

# Develop of Web-Based Internship Information System

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## ABSTRACT

Internships are a part of job training conducted by high school and college students as one of the main requirements to complete the educational process. The students are expected to have the opportunity to apply the knowledge that has been studied and even get a chance to gain experience about the details of professional work standards. The role of an intern in a company is conducted with a purpose to help the company productivity by testing the intern's ability to work and adapt. To make the internship work results to be more efficient and productive, the documentation can be optimized with the approach of mapping employee journey. This approach is carried out in order to increase the new employee experiences starting from the selection process of a new intern to the productive activities. The results of this study is an internship information system that applies the employee journey mapping using Agile Methodology in the internship process at XYZ company. This system is expected to help the process of internship starting from providing information regarding the internship, application for internship, and data management of the internship.

**Keyword:** Internship, Information Systems, Mapping employee journey, Agile Methodology.

## I. INTRODUCTION

The role of internship in goods and service companies has been widely applied. The company's goal of opening an internship program is good, which is to involve the students in helping the company productivity by testing their ability to work and adapt. In addition, companies can also use this program to be a method of socialization.

XYZ company provides work opportunities for interns every year. Aside from getting the knowledge of the working field, the interns receive occupational safety and health facilities during the internship process, and wages according to company regulations for interns.

Because of this, the HRD prioritizes screening the interns. In this company, the employee resource management system is differentiated between permanent employees, contracts, and internships.

The PT.XYZ internship program has several stages, namely the recruitment process where each student is required to pass a written test and interview, fill out a complete bio and provide the files needed. After being declared passed by the HRD from the test results, the HRD provides the identity of the prospective internship to the respective division senior. If the submission process is approved by the Head of Division, HRD again sends an email to the interns to take part in the training process. In this training process, participants are divided into several class meetings according to the number determined by the HRD. This training process is usually guided directly by the experienced senior employees so that the interns will have a glimpse of the company's vision and mission, and are also guided to improve work performance by providing special training for projects that are carried out according to the work standards in the company. The material presented can be stored by the training participants in order to review and deepen the participants' insights in mastering the material outside of the predetermined training hours. After completing the training, participants are recorded by the HRD for job placement and submitted to the related division. After that, the supervisor of each division provides a timeline for the interns to complete. HRD manually collects files from the interns to input them into a database such as personal data, the bank account used and the internship letter that has been signed by the interns.

This is the background for researchers to analyze and help create advanced concepts that will be applied to information systems using Agile Methodology so that the employee journey mapping approach at PT. XYZ is well implemented for interns. Agile Methodology is an incremental

development method that focuses on accelerating development efficiently and involving customers directly in the development process (Mahendra&EbyYanto, 2018). In general, this method is suitable for short-term developments with the potential for continuous system improvement. Currently, the information system built uses a licensed framework, namely the PEGA System. The information system was built by researchers using the PHP Yii Framework. Yii is a generic web programming framework, which means that it can be used to develop any type of Web application using PHP. The author uses the Yii framework because of its component-based architecture and sophisticated caching support, Yii is very suitable for developing large-scale applications such as portals, forums, content management systems (CMS), e-commerce projects, REST web services, and so on (Xue, Makarov, Paul, & Brandt, 2014).

## II. METHODS

This research uses Agile methodology. The SDLC Agile Model is a combination of iterative and incremental process models with a focus on process adaptability and user satisfaction with system process speed (Tutorials Point, 2020). According to Sommerville (2011) in research (Mahendra&EbyYanto, 2018) argues that the agile method is an incremental development method that focuses on fast development, software that is released in stages, reduces process overhead, and produces high-quality code that directly involves customers in its development process.

There are several models in software development that are included in agile software development methods, which are Extreme Programming, Adaptive Software Development, Dynamic Systems Development Method, Scrum Model, and Agile modeling. In this study, the model used is the Scrum model in accordance with the current model used at PT. XYZ in system development. The scrum model is an agile method of software development. Pressman (2010) in research (Mahendra&EbyYanto, 2018). The series of scrum activities consists of backlog activities, sprints activities, scrum meeting activities and demonstrations. The Scrum model was chosen because the Scrum principle is in accordance with the method of making and developing tools quickly such as demand fulfillment, analysis, design, and delivery.

Scrum is a framework in which people can solve complex, ever changing problems, while at the same time producing products of the highest possible value creatively and productively

(Schwaber& Sutherland, 2017). Scrum is neither a process nor a method, but only a framework for developing complex products such as software. Unlike typical project management, the Scrum framework does not provide a detailed description of what the development team needs to do by the project manager. The stages of the scrum are as follows:

### Product Backlog

The Product Backlog is an ordered list, of everything that may be needed in the product, and is also the main source of a requisite list of all the things that need to be done with the product. This research was conducted by compiling priority details on the features built in the PT.XYZ internship information system and the contents of the features can be added at any time.

### Sprint Backlog

The Sprint Backlog is a set of Product Backlog items that have been selected to work on in a Sprint, along with a plan for developing additional product cuts and realizing the Sprint Goal. Done by compiling the activities that will be carried out to meet the needs applied in the backlog.

### Scrum Meeting

Scrum meetings are generally about 15 minutes long for each meeting, but in practice, the duration can be adjusted depending on the number of members and the type of discussion. The structure of these meetings is flexible and can be held in a variety of ways as long as these meetings focus on the progress towards the sprint goal. In this study, a meeting was held with the user, in this case the HRD of the XYZ company to discuss the development of an internship information system that uses the employee journey mapping approach (requirements) and a meeting to discuss research and development of an internship information system.

### Review and retrospective

After completing the sprint phase, testing is carried out to look for deficiencies in the system, then a retrospective is carried out whether there is input in the form of feedback on the functional requirements that have been reviewed. If there is a change to a function, it will be included in the additional backlog to be carried out in the next sprint. If there is no application it is ready to release.

## III. RESULTS AND DISCUSSION

Problems with the internship system that exist in this company begin to be seen from the process of collecting hardcopy of interns' personal data, submitting internships, providing training

modules and work modules, internship appraisal processes and recommendations where the process is still manual and the existing application is still functioning for seniors, and HRD without fully involving the interns to get information. Therefore, to make it easier for the XYZ company, researchers created an intern information system program with a case study of Mapping employee journeys.

A system design is made to overcome the system problems that have been mentioned earlier. The proposed system analysis is as follows:

1. HRD shares data on interns who have passed the test based on the divisions that require interns
2. The leader (Head of Section) selects a list of employees who will be processed for internship applications
3. The leader fills in the submission form for the initial period, end period and the supervisor's account number
4. The Division Head checks the submitted applications and processes them to give approval or rejection and includes information
5. HRD creates an intern account in the system and notifies the intern
6. The intern sees his internship data submission to be processed
7. The intern opens the application for an internship and downloads the internship letter
8. The intern uploads an internship letter, fills in complete personal data
9. HRD sees submissions from interns that have been kept by interns

10. HRD verifies internship files and completes the internship application process
11. HRD makes announcements in the system to schedule interns to attend the training process and start working
12. HRD uploads the training module
13. The leader uploads the work module
14. Interns download the training module and take part in the training
15. Interns download a work module regarding work
16. Interns download and view the workspace position of the announcement
17. The leader makes recommendations on interns who are considered to be working well
18. After the internship period is over, HRD uploads the certification as an internship appraisal which contains the signature of the senior and the head of the division
19. The intern downloads the certificate

Use case diagrams are used in this study as a construction to describe the relationship between actors and activities contained in the system. In this study, using actor leaders, employees, human resources and head of divisions who play a role in the process of applying for interns. Use case diagrams explain the interaction of actors with the system. This system consists of four actors based on users who use the system, namely Leaders, Interns, HRD, and Head of Divisions. The following is a picture of the use case diagram for the Internship Information System.

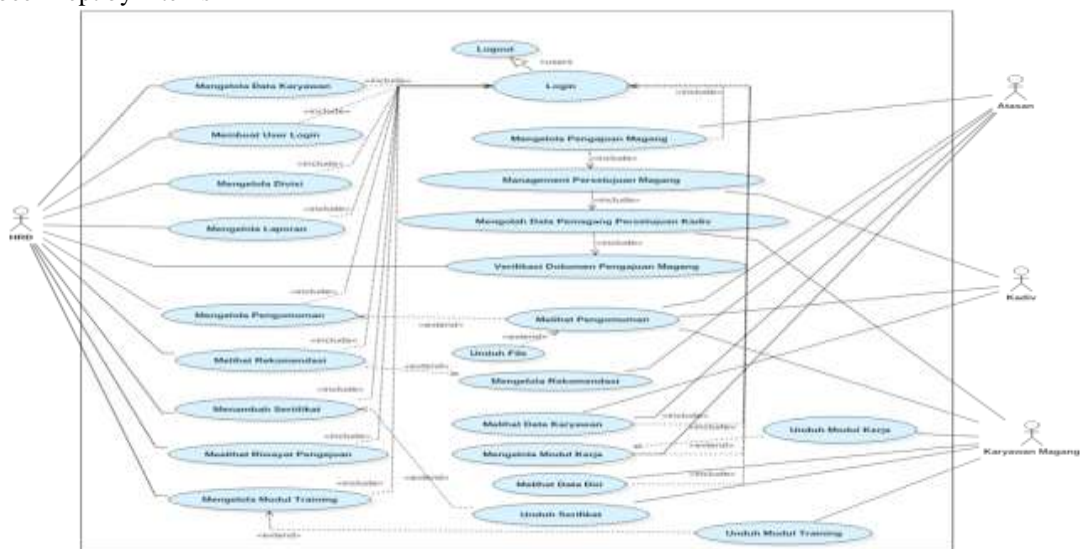


Figure 1. Use Case Diagram of Internship Information System

Interface design is needed to provide an overview of the system being built. This design is a physical design stage, based on predetermined functional and operational requirements. The application of information systems from designs that have been made is the purpose of this study so that the application program can be tested and operated against the actual situation. The results of system testing are very necessary for implementation so that they can be corrected before

this application is used appropriately and reduce errors that may occur later. If the username and password are matched with the access, the user can enter the information system. If the username and password are not matched, the user will display an error message on the form. The results of system testing are very necessary for implementation so that they can be corrected before this application is used appropriately and reduce errors that may occur later.

Table 1. Verification Test for internship application documents

Identification	TB-01		
Functional Number	1		
Unit Test Name	User Login Test		
Goal	To verify the user who has access to the system		
Description	This function will give access for the interns, HRD, leader, and head of division		
Starting Condition	<ol style="list-style-type: none"> <li>1. The application is connected to the database</li> <li>2. The application is opened on browser</li> </ol>		
Testing Date	December 23, 2020		
Tester	Tester 1		
Testing Scenario			
<ol style="list-style-type: none"> <li>1. Inputting the username and password according to what saved in the database</li> <li>2. Inputting the username and password that is not saved in the database</li> </ol>			
Testing Evaluation Criteria			
Case and Result of Testing			
Input Data	Expected	Observation	Conclusion
Username and password	Succeed to enter the system	As expected	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Rejected

#### IV. CONCLUSION

Based on the description and discussion, we can conclude that:

1. The process of analyzing the existing systems are very helpful in designing the process of placing the internship and managing the internship data such as storing employees data, saving internship applications, internship application history, managing announcements, downloading modules from the system, and granting user access to move in the system.

2. HRD has full access regarding the employees from managing employees data, verification of internship application documents, managing divisions, managing announcements, adding user logins, managing reports and managing modules training.

3. Interns who have been approved by the leader and accepted the internship process can view announcements, change personal data, download training modules and work modules and download the certificate provided by the HRD.

4. The leaders can propose employees internship, view and search subordinate employees data that have been saved in the system. To gain team knowledge, seniors can upload a work module as well.
5. Relationship of all actors in the process of internships are interrelated and all processes are systematic.
6. Web-based internship information system has been made as simple as possible to facilitate further exploration.

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