

# DESIGN OF PROTOTYPE DEVELOPMENT ON LECTURER PRESENCE SYSTEM INTEGRATION AT IBI DARMAJAYA

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## ABSTRACT

The design of *Prototype* development on lecturer presence system integration at IBI Darmajaya is a study used to monitor lecturer's teaching activities based on days, hours, classrooms, and specific subjects based on the schedule made previously and results in *up-to-date* information on the lecturer's teaching. The lecturer presence process at IBI Darmajaya has been using a presence application; the monitoring process on the record of lecturer's teaching presence data becomes the responsibility of the official/ the Lecture Reporting Service

Center (PLPP) staffs for inputting the data into that application. This surely gives impacts on the performance of the PLPP department when there are teaching queues at specific hours and there is also inefficiency and inconsistency in recording the lecturer's teaching presence. The result of this study is a *Prototype* of lecturer presence system integration with centralized database placed in each classroom/ laboratory in which it demands the lecturers individually to do the teaching presence at every lecture.

**Keywords:** *lecturer presence, prototype of lecturer presence, lecturer presence integration*

## 1. INTRODUCTION

### 1.1. Introduction

One of *tridarma* (Three Pillars of Tertiary Education) of lecturers is educating and teaching, where the lecturer has to do the presence at a physical/ non-physical media at IBI Darmajaya using 2 records, namely (1) presence application and (2) physical teaching presence.

Prior to the teaching learning process the lecturers will note the material data on the physical teaching presence as a manual presence to the officials of PLPP. Then, the officials input the lecturer data into a presence application. After that, the lecturers enter the classroom/ laboratory. The data obtained from the physical teaching presence will be recapitulated by the PLPP department

for determining the teaching honor, while the data from the application is used as either weekly or monthly lecture information/report.

This lecturer's teaching presence will influence the performance of PLPP department when there is a queue of teaching at specific lecture hour or on specific lecture day where there is often a delay of presence on the physical teaching presence file done by the PLPP department and it is recorded only into the presence application. This further will lead to data inconsistency in recording the lecturer's teaching presence data.

## 2. LITERATURE REVIEW

### 2.1 *Prototype*

The system development process often uses *prototype* approach (*prototyping*). This method is excellent to be used to overcome misunderstanding between *users* and the analysis arises because the *users* are not able to define their needs clearly. (Mulyanto, 2009).

*Prototyping* is a fast development and a test on work model (prototype) from a new application through a repeatedly interactional process usually used by the experts of information system and business. *Prototype* is also known as a rapid application design (*RAD*) because it simplifies and accelerates the system design (O'Brien, 2005).

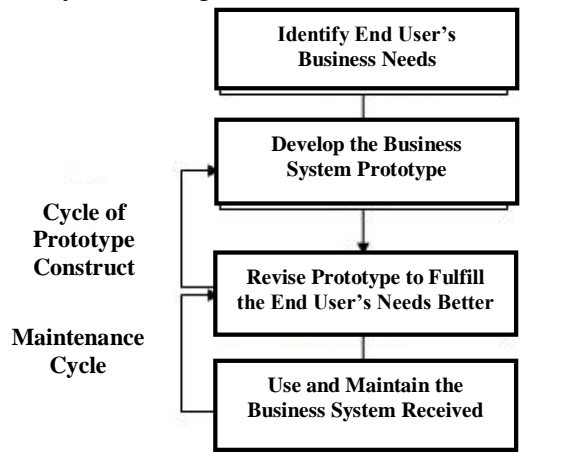


Figure. Steps of *Prototyping*

## 2.2 Information System

Robert A. Leitch/K. Roscoe Davis in the book of Analysis and Design states that information system is a system in an organization which combines the daily transaction processing needs, supporting the managerial operation and strategic activities in an organization and provides the specific outer parties with the reports needed.

## 2.3 Integrated Information System

The information system existing among the organizational units or

departments has to be able to correlate and communicate well.

The information system existing between the organizational units or departments has to correlate and communicate well. The target of this integrated information system is to provide accurate, punctual, and relevant information to all components. Therefore, this integrated information system has to be designed in an organization. The integration of information system can be established through an integrated application at all units, all data will be gathered into a database in a server that can be accessed by users when needed. By this integrated system the data input that has been entered by another department or another unit is not input by another unit.

Therefore, integration means uniting information systems which are separated one another into an inter-unit and each unit may be connected and access the data through a central server to fulfill its needs. In fact, integration reduces duplication. (Turban 2005, 333).

## 2.4 Presence

According to Big Indonesian Dictionary (KBBI), presence means being present of a person in a place; it may be due to an invitation or another.

## 3. RESEARCH METHOD

### 3.1 System Development Method

System Development Method used in this research uses *prototyping* method, which includes:

1. System Requirement Analysis
2. Design.
3. Test.
4. Implementation

## 4. RESULT AND DISCUSSION

### 4.1 System Requirement Analysis

The analysis of the problem in the former presence system is that the usage of lecturer's teaching presence was in the form of presence sheet.



Figure. The Presence System in use

### Learning the Business Process

Business processes on the lecturer presence are:

- Business process of the lecturer presence at IBI Darmajaya involving the PLPP.
- Every lecturer has to fill out the teaching presence form before he/she teaches. The lecturer presence form that has been filled out is to be handed in to the PLPP officials to be proved on the presence at the entrance time. Then, the lecturer does the presence as the lecture is over.
- Every weekly period, monthly period, and semester period the PLPP officials make the recapitulation/reports on the lecturer presence and distribute them to the study program.
- The result of the lecturer presence report by the study program will be used as work reference of the lecturers in teaching.

### Identifying the problems

The problems that arise from the business process are as follows:

- The lecturer presence is done based on the lecturer's teaching presence form.
- The business process on making the recapitulation/ report of the lecturer presence is done by counting the presence lines in the form.
- The storage of the data on the lecturer presence is *paper based* in the form a lecturer presence list with weekly, monthly and semester criteria.

### Learning and Analyzing the System Requirement

Based on the identification of the problem elaborated above, it can be concluded there are several lessons in analyzing the system requirement to solve the problem, namely the development of integrated lecturer presence system application with the centralized storing media.

Therefore, all the data on the lecturer presence at the study program are stored in the same storage media. This is to facilitate the officials in providing information as to the period wanted without having to make and do the calculation manually.

### 4.2 System Design

#### 4.2.1 General Design

General system design for describing general duty of the lecturer presence integrated system. The actors that interact in this system include lecturers, ICT administrators, and PLPP. The general design can be described in the illustration below:

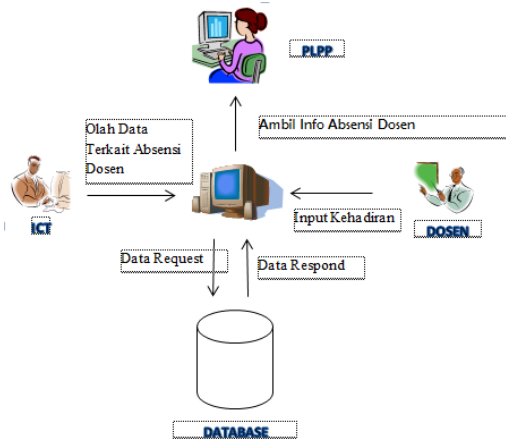


Figure. General System Design

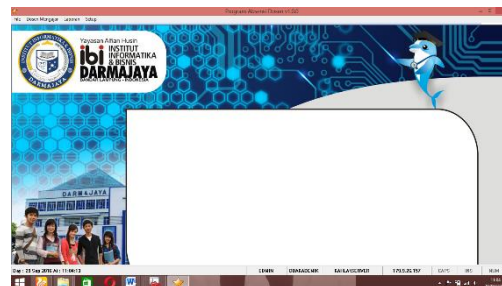


Figure. Main Menu

### 4.3.2 Lecturer Presence Interface

#### 4.2.2 Use Case Diagram

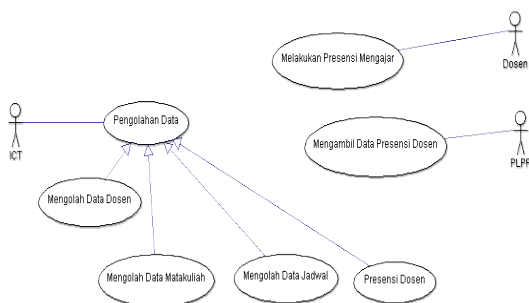


Figure. Use Case Diagram of Lecturer Presence System



Figure. Lecturer's teaching Presence

### 4.3.3 Plotting Interface of Lecturer's Teaching

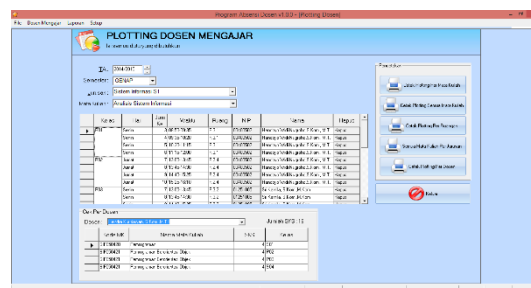


Figure. Plotting of Lecturer's Teaching

#### 4.2.3 Database Design

The database for the implementation of the lecturer presence information system consists of several tables, namely:

1. Lecturer
2. Lecturer of the subject
3. Faculty
4. Hour
5. Major
6. Subject
7. Packaged Subject
8. Lecturer Presence

**DAFTAR PLOTTING PER DOSEN**

TAHUN AKADEMIK : 2014/2015      DOSEN : Hendra Kurniawan, S.Kom, M.T.I  
SEMESTER : GENAP

| No. | Kode MK   | Nama MK                       | SKS | Kelas | Hari   | Waktu       | Ruang             |
|-----|-----------|-------------------------------|-----|-------|--------|-------------|-------------------|
| 1   | SIF050421 | Penyusunan Berorientasi Objek | 4   | P02   | Senin  | 07:10-08:40 | G.1.6             |
| 2   | SIF050421 | Penyusunan Berorientasi Objek | 4   | P02   | Senin  | 08:50-10:20 | Lab MM (G.2)      |
| 3   | SIF050420 | Penyusunan Berorientasi Objek | 4   | S01   | Selasa | 17:00-18:30 | F.2.2             |
| 4   | SIF050420 | Penyusunan Berorientasi Objek | 4   | S01   | Selasa | 18:40-20:10 | Lab Des C (G.2)   |
| 5   | SIF050421 | Penyusunan Berorientasi Objek | 4   | P03   | Rabu   | 13:00-14:30 | E.2.2             |
| 6   | SIF050421 | Penyusunan Berorientasi Objek | 4   | P03   | Rabu   | 14:40-16:10 | Lab Des C (G.2)   |
| 7   | SIF050421 | Penyusunan Berorientasi Objek | 4   | S04   | Kamis  | 17:00-18:30 | G.4.6             |
| 8   | SIF050421 | Penyusunan Berorientasi Objek | 4   | S04   | Kamis  | 18:40-20:10 | Lab Lemat A (G.4) |

JUMLAH MATA KULIAH : 4  
TOTAL SKS : 16

Figure. Report Plotting of Lecturer's Teaching

## 4.3 System Implementation

### 4.3.1 Main Menu Interface

Having been through the process of system implementation, we can explain the difference/ comparison between the old system and the new one. The following is the description of the comparison between the two systems:

Table. Comparison of Old System and New System

| Comparison               | Old system  | New System<br>(Lecture<br>Presence<br>Integration) |
|--------------------------|---|--|
| Process                  | Presence is done by filling out the lecturer's teaching presence form | Presence is done through integrated application    |
| Client                   | Human   | Integration between PC Desktop                     |
| Service                  | Human   | Lecturer Presence service                          |
| Application Architecture | <i>Paper Based</i>  | <i>Desktop Programming and Networking</i>          |
| System Development       | <i>Paper Based</i>  | Rights to access for each lecturer                 |

## 5. CONCLUSION AND SUGGESTION

### 5.1 Conclusion

There are two information systems used in IBI Darmajaya, they are: physical record/ document, and presence application, but the PLPP staffs do the presence. The lecturer presence consists of incoming presence and outgoing presence. This current system enables lecturers to get their presence signed by the PLPP staff before entering the class, and it, in fact, tends to allow manipulation between the lecturers and the PLPP staffs.

### 5.2 Suggestion

Here are some suggestions in this research:

For IBI Darmajaya, it is suggested:

- a. to apply the integrated presence system to replace the old one.
- b. to vary and develop the existing model and the report design to be more developed ones.
- c. to optimize the program being used to avoid mistakes.

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