the date of recording. The following is a view of the marriage certificate form:

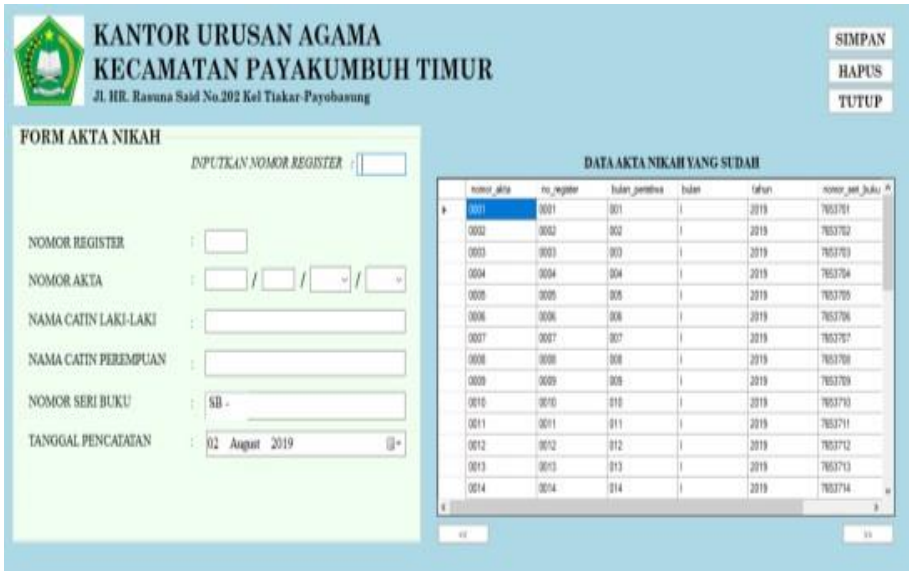

Figure 9. Marriage Certificate Menu

3.6. Monthly Report Form

Monthly Report Form is a form to display monthly reports by specifying the start date and end date of the report you want to display. Here is a view of the monthly report form:

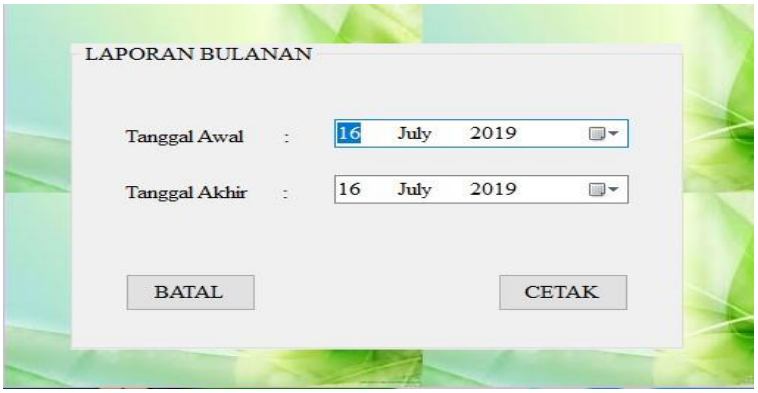

Figure 10. Monthly Report Menu

3.7. Report Application

The application report is the output of the report that has been inputted on each form. The report is obtained based on existing data which is then printed as the result of the marriage event recording process.

4. Conclusion

Based on the discussion of the design of the application for recording marriage events at the Religious Affairs Office using Visual Studio 2012 and MySQL, the authors draw several conclusions, namely as follows: This application can facilitate operators in the process of inputting, storing and searching for data recording marriage events. This

application can help the employees of the Office of Religious Affairs in archiving data on recording marriage events easily and safely. With the application of recording marriage events, report generation is also more effective and efficient to produce more accurate data.

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