Employee Scholarship Acceptance By Applying The Mfep Method

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Abstrak

The use of computers in people's lives is growing as is the case with companies that provide scholarships for the children of employees who work at the company. The scholarship selection system is still done manually so it is ineffective and inefficient and requires a long time. By using a new system design to assist in data processing of spare part goods, producing a desired system a system is created. In this study the authors used the method of field research, interviews, library research and laboratory research, in conducting analysis using UML (Unified Model Language). The new system will be implemented later to improve the quality of information generated so that these designs can be useful for the company concerned.

Keywords: Technology, Expert System, Computer

1. Introduction

Information Technology is a study of design, implementation, development, support or management of computer-based information systems, especially hardware and software. The development of science and technology has shown very rapid progress to be applied in all fields. One example of progress is the creation of computers and the internet. Utilization of computers in community life is growing as well as one company that provides scholarships for the children of employees who work at the company. Scholarships are intended for high achieving students, but limited. Scholarship selection system is still done manually, namely calculations using a calculator and inputting data ranking using Ms. Excel and report generation do not use structured databases so that data processing occurs repeatedly. In these problems it is necessary to have a solution to the existing problem by making a decision support system MFEP (Multifactor Evaluation Process). And to create an information system that helps facilitate the selection of scholarship receipts for employees' children.

2. Theoretical Basis

According to the journal (Radius Prawiro, 2017) about "Applying the PHP Programming Language and MySQL Database Using UML in the Design of a Motorcycle Spare Part Data Processing System at PT. Thamrin Brothers Mukomuko "[1]. The system is a collection of elements that are interrelated between one another that can not be separated, to achieve a certain goal. Simply put, a system can be interpreted as a collection or set of elements, components, or variables that are organized, mutually interdependent, and integrated. A system consists of parts or components that are integrated for one purpose. (Tata Sutabri, 2012)[2]. The system is defined as a set of interrelated components, with clear boundaries, which work together to achieve certain goals by receiving input and producing output in an organized transformation process. Examples of systems can be found in physics and biology, in modern technology, and in social life. (Dr.George M.Marakas, 2017)[3]. Information can be defined as the result of processing data in a form that is more useful and more meaningful for users who describe the events (events) that are real (fact) used for decision making. (Prawiro Radius, 2017)[4]. It is known that information is very important for management in decision making. The proper part of the component is with a view to identifying and evaluating problems,

opportunities, obstacles that occur and the needs that are expected so that improvements can be proposed as well as looking for some alternative solutions to the problem. (Prawiro Radius, 2017)[5].

SDLC or Software Development Life Cycle or often also called System Development Life Cycle is the process of developing or changing a software system using the models and methodologies used to develop previous software systems (Rosa A.S. and M. Shalahuddin, 2018). The steps in SDLC are as follows:

1. Planning (Planning)
At this stage it discusses the study of user needs, feasibility studies both technically and technologically, and scheduling the development of an information system and or software project.

2. Analysis
The stage recognizes all problems that arise in the user by decomposing and realizing the use case diagram further, recognizing the components of the system or software, the objects of the relationship between objects.

3. Design
This stage looks for solutions to problems that can be obtained from the analysis phase.

4. Implementation
Implementation phase which will implement the system design to the real situation.

5. Testing
This stage is used to determine whether the system or software that we make is in accordance with user requirements or not.

6. Maintenance and Care
At this stage the system operates and if needed we will make improvements and small-scale changes (Adi Nugroho, 2017).

2.1 2.1 Tools for Designing Information Systems Models

The steps taken at the stage of designing a system and program are making logical problem solving proposals. One of the most widely used modeling is UML. In the development of programming techniques in object-oriented programming techniques, a standardized modeling language for software development was developed using object-oriented programming techniques, namely Unified Modeling Language (UML). UML arises because of the need for visual modeling to specify, describe, construct, and document, from software systems. UML is a visual language for modeling and communication about a system using diagrams and supporting texts. UML only works for modeling. So the use of UML is not limited to certain technologies. Decision making is carried out with a systematic approach to the problem through the process of collecting data into information and coupled with factors that need to be considered in decision making. With the above understanding, it can be explained that the decision support system is not a decision making tool, but rather a system that helps decision makers by equipping them with information from data that has been relevantly processed and is needed to make decisions about an issue more quickly and accurately. So this system is not intended to replace decision making in the decision making process. (T. Henny F. H and Indri S, 2016)Metode *Multifactor Evaluation Process* (MFEP) According to Erna Lovita (2013) that the MFEP method is a quantitative method that uses a weighting system. In multi-factor decision making, decision makers subjectively and intuitively weigh various factors or criteria that have an important influence on alternative choices. In MFEP, first of all all criteria that are important factors in making consideration are given appropriate weighting. The same steps are also taken for the alternatives to be chosen, which can then be evacuated in relation to these considerations.The best alternative selection process uses the "weighting system", where the method is a quantitative method, referred to as the "Multi Factor Evaluation Process" (MFEP) method.The steps to the calculation process using MFEP, i.e.:

1. Determine the factors and weighting factors where the total weighting must be equal to 1 (Σ weighting = 1), i.e. factor weight.

2. Filling in the value for each factor that influences the decision making of the data to be processed, the value entered in the decision making process is an objective value, that is certainly a factor evaluation whose value is between 0-1.

3. The process of calculating weight evaluation which is the process of calculating the weight between factor weight and factor evaluation by adding all the results of weight evaluations to obtain the total evaluation results. (Andrew Kurniawan, 2018)

Calculations Using the MFEP (Multifactor Evaluation Process) Method:

$$\textbf{Nbe} = \textbf{Nbf} \times \textbf{Nef}$$

Information :
Nbe: Evaluation Weight Value
Nef: Factor Evaluation Values
Nbf: Factor Weight Value

Calculation of the total evaluation value

$$\textbf{Tne} = \textbf{Nbe1} + \textbf{Nbe2}$$

Information :
Tnb: Total Evaluation Value
Nbe: Evaluation Weight Value

3. Research Method

Research Methodology To achieve the accuracy and accuracy of data and information in this study, the authors use several research methods in collecting and analyzing data, namely:

a. Field Research
In this case the writing of conducting research directly into the field, namely PT. Djambi Waras Jujuhan to collect and obtain data directly from the company by presenting questions and collecting existing data.

b. Interview (Interview)
Interview is data collection by conducting interviews with related parties who can provide information about the data that the author needs.

c. Library Research
Literature research is done by reading, summarizing, and making conclusions from books and journals related to the research conducted.

d. Laboratory Research (Laboratory Research*)

Problem Analisis

From the problems found in the preliminary research, and after an analysis of these problems, an alternative is obtained to solve the problem, namely using software as a tool to facilitate everyone in selecting scholarship receipts.

Desain Of Systems

In this Visual Studio based design, the writer uses UML (Unified Modeling Language) diagram which is that visual for modeling and communication about a system of supporting texts, diagrams used include:

1. *Use Case Diagram*
2. *Class Diagram*
3. *Sequence Diagram*
4. *Collaboration Diagram*
5. *Activity Diagram*
6. *Component Diagram*

Implementation

Implementation of the system is the stage of putting the system so it is ready to operate. The realization of the results of this implementation will be a system that is ready to be tested and used with the Visual Basic and MySQL programming languages.
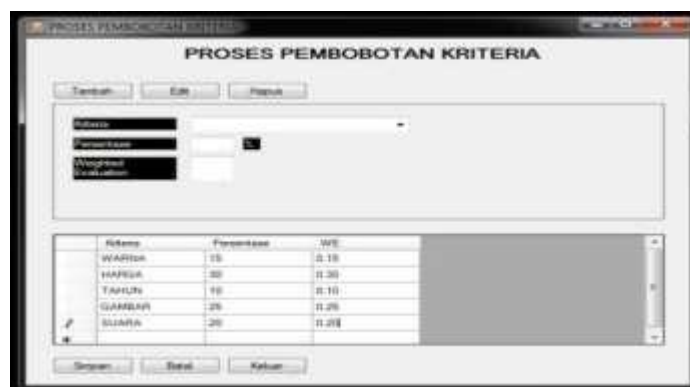
Picture 1. Demo Of Program

4. Conclution

Implementation of the system is the stage of putting the system so it is ready to operate. The realization of the results of this implementation will be a system that is ready to be tested and used with Visual Basic and MySQL programming languages. This test is able to provide fair results in deciding scholarships for employees' children.

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