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Implementation of Supply Chain Management in Web-Based Support Systems Employee Recruitment in Private Hospitals

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Abstract

This public hospital still has many weaknesses in recruiting employees, so the time needed for hiring employees is long and not organized properly, which hampers the need for employees. Therefore, in order to support the smooth running of the employee recruitment system, it is necessary to create an executive support system that can provide solutions for the process of employee recruitment activities at the hospital later. To design an executive support system, a literature study, interviews with executives, observations, and final test results are calculated using a rule-based expert system. The proposed executive information system design includes a model design, data design, dialogue design, and implementation plan. The approach employed in this research is the object-oriented system development approach utilizing the Unified Modeling Language (UML) design tool and the waterfall strategy system development model. The programming languages utilized are Hypertext Preprocessor (PHP) and My Structure Query Language (MySQL). The outcome of this investigation is a web-based information system for supply chain management that can assess potential new hires and merge internal departments to enhance the seamless flow of information and the approval of candidate reports.

Keywords: Recruiting, Employees, Hospital, Information System, Supply Chain.

1. Introduction

The utilization of information technology as a tool in the information system is very broad. Its use in various fields includes small, medium, and large-scale companies. The rapid integration of technology in business operations necessitates companies to adopt appropriate information system strategies to accomplish their business objectives. Consequently, there must be resources that can facilitate the company's operations [1]. The constantly evolving technology and the intense competition in the business world form challenges that every party, particularly large corporations that are highly reliant on technology, must confront. As time progresses, various countries have conducted research on executive support systems, which are utilized to support these endeavors. ESS serves as a primary tool for senior executives who require systems that address strategic concerns and long-term actions, both within and outside the company. ESS assists senior management in making informed decisions. Butler's research delves into sales and marketing development issues in the IS and IT infrastructure of Digital Devices Inc [2].
Regarding other studies, this undertaking deals with a particular aspect of individual trust decisions by providing assistance to citizens in assessing the implications of the security infrastructure furnished by the establishment, titled "Fostering Citizen Confidence in E-Government Security: Challenging Perceptions". Meanwhile, the previous research talks about the most fitting information and recommendations to aid management, specifically the human resources department, in selecting employees based on various criteria and weights determined under the label Selection of Potential Employees Using the Topsis Method [3]. Subsequent research delves into e-government research and the difficulties that arise from the need to seamlessly integrate citizens, enterprises, and technology into e-government solutions and services. Additionally, it discusses the implementation of e-learning and technology capable of supporting current education by incorporating IT for education. Furthermore, several studies in this field talk about utilizing communication and discussion functionality between teachers and students, among students themselves, and monitoring student learning processes [4]. One such study is titled EVA INU Research: Novel Virtual Learning Environments for Educational Innovation at Universities, which discusses virtual learning environments for educational innovation in universities from the present to the future. Lastly, we explore the industry sector, detailing the development and application of web-based applications for managing the collection and analysis of business performance data in the tourism industry in the Australian Capital Territory [5].

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The text then deals with (1) linking merchants with differing business processes and technologies; (2) promoting and vending products through the internet; and (3) simplifying supply chain procedures. A recently appointed e-business vice president had to discover answers to the difficulties that American Hardware Depot (AHD) was experiencing. The paper called Ensuring E-Learning Systems: A Study of Internal Cyber Attacks and Inexperienced IT Management in a Small University examines the growing employment of e-learning systems that have been recorded by various studies. Furthermore, it talks about the impact on the IT department, the company, and the alternatives being considered by the IT department as possible solutions to the numerous issues produced by these modifications in Telecommunications Companies [6]. The article titled Information Systems Dispatching in the Global Environment discusses shipping information systems in an international setting. Lastly, it examines Acer, a case of horizontal integration. Then discuss the development of E-learning in a department. As for other research discussing the construction of a lab to Deliver Online Program Information Systems. As for reporting, this is the first attempt to provide clinical verification of the profile by describing the social, behavioral, and academic characteristics of individual group members [7]. The latter provides a first step in this process by examining whether goal-matched interventions for a child's particular underlying deficits in language or working memory will produce domain-specific outcomes. to examine the relationship between psychopathic symptoms and the network's three main concerns (warning, orientation, and executive concern) among a community sample of adolescents. Prospective investigations aimed at assessing the magnitude of perceived deficiencies in self-regulation across the domains of behavior, cognition, and emotion observed in youngsters diagnosed with ADHD will illuminate the correlation between the severity of ADHD indications and the stress experienced by parents. The study involved 80 participants (with an average age of 10 years and 9 months) who had received a DSM-IV diagnosis of ADHD, which was confirmed via a comprehensive clinical diagnostic evaluation. Research into the management of supply chains includes a cooperative knowledge management system for supply chains, a structure for evaluating the electronics supply chain, and a technique for selecting and managing electronic supply chains. Research into the adoption of e-commerce technologies among logistics service providers and supply chain management is also discussed. An integrated plan for studying the electronics supply network is also presented [8].

Executive support systems also require information technology. This is due to the globalization era, which requires a company to move quickly in making decisions and actions. By referring to the solutions provided by the method (a rule-based expert system) in helping to make decisions, an executive can make decisions about selection in one of the fields, for example, human resource development (HRD) or supplier selection, objectively based on multiple set criteria. To enhance their decision-making capabilities, developers of systems require a deeper comprehension of the elements that impact the adoption of this technology [9]. The need for accurate, precise, and fast information is needed by a company, both by executives, company management, and outsiders. Information from a company is needed to know, supervise, and make decisions that support the company's performance. General Hospital is a hospital that provides health services for adults and small children. Currently, in handling the needs of employees, from cleaning services to doctors, they still use the manual method; only in the financial and medicine recording departments have they been computerized [10]. However, along with the development of the era, the system that runs at the hospital still has many weaknesses in recruiting employees, so that the time needed for hiring employees becomes long and not organized properly, which hampers the need for employees. Therefore, in order to support the smooth running of the employee recruitment system, it is necessary to create an executive support system that can provide solutions for the process of employee recruitment activities at the hospital later. Test reports for prospective new employees will be needed by human resource development (HRD) as input or decision-making, which will later be used to accept new employees who apply in the future [11].

The arrangement of components that work together towards a common aim while considering the environment both within and outside its boundaries is referred to as a system. A group of interrelated components working together towards a specific goal is what constitutes a system. It is an assemblage of elements that are interconnected and interdependent with their environment [12]. Hence, a system can be described as a group of elements that work together and impact one another in carrying out a joint task to achieve a goal. An information system is a process that involves the collection, processing, storage, analysis, and dissemination of information for a specific objective. It is a system within an organization that facilitates daily transaction processing, supports operations, manages the managerial and strategic activities of the organization, and provides reports to designated external parties [13]. An information system is a combination of individuals, data, processes, and information technology that interact to collect, process, store, and disseminate the necessary information required to support an organization. Formal and informal are the two categories in which information systems can be classified. Formal Information Systems are information systems that have written procedures and policies in documents. Example of a sales tax law Informal Information Systems are information systems that have procedures and policies that are not written in documents, for example, giving unexpected sales discounts [14].

The cycle of developing an information system, which encompasses system analysis, involves breaking down a comprehensive information system into its constituent parts to pinpoint and assess issues, identify impediments and anticipated requirements, and suggest possible improvements [15]. System design refers to the process of drawing, planning, outlining, or organizing multiple distinct components into a cohesive unit that operates cohesively. The design phase is a more advanced stage of system analysis. A good system design will produce a good system and be able to overcome the problems encountered in the old system. System programming and testing: at this stage, an algorithm design is carried out using pseudocode written in structured Indonesian or structured English. Algorithm design should be done using a Top-Down approach (Modular Programming). After completing the creation of the algorithm, an application program is created using one of the selected programming languages [16]. System implementation: moving from the old system to the new system, conducting training and guidance as necessary. Operation and maintenance: support information system operations and make changes or additions to facilities. System evaluation: evaluating the extent to which the system has been built and how well the system has been operated.

2. Methods

In this study, the data collection methodology and the system development methodology will be used. Observation activities were carried out five times during the research activities. Interviews were conducted on Feb 2023, by holding a question and answer session as the special section for Research Handling and the Head of the HR Department to obtain data related to activities in the form of recruitment data as well as analysis of system data currently running at the hospital concerned. Literature study is done by reading and studying related books and journals. This study uses the object-oriented system development method with the waterfall strategy model because this model requires the completion of each process one by one. To prevent redundancy of stages and ensure the achievement of intended outcomes and identification of requirements prior to coding, it is imperative that each stage be executed in sequence. The system development process encompasses process design, database design, and interface design as part of the system design. At this implementation stage, software construction will be carried out, and evaluation of the results of the software built will be carried out.

3. Results and Discussion

The recruitment system that is currently running at this hospital starts with applicants bringing their application documents to the hospital. Applicants usually ask the information section where to place their job applications; the information section explains placing job applications in the next building, namely the management building, and then applicants go there. To the receptionist, put your application in; if you need it, it will be processed immediately. If you don't usually wait by phone, usually two to three days or even a month if the hospital doesn't need new paramedics or new staff, The next day, after being called by phone, the applicants came to the hospital, no longer in the hospital building but directly to the management building. Usually, applicants were told to come at 10 a.m. Arriving at the management building, applicants were escorted to the classroom by the person in charge. She is a staff member in the human resources (HR) division. In the first class of applicants, applicants fill out a Curriculum Vitae (CV) from name to salary request. After filling out the Curriculum Vitae (CV), applicants continue working on the questions given by the hospital. After working on the applicant's questions, proceed to the next stage if time allows the applicant to conduct an interview with three stages. The first interview is with the category specification section, for example, nurses with human resources (HR) staff in the nursing department, nutrition with human resources (HR) staff in the nutrition division as well, and others. The second interview was with the vice director of services, and the third was with the vice director of administration and finance. After the applicants have conducted the three interviews, they are allowed to go home. Usually, the applicants wait two to three days to announce whether they have passed or not. If the applicant's exit announcement is called by her human resources (HR) staff to come to the hospital, At the hospital, the applicants who were accepted were given three supplies, which were provided or accompanied by the person in charge. While the Requirement Plan will require new employees such as security guards, cleaning services, and parking attendants, at the general meeting of shareholders, the human resource development (HRD) section will summon the recruitment services bureau to ask for prospective employees who are in accordance with the qualifications agreed upon by the Hospital management. All recruitment activities, such as the process of applying prospective employees to employee tests, are left entirely to service bureaus. After fulfilling all the requirements and passing the selection, the selected employee candidates will be interviewed directly by the human resources department.

The recruitment proposal system begins when the human resource development (HRD) section submits job vacancy announcements according to what the hospital requires. The announcement consists of the qualifications of the required applicants as well as a flowchart of the recruitment process. Prospective employees only need to open a web site where the job openings needed by the hospital are listed. From the announcement of job vacancies, prospective employees can decide and weigh whether they want to apply for a job and whether the required qualifications are in accordance with their own, and prospective employees can see a flowchart of the recruitment

that will take place at the hospital in question. If a prospective employee is sure that he wants to apply for a job at a related hospital, then the prospective employee simply fills out the job application registration form. The form provided is designed in such a way that it has a format similar to the CV format, so prospective employees do not need to make a CV first and attach it via email. After all available forms are filled in, the prospective employee will be asked to wait for the telephone as validation of the data that has been entered into the employee recruitment department to carry out the next stage of psychological tests and interviews at the hospital.

The applicant data that has been entered will be entered into the hospital database. For data that does not match the qualifications of predetermined applicants, the data will be eliminated. Applicant data that falls into the category desired by the hospital will be validated by the human resource development (HRD) administrator as authorization for files that pass the selection. The files that pass the selection will be kept, and the name of the prospective employee on the file and the date of the test will be announced by telephone by the hospital with a note of the registration result. On the appointed day, the prospective employee must come to the hospital to take the selection test. At the hospital, before the prospective employee enters a class, the committee gives the prospective employee's business card with a password to work on the questions. There are computers provided for prospective employees; they do the psychological test on the computer. After taking the test, prospective employees continue to conduct interviews in three stages. The first interview is with the category specification section, for example, nurses with HR staff in the nursing department, nutrition with HR staff in the nutrition section, as well as with the others. The second interview was with the vice director of services, and the third was with the vice director of administration and finance. The results of the interview are entered into the existing database for storage of the applicant's interview results. After the applicant has conducted these three interviews, the applicant is allowed to go home. The test results will be announced on the web site. Finally, when the prospective employee has succeeded in all test results, the prospective employee has been approved by the hospital as an employee at the hospital.

The information section class is one of the generalized classes from the Hospital Center class, which has the same attributes as the Center class and has answer operations. The Information Section class has the same attributes as the Center Class and has the operations of receiving, conveying, and calling; it has a 1 to 1…* relationship with the Applicant class. The HR Section Class has the same attributes as the Hospital Center class and has the operations of receiving, giving, and seeing; it has a 1 to 1…* relationship with the Applicant class. The human resource development (HRD) Section class has the same attributes as the Center Class, has call and give operations, and has a 1 to 1…* relationship with the Applicant class. The applicant class is the one that has the most attributes from id_cv compared to others and has a 1 to 1…* relationship with the Psychotest class, interview class, admissions class, and acceptance class, which have id_cv attributes, name, and topic. The service wadir class, administrative wadir, and specification section are generalized results from the interview class, having a 1...* to 1…* relationship with the outcome class, which has the attributes id_user, name, password, full_name, no_telp, email, and level. The HR staff class and human resource development (HRD) staff are the result of a generalization of the staff class, which has the attributes id_user, name, password, full_name, no_telp, email, and level, having a 1 to 1…* relationship with the class of questions. The results class has the attributes id_interview, name, position, gender_kel, education, and interview_specification until the results of the interview in the results class also carry out rule-base operations and have a 1...* to 1 relationship with the Executive class. while the class of recruitment services and prospective employees has an attribute ID, name, and email address.

Once the proposed system has been designed, the subsequent step is to program it utilizing the PHP programming language and MySQL as the database. During this phase, the program will undergo testing, commencing with the assessment of the pre-existing modules in the program. Afterward, black box testing will be conducted. This particular testing approach only tests the units in the program that have been created and matches them with the intended business process design. The black box testing is an alpha test for both a supply chain management system and an executive support system for employee recruitment scenarios. Upon successfully passing the system testing phase, the transition from the old system to the new system is ready to proceed. To facilitate user operation of the new system, a manual book will be provided as a guide on how to use the system.

4. Conclusion

There are several problems with managing human resources, especially in relation to recruitment. Both in the matter of announcing job openings, which are done manually, and using service bureaus. So with supply chain management, a web-based executive support system that is limited to prospective employees really helps HRD, managers, and job applicants carry out HRD functions better. By using the Rule-based Expert System approach, this application is expected to assist executive performance in making decisions for prospective employees based on their needs because they have been adjusted to the relevant hospital. With a web-based executive support system and supply chain management system, documents that are often lost or mixed up with other documents will no longer occur because all prospective employee data is in the hospital database. For readers who want to develop this system, they can add other HRD functions such as salary, position, promotion, transfer, and web-based leave.

Readers wishing to expand on this system can also add other recruitment sections, such as online job tests, so that applicants no longer need to take job tests at the hospital.

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