

E-Learning Control Website Based on Employee Education and Training



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Abstract-- Education and training process employees at this time still use many fundamental methods that have some weaknesses, such as the education and training process can only be done with the condition of face-to-face meetings between participants and instructors in class, the costs incurred to organize are expensive, the amount of accommodation and transportation costs, lack of motivation to attend training, lack of control from the leadership of employee training activities and possible loss of modules and subject matter. This research aims to build E-Learning that can help leaders, staff, instructors, and participants in carrying out the education and training process more effectively and efficiently. Besides this website-based e-learning can also be used as a monitoring tool for leaders to control the activities and results of employee training. This research was conducted at PT. Pegadaian which is an Indonesian State-Owned Enterprise engaged in finance by interviewing employees and leaders related to education and training activities that have taken place so far. The E-Learning Control Based Website on Employee Education and Training is designed using the PHP programming language with the Laravel Framework and MySql Database. By using this system, the education and training process can be done anytime and anywhere, ease in accessing subject matter, comfort in discussing with instructors or with fellow participants as well as easy access for leaders to monitor and control training activities conducted by employees.

Index Terms: E-learning control, Education and Training, Laravel Framework, MySql

I. INTRODUCTION

In an era of knowledge and technology-based economy, organizational and business performance depends on the knowledge and skills possessed by employees. Therefore knowledge and development of information-based technology implies the strategic role of the training function and has significant implications in identifying needs and providing training to employees [1]

A skilled and appropriate workforce is one of the most important and necessary prerequisites for a company in the advanced economic era.

Companies are faced with the problem of the availability of skilled and adequate workforce in order to be compete and competitive in the industrial market and the world economy. One way to ensure companies have a skilled and highly competitive workforce is to provide appropriate training and education. Employee education and development has the meaning of increasing the ability of workers personally so that they can improve employee performance, assist in improving employee careers and assist in improving company performance in general [2]. Employees are expected to continue learning to improve their knowledge and skills, so the training function is very strategic for improving the quality of the company. However, companies are faced with expensive training costs and takes a long time. Therefore many companies are turning to e-learning activities as an effective training activity both in terms of cost and time [3] [4]

In providing training to employees of the company faced with some problems such as the cost of providing employee training which is quite expensive [3], [5]. Correspondingly, Khwanying also revealed that every year, American companies provide nearly 2 billion hours of training to around 60 million employees at a cost of \$ 55 to \$ 60 billion [7].

The training activities that have been conducted are fundamentally face-to-front in a designated place. This activity has some disadvantages such as lack of employee motivation in following training because the view of training is only as a working formality [8]. In addition, fundamental training is centered on instructors so that training participants cannot develop their abilities, [6] training is fundamentally limited in space and time so that trainees cannot repeat the lessons whenever they want. [5] This led to the absence of increased skills and competencies due to lack of company leadership control over training activities [3]

Various studies have also been developed to overcome the problem of workforce training, one of them by conducting e learning development in training activities. E-learning is debated to provide efficiency and cost savings in both the cost of providing training and travel costs in participating in employee education and training activities [6], [10]–[14], greater flexibility and provide training in a consistent and ongoing manner and provide training according to the demands and needs of employees [9], [15], [16], and reduced training time and easy access to training activities because it can be done anytime and anywhere [2], [9], [10].

Seeing from the problems of employee education and training activities fundamentally above as well as the benefits generated by the use of e-learning as a model of education and training, the authors are interested in developing e-learning in employee education and training activities.

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E-learning was developed not only as a learning medium but also can be used as a monitoring medium by the leadership of training activities conducted by employees. With the direct monitoring conducted by the leadership it is expected that the objectives of the education and training activities will be more maximal. The development of E-Learning Control can facilitate leaders, staff, instructors, and participants in carrying out the education and training process. The author hopes this system can help in achieving the goal of improving the performance and quality of employee education and training. Based on these problems, the purpose of this study is to produce a website-based e-learning control application that can be used by participants, instructors, and leaders to support the development of education and training activities.

II. THEORY AND RESEARCH METHOD

A. Theory

Learning is a more complex concept than education. It is a process of change that involves new knowledge and behavior. Unlike education, learning takes place spontaneously [2]. Terry (2000) defines e-Learning as "the ability to deliver training and education through Web technology". This is intended to enhance training by providing content anytime, anywhere, and offering students a new, interactive and timely experience. [1].

E-learning can be defined as the best learning science without using printed paper or teaching materials. E-learning is the use of telecommunications technology to deliver information on Education and Training with the development of information and communication technology [14], [17]. E-learning emerged as a paradigm in modern education. The advantage of using e-learning is to free students and instructors in interacting without being limited by time and place through synchronous and asynchronous learning models [18].

Many of the terms used to describe these learning models include online learning, virtual learning, distributed learning and web-based learning models. E-Learning Learning is an acronym for Electronic learning which includes all learning activities by individuals or groups who work online or offline [19].

E-learning refers to a series of applications and processes such as web-based learning, computer-based learning, a virtual classroom, and digital collaboration. E Learning has a number of benefits such as cost effectiveness, efficiency, self-learning management, on-demand training, and anytime anywhere. Thus e-learning is increasingly recognized as an important supporting structure for the formal and informal study of the workforce [8], [20]

E-Learning includes a series of applications and processes, such as website-based learning, computer-based learning, a virtual classroom, and digital collaboration. This includes learning through the Internet, intranet/extranet (LAN/WAN), audio-and video recordings, interactive/satellite Tv, and CD-ROMS. E-Learning learning models can be delivered via synchronous and asynchronous [5], [21].

E-learning is a technology-based learning model that includes the use of the internet and other important technologies to produce teaching materials, conduct teaching and learning activities, and is also widely used in organizational training activities [22]. The e-learning system (distance training or virtual learning) consists of planned and systematic teaching and learning activities, organized by institutions / agencies that conduct and provide teaching materials in a logical sequence and can be obtained by participants independently without having to face to face [3]

B. Method

This research was conducted at PT. Pegadaian (Persero) Padang. This company is an Indonesian state-owned company engaged in finance, especially public financial services. PT. Pegadaian has sub-branches in almost every district in the city of Padang. Previously, a survey was conducted by interviewing employees from several sub-branches about education and training activities in this company. In addition, the branch head was also interviewed regarding monitoring and control in employee training activities. From the survey results a research problem was formulated. The website-based e-learning application for employee education and training is designed using the PHP programming language with the Laravel Framework and the MySQL database.

III. RESULTS AND DISCUSSION

A. UML Design

a. Use Case Diagram

To overcome the current problems, design is needed to build a new system so that the needs of this system are met. Analysis of system requirements outlines discussing the needs of the application system. To illustrate the flow of the use of a system that is designed can be seen in the use case diagram contained in the appendix (Figure 1).

The use case it is illustrated that the system has 4 actors namely staff, leaders, instructors and trainees. Each user will have an account to access the system. Staff can manage participant data, instructor data, leadership data, training force data, manage virtual classes, and subject data. The leader has the right to validate instructors and trainees, then the leader can monitor the user account data that has been registered by the staff. Leaders can see the value of the trainees' assignments and supervise the class virtually. The instructor can input participant test scores, provide materials and assignments as well as tests to participants, make polls. Participants can access the system if the account has been validated by staff and leaders, then participants can attend virtual classes, join discussion forums, access subject matter, fill out polls and take tests given.

b. Sequence Diagram

Sequence diagrams illustrate the scenario of the system to be designed, useful to show the sequence of messages and interactions that occur between system users. Sequence diagrams in this system consist of sequence diagrams for leaders, staff, instructors and participants.

Staff sequence diagrams (Figure 2) illustrate the activities that can be carried out by staff in the system.



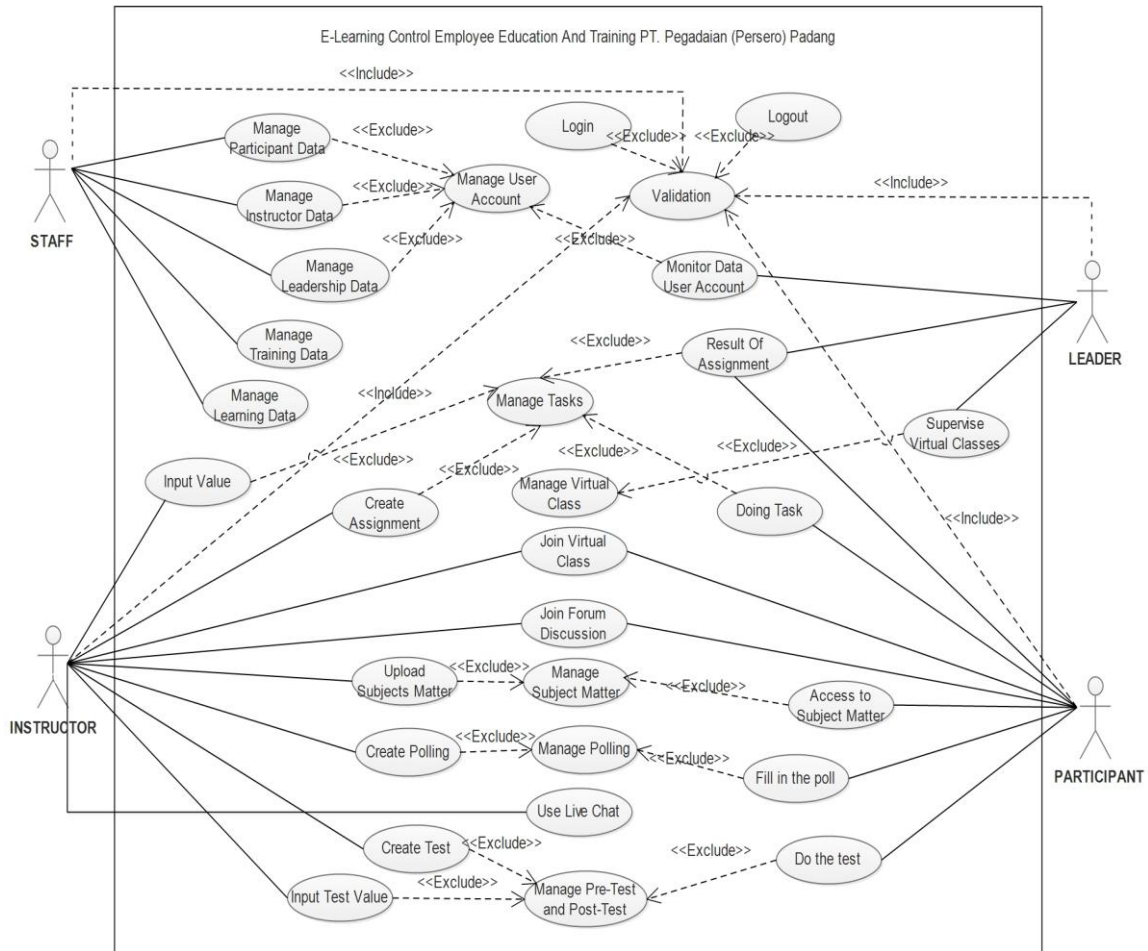


Figure. 1 Use Case Based E-Learning Control Diagram Website

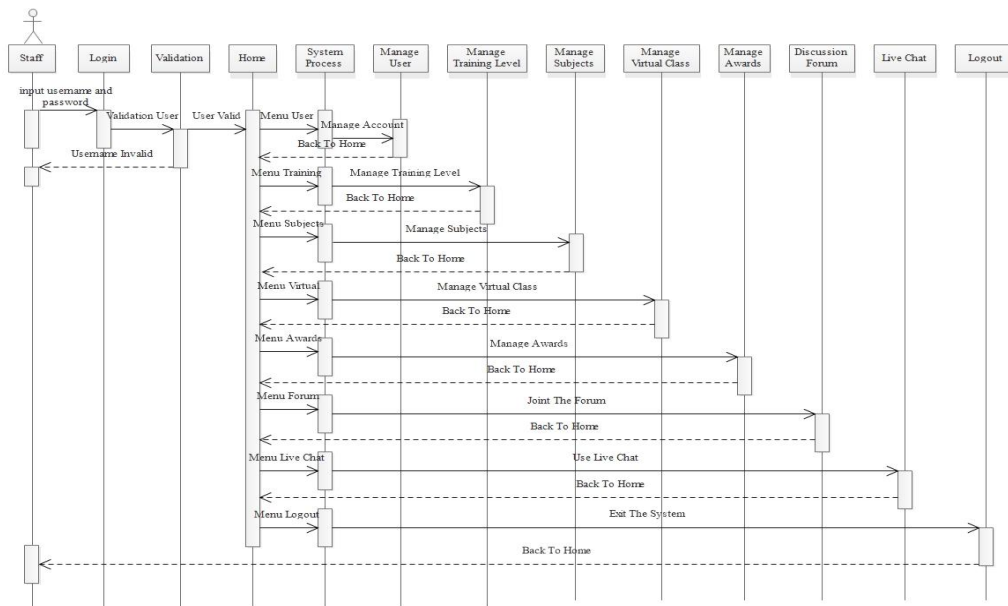


Figure. 2 Staff Sequence Diagram

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To access the system staff must log in first with a user and a valid password. Then the staff will enter the system homepage. Staff can carry out several activities such as managing user accounts such as participants and instructors, managing the training force, managing subject matter, virtual classes, managing awards given to participants, joining and managing discussion forums and live chat and logout from the system.

Next the instructor sequence diagram (Figure 3) shows the activities and access that the instructor can do in the system. The instructor must log in for access to the system if the account has been validated by staff and leaders. Instructors have access rights to manage subject matter, join virtual classrooms, post polls, join discussion forums, and use live chat as a medium to communicate in the system.

The participant sequence diagram can be seen in Figure 4. After the participant has logged in with a validated account, the participant has access rights in participating in a virtual class, accessing material, doing tests, viewing assignments and test scores, filling out polls given by the instructor, following discussion forums and live chat.

The lead sequence diagram (Figure.5) shows the leader's activities in the system. After logging in the leader has the right to validate participant and instructor accounts, monitor virtual classes, attend discussion forums conducted by instructors and participants, use and monitor live chat, monitor tests run by participants and get the results of education and training activities participated by participants .

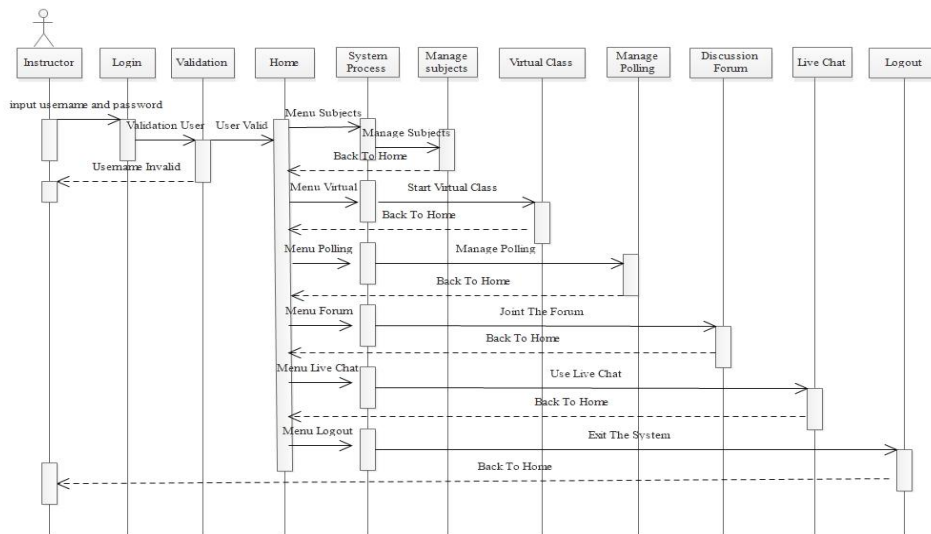


Figure. 3 Instructor Sequence Diagram

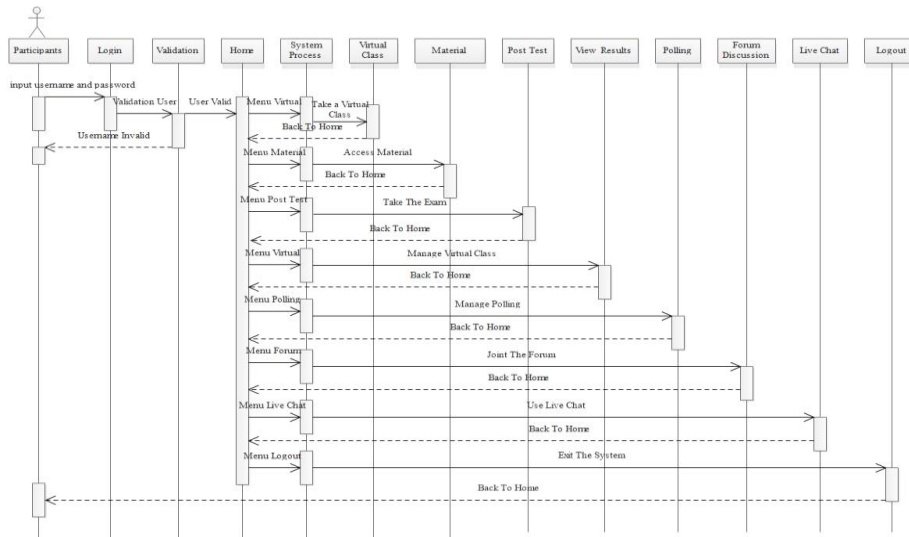


Figure. 4 Participant Sequence Diagram

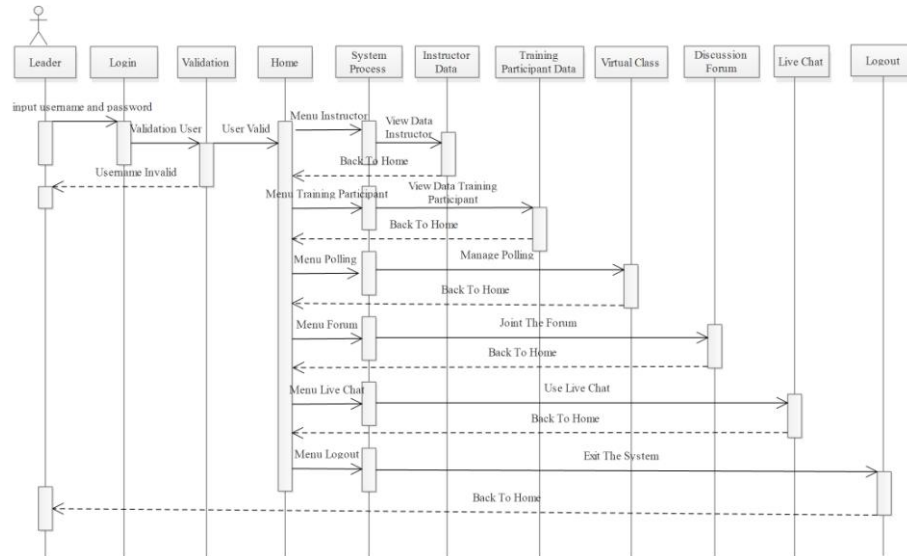


Figure. 5 Leader Sequence Diagram

B. SYSTEM IMPLEMENTATION

System implementation phase is the procedure performed to complete the existing system design in an approved system design document and test, install, and start using a new system or an improved system. The purpose of the implementation phase is to complete the approved system design, test and document the necessary system programs and procedures, ensure that users involved can operate the new system, and ensure the conversion of the old system to the new system can run properly and correctly. Here are some views of the system built in e-learning control of educational activities and employee training:

a. Log in menu

The log in menu is used to enter the e-learning control system. Users who want to access the system must first log in using a valid username and password. After logging in, the user will go directly to the home page. Each user (staff, instructors, participants and leaders) will have a different menu on the homepage according to each user's access rights.

The initial part of this system contains the logo and company name. Each user can log in using the user name and password provided. Each user has their own account and user name, which may not be exchanged or given to other users or employees.

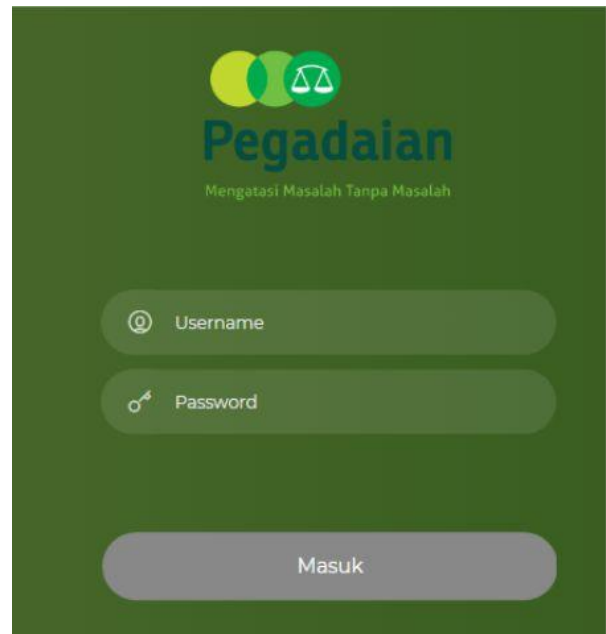


Figure.6 Log in Menu E-learning Control System

b. Staff Menu, Participant Menu, Leader Menu and Instructor Menu

This designed system can be accessed by staff, instructors, leaders and employees. Not all content and features in the system can be accessed by all users. The following description of the activities of each user in a web-based e-learning control system :

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Staff Menu	Participant Menu	Leader Menu	Instructor Menu
<p>The staff is assigned as an admin who will manage the e-learning control system for employee education and training activities. Staff can manage users / accounts such as adding participant accounts and instructor account validation.</p> <p>Staff can also manage the batch of trainees and manage virtual classes. Staff will also receive reports on the results of employee education and training activities and other activities such as giving awards to participants and conducting polls for further training activities.</p>	<p>The participant menu consists of the participant's personal data, the branch of origin of the participant and the training / training force. Participants can access a menu of educational and training materials, watch videos of teaching materials, fill out polls, ask questions using the chat feature and do pre-test and post-test.</p>	<p>Leaders can access the data of education and training participants and see the development of participants from the present report and test report of the participant. Leaders can also see the results of polls conducted by participants.</p>	<p>In the instructor menu, it can be managed by training material, adding material or videos, conducting a series of tests, and evaluating the results of education and training for participants.</p>

IV. CONCLUSION

From research conducted on Website Based E-Learning Control on Employee Education and Training of PT. Pegadaian Padang, it can be concluded that the process of education and training by e-learning can be done anywhere and anytime as long as it is connected to the internet. Participants in education and training will more easily access the existing subject matter, even though the participant has completed education and training. Leaders can directly monitor ongoing education and training activities. Companies can blow up costs because they do not need to pay accommodation or transportation costs to send employees to attend education and training.



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