INNOVATIVE: Journal Of Social Science Research
Volume 3 Nomor 4 Tahun 2023 Page 9703-9710
E-ISSN 2807-4238 and P-ISSN 2807-4246
Website: https://j-innovative.org/index.php/Innovative

Analysis And Design Of Website-Based Swimming Course Information System At Jatayu Swimming Club

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Abstract

Jatayu Swimming Club is a non-formal educational institution that provides swimming courses. Jatayu Swimming Club's operational activities still use a manual system, from new member registration, transaction processing, and scheduling to reporting. An information system is needed to improve services so that services are more effective and efficient. The research method used is the system development method, namely the Prototype Method. The design of the swimming course information system is based on a needs analysis by conducting interviews, observations, and literature studies to reduce the difficulties that occur in operational services at the Jatayu Swimming Club. This study only focuses on three stages: gathering needs, building prototyping, and prototyping evaluation. The swimming course information system design process at Jatayu Swimming Club uses system modeling, including Context Diagrams, Data Flow Diagrams, and Entity Relationship Diagrams, and produces a User Interface. It is hoped that with the design of this system, Jatayu Swimming Club can apply it to become an information system that can be run for company operations.

Keywords: *Information System, Prototyping, Data Flow Diagram, Entity Relationship Diagram, User Interface*

INTRODUCTION

Technology has developed continuously and rapidly. This has caused many industrial sectors to start switching from conventional to digital systems by utilizing technology. The application of technology in every industry certainly provides many uses, especially regarding the efficiency of the company's operations. According to Gary J. Anglin, many benefits from technology can simplify human life today, including making it easier to receive information on activities that are more effective and efficient, facilitating communication between users, and making financial and banking transactions easier [1]. The application of technology is now starting to enter the field of education. As with the development of technology in general, technology in education also continues to experience growth. Teachers and educators must be able to have the ability to use technology, which aims to make learning more exciting and efficient. Based on the opinion of Bonnie Soeherman and Marion Pinontoan, an information system is a series of components in the form of humans as users, procedures, data, and technology which function to process data into information and make decisions by the goals of the organization [2]. The information system itself is a computer-based system in which there is information for its users according to the information needed. Users of information systems are usually an organizational entity, both formal and non-formal.

Based on the above understanding, information systems can provide convenience in making decisions that affect the organization and can also help improve efficiency in the data management process owned by the organization. Currently, many educational institutions, both formal and non-formal, have used information systems to support teaching and learning systems within their institutions. According to research conducted by Abdul Habid Alaudin with the title Information System for Web-Based Tutoring Services Case Study Bimbel Nabila, initially giving grades when students take quizzes or daily rates often results in data loss, and it isn't easy to know the overall quality of students. However, after the implementation of the information system, these problems can be resolved, and users, teachers, students, and operators can see all the value data according to their needs quickly [3]. In addition, there was another study conducted by Irfan Ramdhani Smith regarding the Design of an Academic Information System in Soreang Tutoring Tutoring, which stated

the same thing: since the use of an Academic information system, owners, students, and teachers can access information related to learning through an academic information system that is designed [4].

Jatayu Swimming Club is a non-formal tutoring institution and is a swimming club in Denpasar, Bali. After conducting observations and interviews and observing the Jatayu Swimming Club, several obstacles were experienced, namely, firstly related to registration, and class scheduling was still done manually. The second difficulty that often occurs is related to conveying information when there is a change in schedule to students. And the third problem is related to students' difficulties checking class availability. Considering the benefits of implementing a management information system, implementing the information system at the Jatayu Swimming Club can overcome problems that occur optimally. Especially issues related to data management of swimming course participants. All users can receive and view existing information without having to search for it manually through notebooks using the information system.

In this study, the prototype method was used. This method will provide a representation or mockup at the beginning of the system design that is made, and later, it will be evaluated by the users. There are several stages in the prototyping method, namely planning and ending with designing a new proposed system. This swimming course system design contains context diagrams, data flow diagrams, and user interface designs.

RESEARCH METHODS

In collecting data, the researcher conducted semi-structured interviews with the owner and several staff at the Jatayu swimming club and, in the research, went directly to the field, made observations about matters related to the problem being discussed, and collected theoretical concepts by studying existing literature and books. Relation to problems and laboratory research, namely the author's efforts to process the information obtained. This study uses the Prototype method. This prototype method is a system development method that allows developers and customers to interact with each other during the system design process [5]. Interactions that occur directly between developers and customers, of course, developers more accurately know the needs of users [6].

In the prototype system development method, several processes must be carried out, including:

1. Communication

In the initial stage of the prototype method, the developer must communicate with users or customers. At this stage, the developer discusses the system requirements with the users.

2. Quick Plan

After conducting discussions with users and obtaining the system requirements, proceed with making a system flow design. The quick system flow created by the developer includes an end-to-end system description.

3. Modeling Quick Design

After planning the system flow, the following process or stage is to create a simple design based on the system flow design created previously.

4. Construction of Prototype

If there is no evaluation at the previous stage and it meets the user's needs, it will proceed to the Construction of Prototype stage. This stage is the development of a prototype based on the approved design.

5. *Development Delivery and Feedback*

In this final stage, the developer will create the system based on the prototype developed in the previous step. After the procedure is completed, the system will be handed over to the user. Developers will wait for user feedback for further evaluation until the system suits users.

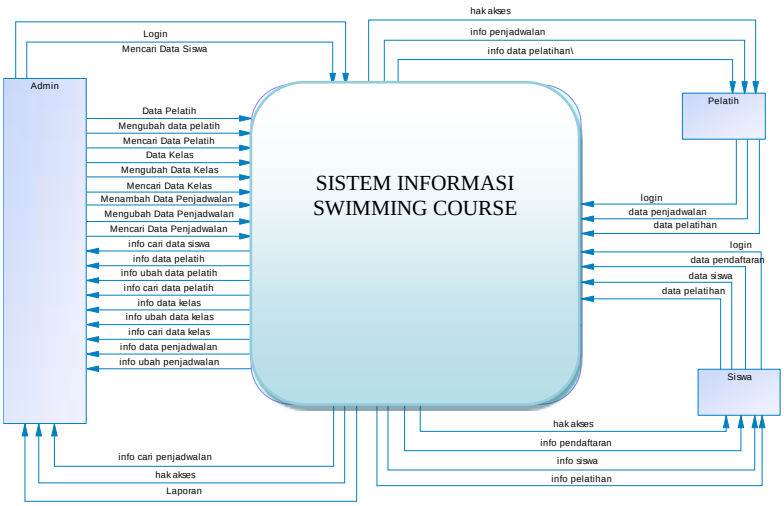
In collecting data, the researcher conducted semi-structured interviews with the owner and some of the staff at the Jatayu Swimming Club. In hands-on research, it is easy to make observations about matters relating to the issues discussed, collecting theoretical concepts by studying literature and books related to problems and laboratory research, namely the author's efforts to process the information obtained.

RESUTS AND DISCUSSION

In the system design process, this is done to describe the sketch or arrangement of several separate elements into one unified whole. Based on the analysis that has been done. Then, it can be known what the system input, process, output, and interface will be made.

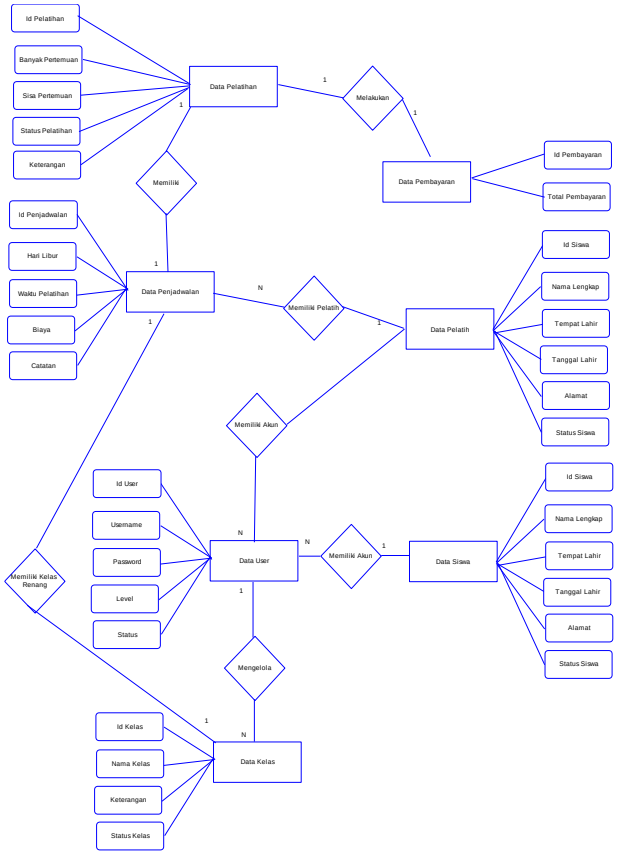
a. Diagram context

The image below is a context diagram design consisting of three external entities: Admin, Trainer, and Student. The following is the design of the context diagram, namely:



b. Entity Relationship Diagram

ERD (*Entity relationship diagram)* describes the relationship between objects from the data in the system. ERD (Entity relationship diagram) on Website-Based Information System Analysis and Design at Jatayu Swimming Club Denpasar has seven entities, including data_user, data_student, data_trainer, data_class, data_scheduling, data_payment and data_training.



c. User Interface

Interface design in an information system is a menu design in the form of interactive screen displays.

a) Home page, page for prospective participants to register

b) Swimming Class page

The following is the design of the swimming class page, namely:

c) Login Page

The following is a login page that visitors can access:

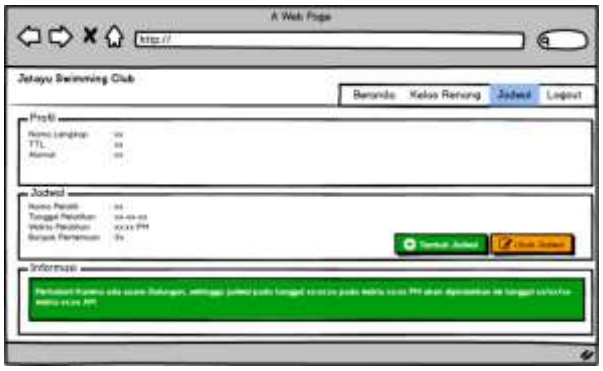
a) Register Page

On this page, visitors must fill in their data and then choose a coach's name, where visitors can see a list of trainers to check training schedules and costs.

Display of the payment page design that is integrated with the Payment Gateway, namely:

b) Schedule Page

Also, on this page, students will get information related to schedule changes that the coach previously informed.



CONCLUSION

Based on the research that has been done and the discussion that has been described in each chapter in the study entitled Analysis and Design of a Web-Based Swimming Course Information System at the Jatayu Swimming Course Denpasar, it can be concluded that:

1) This design only creates an information system design for the aspects of course registration, payment, and data processing
2) The method used in this research is the prototyping method, but this study only focuses on 3 (three) stages: gathering needs, building prototyping, and evaluating prototyping.

The authors conducted interviews, observations, and literature studies for the needs-gathering stage to get to the existing problems. After the issues are found, the authors carry out the prototyping stage; at this stage, the authors describe the research results using structured modeling, namely DFD, ERD, Database, and user interface. The final step is prototyping evaluation, done by interviewing users and distributing questionnaires to developers. This aims to get feedback from users regarding the appearance of the system that has been made and to find out whether this design can be continued in the next direction.

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