

English Class Scheduling Information System at Indonesian-American Educational Institutions

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Abstract - The purpose of the research is to create and implement a simple class scheduling application that is useful to minimize the occurrence of clashes of time, classes, levels, teachers and students at the same time. The research method used is the Descriptive Method with the type of case study research. The descriptive method is a method of researching the status of a group of people, an object, a set of conditions, a system of thought or an event in the present. From this Thesis or Final Project, the author can draw the conclusion that the English Class Scheduling Information System in Indonesian-American Educational Institutions is more effective, fast, conceptual, and up to date in data processing.

Keywords - Classroom Scheduling Information System, Indonesian-American Educational Institutions.

1. INTRODUCTION

Computer technology is one of the highest achievements of mankind where the creation of an object that functions as a human aid aims to facilitate the work of a company, as well as in the fields of education, government, health, religion, and society. Providing space for humans to expand creativity, making the development of future generations in the field of Computer Technology, the use of computer technology has been proven to provide faster and more precise work achievements than problem solving or manual work.

One of the aspects in daily life that can be handled by Computer Technology is the problem of scheduling, in this case the creation of an English Class Scheduling System at the Indonesian-American Educational Institution Cijantung Branch. Currently, there is often a conflict between the time students enter and the limited number of classes, the number of students and the number of English levels as well as the limited time and classes, therefore an application was created that functions to create a class schedule that is useful for managing the study time and classes used. In making this class schedule, understanding the concept of scheduling is very important.

Some things that need to be noted are that the classrooms or rooms at the Indonesian-American Educational Institution Cijantung Branch have four rooms, two of which have a capacity of three to five people, the other two rooms have a capacity of five to ten people. The teaching staff owned by the Indonesian-American Educational Institute Cijantung Branch amounted to two people and the English Students of the Indonesian-American Educational Institute Cijantung Branch numbered eighty people.

The majority of students of the Indonesian-American Educational Institution Cijantung Branch are elementary, junior high, high school, and office employees. Therefore, the time that students have to attend the Cijantung Branch of the Indonesian-American Educational Institution is limited, for example, office employees can only study after four and five in the afternoon, it shows that all students of the Cijantung Branch of the Indonesian-American Educational Institution will accumulate at different times. Likewise, students from junior high schools, high schools, and vocational schools will pile up every day because of new students from their respective schools, therefore the Indonesian-American Educational Institution Cijantung Branch really needs an application that is useful for making class schedules for English students.

Creating a class schedule manually often takes a long time, this is due to several factors that must be considered, namely:

1. There are levels that should not be scheduled at the same time.
2. There are limitations on time and classrooms.
3. There is a division of the type of student class and the type of classroom (class capacity).

In addition to the above factors, there are often also problems in the division of classes for elective levels, where sometimes the number of students taking the class is too much or too small so there must be a division or merging of classes. In addition, it is also necessary to distribute the schedule evenly for students every day.

Schedulers take a long time to create a class schedule to be used because they have to adjust the time available to teachers, classrooms, and students. The conditions in scheduling also make schedulers have to be careful so that there are no teacher class schedules or classes that clash.

From the results that the author did, the author can analyze the problems that exist in the English Class Scheduling System at Indonesian-American Educational Institutions, namely:

1. There is no availability of scheduling or manual applications for class schedules at the Cijantung Branch of the Indonesian-American Educational Institution.
2. There are levels that cannot be scheduled at the same time.
3. There are limitations in time and classrooms.
4. There is a division of student class types and classroom types (class capacity).
5. Problems in the division of classes for elective levels, where sometimes the number of students taking the class is too much or too small so that there must be a division or merging of classes.
6. It takes a long time to make a class schedule that will be used because it has to adjust the available time for teachers, classrooms, and students. The conditions in scheduling also make schedulers have to be careful so that there are no teacher class schedules or classes that clash.

Alternative problem-solving that the author will do to simplify the work process in the English Class Scheduling System at Indonesian-American Educational Institutions, namely:

1. Designing an information system for English Class Scheduling at Indonesian-American Educational Institutions with a computerized system. So, Every Student and Teacher Data as Material in creating a Class Schedule will be stored in the database. Then the required report will be displayed automatically.
2. Print the Schedule with Paper Media so that Students and Teachers can immediately know the Hours and Days of Learning and Teaching without any clashes. Providing Good Service for Students of Indonesian-American Educational Institutions.

2. RESEARCH METHOD

2.1 Decomposition of System Functions

To support Writing in Making this Final Project, the author will explain the Decomposition of System Functions in the English Class Scheduling System at the Indonesian American Institute. The procedure for Decomposition of System Functions will be explained in the following process:

- a. The Process of Providing Student, Class, Schedule and Teacher Data to the Administration Students provide data on Id_Siswa, Nama_Siswa, Nomor_Telepon, Foto_Siswa, Time and Date or Day of Study, as well as the desired level to the Administrative Staff. Teachers provide data in the form of Id_Pengajar, Nama_Pengajar, Nomor_Telepon to Administrative Staff. Office Boy Provides Nomor_Kelas and Nama_Kelas data to Administration.
- b. Sorting Study Dates and Times, Administration Sort manually, looking at the Student Learning Date and Time one by one.
- c. Classroom Schedule Input Process, Administration opens Microsoft Word, After that Administration begins to enter class schedule data according to the data that has been provided by the Teacher, Office Boy and Student, Beginning by entering the Id_Siswa, Nama_Siswa, Telepon_Siswa, Level_Siswa, Foto_Siswa, Learning Time Chosen by Students, Study Dates Chosen by Students, Classes Chosen by Students, Level and Time that coincides with the Teacher, Foto_Siswa, Id_Pengajar, Nama_Pengajar, Nomor_Telepon Teacher, then enter the Nomor_Kelas and Nama_Kelas.
- d. Print Class Schedule, After Administration, input data on Students, Teachers, Classes and Schedules. Administration prints Class Schedules.

2.2 Unified Modelling Language (UML) and Entity Relationship Diagram (ERD) Running System (Data Dictionary, Normalization)

1. Usecase Diagram

Use Case according to Martin Fowler (2005: 141) is a technique for recording the functional requirements of a system. Use Cases describe the typical interaction between the users of the system and the system itself, by providing a narrative of how the system is used.

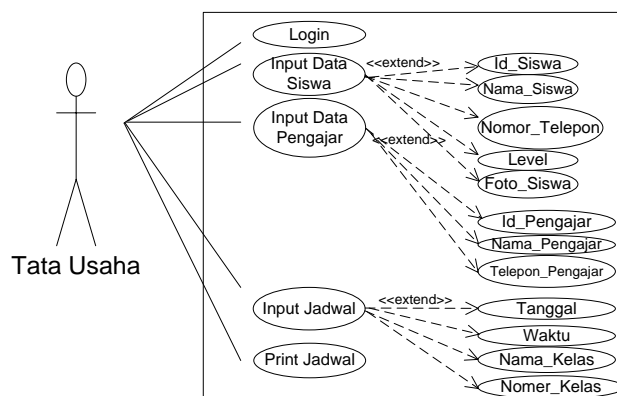


Figure 1. Proposed System Diagram Usecase

2. Activity Diagrams

Activity diagrams according to Martin Fowler (2005: 163) are techniques to describe procedural logic, business processes, and work paths. In some ways, activity diagrams play a similar role to flowcharts, but the principle difference between flowchart notation is that activity diagrams support parallel behavior.

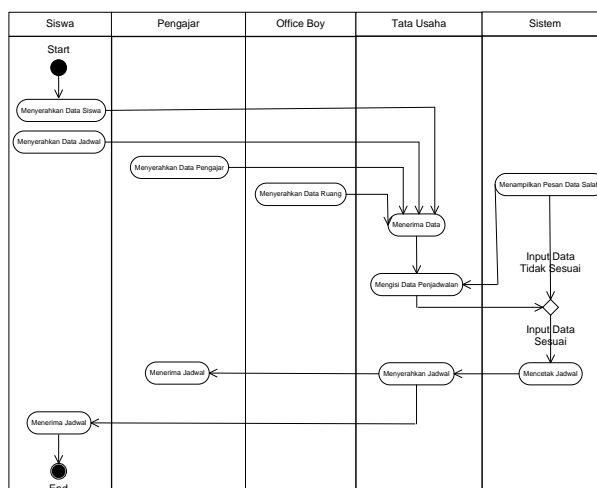


Figure 2. Proposed System Activity Diagram

3. Collaboration Diagrams

Collaboration diagram according to Munawar (2005: 101) is an extension of the diagram object. Diagram objects show objects that are related to each other. Collaboration diagrams show the messages that objects send to each other.

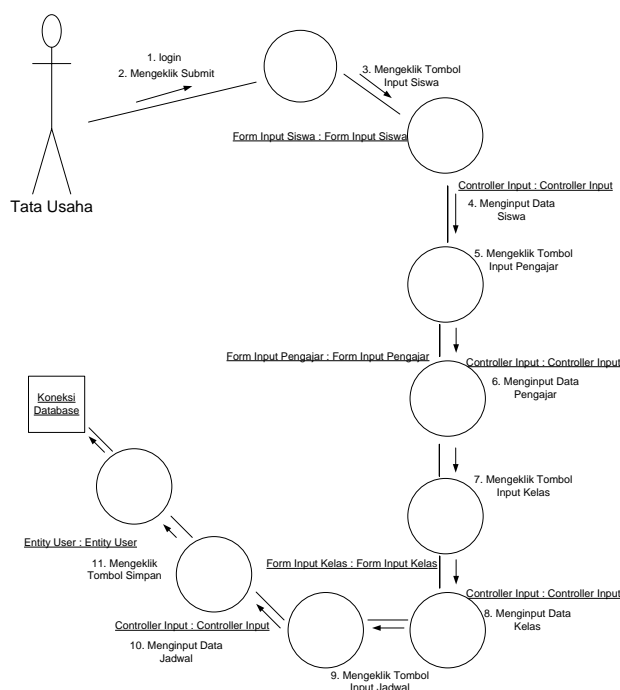


Figure 3. Proposed Collaboration System Diagram

4. Class Diagrams

Class diagrams according to Munawar (2005: 28) are a set of similar objects. An object has a momentary state (state) and a behavior (behavior). The state of an object is the condition of that object expressed in attributes/properties. Meanwhile, the behavior of an object defines how an object acts/acts and reacts.

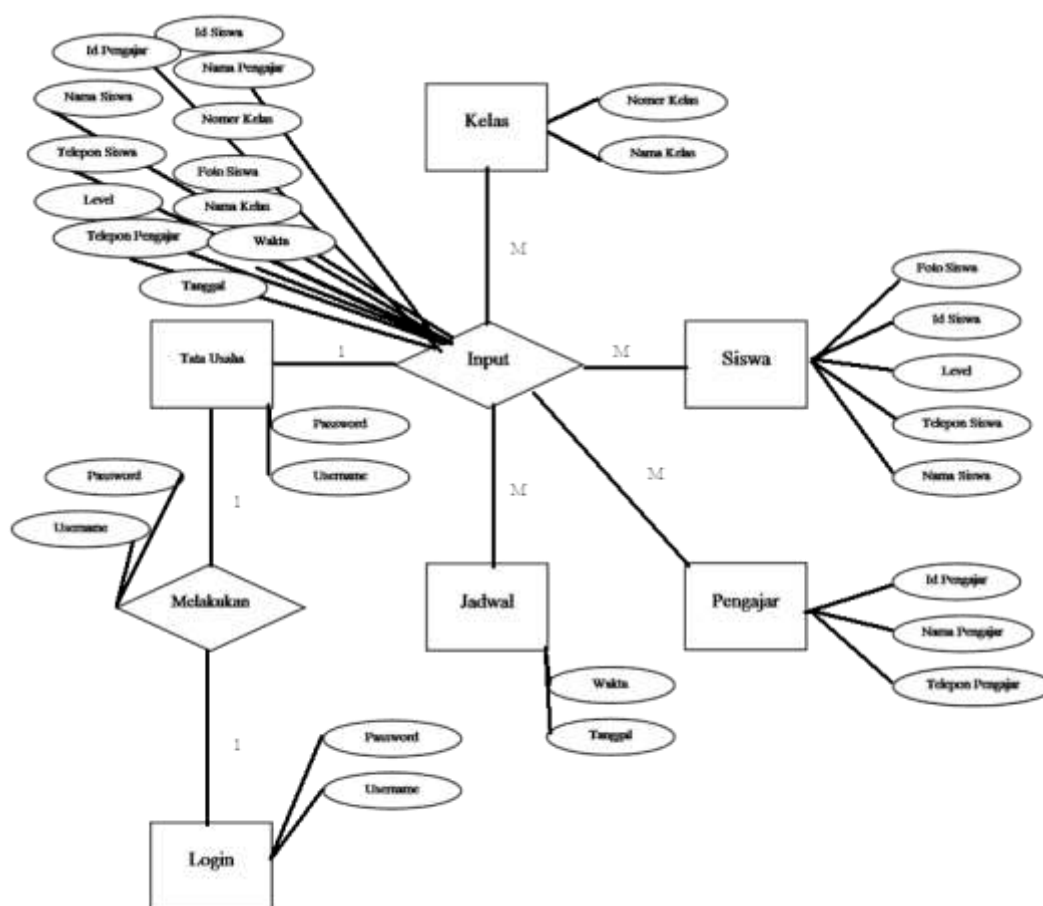


Figure 4. Proposed System Diagram Class

5. Entity Relationship Diagram (ERD)

According to Brady and Loonam (2010) Entity Relationship diagram (ERD) is a technique used to model the data needs of an organization, usually by System Analysts in the requirements analysis stage of a system development project.

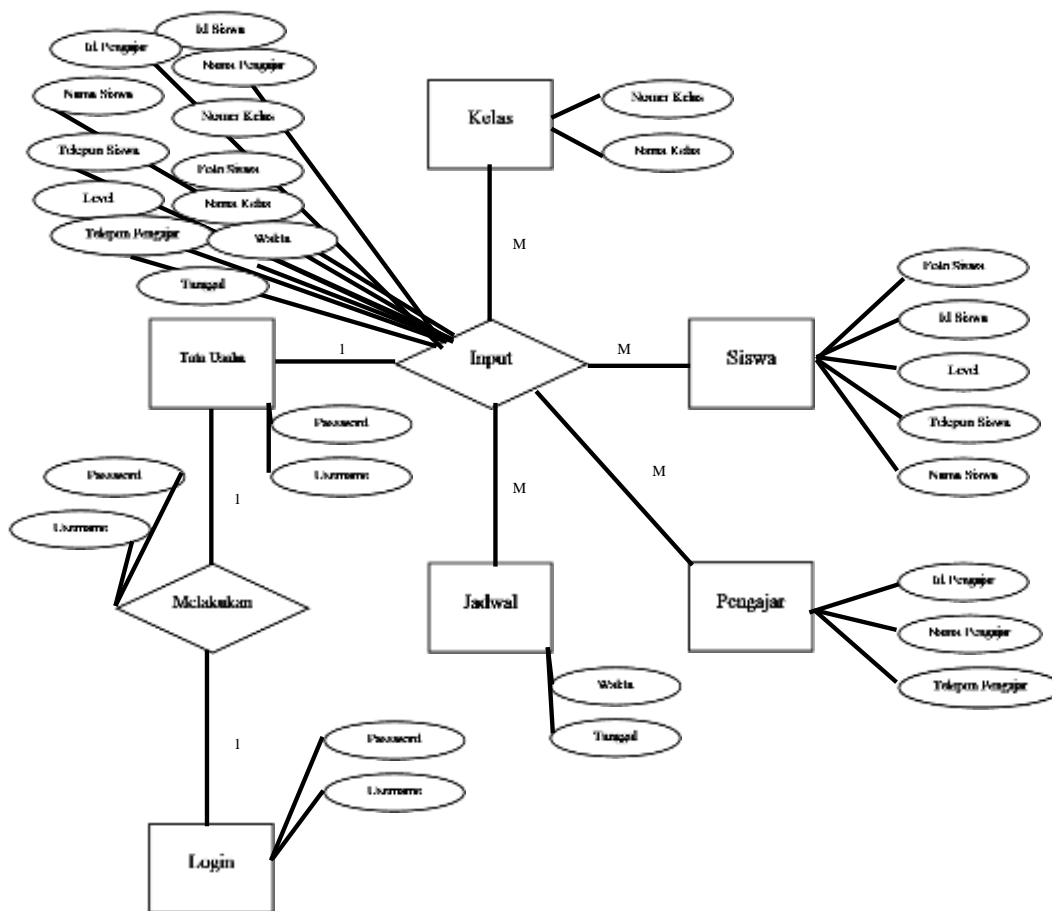


Figure 5. Entity Relationship Diagram (ERD) System Proposed

3. RESULTS AND DISCUSSION

3.1 Display and Explanation Screen, Input Format Display and Output Display

The interface or screen dialog is a conversation design between the user and the computer which consists of the process of entering data into the system and then displaying the output information to the user with the following description:

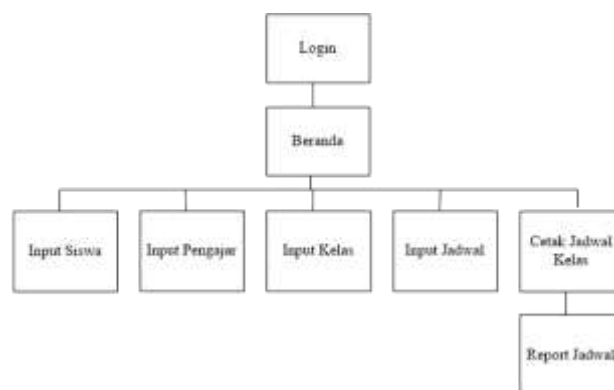


Figure 6. Display Interface or Screen Dialogue

1. Screen Display Design
 a. Login Display



Figure 7. Display Login

Explanation:

1. Fill in the Username Column with "admin"
2. Fill in the Password Column with "tuadmin"
3. Click the Submit Button, Then It Will Enter the Homepage

b. Home Display



Figure 8. Display Home

Explanation:

1. Click the Student Input button to input student data
2. Click the Teacher Input button to input teacher data
3. Click the Class Input button to input class data
4. Click the Schedule Input button to input schedule data
5. Click the Print Schedule button to print the schedule

c. Input Student Display



Figure 9. Input Student Display

Explanation:

1. Enter the student id data into the "student id" column
2. Enter the student name data in the "Student Name" column
3. Enter student phone data into the "Student Phone" column
4. Input Student Level Data into the "Level" Column
5. Input student photo data into the "Student Photo" column
6. Then click the Save button to save
7. If you want to update Student Data, click the Update Button and then Enter Updated Data

d. Input Teacher Display



Id Pengajar	Nama Pengajar	Telepon Pengajar
TC01	Mr. Ihsan	083896064210

Id Pengajar :
Nama Pengajar :
Telepon Pengajar :

Figure 10. Input Teacher Display

Explanation:

1. Input the Teacher's Name Data into the Teacher's Name Column
2. Input the Teacher's Phone Data into the Teacher's Phone Column
3. Then click the Save button to save
4. If you want to update Teacher Data, click the Update Button and then Enter Updated Data
5. Click the "Home" button to return to the Home page and continue Entering Class Data

e. Input Class Display



Figure 11. Input Class Display

Explanation:

1. Enter the Class Number Data into the "Class Number" Column
2. Enter the Class Name Data into the "Class Name" Column
3. Then click the Save button to save
4. If you want to update the Class Data, click the Update Button and then Enter the Updated Data
5. Click the "Home" button to return to the homepage and continue to input schedule data

f. Input Schedule Display

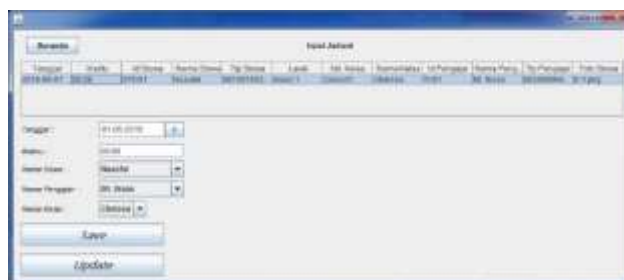


Figure 11. Input Schedule Display

Explanation:

1. Enter Date by selecting Date, Month, and Year
2. Enter Time in the Time Column
3. Select the "Same Student" data that you want to enter Date and Time
4. Select the "Teacher's Name" data that you want to enter the Date and Time
5. Select the "Class Name" data you want to enter the Date and Time
6. Then click the Save button to save
7. If you want to update the Class Data, click the Update Button and then Enter the Updated Data
8. Click the "Home" button to return to the Home and continue Printing Class Schedule

g. Input Print Schedule Class Display



Figure 11. Input Schedule Class Display

Explanation:

1. Click the Print Button, then the Yam Schedule is printed

4. CONCLUSION

With the creation of the English Class Scheduling Information System Design application at Indonesian-American Educational Institutions, all activities related to Class Scheduling data processing can run well and smoothly. In this application, the Administration section can handle the work of inputting Class Scheduling data quickly and accurately and can be updated easily. And with this application, it is hoped that it will facilitate activities or work activation that requires speed and certainty of information.

The speed and accuracy of the results of this Information System also requires the active participation of system users, especially the discipline of the implementers who handle directly on the designed system. With the existence of computer services as a tool, the author has a conclusion by using this system based on the formulation of the following problems:

1. The English Class Scheduling Information System at Indonesian-American Educational Institutions has been created to be able to input classrooms, learning time, student names, and teachers and produce output in the form of class schedules.
2. With the English Class Scheduling Information System in Indonesian-American Educational Institutions can Handle and Minimize Conflicting Class Schedules. By entering all the aspects needed to make a Class Schedule, such as Id_Siswa, Nama_Siswa, Telepon_Siswa, Foto_Siswa, Level, Nama_Kelas, Nomer_Kelas, Time, Date, Id_Pengajar, Nama_Pengajar, Telepon_Pengajar. Especially the Learning Date and Time according to the wishes of the Students and Teachers. Therefore, the Learning and Teaching Schedule does not clash.
3. With the English Class Scheduling Information System at the Indonesian-American Educational Institution can provide satisfactory services to students of the Indonesian-American Educational Institution Cijantung Branch. By providing classrooms, time and teachers that are in accordance with the student's wishes. Like students will be able to learn at the desired time, in a class that has been adjusted to the level and number of students.

4. The English Class Scheduling Information System in Indonesian-American Educational Institutions is more effective, fast, conceptualized and up to date in data processing.

The implementation of the English Class Scheduling Information System in Desktop-based Indonesian-American Educational Institutions is one of the steps forward in the application of information technology. The English Class Scheduling Information System that the author created is only to support the Class Scheduling Information System process to streamline time, as well as the date or day of study and data security which can at least help the Administration department in making Class Schedules.

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