16 APPLICATION DEVELOPMENT OF INSPECTION OF FIRE PROTECTION EQUIPMENT, FIRST AID KIT AND INCIDENT REPORTING CASE STUDY

by Dania Eridani

APPLICATION DEVELOPMENT OF INSPECTION OF FIRE PROTECTION EQUIPMENT, FIRST AID KIT AND INCIDENT REPORTING CASE STUDY

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ABSTRACT

Background: Occupational Safety and Health (OSH) is an important part of the work environment. Both workers and employers are responsible for maintaining a safe environment in the workplace. However, by comparing and mapping the general situation of occupational safety and health legislation in some countries, we found that the current occupational safety and health standards in the retail industry are seriously insufficient or even absent. This study aimed to examine design an application development of inspection of fire protection equipment, first aid kit and incident reporting case study in the Faculty of Engineering, Diponegoro University.

Subjects and Method: Use the Scrum method to develop Android-based occupational safety and health inspection applications. This application's user is the P2K3 team from each department at the Faculty of Engineering, Diponegoro University. The study phases used in this research are as follows: meeting with customers, creating user stories and product backlogs, application development.

Results: The result of this research is a mobile application to record the condition of the fire extinguisher and first aid kit.

Conclusion: The application made has been able to handle the records of K3 inspection tools, namely fire extinguishers and first aid kits, to report incidents.

Keywords: information systems, apar, first aid

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BACKGROUND

The Occupational Safety and Health (K3) program is an effort to create a work area that is safe, healthy, and avoids accidents to increase work efficiency and productivity. The K3 aspect is regulated in a system called the Occupational Health and Safety Management System (SMK3). SMK3 is regulated in the Permenaker RI. No. Per. 05/MEN /1996 article 3, paragraph 1 and 2, which states that "Any company that employs a workforce of 100 or more and or contain the potential danger posed by the characteristics of the process or production materials can cause workplace accidents such as explosions, fires, environmental pollution and occupational diseases must apply SMK3". With the implementation of SMK3, K3 management can be carried out more systematically and comprehensively in a complete management system through planning, implementing, measuring, and monitoring (Ramli, 2010) in (Kukun, 2015).

The Faculty of Engineering, Diponegoro University has 12 departments and 57 laboratories where many unsafe conditions can endanger the academic community's safety and health in their activities. The Faculty of Engineering has been committed to implementing a commitment to implementing Occupational Safety and Health (K3) in the

Faculty of Engineering environment. Evidence of the application of K3, among others, by procuring a Light Fire Extinguisher (APAR) and a First Aid Box (P3K) and its contents.

From January 28 to February 10 2020 an OHS audit was carried out for the 12 departments. From the equipment and activity checklist results, 67% of the K3 implementation was still not fulfilled, which was classified as unsafe conditions.

Based on the preliminary findings, it was found that the condition of some first aid kits was incomplete, and there were no record books for drug use and filling. As for the APAR, almost all APARs are in expired condition because they have never been routinely checked, and there is no record book of the APAR condition.

Lack of supervision causes old repairs and can lead to various kinds of new problems, so a system is needed to simplify monitoring the fire extinguisher and first aid kit conditions. For that, we need an application that can be used as a medium for recording the fire extinguisher and first aid kit requirements. The implementation of the use of the dashboard in the application is expected to facilitate the management's response regarding the conditions of the fire extinguisher and first aid kit.

Based on the background above, the problem formulation in this study can be made, namely designing an application for occupational health and safety inspection in the Faculty of Engineering, Diponegoro University.

SUBJECTS AND METHOD

1. Study Design
Use the Scrum method to develop Android-based occupational safety and health inspection applications. This application's user is the P2K3 team from each department at the Faculty of Engineering, Diponegoro University.

The study phases used in this research are meeting with customers, creating user stories and product backlogs, application development.

2. Stage of Study
a. Meeting with Clients
Meetings with clients were conducted to collect data using interview and observation techniques to obtain the needs of P2K3 clients.

b. Creating User Stories and Product Backlog
After the client's meeting is complete and an agreement has been reached in the form of a description of the application, then it is continued with the creation of User Stories. User Stories is a brief description of a feature illustrated through the user's perspective who will use the feature. Meanwhile, the Product Backlog is a list of all jobs that must be completed from a product. The Product Backlog contains User Stories, bugs found, and technical work to be done.

c. Application Development
The final stage of the research is implementing the system design into the programming language that has been selected. Furthermore, testing is carried out to look for system errors and determine whether the system is following the requirements that have been determined at the beginning.

RESULTS
Use cases are mutually sustainable relationships between users/actors and the system in an application. This section contains access rights on users, namely which parts of the system can be accessed and which the user cannot access parts. Developers using use case when developing an application to determine the functional requirements in applications such as that shown in Figure 1.
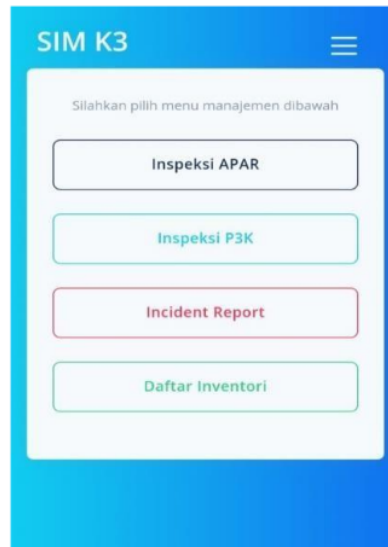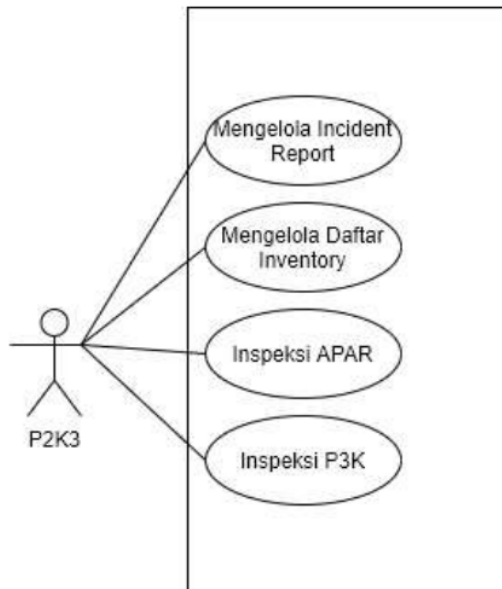
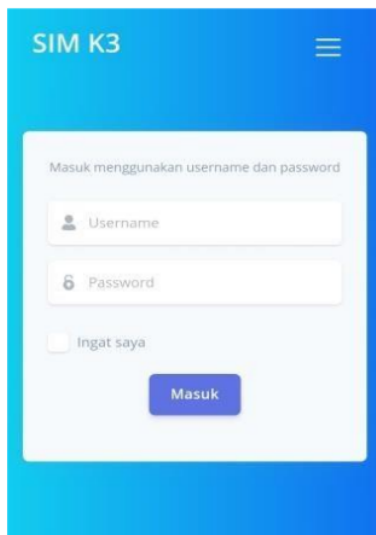Figure 2. Application Menu List Display

Figure 1. Login Application

Figure 1 shows the following is a display of the application based on the use cases that have been made.
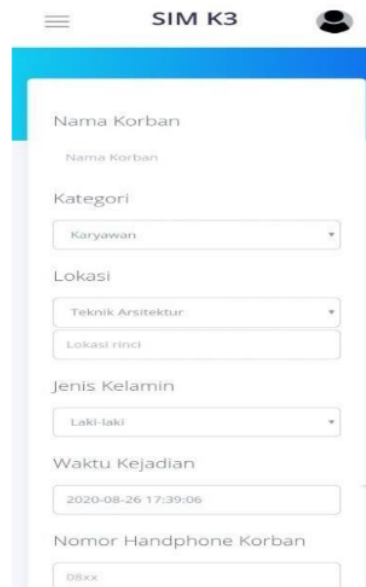

Figure 3. Display Incident Report

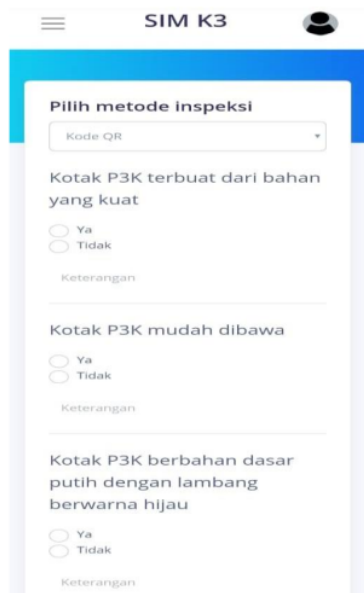Figure 4 Display of the first aid inspection
menu

Figure 5 Display of the fire extinguisher
Inspection menu

The application that has been made can handle the inspection records of the K3 tools, namely the fire extinguisher and the first aid kit, and can also report incidents.

REFERENCES

Kukun SL (2015). Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada PT Pertamina (Persero) Terminal BBM Kijang.

Lestari T, Putri K, Santoso PB, Choiri M (2013). Perancangan sistem informasi manajemen health & safety environment dengan menggunakan microsoft excel 2007 dan makro vba (studi kasus : pt . Beiersdorf indonesia malang) health & safety environment management information system design using microsoft ex. 750–760.

Rahmi R, Sari R, Suhatman R (2016). Pendekatan Metodologi Extreme Programming pada Aplikasi E-Commerce (Studi Kasus Sistem Informasi Penjualan Alat-alat Telekomunikasi). Jurnal Komputer Terapan. 2(2): 83–92.

Ramli S (2010). Pedoman Praktis Manajemen Risiko dalam Perspektif K3: OHS Risk Management. Dian Rakyat.

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