Research on Dormitory Management System in Colleges and Universities

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ABSTRACT

Through constant communication and survey of university dormitory management personnel, continuous practice and improvement in system function, and continuous data analysis, we finally developed the "student dormitory management system" which dormitory administrators and students two client are satisfied with.

KEYWORDS

Student dormitory management system; friendly interface.

INTRODUCTION

Research Status

Many different kinds of student dormitory management systems has developed on the Internet at present, although the function is relatively complete, the interface give a person a kind of very complicated feeling, dormitory management personnel in our school do not have great advantages to learn new knowledge relatively at the age, need some time to learn and adapt for new dormitory management mode as well, although students as another kind of end user with the ability to quickly learn new knowledge, who are accustomed to the original paper management, they also need some adaptation time. So, it not only ensures that the function is complete, it more need to make people discern easily in the visual perception of interface, which considers the friendless of interface, the convenience of use is equally important. This paper has attached great importance to this issue and has made a relatively perfect solution.

Research Content and Goals

Main features of dormitory management system include the following points:

The system is divided into two identities to log in, one is the dormitory personnel, and the other is student, function of each identity is slightly different after login.

The dormitory management personnel can mainly realize the inquiry about the students and dormitory information as well as the addition, deletion and modification of their information after login.

Users can check express information

Users can submit and inquire about repair information;

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Students can add or delete their own information on leaving and returning to school.

User can change user's own password.

This dormitory management system emphasizes the completeness of functions and the friendliness of the interface, which has made a lot of efforts in convenience of use, in order to make the content seem simple and easy to understand without losing the functional integrity, I have designed many different kinds of window layout, finally choose one of the most satisfactory layout to achieve the object of simple interface.

DEMAND ANALYSIS

Feasibility Analysis of System Development

Technical feasibility: with the development of computer technology, the life and work of people have involved in computer field more or less, now it is hard for people to break away from a convenient science and technology, on the whole, the popularization of the computer makes people's life efficiency have a leap. Dormitory management system store is management software which stores a lot of information on students and dormitory, including students and dormitory information' inquiry, addition, deletion, change and other operations, records of students staying late, the repair registration of dormitory items, and inquiry and input of the students' letters and so on. The development of such a management system makes it easier for understanding student' way. This system uses the Eclipse and database technology, Eclipse is safe and easy to use, which has mentioned above, and the database is much more convenient and simple to use, so developing a management system is completely no problem in the technology aspects. Economic feasibility: Developing this system only requires software to be installed onto a computer, and it can be implemented anywhere and anytime, so developing such software is not very big economic pressure.

Feasibility of organization and management: a lot of conservative state have got rid of in the concept of modern people, if the developed management software function is strong enough, it can bring to life, so it can get school logistics support, because no one will give up a chance which can do things easier, and conservative do inefficient things.

It can be seen from the above feasibility that developing such a management system can make the management of the dormitory more convenient and fast, and can make the whole management mode improve one step. Therefore, it is necessary to develop dormitory management system.

Users' Needs Analysis

The system's end users are dormitory managers and students. According to my daily experience in the dormitory, investigate the dormitory management teachers in my school and the students in the same dormitory; I come to the practical needs of the following user terminal:

Students live in dormitory, daily life of many dormitory management personnel in dormitory building.

Student's basic information:

After the students entering the school, the school will automatically generate for each student a primary key, which is the only student ID as well, and it is assigned to

the specified dormitory buildings and dormitory. Each dormitory has a unique dormitory house number; student registration time is the time when students enter school. In addition, students generally with the same college live in the same building in order to facilitate the management; there are corresponding department names in the information.

Basic information of dormitory:

Each dormitory has a primary key dormitory number; each dormitory has a phone, it is corresponding to the dormitory phone number.

Basic information of dormitory property project:

The school's public property includes light bulbs, beds, tables and chairs, etc. in order to make better distinction for different items, and item numbers are assigned for each item. The main purpose is to be more conducive to repair and manage dormitory public items.

Basic information of express:

There is express management in each dormitory. When students have a letter on the building, the arrival time of the letter will show correspondingly, and accept the letter with student's name and the house number of his dormitory. A student can have several express at one time, it is necessary have column that show the number of express. When the express arrives, there will be an arrival time. After the student has successfully received express mail, it shows successful receipt.

Basic information of public repair:

The public property of dormitory often need to be repaired due to damage, at this time, the students should number the item, item name, and the cause of the damage, and report to the dormitory management system, management will see it this time, notify the relevant personnel to repair dormitory property. The report will generate an report time, and have a successful repair time after the repair is completed.

Basic information of night return:

Students sometimes are over the closing time of dormitory because of some things, at this time, dormitory management personnel should make corresponding record on the system, for example: time of night return, personnel's name of night return, student number, the reason for return late and so on, in order to verify later.

Basic information for leaving school:

Every year when the school in winter vacation, summer vacation, and all kinds of small holidays, in order to facilitate the students' safety management and know where the students are going, they should do their best to record where the students are, when they leave and when they return to school.

User's requirements for the system:

1. Dormitory management personnel:

A. Information requirements:

The dormitory management personnel can check all the above information, including any information in the student's dormitory, the receipt information of the express, the information of the property, etc., so as to manage the whole dormitory.

B. processing requirements:

Dormitory management personnel not only can inquire the relevant information, and have the right to change a lot of information, such as the change of students' information changes, which is mainly modified by dormitory management personnel, when students' express arrive, the management personnel record it, after the express is successfully received, and the dormitory management personnel confirm and receive.

When the student reports the damaged property for repair, dormitory management personnel can inquire the fixed time, that is to say, the dormitory management personnel cannot only inquire the students' information, but also have authority to add and remove information.

C. Safety and integrity requirements:

1) Safety requirements:

The system has two different users' ID to login, and different user id login has different system window, and should ensure that the users' name and password are legal.

The system has the same access to the same data set, and users can inquire and handle the types and contents of all information of the access rights.

The system sets different authorities for administrators and students. Users with different authorities have different access rights and change authorities for different data, which are divided into dormitory personnel' authorities and students' rights.

2) Integrity requirements:

All kinds of information records must have data; the completeness of information must be ensured:

Meticulously linked all kinds of data;

The same data record should be consistent, no matter which page is the same.

2. Students in this dormitory:

A. Information requirements:

The students live in this dormitory can inquire dormitory they live in, students' express, their dormitory property repair conditions and so on, and can change their information for leaving and returning for school.

B. processing requirements:

The students can inquire, and report dormitory property need to be repaired in the system according to the requirements. After the repair, the personnel can see it and send relevant personnel to repair it.

During the festival and holiday, students need to record their whereabouts on the system when they are away from school or return to school.

Second part: The design and division of system function

According to the above analysis, the user's requirements can be obtained, and the functions of the system are divided into the following parts, the student management part and administrator management part, respectively:

The functions completed by all parts are as follows:

1) User management part

Handle user registration

Handle user login

Students can query the student information.

Students can query the express information.

Students can submit and search repair information.

Students can increase and modify students' own return or leaving for school information.

Students can change their passwords.

2) Administrators' management part

Handle administrator login

Administrators can query students' information.

Administrators can issue and update express information.

Administrators can add, modify, query and delete student warranty information.
Administrators can add and query students for their information for night return.
The administrator can query information whether the student is in school or not.
Administrators can modify the administrators ' password.

Flow Diagram of System Data
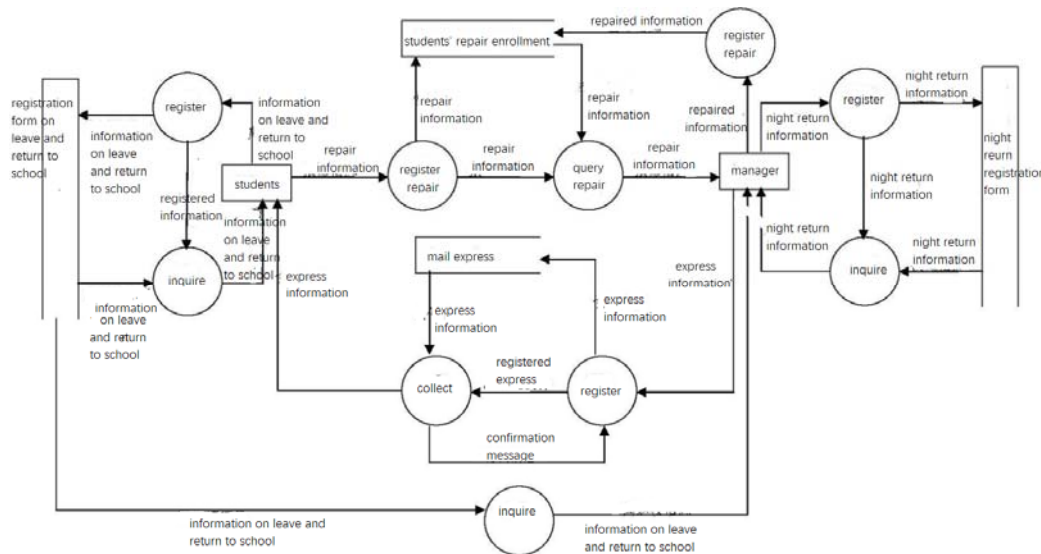
STRUCTURAL DESIGN OF SYSTEM CONCEPT

The instruction book is analyzed in accordance with the demand, according to the structural design idea; the local E-R graph is designed through data abstract design.

The set of relational schemata is the relational data model, and the relationship among entity and attribute and other entities constitutes E-R diagram. So transforming E-R diagrams into relational data models is to transform the relationships among entities, attributes, and entities into relational schemas.

The database logic design can be divided into three phases: user' demand, establish E-R model and database pattern design. I have designed the E-R diagram of system before, meantime I have made some users' demand survey before the development, place myself in users' position, truly feel how to do products better, and more convenient in use, interface is friendlier. Based on this, the direction and emphasis of this system are clear, and the design of the database model is emphasized. It can be divided into two steps to realize the design stage of the logical design in the database mode, the first step is to convert the E-R graph to the relational model, and the second step is to optimize the design, adjust and improve the mode. I would like to emphasize that in the third step of logical design, namely, the E-R image relation model is transformed into a relational model. The relationship patterns of the entity transformation are as follows:

Relational schema

Dormitory student (student number, name, gender, major, dormitory number, check-in time)

Dormitory (dormitory number, dormitory telephone)

Dormitory property (item number, item name)

Mail express (name, dormitory number, arrival time, receipt time, number of mail)

Report (item number, dormitory number, submission date, settlement date, reason for repair)

Night return (student number, dormitory number, late return time, the reason late return)

Departure (student number, dormitory number, departure time, return time)

(The underlined attribute is the primary code)

The above relationship mode is BCNF.

In order to facilitate program query, the following user views are established:

Student information view (student number, name, gender, department, dormitory number, dormitory telephone)

View of property report for repair (dormitory number, property name, time for repair, processing time, reasons for repair)

Student night view (student number, name, gender, department, dormitory number, time, the reason for night return)

View for student leaving school (student number, name, gender, department, dormitory number, departure time, return time)

View for student in school (student number, name, gender, department, dormitory number, and dormitory telephone)

PHYSICAL DESIGN

In order to design the physical structure of a database, it is necessary to determine in accordance with the logic structure of database, and design storage structure, methods and space of database and so on based on this. The entrance modes of sequence table are from the outside to inside. The relationship between tables and tables can be formed in the database on the basis of the entities and relationship among entities. Student ID in the student information table is corresponding to the one and only one dormitory ID, mail recipient ID is corresponding to the student ID in the database as well, each dormitory property ID is corresponding to a dormitory ID, administrator ID is associated with each table, and the tables are correlated.

SYSTEM IMPLEMENTATION AND MAIN CODES

The module codes of "student information management" are as follows:

TESTING PROCESS AND IMPROVEMENT

The students experience different user terminal after completion of the system, all kinds of situations are set to realize each function of system, after the use of different user terminal for a period of time, this system has many affirmations and valuable opinions from experienced people.

The highlight of this system is the friendliness of the interface, meanwhile maintaining relatively complete functions.

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