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Hostel Automation System

Mr. A.Aswar¹; Mr. A.Ganesan²; Dr. V.Kavitha³; Mr. V.Karthicksabri⁴

^{1,2,3&4}PG & Research Department of Computer Applications, Hindusthan College of Arts and Science, India
¹aswar2831@gmail.com; ³kavithahicas@gmail.com

Abstract— *This project deals with integrating the activities of the College Hostel into a comprehensive IT enabled Campus. There are 1200 students staying in a hostel pursuing various degrees in an institution. The activity for allocating the rooms for each student and maintaining the changes in rooms is a tedious task when operated manually. So to overcome the difficulty the integrated hostel automation system is proposed. In this project each student detail, College detail, Department details, Hostel building blocks details and room allocation details are get performed. The development process is done using the .Net Technology as Development Frame work and SQL Server as Back End Database Server.*

Keywords— *Room allotment, Registration process, Portability*

I. INTRODUCTION

File design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm and area of application. Design is the first step in the development phase for any engineered product or system. The designer's goal is to produce a model or representation of an entity that will later be built. Beginning, once system requirement have been specified and analyzed, system design is the first of the three technical activities -design, code and test that is required to build and verify software.

The importance can be stated with a single word "Quality". Design is the place where quality is fostered in software development. Design provides us with representations of software that can assess for quality. Design is the only way that we can accurately translate a Student's view into a finished software product or system. Software design serves as a foundation for all the software engineering steps that follow. Without a strong design we risk building an unstable system – one that will be difficult to test, one whose quality cannot be assessed until the last stage.

During design, progressive refinement of data structure, program structure, and procedural details are developed reviewed and documented. System design can be viewed from either technical or project management perspective. From the technical point of view, design is comprised of four activities – architectural design, data structure design, interface design and procedural design.

Existing System and Disadvantages

The existing system is manual based and need lot of efforts and consume enough time. In the existing system hostel room allotment processes are done manually. It may lead to mistakes in the allocation process as well as hostel fee calculation.

- More human power
- More strength and strain of manual labour needed
- Repetition of same procedure.
- Low security
- Data redundancy
- Difficulty to handle
- Difficulty to update data
- Record keeping is difficult

Proposed System

This project Implemented Hostel Maintenance System it is design for maintain detail of hostel and hostel students who are staying in college hostel. This project contain the detail of the student who are all staying in the college hostel and full detail of the student name, address, age, Department, Parents details and some other detail like health condition of the student who are all stay in the hostel. The project contain hostel detail like the number of room the hostel contain and how many rooms are fill by the students and how many of them free.

Advantages of Proposed System

1. Unique id to student.
2. Personal detail collection of students, parents / guardians.
3. Whole module has been managed by the admin only.

II. METHODOLOGY

The project "Hostel Management System" is divided into several modules. That name of the modules are explained respectively.

Modules:

1. Students Module.
2. Hostel Detail management.
3. Room Allotment Module

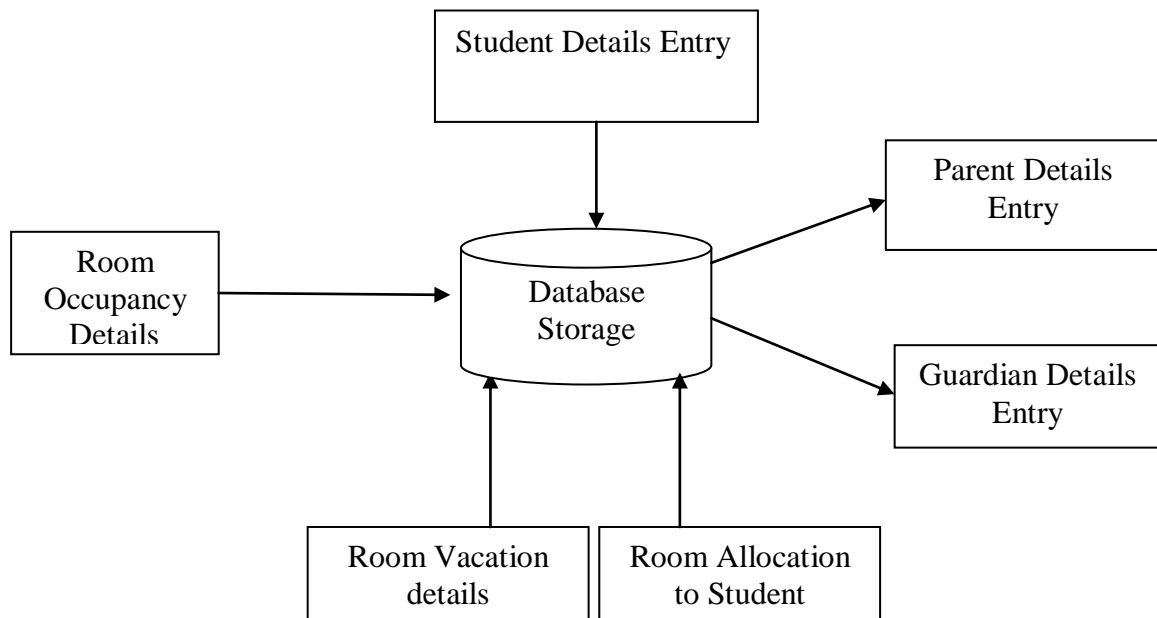


Fig 1 Data Flow Diagram of Hostel Management System

Modules Description of Hostel Management System

Student Module

In this module the students can fill the student application form after the full completion of the application the student will get a unique hostel id allocated by the system. STUDENT MODULE This module is

used to store student details i.e. information like profile details, contact information, educational details etc. Users can search according different criteria such as name, course, room number etc.

Hostel Detail management

In the above module, filled application form that should be made system entry by the hostel manager and he will get a unique id. Using that the hostel manager can fill the detail of the hostel. This hostel detail management contain the no of rooms available in the hostel, the no of student staying in hostel, no of rooms are free. This module also always monitor by the admin daily.

Room Allotment Module

This deals with allocation of room to students according to education details, section or course. Rooms will be allocated to students and an ID will be generated for it. It will display details students staying in the room or rooms. When a student leaves the room after the semester, the left date will be also saved.

III.INPUT & OUTPUT DESIGN

INPUT DESIGN

Input design is a part of overall system design. The main objective during the input design is as given below:

- To produce a cost-effective method of input.
- To achieve the highest possible level of accuracy.
- To ensure that the input is acceptable and understood by the user.

The main input stages can be listed as below:

- Data recording
- Data transcription
- Data conversion
- Data verification
- Data control
- Data transmission
- Data validation
- Data correction

It is necessary to determine the various types of inputs. Inputs can be categorized as follows:

- External inputs, which are prime inputs for the system.
- Internal inputs, which are user communications with the system.
- Operational, which are computer department's communications to the system?
- Interactive, which are inputs entered during a dialogue.

At this stage choice has to be made about the input media. To conclude about the input media consideration has to be given to;

- Type of input
- Flexibility of format
- Speed
- Accuracy
- Verification methods
- Rejection rates
- Ease of correction
- Storage and handling requirements
- Security
- Easy to use
- Portability

Keeping in view the above description of the input types and input media, it can be said that most of the inputs are of the form of internal and interactive. As Input data is to be the directly keyed in by the user, the keyboard can be considered to be the most suitable input device.

OUTPUT DESIGN

Outputs from computer systems are required primarily to communicate the results of processing to users. They are also used to provide a permanent copy of the results for later consultation. The various types of outputs in general are:

- External Outputs, whose destination is outside the organization.
- Internal Outputs whose destination is within organization.
- User’s main interface with the computer.
- Operational outputs whose use is purely within the computer department.
- Interface outputs, which involve the user in communicating directly.

The outputs should be defined in terms of the following points:

- Type of the output
- Content of the output
- Format of the output
- Location of the output
- Frequency of the output
- Volume of the output
- Sequence of the output

It is not always desirable to print or display data as it is held on a computer. It should be decided as which form of the output is the most suitable. In the next stage it is to be decided that which medium is the most appropriate for the output. The main considerations when deciding about the output media are:

- The suitability for the device to the particular application.
- The need for a hard copy.
- The response time required.
- The location of the users
- The software and hardware available.

Keeping in view the above description the project is to have outputs mainly coming under the category of internal outputs. The main outputs desired according to the requirement specification are:

The outputs were needed to be generated as a hot copy and as well as queries to be viewed on the screen. Keeping in view these outputs, the format for the output is taken from the outputs, which are currently being obtained after manual processing. The standard printer is to be used as output media for hard copies.

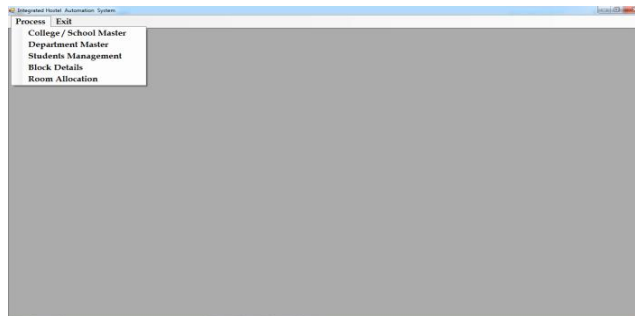


Fig 2 Input Design of Hostel Automation System

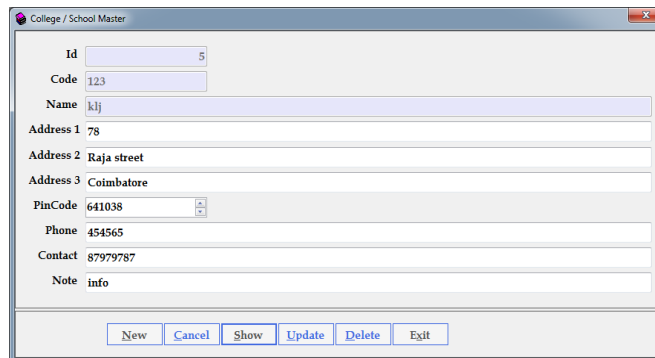


Fig 3 Output design of Registration Form for College/School

Student Master

Student Detail

Id: 1 Code: 121212121

Name: Raj Blood Group: o+ Prev. Medical Treatment: No

College: kjl Joining Date: 07/26/2010 Date: 07/26/2010

Department: cs Status: Live Date: 07/26/2010

D.O.B. Certificate: 01/01/1994 Original: 01/01/1994 Father's Name: kumar

Mother's Name: sri Address1: 123

Address2: Nehru street Address3: coimbatore

City: coimbatore Phone No.: 9876543210

Mobile No.: 9876543210 Community: B.C. Caste: caste Pincode: 600028

Local Guardian Details

Name: kumar Address1: 123

Address2: Nehru street Address3: coimbatore

City: coimbatore Pincode: 600028

Phone No.: 9876543210 Mobile No.: 9876543210

Visitor Details

SLNo.	Name	Address	Relationship
1	kumar	As Above	Father
2	sri	As Above	Mother
3	ramu	As Above	brother

Attendance Reference: 121212121

Buttons: New, Cancel, Edit, Update, Delete, Exit, Search

Fig 4 Output Design of Hostel Registration Form

Block Type Master

Bed Name: Add

Id: 8

Name: Old Block

Type: 6 IN 1

Room No: 507

Nos: 6

Delete	Id	Name
Delete	1	Bed1
Delete	2	Bed2
Delete	3	Bed3
Delete	4	Bed4
Delete	5	Bed5
Delete	6	Bed6

Buttons: Save, Cancel, Search, All, Exit

Fig 5 Output Design of Room Allotment

Student Allotment

Block Name: GRG Block Room No: 77 Status: Status

Status: Free Date: 29/02/2016

Block Details: All

Student Details: All

BedName	StudentCode	StudentName
Bed23	121212121	Raj
Bed4		
Bed45		
Bed5		
Bed6		
Bed7		

Student Code: Name:

Block Id: Old Block Bed Id: 507 Student Code:

Buttons: New, Cancel, Search, Exit

Fig 6 Output Design of Student Allotment System

In the above said input and output form designs of the figures explain about the home page of hostel automation system, registration process school or college, room allocation and student allotment system for a concern room.

IV. CONCLUSION

To conclude the description about the project, the project, developed using VB.Net with SQL Server is based on the requirement specification of the user and the analysis of the existing system, with flexibility for future enhancement. COLLEGE HOSTEL MANAGEMENT SYSTEM is very useful for hostel allotment and mess fee calculation in future. This hostel management software is designed for students who want to manage various activities in the hostel. For the past few years the numbers of educational institutions are increasing rapidly. Thereby the numbers of hostels are also increasing for the accommodation of the students studying in this institution. And hence there is a lot of strain on the person who are running the hostel and software's are not

usually used in this context. This particular project deals with the problems on managing a hostel and avoids the problems which occur when carried manually. Identification of the drawbacks of the existing system leads to the designing of computerized system that will be compatible to the existing system with the system which is more user friendly and more GUI oriented.

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