Classroom Booking Information System Integrated with Course Scheduling Information System

IOP Conf. Series: Materials Science and Engineering **407** (2018) 012163 doi:10.1088/1757-899X/407/1/012163

Classroom Booking Information System Integrated with Course Scheduling Information System

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Abstract. Aim of this study is to facilitate the secretariat of information system department in monitoring and management of classroom using classroom booking information system integrated with lecture scheduling information system. Method use in this research is object oriented approach method with UML (Unified Modeling Language) tool and prototype model as development method. Java SE with mysql database use as programming language to build the information system. Implementation of this system helps secretariat to monitor and manage classroom easier and could prevent clashes between original schedule and replacement schedule.

1. Introduction

Information system study department is one of the largest department at University Computer Indonesia with total number of odd semester students 2017/2018 are 1215 students (data source: forlap.ristekdikti.go.id) [1]. The problems that often occur in the information systems program is related with classroom management. Every semester not every lecturer is able to teach in accordance with a predetermined schedule, so lecturer often require a replacement schedule for class that disbursed or because of national holidays.

The curent system, to obtain a replacement schedule the lecturer asks available classroom to secretariat. Then the secretariat will look for empty classroom from scheduling information system and record the replacement schedule in a paper. This way made secretariat face difficulty in supervising the use of the classroom because secretariat must check the schedule using notes of classroom booking. In addition to the long process, it often leads complaints even there has been a dispute between lecturers with the secretariat due to the use of classroom by other lecturers who are not eligible for the classroom.

To solve above problems this research had been done in the form of classroom booking information systems integrated with scheduling information system. Similar Research had been done by some researchers such as in 2013 yuli astuti and erni seniwati where those researchers designed desktop classroom reservation applications, but the application is only for concept class [2]. In 2017, Yulrio Brianorman and Barry Ceasar Octariadi designed web-based booking applications, but the booking applications focused on the use of large spaces such as auditoriums that could be borrowed for events such as weddings and other events [3]. In 2018 Dyna Marisa Khairina et al designed the application of classroom management information system, but the application was designed statically for one faculty only with 5 classrooms [4].

Through this classroom booking information system secretariat can be easily do the data recording of classroom and easy in conducting supervision related to the use of classroom, so it can help to avoid the dispute between lecturers caused by the use of classroom by other lecturers who are not entitled to the classroom. Aim of this study is to facilitate the secretariat of information system department in monitoring and management of classroom using classroom booking information system integrated with lecture scheduling information system.

2. Research Methods

2.1. System approach method

System approach method used is object-oriented systems method. Object-oriented approach by Jogiyanto is "a technique or approach in view problems and system (software system, information systems, or other systems). Object-oriented approach will view the system to be developed as a collection of objects that corresponds to real-world objects"[5]. "Object-oriented analysis and design can offer an approach that facilitates logical, rapid, and thorough methods for creating new systems responsive to a changing business landscape. Object-oriented techniques work well in situations in which complicated information systems are undergoing continuous maintenance, adaptation, and redesign" [6].

2.2. System Development Method

System development method used was prototype model. The prototype model shown below (See Figure 1).

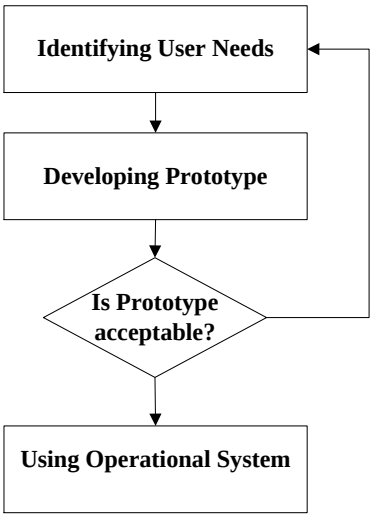

Figure 1. Prototype Model [7].

3. Results and Discussion

This section will explain the results of each research phase refers to the prototype model.

3.1. User Requirement Identification

Stages of user requirement identification are the stages that need serious attention [8]. The process of identifying the needs of user by observing and interviewing the secretary and secretariat of the department. This stage produces the information needed by the user where information system department require a classroom booking information system integrated with course scheduling information system. Classroom booking information system is able to store classroom booking for replacement courses. The classroom booking information system makes it easy for the secretariat to monitor the use of the classroom. The classroom booking information system does not cause a clash between a temporary replacement schedule and the original lecture schedule.

3.2. Prototype Development

At the stage of developing this prototype will explain the results of system / application design functionality and database design

3.3. Application Functional Design

An overview of the functionality of the classroom booking information system shown in Figure 2 and the explanation of its activities shown in Figures 3 and 4.

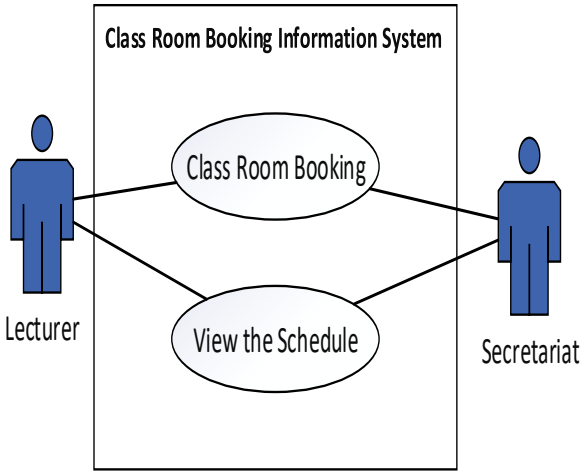

Figure 2. Use Case Diagram of Classroom Booking Information System.

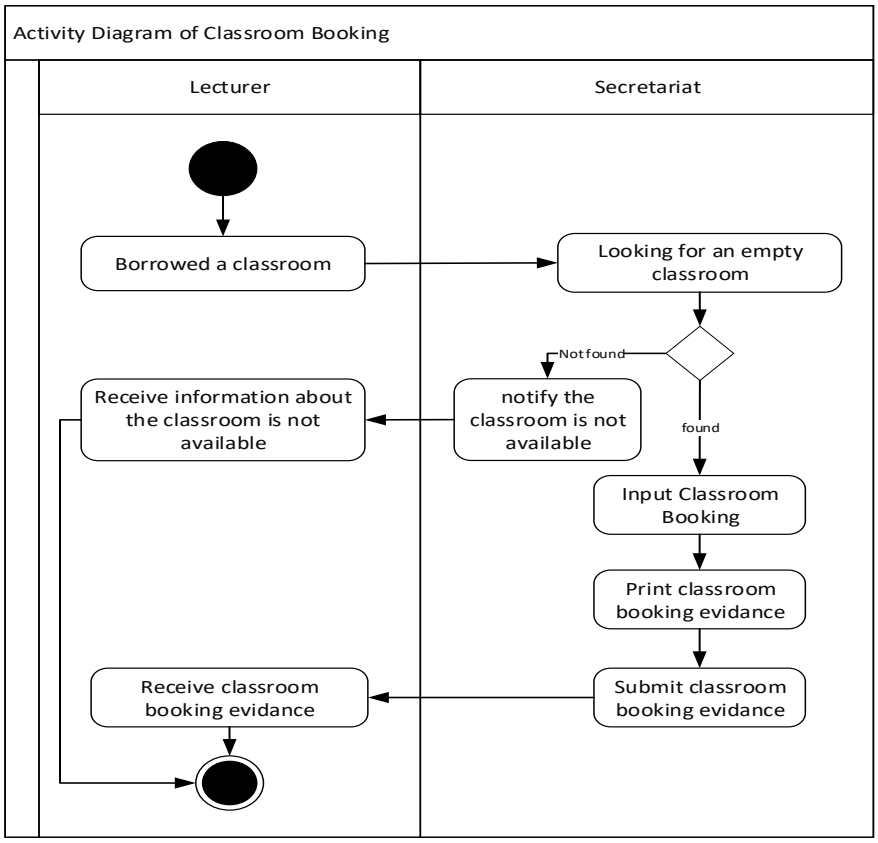

Figure 3. Activity Diagram of Classroom Booking.

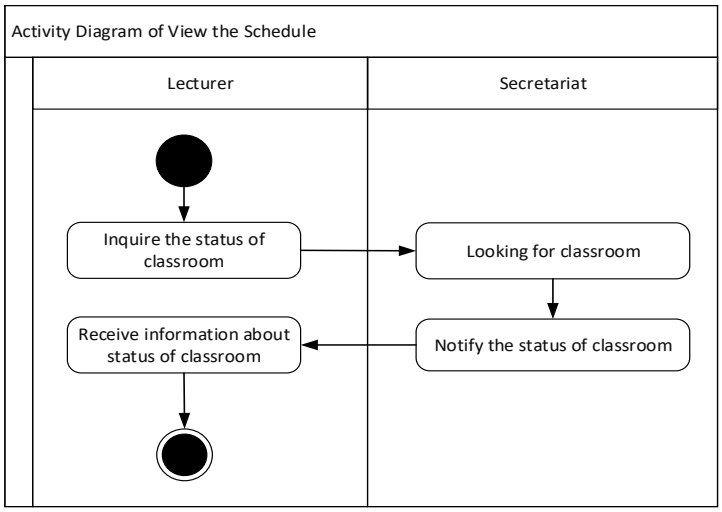

Figure 4. Activity Diagram of View the Schedule

3.3.1. Database Design. Below is classroom booking information system database integrated with course schedule information system database (See Figure 5).

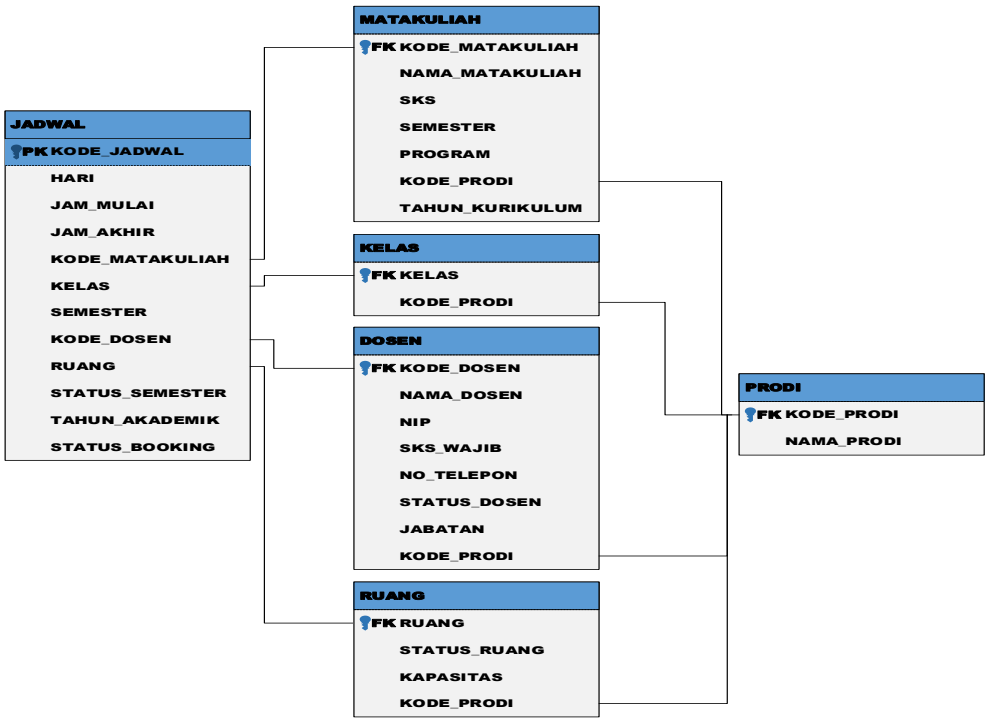

Figure 5. Database design.

3.3.2. Interface Design. Below is interface design of classroom booking information system.

3.3.2.1. Input Form Classroom Booking. To do data input classroom booking as follows: 1) Select Tab Input Booking Schedule 2). Select Space [Combo box] 3). Select Cell Day and Hour [Click 2x] 4). Input Lecturer Code then [Enter] / Select via button ... 5). Select Course [Click 2x] 6) Save. (See Figure 6).

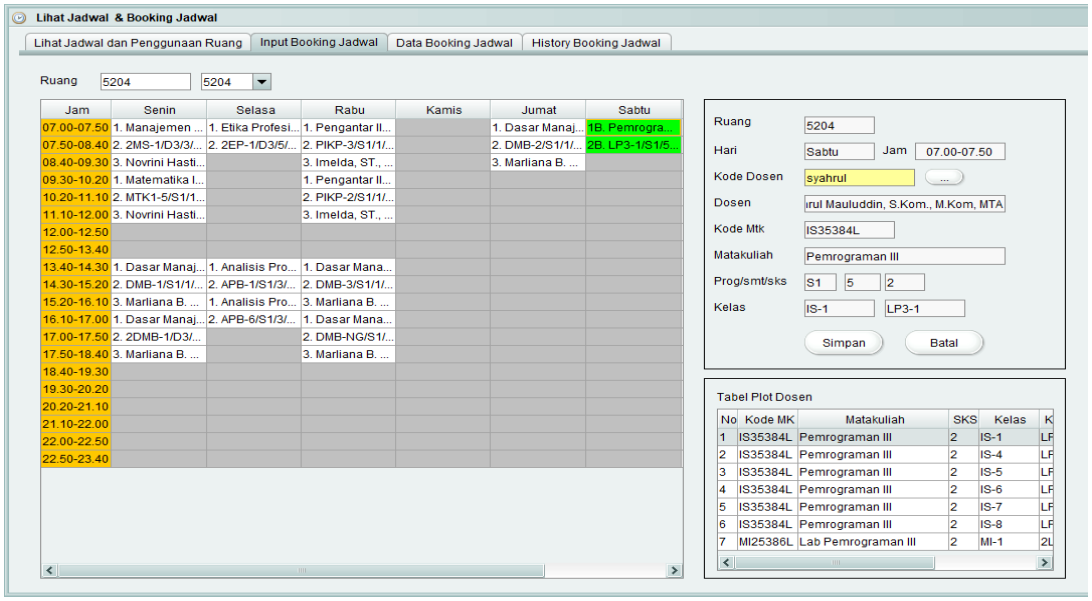

Figure 6. Form Classroom booking.

3.3.2.2. Form of date selection. After doing data input classrrom booking, next is to determine the date of use classroom. The trick as follows: 1) Select Tab "Schedule Booking Data". 2) Select Data Booking. 3). Select Date and Click + button. 4). Click the Print button "Replacement Schedule" it will display the proof of borrowing classroom. (See Figure 7).

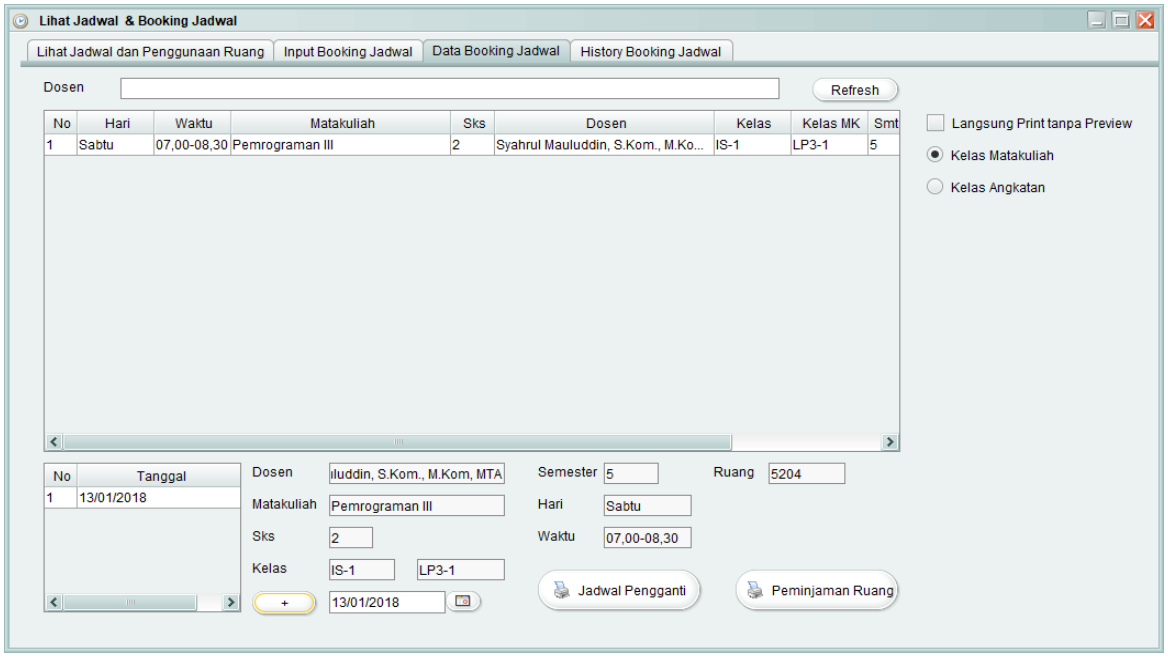

Figure 7. Form of Date selection for classroom use.

3.3.2.3. View Schedule/Classroom. If there is a lecturer or student who asks the secretariat related schedule then the secretariat can see the schedule of lectures in the following ways: 1) Select Space 2. Select the schedule in the first hour.

Schedule in green is the replacement schedule and white color is the original schedule (See Figure 8).

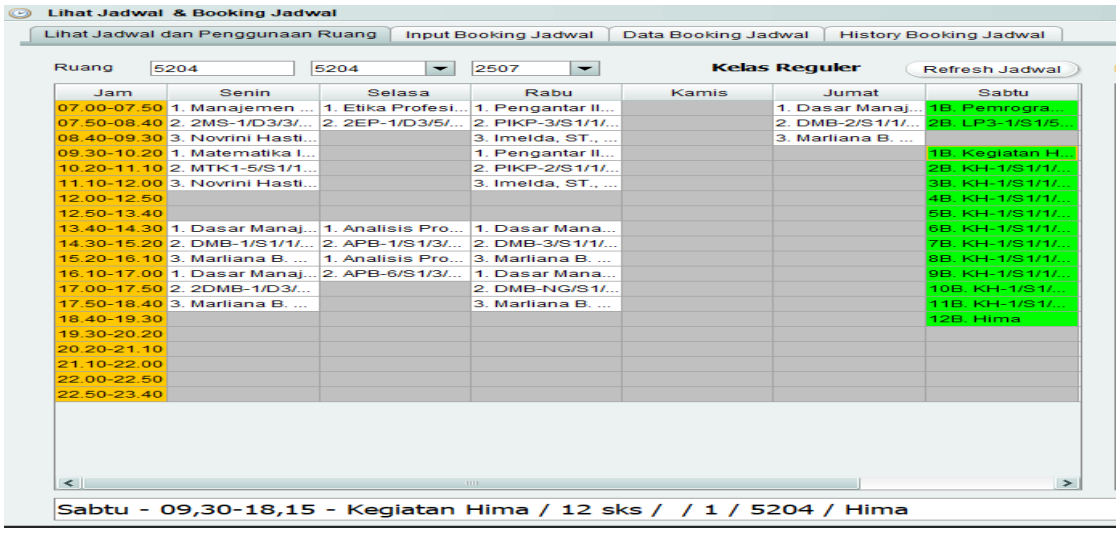

Figure 8. View Schedule/Classroom

3.4. Testing

Tests on classroom booking information system is done by black box method by secretariat study program information system with the result that the functionality of information system application booking classroom run very well.

4. Conclusions

Using this classroom booking information system can facilitate the secretariat in monitoring the use of classrooms and avoid clashes between replacement schedules and original schedules.

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